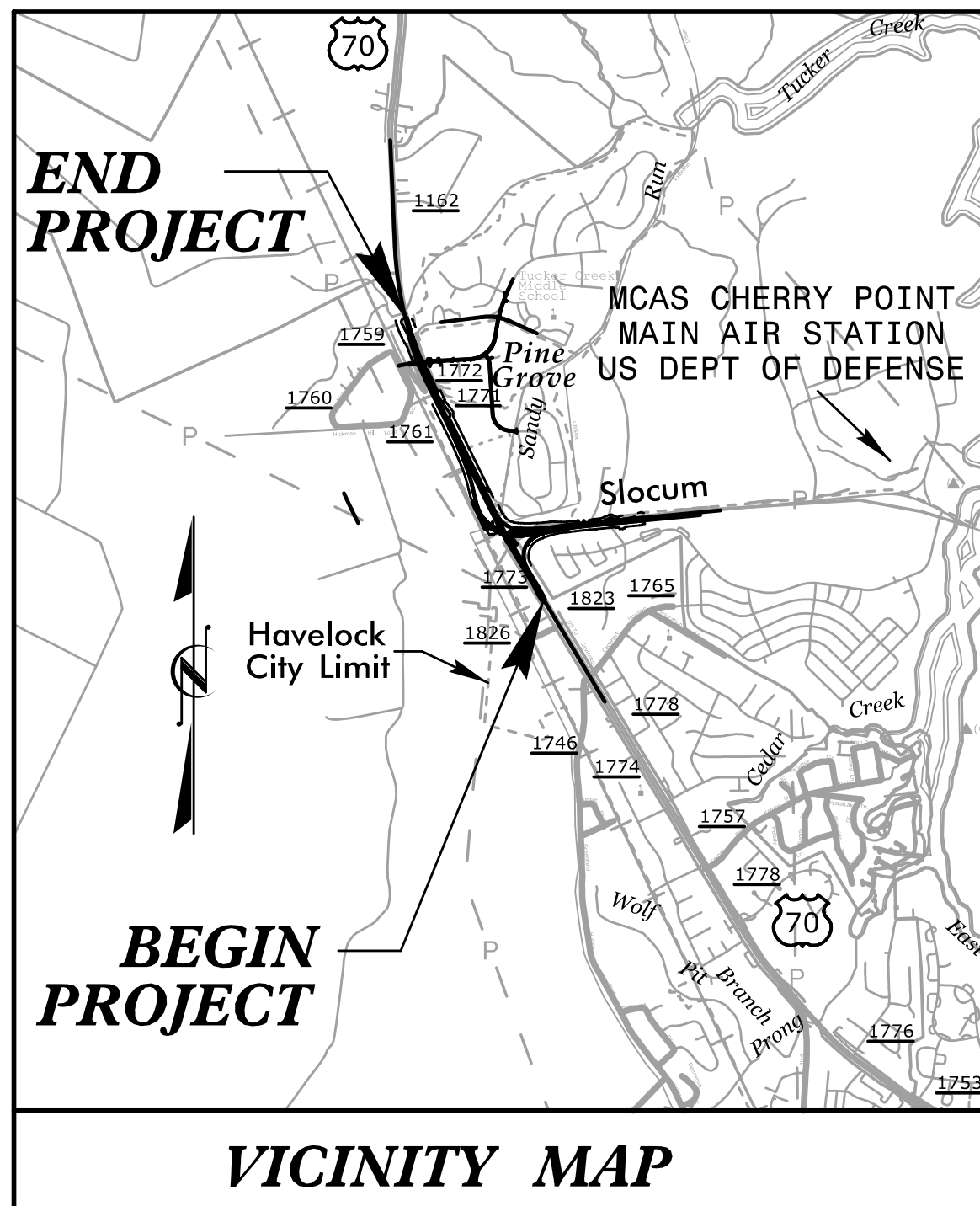


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See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CRAVEN COUNTY

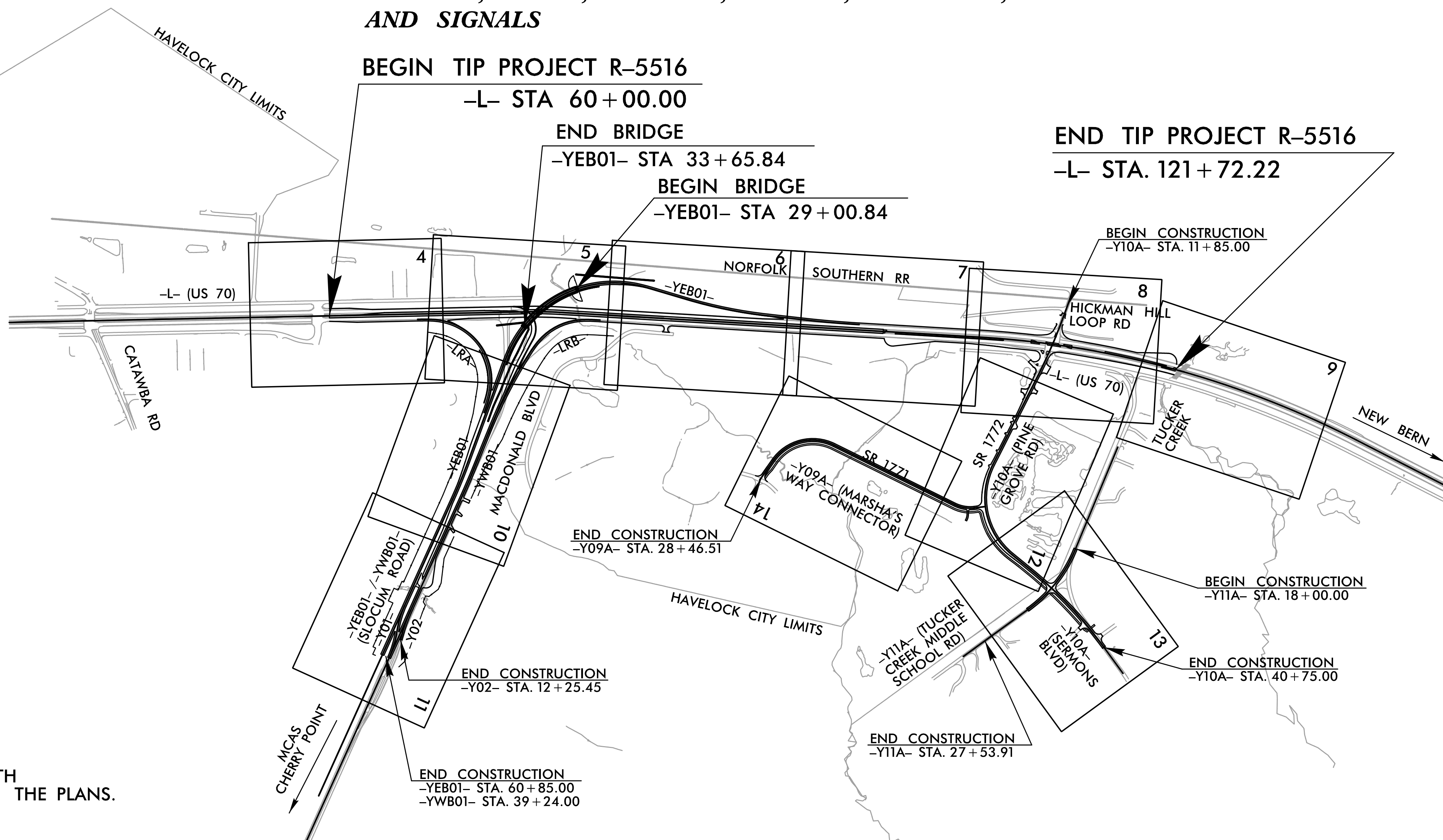
LOCATION: INTERCHANGE FROM US 70 TO SLOCUM ROAD AT CHERRY POINT MILITARY BASE

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

BEGIN TIP PROJECT R-5516
-L- STA 60+00.00

END BRIDGE
-YEB01- STA 33+65.84
BEGIN BRIDGE
-YEB01- STA 29+00.84

END TIP PROJECT R-5516
-L- STA. 121+72.22



THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

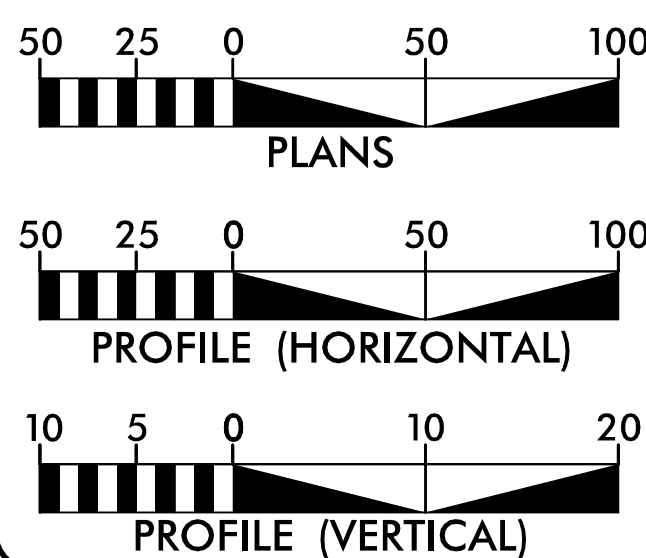
TIP PROJECT: R-5516

CONTRACT: C203955

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5516	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45492.1.1	NHS-0070(154)	P.E.	
45492.2.1	NHS-0070(154)	R/W & UTIL.	
45492.3.1	NHS-0070(154)	CONST	

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GRAPHIC SCALES



DESIGN DATA

ADT 2017 = 32,900
ADT 2040 = 38,100
K = 10 %
D = 70 %
T = 12 % *
V = 60 MPH
* TTST 2 % DUAL 10%
FUNC CLASS = PRINCIPAL ARTERIAL STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5516 = 1.169 MILES
LENGTH STRUCTURE TIP PROJECT R-5516 = 0.000 MILES
TOTAL LENGTH TIP PROJECT R-5516 = 1.169 MILES

Prepared in the Office of:



NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
June 30, 2015

LETTING DATE:
June 20, 2017

NEIL J. DEAN, PE
PROJECT ENGINEER

ERIC SPALDING, EI
PROJECT DESIGN ENGINEER

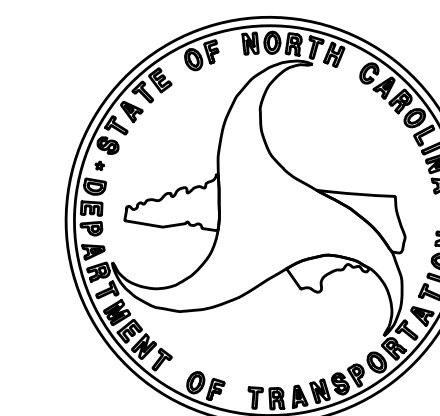
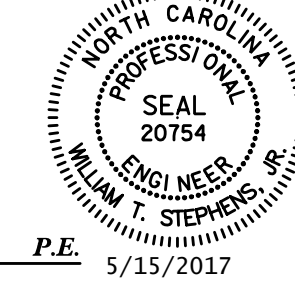
GARY LOVERING, PE
PROJECT ENGINEER
NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

DocuSigned by:
William T. Stephens, Jr.
SIGNATURE: [Signature]
P.E. 5/15/2017

ROADWAY DESIGN ENGINEER

DocuSigned by:
Neil Dean
SIGNATURE: [Signature]
P.E. 5/15/2017



PROJECT REFERENCE NO.	SHEET NO.
R-5516	1A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
Prepared in the Office of:	NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 415 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

SHEET NUMBER	SHEET	INDEX OF SHEETS
1	TITLE SHEET	
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS	
1B	CONVENTIONAL SYMBOLS	
1C-1 THRU 1C-4	SURVEY CONTROL SHEETS	
1D-1	CENTERLINE COORDINATE LIST	
2A-1 THRU 2A-7	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS	
2B-1	BRIDGE SKETCH DETAIL	
2C-1	SPECIAL JUNCTION BOX DETAIL	
2C-2	CHAIN LINK SECURITY FENCE DETAIL	
2C-3	CONVERT EXISTING DI TO JB DETAIL	
2C-4	STEEL PIPE GATE DETAIL	
2D-1	DRAINAGE DETAILS	
2G-1	TEMPORARY SHORING	
3B-1	SUMMARY OF ROADWAY QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY	
3D-1 THRU 3D-6	DRAINAGE SUMMARY SHEETS	
3G-1	GEOTECHNICAL SUMMARY	
3P-1	PARCEL INDEX SHEET	
4 THRU 14	PLAN SHEETS	
15 THRU 26	PROFILE SHEETS	
TMP-1 THRU TMP-25	TRAFFIC MANAGEMENT PLANS	
PMP-1 THRU PMP-12	PAVEMENT MARKING PLANS	
EC-1 THRU EC-25	EROSION CONTROL PLANS	
RF-1	REFORESTATION PLANS	
SIGN-1 THRU SIGN-10A	SIGNING PLANS	
SIG-1.0 THRU SIG-6.1	SIGNAL PLANS	
SIG.M1 THRU SIG.M8	METAL POLE STANDARDS	
SCP-1 THRU SCP-13	SIGNAL COMMUNICATION PLANS	
UC-1 THRU UC-23	UTILITY CONSTRUCTION PLANS	
UO-1 THRU UO-12	UTILITIES BY OTHERS	
X-0	INDEX OF CROSS SECTIONS	
X-0A & X-0B	CROSS SECTION SUMMARIES	
X-1 THRU X-63	CROSS-SECTIONS	
S-1 THRU S-51	STRUCTURE PLANS	
C1-1 THRU C2-6	CULVERT PLANS	
W1 THRU W2	WALL PLANS	

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 07/30/12

**GRADE LINE:
GRADING AND SURFACING:**
THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

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

SUPERELEVATION:
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 & NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:
ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01 & 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' 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 NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

END BENTS:
THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY, CITY OF NEW BERN, CENTURY LINK, CITY OF HAVELOCK, TIME WARNER CABLE, CRAVEN COUNTY SCHOOLS, CRAVEN COUNTY & CHERRY POINT MILITARY BASE
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD. NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.02	Guide for Grading Subgrade - Secondary and Local
225.03	Deceleration and Acceleration Lanes
225.04	Method of Obtaining Super-elevation - Two Lane Pavement
225.05	Method of Obtaining Super-elevation - Divided Highways
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Super-elevated Curve - Method 1
560.02	Method of Shoulder Construction - High Side of Super-elevated Curve - Method II (Sheet 2 of 3 is no longer applicable)
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
838.34	Reinforced Concrete Endwall - for Double and Triple 66" Pipes 90 Skew
838.64	Reinforced Brick Endwall - for Double and Triple 66" Pipes 90 Skew
838.75	Notes for Reinforced Brick Endwall - Std. Dwg 838.51 thru 838.70
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
840.17	Concrete Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' - 12" thru 36" Pipe
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.26	Brick Grated Drop Inlet Type 'A' - 12" thru 72" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
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
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.37	Steel Grate and Frame
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.71	Concrete and Brick Pipe Plug
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.02	Driveway Turnout - Radius Type
848.04	Street Turnout
850.01	Concrete Paved Ditches
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
857.01	Precast Reinforced Concrete Barrier - 41" Single Faced
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
866.02	Woven Wire Fence - with Wood Post
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

DATE/TIME: 9:04:2 AM
Dwg: RWRoadwayPro\356109_ash_1A-1.dgn

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

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

BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	○ EP
Property Corner	⊗
Property Monument	□ EDM
Parcel/Sequence Number	⑫③
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	☠
Potential Contamination Area: Soil	☠?
Known Contamination Area: Water	☠
Potential Contamination Area: Water	☠?
Contaminated Site: Known or Potential	☠?

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	_____
Proposed Right of Way Line	○ RW
Proposed Right of Way Line with Iron Pin and Cap Marker	○ RW ▲
Proposed Right of Way Line with Concrete or Granite RW Marker	▲ RW
Proposed Control of Access Line with Concrete CA Marker	○ CA
Existing Control of Access	○ CA
Proposed Control of Access	○ CA
Existing Easement Line	-E-
Proposed Temporary Construction Easement	-E-
Proposed Temporary Drainage Easement	-TDE-
Proposed Permanent Drainage Easement	-PDE-
Proposed Permanent Drainage / Utility Easement	-DUE-
Proposed Permanent Utility Easement	-PUE-
Proposed Temporary Utility Easement	-TUE-
Proposed Aerial Utility Easement	-AUE-
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

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

VEGETATION:

Single Tree	☼
Single Shrub	☼
Hedge	_____
Woods Line	_____

Orchard	☼ ☼ ☼ ☼
Vineyard	□ Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

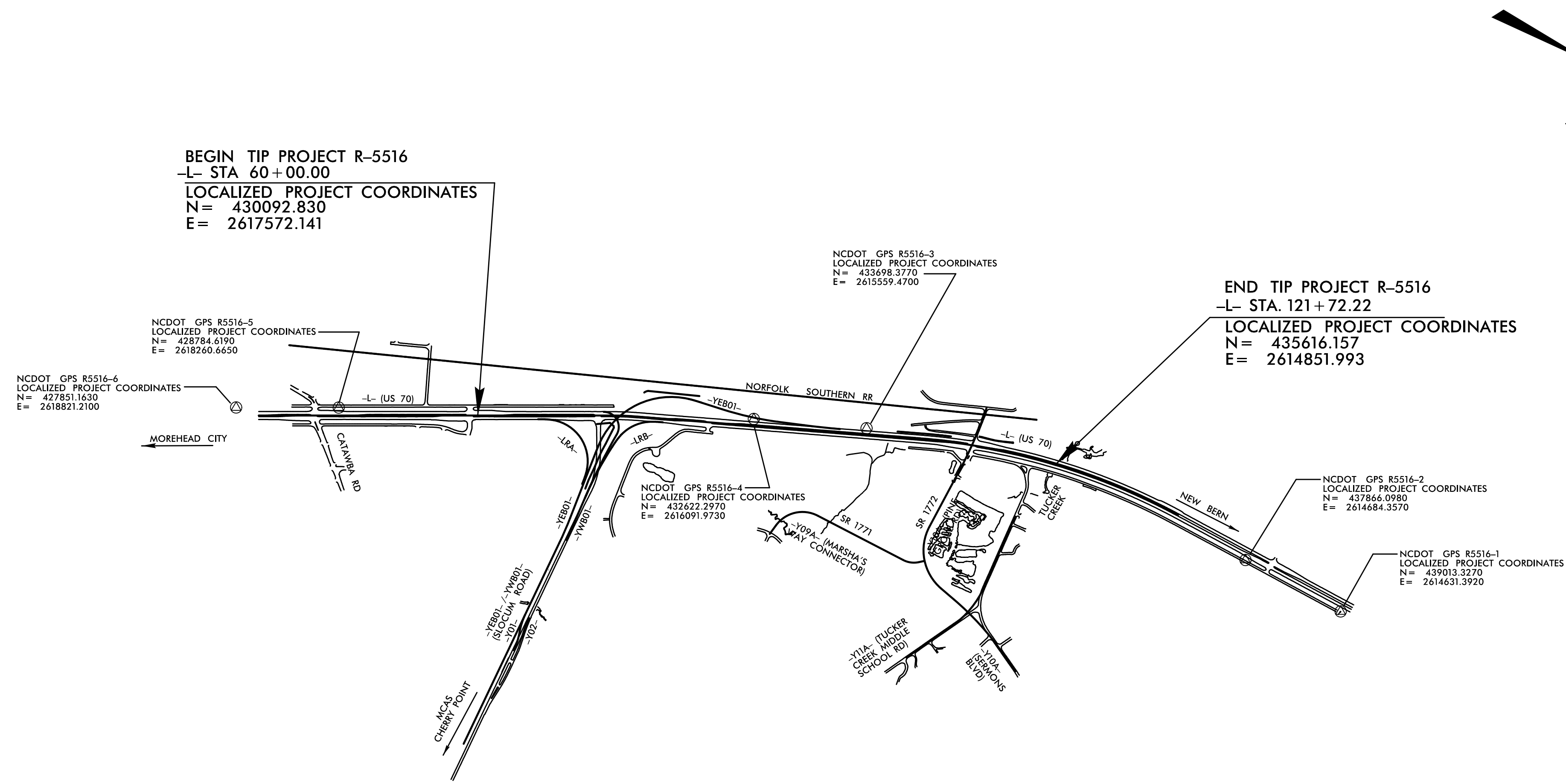
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-SS-
Above Ground Sanitary Sewer	-A/G Sanitary Sewer-
SS Forced Main Line LOS B (S.U.E.*)	-FSS-
SS Forced Main Line LOS C (S.U.E.*)	-FSS-
SS Forced Main Line LOS D (S.U.E.*)	-FSS-

MISCELLANEOUS:

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

SURVEY CONTROL SHEET R-5516

PROJECT REFERENCE NO.	SHEET NO.
R-5516	1C-1
Location and Surveys	



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-3" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 433698.377(±) EASTING: 2615559.470(±) ELEVATION: 26.971(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989341

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-3" TO -L- STATION 60+00.00 IS
 S 29°10'15.3" E 4129.26'

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

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION](https://connect.ncdot.gov/resources/location)

THE FILES TO BE FOUND ARE AS FOLLOWS:
 R-5516_LS_CONTROL_150421.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.
 NETWORK ESTABLISHED FROM NCGS REAL TIME NETWORK

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET R-5516

BASELINES

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
GPS1	NCDOT GPS R-551		439013.3270	2614631.3920	28.32	155+85.81	84.23 RT
2	BL-2		438414.7000	2614656.4290	28.89	149+86.67	80.82 RT
GPS2	NCDOT GPS R-551		437866.0980	2614684.3570	27.89	144+37.36	82.68 RT
4	BL-4		437078.4560	2614722.0490	27.10	136+48.81	82.94 RT
5	BL-5		436476.0640	2614772.6280	19.29	130+37.55	83.79 RT
6	BL-6		435824.0710	2614885.7880	11.96	123+67.50	81.80 RT
7	BL-7		435361.7460	2615008.7430	20.12	118+83.24	82.43 RT
8	BL-8		434721.9300	2615234.3920	27.66	111+96.46	79.35 RT
9	BL-9		434210.0730	2615439.2540	27.34	106+41.13	50.57 RT
GPS3	NCDOT GPS R-551		433698.3770	2615559.4700	26.95	101+29.52	70.01 LT
11	BL-11		433166.1290	2615823.5150	26.89	95+35.37	71.01 LT
GPS4	NCDOT GPS R-551		432622.2970	2616091.9730	26.68	89+28.89	73.22 LT
13	BL-13		432119.4890	2616514.7930	27.65	82+90.30	81.02 RT
14	BL-14		431153.8830	2616838.1060	26.26	72+87.61	81.83 LT
15	BL-15		430326.7160	2617331.8000	28.45	63+24.32	85.33 LT
16	BL-16		429613.3890	2617765.9540	26.52	54+89.27	81.15 LT
GPS5	NCDOT GPS R-551		428784.6190	2618260.6650	26.75	45+24.09	84.61 LT
18	BL-18		428303.1800	2618559.1660	25.69	39+57.67	77.09 LT
GPS6	NCDOT GPS R-551		427851.1630	2618821.2100	25.47		OUTSIDE PROJECT LIMITS

BY	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
20	BY-20		435141.5290	2614615.3340	24.03	117+91.15	358.54 LT
21	BY-21		434728.6070	2614739.9490	27.43	113+82.03	377.39 LT
22	BY-22		434003.0170	2615107.6580	28.34	106+03.67	338.57 LT
23	BY-23		433276.7400	2615439.3910	28.65	98+05.67	365.50 LT
24	BY-24		432495.1350	2615811.1700	26.18	89+40.29	381.26 LT
25	BY-25		431702.2950	2616225.8650	27.72	80+45.72	363.62 LT
26	BY-26		430845.4970	2616595.5220	26.36	71+48.47	448.69 LT
27	BY-27		430113.9410	2616949.0500	28.14	63+39.37	522.99 LT
28	BY-28		429304.6000	2617310.7860	28.17	54+59.39	630.36 LT
29	BY-29		428542.9380	2617728.0080	26.26	45+91.66	665.62 LT
30	BY-30		428096.5990	2617889.2320	26.42	41+26.10	757.62 LT

BY1	POINT	DESC.	NORTH	EAST	ELEVATION	Y11A STATION	OFFSET
31	BY1-31		436369.5340	2616969.1850	27.07	22+15.09	792.35 LT
32	BY1-32		435658.7800	2616572.0730	25.39	20+27.84	18.37 LT
33	BY1-33		435565.9250	2615968.0670	24.05	14+19.22	20.69 RT
34	BY1-34		435516.3010	2615282.9960	17.86		OUTSIDE PROJECT LIMITS
EQBY1	BL-7		435361.7460	2615008.7430	20.14		OUTSIDE PROJECT LIMITS

BY2	POINT	DESC.	NORTH	EAST	ELEVATION	Y11A STATION	OFFSET
35	BY2-35		435192.1980	2617673.0010	26.04		OUTSIDE PROJECT LIMITS
36	BY2-36		435393.1600	2617220.7950	26.13	27+28.61	15.22 RT
EQBY2	BY1-32		435658.7800	2616572.0730	25.40	20+27.84	18.37 LT

BY3	POINT	DESC.	NORTH	EAST	ELEVATION	Y10A STATION	OFFSET
37	BY3-37		434854.3720	2616723.7150	26.92	28+62.99	271.21 RT
38	BY3-38		434824.2080	2615837.4760	28.00	21+27.38	29.26 LT
EQBY3	BL-8		434721.9300	2615234.3920	27.67	15+18.18	38.37 RT

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS-3"

WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
 NORTHING: 433698.377(ft) EASTING: 2615559.470(ft)
 ELEVATION: 26.971(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989341

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-3" TO -L- STATION 60+00.00 IS
 S 29°10'15.3" E 4129.26'

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

BY4	POINT	DESC.	NORTH	EAST	ELEVATION	LRB STATION	OFFSET
39	BY4-39		431777.4340	2617505.9830	28.57	20+46.72	282.07 LT
40	BY4-40		431750.5830	2617002.9870	26.39	14+48.30	250.18 LT
EQBY4	BL-13		432119.4890	2616514.7930	27.65		OUTSIDE PROJECT LIMITS

BY5	POINT	DESC.	NORTH	EAST	ELEVATION	YWB01 STATION	OFFSET
53	BY5-53		431806.3400	2621033.0730	27.41	54+00.04	47.37 RT
46	BY5-46		431830.9920	2619839.2490	25.89	42+14.20	92.70 LT
41	BY5-41		431647.2890	2619100.5680	23.65	34+61.21	18.65 RT
42	BY5-42		431584.1300	2618084.5520	26.72	24+44.29	18.43 LT
43	BY5-43		431423.6250	2617413.6460	27.31	17+60.94	58.30 RT
EQBY5	BL-14		431153.8830	2616838.1060	26.26		OUTSIDE PROJECT LIMITS

BY7	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
44	BY7-44		429312.2640	2618997.4560	26.47	45+96.27	818.75 RT
45	BY7-45		428764.4790	2618552.3270	26.91	43+56.44	154.90 RT
EQBY7	NCDOT GPS R-551		428784.6190	2618260.6650	26.75	45+24.09	84.61 LT

BY9	POINT	DESC.	NORTH	EAST	ELEVATION	Y09A STATION	OFFSET
EQBY9	BY3-37		434854.3720	2616723.7150	26.92	11+81.59	180.86 LT
47	BY9-47		434571.5760	2616701.7330	31.97	14+24.32	131.40 LT
48	BY9-48		434288.3190	2616677.9210	19.79	17+05.55	89.99 LT
49	BY9-49		434016.4690	2616672.1800	23.13	19+76.51	67.33 LT
50	BY9-50		433736.0700	2616694.1940	26.32	22+58.10	71.84 LT
51	BY9-51		433475.9990	2616769.7150	27.02	25+64.84	5.71 LT
52	BY9-52		433362.4570	2617075.1290	27.15		OUTSIDE PROJECT LIMITS

BENCHMARKS

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*****
BM1 ELEVATION = 28.22
N 438757 E 2614689
L STATION 153+27.00 129 RIGHT
RR SPIKE IN PP HV48
*****
BM2 ELEVATION = 28.06
N 437093 E 2614767
L STATION 136+61.00 129 RIGHT
NAIL IN PP
*****
BM3 ELEVATION = 11.68
N 435787 E 2614949
L STATION 123+16.00 135 RIGHT
RR SPIKE IN LP 10KE08
*****
BM4 ELEVATION = 29.33
N 434776 E 2614992
L STATION 113+37.00 125 LEFT
RR SPIKE IN PP
*****
BM5 ELEVATION = 28.01
N 435733 E 2616707
Y10A STATION 36+11.00 2 RIGHT
RR SPIKE IN 15' PINE
*****
BM6 ELEVATION = 28.23
N 433000 E 2616052
L STATION 93+56.00 95 RIGHT
RR SPIKE IN 32' PINE
*****
*****
BM7 ELEVATION = 26.55
N 433566 E 2617074
Y09A STATION 10+00.00
S 24°16'46.86" E DIST 1521.05
PK NAIL OVER 30" RCP
*****
BM9 ELEVATION = 29.30
N 429575 E 2617731
L STATION 54+75.00 131 LEFT
RR SPIKE IN PP
*****
*****
BM10 ELEVATION = 26.33
N 431707 E 2618542
YWB01 STATION 29+11.00 95 LEFT
RR SPIKE IN H-POLE
*****

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NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/](https://connect.ncdot.gov/resources/location/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 R-5516_LS_CONTROL_150421.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.
 NETWORK ESTABLISHED FROM NCGS REAL TIME NETWORK

SURVEY CONTROL SHEET R-5516

FINAL ROW AND EASEMENT POINTS

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	75+97.08	-130.02	431402.35163	2616637.38895
L	80+72.77	149.00	431955.09179	2616672.63933
L	100+15.00	130.00	433685.06060	2615789.55581
L	101+05.00	169.00	433783.00804	2615784.33103
L	103+28.00	130.00	433965.21865	2615649.98337
L	104+05.27	-130.00	433918.44020	2615382.80913
L	116+20.69	-130.00	435045.73637	2614887.72431
L	119+45.16	140.00	435436.56470	2615046.54025
L	121+72.22	130.00	435648.54774	2614977.89262
L	121+72.22	-202.23	435565.76864	2614656.13837

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
LRA	10+57.75	90.59	430755.7218	2617324.9417
LRA	11+68.00	100.00	430844.4661	2617292.2909
LRA	18+62.63	100.00	431285.3327	2617494.3185

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
LRB	10+00.00	-110.00	431861.3918	2616719.3199
LRB	11+68.37	-110.00	431733.6872	2616792.6133
LRB	14+71.09	-110.00	431611.7294	2616979.7124
LRB	16+39.27	-110.00	431597.0276	2617124.4929
LRB	22+57.97	-110.00	431627.7536	2617723.1093

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y09A	10+82.34	60.00	434812.4645	2616403.7925
Y09A	10+82.34	-60.00	434884.2461	2616499.9560
Y09A	12+27.06	60.00	434710.6440	2616441.1649
Y09A	12+27.06	-60.00	434718.1178	2616560.9319
Y09A	22+05.05	-60.00	433742.0318	2616621.8425
Y09A	22+05.05	60.00	433734.5580	2616502.0754
Y09A	27+02.38	-60.00	433471.2039	2616885.9256
Y09A	27+02.38	60.00	433351.6634	2616875.4344
Y09A	28+34.97	-60.00	433459.6112	2617018.0162
Y09A	28+50.93	60.00	433338.6761	2617023.4155

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y10A	11+63.75	-45.00	434755.5165	2614872.2481
Y10A	11+86.27	36.00	434679.5309	2614908.2273
Y10A	12+48.04	-45.00	434769.8328	2614955.6049
Y10A	12+76.96	-58.00	434787.3594	2614982.4679
Y10A	13+01.20	48.00	434686.3265	2615022.6825
Y10A	18+41.88	-30.41	434810.4943	2615552.3003
Y10A	18+41.91	-60.00	434840.0448	2615550.7945
Y10A	18+82.98	29.26	434753.0468	2615596.4540
Y10A	18+88.51	60.00	434722.6322	2615603.5676
Y10A	24+00.29	60.00	434749.2674	2616114.6540
Y10A	24+00.29	-60.00	434869.1048	2616108.4087
Y10A	26+14.81	70.00	434799.6923	2616348.5419
Y10A	28+62.07	60.00	434981.4817	2616555.0262
Y10A	31+22.58	-60.00	435264.4331	2616550.4771
Y10A	31+22.58	60.00	435244.8904	2616668.8751
Y10A	32+98.65	60.00	435418.6083	2616697.5489
Y10A	32+98.65	-60.00	435438.1510	2616579.1509
Y10A	38+00.00	90.00	435884.9647	2616845.6287
Y10A	38+50.00	60.00	435940.9067	2616833.4572
Y10A	40+71.78	60.00	436142.5686	2616914.5059
Y10A	40+71.78	40.00	436150.7008	2616896.2339

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y11A	18+14.01	40.00	435596.6066	2616362.1343
Y11A	20+72.33	40.00	435595.9679	2616609.4351
Y11A	22+20.00	-75.00	435677.5953	2616779.8038

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
YEB01	11+06.65	85.00	433156.8799	2615762.2122
YEB01	11+91.15	85.00	433080.4789	2615795.9309
YEB01	14+74.08	85.00	432820.9754	2615908.6699
YEB01	20+75.32	85.00	432265.5135	2616093.4608
YEB01	22+58.48	85.00	432087.2863	2616135.6587
YEB01	41+00.00	85.00	431351.6005	2617669.2178
YEB01	43+00.00	65.00	431405.0848	2617862.9688
YEB01	44+45.11	65.00	431429.5880	2618005.9975
YEB01	47+36.09	65.00	431467.6231	2618289.6442
YEB01	60+00.00	65.00	431589.9368	2619547.6225

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
YWB01	23+28.00	-71.23	431621.2296	2617961.8519
YWB01	25+75.00	-65.71	431645.4938	2618210.3331
YWB01	28+80.00	-65.85	431675.1475	2618513.9084
YWB01	30+53.00	-65.84	431691.8806	2618686.0972
YWB01	32+25.00	-120.00	431762.4329	2618852.0485
YWB01	32+75.00	-120.00	431767.2716	2618901.8138
YWB01	33+50.00	-80.00	431734.7174	2618980.3328
YWB01	36+50.00	-90.00	431773.7027	2619277.9569
YWB01	36+50.00	-81.00	431764.7450	2619278.8279
YWB01	39+00.00	-81.00	431788.9385	2619527.6545

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
LRB	10+00.00	-110.00	431861.3918	2616719.3199
LRB	11+68.37	-110.00	431733.6872	2616792.6133
LRB	14+71.09	-110.00	431611.7294	2616979.7124
LRB	16+39.27	-110.00	431597.0276	2617124.4929
LRB	22+57.97	-110.00	431627.7536	2617723.1093

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
YEB01	54+30.00	90.00	431509.8933	2618982.7213
YEB01	54+30.00	65.00	431534.7760	2618980.3020
YEB01	55+00.00	90.00	431516.6675	2619052.3928
YEB01	55+00.00	65.00	431541.5502	2619049.9734

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
YWB01	33+21.88	-95.00	431746.9253	2618950.8882
YWB01	34+20.00	-95.00	431756.4212	2619048.5526
YWB01	34+20.00	-82.33	431743.8140	2619049.7784
YWB01	39+30.00	-65.60	431776.5172	2619559.0037
YWB01	39+30.00	-81.00	431791.8417	2619557.5137

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y09A	18+60.00	-60.00	434086.4108	2616600.3522
Y09A	18+60.00	-75.00	434087.3450	2616615.3231
Y09A	21+50.00	-115.00	433800.3993	2616673.3071
Y09A	23+00.00	-75.00	433670.0428	2616651.4413
Y09A	23+00.00	-60.00	433665.1309	2616637.2683
Y09A	26+55.00	60.00	433360.2367	2616820.6455
Y09A	26+55.00	100.00	433321.2262	2616811.8032
Y09A	26+95.00	100.00	433312.7452	2616862.4992
Y09A	26+95.00	60.00	433352.5095	2616866.8353
Y09A	27+02.38	-120.00	433530.9742	2616891.1712
Y09A	27+63.06	-60.00	433465.8988	2616946.3734
Y09A	27+63.06	-120.00	433525.6688	2616951.6226

NOTE: DRAWING NOT TO SCALE

SURVEY CONTROL SHEET R-5516

FINAL DESIGN ALIGNMENTS

L

TYPE	STATION	NORTH	EAST
POT	36+74.96	428100.7010	2618770.9934
PC	74+42.93	431329.1560	2616828.1273
PT	76+70.79	431528.8532	2616718.5212
PC	107+22.65	434260.4945	2615357.6399
PT	135+80.04	437005.8241	2614642.4637
POT	156+74.22	439097.6447	2614543.0592

Y02

TYPE	STATION	NORTH	EAST
PC	10+00.00	431669.2047	2619133.2119
PT	11+70.76	431697.5992	2619301.4528
POT	12+25.45	431710.4641	2619354.6055

Y11A

TYPE	STATION	NORTH	EAST
POT	10+00.00	435533.5252	2615549.5911
PC	18+14.01	435636.2866	2616357.0846
PT	23+61.36	435557.0615	2616891.7901
POT	29+47.85	435317.4982	2617427.1306

LRA

TYPE	STATION	NORTH	EAST
TS	10+00.00	430661.0578	2617275.7026
SC	11+68.00	430809.9371	2617198.4414
CS	18+62.63	431378.9625	2617459.1979
ST	20+30.63	431417.6450	2617622.4094

Y09A

TYPE	STATION	NORTH	EAST
POT	10+00.00	434914.3378	2616402.6214
PC	10+82.34	434848.3553	2616451.8743
PT	12+27.06	434714.3809	2616501.0484
PC	22+05.05	433738.2949	2616561.9589
PT	27+02.38	433411.4337	2616880.6800
POT	28+73.96	433396.4325	2617051.6073

YEB01

TYPE	STATION	NORTH	EAST
PC	8+08.92	433460.7740	2615712.4823
PT	11+91.15	433114.3482	2615873.8916
PC	14+74.08	432854.8447	2615986.6306
PT	20+75.32	432285.0971	2616176.1740
TS	23+09.46	432057.2536	2616230.1194
SC	24+53.46	431918.1876	2616267.3067
CS	35+65.61	431349.2503	2617127.5577
ST	37+09.61	431369.4605	2617270.0841
PC	44+45.11	431493.6547	2617995.0219
PT	47+36.09	431532.3180	2618283.3539
POT	70+99.38	431761.0236	2620635.5560

LRB

TYPE	STATION	NORTH	EAST
TS	10+00.00	431812.3407	2616620.8618
SC	11+68.00	431667.2180	2616704.9672
CS	14+71.27	431504.7575	2616954.0797
SC	16+39.27	431487.0882	2617120.8431
PC	16+39.27	431487.0882	2617120.8431
PT	22+57.97	431518.7657	2617737.9963

Y10A

TYPE	STATION	NORTH	EAST
POT	10+00.00	434679.0126	2614719.4153
PC	10+17.03	434683.1405	2614735.9353
PT	11+01.66	434700.6068	2614818.7213
PC	12+23.98	434721.4228	2614939.2598
PT	16+72.37	434771.3025	2615384.6069
PC	24+00.29	434809.1861	2616111.5314
PT	31+22.58	435254.6618	2616609.6761
PC	32+98.65	435428.3796	2616638.3499
PT	40+71.78	436166.9654	2616859.6899
POT	43+08.80	436383.5028	2616956.0636

YWB01

TYPE	STATION	NORTH	EAST
PC	10+00.00	431218.3444	2616849.2957
PRC	13+35.81	431460.8294	2616984.1880
PT	20+68.00	431515.4723	2617713.8856
PC	23+66.02	431555.8050	2618009.1623
PT	25+76.66	431580.2533	2618218.3608
POT	54+02.03	431853.6762	2621030.4730

Y01

TYPE	STATION	NORTH	EAST
PC	10+00.00	431614.1084	2619124.5556
PRC	11+99.03	431660.0038	2619317.5831
PT	13+98.05	431705.8993	2619510.6105

NOTE: DRAWING NOT TO SCALE

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CENTERLINE COORDINATE LIST

Point #	Chain	Station	Northing (Y)	Easting (X)	Point #	Chain	Station	Northing (Y)	Easting (X)	Point #	Chain	Station	Northing (Y)	Easting (X)	Point #	Chain	Station	Northing (Y)	Easting (X)	Point #	Chain	Station	Northing (Y)	Easting (X)
1	YEB01	10+00.00	433288.6509	2615795.4389	80	Y01	12+00.00	431660.3553	2619318.4912	157	Y09A	24+00.00	433595.4127	2616660.1195										
2	YEB01	11+00.00	433197.7207	2615837.0507	81	Y01	13+00.00	431689.8856	2619413.9495	158	Y09A	25+00.00	433514.0493	2616717.6707										
3	YEB01	12+00.00	433106.2312	2615877.4179	82	Y01	13+98.05	431705.8993	2619510.6105	159	Y09A	26+00.00	433452.2047	2616795.8206										
4	YEB01	13+00.00	433014.5127	2615917.2642						160	Y09A	27+00.00	433414.8933	2616888.2328										
5	YEB01	14+00.00	432922.7943	2615957.1105	83	Y02	10+00.00	431669.2047	2619133.2119	161	Y09A	28+00.00	433402.0780	2616987.2816										
6	YEB01	15+00.00	432831.0366	2615996.8658	84	Y02	11+00.00	431682.9648	2619232.2322	162	Y09A	28+64.57	433396.4325	2617051.6073										
7	YEB01	16+00.00	432738.4522	2616034.6470	85	Y02	12+00.00	431704.4776	2619329.8716															
8	YEB01	17+00.00	432644.7938	2616069.6810	86	Y02	12+25.45	431710.4641	2619354.6055															
9	YEB01	18+00.00	432550.1429	2616101.9373																				
10	YEB01	19+00.00	432454.5818	2616131.3880	87	YWB01	10+00.00	431218.3444	2616849.2957															
11	YEB01	20+00.00	432358.1936	2616158.0074	88	YWB01	11+00.00	431314.1511	2616826.9402															
12	YEB01	21+00.00	432261.0827	2616181.8598	89	YWB01	12+00.00	431404.9269	2616864.8669															
13	YEB01	22+00.00	432163.7730	2616204.8993	90	YWB01	13+00.00	431456.3519	2616948.7368															
14	YEB01	23+00.00	432066.4633	2616227.9389	91	YWB01	14+00.00	431462.0545	2617048.3685															
15	YEB01	24+00.00	431969.4014	2616251.9793	92	YWB01	15+00.00	431465.3305	2617148.3137															
16	YEB01	25+00.00	431874.4289	2616283.1239	93	YWB01	16+00.00	431470.2715	2617248.1904															
17	YEB01	26+00.00	431783.7883	2616325.2222	94	YWB01	17+00.00	431476.8762	2617347.9709															
18	YEB01	27+00.00	431698.8417	2616377.8727	95	YWB01	18+00.00	431485.1426	2617447.6274															
19	YEB01	28+00.00	431620.8118	2616440.3174	96	YWB01	19+00.00	431495.0685	2617547.1324															
20	YEB01	29+00.00	431550.8220	2616511.6575	97	YWB01	20+00.00	431506.6511	2617646.4582															
21	YEB01	30+00.00	431489.8795	2616590.8662	98	YWB01	21+00.00	431519.8028	2617745.5889															
22	YEB01	31+00.00	431438.8617	2616676.8033	99	YWB01	22+00.00	431533.3364	2617844.6689															
23	YEB01	32+00.00	431398.5029	2616768.2317	100	YWB01	23+00.00	431546.8700	2617943.7489															
24	YEB01	33+00.00	431369.3840	2616863.8355	101	YWB01	24+00.00	431560.2981	2618042.8430															
25	YEB01	34+00.00	431351.9242	2616962.2385	102	YWB01	25+00.00	431572.2962	2618142.1192															
26	YEB01	35+00.00	431346.3747	2617062.0243	103	YWB01	26+00.00	431582.5124	2618241.5949															
27	YEB01	36+00.00	431352.7594	2617161.7628																				
28	YEB01	37+00.00	431367.8384	2617260.6085	104	Y10A	10+00.00	434679.0126	2614719.4153															
29	YEB01	38+00.00	431384.7229	2617359.1728	105	Y10A	11+00.00	434700.3239	2614817.0901															
30	YEB01	39+00.00	431401.6086	2617457.7368	106	Y10A	12+00.00	434717.3424	2614915.6313															
31	YEB01	40+00.00	431418.4943	2617556.3009	107	Y10A	13+00.00	434733.6036	2615014.2981															
32	YEB01	41+00.00	431435.3800	2617654.8650	108	Y10A	14+00.00	434747.3177	2615113.3503															
33	YEB01	42+00.00	431452.2657	2617753.4290	109	Y10A	15+00.00	434758.3998	2615212.7313															
34	YEB01	43+00.00	431469.1514	2617851.9931	110	Y10A	16+00.00	434766.8423	2615312.3714															
35	YEB01	44+00.00	431486.0371	2617950.5571	111	Y10A	17+00.00	434772.7402	2615412.1953															
36	YEB01	45+00.00	431502.5513	2618049.1831	112	Y10A	18+00.00	434777.9447	2615512.0597															
37	YEB01	46+00.00	431516.8466	2618148.1534	113	Y10A	19+00.00	434783.1491	2615611.9242															
38	YEB01	47+00.00	431528.6635	2618247.4501	114	Y10A	20+00.00	434788.3535	2615711.7887															
39	YEB01	48+00.00	431538.5029	2618346.9645	115	Y10A	21+00.00	434793.5580	2615811.6532															
40	YEB01	49+00.00	431548.1803	2618446.4952	116	Y10A	22+00.00	434798.7624	2615911.5177															
41	YEB01	50+00.00	431557.8577	2618546.0258	117	Y10A	23+00.00	434803.9668	2616011.3821															
42	YEB01	51+00.00	431567.5351	2618645.5564	118	Y10A	24+00.00	434809.1713	2616111.2466															
43	YEB01	52+00.00	431577.2125	2618745.0871	119	Y10A	25+00.00	434823.6332	2616210.0472															
44	YEB01	53+00.00	431586.8899	2618844.6177	120	Y10A	26+00.00	434856.2693	2616304.4166															
45	YEB01	54+00.00	431596.5673	2618944.1483	121	Y10A	27+00.00	434905.9344	2616391.0427															
46	YEB01	55+00.00	431606.2447	2619043.6790	122	Y10A	28+00.00	434970.8853	2616466.8852															
47	YEB01	56+00.00	431615.9221	2619143.2096	123	Y10A	29+00.00	435048.8424	2616529.2822															
48	YEB01	57+00.00	431625.5995	2619242.7403	124	Y10A	30+00.00	435137.0697	2616576.0438															
49	YEB01	58+00.00	431635.2769	2619342.2709	125	Y10A	31+00.00	435232.4706	2616605.5287															
50	YEB01	59+00.00	431644.9543	2619441.8015	126	Y10A	32+00.00	435331.0511	2616622.2849															
51	YEB01	60+00.00	431654.6317	2619541.3322	127	Y10A	33+00.00	435429.7161	2616638.5708															
					128	Y10A	34+00.00	435528.0864	2616656.5253															
52	LRA	10+00.00	430661.0578	2617275.7026	129	Y10A	35+00.00	435625.8107	2616677.7161															
53	LRA	11+00.00	430747.8524	2617226.0770	130	Y10A	36+00.00	435722.7826	2616702.1199															
54	LRA	12+00.00	430840.3409	2617188.4834	131	Y10A	37+00.00	435818.8964	2616729.7103															
55	LRA	13+00.00	430938.7271	2617171.8110	132	Y10A	38+00.00	435914.0475	2616760.4571															
56	LRA	14+00.00	431038.3517	2617177.5319	133	Y10A	39+00.00	436008.1322	2616794.3269															
57	LRA	15+00.00	431134.1826	2617205.3570	134	Y10A	40+00.00	436101.0480	2616831.2829															
58	LRA	16+00.00	431221.3791	2617253.8809	135	Y10A	41+00.00	436192.7476	2616871.1647															
59	LRA	17+00.00	431295.5367	2617320.6526																				
60	LRA	18+00.00	431352.9095	2617402.2991	136	Y11A	18+00.00	435634.5184	2616343.1907															
61	LRA	19+00.00	431390.7110	2617494.6621	137	Y11A	19+00.00	435643.4636	2616442.7521															
62	LRA	20+00.00	431412.4093	2617592.2285	138	Y11A	20+00.00	435642.5225	2616542.7060															
63	LRA	20+30.63	431417.6450	2617622.4094	139	Y11A	21+00.00	435631.6074	2616642.0666															
64	LRB	10+00.00	431812.3407	2616620.8618	140	Y11A	22+00.00	435610.8273	2616739.8															

PROJECT REFERENCE NO. R-5516	SHEET NO. 2A-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER <i>[Signature]</i> 5/12/2017	PAVEMENT DESIGN ENGINEER <i>[Signature]</i> 5/18/2017
Prepared in the Office of: AECOM NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 415 Cary, NC 27513 (919) 654-6200 • (919) 654-6259 FAX	

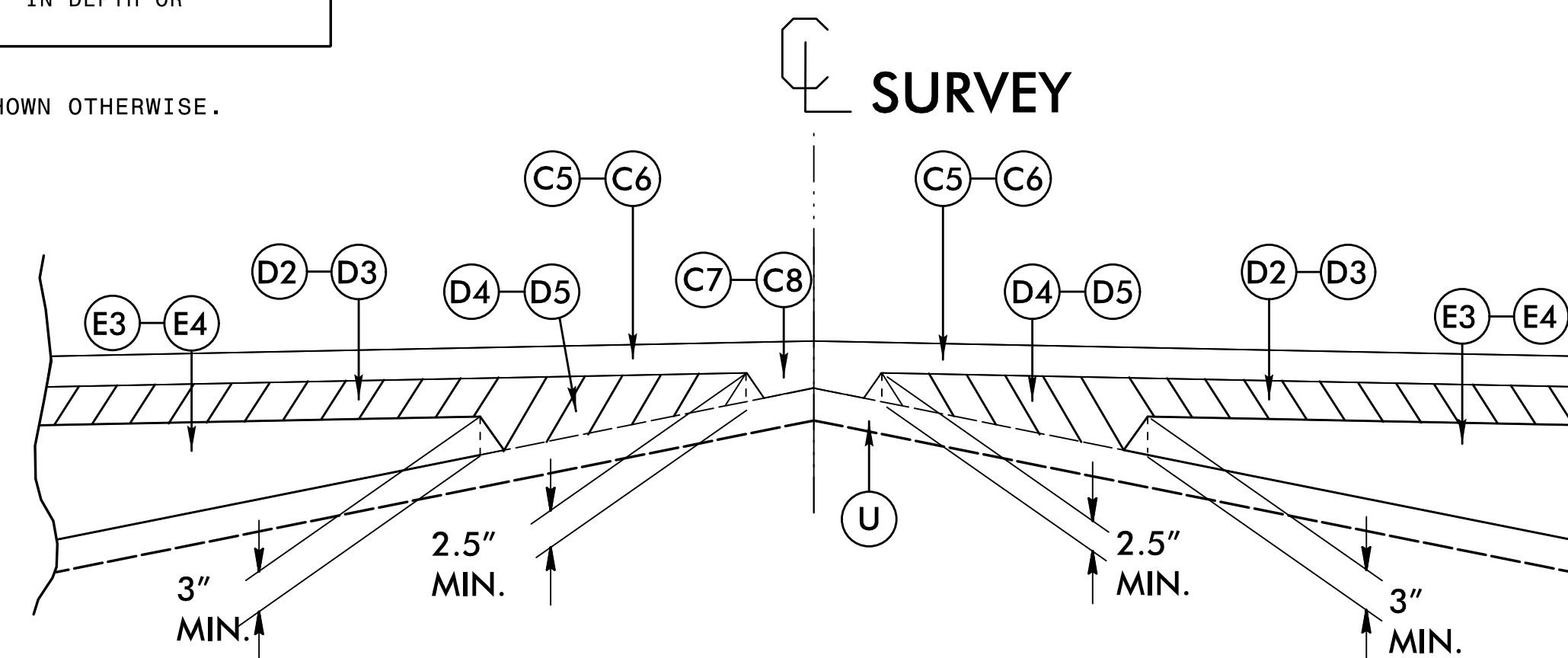
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE

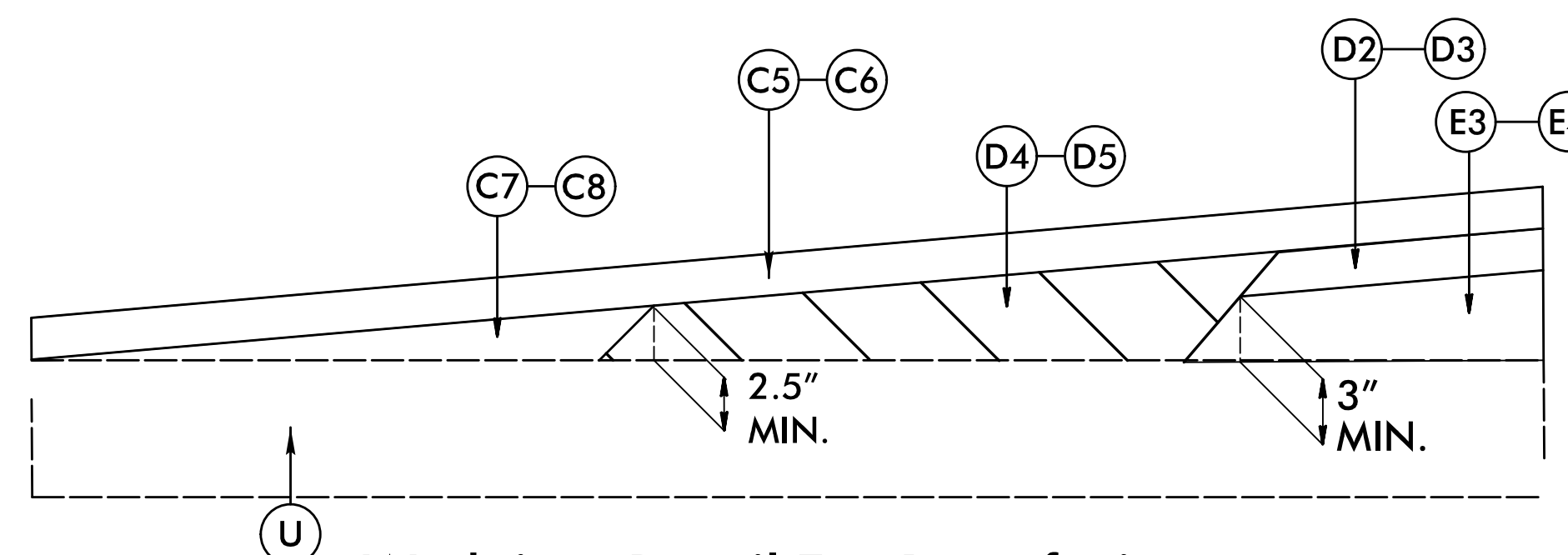
FINAL PAVEMENT DESIGN

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	E2	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
C3	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.	E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
C4	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.	E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
C5	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J1	PROP. 8" AGGREGATE BASE COURSE
C6	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YARD
C7	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	R1	PROP. 5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)
C8	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	R2	PROP. 2'-6" CURB & GUTTER
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R3	PROP. SHOULDER BERM GUTTER
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
D3	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
D4	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS).
D5	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 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.		

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



Detail Showing Method of Wedging



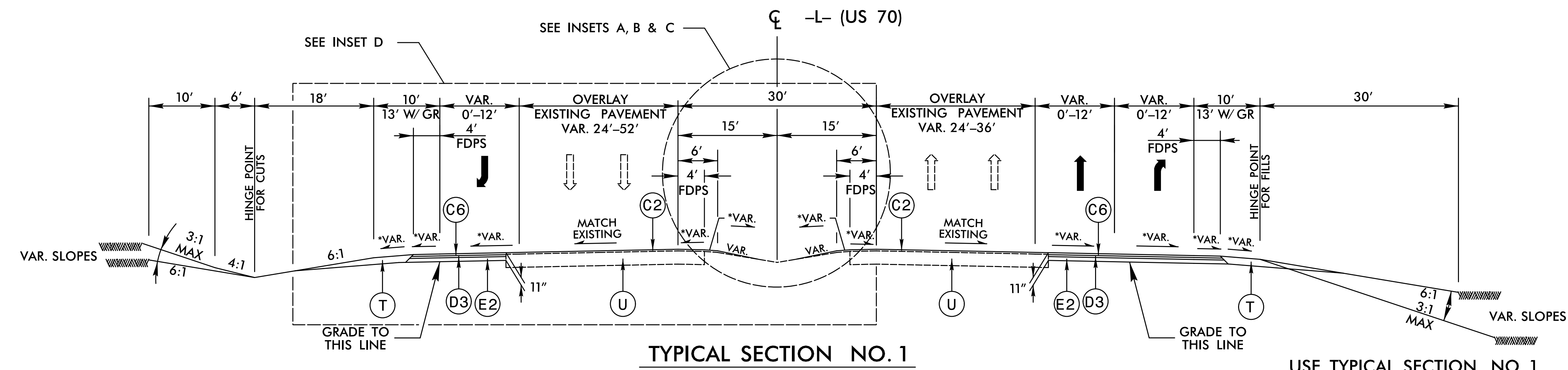
Wedging Detail For Resurfacing

REVISIONS

DATE/TIME: 4/26/16 PM
 DES: R:\Roadway\Proj\5516_rdy\lpdgm

PROJECT REFERENCE NO. R-5516	SHEET NO. 2A-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
Prepared in the Office of: AECOM NC FIRM LICENSE No. F-0342 70 Corporate Center Drive, Suite 415 Raleigh, NC 27603 (919) 854-6200 • (919) 854-6259 FAX	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

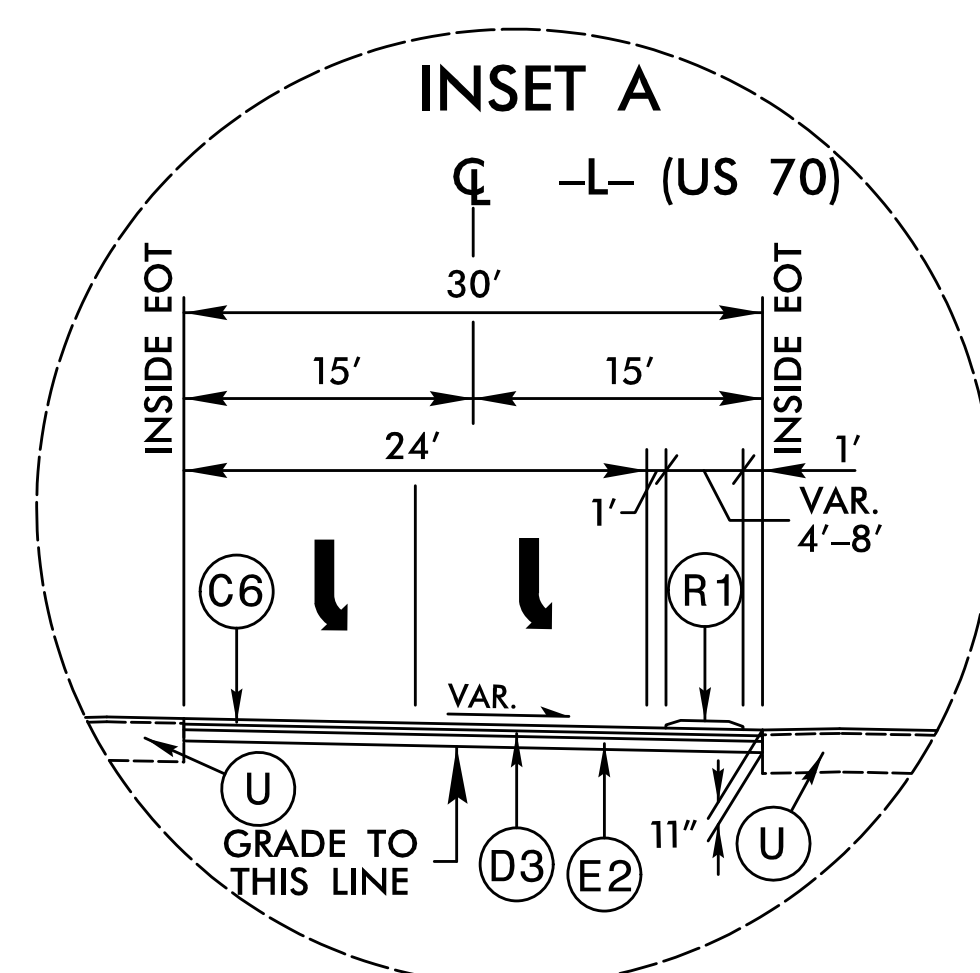


TYPICAL SECTION NO. 1

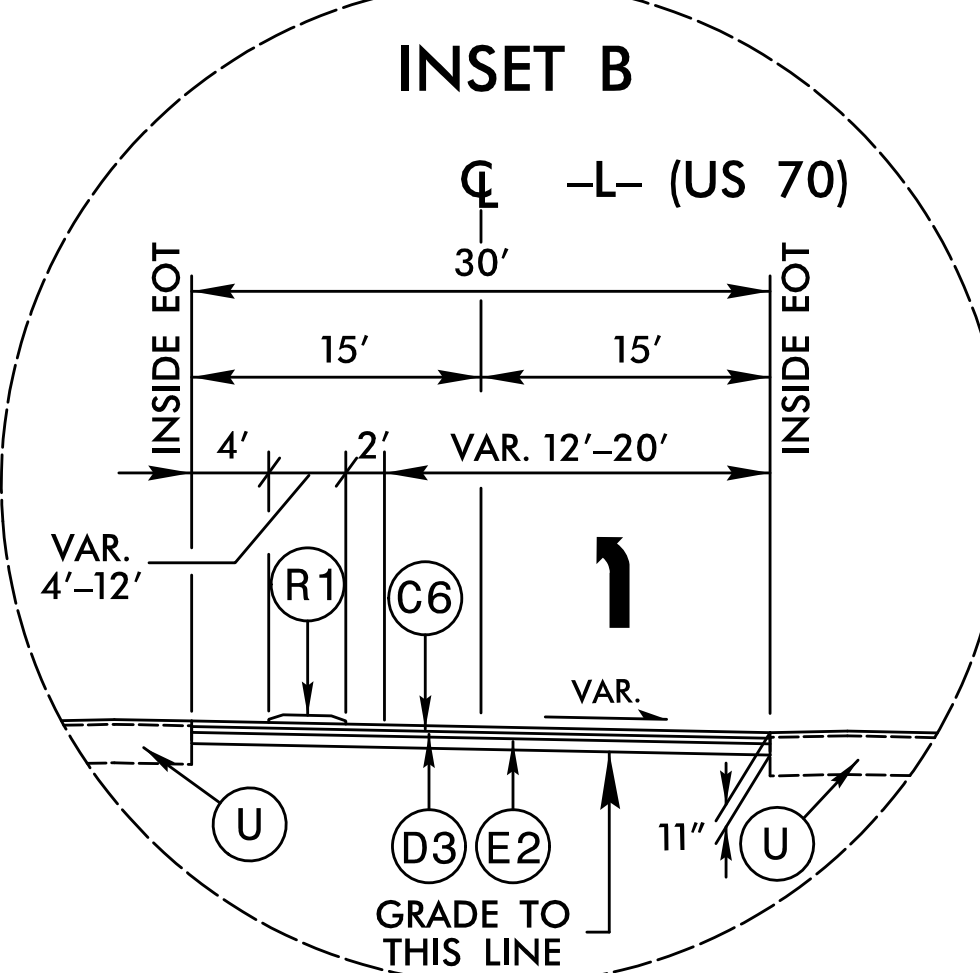
USE TYPICAL SECTION NO. 1
 -L- STA. 60+00.00 TO -L- STA. 73+25.00
 -L- STA. 77+66.79 TO -L- STA. 121+72.22

* PROPOSED WIDENING AND 4' PAVED SHOULDER TO MATCH SLOPE OF EXISTING THRU LANES. FOLLOW NCDOT RDY. STD. DWG. 560.02 FOR TURF SHOULDER SLOPE

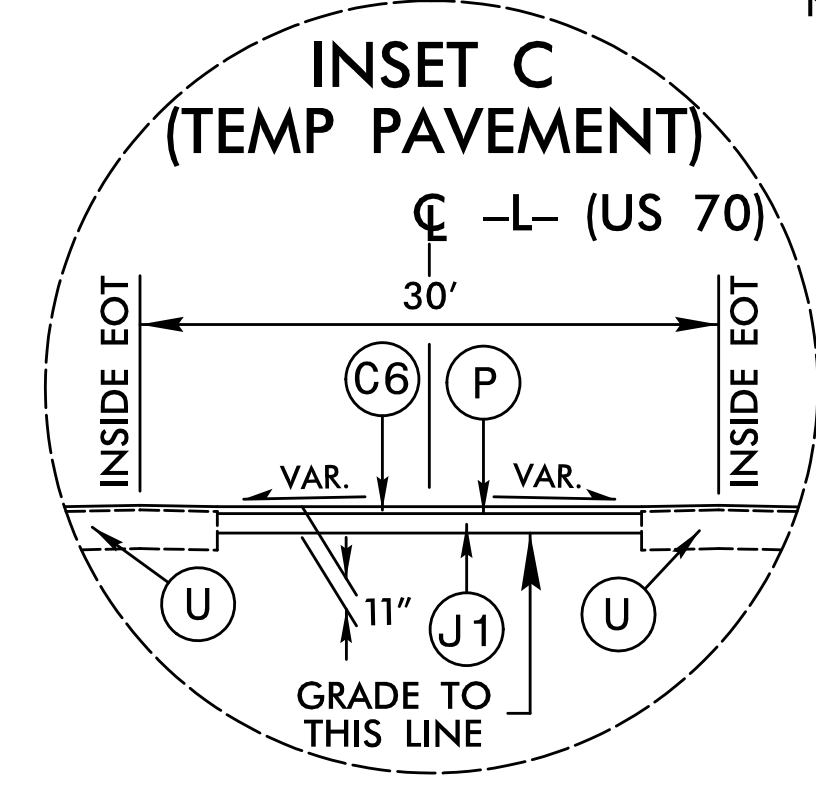
C1	1.5" S9.5B
C2	1.5" S9.5C
C3	2" S9.5B
C4	2" S9.5C
C5	3" S9.5B
C6	3" S9.5C
C7	VAR. S9.5B
C8	VAR. S9.5C
D1	2.5" I19.0C
D2	4" I19.0B
D3	4" I19.0C
D4	VAR. I19.0B
D5	VAR. I19.0C
E1	4" B25.0B
E2	4" B25.0C
E3	VAR. B25.0B
E4	VAR. B25.0C
J1	8" ABC
P	PRIME COAT
R1	5" MONO CONC ISLAND
R2	2'-6" CURB & GUTTER
R3	SHLD BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING



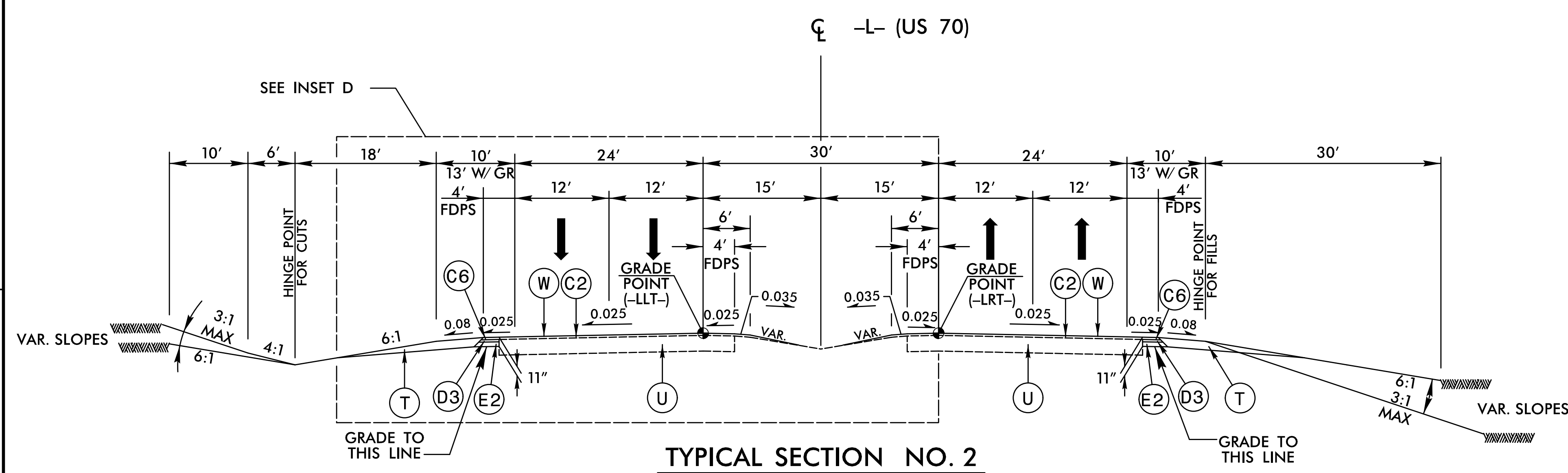
USE IN CONJUNCTION w/TYPICAL SECTION NO. 1
 -L- STA. 100+26.06 TO -L- STA. 110+21.62



USE IN CONJUNCTION w/TYPICAL SECTION NO. 1
 -L- STA. 115+17.03 TO -L- STA. 121+72.22

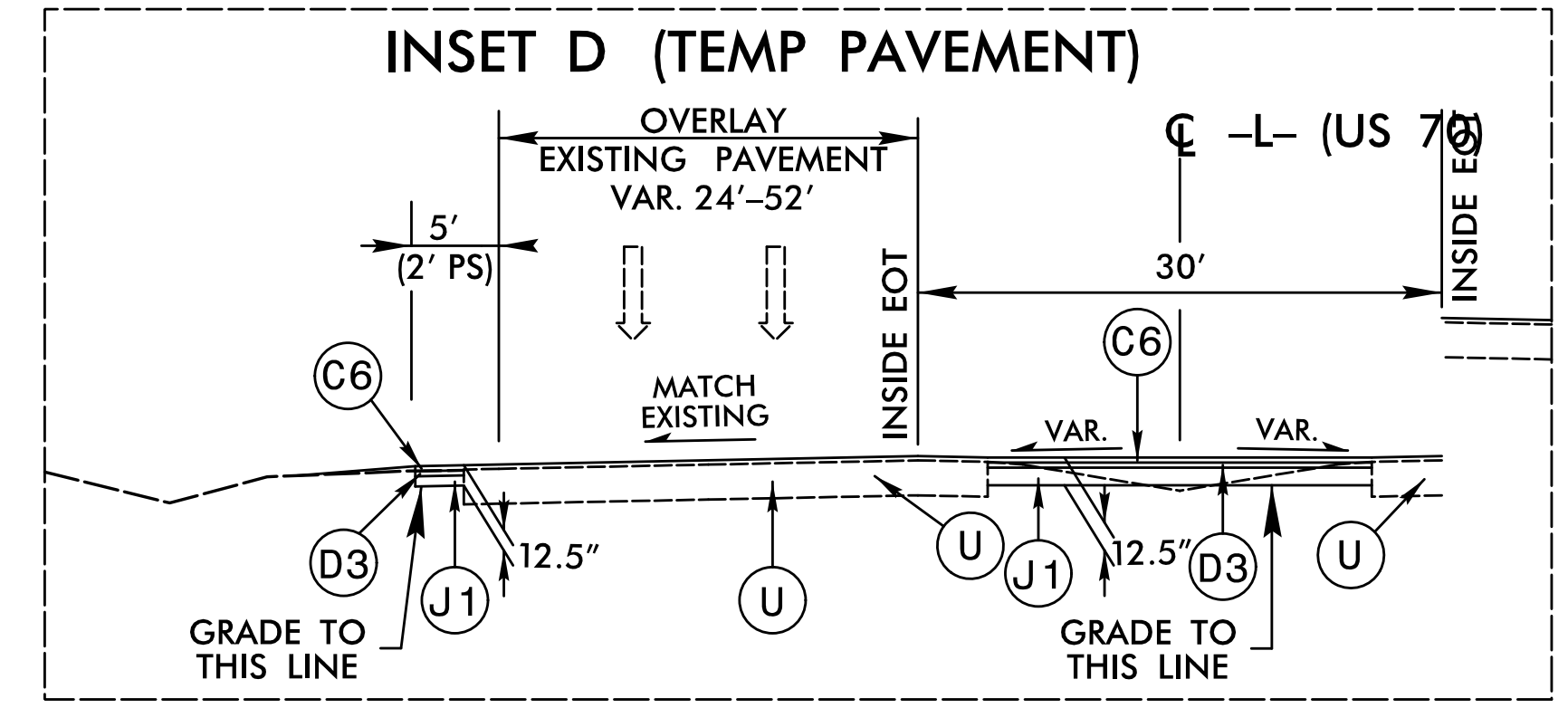


USE IN CONJUNCTION w/TYPICAL SECTION NO. 1
 -L- STA. 64+25.00 TO -L- STA. 69+08.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
 -L- STA. 73+25.00 TO -L- STA. 77+66.79



USE IN CONJUNCTION w/TYPICAL SECTION NO. 1 & NO. 2
 -L- STA. 67+97.00 TO -L- STA. 84+03.00 (LEFT)
 -L- STA. 76+58.00 TO -L- STA. 77+38.00 (MEDIAN)
 -L- STA. 79+81.00 TO -L- STA. 84+26.00 (MEDIAN)

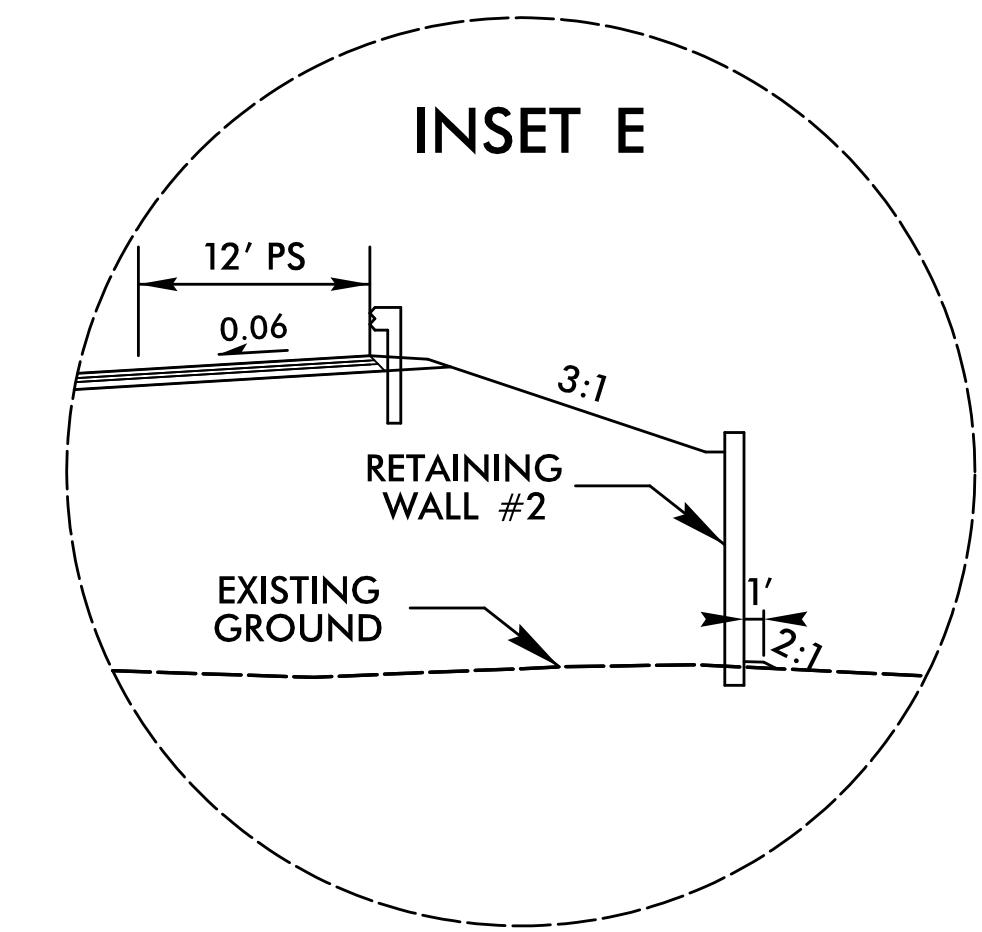
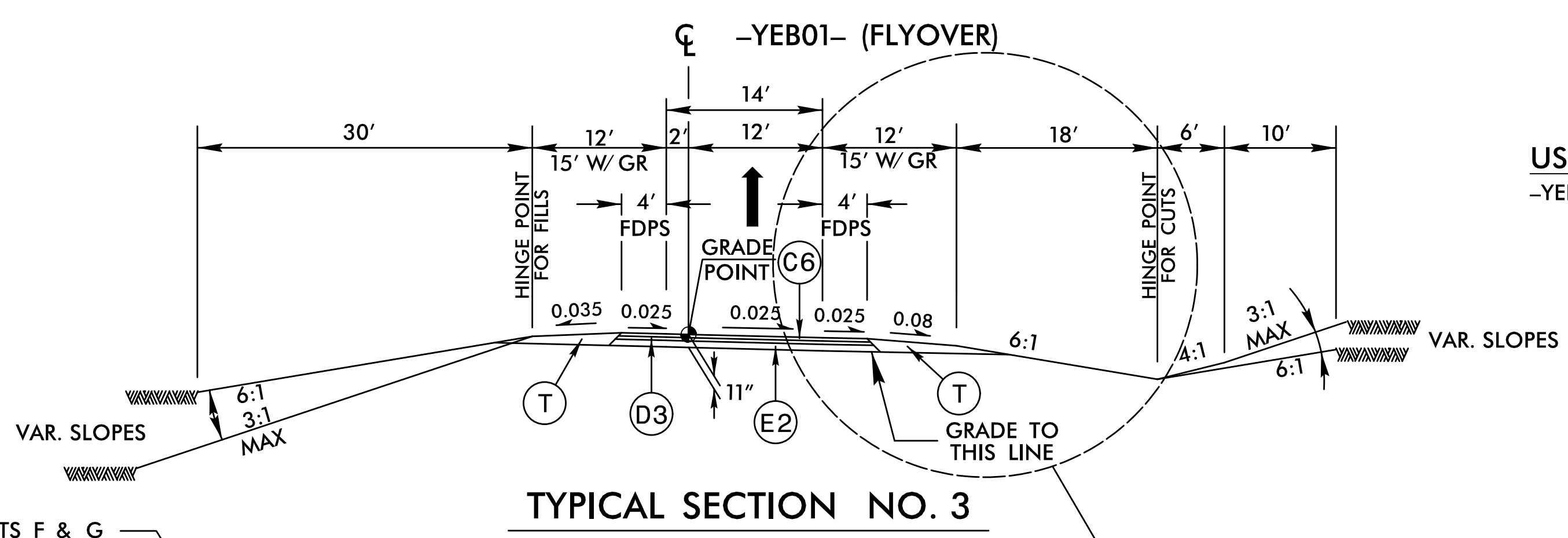
REVISIONS

DATE/TIME: 4/26/16 PM
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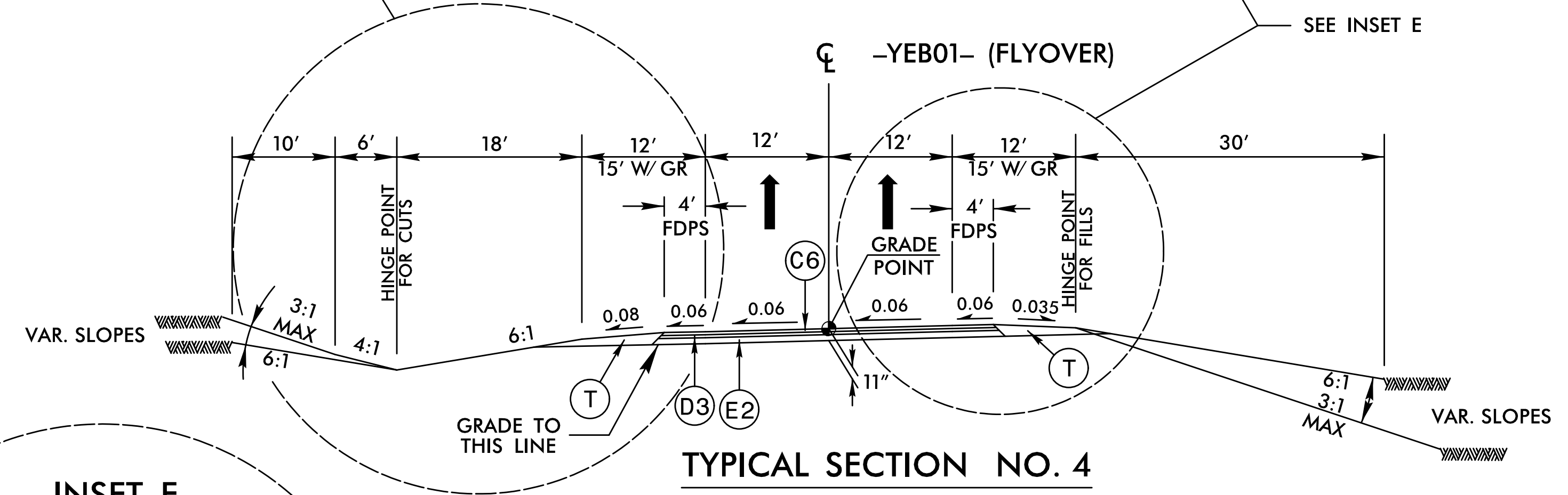
PROJECT REFERENCE NO. R-5516	SHEET NO. 2A-3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>
5/12/2017	5/18/2017
Prepared in the Office of: AECOM 701 Corporate Center Drive, Suite 415 Raleigh, NC 27603 919 854-6200 Fax 919 854-6259 FAX	

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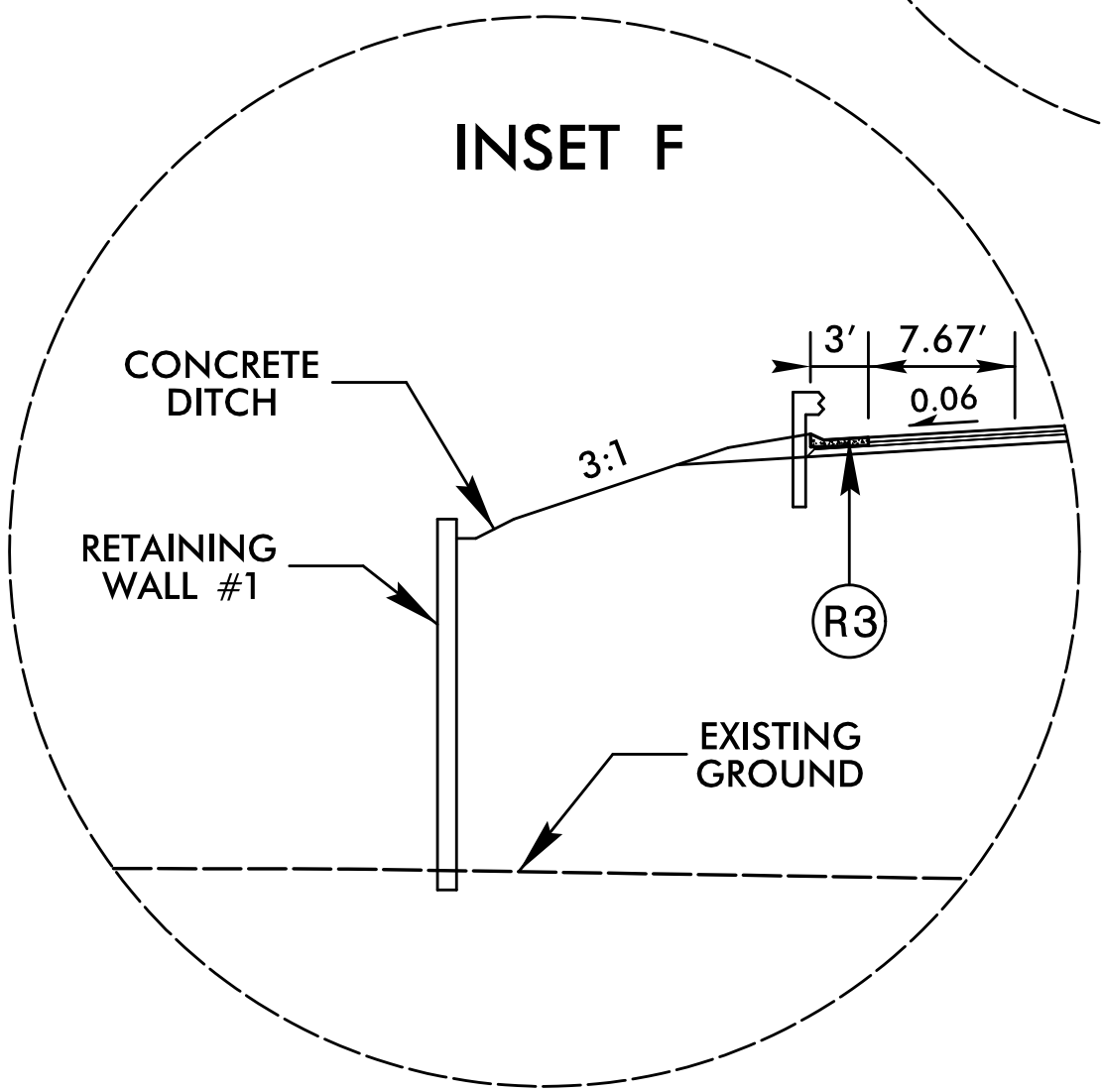
C1	1.5" S9.5B
C2	1.5" S9.5C
C3	2" S9.5B
C4	2" S9.5C
C5	3" S9.5B
C6	3" S9.5C
C7	VAR. S9.5B
C8	VAR. S9.5C
D1	2.5" I19.0C
D2	4" I19.0B
D3	4" I19.0C
D4	VAR. I19.0B
D5	VAR. I19.0C
E1	4" B25.0B
E2	4" B25.0C
E3	VAR. B25.0B
E4	VAR. B25.0C
J1	8" ABC
P	PRIME COAT
R1	5" MONO CONC ISLAND
R2	2'-6" CURB & GUTTER
R3	SHLD BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING



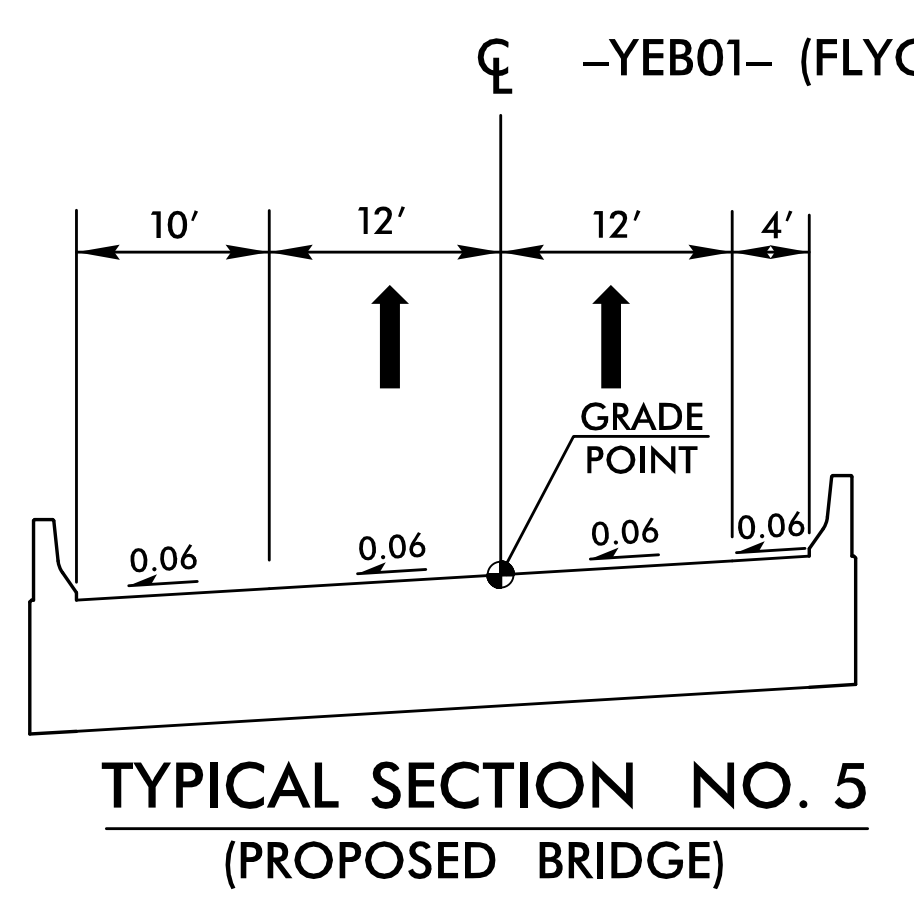
USE IN CONJUNCTION w/TYPICAL SECTION NO. 3 & 4
-YEB01- STA. 23+43.32 TO -YEB01- STA. 28+70.74



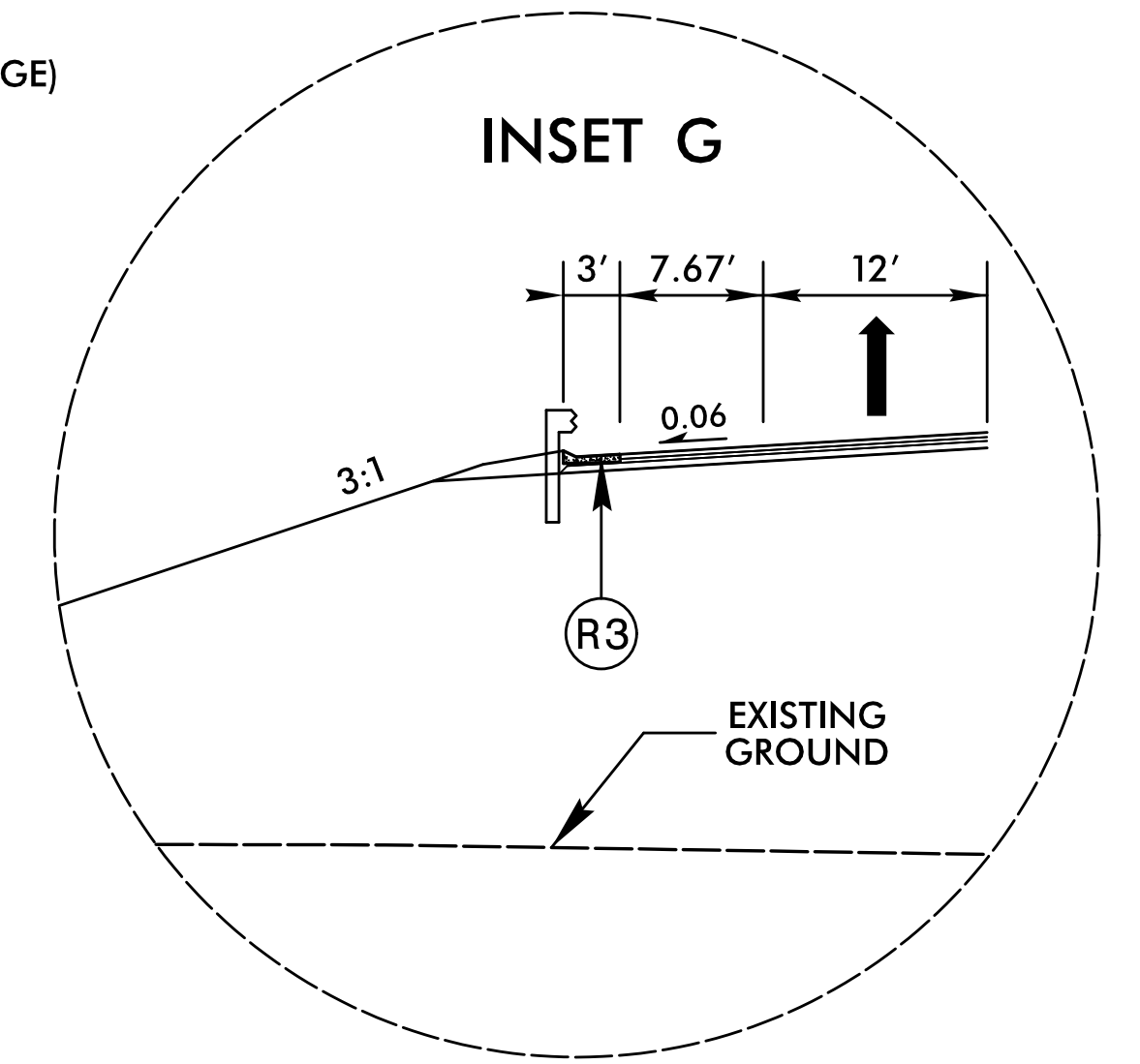
USE TYPICAL SECTION NO. 4
-YEB01- STA. 25+81.43 TO -YEB01- STA. 29+00.84 +/- (BEGIN BRIDGE)
-YEB01- STA. 33+65.84 +/- (END BRIDGE) TO -YEB01- STA. 38+00.00



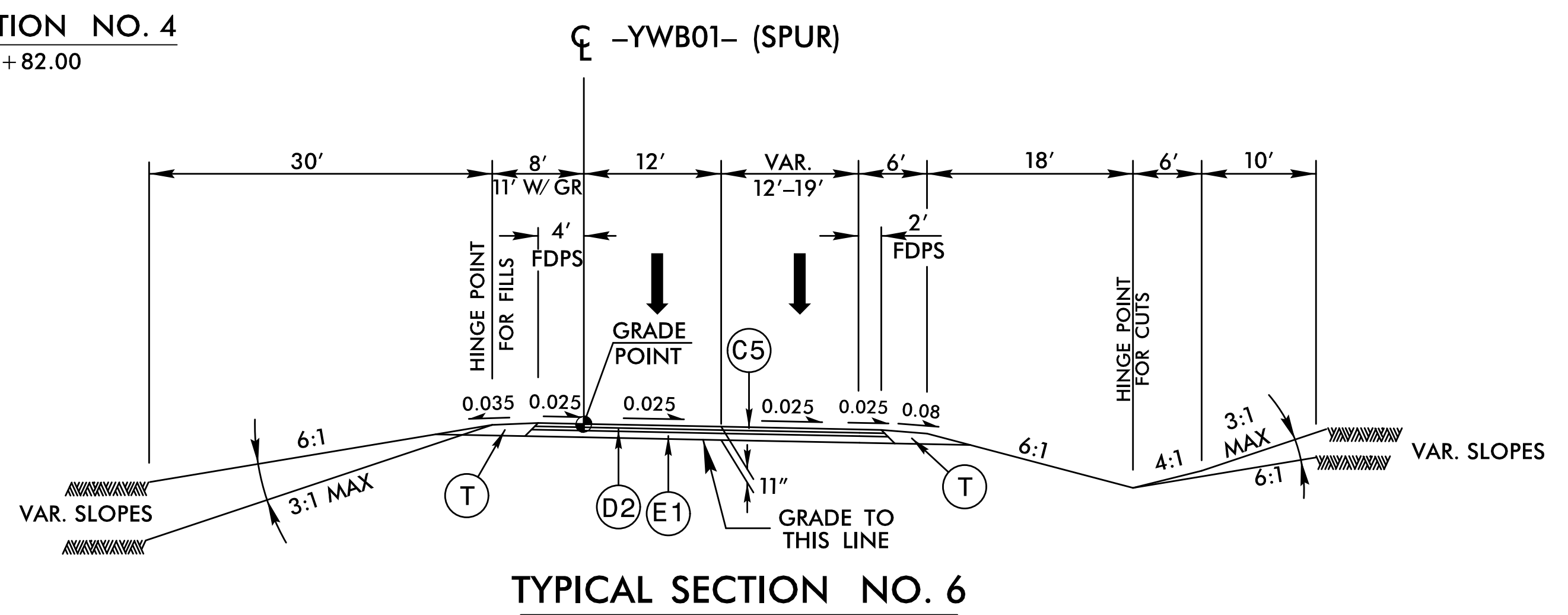
USE IN CONJUNCTION w/TYPICAL SECTION NO. 4
-YEB01- STA. 33+65.84 TO -YEB01- STA. 36+82.00



USE TYPICAL SECTION NO. 5
-YEB01- STA. 29+00.84 +/- (BEGIN BRIDGE) TO -YEB01- STA. 33+65.84 +/- (END BRIDGE)



USE IN CONJUNCTION w/TYPICAL SECTION NO. 4
-YEB01- STA. 27+32 TO -YEB01- STA. 29+00.84



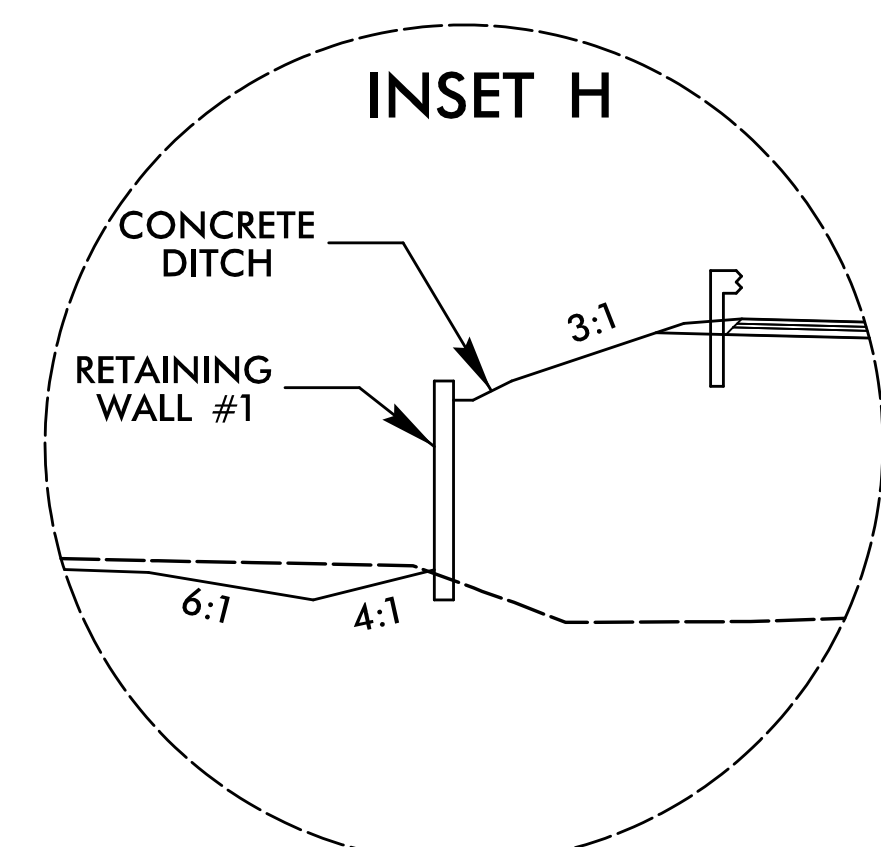
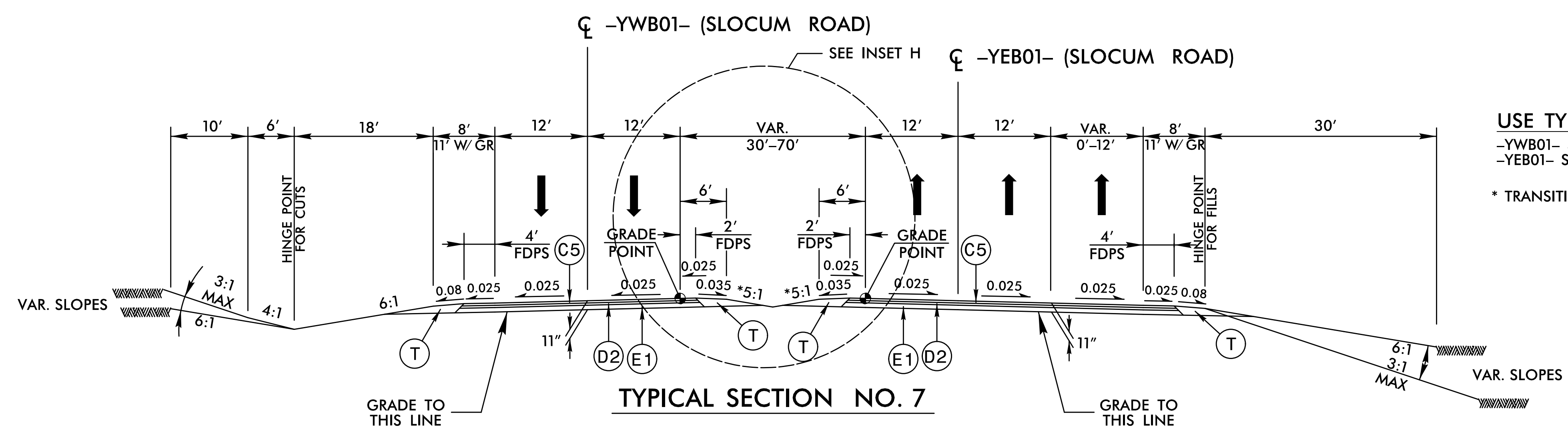
USE TYPICAL SECTION NO. 6
-YWB01- STA. 11+65.44 TO -YWB01- STA. 21+00.00

REVISIONS

DATE/TIME: 4/24/17 PM
DWG. RW/ROADWAY/PROJ/5516.dwg/lyndgr

PROJECT REFERENCE NO. R-5516	SHEET NO. 2A-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	PAVEMENT DESIGN ENGINEER <i>[Signature]</i>
5/12/2017	5/18/2017
Prepared in the Office of: AECOM 70 Corporate Center Drive, Suite 415 Raleigh, NC 27603 919 854-6200 Fax 919 854-6259 FAX	

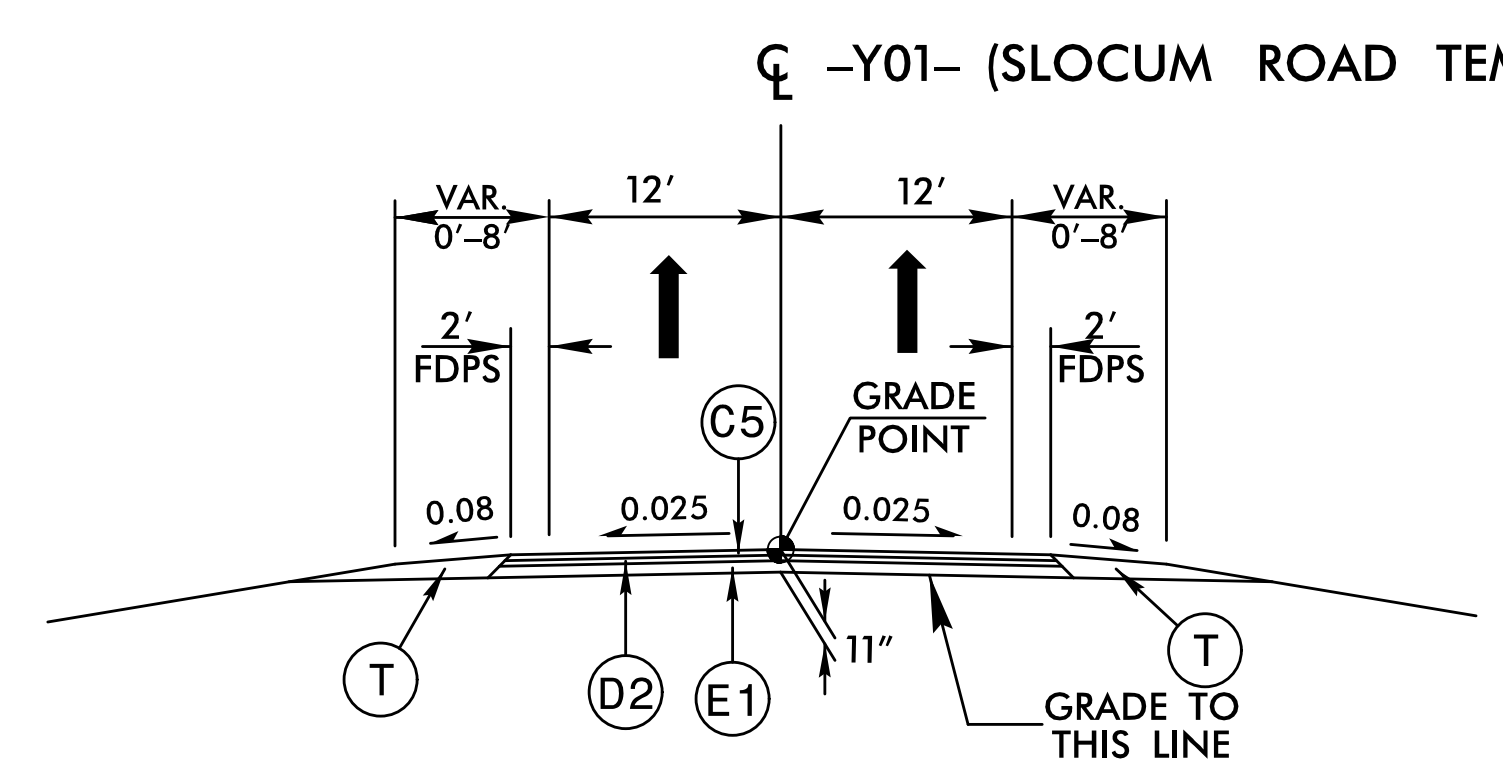
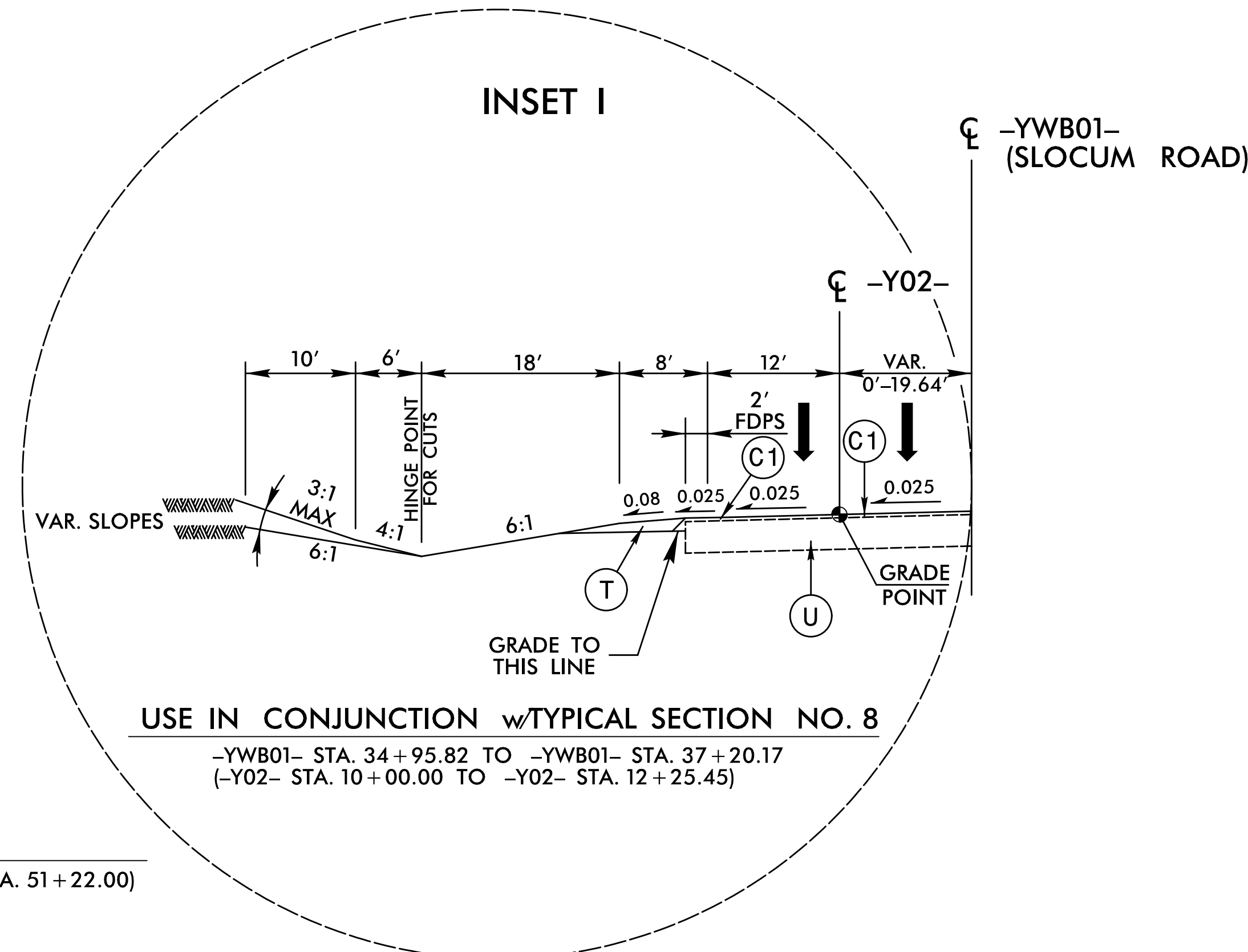
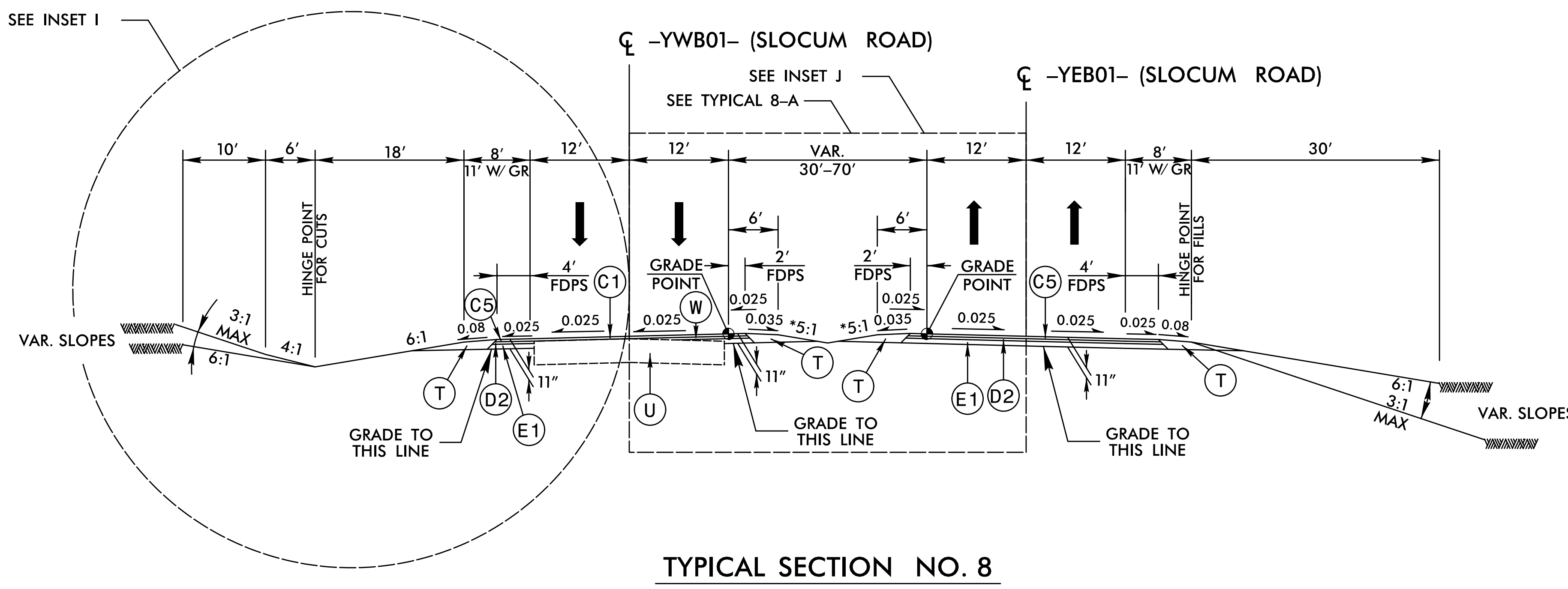
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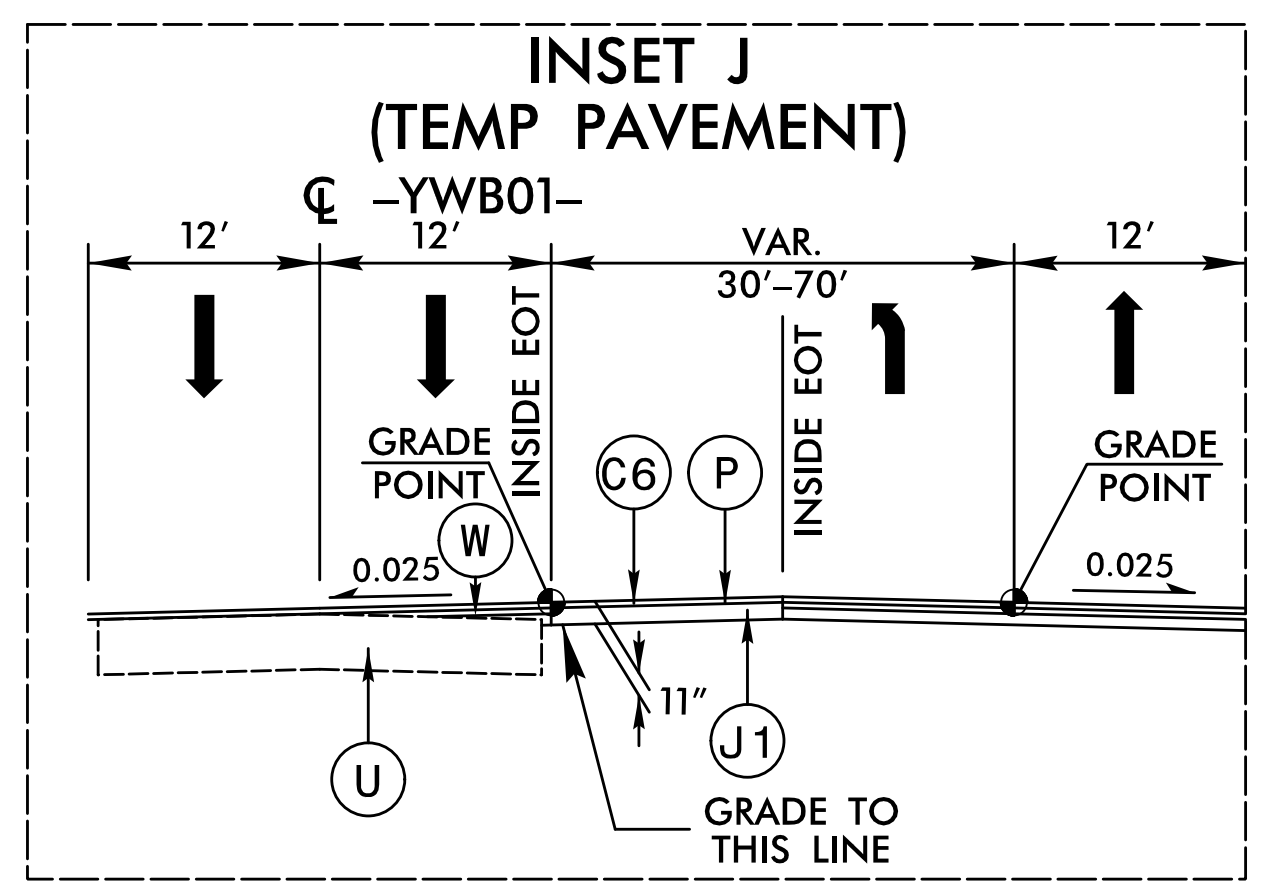
C1	1.5" S9.5B
C2	1.5" S9.5C
C3	2" S9.5B
C4	2" S9.5C
C5	3" S9.5B
C6	3" S9.5C
C7	VAR. S9.5B
C8	VAR. S9.5C
D1	2.5" I19.0C
D2	4" I19.0B
D3	4" I19.0C
D4	VAR. I19.0B
D5	VAR. I19.0C
E1	4" B25.0B
E2	4" B25.0C
E3	VAR. B25.0B
E4	VAR. B25.0C
J1	8" ABC
P	PRIME COAT
R1	5" MONO CONC ISLAND
R2	2'-6" CURB & GUTTER
R3	SHLD BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING

USE IN CONJUNCTION wTYPICAL SECTION NO. 7
 -YEB01- STA. 38+00.00 TO -YEB01- STA. 41+13.29

USE TYPICAL SECTION NO. 8
 -YWB01- STA. 21+30.00 TO -YWB01- STA. 38+75.00
 -YEB01- STA. 46+16.28 TO -YEB01- STA. 59+74.38
 * TRANSITION FROM 8:1, 70' MEDIAN TO 5:1, 30' MEDIAN



USE IN CONJUNCTION wTYPICAL SECTION NO. 8
 -YWB01- STA. 36+13.60 TO -YWB01- STA. 37+43.28
 -YEB01- STA. 57+12.98 TO -YEB01- STA. 58+42.66
 (-Y01- STA. 11+32.45 TO -Y01- STA. 12+65.60)



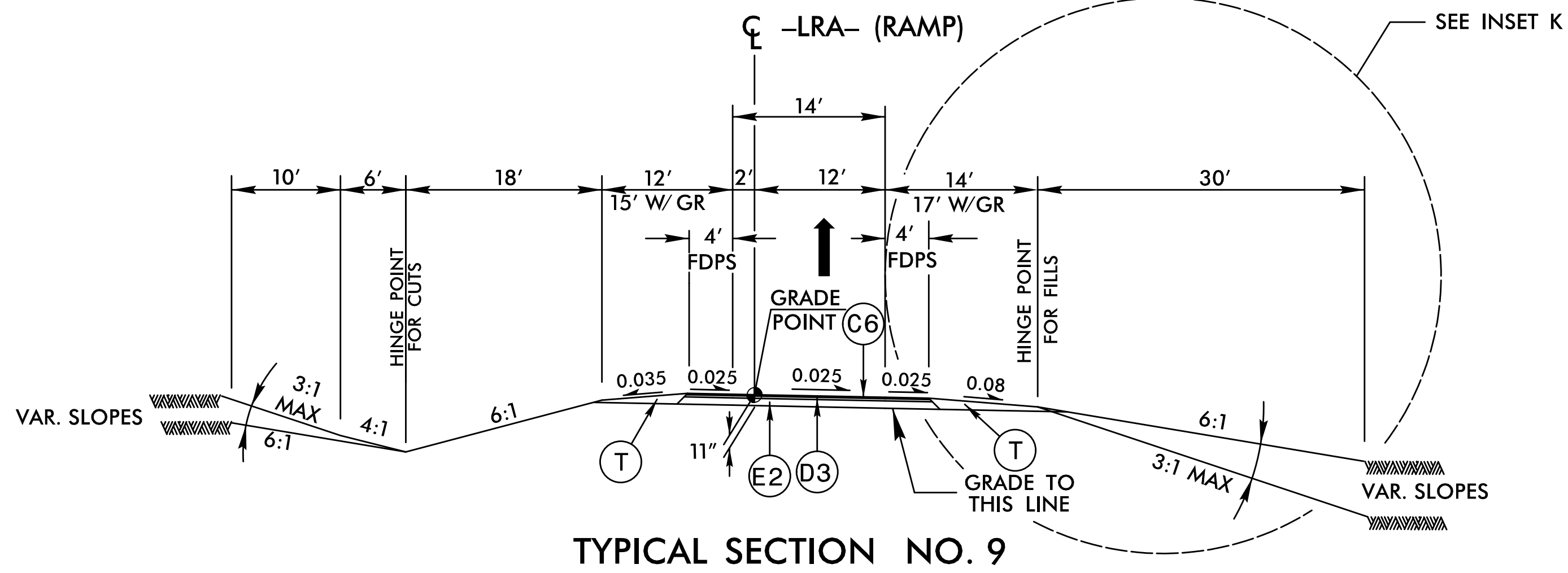
USE IN CONJUNCTION wTYPICAL SECTION NO. 8
 -YWB01- STA. 27+89.00 TO -YWB01- STA. 29+80.00 (-YEB01- STA. 49+67.00 TO STA. 51+22.00)
 -YEB01- STA. 55+08.00 TO -YEB01 STA. 57+49.19

REVISIONS

DATE/TIME: 4/24/17 PM
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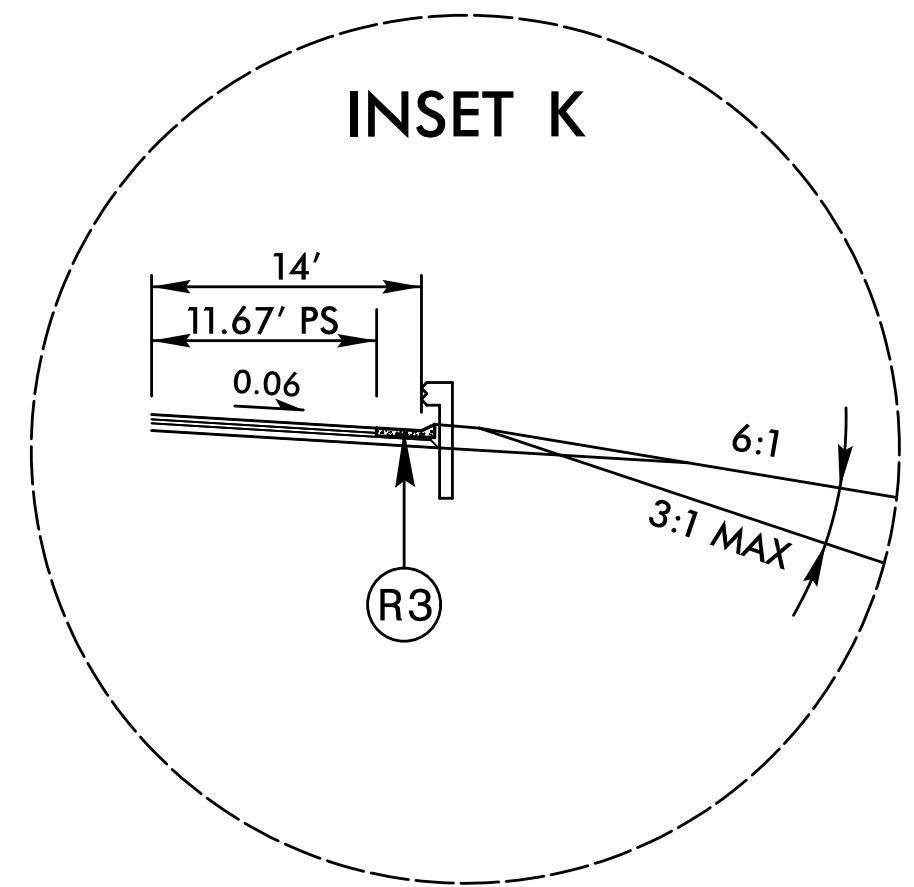
PROJECT REFERENCE NO. R-5516	SHEET NO. 2A-5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
Prepared in the Office of: AECOM 70 Corporate Center Drive, Suite 415 Raleigh, NC 27603 919 854-6200 Fax 919 854-6259 FAX	

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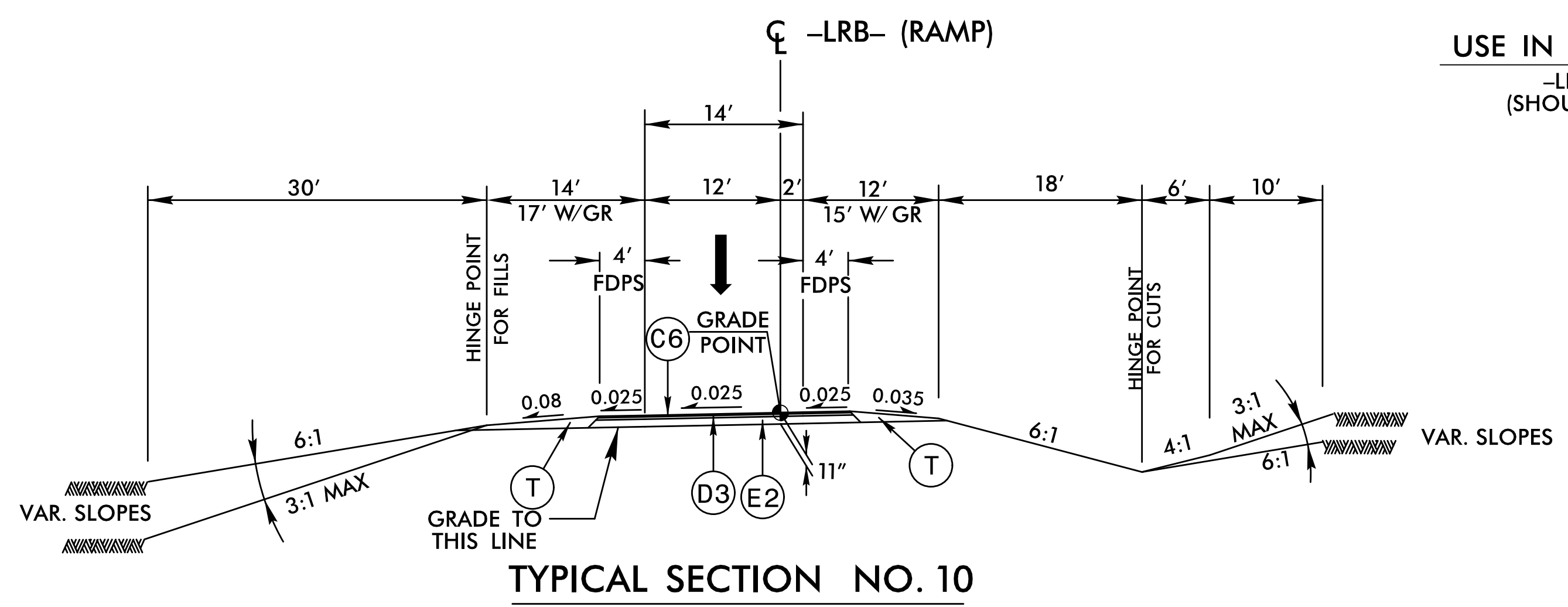
TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9
-LRA- STA. 10+00.00 TO -LRA- STA. 20+30.63



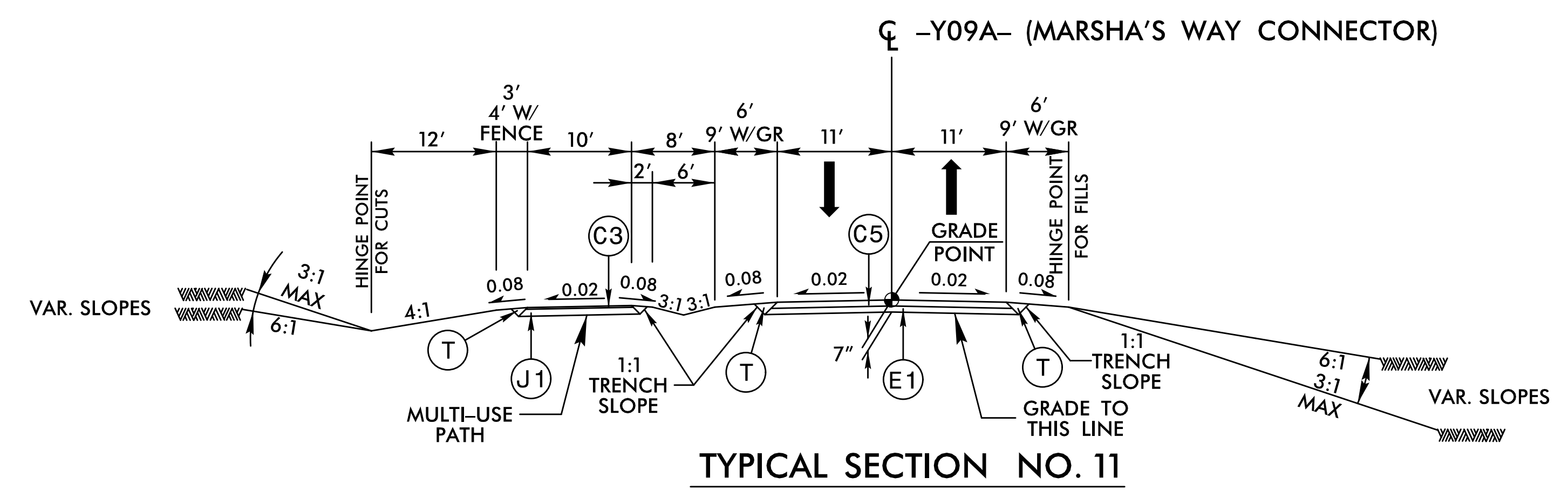
INSET K

USE IN CONJUNCTION w/TYPICAL SECTION NO. 9
-LRA- STA. 14+32.69 TO -LRA- STA. 20+30.63
(SHOULDER BERM GUTTER FROM 15+43 TO 19+65)



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10
-LRB- STA. 10+00.00 TO -LRB- STA. 22+57.97



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11
-Y09A- STA. 10+24.00 TO -Y09A- STA. 28+46.51

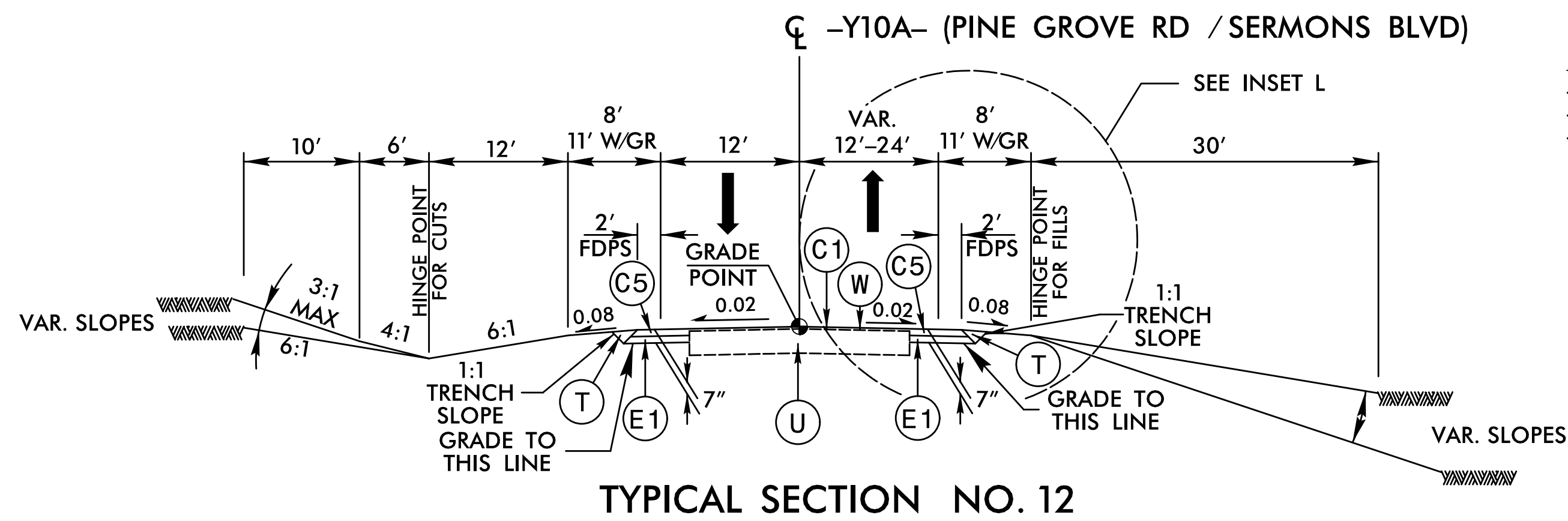
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C2	1.5" S9.5C
C3	2" S9.5B
C4	2" S9.5C
C5	3" S9.5B
C6	3" S9.5C
C7	VAR. S9.5B
C8	VAR. S9.5C
D1	2.5" I19.0C
D2	4" I19.0B
D3	4" I19.0C
D4	VAR. I19.0B
D5	VAR. I19.0C
E1	4" B25.0B
E2	4" B25.0C
E3	VAR. B25.0B
E4	VAR. B25.0C
J1	8" ABC
P	PRIME COAT
R1	5" MONO CONC ISLAND
R2	2'-6" CURB & GUTTER
R3	SHLD BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING

REVISIONS

DATE/TIME: 4/26/18 PM
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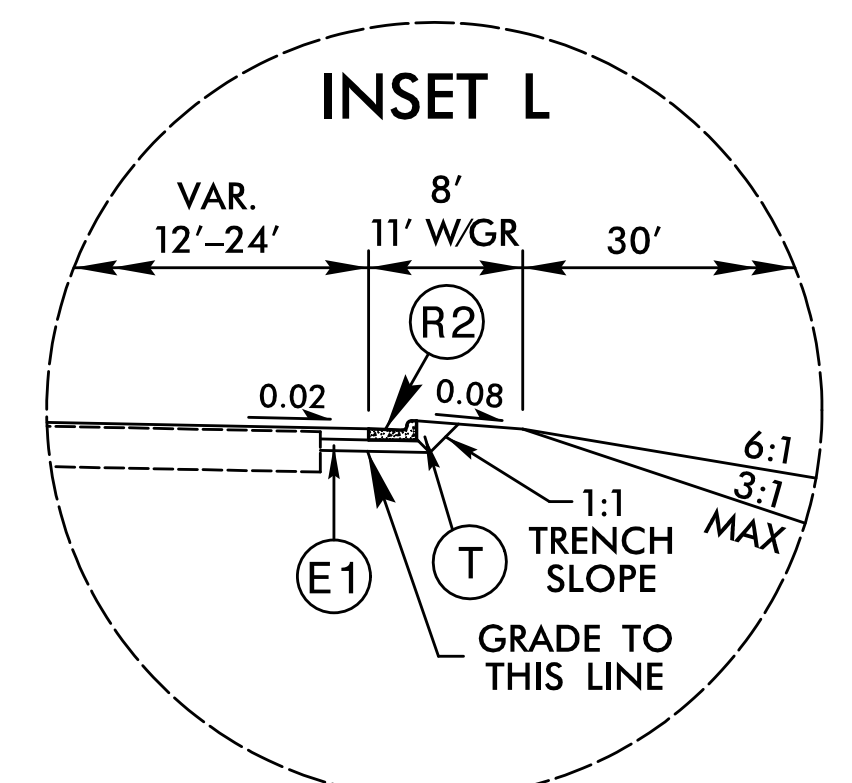
PROJECT REFERENCE NO. R-5516	SHEET NO. 2A-6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
Prepared in the Office of: AECOM NC FIRM LICENSE No. F-0342 700 Corporate Center Drive, Suite 415 Raleigh, NC 27603 (919) 854-6200 • (919) 854-6259 FAX	

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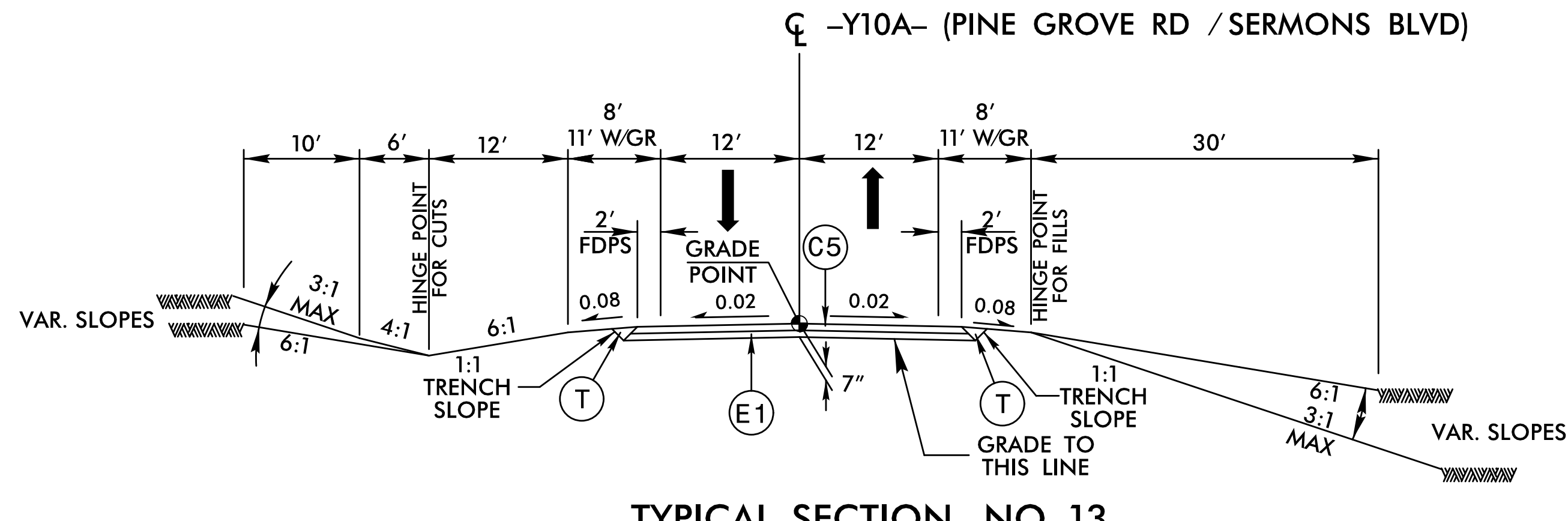


TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12
 -Y10A- STA. 11+85.00 TO -Y10A- STA. 13+71.13
 -Y10A- STA. 14+89.37 TO -Y10A- STA. 18+60.51
 -Y10A- STA. 39+50.00 TO -Y10A- STA. 40+75.00

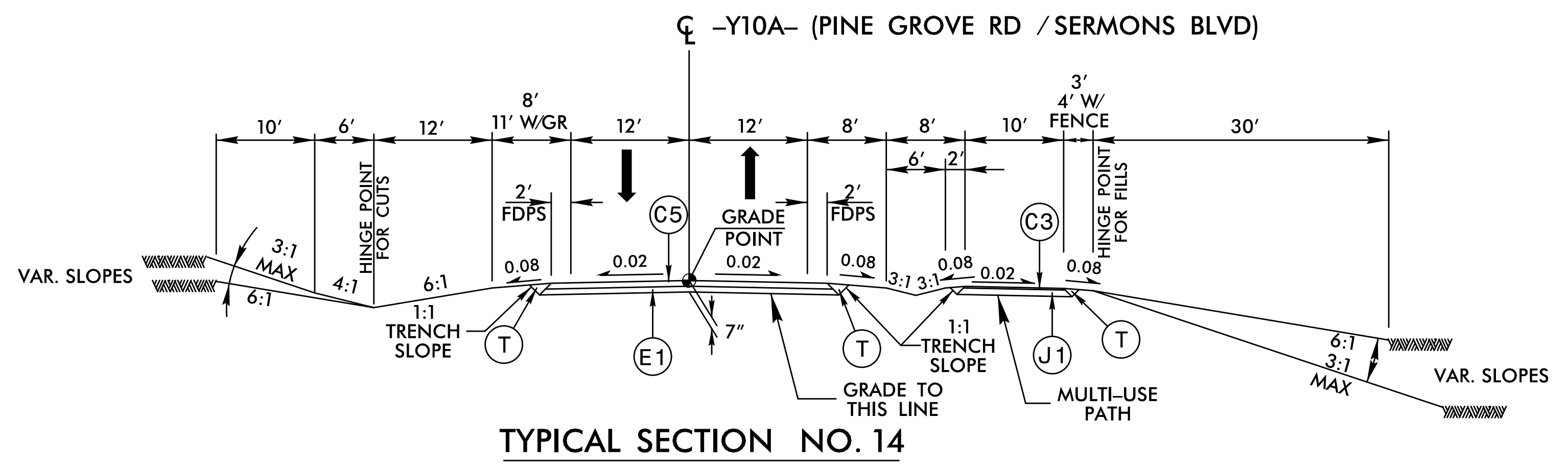


USE IN CONJUNCTION w/TYPICAL SECTION NO. 12
 -Y10A- STA. 11+85.00 TO -Y10A- STA. 12+05.11
 -Y10A- STA. 12+74.12 TO -Y10A- STA. 13+08.10



TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13
 -Y10A- STA. 18+60.51 TO -Y10A- STA. 27+97.00



TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14
 -Y10A- STA. 27+97.00 TO -Y10A- STA. 39+50.00
 (SIDEWALK ENDS -Y10A- STA. 38+42.12)

C1	1.5" S9.5B
C2	1.5" S9.5C
C3	2" S9.5B
C4	2" S9.5C
C5	3" S9.5B
C6	3" S9.5C
C7	VAR. S9.5B
C8	VAR. S9.5C
D1	2.5" I19.0C
D2	4" I19.0B
D3	4" I19.0C
D4	VAR. I19.0B
D5	VAR. I19.0C
E1	4" B25.0B
E2	4" B25.0C
E3	VAR. B25.0B
E4	VAR. B25.0C
J1	8" ABC
P	PRIME COAT
R1	5" MONO CONC ISLAND
R2	2'-6" CURB & GUTTER
R3	SHLD BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING

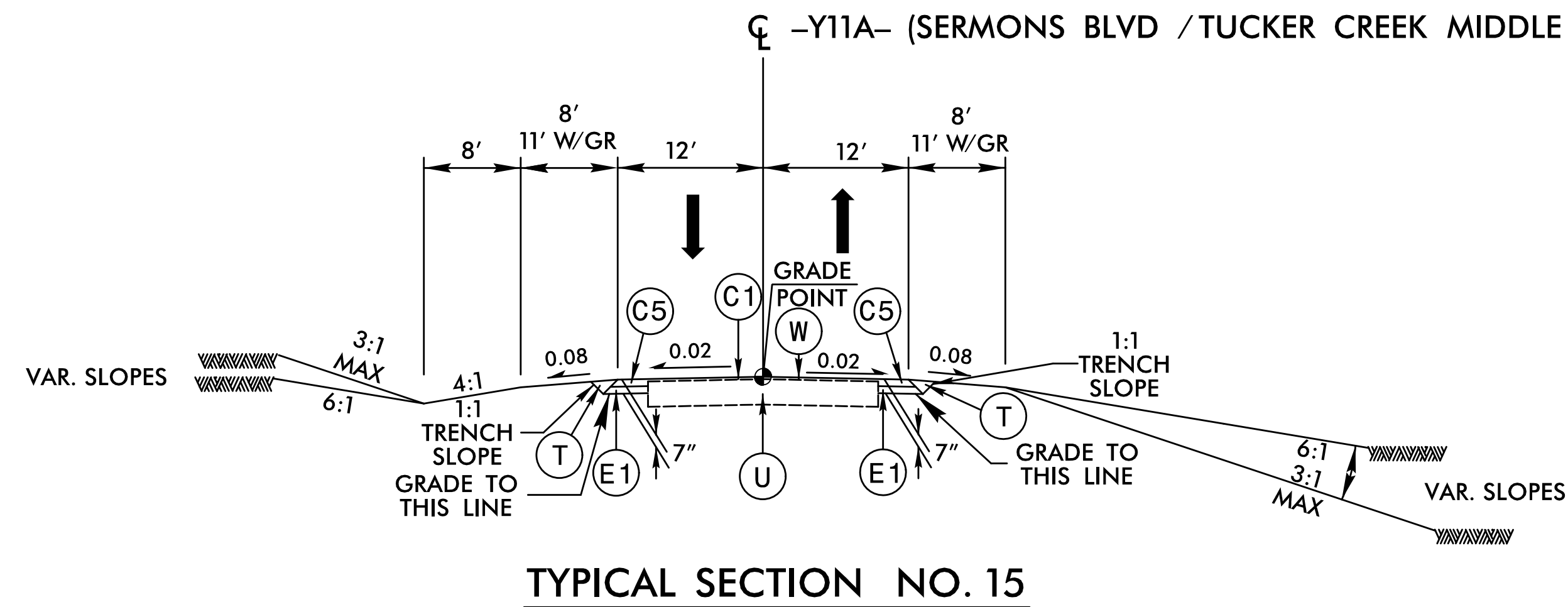
REVISIONS

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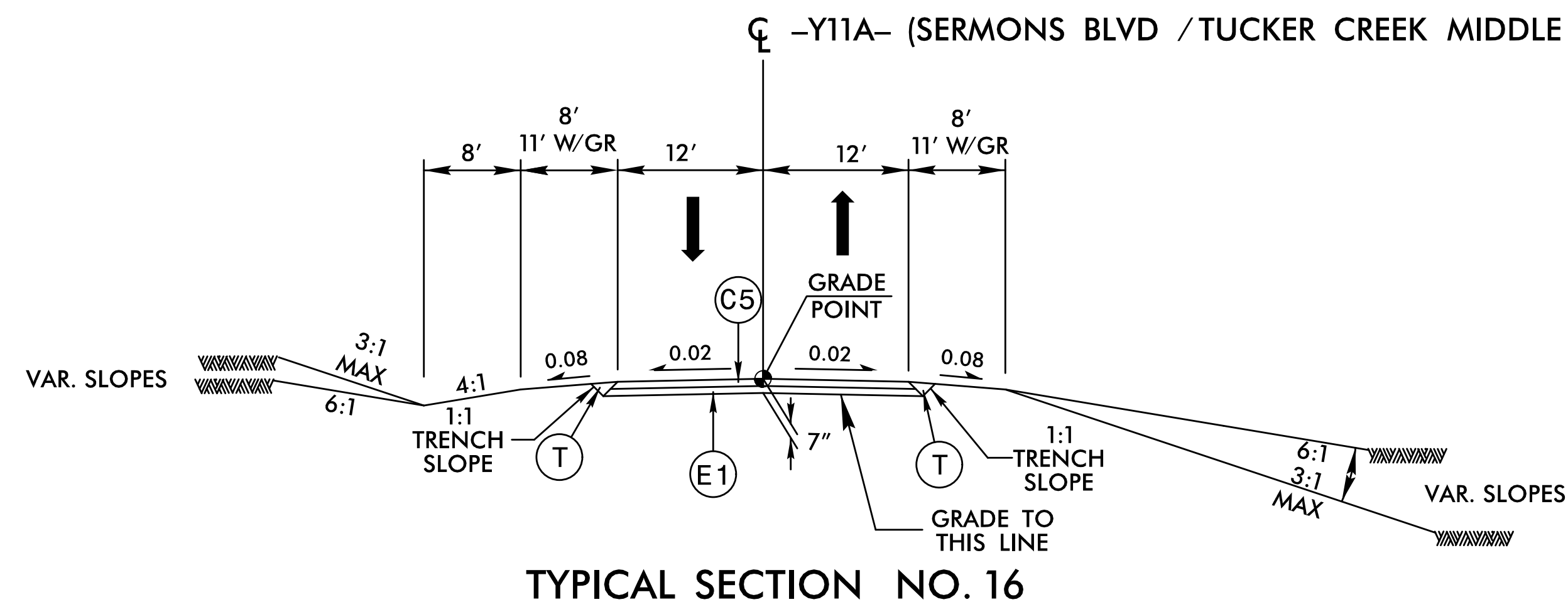
PROJECT REFERENCE NO. R-5516	SHEET NO. 2A-7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER [Stamp]	PAVEMENT DESIGN ENGINEER [Stamp]
5/12/2017	5/18/2017
Prepared in the Office of: AECOM 70 Corporate Center Drive, Suite 415 Raleigh, NC 27603 919 854-6200 FAX 919 854-6259 FAX	

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C1	1.5" S9.5B
C2	1.5" S9.5C
C3	2" S9.5B
C4	2" S9.5C
C5	3" S9.5B
C6	3" S9.5C
C7	VAR. S9.5B
C8	VAR. S9.5C
D1	2.5" I19.0C
D2	4" I19.0B
D3	4" I19.0C
D4	VAR. I19.0B
D5	VAR. I19.0C
E1	4" B25.0B
E2	4" B25.0C
E3	VAR. B25.0B
E4	VAR. B25.0C
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P	PRIME COAT
R1	5" MONO CONC ISLAND
R2	2'-6" CURB & GUTTER
R3	SHLD BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING

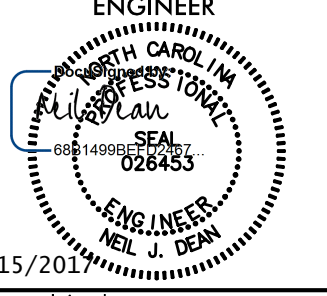


USE TYPICAL SECTION NO. 15
 -Y11A- STA. 18+00.00 TO -Y11A- STA. 19+15.60
 -Y11A- STA. 22+17.09 TO -Y11A- STA. 23+70.00

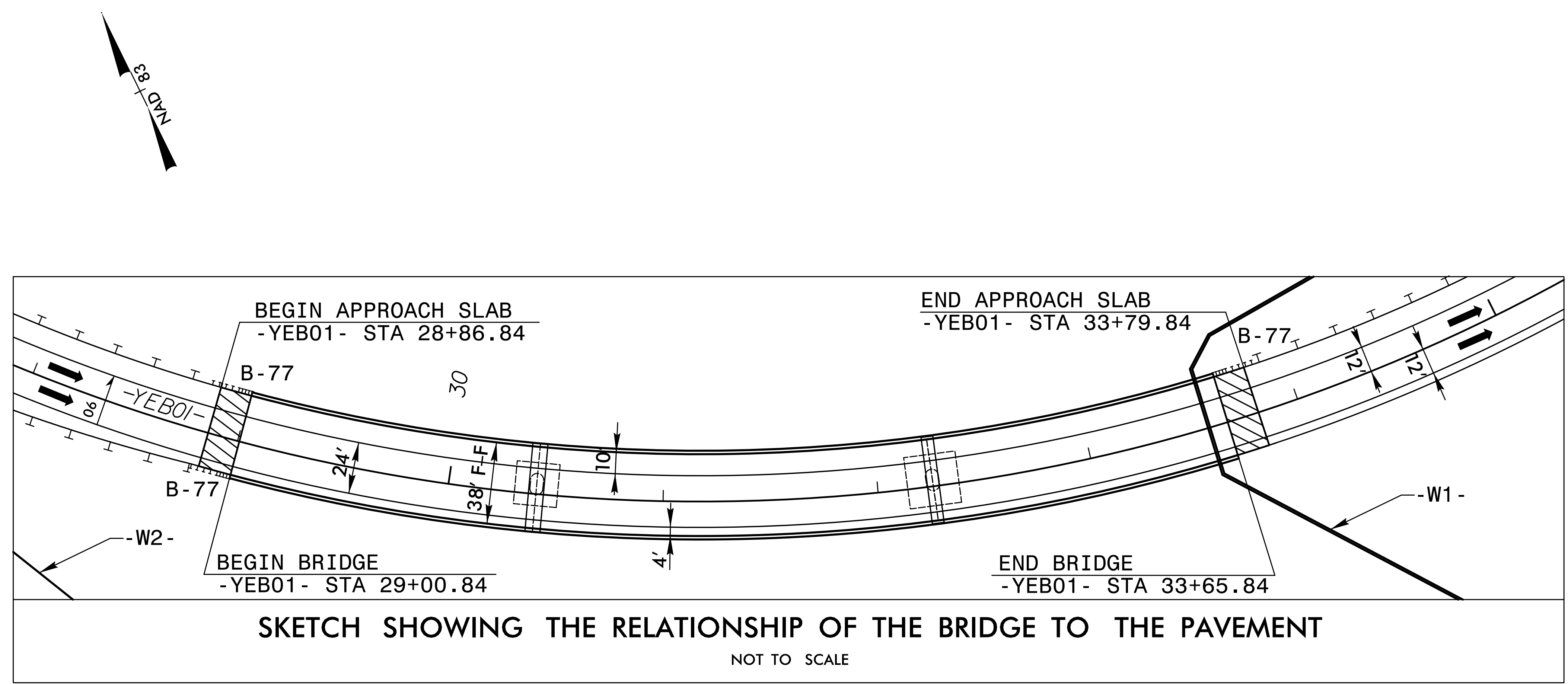


USE TYPICAL SECTION NO. 16
 -Y11A- STA. 19+15.60 TO -Y11A- STA. 21+22.03
 -Y11A- STA. 21+50.05 TO -Y11A- STA. 22+17.09

REVISIONS

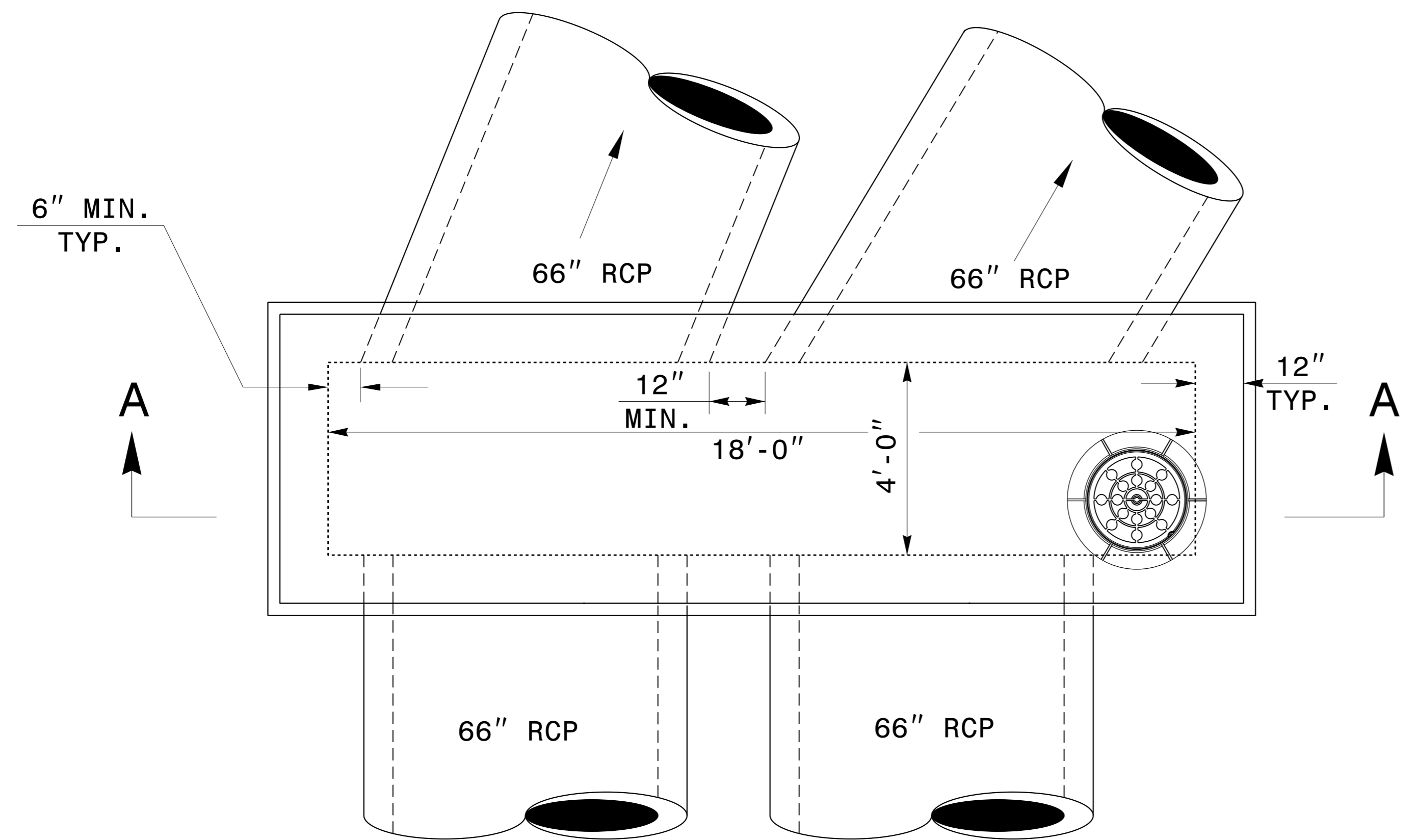
PROJECT REFERENCE NO. R-5516	SHEET NO. 2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
	
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DOCUMENT NOT CONSIDERED FINAL
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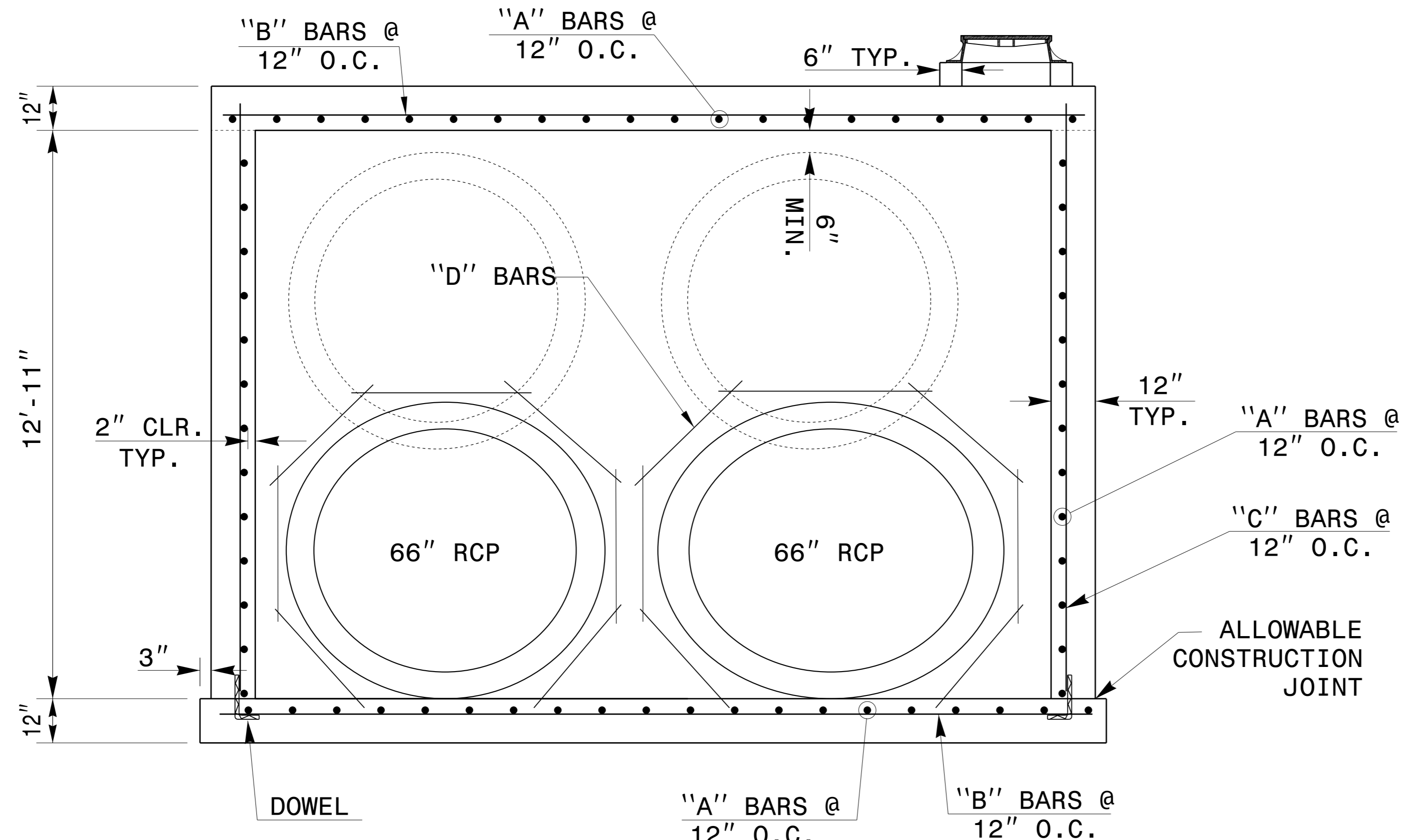


REVISIONS

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PLAN



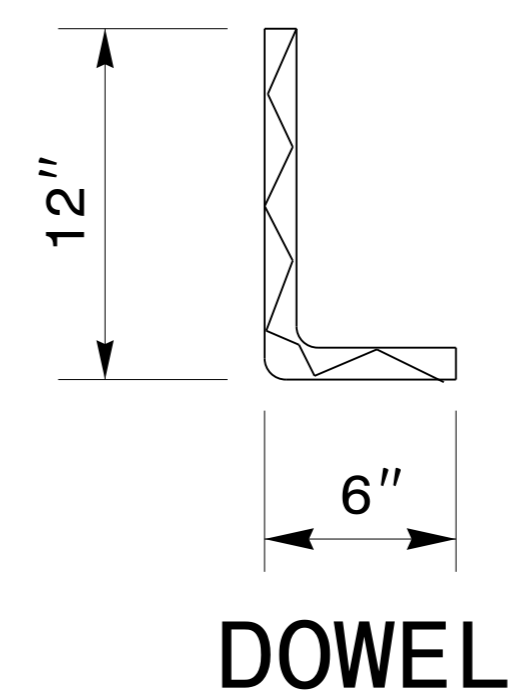
SECTION A-A

GENERAL NOTES:

- CONSTRUCT THE BASE SLAB BY FORMING.
- SEE STD. DWG. 840.00 FOR CONSTRUCTION OF BASE SLAB IF PIPE IS SET INTO BASE SLAB.
- USE CLASS 'B' CONCRETE THROUGHOUT.
- CONSTRUCTION OPTIONS: MONOLITHIC POUR, 2" KEYWAY, OR #5 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
- CUT, BEND OR RELOCATE REINFORCING STEEL TO POSITION PIPE AS DIRECTED BY THE ENGINEER.
- CHAMFER ALL EXPOSED CORNERS 1".
- CONTRACTOR MAY ADJUST DIMENSIONS OF BOX AS FIELD CONDITIONS DICTATE OR AS DIRECTED BY THE ENGINEER.

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	WEIGHT
A	70	#5	5'-8"	414
B	14	#5	19'-8"	288
C	14	#5	13'-6"	198
D	30	#5	4'-0"	126
TOTAL REINF. STEEL (lbs.)				1026
CLASS "B" CONC. (cu. yds.)				30.8
NO DEDUCTIONS FOR PIPES				



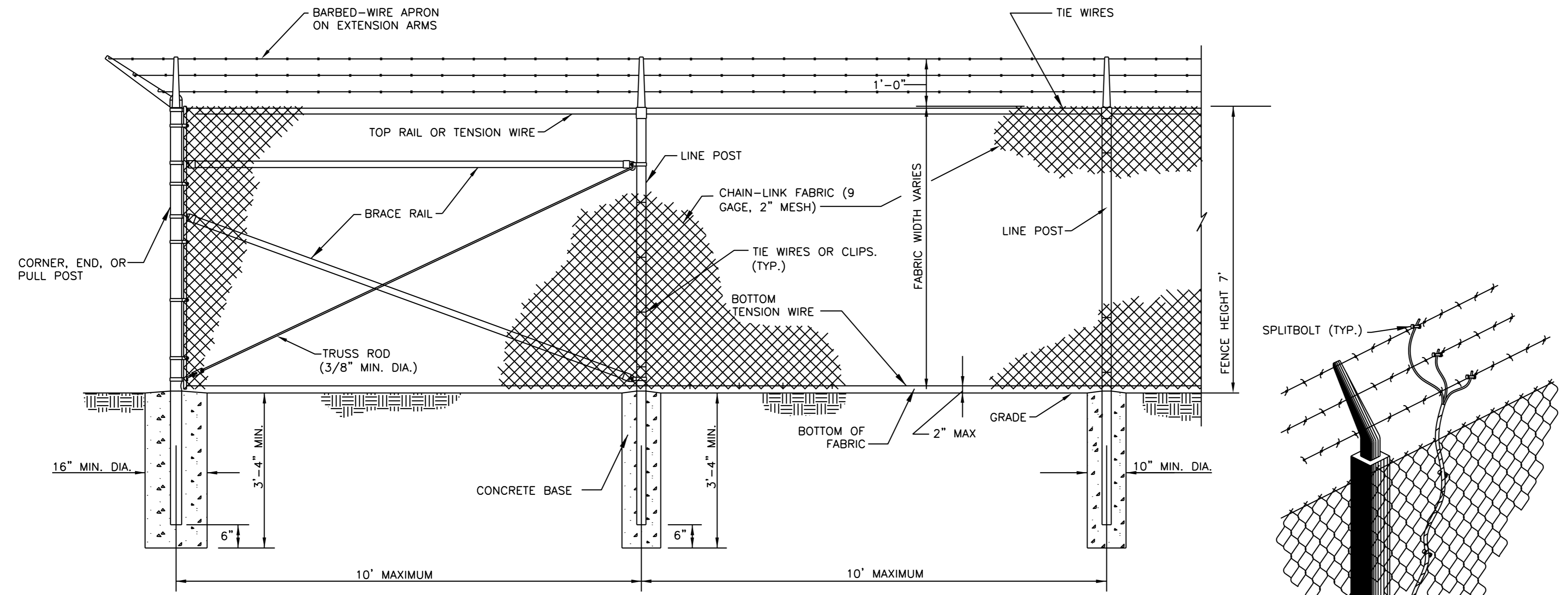
5/15/2017

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

DETAIL OF SPECIAL JUNCTION BOX

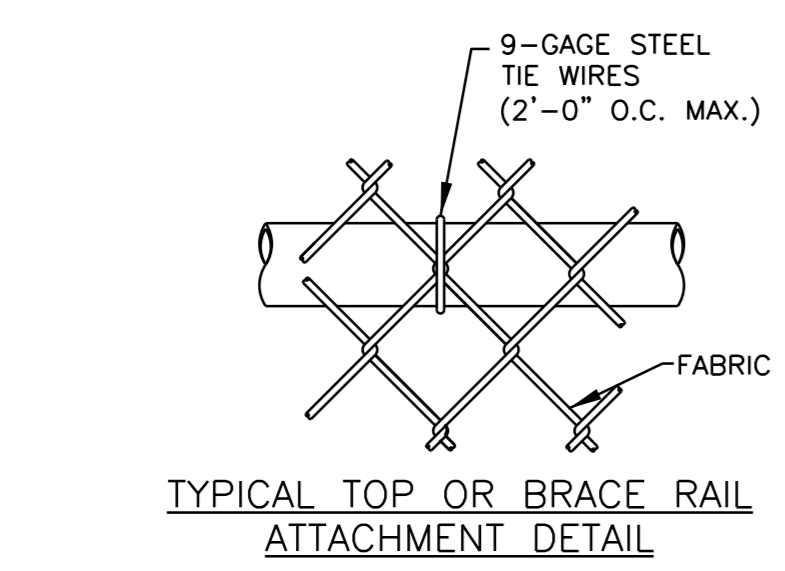
ORIGINAL BY: K. KEMPF	DATE: 1-11-08
MODIFIED BY: K. KEMPF	DATE: 5-11-15
CHECKED BY:	DATE:
FILE SPEC.: \\kkempf\english\R5516jbttwo66wMH.dgn	

C:\TIME\PROJECTS\CONSTRUCTION\PROJECTS\USER\NAME\\$\$\$\$\$.dgn

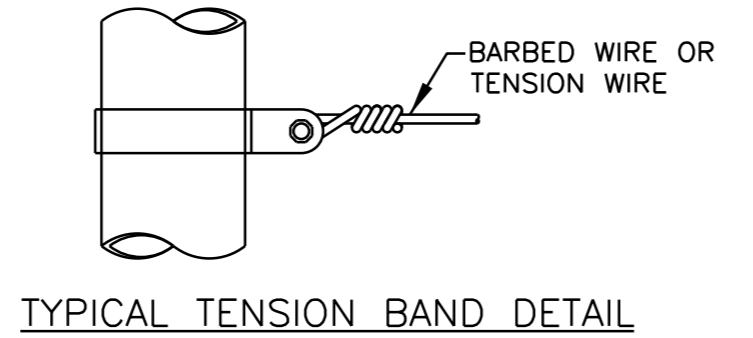


TYPICAL FENCE DETAIL
NOT TO SCALE

- NOTES:**
- FENCE FABRIC SHALL BE 2 INCH SQUARE MESH.
 - FENCE FABRIC MINIMUM WIRE THICKNESS SHALL BE 9 GAUGE (WITHOUT COATING) STEEL WIRE.
 - POSTS SHALL BE STEEL POSTS.
 - FENCE POSTS, BRACING, AND OTHER STRUCTURAL MEMBERS SHALL BE PLACED ON SITE SIDE OF THE FABRIC.
 - FENCE FABRIC SHALL BE SECURELY FASTENED WITH TENSION WIRES WITH 9 GAUGE GALVANIZED TIE WIRES INCORPORATING AT LEAST A 540 DEGREE TIGHTENED LOOP.
 - CONTRACTOR SHALL PROVIDE NECESSARY GRADE SUCH THAT FENCE FABRIC EXTENDS WITHIN 2 INCHES OF FIRM GROUND. PROVIDE ANCHORING TO PREVENT THE FABRIC FROM BEING LIFTED MORE THAN 5 INCHES. FENCE FABRIC MAY ALSO BE BURIED 12 INCHES.
 - FENCE FABRIC SHALL BE INTERWOVEN OR CLIPPED ALONG THE TOP AND THE BOTTOM ROW OF FABRIC DIAMONDS AND HAVE TWISTED AND BARBED SELVAGE AT THE BOTTOM AND THE TOP.
 - POSTS SHALL BE THE SAME MATERIAL AS THE FENCING WIRE.
 - POSTS SHALL BE VERTICAL WITHIN PLUS OR MINUS 2 DEGREES IN TWO PLANES.
 - POSTS SHALL BE BURIED AND ENCASED IN CONCRETE FOOTINGS. FOOTINGS SHALL BE MINIMUM 3'-4" IN DEPTH.
 - POST SEPARATION SHALL BE A MAXIMUM OF 10 FEET.
 - EACH GATE, TERMINAL, AND END POST SHALL BE BRACED WITH TRUSS RODS INSTALLED DIAGONALLY FROM THE NEAR GROUND LEVEL OF THE GATE, TERMINAL OR END POST TO THE TOP OF THE ADJACENT LINE POST, THIS CONNECTION POINT SHALL BE NO HIGHER THAN 6 INCHES DOWN FROM THE TOP OF THE FABRIC. THE ANGLE BETWEEN THE TRUSS ROD AND THE GROUND SHALL BE NO MORE THAN 50 DEGREES. STEEL TRUSS RODS SHALL BE NOT LESS THAN 3/8 INCH NOMINAL DIAMETER WITH TURNBUCKLES FOR TENSIONING.
 - ALL FASTENINGS AND HINGE HARDWARE SHALL BE SECURED IN PLACE BY PEENING OR WELDING.
 - FENCE HEIGHT FROM GROUND TO TOP OF FABRIC SHALL BE 7.
 - BARBED WIRE SHALL BE SECURED AT EVERY POST AT A MINIMUM INTERVAL OF 18 INCHES ALONG THE TOP REINFORCING WIRE OR BARBED WIRE STRAND.
 - THE OUTRIGGER SHALL PROVIDE A MINIMUM OF 12 INCHES TO THE FENCE HEIGHT.
 - THE TOP GUARD ADJOINING GATES MAY RANGE FROM A VERTICAL HEIGHT OF 18 INCHES TO THE NORMAL 45 DEGREE OUTWARD PROTECTION, ONLY FOR THE AMOUNT OF SPACE IT TAKES TO OPEN THE GATES. BARBED WIRE ON GATES SHALL BE ATTACHED ONE STRAND ABOVE THE OTHER VERTICALLY.
 - ASTM STANDARDS SHALL BE FOLLOWED FOR ALL MATERIALS, INSTALLATIONS, AND REPAIRS OF STANDARD FENCING FABRIC.
 - ALL FENCING ACCESSORIES USED IN THE ERECTION OF CHAIN-LINK FENCES SHALL MEET ASTM SPECIFICATIONS.
 - ALL FITTINGS SHALL BE ELECTROLYTICALLY COMPATIBLE WITH CONNECTING FITTINGS, COMPONENTS, AND FENCE FABRIC TO INHIBIT CORROSION.
 - IN ACCORDANCE WITH UFC 4-022-03, WHERE THE BOTTOM OF FENCE FABRIC CANNOT BE 2" OR LESS FROM THE GROUND SURFACE, SUCH AS WHERE FENCING CROSSES DRAINAGE DITCHES OR SWALES, THE CONTRACTOR SHALL PROVIDE ADDITIONAL FENCING ACROSS THE DITCH OR SWALE. FENCING ADDED BELOW SHALL BE ATTACHED A MINIMUM OF EVERY 2" ALONG THE INTERSECTION OF THE TWO FENCE SECTIONS AND ATTACHED TO A SERIES OF GROUND STAKES SECURED TO THE SIDES AND BOTTOM OF THE DITCH (SEE SECTION 2-12.7 OF THE UFC). SEE 'TYPICAL DITCH CROSSING DETAIL' SHEET C-12.



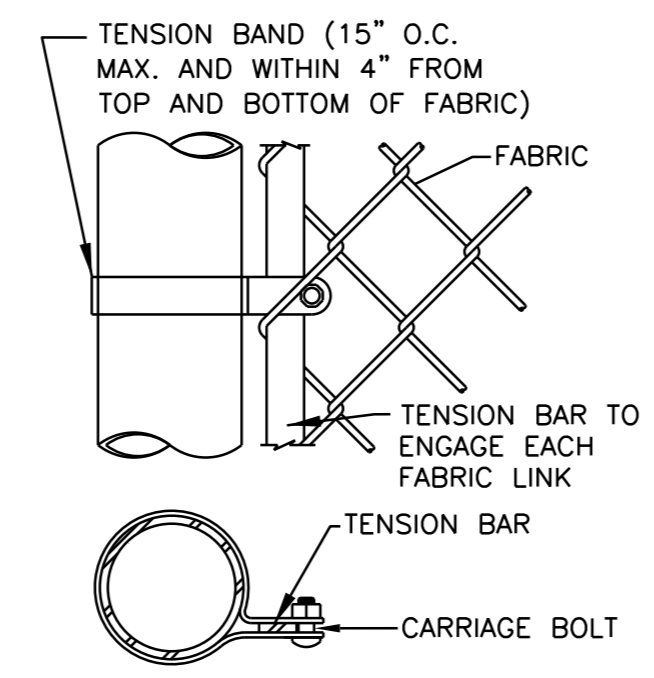
TYPICAL TOP OR BRACE RAIL ATTACHMENT DETAIL



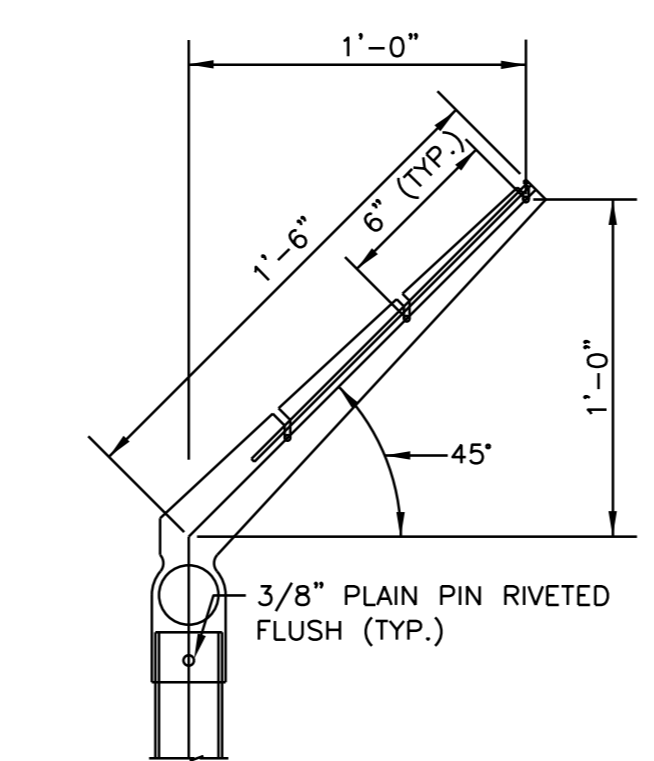
TYPICAL TENSION BAND DETAIL



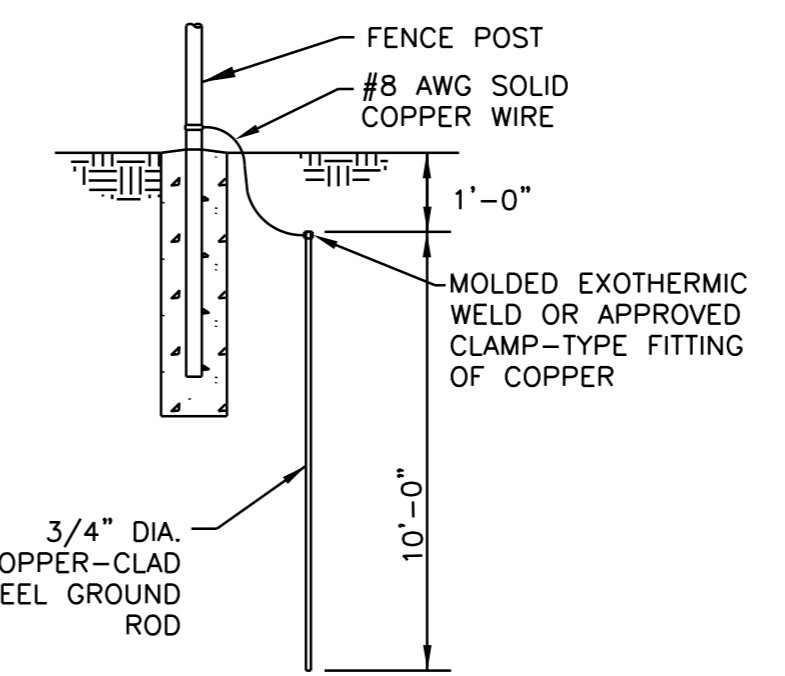
TYPICAL LINE POST ATTACHMENT DETAILS



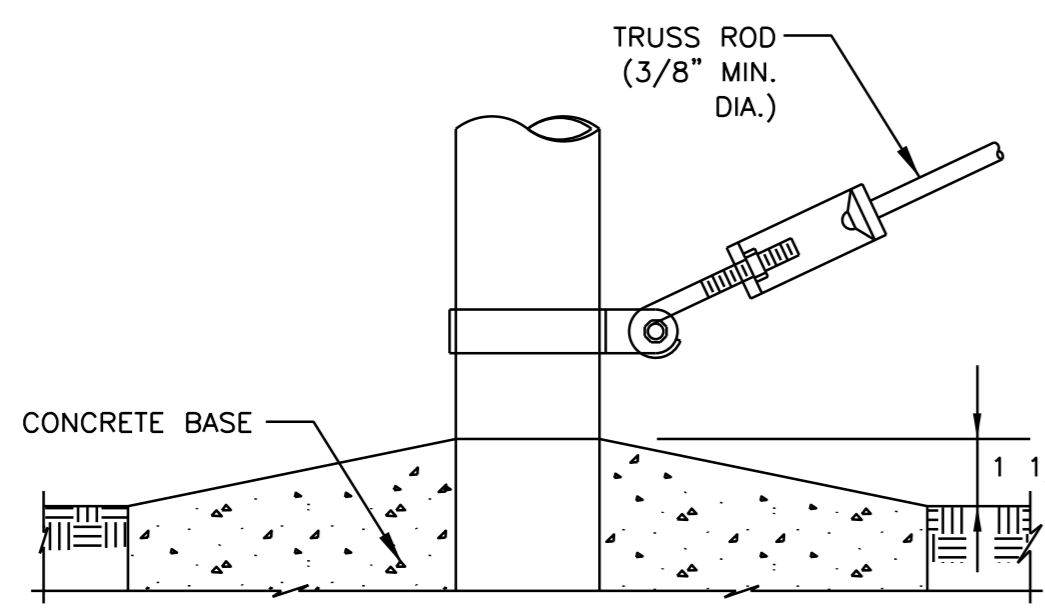
TYPICAL END OR GATE POST DETAIL



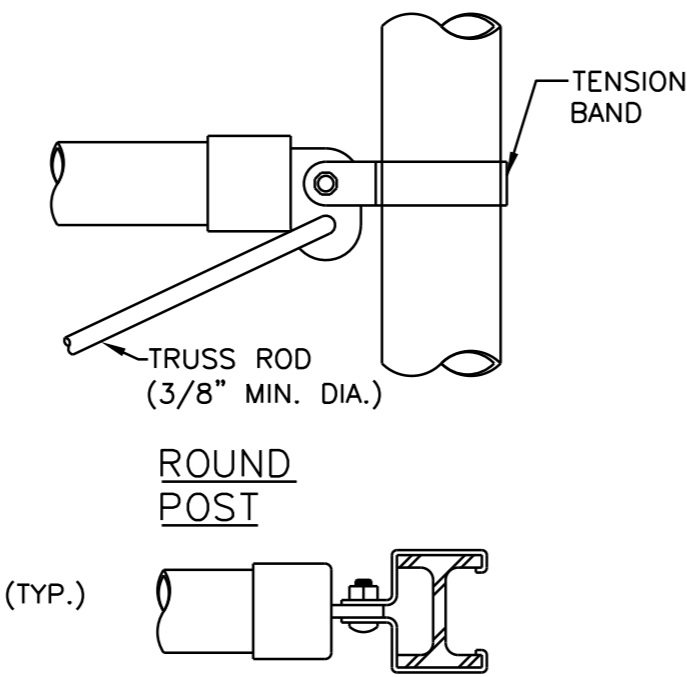
TYPICAL EXTENSION ARM DETAIL
NOT TO SCALE



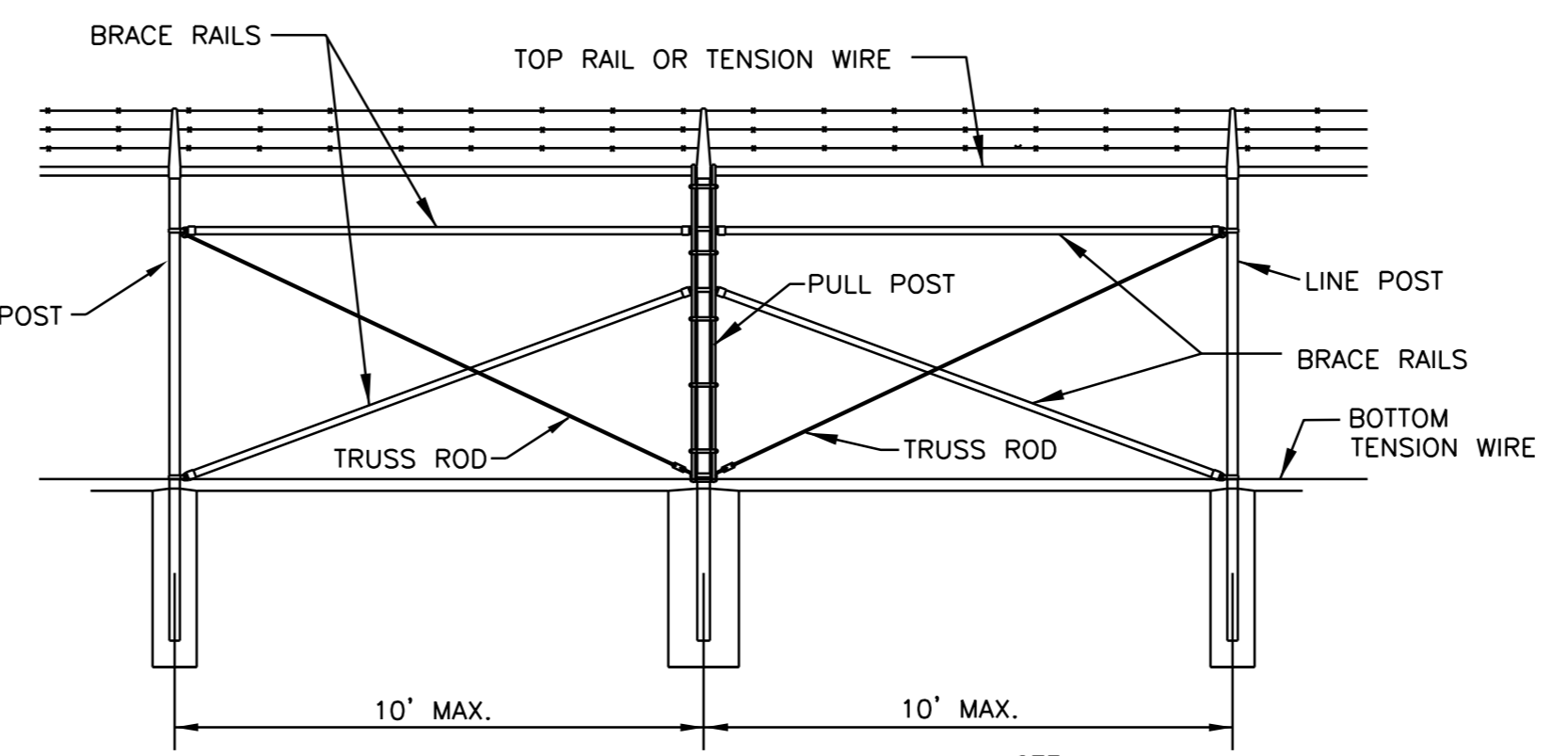
TYPICAL GROUNDING DETAIL
NOT TO SCALE



TYPICAL TRUSS ROD AND BAND DETAIL



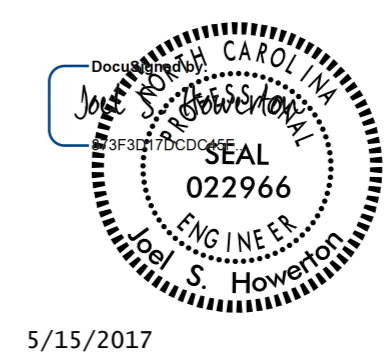
TYPICAL BRACE RAIL CLAMP DETAILS



TYPICAL BRACE PANEL DETAIL
NOT TO SCALE

STEEL POST SCHEDULE	
USE AND SECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)
	FABRIC WIDTH 84" TO 96"
CORNER, END & PULL POSTS	
TUBULAR - ROUND	2.875" O.D.
TUBULAR - SQUARE	2.50" SQ.
C-SECTION (ROLL-FORMED)	3.50" x 3.50"
LINE POSTS	
TUBULAR - ROUND	2.375" O.D.
H-SECTION	2.25" x 1.70"
C-SECTION (ROLL-FORMED)	2.25" x 1.70"
TOP, BOTTOM & BRACE RAILS	
TUBULAR - ROUND	1.66" O.D.
TUBULAR - SQUARE	1.50" SQ.
H-SECTION	1.625" x 1.50"
C-SECTION (ROLL-FORMED)	1.625" x 1.25"

- NOTE:**
- THE DRAWINGS HAVE BEEN PREPARED USING SOME DIMENSIONS AND ELEMENTS FROM A PARTICULAR EQUIPMENT MANUFACTURER. AS ALLOWED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR MAY IN FACT PROVIDE A DIFFERENT PIECE OF EQUIPMENT WHICH HAS DIFFERENT DIMENSIONS AND ELEMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GAINING APPROVAL OF THE DIFFERENT DIMENSIONS AND ELEMENTS PRIOR TO ANY CONSTRUCTION AND ALL CHANGES SHALL BE MADE AT THE CONTRACTOR'S EXPENSE. THE SALIENT FEATURES SHALL NOT BE COMPROMISED.



5/15/2017

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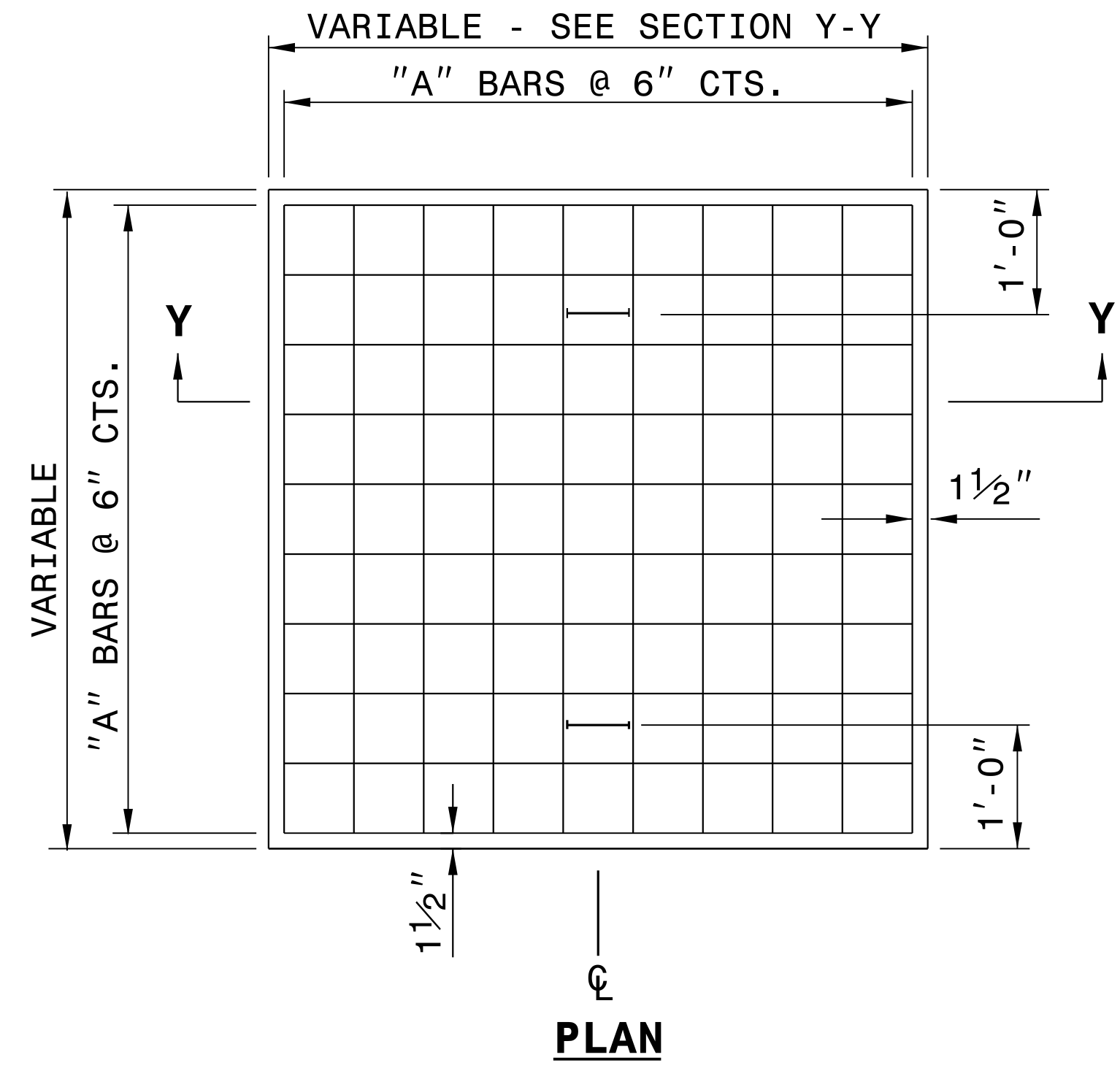
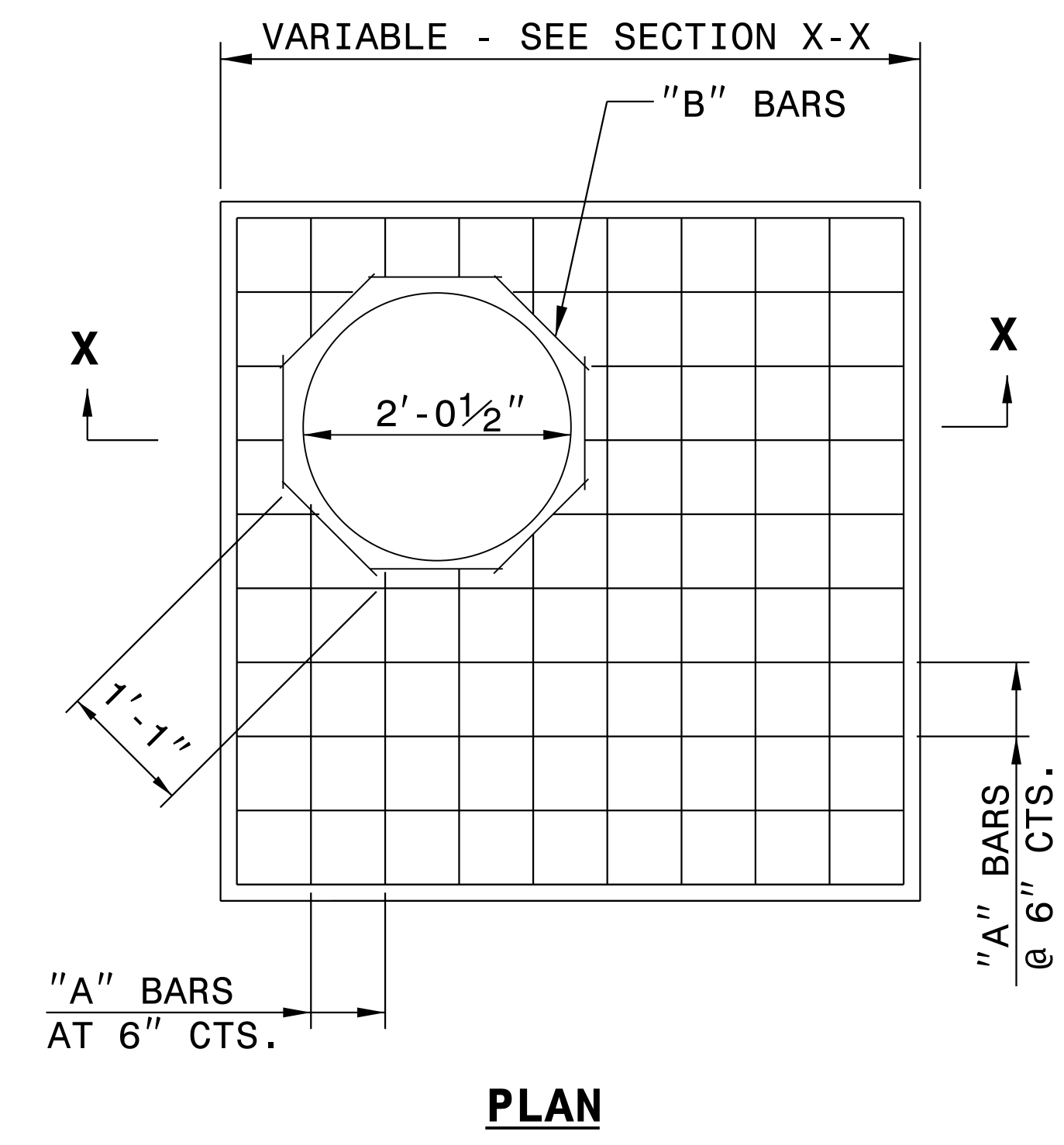
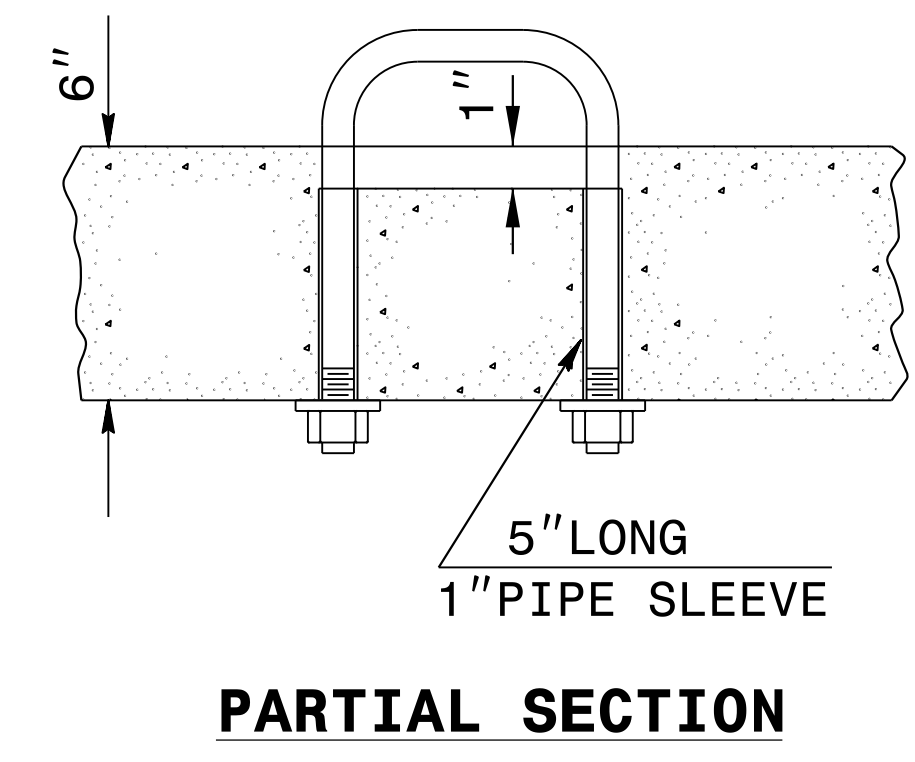
**CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN**
Office 919-707-6950 FAX 919-250-4119

**CHAIN LINK
SECURITY FENCE**

ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: rnbritt DATE: 03/22/16
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: jhowerton\Chain Link Fence Security Fence - Military.dgn

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NOT TO SCALE



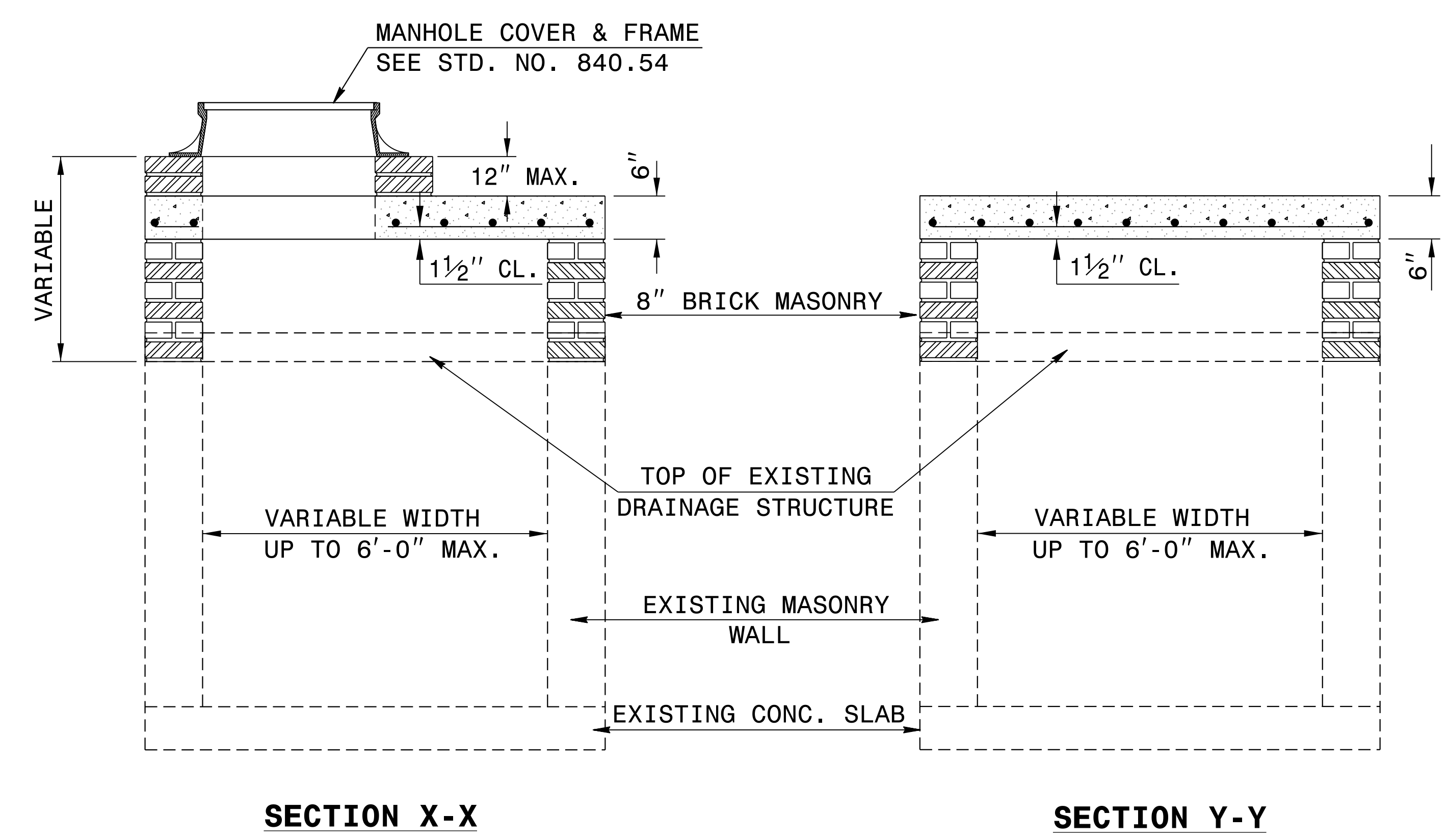
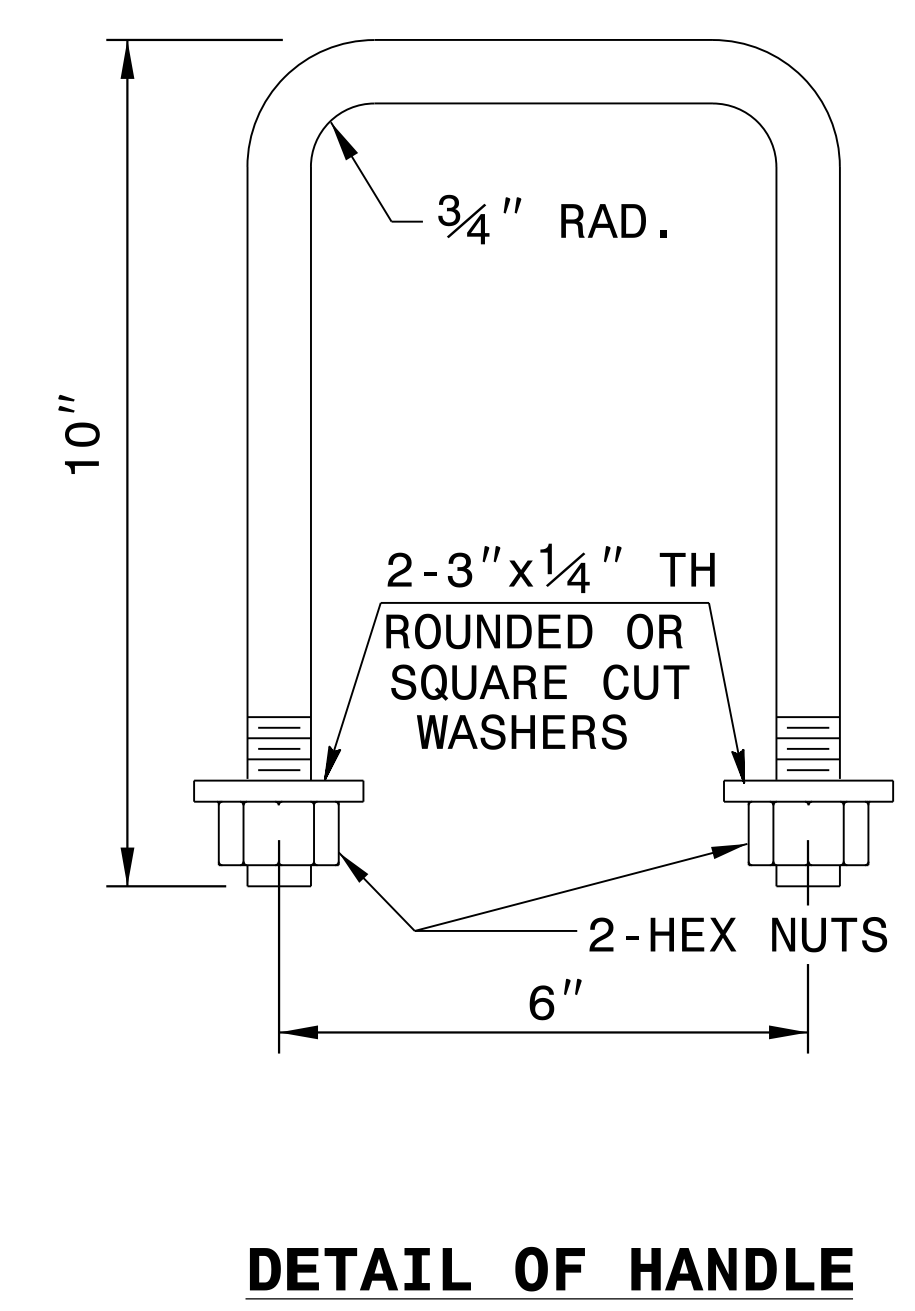
GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

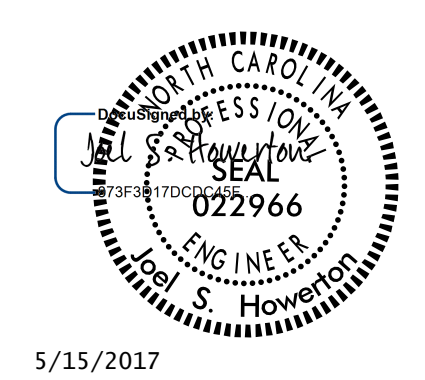
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

BILL OF MATERIALS				
REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *
MASONRY				CU YDS
TOP SLAB CONCRETE CLASS "B"				.4326 *
BRICK MASONRY PER FT HT (MIN)				.4111



*** NOTE:**
QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.

12-APR-2017 12:04 S:\Contracts\Contractors\Sigco\1 Details\vertical\usr\details\stand\boxtojb.dgn Jrower-ton AI CS0-212945



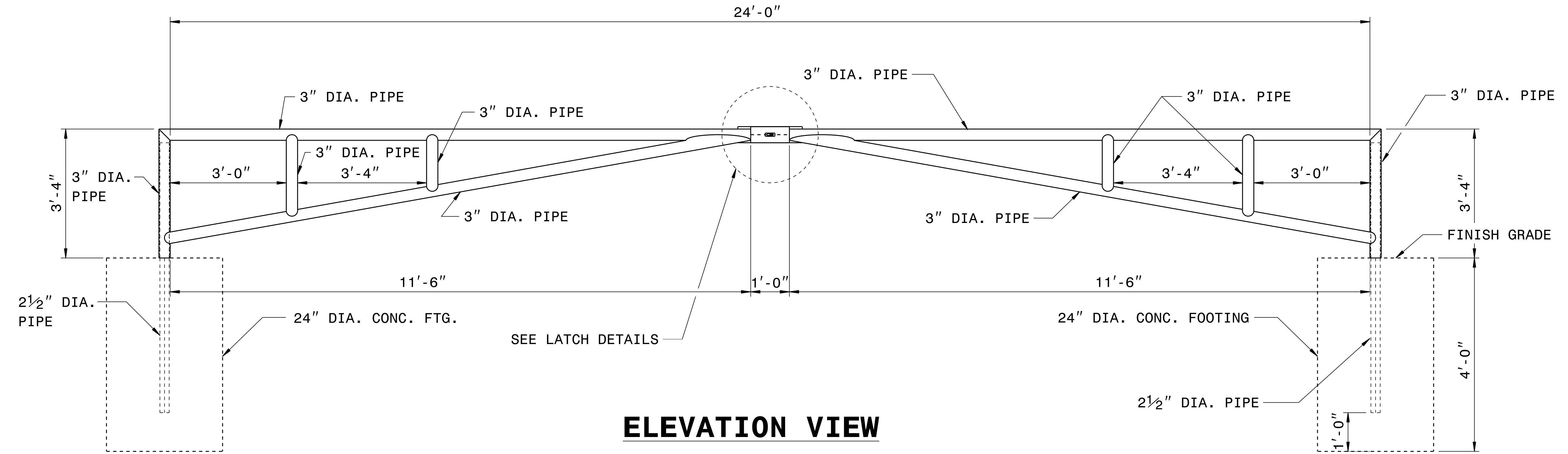
5/15/2017

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UNLESS ALL SIGNATURES COMPLETED

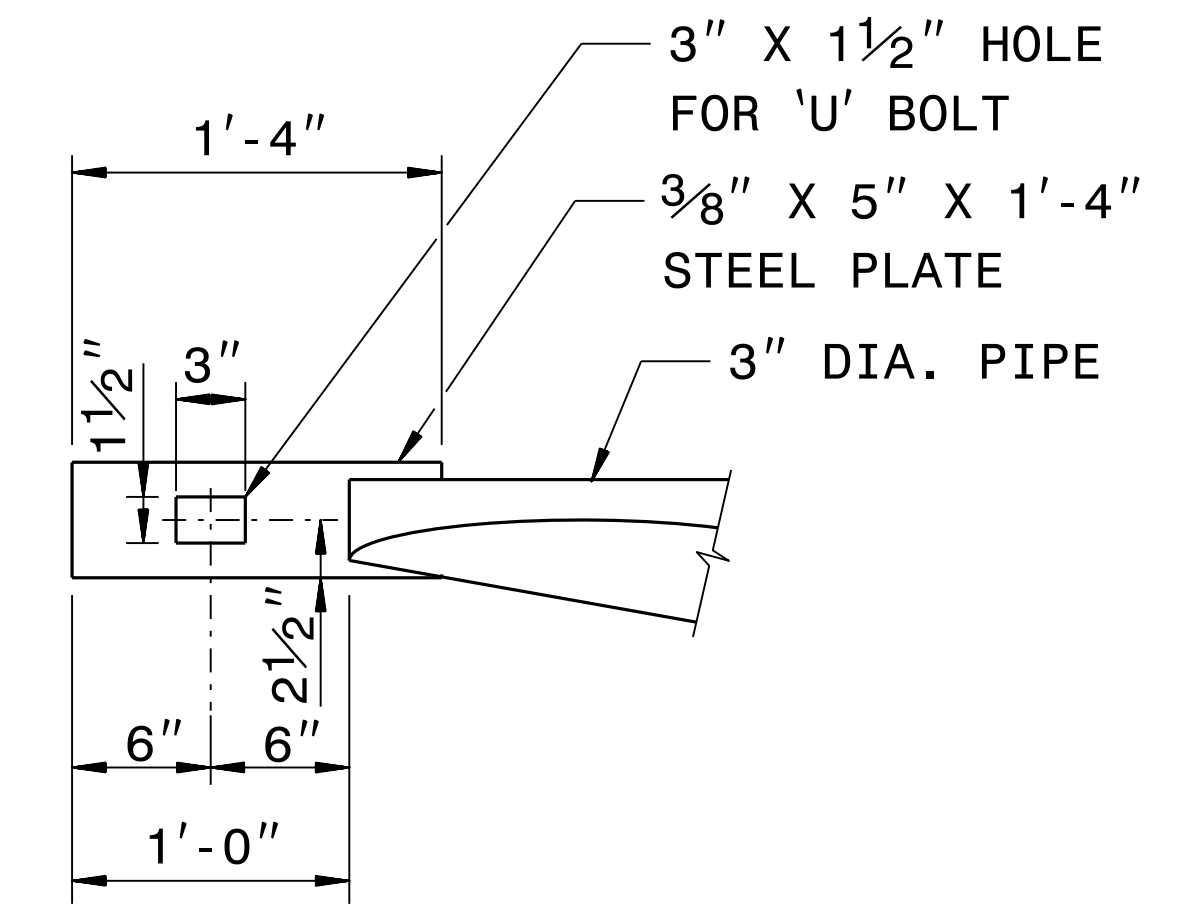
**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

**DETAIL TO CONVERT EXISTING
DI, CB, OTCB or GI
TO JUNCTION BOX
(MANHOLE OPTIONAL)**

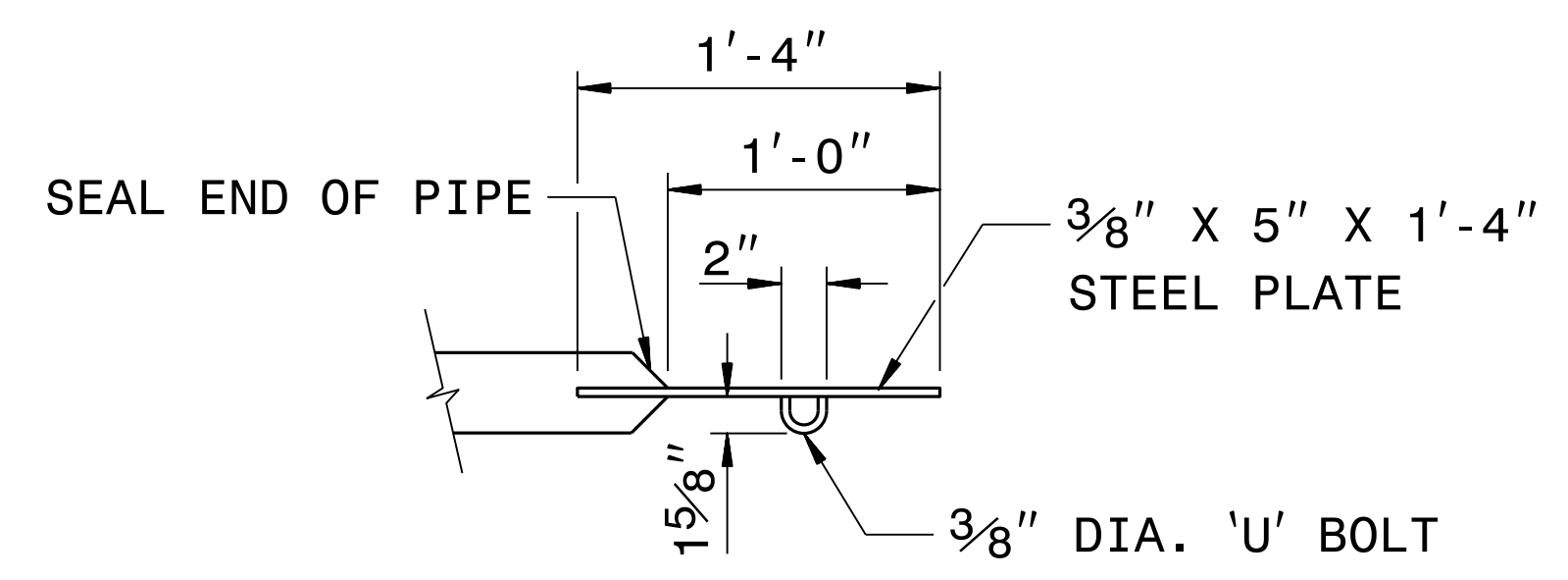
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ELEVATION VIEW

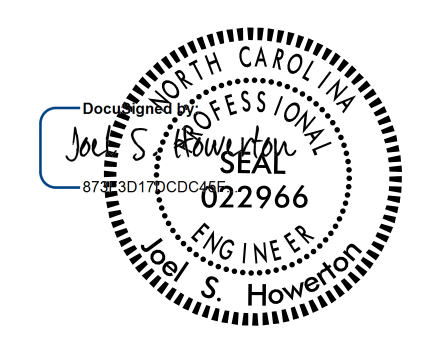


LATCH DETAILS



GENERAL NOTES:

- 1- USE ASTM A36 STEEL.
- 2- 1/4" FILLET WELDS ON ALL CONNECTIONS.
- 3- USE CLASS 'B' CONCRETE.
- 4- LOCATE GATE AS DIRECTED BY THE ENGINEER.
- 5- ALL PIPE SIZES ARE O.D.
- 6- LUBRICATE 2 1/2" DIA. PIPE BEFORE INSTALLING GATE TO INSURE SMOOTH OPERATION.



5/15/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

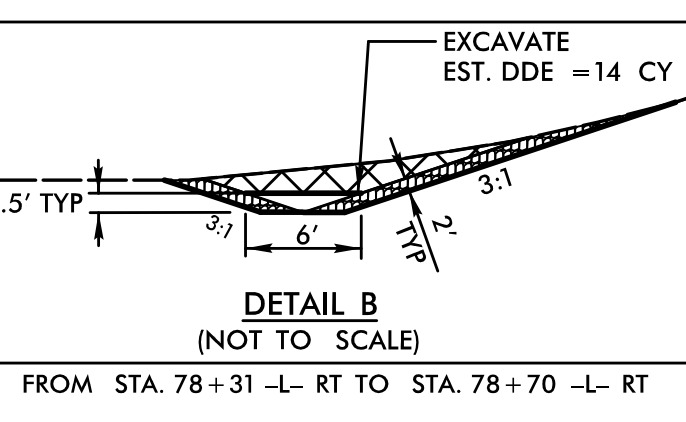
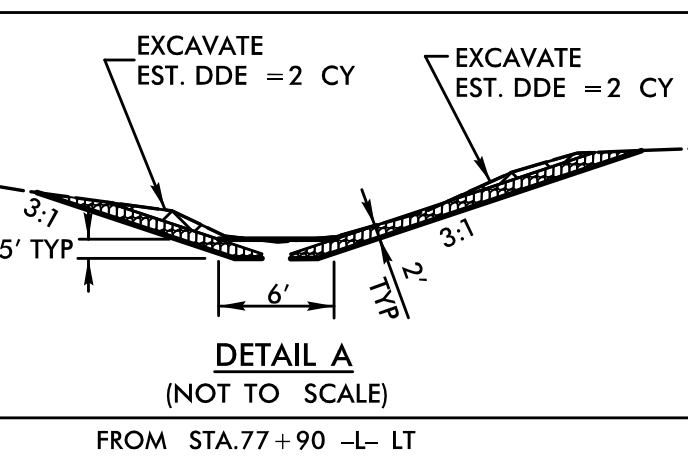
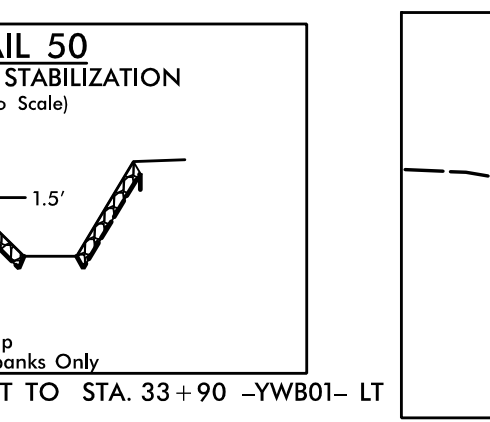
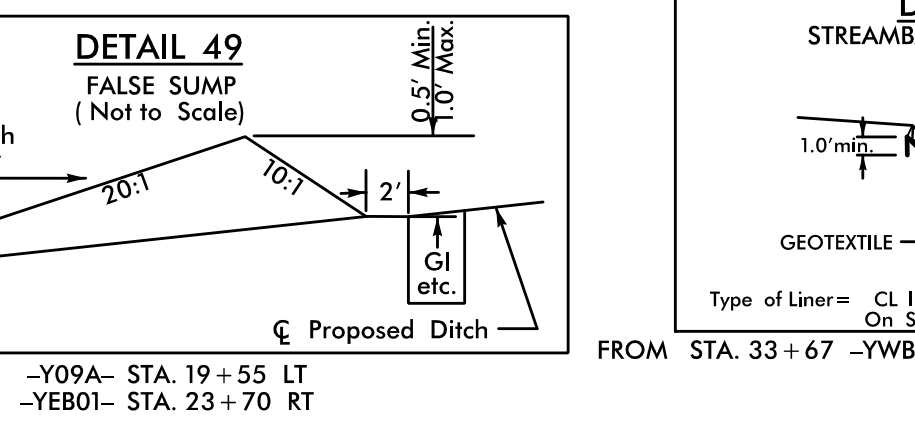
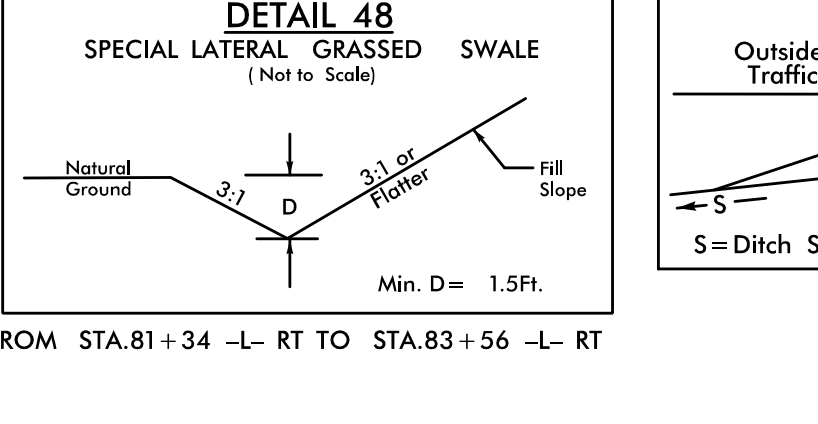
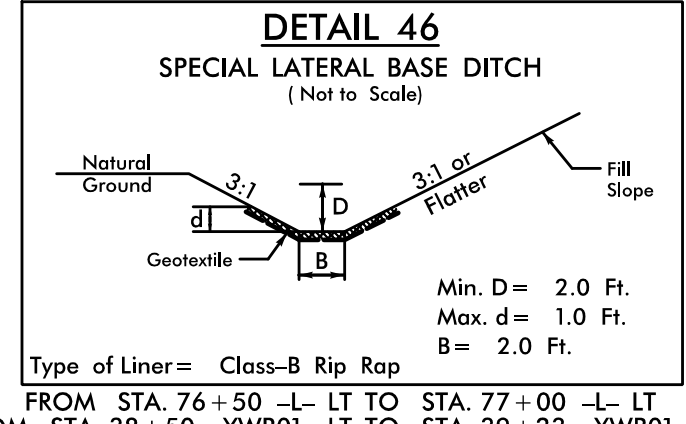
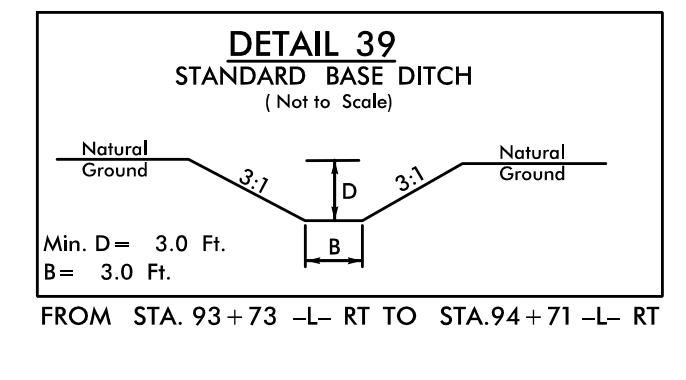
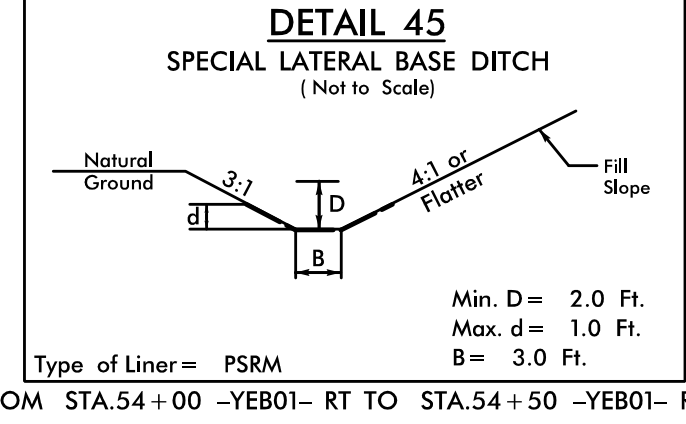
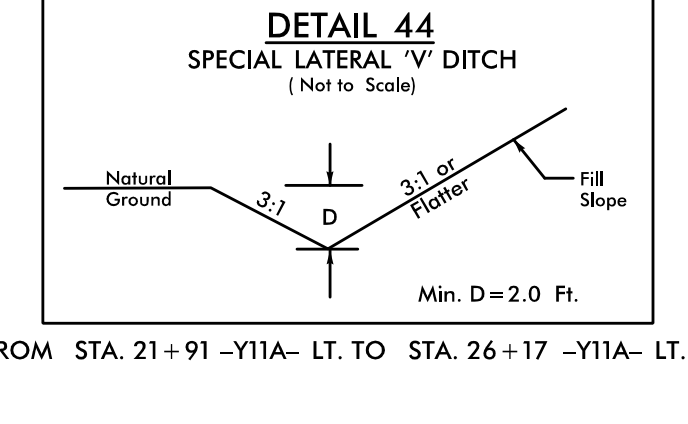
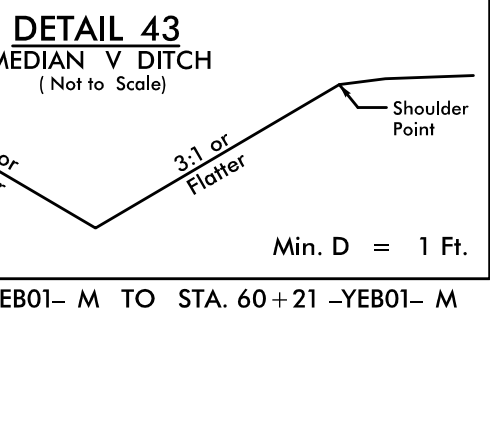
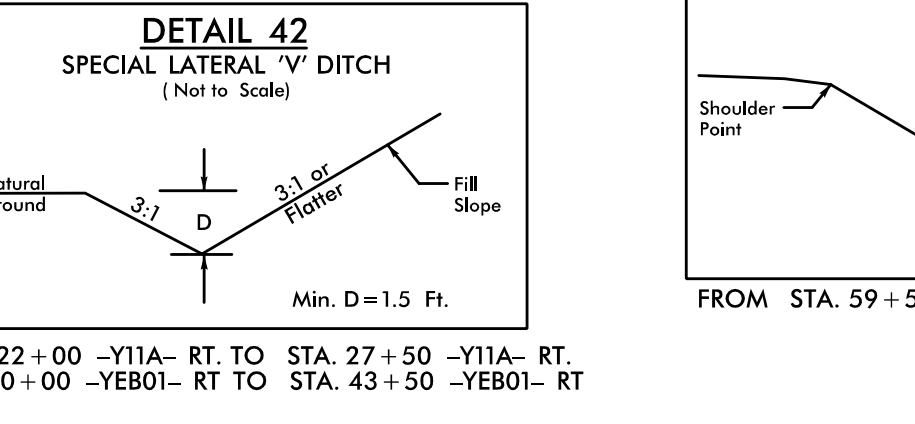
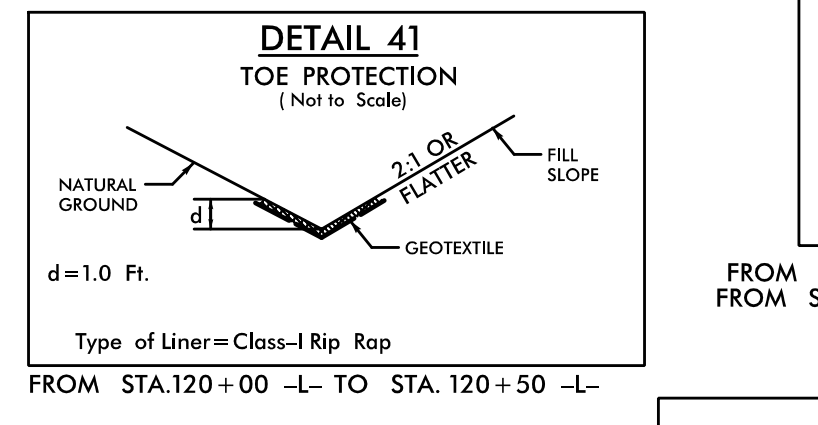
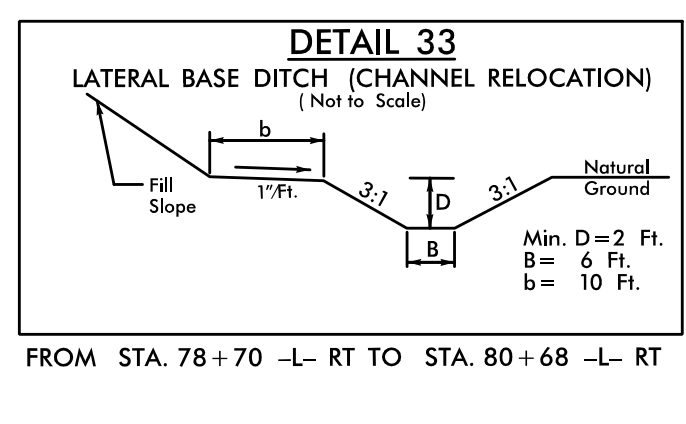
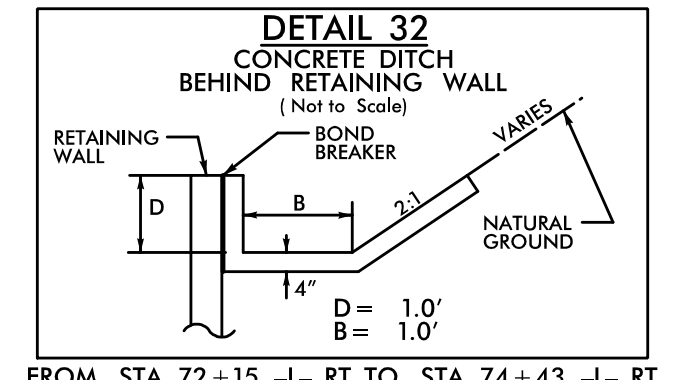
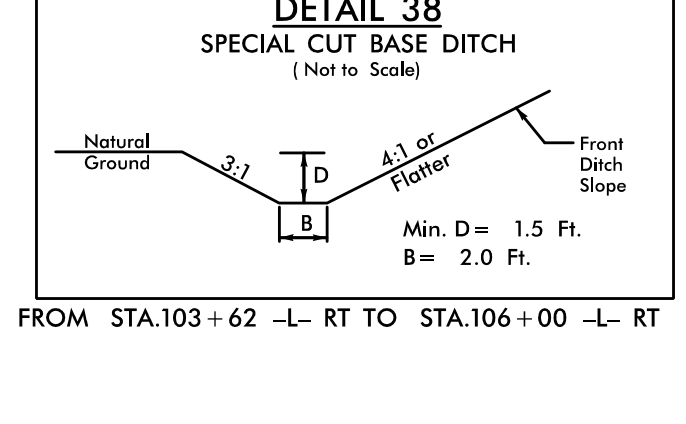
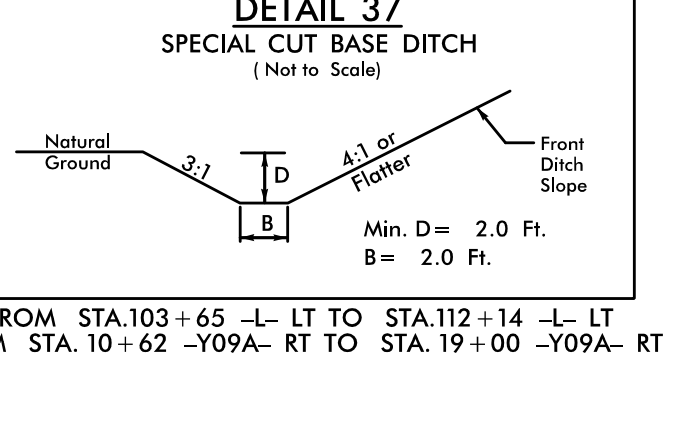
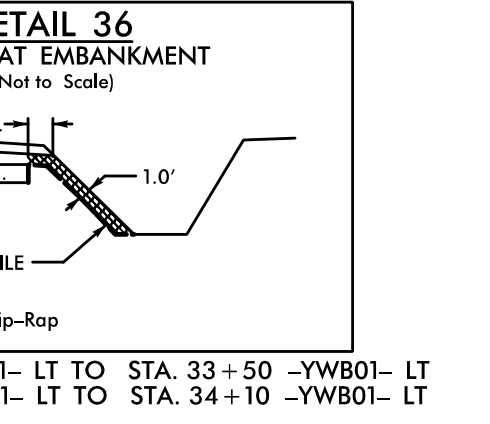
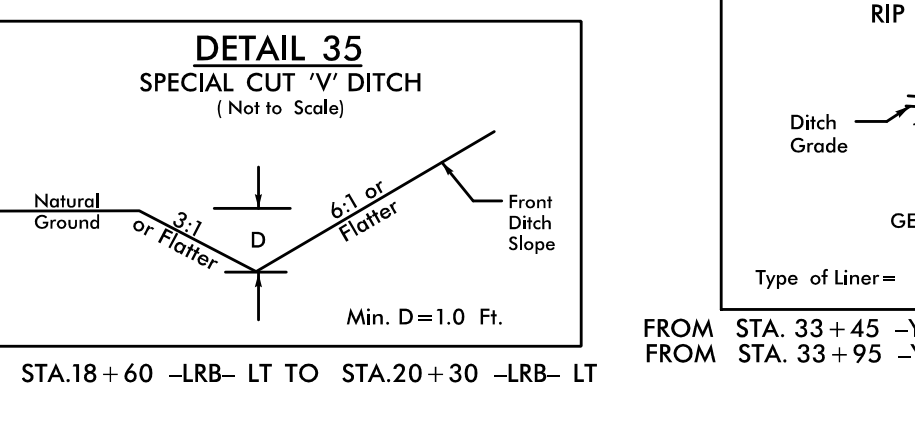
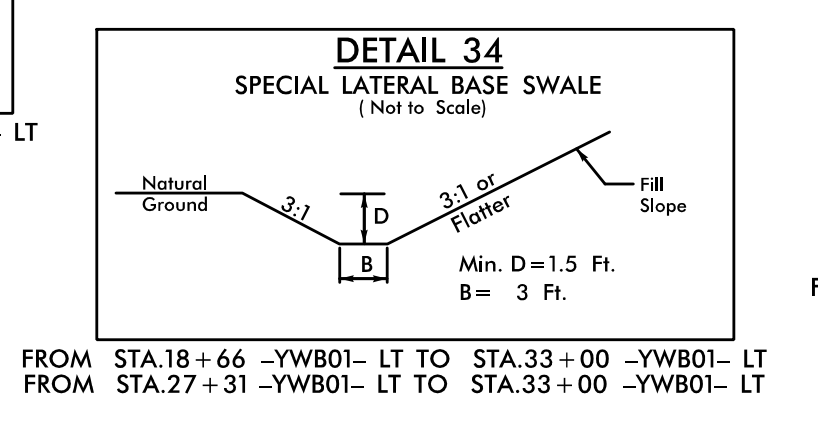
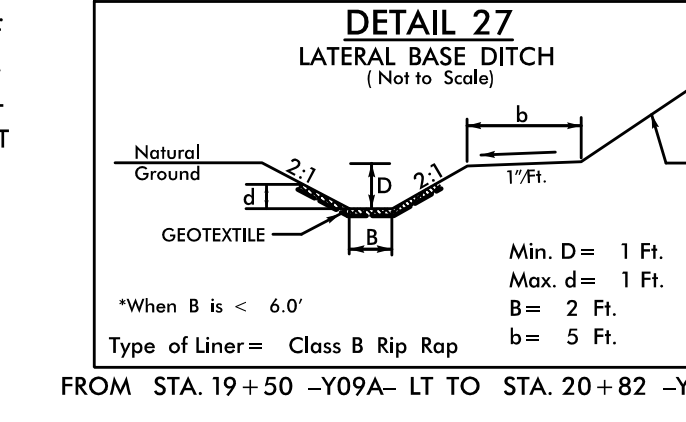
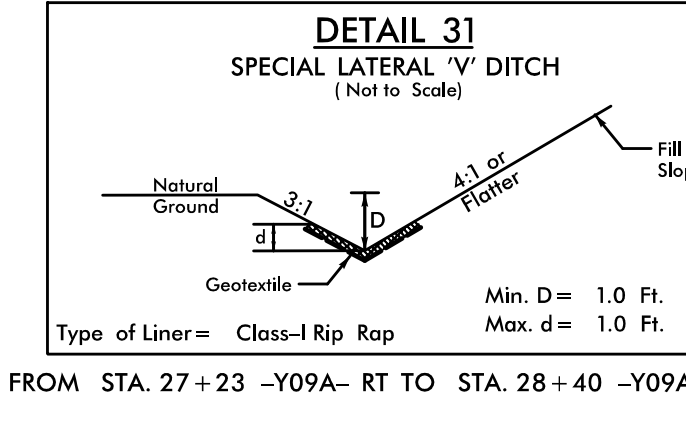
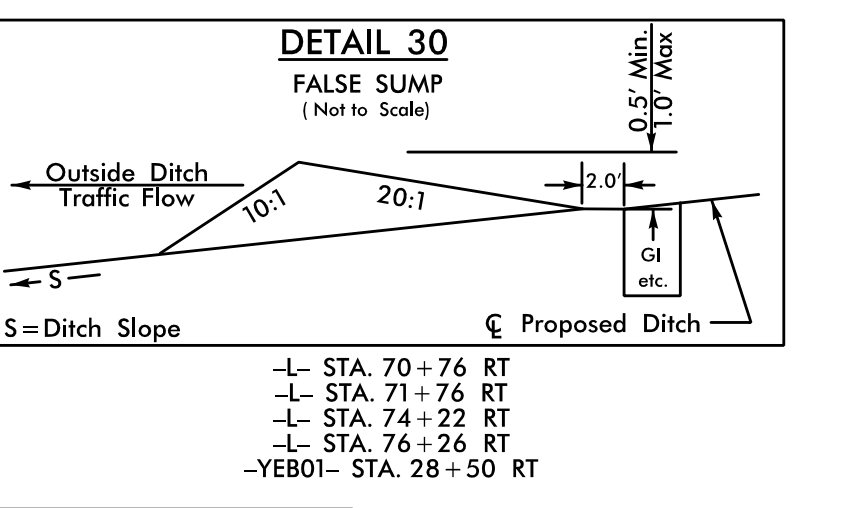
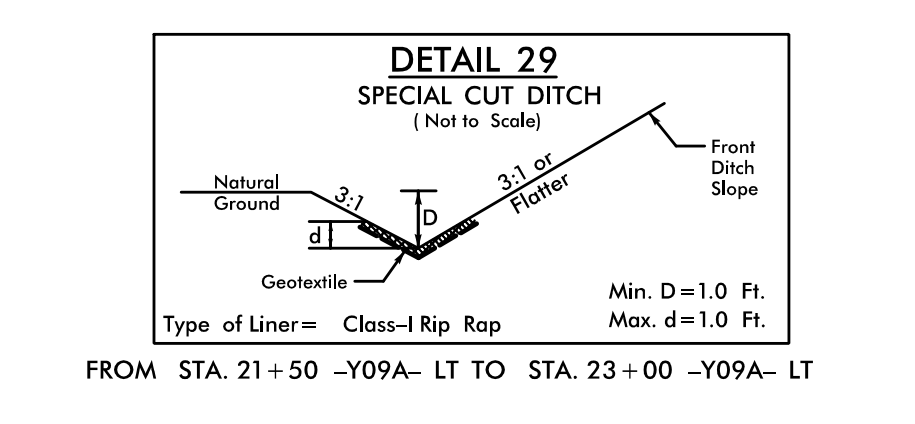
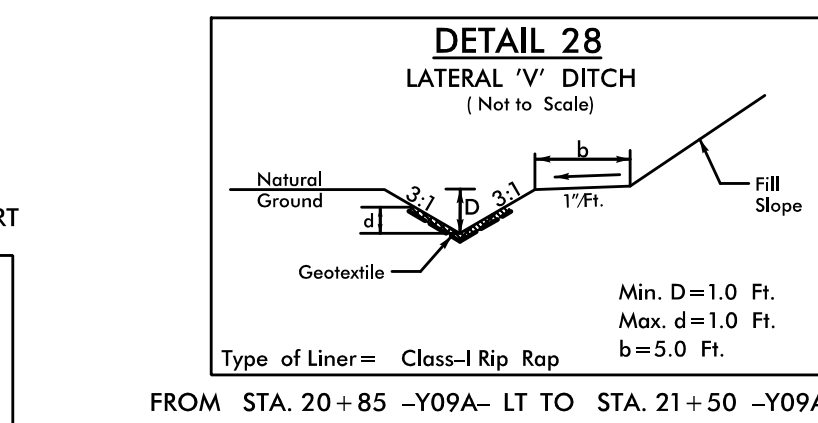
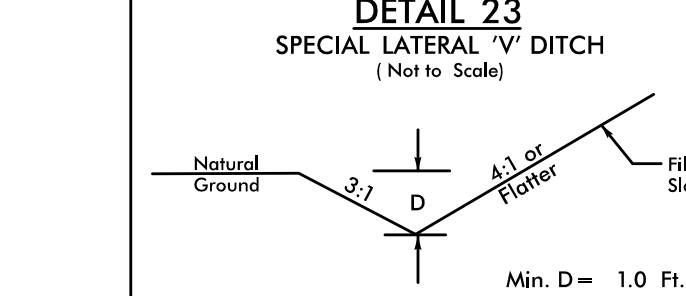
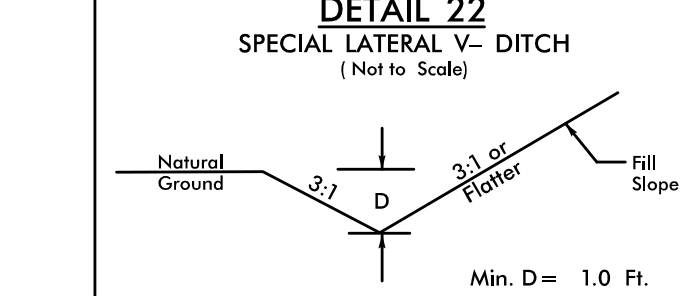
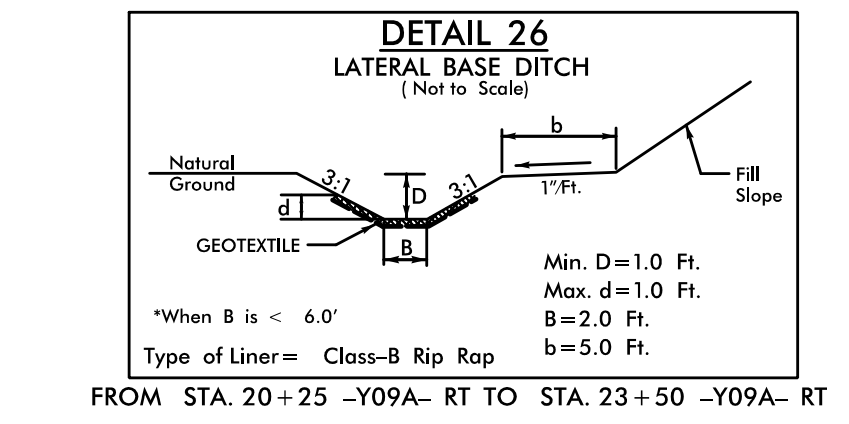
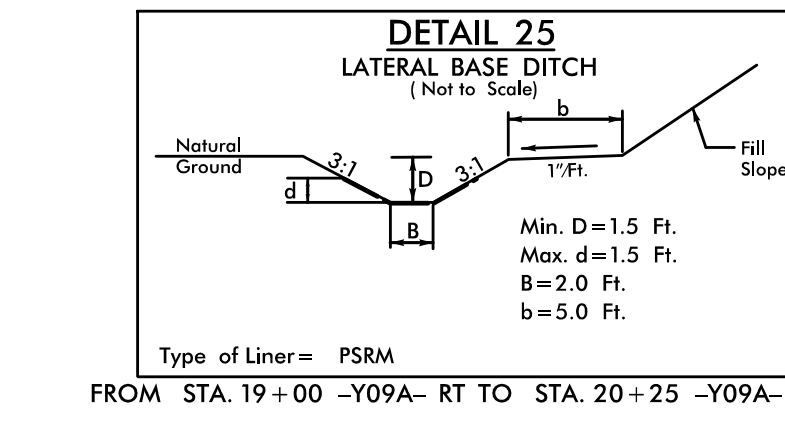
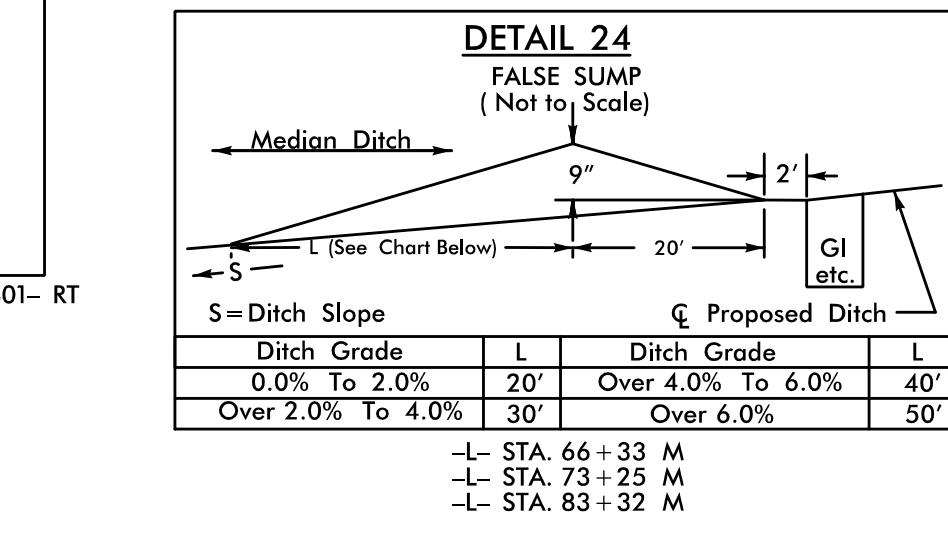
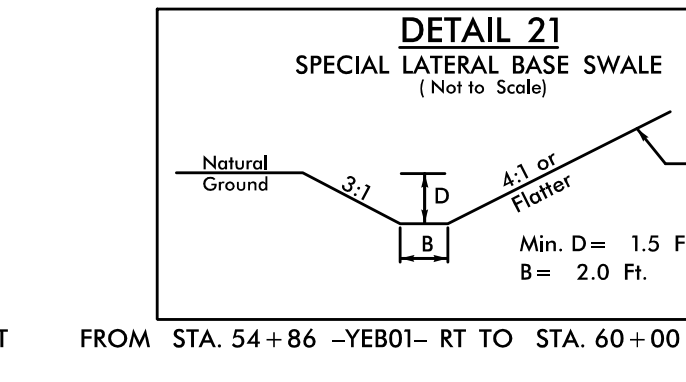
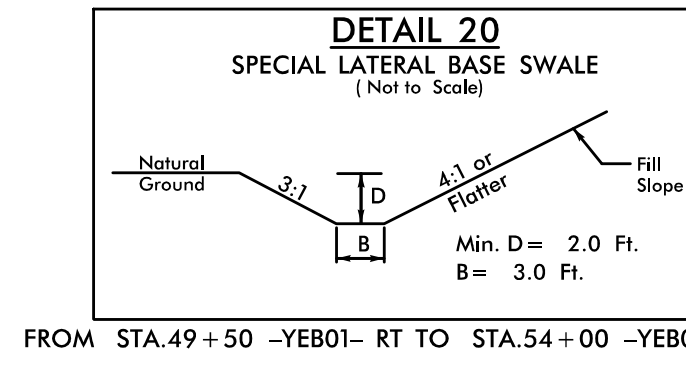
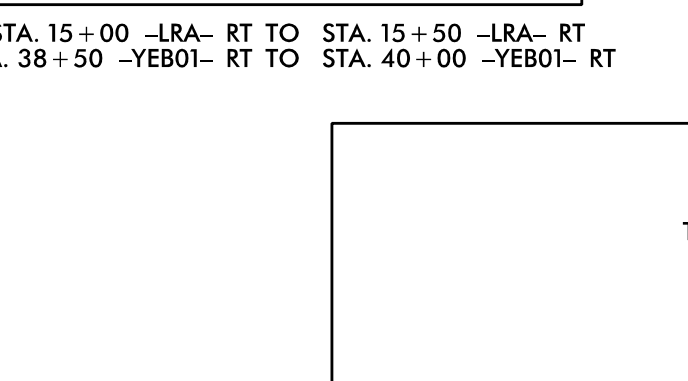
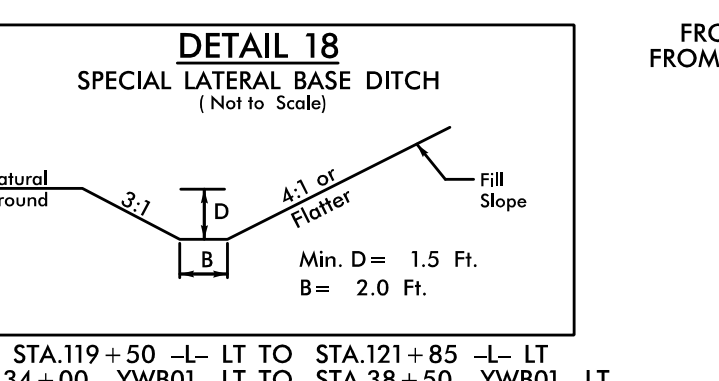
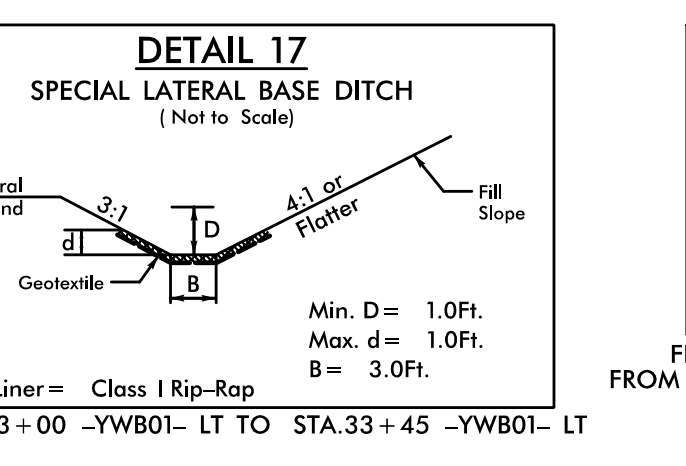
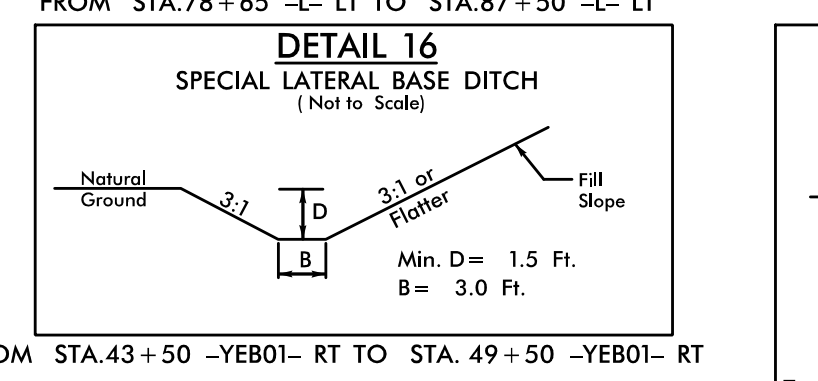
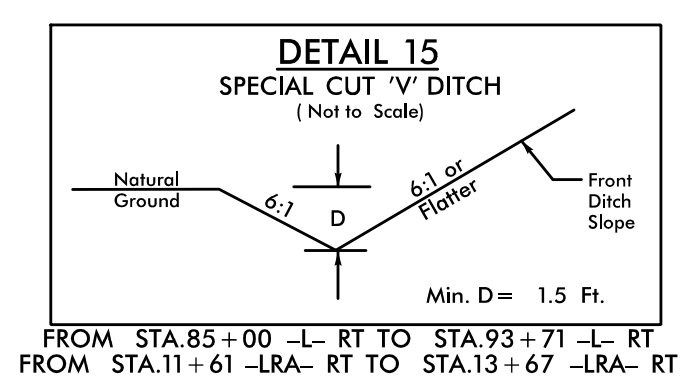
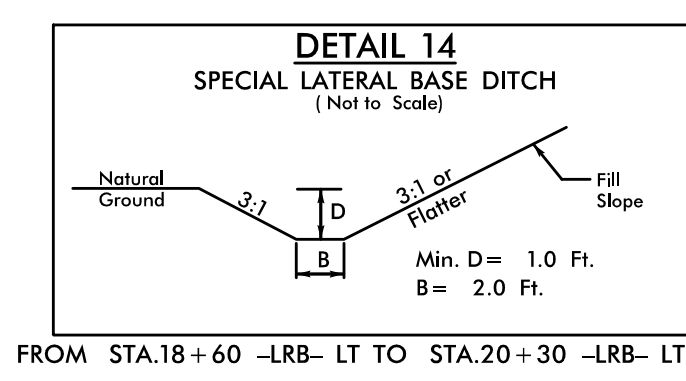
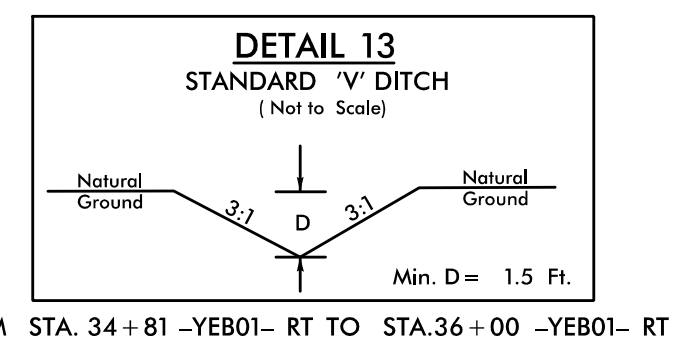
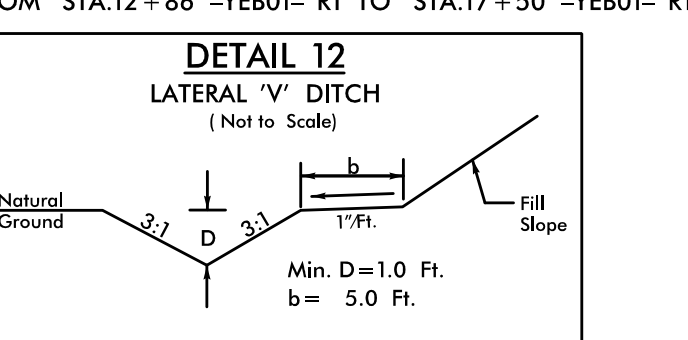
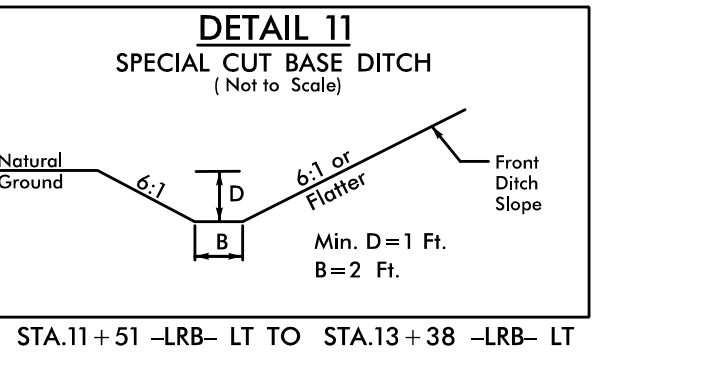
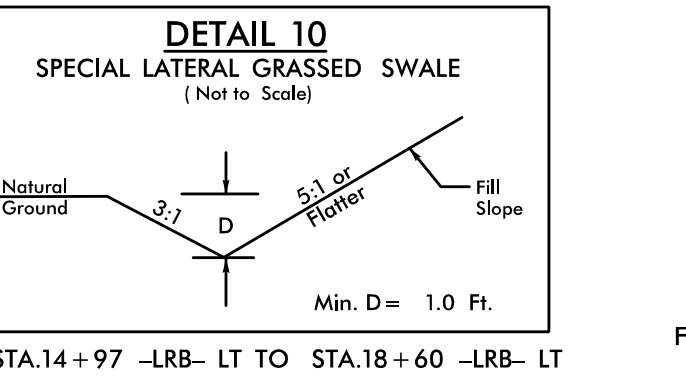
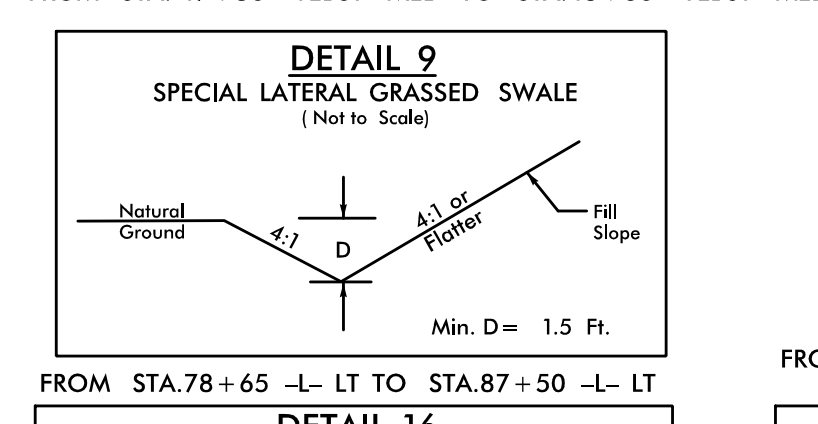
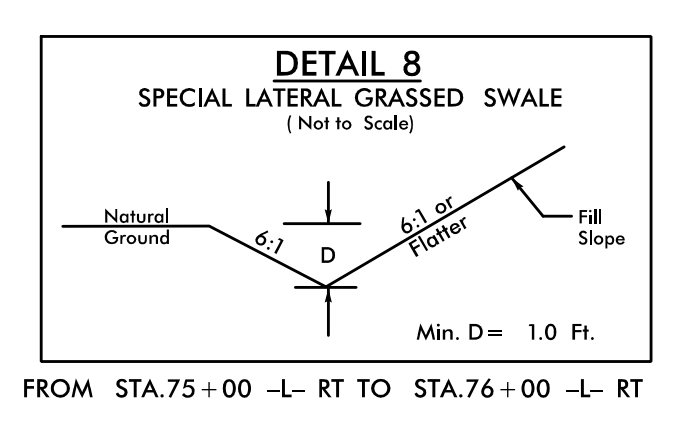
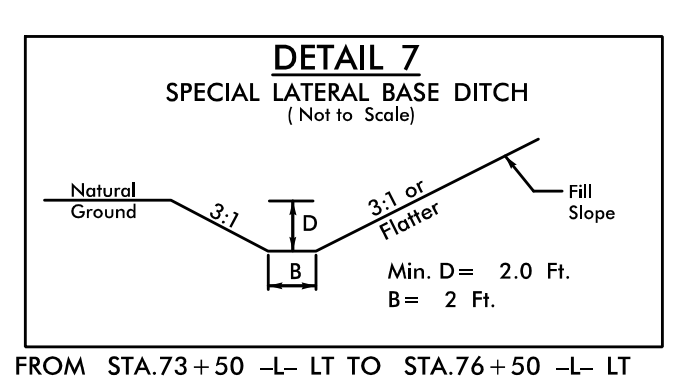
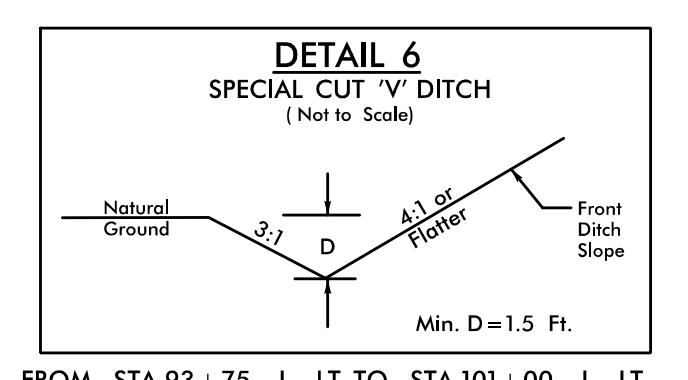
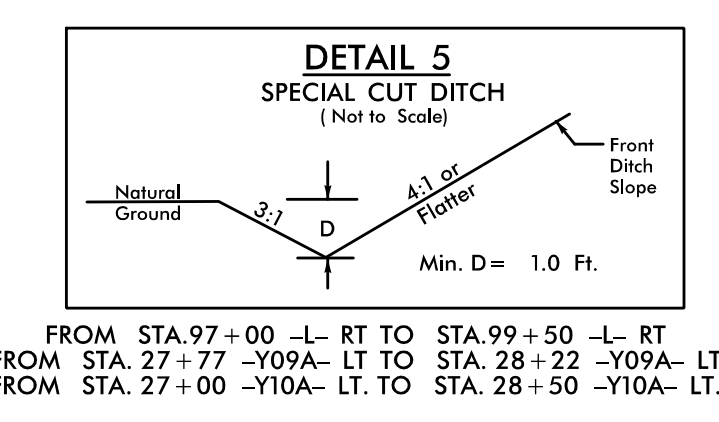
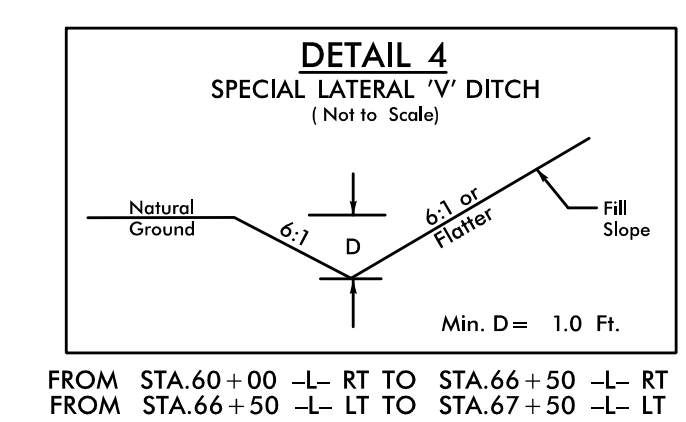
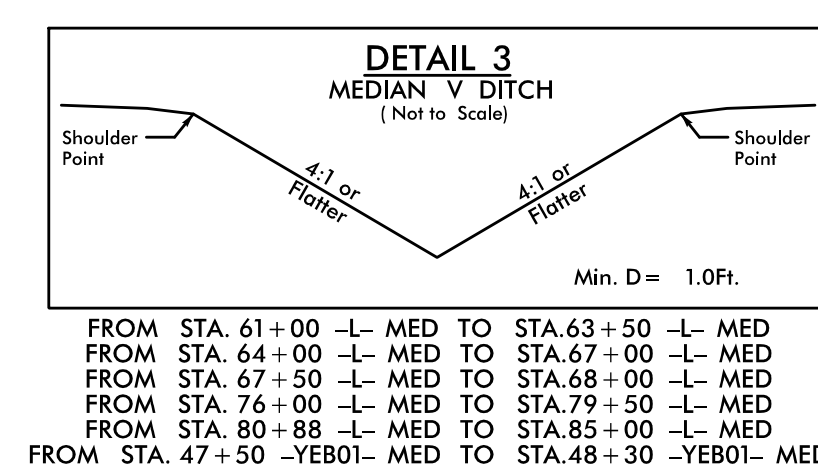
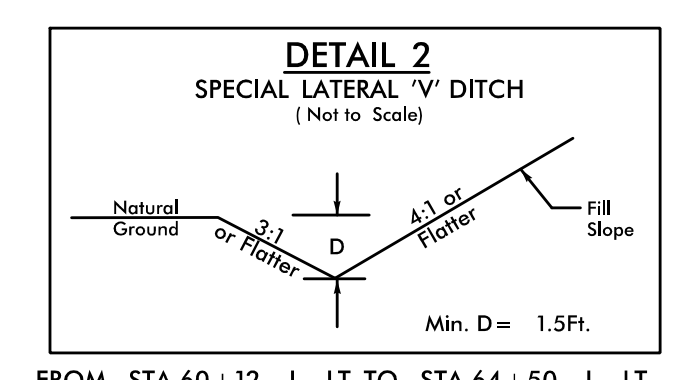
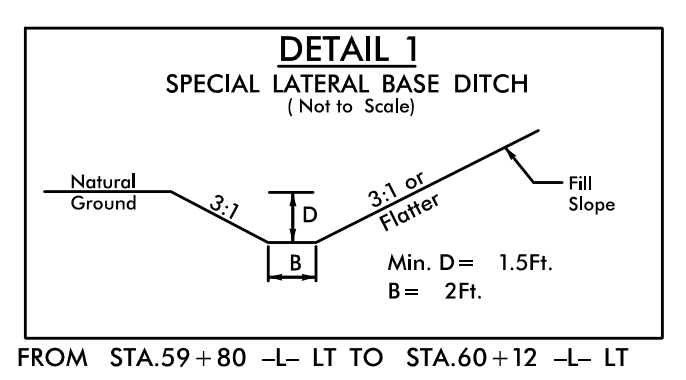
**CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN**
Office 919-707-6950 FAX 919-250-4119

DETAIL OF STEEL PIPE GATE

ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: rnbritt DATE: 09-08-05
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: details/nbritt/misc/steelpipegate.dgn

I:\MAY-2017\14146 S:\Contracts\Contract Details\nbritt\english\misc\steel pipe gate.dgn jhower-ton AT USD-292595

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



REVISIONS

DATE/TIME: 9/09/09 AM
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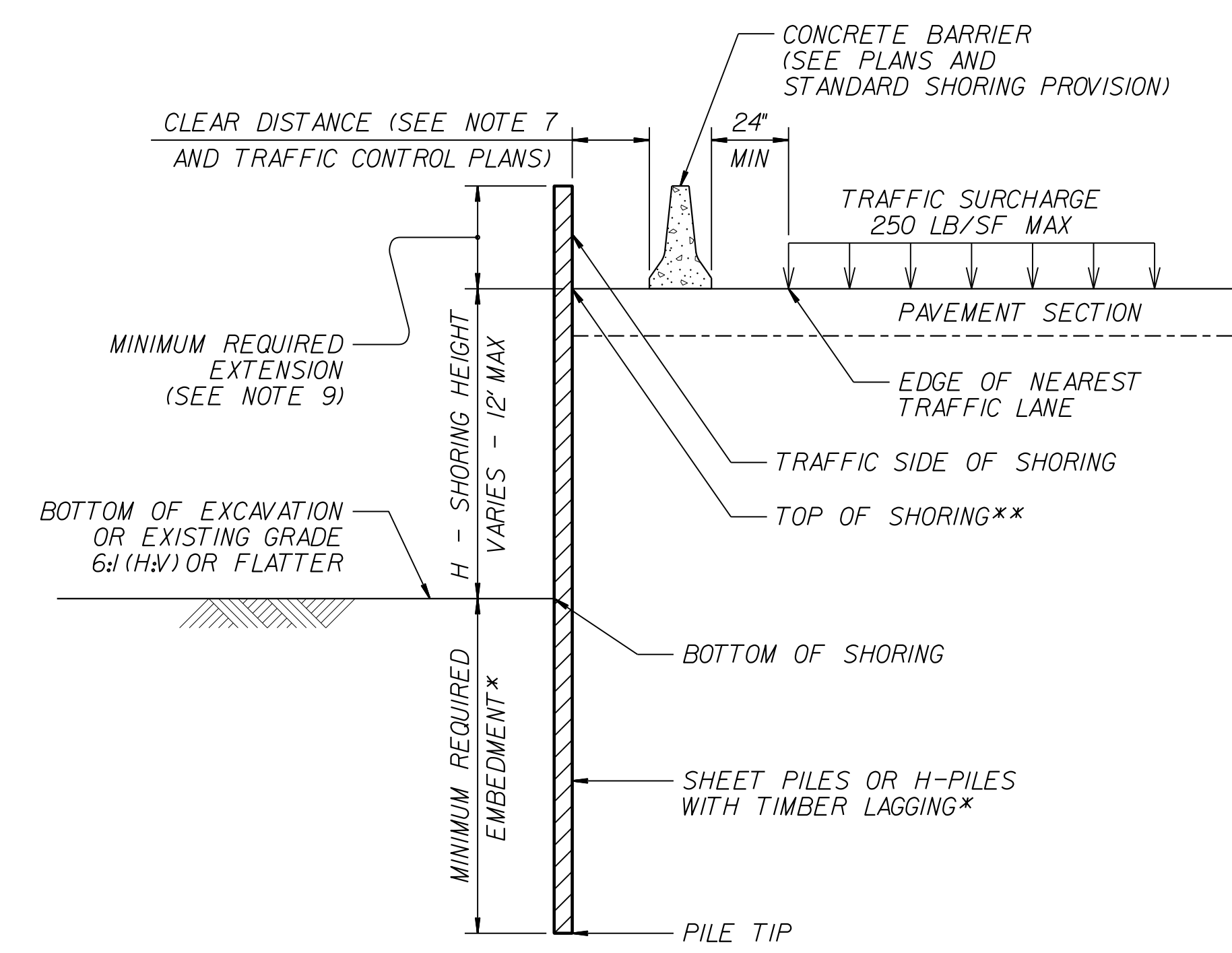
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)		
				HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
12	22.5	33.0	--	--	--	22.0	33.0	--	--	21.5	
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5	

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

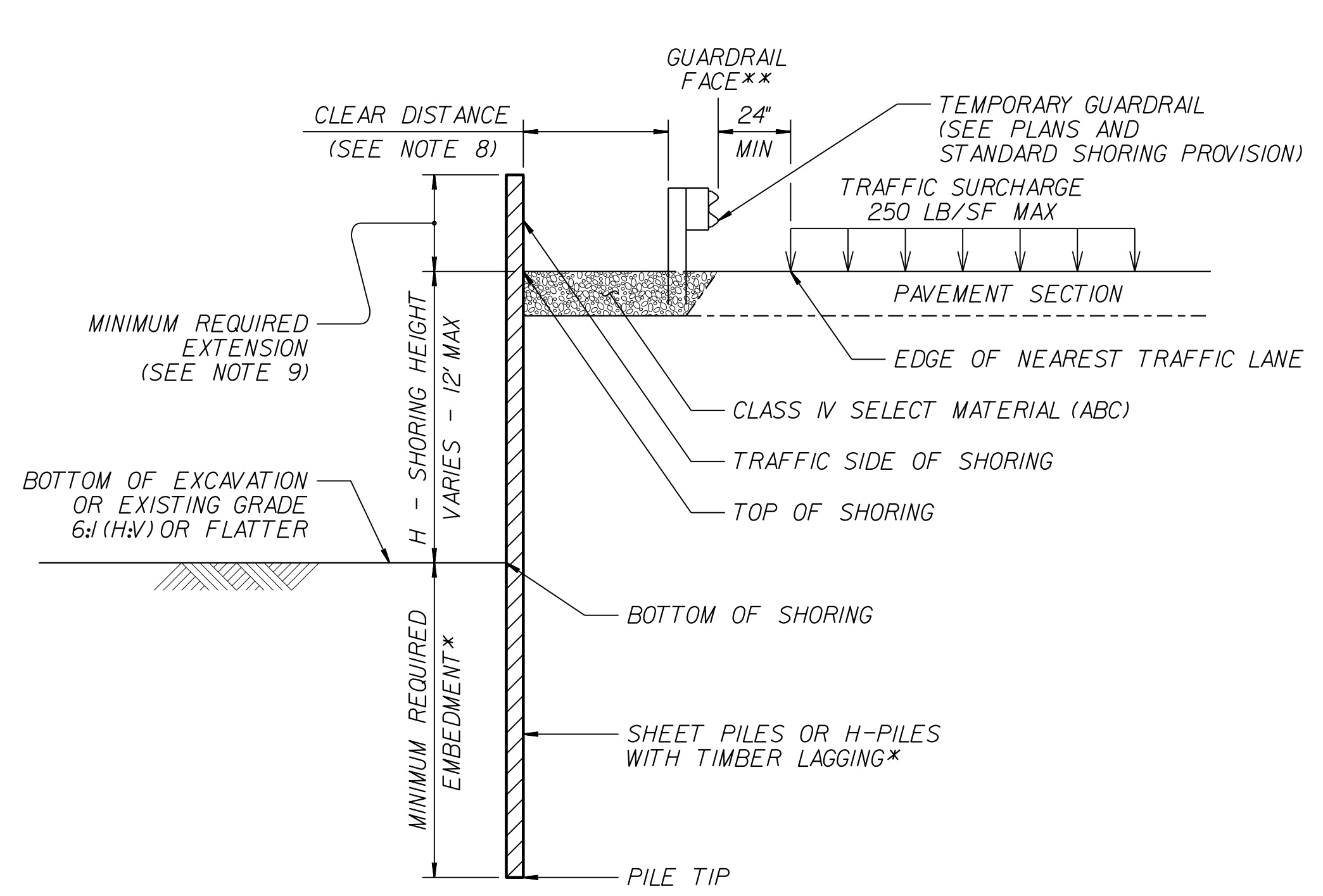
*DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".

NOTES:

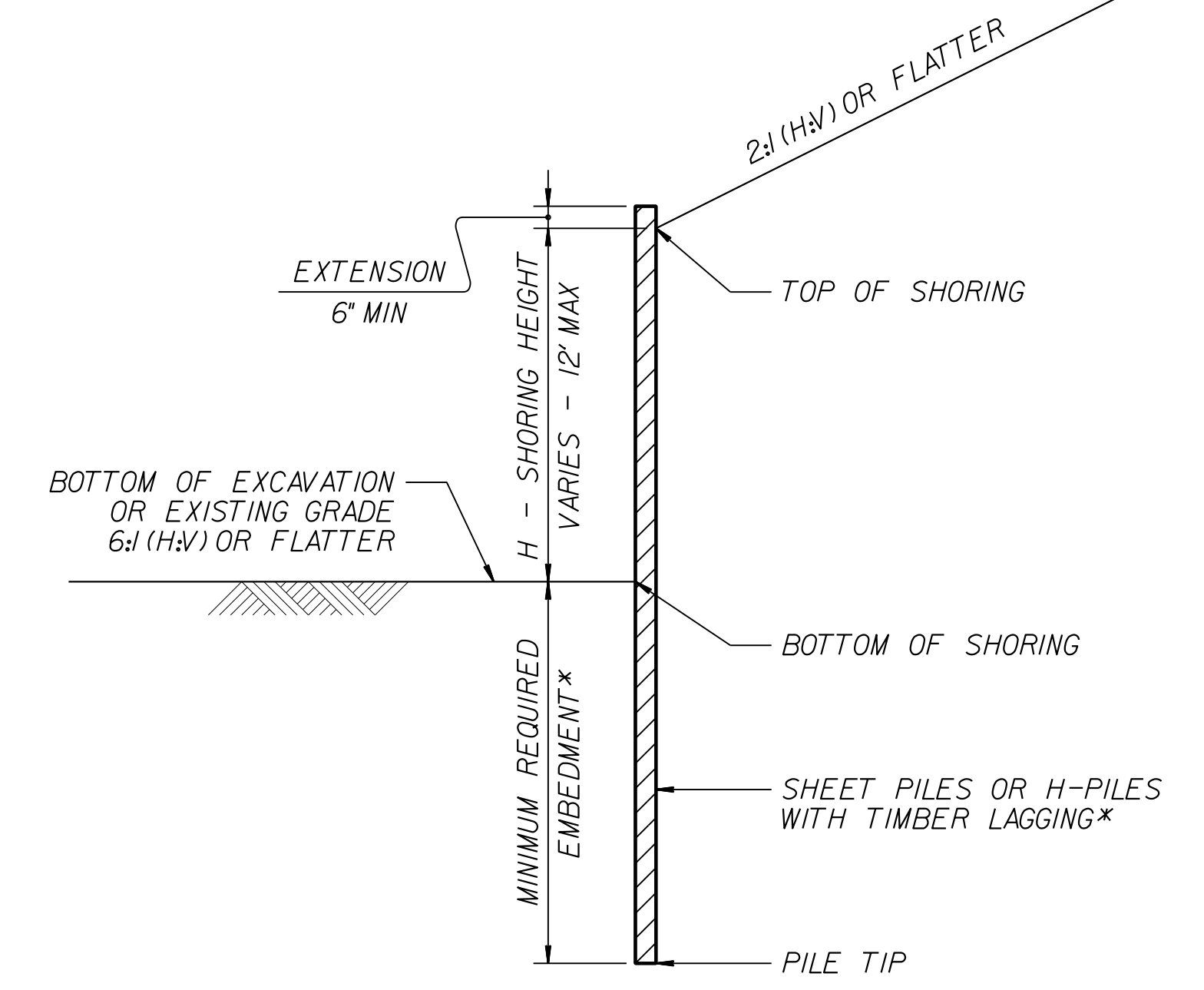
- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ LB/CF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ LB/SF
- DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EXTENSION IS 6" FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
- SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM:
connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
- CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.



CONCRETE BARRIER
**TOP OF SHORING =
EDGE OF PAVEMENT



TEMPORARY GUARDRAIL
**GUARDRAIL FACE =
EDGE OF PAVEMENT



STANDARD TEMPORARY SHORING
(SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING
(SURCHARGE CASE)
*SEE TABLE ABOVE.



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**GEOTECHNICAL
ENGINEERING UNIT**

STANDARD DETAIL NO. 1801.01

STANDARD
TEMPORARY SHORING

16121P-47034

COMPUTED BY: MDB DATE: 04/27/2017
CHECKED BY: WTS DATE: 04/19/2017

PROJECT NO. R-5516 SHEET NO. 3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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, Side Drain Pipe, C. A. A. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GATE TYPE, FLOWABLE FILL, CONCRETE COLLARS, CONCRETE AND BRICK PIPE PLUG, PIPE REMOVAL, and REMARKS. Includes a SHEET TOTALS row at the bottom.

16:12/P-47/034

COMPUTED BY: MDB DATE: 04/27/2017
CHECKED BY: WTS DATE: 04/19/2017

PROJECT NO. SHEET NO.
R-5516 3D-2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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, Side Drain Pipe, C. A. A. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes a SHEET TOTALS row at the bottom.

16:12/P-47/034

COMPUTED BY: MDB DATE: 04/27/2017
CHECKED BY: WTS DATE: 04/19/2017

PROJECT NO. R-5516 SHEET NO. 3D-3

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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 for Line & Station, Offset, Structure Number, Invert Elevation, Pipe Size, Material (R.C. Pipe Class I-IV, Endwalls, etc.), Quantities for Drainage Structures, Frame/Grates/Hood, Concrete/Transitional Section, and Remarks. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing terms like C.A.A., C.B., C.S., D.I., G.D.I., H.D.P.E., J.B., M.H., N.S., P.V.C., R.C., T.B.D.I., T.B.J.B., W.S. and their corresponding descriptions.

16:12.P.4/27/16

COMPUTED BY: MDB DATE: 04/27/2017
CHECKED BY: WTS DATE: 04/19/2017

PROJECT NO. R-5516 SHEET NO. 3D-6

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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, Pipe Type (Side Drain, C.A.A., R.C. Class III/IV), Quantities for Drainage Structures, Frame/Grates/Hood, and Remarks. Includes sub-columns for pipe sizes (54, 60, 66, 72, 78, 84) and various material specifications.

SHEET TOTALS and PROJECT TOTALS summary rows.

ABBREVIATIONS table listing codes like C.A.A., C.B., C.S., etc. and their corresponding material descriptions.

**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
TOTAL SUBSURFACE DRAINAGE:				SD	0
CONTINGENCY:				SD	500
TOTAL LF:					500

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

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
			ASU		800	1600	2400		
			AST	3"					6750
			ASU	12"	2500	4800	7500		
L	61+35	120+75			7220	13900			
TOTAL CY/TONS/SY:					10520	20300	9900		6750
SAY:									
GRAND TOTAL:					10520	20300	9900		6750

*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

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 UNLESS ALL SIGNATURES COMPLETED

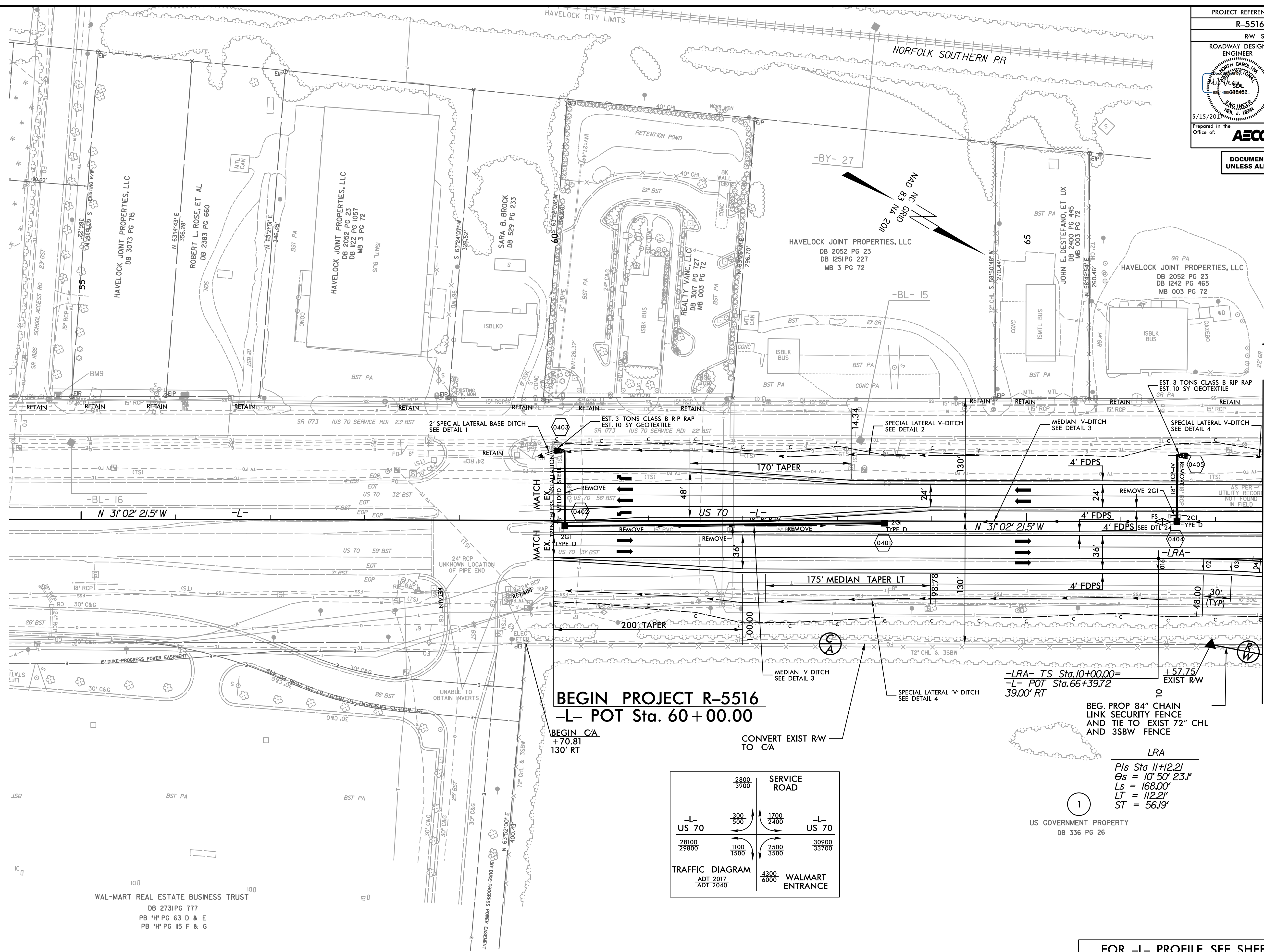
PARCEL INDEX

PARCEL NO.	PLAN SHEET NO.	PROPERTY OWNER NAME
1	4, 5, 10, 11	US GOVERNMENT PROPERTY
2	5, 6, 7, 14	CHERRY BRANCH, LTD
3	5	ERNIE L. LAMBERT
4	5	JAMES L. MOREIRA, et ux
5	5	TERRY M. YOUNG
6	5, 6, 7	CHERRY BRANCH, LTD
7	7	CHERRY BRANCH, LTD
8	8	4-GOVIND, LLC
9	8	W&B ENTERPRISES
10	8, 12	CITY OF HAVELOCK
11	8, 12	WELLS WAYSIDE FURNITURE CO., INC
12	10	NORA BARRERAS AND EUSEVIA GAMEZ
13	10	GREEN CHAPEL MISSIONARY BAPTIST CHURCH
14	10, 11	CRYSTAL S. COLEMAN
15	11	FOUNTAIN OF LIFE MINISTRIES
16	12	CITY OF HAVELOCK
17	12, 14	ANDREW HICKMAN, HEIRS
18	12, 13, 14	CITY OF HAVELOCK
19	13	JACKSON HOLDINGS GROUP, LLC
20	13	CRAVEN COUNTY BOARD OF EDUCATION
21	14	RICHARD D. HILL, et ux
22	14	CITY OF HAVELOCK

PROJECT REFERENCE NO. R-5516	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER <i>[Signature]</i> 5/15/2011	HYDRAULICS ENGINEER <i>[Signature]</i> 5/15/2011
Prepared in the Office of: AECOM NC FIRM LICENSE No F-0342 70 Corporate Center Drive, Suite 415 Raleigh, NC 27603 (919) 854-6200 (F) (919) 854-6259(FAX)	

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REVISIONS



MATCHLINE -L- STA 67 + 50.00
SEE PLAN SHEET 5

BEGIN PROJECT R-5516
-L- POT Sta. 60+00.00

BEGIN CA
+ 70.81
130' RT

CONVERT EXIST RW
TO CA

-LRA- TS Sta. 10+00.00 =
-L- POT Sta. 66+39.72
39.00' RT

BEG. PROP 84" CHAIN
LINK SECURITY FENCE
AND TIE TO EXIST 72" CHL
AND 35BW FENCE

LRA
Pls Sta 11+12.21
Os = 10' 50" 23.1"
Ls = 168.00'
LT = 112.21'
ST = 56.19'

US GOVERNMENT PROPERTY
DB 336 PG 26

	2800 3900	SERVICE ROAD	
-L- US 70	300 500	1700 2400	-L- US 70
28100 29800	1100 1500	2500 3500	30900 33700
TRAFFIC DIAGRAM ADI 2017 ADT 2040		4300 6000	WALMART ENTRANCE

WAL-MART REAL ESTATE BUSINESS TRUST
DB 2731 PG 777
PB 'H' PG 63 D & E
PB 'H' PG 115 F & G

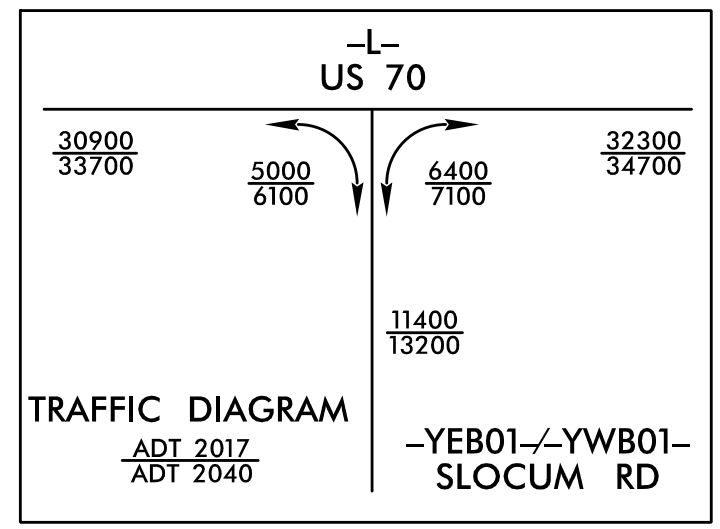
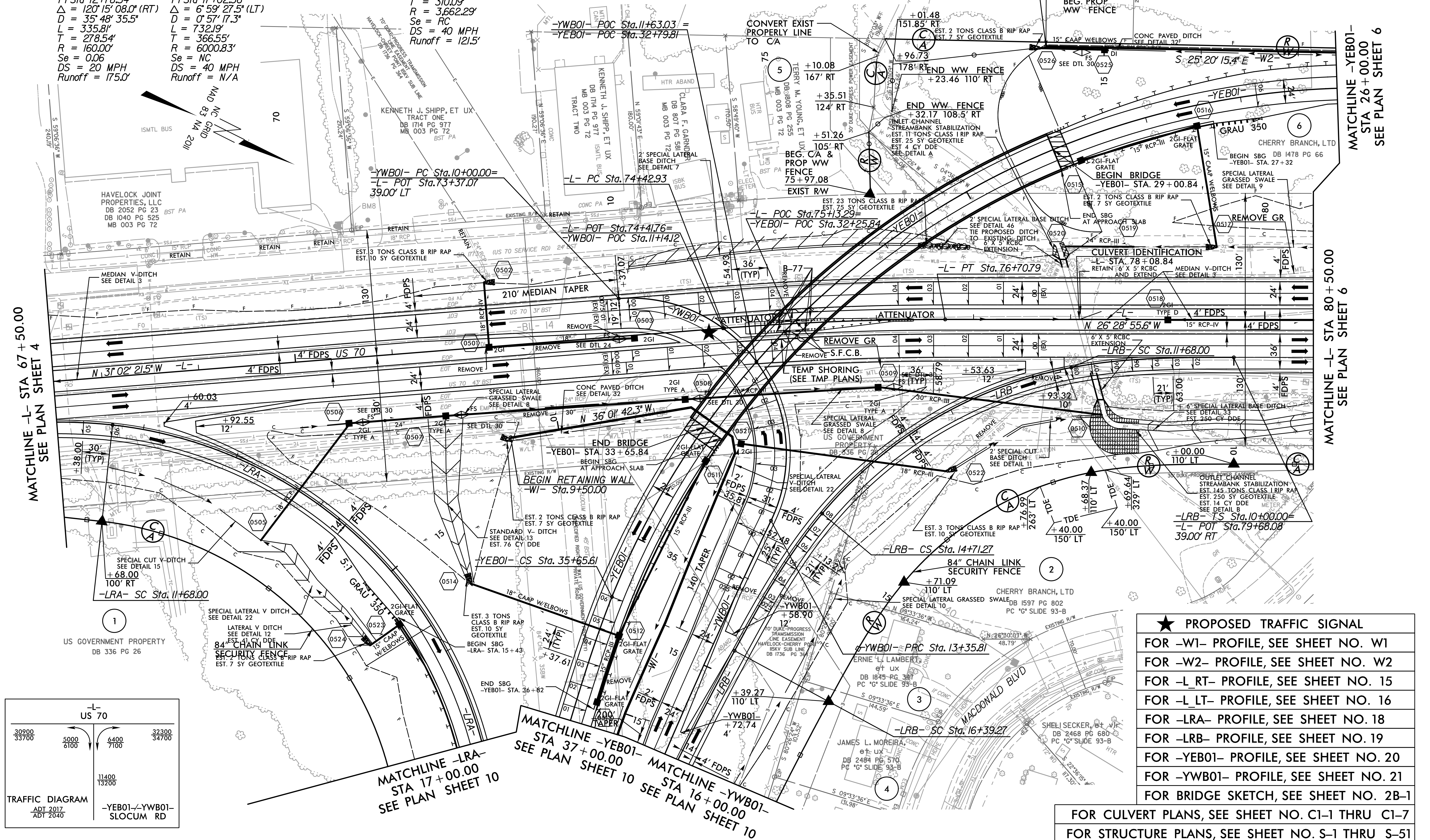
FOR -L- PROFILE, SEE SHEET NO. 15
FOR -LRA- PROFILE, SEE SHEET NO. 18

DATE/TIME: 10/25/11 AM
DWG: R:\Roadway\Proj\R-5516_rdw\plan_04.dwg

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

<p>-L-</p> <p>PI Sta 75+56.92 Δ = 4° 33' 25.9" (RT) D = 2' 00" 00.0" L = 227.86' T = 113.99' R = 2,864.79' Se = 0.04 DS = 50 MPH Runoff = 144.0'</p>	<p>-LRA-</p> <p>PIs Sta 11+12.21 Os = 10° 50' 23.1" Ls = 168.00' LT = 112.21' ST = 56.19'</p> <p>PIs Sta 16+09.21 Δ = 89° 38' 18.4" (RT) D = 12' 54" 16.0" L = 694.63' T = 441.21' R = 444.00' Se = 0.08 DS = 40 MPH Runoff = 168.0'</p>	<p>-LRB-</p> <p>PIs Sta 11+12.21 Os = 10° 50' 23.1" Ls = 168.00' LT = 112.21' ST = 56.19'</p> <p>PIs Sta 13+25.82 Δ = 39° 08' 05.9" (LT) D = 12' 54" 16.0" L = 303.27' T = 157.82' R = 444.00' Se = 0.08 DS = 40 MPH Runoff = 168.0'</p> <p>PIs Sta 15+31.36 Os = 0° 47' 54.6" Ls = 168.00' LT = 108.40' ST = 60.09'</p> <p>PIs Sta 31+10.10 Δ = 76° 29' 46.8" (LT) D = 6' 52" 41.7" L = 1,112.15' T = 656.64' R = 833.00' Se = 0.06 DS = 50 MPH Runoff = 144.0'</p>	<p>-YEB01-</p> <p>PIs Sta 36+13.64 Os = 4° 57' 08.4" Ls = 144.00' LT = 96.04' ST = 48.03'</p>
---	---	---	--

<p>-YWB01-</p> <p>PI Sta 12+78.54 Δ = 120° 15' 08.0" (RT) D = 35' 48" 35.5" L = 335.81' T = 278.54' R = 160.00' Se = 0.06 DS = 20 MPH Runoff = 175.0'</p>	<p>PIs Sta 17+02.36 Δ = 6° 59' 27.5" (LT) D = 0' 57" 17.3" L = 732.19' T = 366.55' R = 6000.83' Se = NC DS = 40 MPH Runoff = N/A</p>
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- ★ PROPOSED TRAFFIC SIGNAL
- FOR -W1- PROFILE, SEE SHEET NO. W1
- FOR -W2- PROFILE, SEE SHEET NO. W2
- FOR -L RT- PROFILE, SEE SHEET NO. 15
- FOR -L LT- PROFILE, SEE SHEET NO. 16
- FOR -LRA- PROFILE, SEE SHEET NO. 18
- FOR -LRB- PROFILE, SEE SHEET NO. 19
- FOR -YEB01- PROFILE, SEE SHEET NO. 20
- FOR -YWB01- PROFILE, SEE SHEET NO. 21
- FOR BRIDGE SKETCH, SEE SHEET NO. 2B-1

FOR CULVERT PLANS, SEE SHEET NO. C1-1 THRU C1-7
FOR STRUCTURE PLANS, SEE SHEET NO. S-1 THRU S-51

REVISIONS

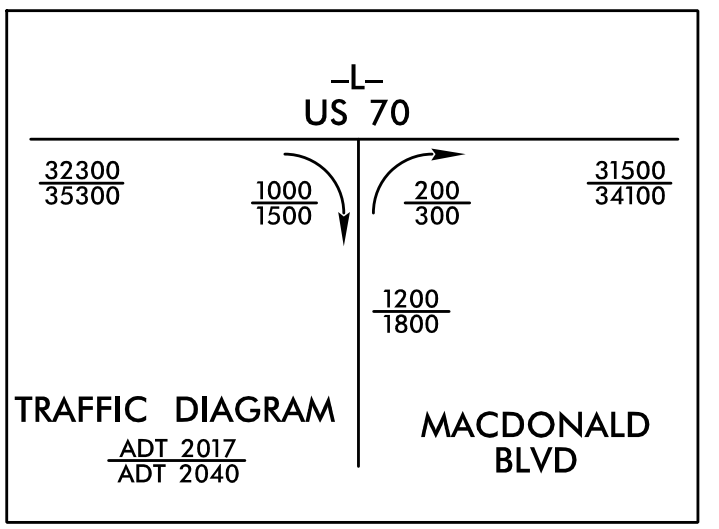
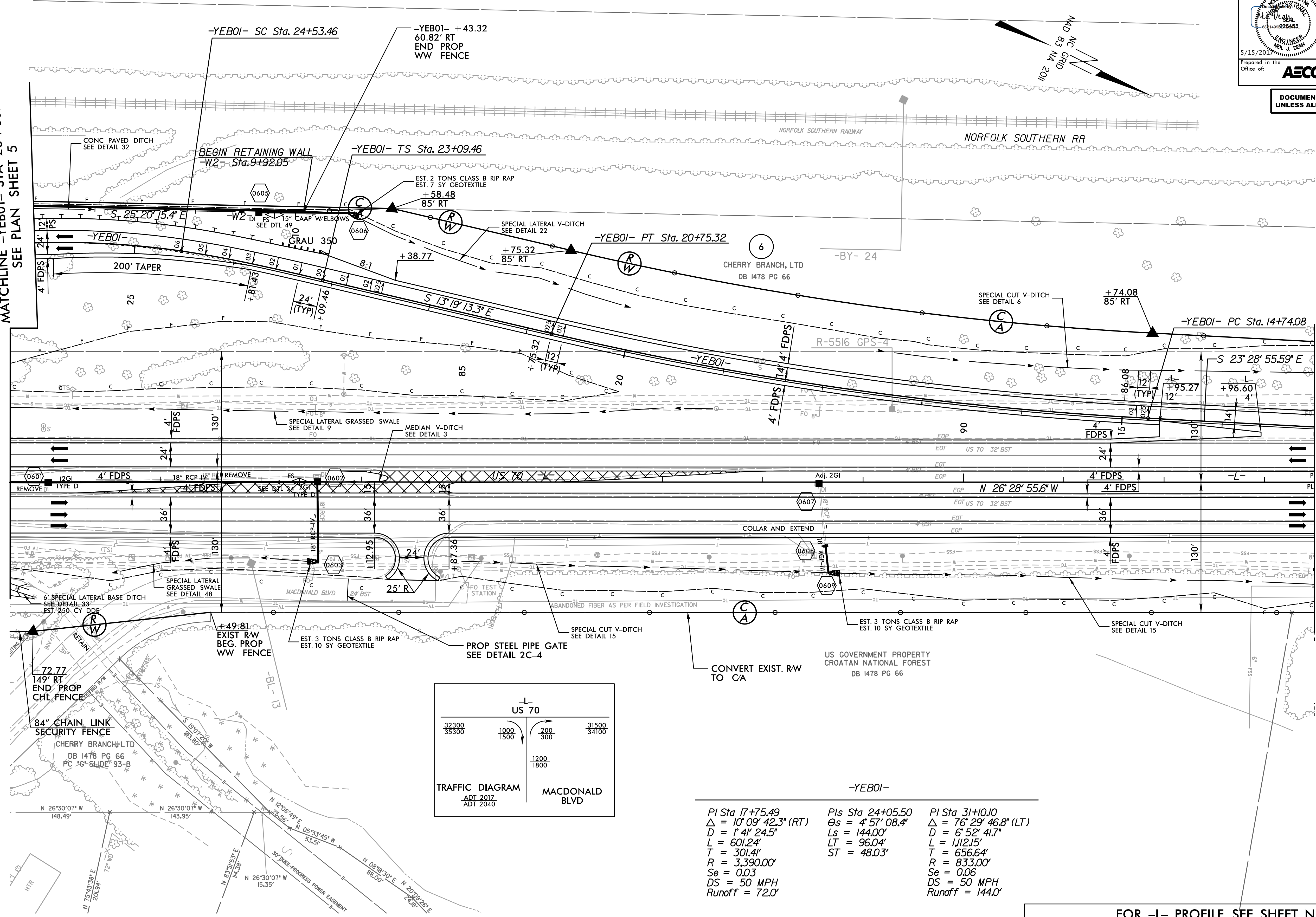
DATE/TIME: 10/27/16 AM
DES: RYANWAY/PRO/15516_04_p01_05.dgn

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE -YEB01- STA 26+00.00
SEE PLAN SHEET 5

MATCHLINE -L- STA 80+50.00
SEE PLAN SHEET 5

MATCHLINE -L- STA 93+50.00
SEE PLAN SHEET 7



-YEB01-

PI Sta 17+75.49 Δ = 10° 09' 42.3" (RT) D = 1' 41' 24.5" L = 601.24' T = 301.41' R = 3,390.00' Se = 0.03 DS = 50 MPH Runoff = 72.0'	PIs Sta 24+05.50 Θs = 4° 57' 08.4" Ls = 144.00' LT = 96.04' ST = 48.03'	PI Sta 31+10.10 Δ = 76° 29' 46.8" (LT) D = 6° 52' 41.7" L = 1,112.15' T = 656.64' R = 833.00' Se = 0.06 DS = 50 MPH Runoff = 144.0'
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FOR -L- PROFILE, SEE SHEET NO. 16
FOR -W2- PROFILE, SEE SHEET NO. W2
FOR -YEB01- PROFILE, SEE SHEET NOS. 19 & 20

REVISIONS

DATE/TIME: 2:00:31 PM
DNV: R:\Roadway\Proj\R-5516_rdw\pln_06.dgn

PROJECT REFERENCE NO. R-5516	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER <i>[Signature]</i> 5/15/2017	HYDRAULICS ENGINEER <i>[Signature]</i> 5/15/2017
<p>Prepared in the Office of:</p> <p>AECOM NC FIRM LICENSE No. F-0342 700 Corporate Center Drive, Suite 415 Raleigh, NC 27603-1200 (919) 854-6200 (919) 854-6259 FAX</p>	

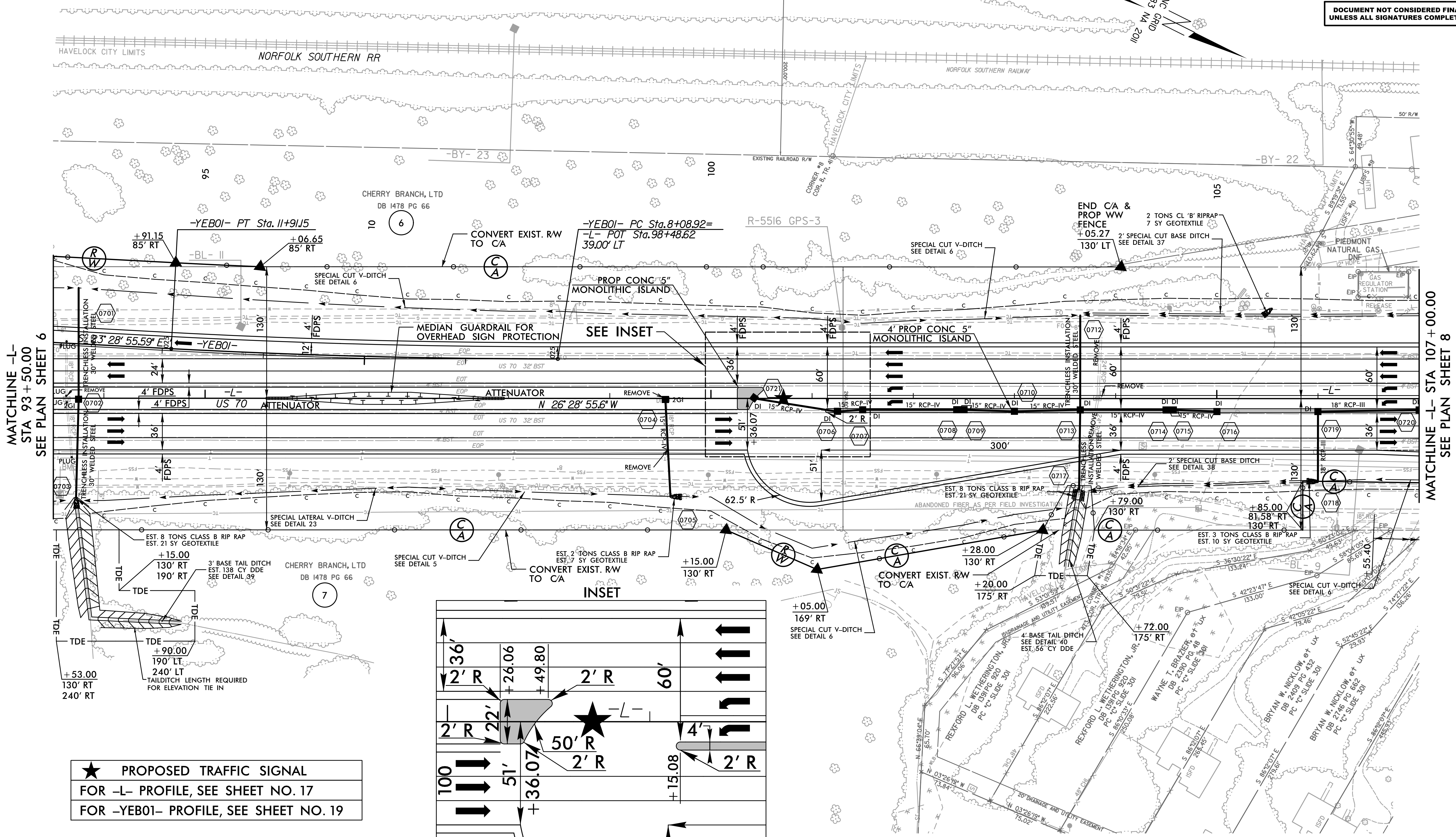
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-YEB01-
 PI Sta. 10+00.08
 $\Delta = 3^{\circ}00'00.0''$ (RT)
 $D = 0^{\circ}47'05.5''$
 $L = 382.23'$
 $T = 191.6'$
 $R = 7,300.00'$
 $Se = 0.06$
 $DS = 50$ MPH
 Runoff = 60.0'

US GOVERNMENT PROPERTY
CROATAN NATIONAL FOREST

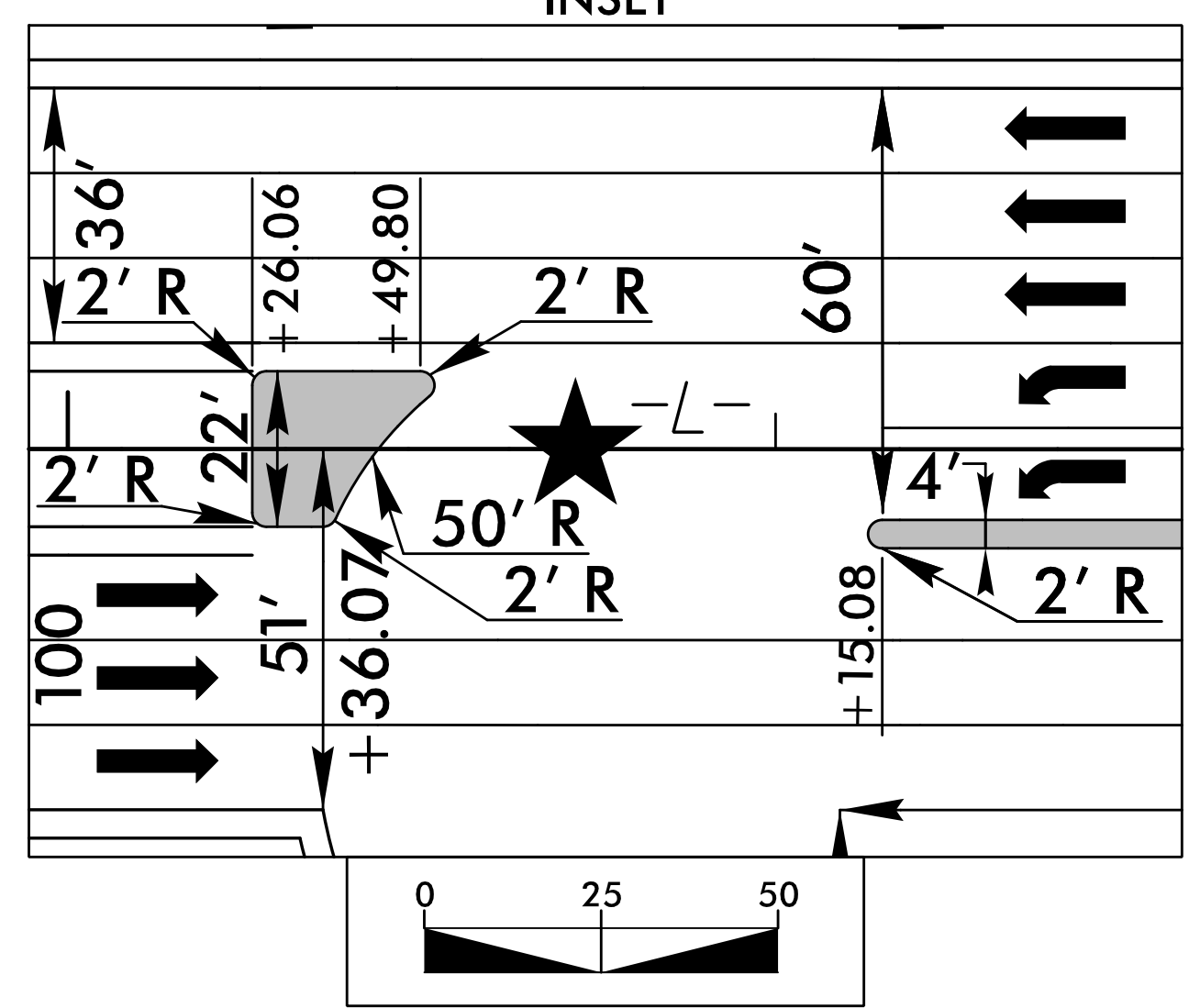
NEDHAM HICKMAN, HEIRS
DB 81 PG 253
DRAWN BY CRAVEN COUNTY TAX

GREEN CHAPEL MISSIONARY BAPTIST CHURCH
DB 1695 PG 259
DRAWN BY CRAVEN COUNTY TAX

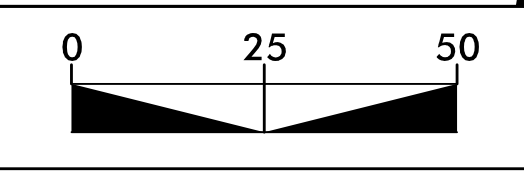


MATCHLINE -L- STA 93+50.00
SEE PLAN SHEET 6

MATCHLINE -L- STA 107+00.00
SEE PLAN SHEET 8



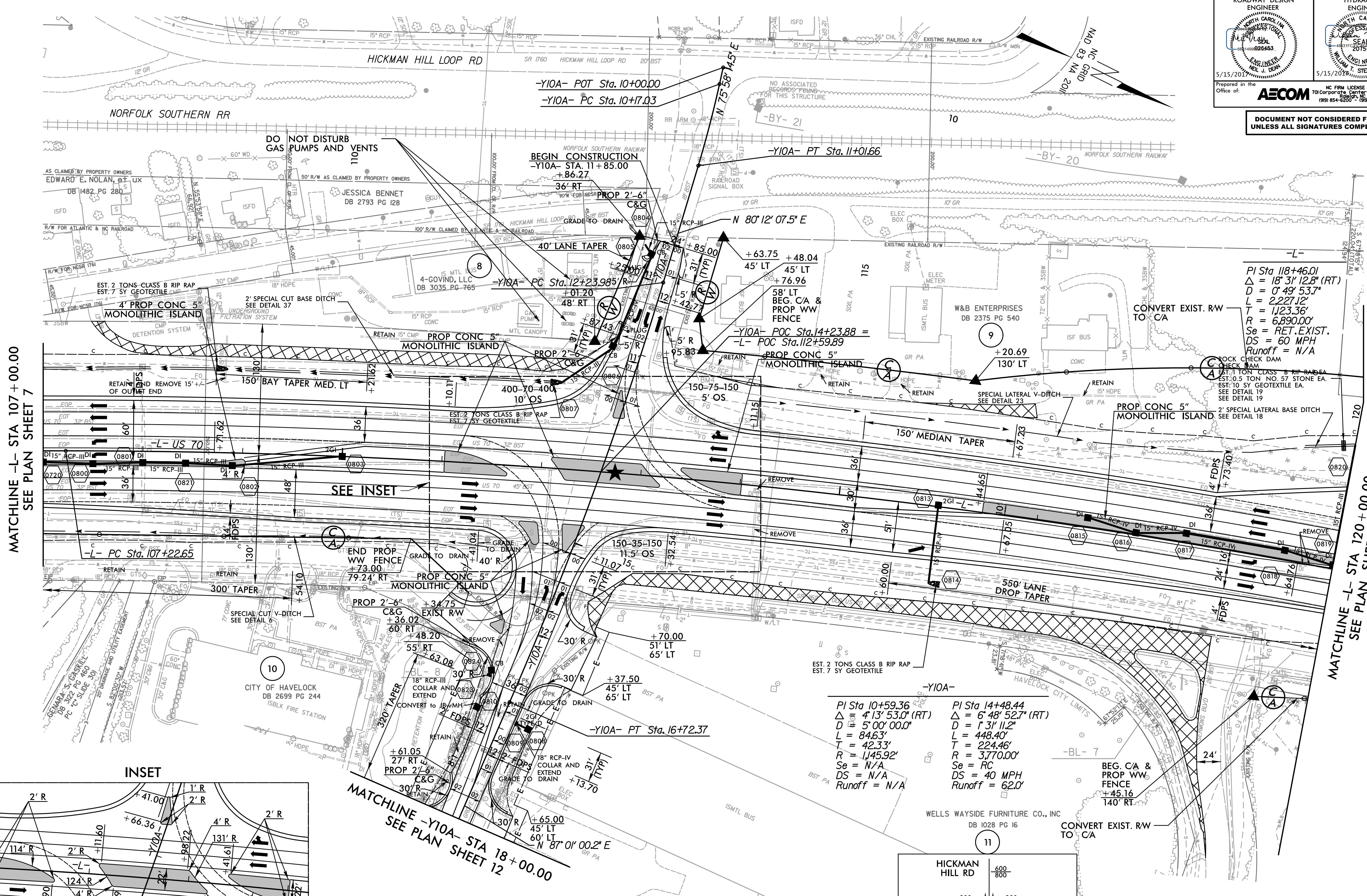
★ PROPOSED TRAFFIC SIGNAL
 FOR -L- PROFILE, SEE SHEET NO. 17
 FOR -YEB01- PROFILE, SEE SHEET NO. 19



REVISIONS

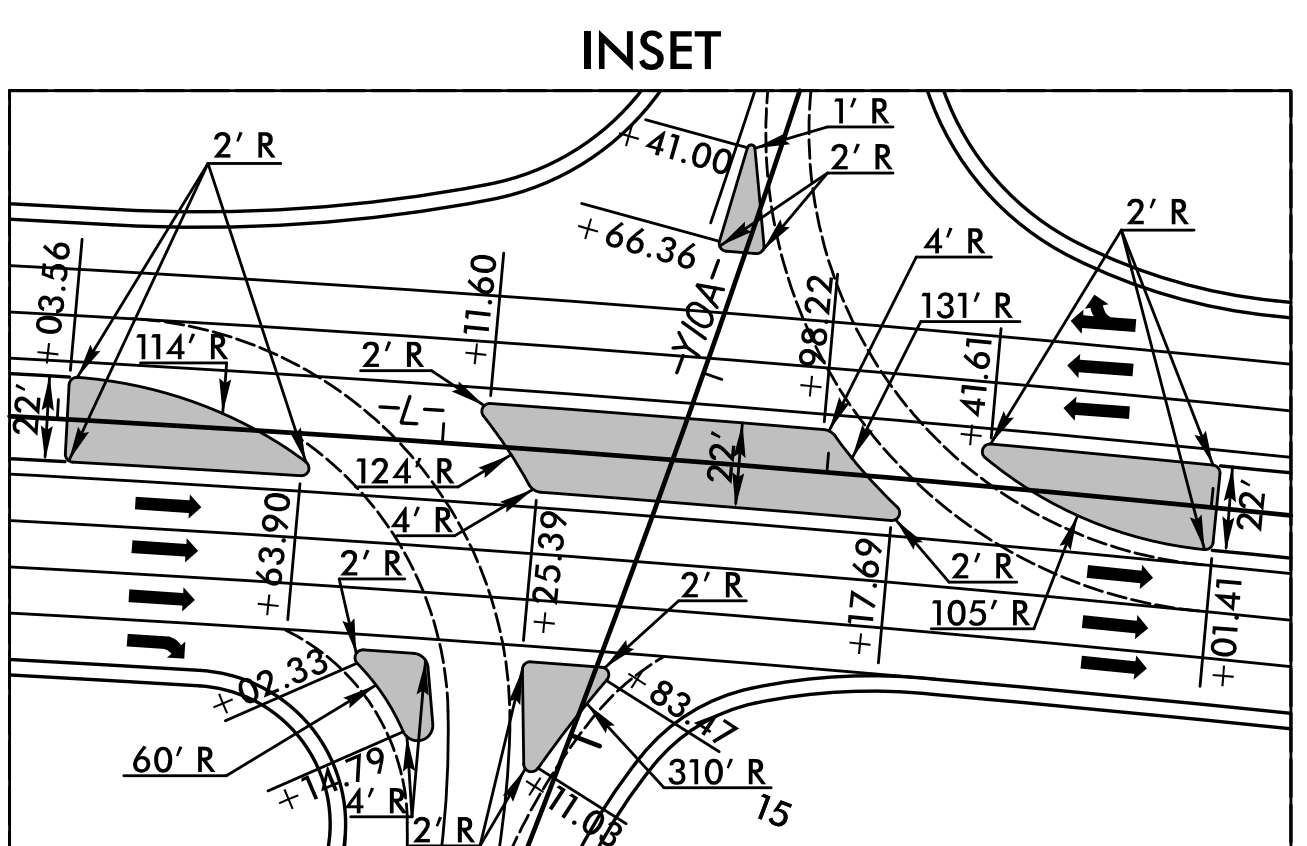
DATE/TIME: 10/25/16 AM
DRAWN: RY/ROADWAY/PROJ/R-5516.dwg/07.dwg

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



MATCHLINE -L- STA 107+00.00
SEE PLAN SHEET 7

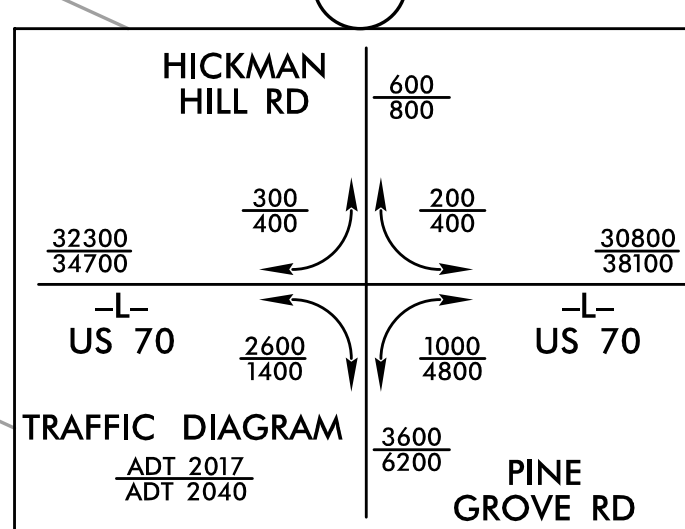
MATCHLINE -L- STA 120+00.00
SEE PLAN SHEET 9



MATCHLINE -Y10A- STA 18+00.00
SEE PLAN SHEET 12

-Y10A-
 PI Sta 10+59.36
 $\Delta = 4' 13' 53.0''$ (RT)
 $D = 5' 00' 00.0''$
 $L = 84.63'$
 $T = 42.33'$
 $R = 1,145.92'$
 $Se = N/A$
 $DS = N/A$
 $Runoff = N/A$

PI Sta 14+48.44
 $\Delta = 6' 48' 52.7''$ (RT)
 $D = 1' 31' 11.2''$
 $L = 448.40'$
 $T = 224.46'$
 $R = 3,770.00'$
 $Se = RC$
 $DS = 40$ MPH
 $Runoff = 62.0'$



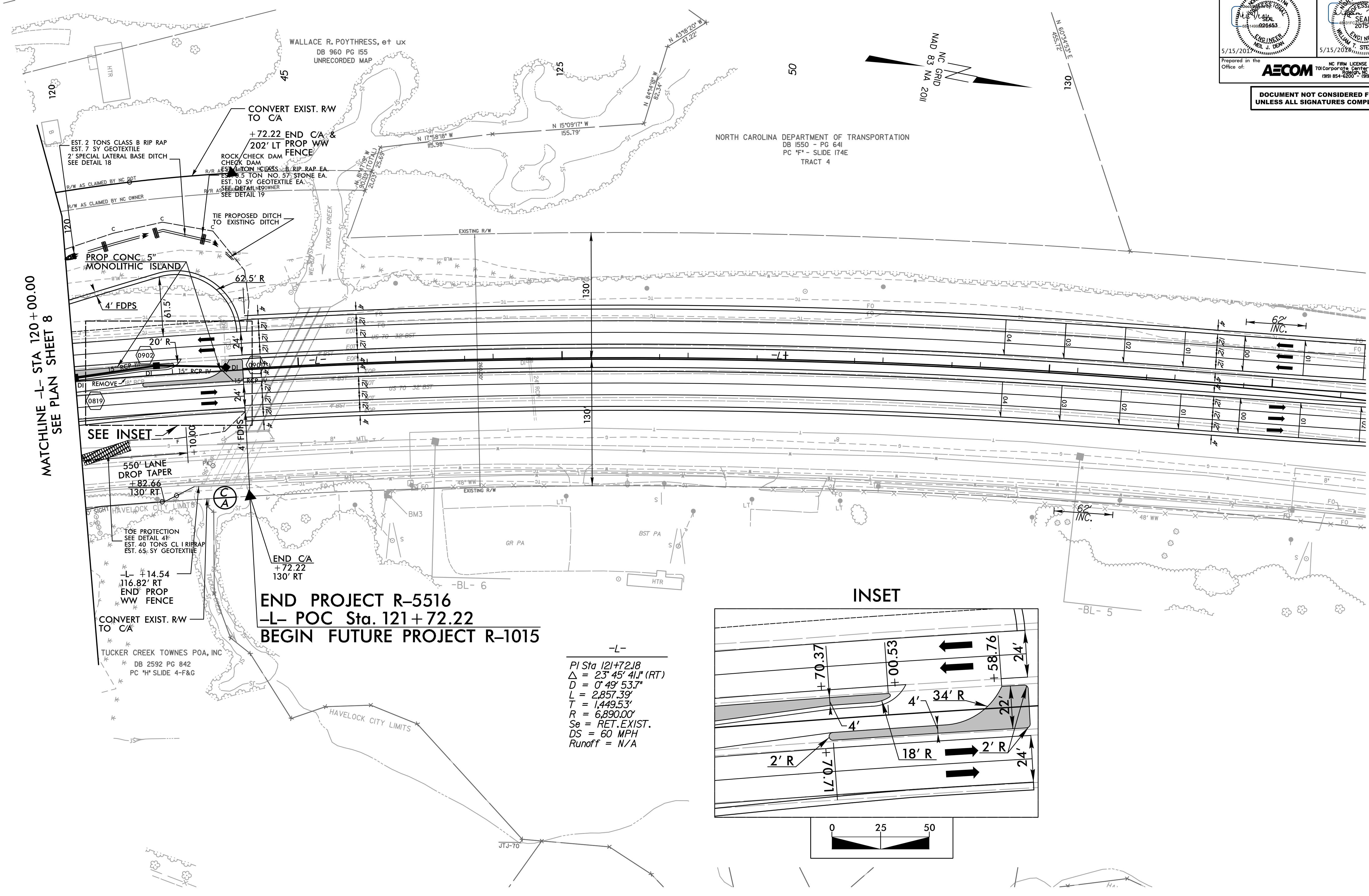
★ PROPOSED TRAFFIC SIGNAL
 ▨ PROPOSED PAVEMENT REMOVAL
 FOR -L- PROFILE, SEE SHEET NO. 17
 FOR -Y10A- PROFILE, SEE SHEET NO. 24

REVISIONS

DATE/TIME: 10/25/19 AM
 DES: RY/ROADWAY/PRO/VE/SS/6/04/04/08/09

PROJECT REFERENCE NO. R-516	SHEET NO. 9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER <i>[Signature]</i> 5/15/2011	HYDRAULICS ENGINEER <i>[Signature]</i> 5/15/2011
Prepared in the Office of: AECOM NC FIRM LICENSE No F-0342 70 Corporate Center Drive, Suite 415 Cary, NC 27513 (919) 654-6200 • (919) 654-6259 FAX	

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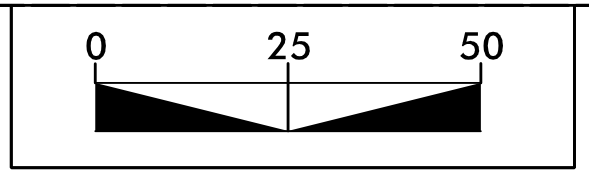
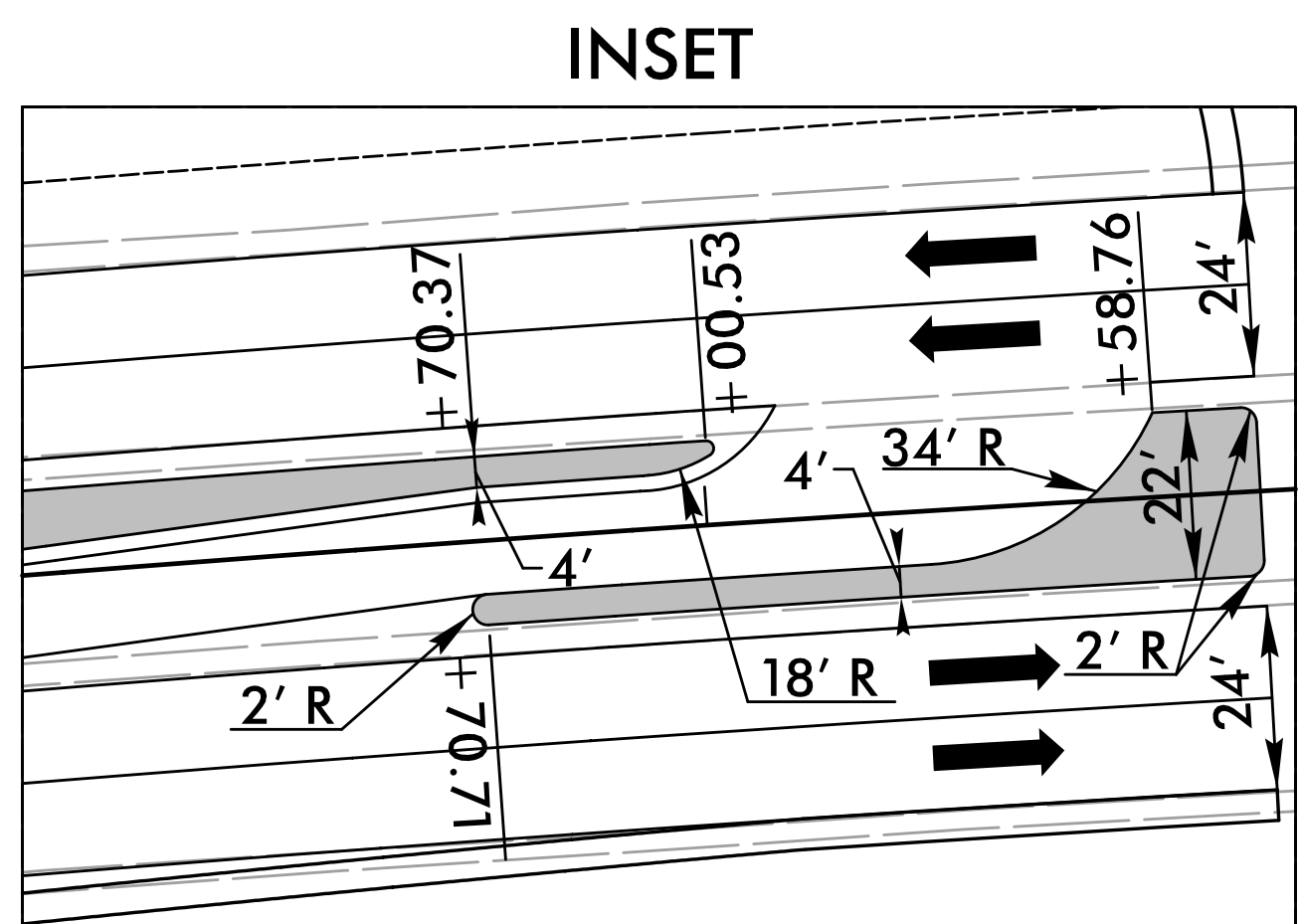


MATCHLINE -L- STA 120+00.00
SEE PLAN SHEET 8

END PROJECT R-516
-L- POC Sta. 121+72.22
BEGIN FUTURE PROJECT R-1015

-L-

$PI\ Sta\ 121+72.18$
 $\Delta = 23^\circ 45' 41'' (RT)$
 $D = 0^\circ 49' 53.7''$
 $L = 2,857.39'$
 $T = 1,449.53'$
 $R = 6,890.00'$
 $S_e = RET. EXIST.$
 $DS = 60\ MPH$
 $Runoff = N/A$

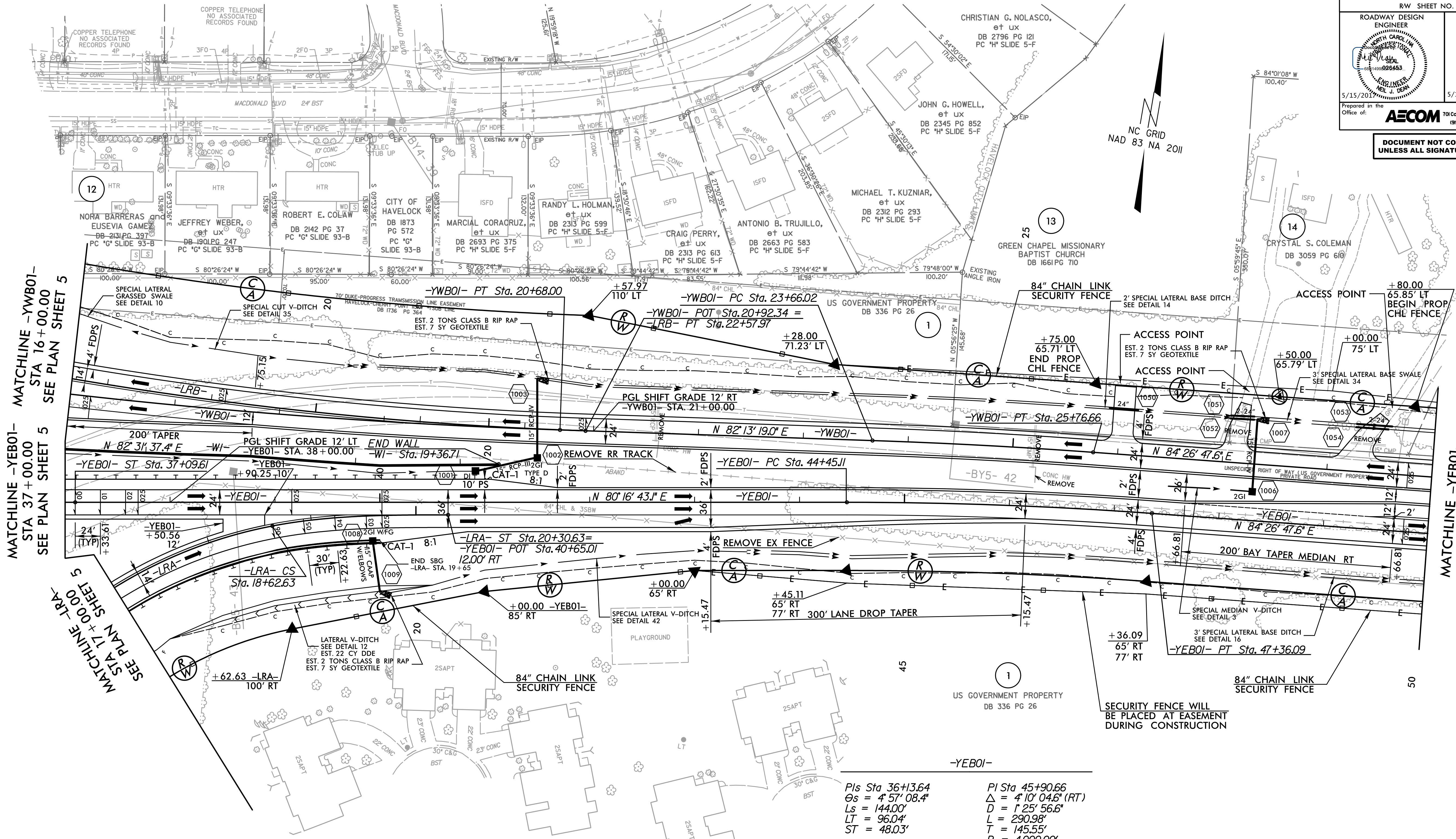


REVISIONS

DATE/TIME: 10/30/10 AM
DWN: R:\Roadway\Proj\R-516\rdw\plan_09.dwg

FOR -L- PROFILE, SEE SHEET NO. 18

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



MATCHLINE -YWB01- STA 16+00.00 SEE PLAN SHEET 5

MATCHLINE -YEB01- STA 37+00.00 SEE PLAN SHEET 5

MATCHLINE -LRA- STA 17+00.00 SEE PLAN SHEET 5

MATCHLINE -YEB01- STA 50+00.00 SEE PLAN SHEET 11

REVISIONS

-LRA-		-LRB-	
PI Sta 16+09.21	PIs Sta 19+18.82	PI Sta 19+49.36	
$\Delta = 89^\circ 38' 18.4''$ (RT)	$\Delta = 10^\circ 50' 23.1''$	$\Delta = 9^\circ 40' 46.0''$ (LT)	
D = 12' 54' 16.0"	Ls = 168.00'	D = 1' 33' 52.1"	
L = 694.63'	LT = 112.21'	L = 618.70'	
T = 441.21'	ST = 56.19'	T = 310.09'	
R = 444.00'		R = 3,662.29'	
Se = 0.08		Se = RC	
DS = 40 MPH		DS = 40 MPH	
Runoff = 168.0'		Runoff = 121.5'	

-LRA-		-LRB-	
PIs Sta 36+3.64	PI Sta 45+90.66	PI Sta 17+02.36	PI Sta 24+71.35
$\Delta_s = 4^\circ 57' 08.4''$	$\Delta = 4^\circ 10' 04.6''$ (RT)	$\Delta = 6^\circ 59' 27.5''$ (LT)	$\Delta = 2^\circ 13' 28.6''$ (RT)
Ls = 144.00'	D = 1' 25' 56.6"	D = 0' 57' 17.3"	D = 1' 03' 22.1"
LT = 96.04'	L = 290.98'	L = 732.19'	L = 210.64'
ST = 48.03'	T = 145.55'	T = 366.55'	T = 105.33'
	R = 4,000.00'	R = 6,000.83'	R = 5,425.00'
	Se = 0.025	Se = 0.025	Se = 0.025
	DS = 40 MPH	DS = 40 MPH	DS = 40 MPH
	Runoff = 144.0'	Runoff = N/A	Runoff = N/A

FOR -W1- PROFILE, SEE SHEET NO. W1

FOR -LRA- PROFILE, SEE SHEET NO. 18

FOR -LRB- PROFILE, SEE SHEET NO. 19

FOR -YWB01- PROFILE, SEE SHEET NO. 22

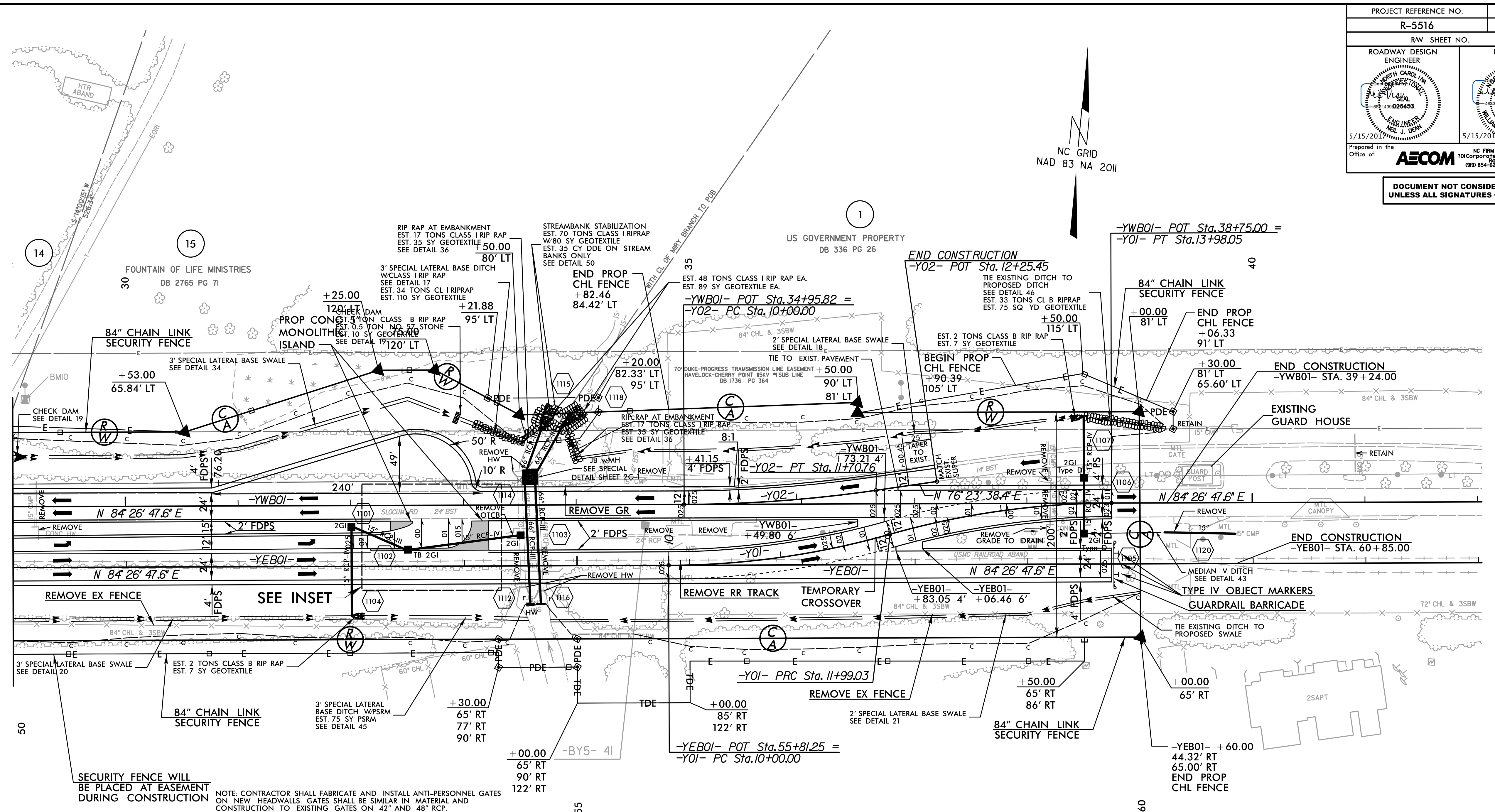
FOR -YEB01- PROFILE, SEE SHEET NOS. 20 & 21

ALL DRIVEWAY TURNOUT RADII ARE 10' UNLESS OTHERWISE NOTED

DATE/TIME: 10/30/11 AM
 DSN: R:\Roadway\Proj\5516_01\plan_10.dgn

PROJECT REFERENCE NO. R-5516	SHEET NO. 11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
5/15/2017	
Prepared in the Office of: AECOM 701 Corporate Center Drive, Suite 475 Raleigh, NC 27601 (919) 854-6200 • (919) 854-6259 FAX	
<p style="text-align: center;">DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	

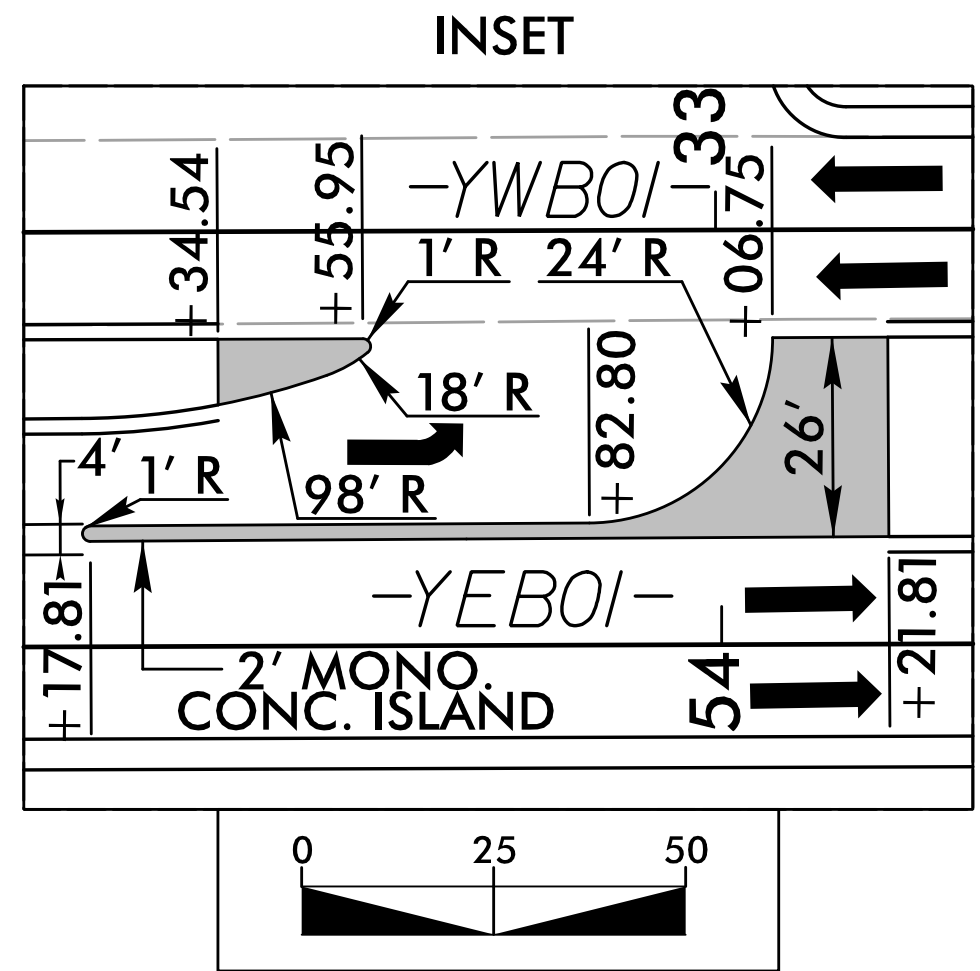
MATCHLINE -YEB01- STA 50+00.00 SEE PLAN SHEET 10



SECURITY FENCE WILL BE PLACED AT EASEMENT DURING CONSTRUCTION

NOTE: CONTRACTOR SHALL FABRICATE AND INSTALL ANTI-PERSONNEL GATES ON NEW HEADWALLS. GATES SHALL BE SIMILAR IN MATERIAL AND CONSTRUCTION TO EXISTING GATES ON 42" AND 48" RCP.

NOTE: THE PROPOSED 84" CHAIN LINK FENCE TO BE RELOCATED TO TIE INTO CULVERT HEADWALL AFTER CONSTRUCTION



US GOVERNMENT PROPERTY
DB 336 PG 26

-Y01-	-Y02-
PI Sta 11+00.14	PI Sta 12+99.16
$\Delta = 15' 38' 32.9''$ (LT)	$\Delta = 15' 38' 32.9''$ (RT)
$D = 7' 51' 34.2''$	$D = 7' 51' 34.2''$
$L = 199.03'$	$L = 199.03'$
$T = 100.14'$	$T = 100.14'$
$R = 729.00'$	$R = 729.00'$
$Se = VARIES$	$Se = VARIES$
$DS = 40$ MPH	$DS = 40$ MPH
$Runoff = 84.0'$	$Runoff = 84.0'$

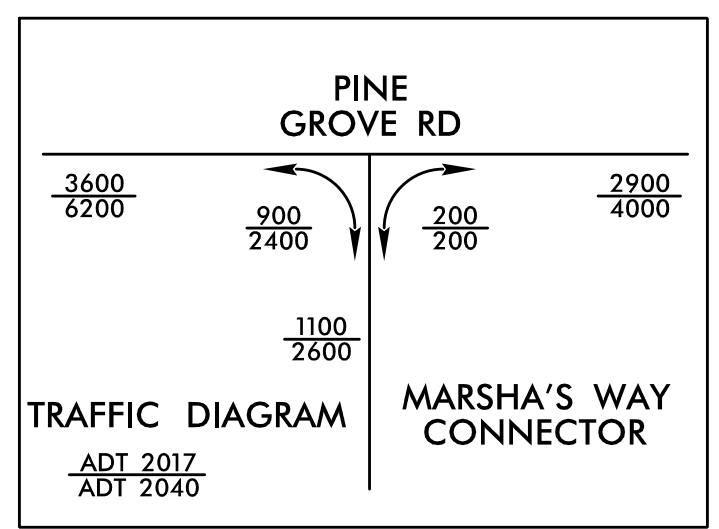
FOR -YEB01- PROFILE, SEE SHEET NO. 21
 FOR -YWB01- PROFILE, SEE SHEET NO. 22
 FOR -Y01- PROFILE, SEE SHEET NO. 26
 FOR -Y02- PROFILE, SEE SHEET NO. 26

REVISIONS

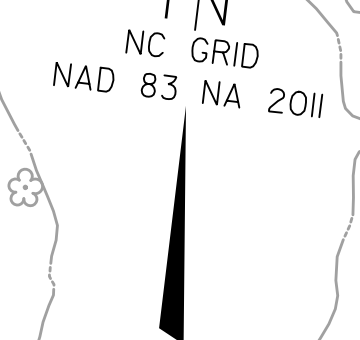
DATE/TIME: 11/06/02 AM
2016: R:\Roadway\701\5516\11\11.dgn

PROJECT REFERENCE NO. R-5516	SHEET NO. 12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
Prepared in the Office of: AECOM 701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259 FAX	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y10A-
 PI Sta 28+29.17
 $\Delta = 77^\circ 38' 38.6" (LT)$
 $D = 10^\circ 44' 58.8"$
 $L = 722.29'$
 $T = 428.88'$
 $R = 533.00'$
 $Se = 0.060$
 $DS = 40 MPH$
 $Runoff = 126.0'$



MATCHLINE -Y10A- STA 18+00.00
SEE PLAN SHEET 8

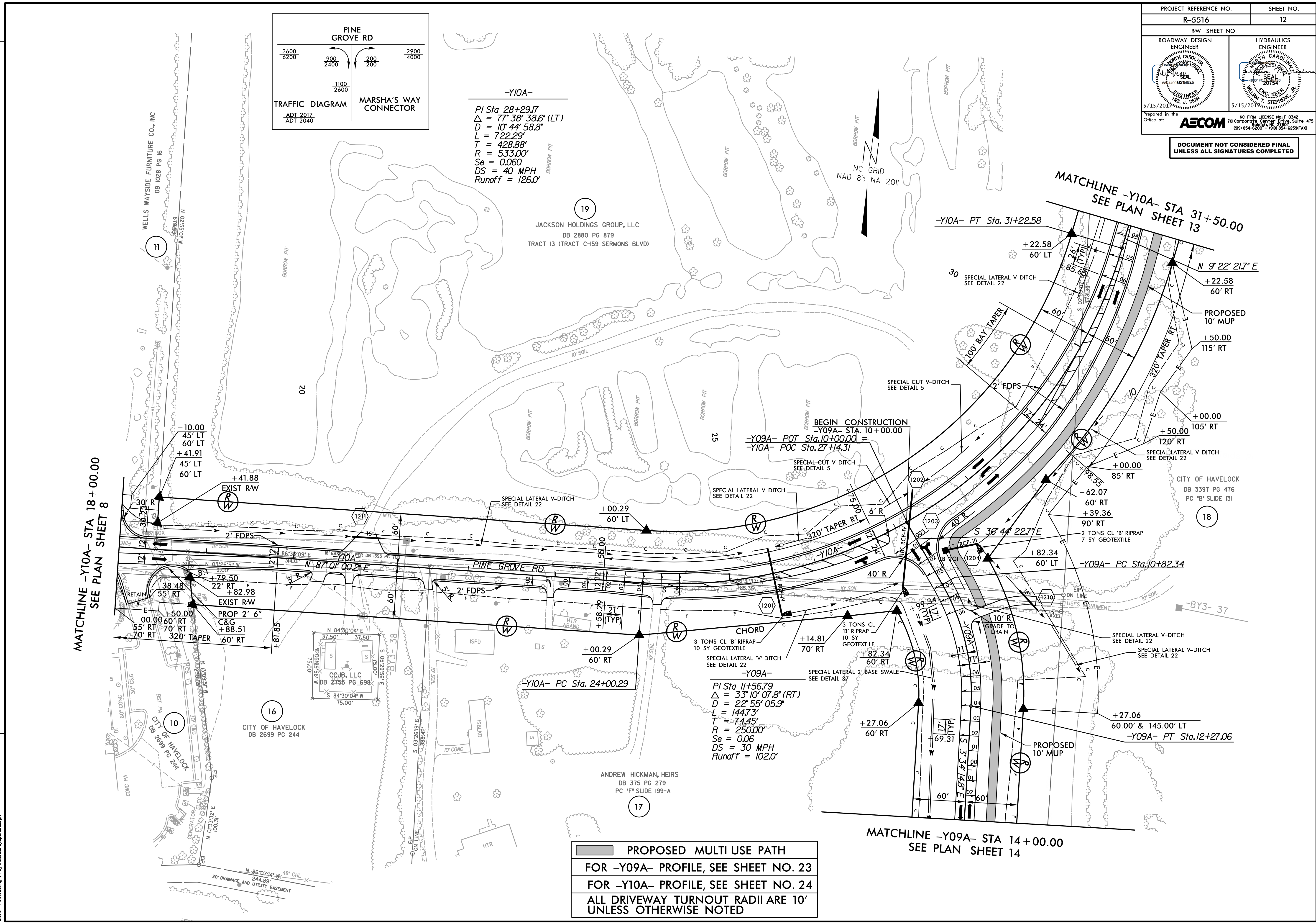
MATCHLINE -Y10A- STA 31+50.00
SEE PLAN SHEET 13

MATCHLINE -Y09A- STA 14+00.00
SEE PLAN SHEET 14

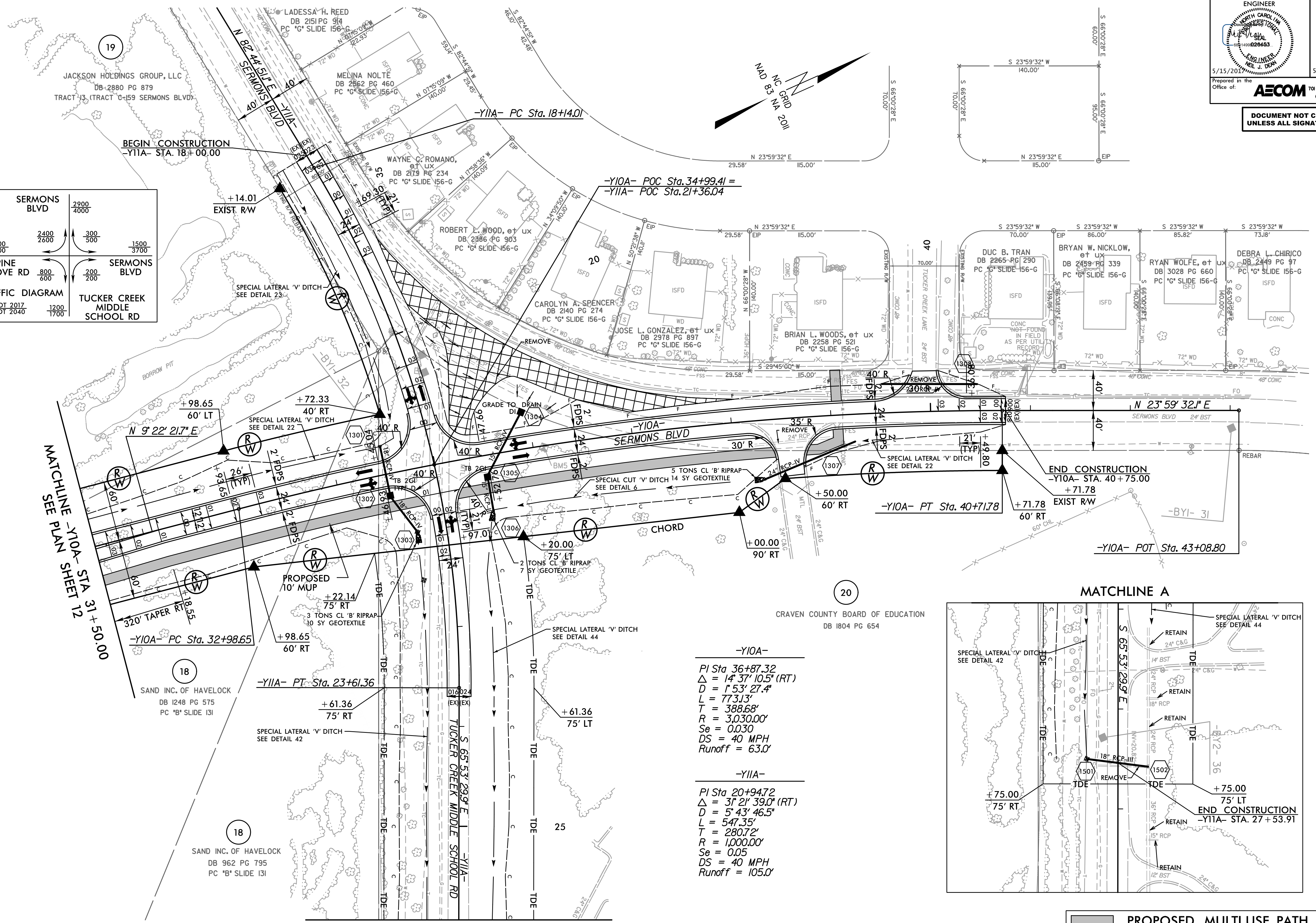
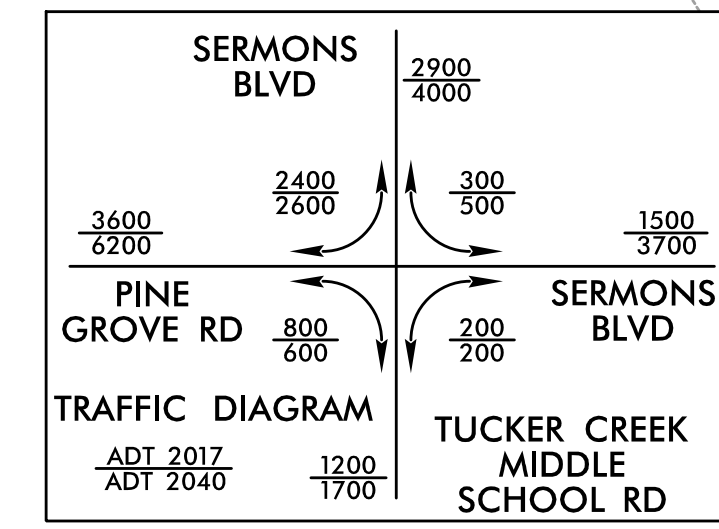
PROPOSED MULTI USE PATH
 FOR -Y09A- PROFILE, SEE SHEET NO. 23
 FOR -Y10A- PROFILE, SEE SHEET NO. 24
 ALL DRIVEWAY TURNOUT RADII ARE 10'
 UNLESS OTHERWISE NOTED

REVISIONS

DATE/TIME: 11/06/04 AM
2014: R:\Roadway\701\2516\12\12.dgn



PROJECT REFERENCE NO. R-5516	SHEET NO. 13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
5/15/2017	5/15/2017
Prepared in the Office of: AECOM 701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259 FAX	
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-Y10A-

PI Sta 36+87.32
 $\Delta = 14' 37" 10.5" (RT)$
 $D = 1' 53" 27.4"$
 $L = 773.13'$
 $T = 388.68'$
 $R = 3,030.00'$
 $Se = 0.030$
 $DS = 40 MPH$
 $Runoff = 63.0'$

-Y11A-

PI Sta 20+94.72
 $\Delta = 31' 21" 39.0" (RT)$
 $D = 5' 43" 46.5"$
 $L = 547.35'$
 $T = 280.72'$
 $R = 1,000.00'$
 $Se = 0.05$
 $DS = 40 MPH$
 $Runoff = 105.0'$

	PROPOSED MULTI USE PATH
	PROPOSED PAVEMENT REMOVAL
FOR -Y10A- PROFILE, SEE SHEET NO. 25	
FOR -Y11A- PROFILE, SEE SHEET NO. 25	

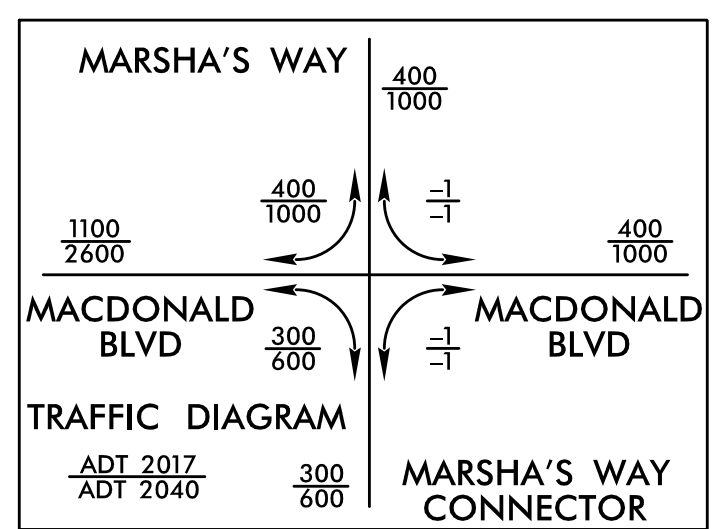
REVISIONS

DATE/TIME: 11/06/05 AM
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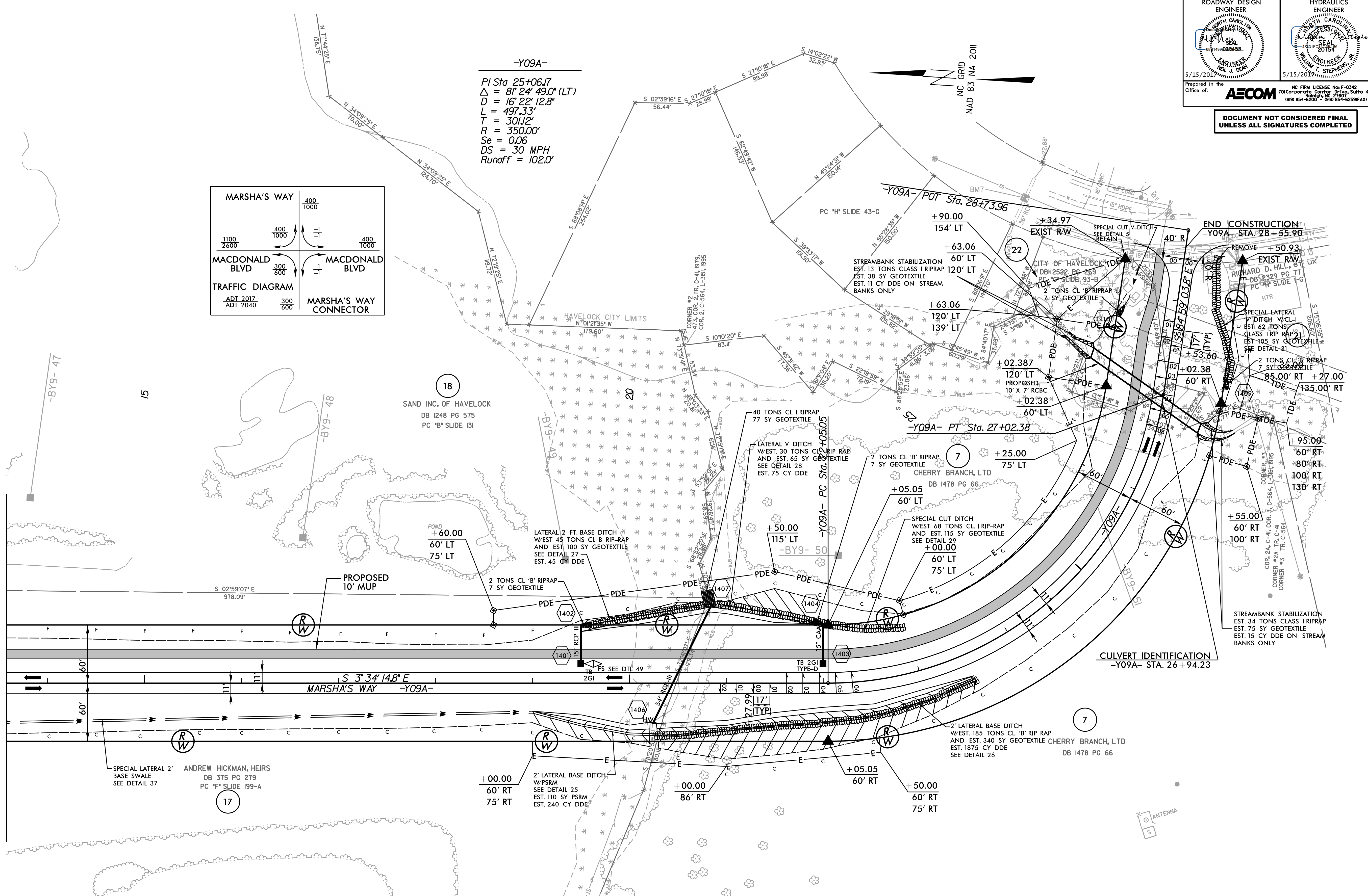
PROJECT REFERENCE NO. R-5516	SHEET NO. 14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
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-Y09A-
 PI Sta 25+06.17
 $\Delta = 81^{\circ} 24' 49.0"$ (LT)
 $D = 16^{\circ} 22' 12.8"$
 $L = 497.33'$
 $T = 301.12'$
 $R = 350.00'$
 $Se = 0.06$
 $DS = 30$ MPH
 Runoff = 102.0'



MATCHLINE -Y09A- STA 14+00.00
SEE PLAN SHEET 12



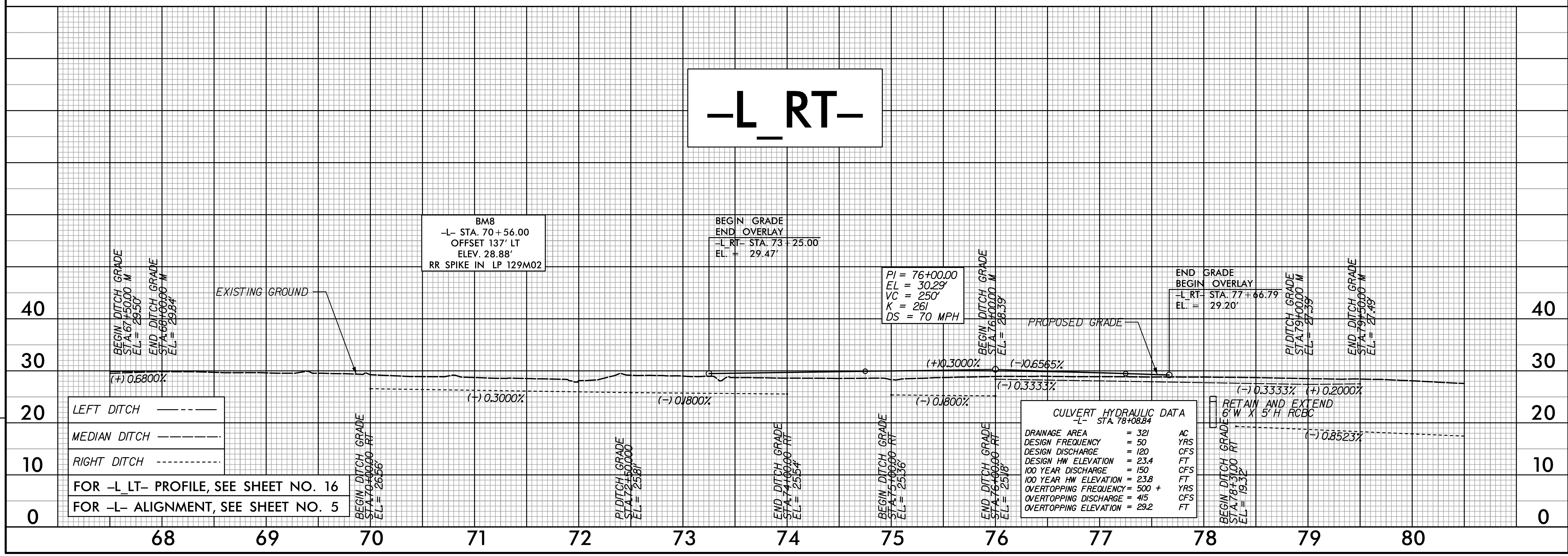
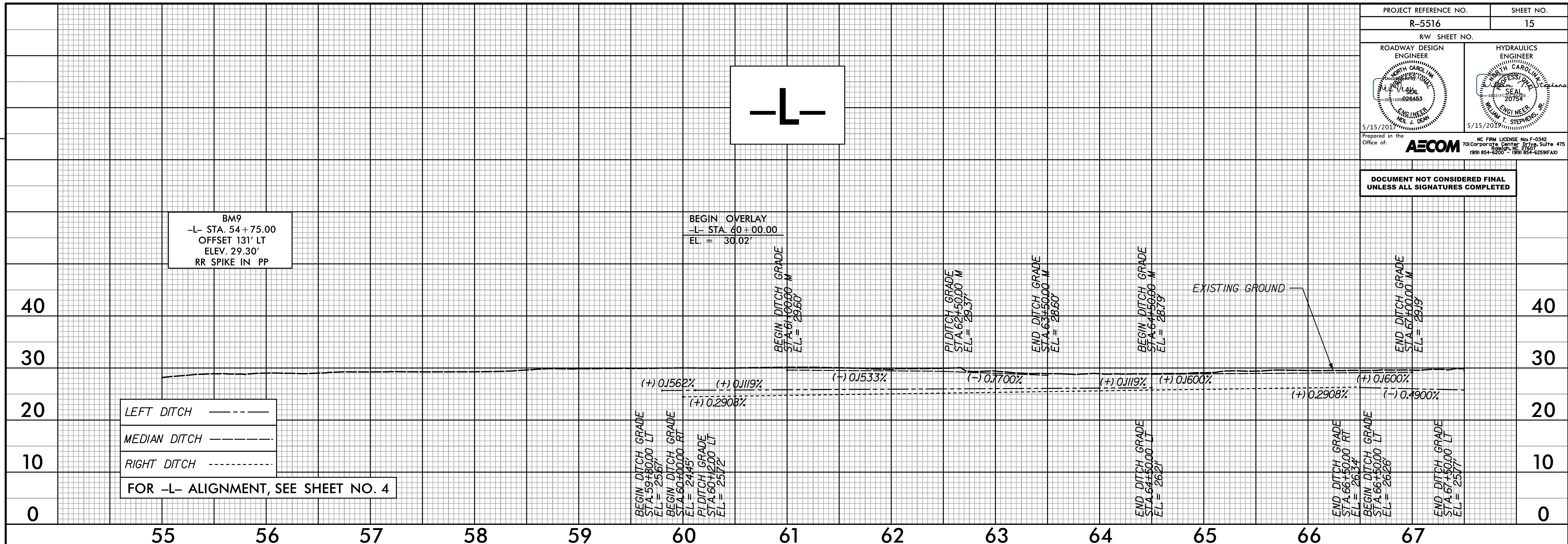
PROPOSED MULTI USE PATH
 FOR -Y09A- PROFILE, SEE SHEET NO. 23
 FOR CULVERT PLANS, SEE SHEET NO. C2-1 THRU C2-6

REVISIONS

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2:04 PM: R:\Roadway\Pro\Y09A\2561_r0_ash_14.dgn

PROJECT REFERENCE NO. R-5516	SHEET NO. 15
RW SHEET NO.	
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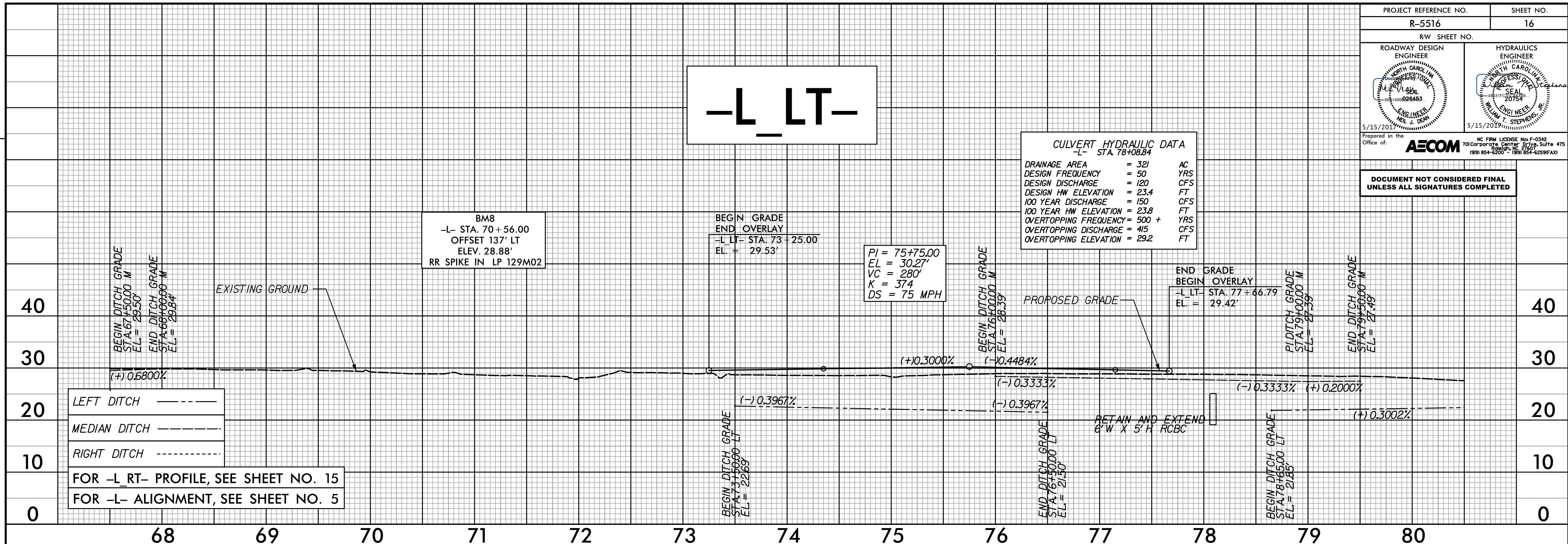
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 DATE/TIME: 11/26/07 AM

PROJECT REFERENCE NO. R-5516	SHEET NO. 16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
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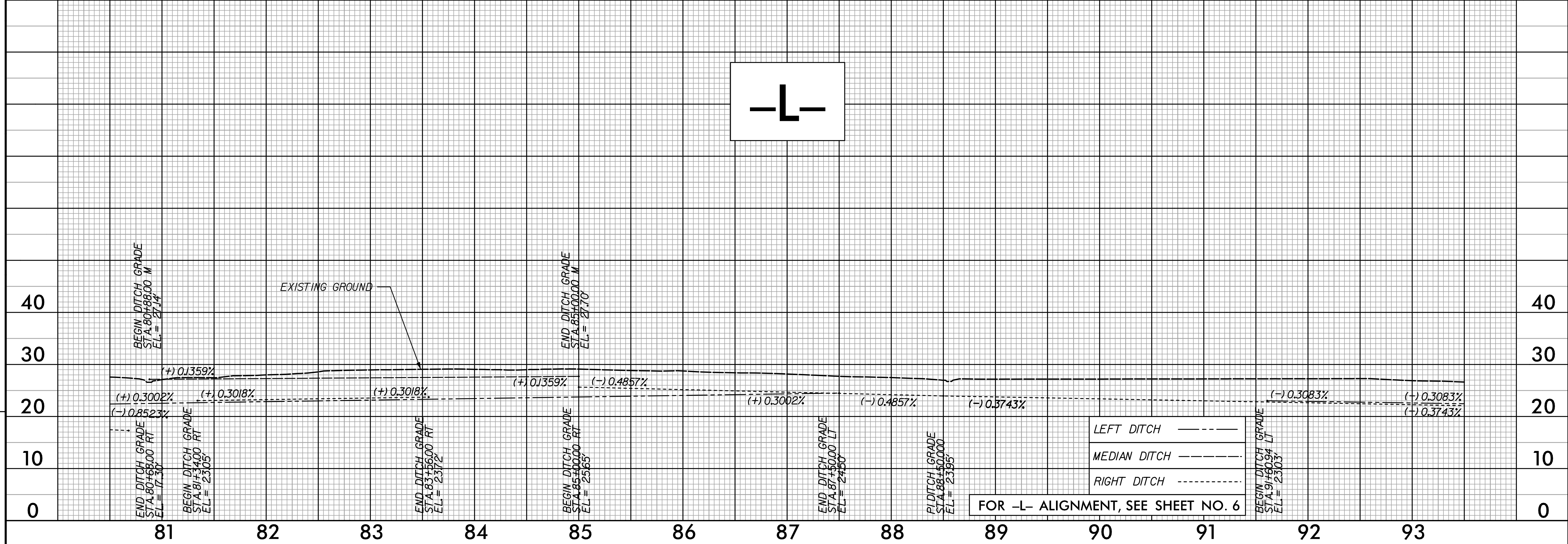
CULVERT HYDRAULIC DATA
-L- STA. 78+08.84

DRAINAGE AREA	= 321	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 120	CFS
DESIGN HW ELEVATION	= 23.4	FT
100 YEAR DISCHARGE	= 150	CFS
100 YEAR HW ELEVATION	= 23.8	FT
OVERTOPPING FREQUENCY	= 500 +	YRS
OVERTOPPING DISCHARGE	= 415	CFS
OVERTOPPING ELEVATION	= 29.2	FT



FOR -L_RT- PROFILE, SEE SHEET NO. 15
FOR -L- ALIGNMENT, SEE SHEET NO. 5

REVISIONS

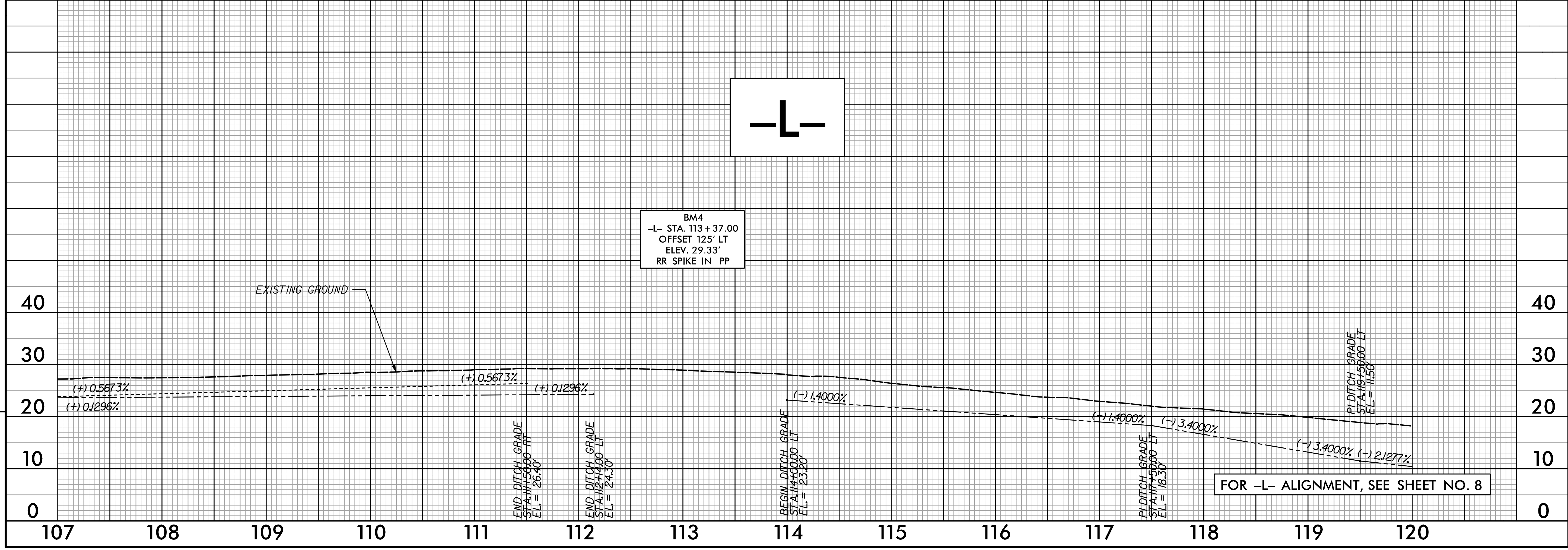
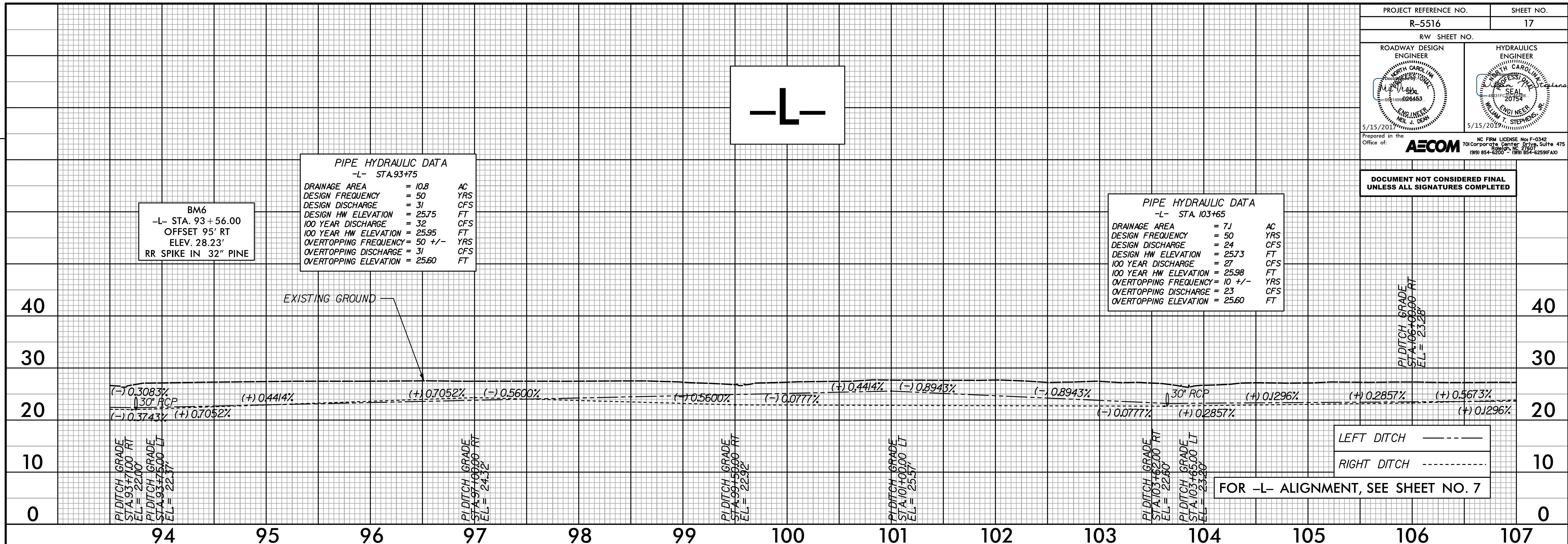


FOR -L- ALIGNMENT, SEE SHEET NO. 6

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PROJECT REFERENCE NO. R-5516	SHEET NO. 17
RW SHEET NO.	
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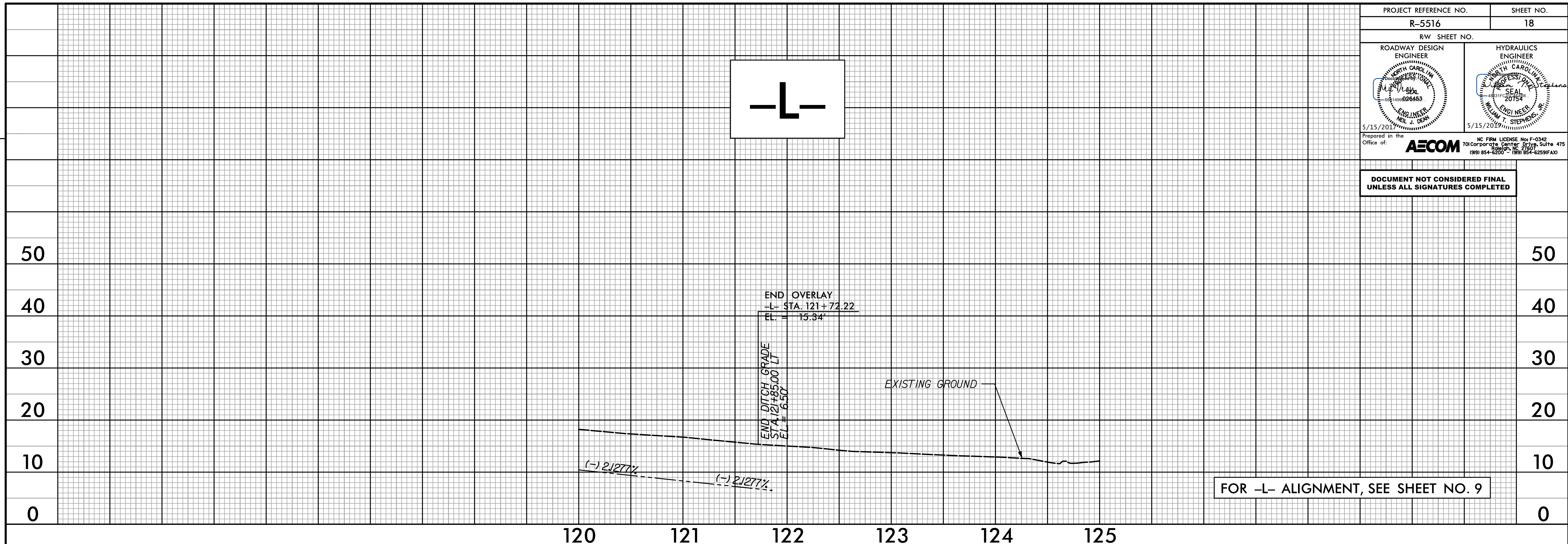
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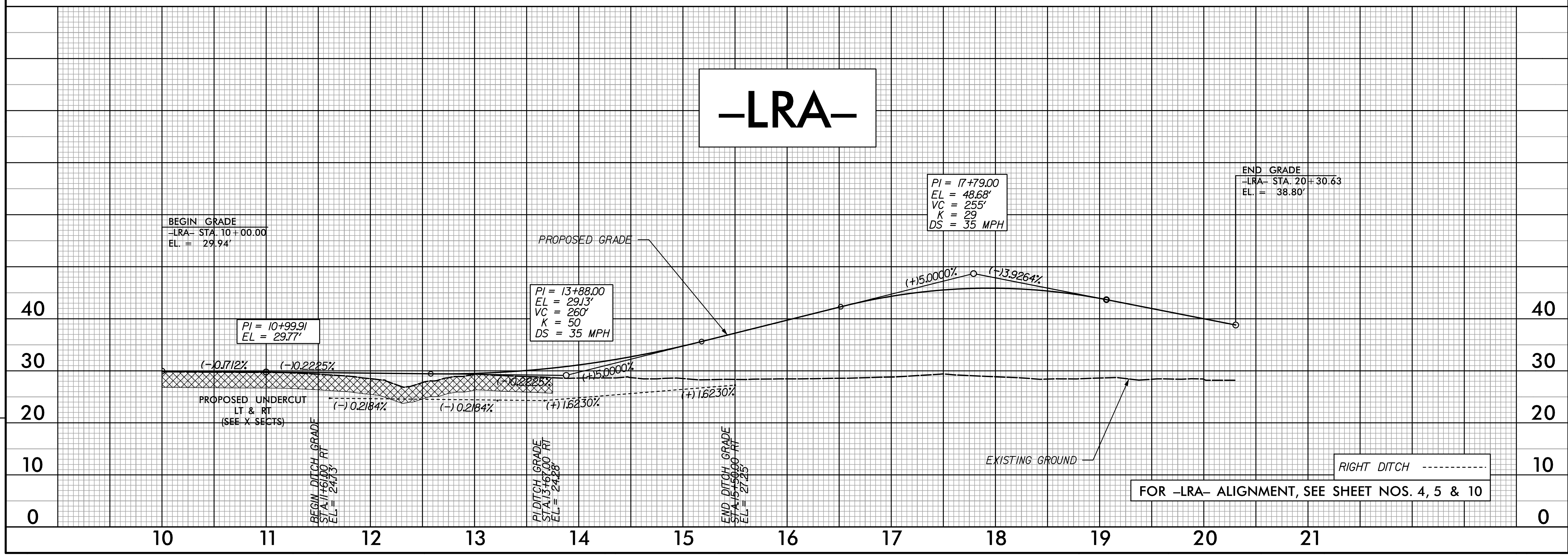
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PROJECT REFERENCE NO. R-5516	SHEET NO. 18
RW SHEET NO.	
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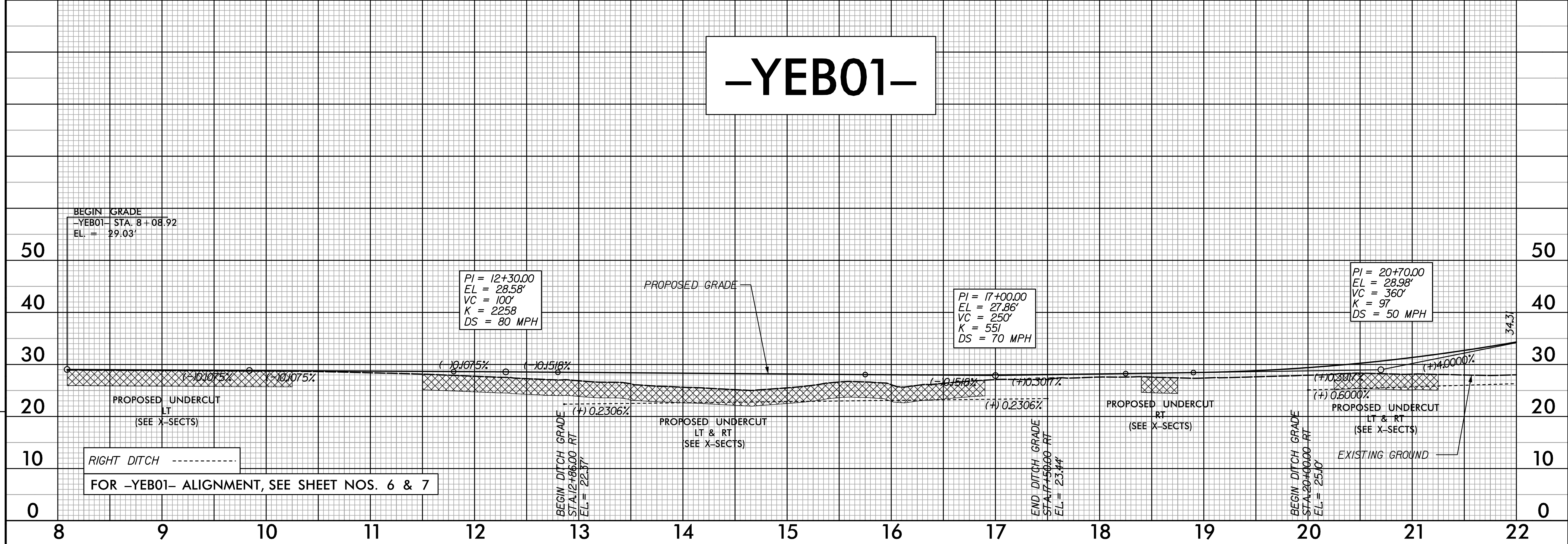
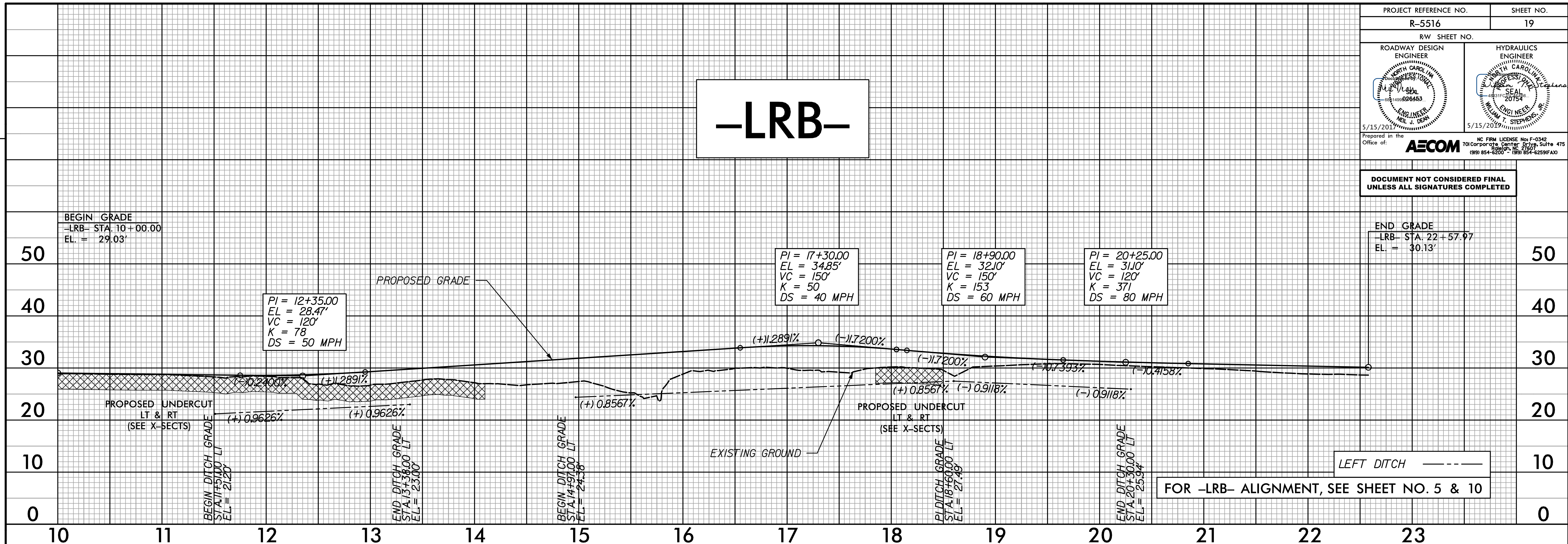
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PROJECT REFERENCE NO. R-5516	SHEET NO. 19
RW SHEET NO.	
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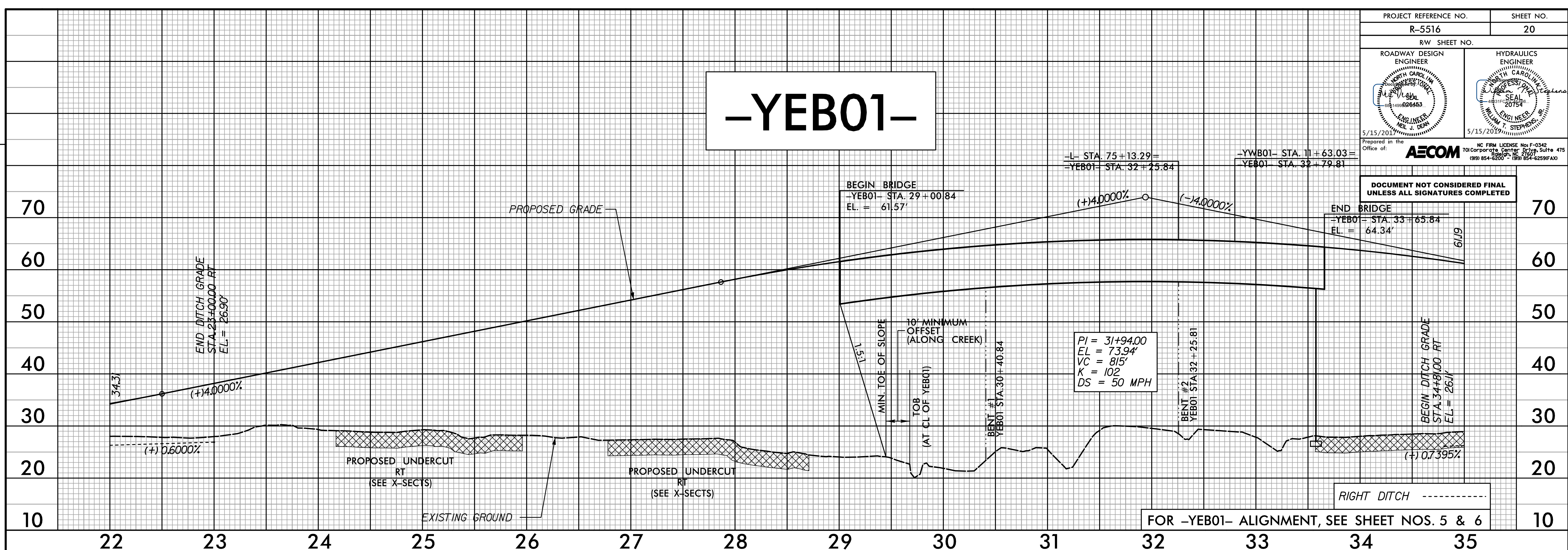


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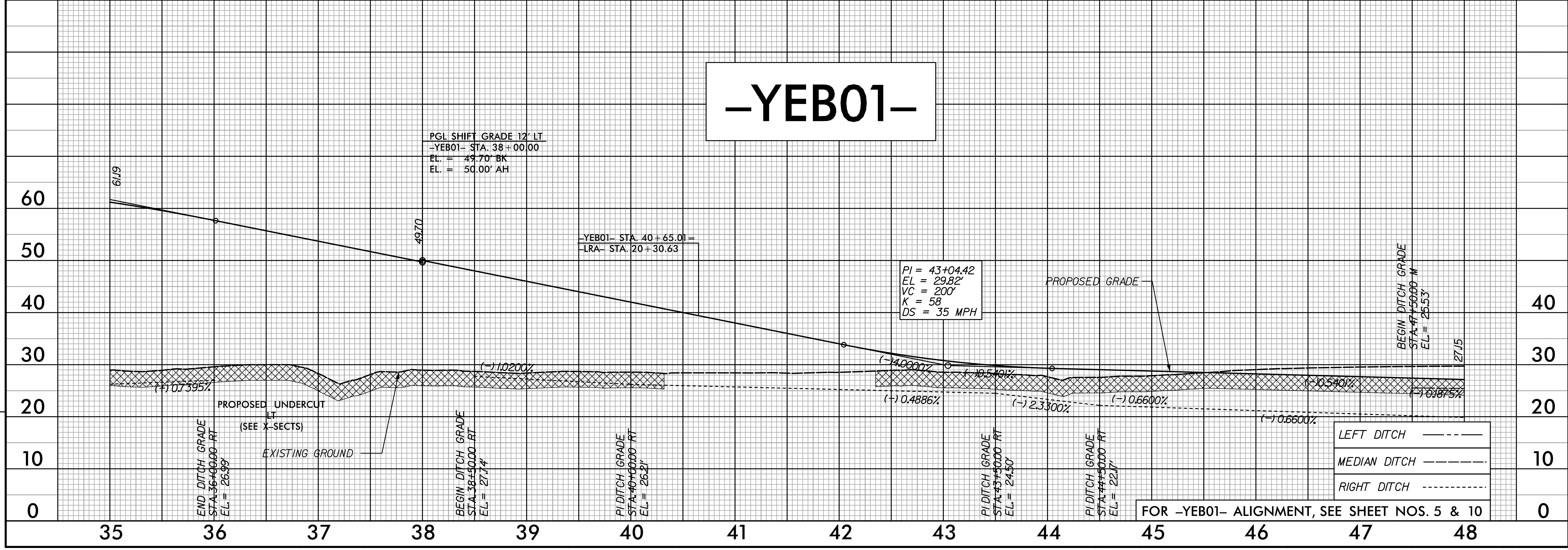
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DATE/TIME: 11/26/09 AM

PROJECT REFERENCE NO. R-5516	SHEET NO. 20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
5/15/2017	5/15/2017
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-YEB01-



-YEB01-



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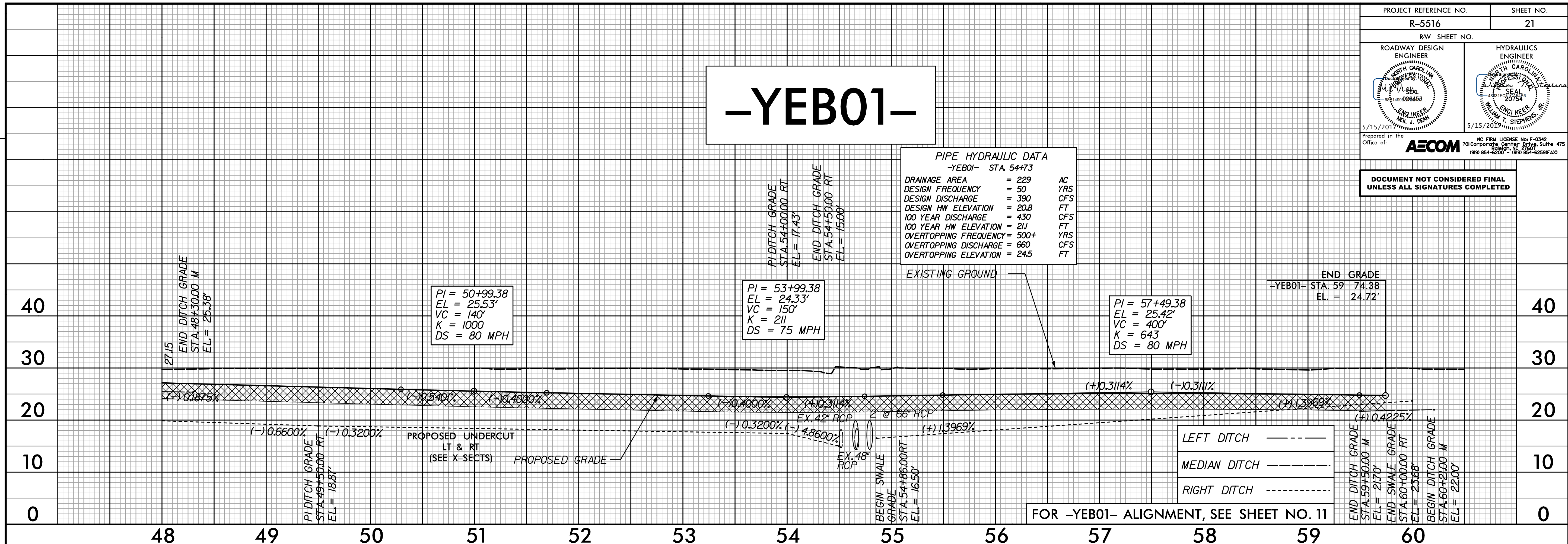
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PROJECT REFERENCE NO. R-5516	SHEET NO. 21
RW SHEET NO.	
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-YEB01-

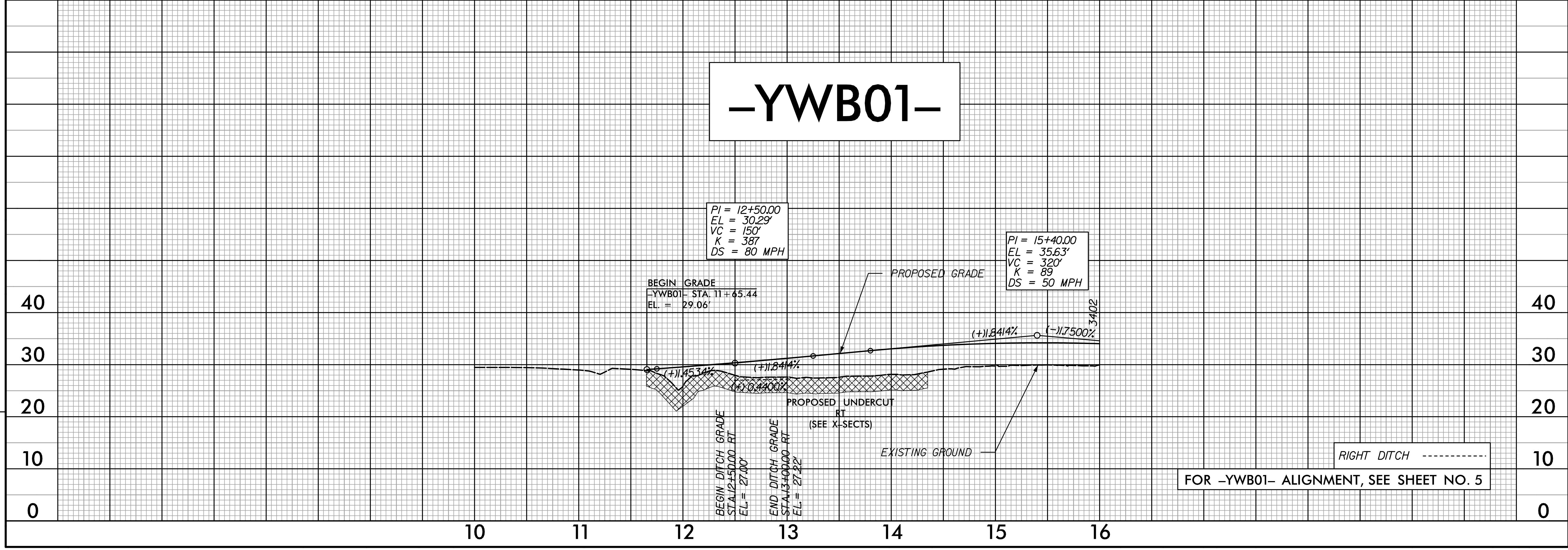
PIPE HYDRAULIC DATA
-YEB01- STA. 54+73

DRAINAGE AREA	= 229	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 390	CFS
DESIGN HW ELEVATION	= 20.8	FT
100 YEAR DISCHARGE	= 430	CFS
100 YEAR HW ELEVATION	= 21.1	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 660	CFS
OVERTOPPING ELEVATION	= 24.5	FT



-YWB01-

PI = 15+40.00
EL = 35.63'
VC = 320'
K = 89
DS = 50 MPH

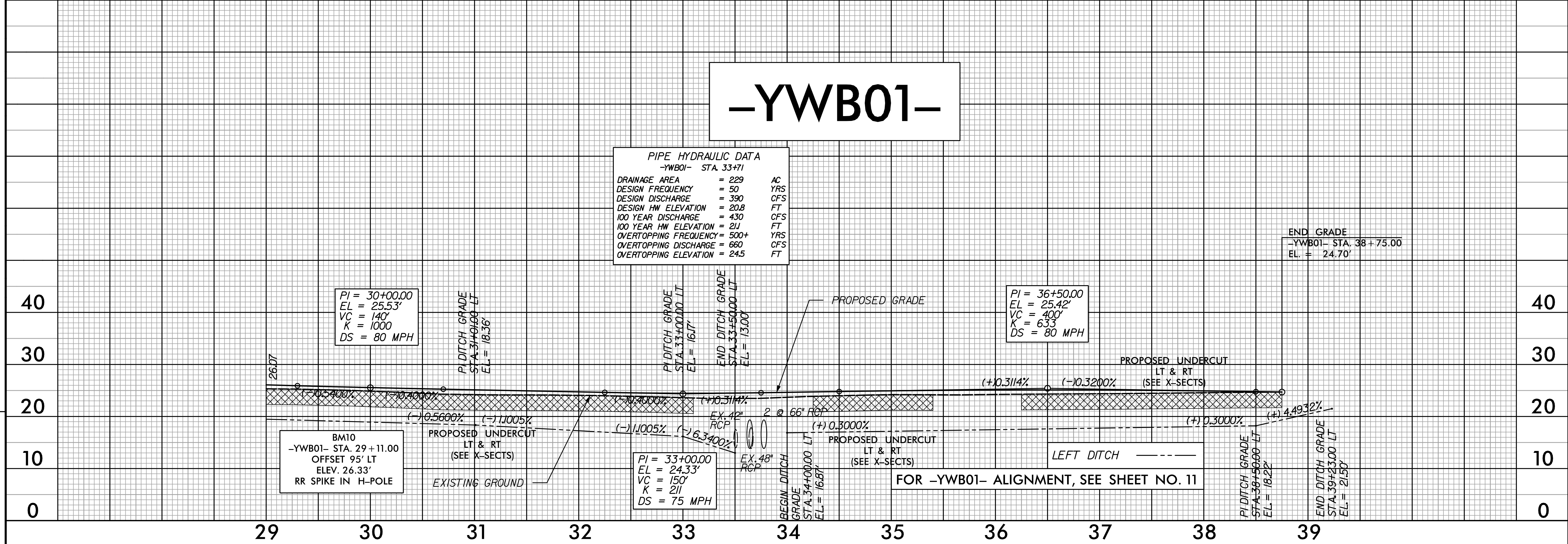
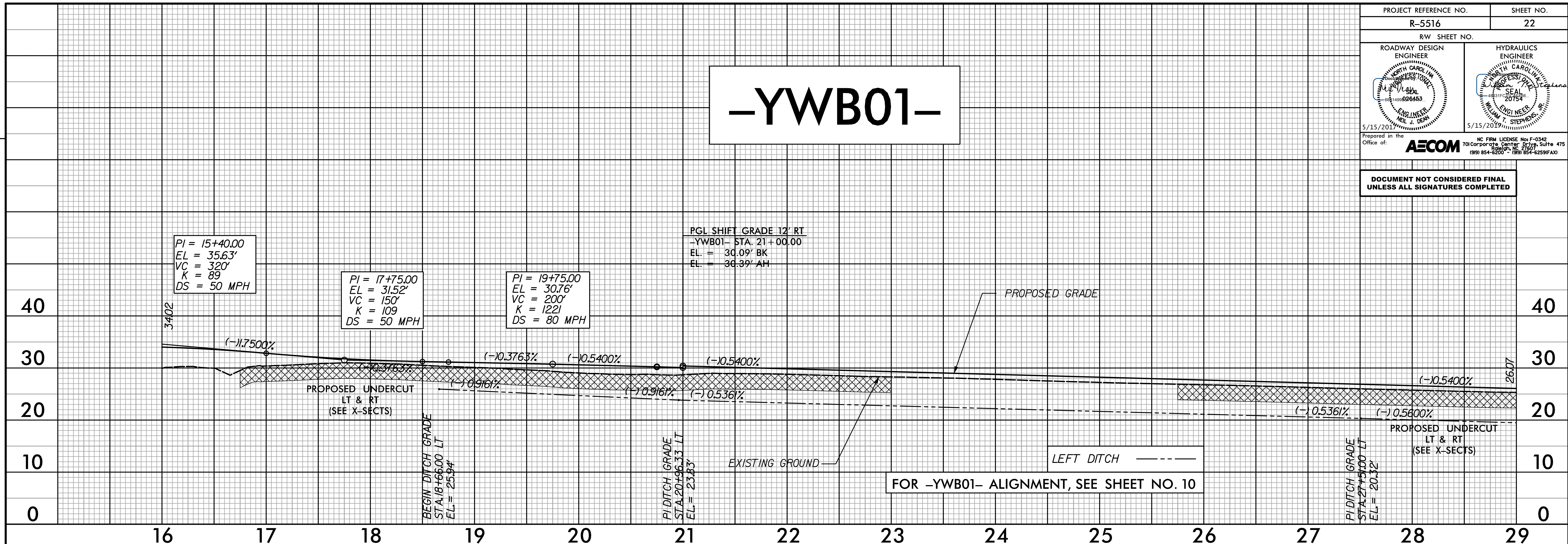


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PROJECT REFERENCE NO. R-5516	SHEET NO. 22
RW SHEET NO.	
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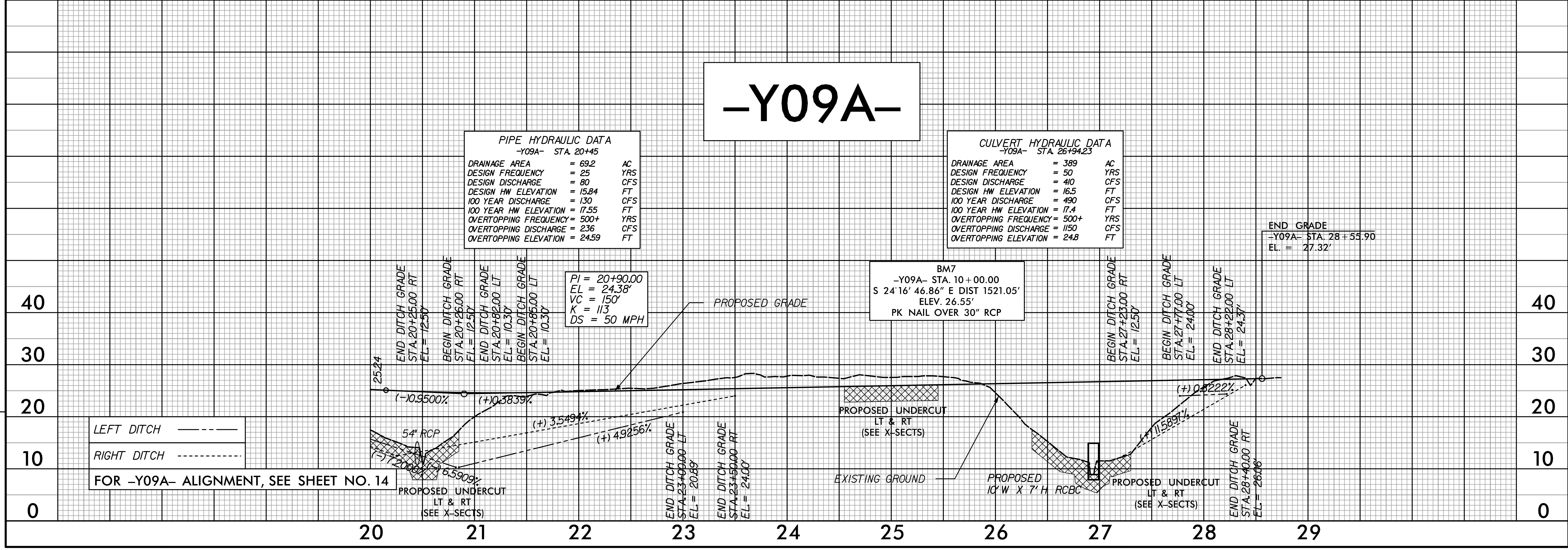
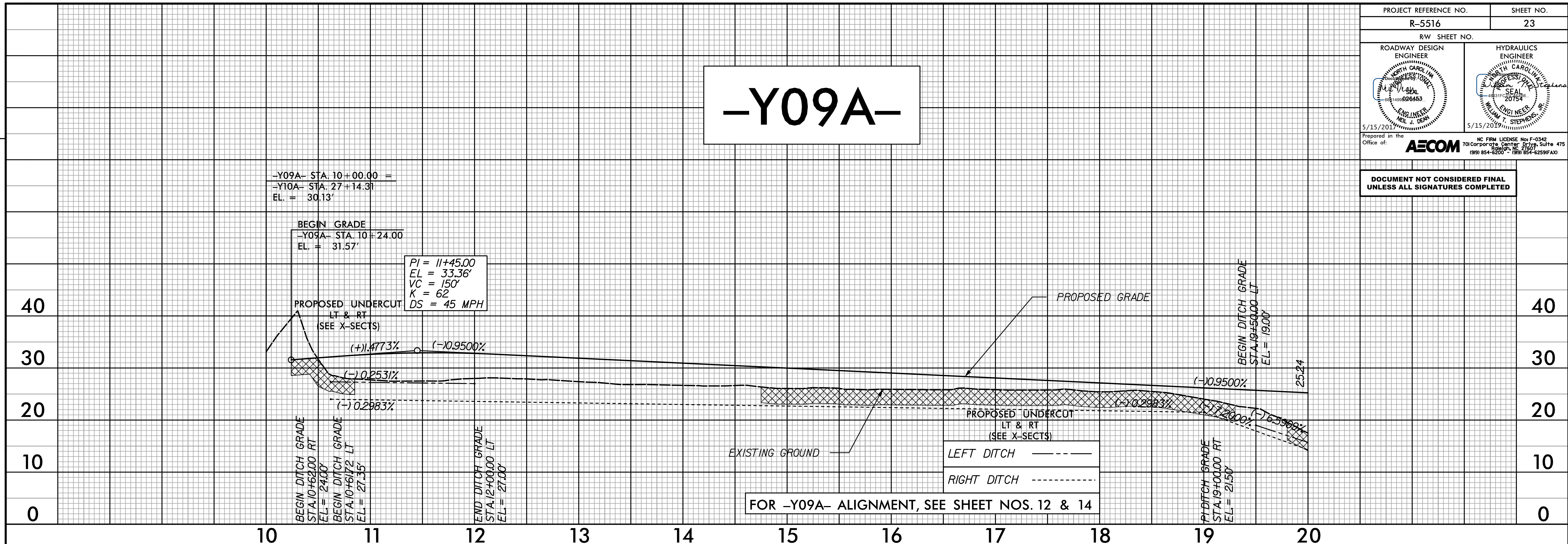


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DATE/TIME: 11/28/11 AM

PROJECT REFERENCE NO. R-5516	SHEET NO. 23
RW SHEET NO.	
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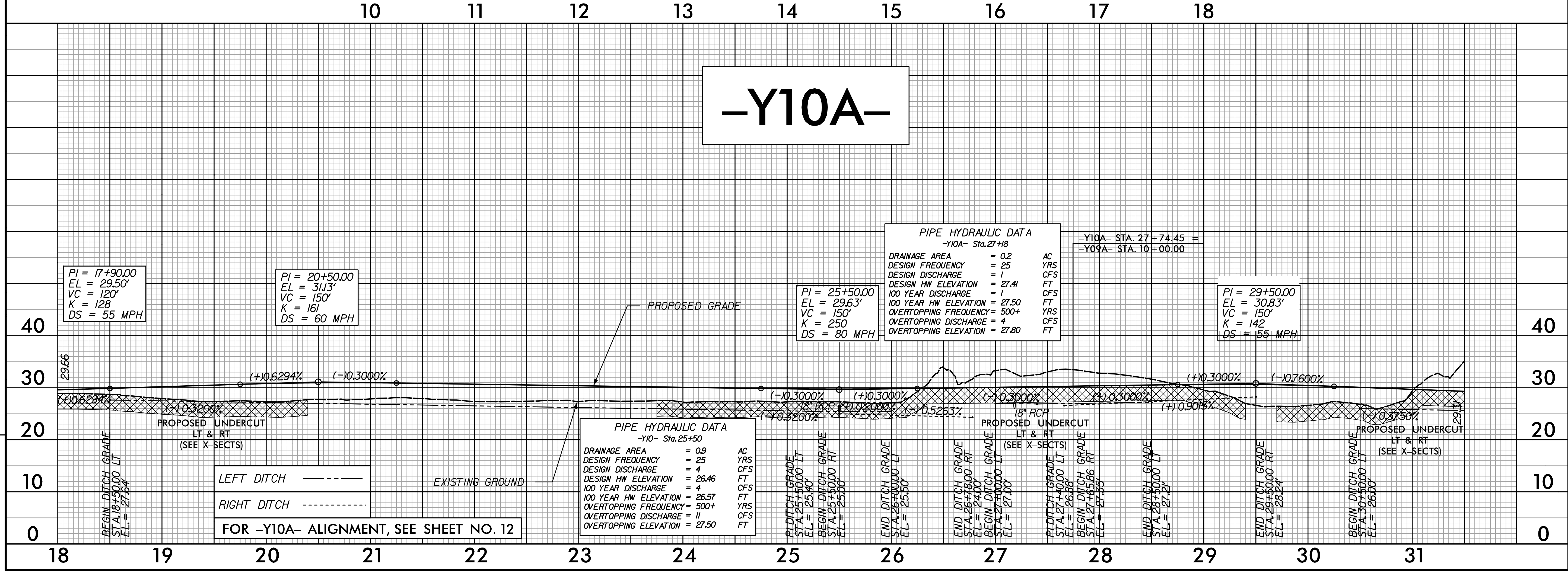
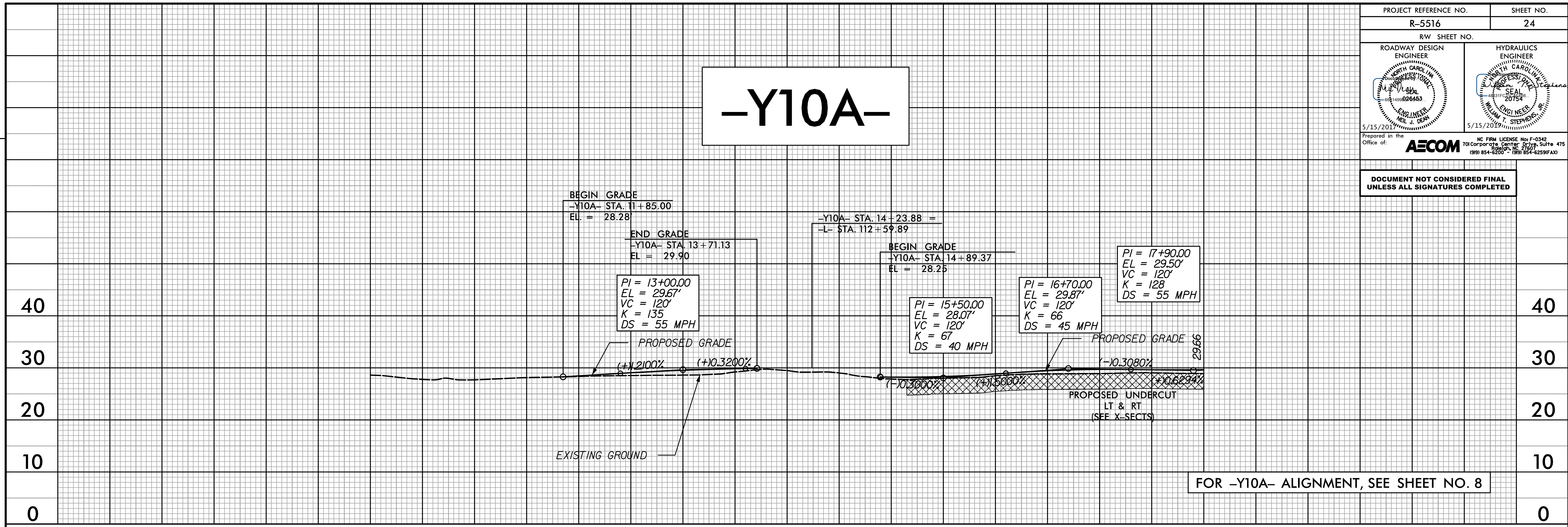


REVISIONS
R/W REVISION (10/16/15) - REVISED PROFILE DUE TO RE-ALIGNED -Y09A-- TH

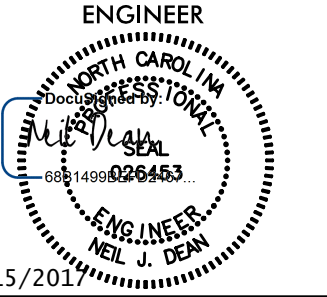
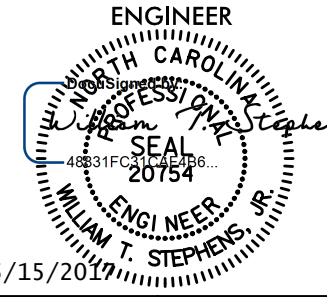
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DATE/TIME: 11/6/11 AM

PROJECT REFERENCE NO. R-5516	SHEET NO. 24
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
5/15/2017	5/15/2017
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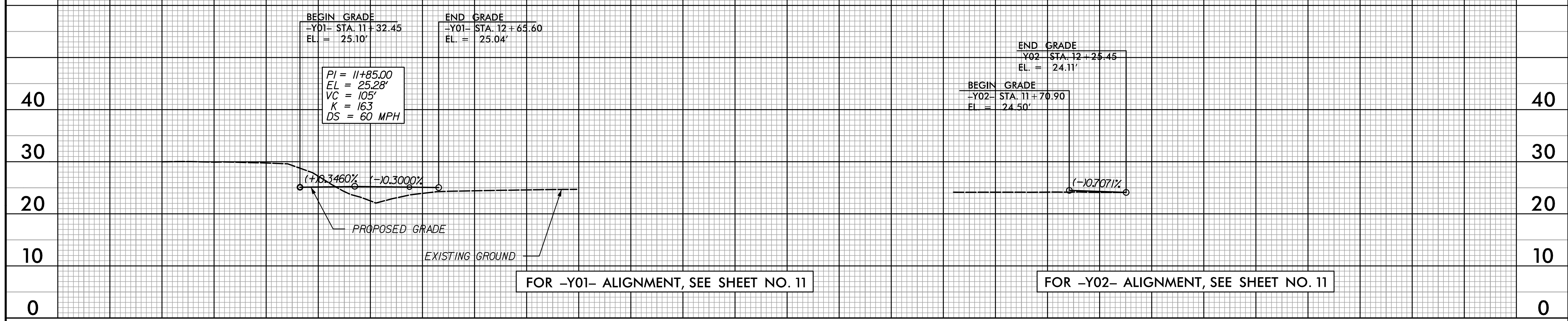
REVISIONS
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PROJECT REFERENCE NO. R-5516	SHEET NO. 26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
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-Y01-

-Y02-



FOR -Y01- ALIGNMENT, SEE SHEET NO. 11

FOR -Y02- ALIGNMENT, SEE SHEET NO. 11

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