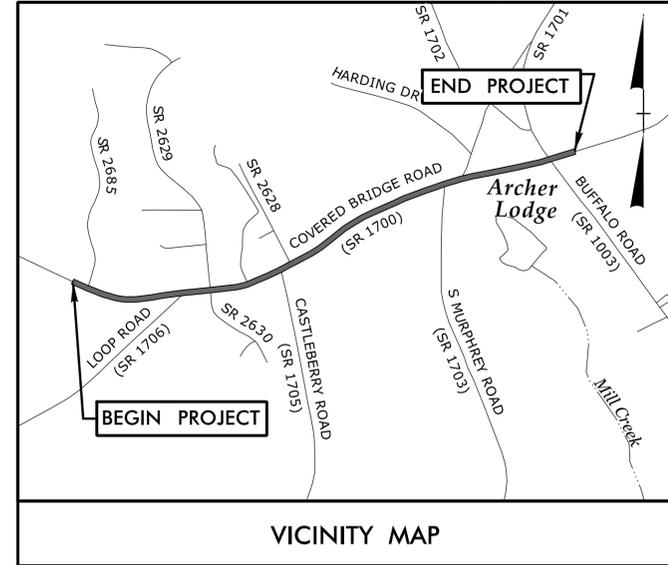


09_08/2019

TIP PROJECT: W-5704E

CONTRACT: C204857

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

**LOCATION: SR-1700 (COVERED BRIDGE RD)
FROM WEST OF SR-2685 (HELENA LN)
TO EAST OF SR 1003 (BUFFALO RD)**

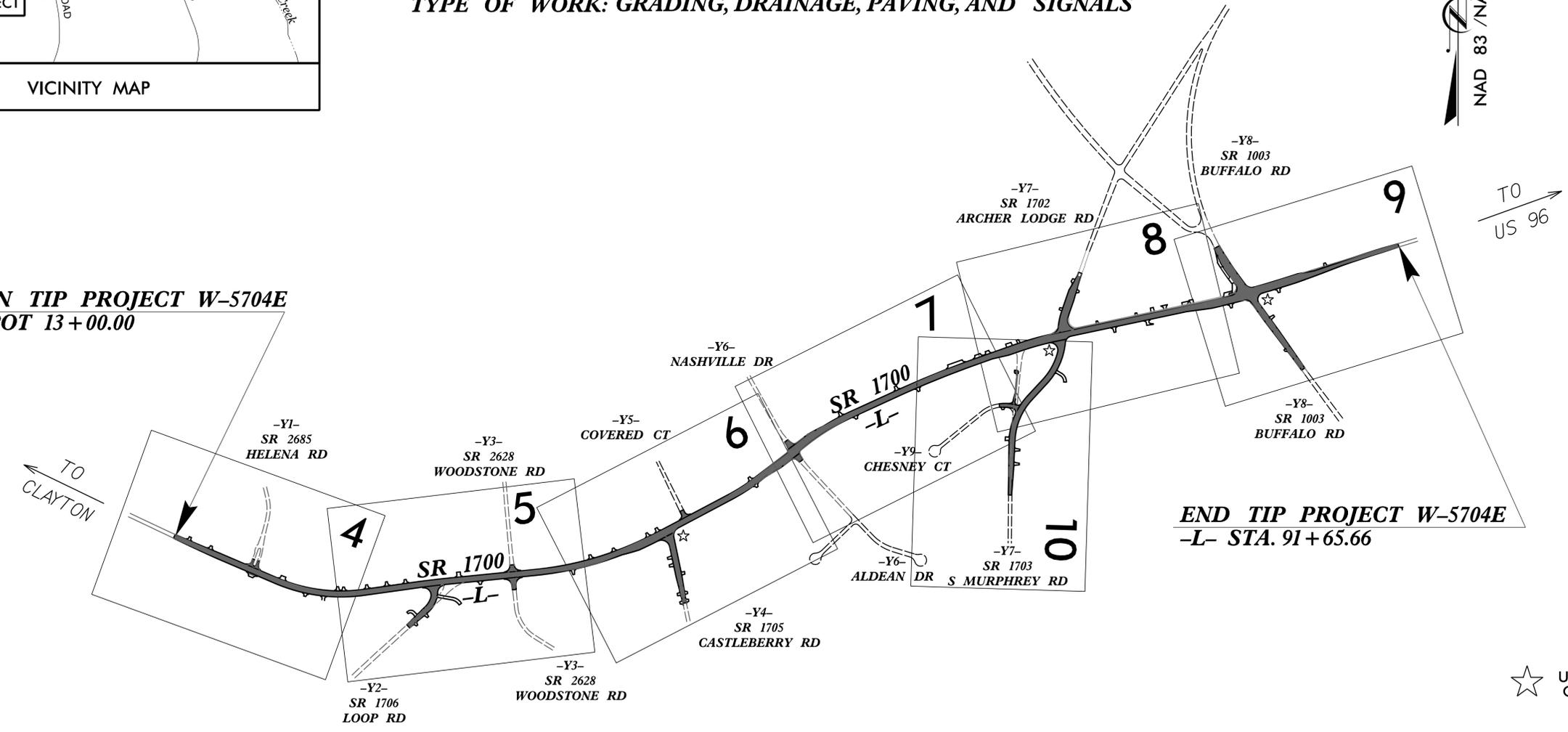
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND SIGNALS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5704E	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44850.1.5	HSIP-1700(022)	PE	
44850.2.5	HSIP-1700(022)	RW, UTILITIES	
44850.3.5	HSIP-1700(022)	CONST	



BEGIN TIP PROJECT W-5704E
-L- POT 13+00.00

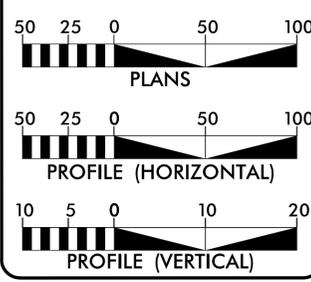
END TIP PROJECT W-5704E
-L- STA. 91+65.66



☆ UPGRADE EXISTING OR NEW SIGNAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2020 = 12,350
ADT 2040 = 18,400
K = 10 %
D = 65 %
T = 7 % *
V = 50 MPH
* TTST = 1%+DUAL 6%
FUNC CLASS =
MAJOR COLLECTOR
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT W-5704E = 1.490 mile
TOTAL LENGTH TIP PROJECT W-5704E = 1.490 mile
LENGTH OF PROJECT BASED ON -L-

Prepared For:
NCDOT HIGHWAY DIVISION 4
509 Ward Bld., Wilson, NC 27895

By:
TGS ENGINEERS
706 HILLSBOROUGH ST SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

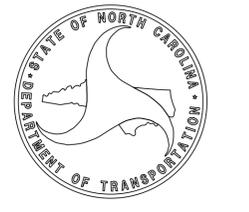
2024 STANDARD SPECIFICATIONS
RIGHT OF WAY DATE:
AUGUST 31, 2018
LETTING DATE:
APRIL 21, 2026

BURKE EVANS, PE
PROJECT ENGINEER
ADDISON GAINNEY, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

Signed by: Benjamin J Henegar 1/30/2026
SEAL 044158
P.E.

ROADWAY DESIGN ENGINEER
Signed by: David Burke Evans 1/30/2026
SEAL 19724
P.E.



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GENERAL NOTES



706 HILLSBOROUGH ST. SUITE 200
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(919) 733-8887 | tgsengineers.com
CORP. LICENSE NO.: C-0275

PROJECT REFERENCE NO. <i>W-5704E</i>	SHEET NO. <i>1A</i>
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

INDEX OF SHEETS

SHEET NUMBER	SHEET
01	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL PLAN SHEET SYMBOLS
2A-1 THRU 2A-3	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1	ROADWAY DETAILS
2C-1 THRU 2C-5	SPECIAL DETAILS
2D-1	DRAINAGE DETAILS
3B-1	ROADWAY SUMMARIES
3D-1 THRU 3D-4	DRAINAGE SUMMARY SHEETS
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEETS
4 THRU 16	PLAN AND PROFILE SHEETS
RW01 THRU RW10	RIGHT OF WAY SHEETS
TMP-1 THRU TMP-15	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-6	PAVEMENT MARKING PLANS
EC-1 THRU EC-17	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-7	SIGNING PLANS
SIG-1.0 THRU SIG-10.3	SIGNAL PLANS
SCP-1 THRU SCP-9	SIGNAL COMMUNICATIONS PLANS
UC-1 THRU UC-17	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-8	UTILITY BY OTHERS PLANS
X-0	CROSS-SECTION INDEX
X-0A THRU X-0B	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-54	CROSS-SECTIONS

GENERAL NOTES: 2024 SPECIFICATIONS EFFECTIVE: 01-16-2024

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 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

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 AND DETAILS IN PLANS AT LOCATIONS DIRECTED BY THE ENGINEER.

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

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

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

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

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE:

DUKE ENERGY (POWER) – JAMES RICHARDSON
CENTURYLINK (TELECOM) – KEVIN GOODWIN
SPECTRUM (TELECOM) – ROBERT DABROWSKI
CONTERRA (TELECOM) – CHRIS FARR
UTILIPIXEL (TELECOM) – ROCCO DISANTO
PNG (GAS) – JOEL SMITH

JOHNSTON COUNTY (WATER & SEWER) – MICHAEL KEEN

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

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

CURB RAMPS:
CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS IN ACCORDANCE WITH STD. 848.06.

STANDARD DRAWINGS

2024 ROADWAY ENGLISH STANDARD DRAWINGS EFF. 01-16-2024
REV.

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" CONTRACTS STANDARDS AND DEVELOPMENT UNIT – N. C. DEPARTMENT OF TRANSPORTATION – RALEIGH, N. C., DATED JANUARY 16, 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.NO.	TITLE
DIVISION 2 – EARTHWORK	
200.03	METHOD OF CLEARING – METHOD III
225.02	GUIDE FOR GRADING SUBGRADE – SECONDARY AND LOCAL
225.04	METHOD OF OBTAINING SUPERELEVATION – TWO LANE PAVEMENT
225.06	METHOD OF GRADING SIGHT DISTANCE AT INTERSECTIONS
DIVISION 3 – PIPE CULVERTS	
300.01	METHOD OF PIPE INSTALLATION (USE DETAILS IN LIEU OF STANDARDS FOR SHEETS 1 AND 2 OF 2)
310.10	DRIVEWAY PIPE CONSTRUCTION
DIVISION 5 – SUBGRADE, BASES AND SHOULDERS	
560.01	METHOD OF SHOULDER CONSTRUCTION – HIGH SIDE OF SUPERELEVATED CURVE – METHOD I
DIVISION 6 – ASPHALT BASES AND PAVEMENTS	
654.01	PAVEMENT REPAIRS
DIVISION 8 – INCIDENTALS	
815.02	SUBSURFACE DRAIN
838.01	CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS – 15" THRU 48" PIPE 90 SKEW
838.04	CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS – 17"x13" THRU 71"x47" ARCH 90 SKEW
838.11	BRICK ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS – 15" THRU 48" PIPE 90 SKEW
838.14	BRICK ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS – 17"x13" THRU 71"x47" ARCH 90 SKEW
838.21	REINFORCED CONCRETE ENDWALL – FOR SINGLE 54" PIPE 90 SKEW
838.45	NOTES FOR REINFORCED CONCRETE ENDWALL – STD. DWG 838.21 THRU 838.40
838.51	REINFORCED BRICK ENDWALL – FOR SINGLE 54" PIPE 90 SKEW
838.75	NOTES FOR REINFORCED BRICK ENDWALL – STD. DWG 838.51 THRU 838.70
838.80	PRECAST ENDWALLS – 12" THRU 72" PIPE 90 SKEW
840.00	CONCRETE BASE PAD FOR DRAINAGE STRUCTURES
840.01	BRICK CATCH BASIN – 12" THRU 54" PIPE
840.02	CONCRETE CATCH BASIN – 12" THRU 54" PIPE
840.03	FRAME, GRATES AND HOOD – FOR USE ON STANDARD CATCH BASIN
840.14	CONCRETE DROP INLET – 12" THRU 30" PIPE
840.15	BRICK DROP INLET – 12" THRU 30" PIPE
840.16	DROP INLET FRAME AND GRATES – FOR USE WITH STD. DWG 840.14 AND 840.15
840.19	CONCRETE GRATED DROP INLET TYPE 'D' – 12" THRU 36" PIPE
840.24	FRAMES AND NARROW SLOT SAG GRATES
840.28	BRICK GRATED DROP INLET TYPE 'D' – 12" THRU 36" PIPE
840.31	CONCRETE JUNCTION BOX – 12" THRU 66" PIPE
840.32	BRICK JUNCTION BOX – 12" THRU 66" PIPE
840.55	MANHOLE FRAME AND COVER (FLUSH WITH SLAB FOR OPEN THROAT CATCH BASIN)
840.66	DRAINAGE STRUCTURE STEPS
846.01	CONCRETE CURB, GUTTER AND CURB & GUTTER
848.02	DRIVEWAY TURNOUT – RADIUS TYPE
848.04	STREET TURNOUT
848.06	CURB RAMP
852.01	CONCRETE ISLANDS
862.01	GUARDRAIL PLACEMENT (Use Detail in Lieu of Standards for Sheet 6 of 15)
862.02	GUARDRAIL INSTALLATION
876.01	RIP RAP IN CHANNELS AND DITCHES
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS
876.04	DRAINAGE DITCHES WITH CLASS 'B' RIP RAP

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

Note: Not to Scale

BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin (EIP)	○
Computed Property Corner	×
Existing Concrete Monument (ECM)	□
Parcel/Sequence Number	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Existing Historic Property Boundary	-HPB-
Known Contamination Area: Soil	-S-S-
Potential Contamination Area: Soil	-S-S-
Known Contamination Area: Water	-W-W-
Potential Contamination Area: Water	-W-W-
Contaminated Site: Known or Potential	☠ ☡

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
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	○
Switch	□
RR Abandoned	_____
RR Dismantled	_____

RIGHT OF WAY & PROJECT CONTROL:

Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Secondary Horiz and Vert Control Point	◆
Vertical Benchmark	⊠
Existing Right of Way Monument	△
Proposed Right of Way Monument (Rebar and Cap)	▲
Proposed Right of Way Monument (Concrete)	⊙
Existing Permanent Easement Monument	◇
Proposed Permanent Easement Monument (Rebar and Cap)	◆
Existing C/A Monument	△
Proposed C/A Monument (Rebar and Cap)	▲
Proposed C/A Monument (Concrete)	⊙
Existing Right of Way Line	_____
Proposed Right of Way Line	_____
Existing Control of Access Line	_____
Proposed Control of Access Line	_____
Proposed ROW and CA Line	_____
Existing Easement Line	_____
Proposed Temporary Construction Easement	_____
Proposed Temporary Drainage Easement	_____
Proposed Permanent Drainage Easement	_____
Proposed Permanent Drainage/Utility Easement	_____
Proposed Permanent Utility Easement	_____
Proposed Temporary Utility Easement	_____
Proposed Aerial Utility Easement	_____

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Curb Ramp	_____
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	_____

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	_____
Bridge Wing Wall, Head Wall and End Wall	_____
MINOR:	
Head and End Wall	_____
Pipe Culvert	_____
Footbridge	_____
Drainage Box: Catch Basin, DI or JB	_____
Paved Ditch Gutter	_____
Storm Sewer Manhole	_____
Storm Sewer	_____

UTILITIES:

* SUE - Subsurface Utility Engineering
LOS - Level of Service - A,B,C or D (Accuracy)

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 Test Hole (SUE - LOS A)*	⊙
U/G Power Line (SUE - LOS B)*	_____
U/G Power Line (SUE - LOS C)*	_____
U/G Power Line (SUE - LOS D)*	_____

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊙
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	⊠
U/G Telephone Test Hole (SUE - LOS A)*	⊙
U/G Telephone Cable (SUE - LOS B)*	_____
U/G Telephone Cable (SUE - LOS C)*	_____
U/G Telephone Cable (SUE - LOS D)*	_____
U/G Telephone Conduit (SUE - LOS B)*	_____
U/G Telephone Conduit (SUE - LOS C)*	_____
U/G Telephone Conduit (SUE - LOS D)*	_____
U/G Fiber Optics Cable (SUE - LOS B)*	_____
U/G Fiber Optics Cable (SUE - LOS C)*	_____
U/G Fiber Optics Cable (SUE - LOS D)*	_____

WATER:

Water Manhole	⊙
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line Test Hole (SUE - LOS A)*	⊙
U/G Water Line (SUE - LOS B)*	_____
U/G Water Line (SUE - LOS C)*	_____
U/G Water Line (SUE - LOS D)*	_____
Above Ground Water Line	_____
TV:	
TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	⊠
U/G TV Test Hole (SUE - LOS A)*	⊙
U/G TV Cable (SUE - LOS B)*	_____
U/G TV Cable (SUE - LOS C)*	_____
U/G TV Cable (SUE - LOS D)*	_____
U/G Fiber Optic Cable (SUE - LOS B)*	_____
U/G Fiber Optic Cable (SUE - LOS C)*	_____
U/G Fiber Optic Cable (SUE - LOS D)*	_____

GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line Test Hole (SUE - LOS A)*	⊙
U/G Gas Line (SUE - LOS B)*	_____
U/G Gas Line (SUE - LOS C)*	_____
U/G Gas Line (SUE - LOS D)*	_____
Above Ground Gas Line	_____

SANITARY SEWER:

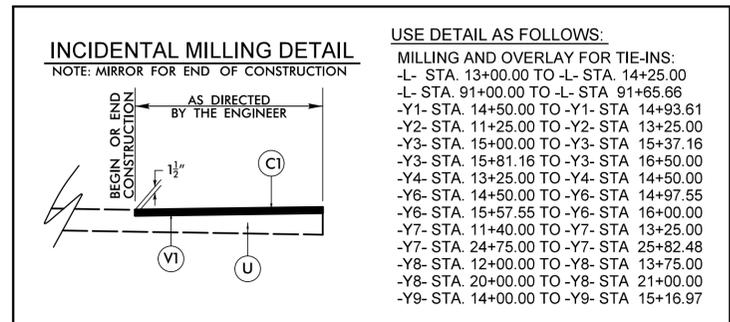
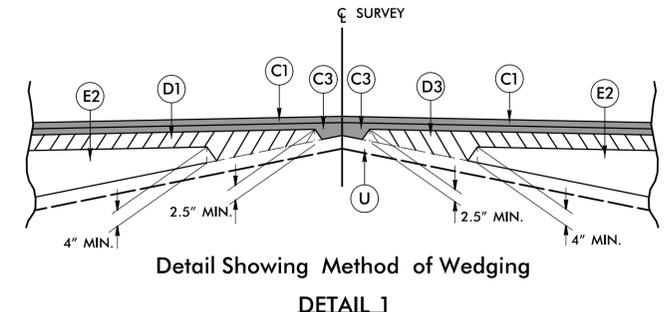
Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	_____
Above Ground Sanitary Sewer	_____
SS Force Main Line Test Hole (SUE - LOS A)*	⊙
SS Force Main Line (SUE - LOS B)*	_____
SS Force Main Line (SUE - LOS C)*	_____
SS Force Main Line (SUE - LOS D)*	_____

MISCELLANEOUS:

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

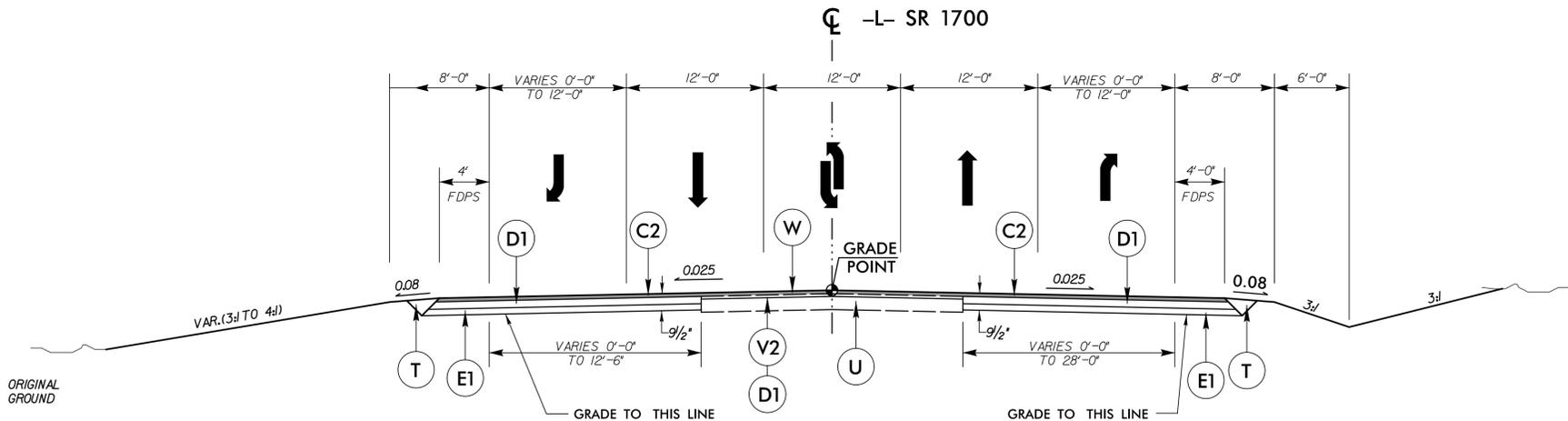
6/2/2025

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)			
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R1	2'-6" CONCRETE CURB AND GUTTER.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R2	6" CONCRETE DRIVEWAY
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	S	4" CONCRETE SIDEWALK
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	T	EARTH MATERIAL.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
D3	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.	V1	INCIDENTAL MILLING
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	V2	MILLING BITUMINOUS PAVEMENT. 2.5" DEPTH.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL 1)
J	6" AGGREGATE BASE COURSE	PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.	



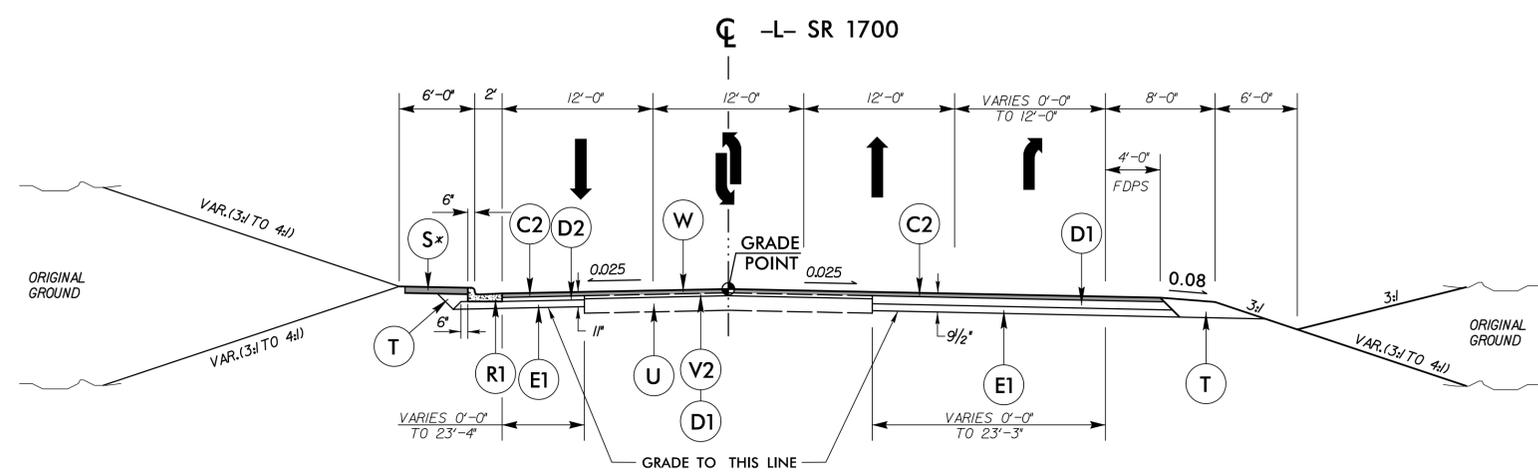
PROJECT REFERENCE NO. W-5704E	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER PROFESSIONAL SEAL 19724 1/26/2026	PAVEMENT DESIGN ENGINEER PROFESSIONAL SEAL 040774 1/26/2026
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.5" S9.5C
C2	3" S9.5C
C3	VAR. S9.5C
D1	2.5" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
J	6" ABC
R1	2'-6" C & G
R2	6" CONC. DRIVEWAY
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	INC. MILLING
V2	MILLING, 2.5"
W	WEDGING
PAVEMENT EDGE SLOPES 1:1 UNLESS NOTED OTHERWISE	



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1:
 FROM -L- STA. 13+00.00 TO 41+65.00
 FROM -L- STA. 44+00.00 TO 71+00.00
 FROM -L- STA. 82+00.00 TO 91+65.66



TYPICAL SECTION NO. 2

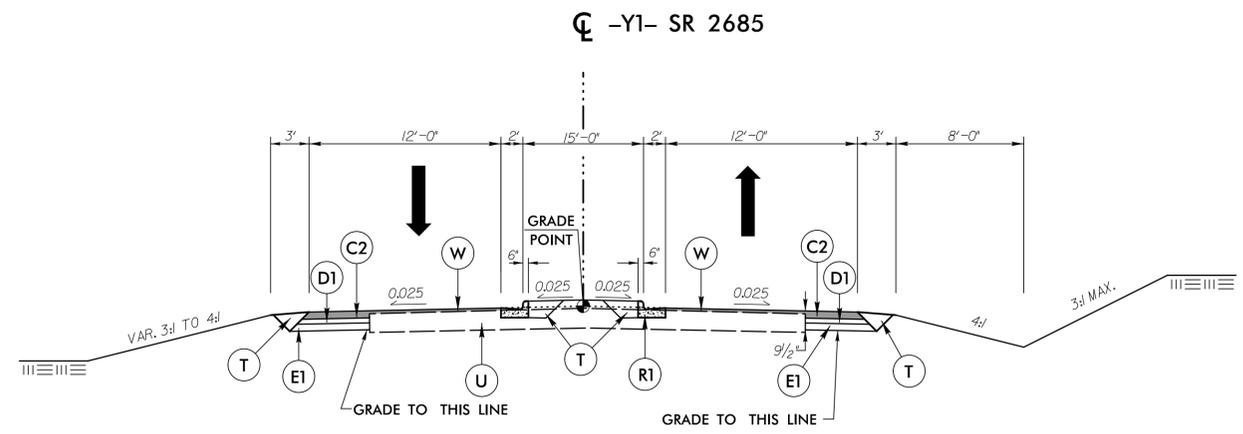
USE TYPICAL SECTION NO. 2:
 FROM -L- STA. 41+65.00 TO 44+00.00 (MIRROR)
 FROM -L- STA. 71+00.00 TO 82+00.00

* CONSTRUCT SIDEWALK IN THE FOLLOWING LOCATION:
 FROM -L- STA. 71+00.00 TO 82+00.00 LT

I:\26\2025\11\26\2025\W-5704e\roadway\proj\W-5704E_RDY_TYP.dgn

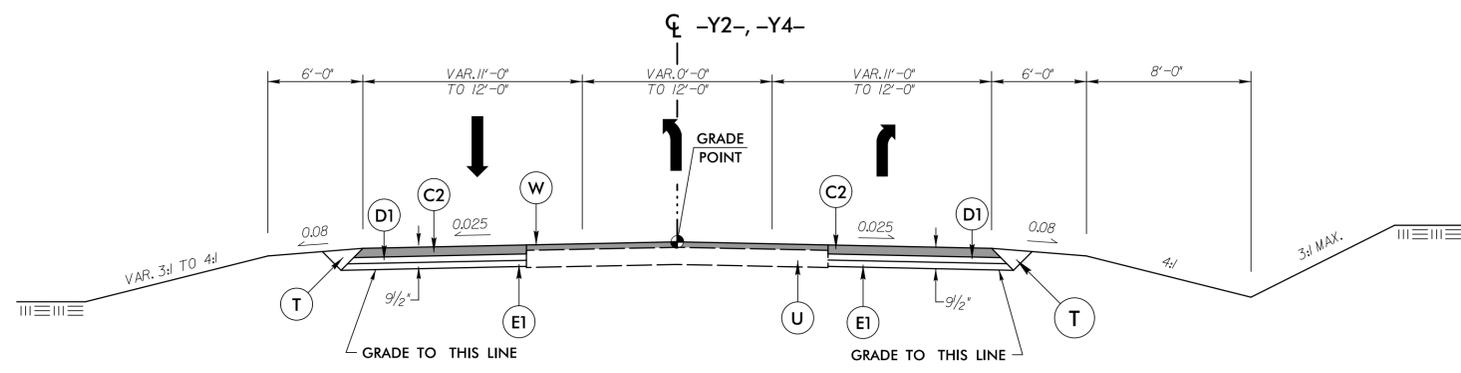
6/2/2026

PROJECT REFERENCE NO. W-5704E	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	



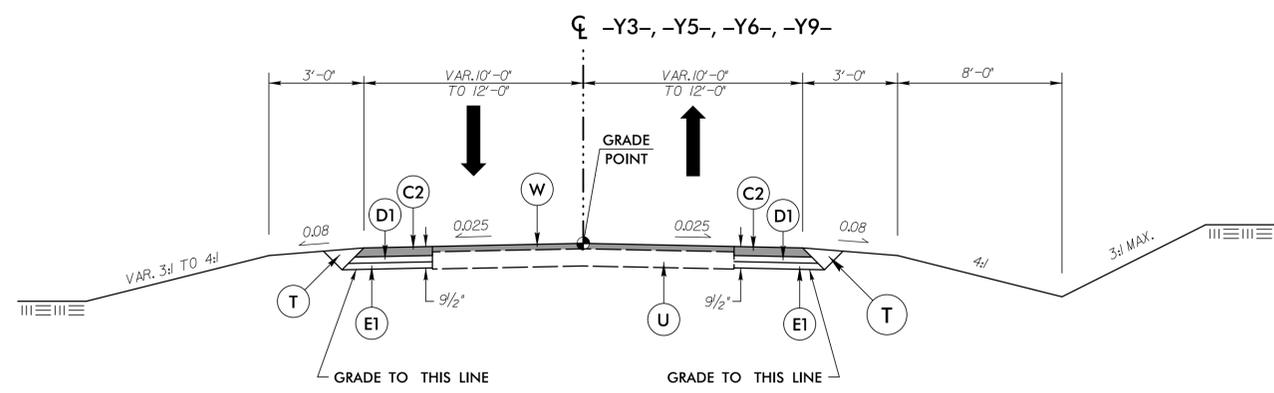
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3:
FROM -Y1- STA. 14+50.00 TO 14+93.61



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4:
FROM -Y2- STA. 10+22.00 TO 13+25.00
FROM -Y4- STA. 10+34.00 TO 14+50.00



TYPICAL SECTION NO. 5

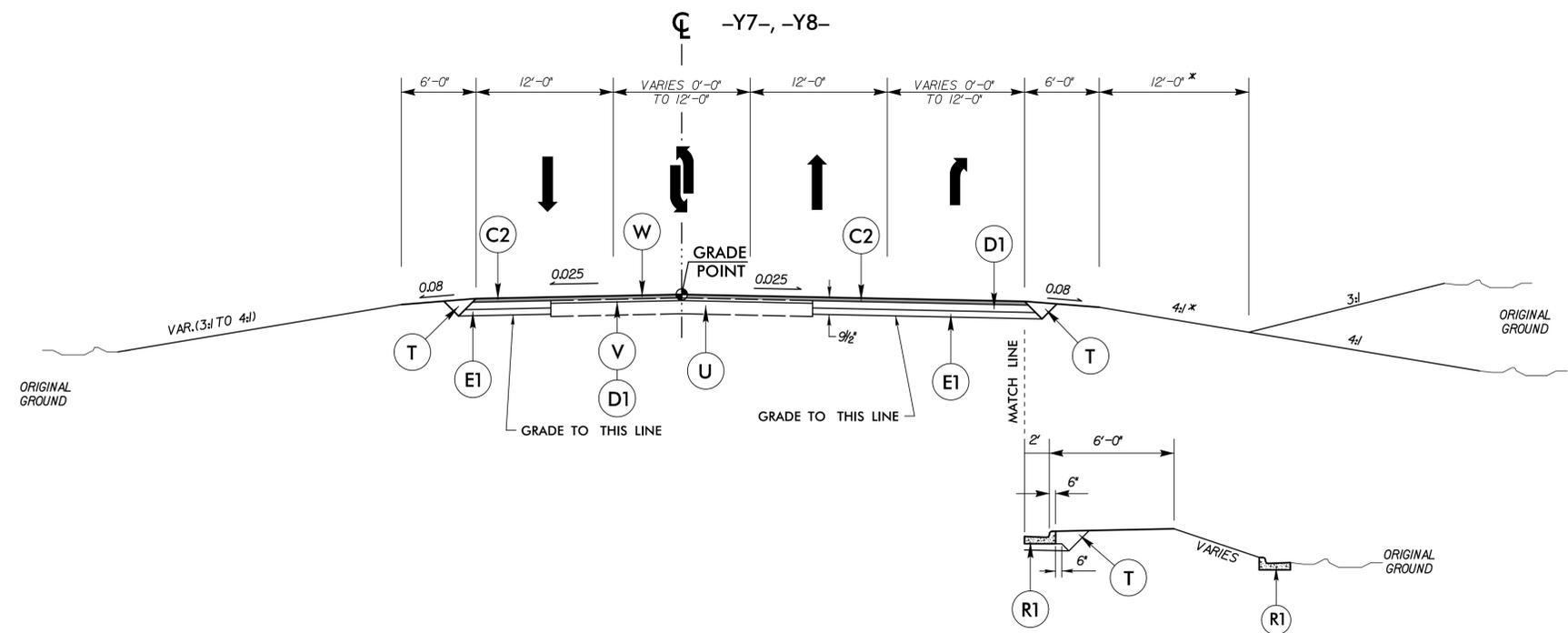
USE TYPICAL SECTION NO. 5:
FROM -Y3- STA. 15+00.00 TO 15+37.16
FROM -Y3- STA. 15+81.16 TO 16+50.00
FROM -Y5- STA. 15+00.00 TO 15+42.30
FROM -Y6- STA. 14+50.00 TO 14+97.55
FROM -Y6- STA. 15+57.55 TO 16+00.00
FROM -Y9- STA. 14+00.00 TO 15+16.97

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.5" S9.5C
C2	3" S9.5C
C3	VAR. S9.5C
D1	2.5" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
J	6" ABC
R1	2'-6" C & G
R2	6" CONC. DRIVEWAY
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	INC. MILLING
V2	MILLING, 2.5"
W	WEDGING

PAVEMENT EDGE SLOPES 1:1 UNLESS NOTED OTHERWISE

I:\26\2026\15\1505\W-5704E\roadway\proj\W-5704E_RDY_TYP.dgn
 User: jbeavans

6/2/2026



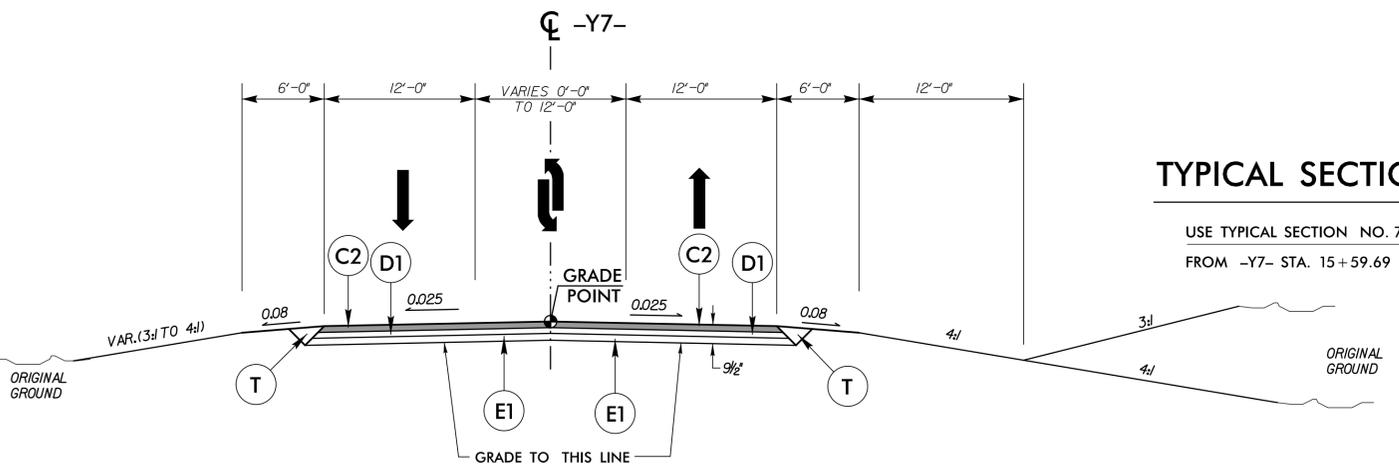
TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6:
 FROM -Y7- STA. 11+60.00 TO 15+10.15
 FROM -Y7- STA. 21+00.00 TO 25+82.48
 FROM -Y8- STA. 12+00.00 TO 15+20.84
 FROM -Y8- STA. 15+76.51 TO 21+00.00

* FROM -Y7- STA. 11+60.00 TO 15+10.15 LT
 SEE CROSS-SECTIONS FOR ROADWAY DITCH TYPICAL

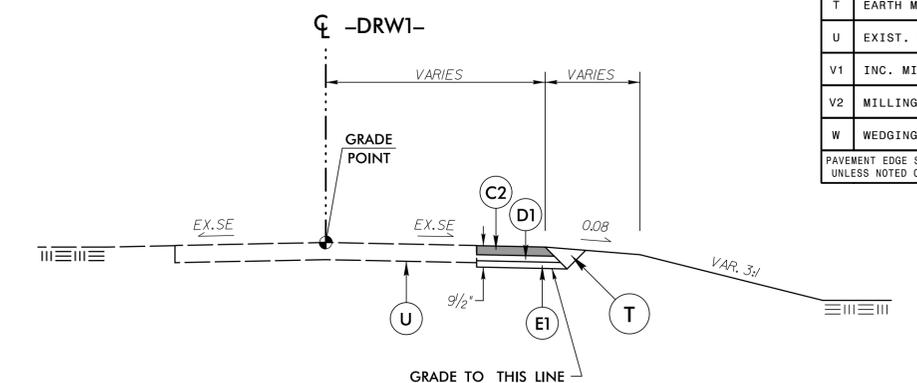
TYPICAL SECTION NO. 6A

USE TYPICAL SECTION NO. 6A IN CONJUNCTION
 WITH TYPICAL SECTION 6:
 FROM -Y7- STA. 12+60.00 TO 15+10.15



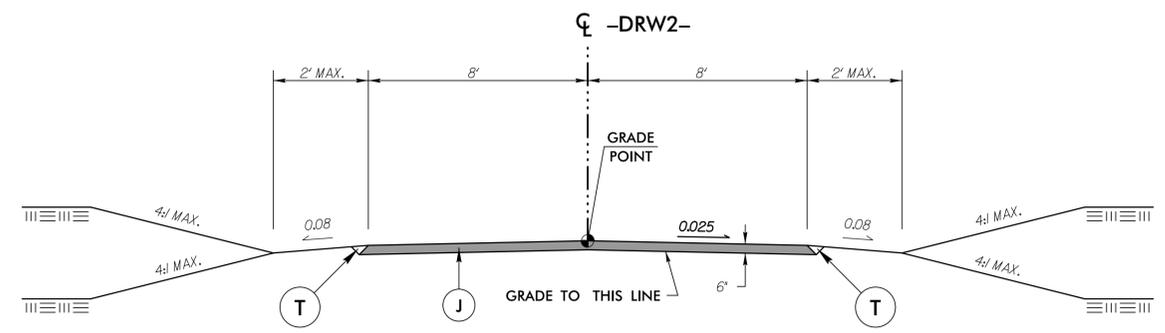
TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7:
 FROM -Y7- STA. 15+59.69 TO 21+00.00



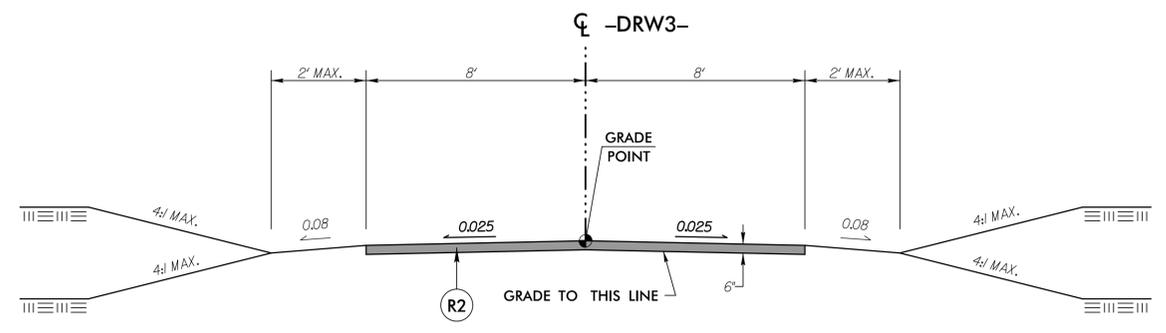
TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8:
 FROM -DRW1- STA. 11+22.11 TO 11+88.08



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9:
 FROM -DRW2- STA. 10+18.00 TO 11+70.00



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10:
 FROM -DRW3- STA. 10+18.00 TO 11+06.99

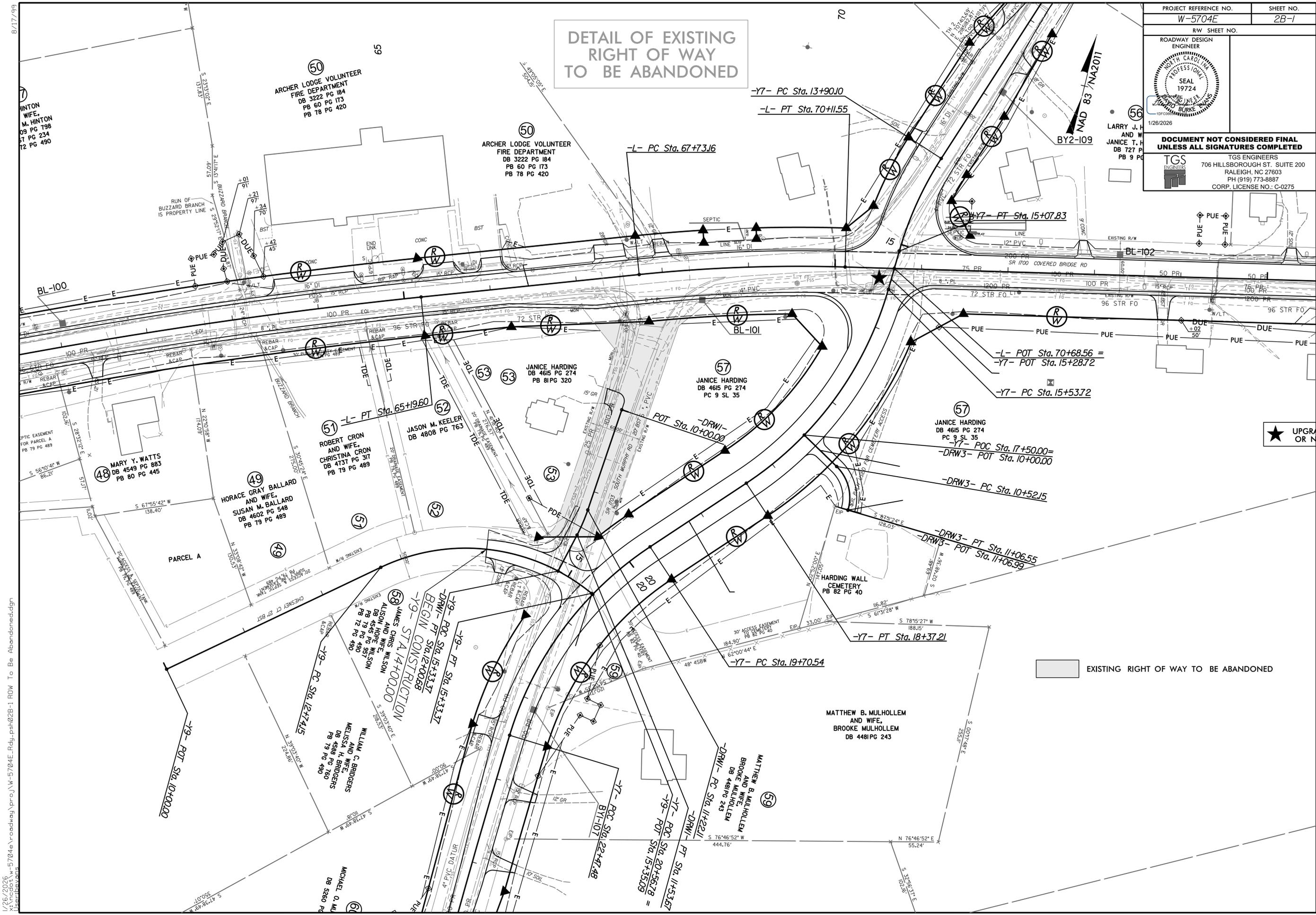
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ROADWAY DESIGN ENGINEER SEAL 19724 1/26/2026	PAVEMENT DESIGN ENGINEER SEAL 040774 1/26/2026
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.5" S9.5C
C2	3" S9.5C
C3	VAR. S9.5C
D1	2.5" I19.0C
D2	4" I19.0C
D3	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
J	6" ABC
R1	2'-6" C & G
R2	6" CONC. DRIVEWAY
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	INC. MILLING
V2	MILLING, 2.5"
W	WEDGING
PAVEMENT EDGE SLOPES 1:1 UNLESS NOTED OTHERWISE	

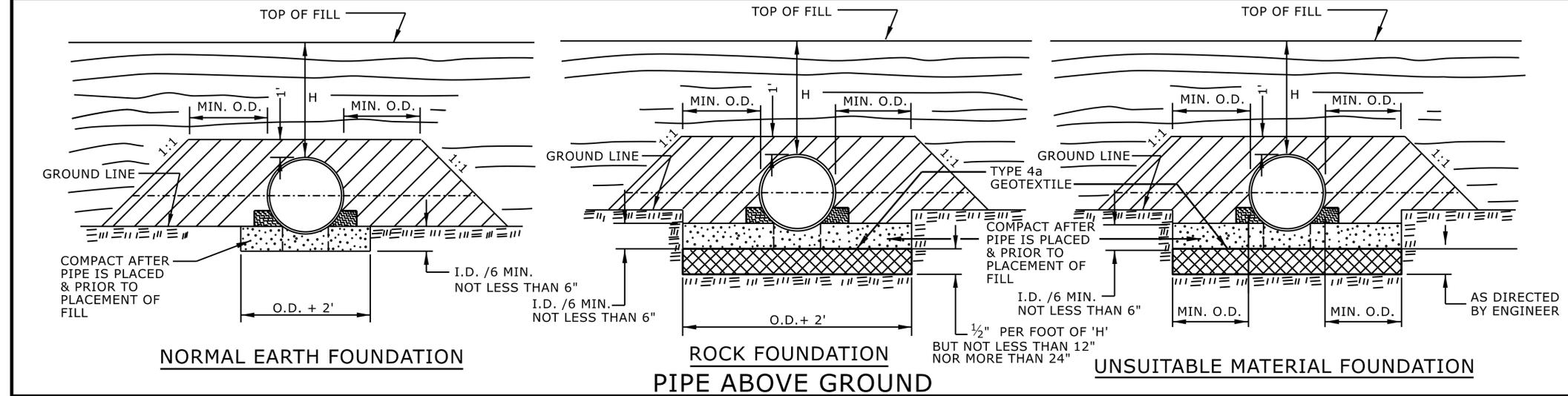
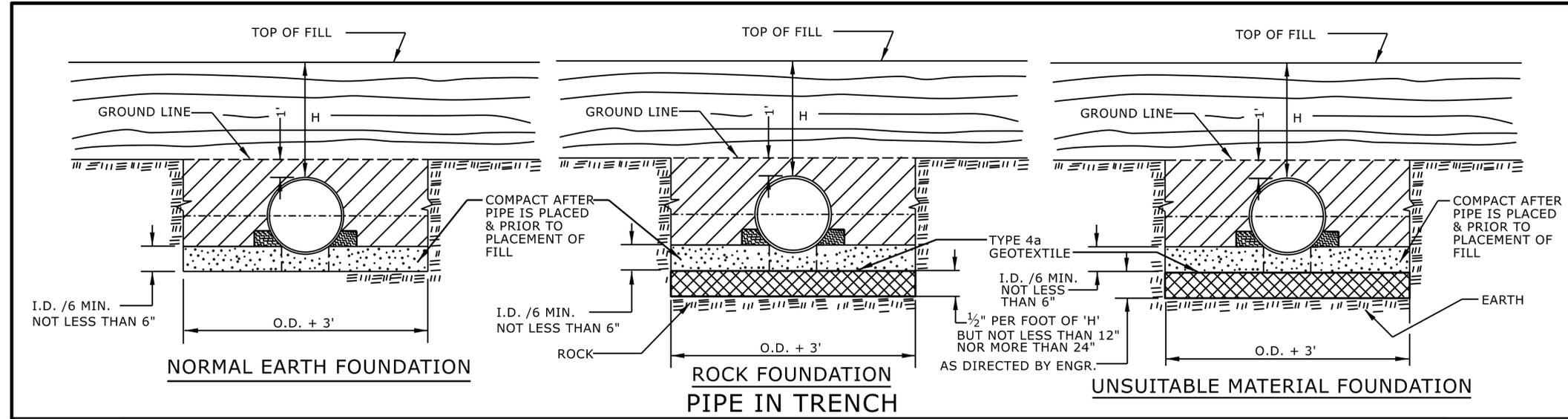
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 1/26/2026
 User: jstevens

PROJECT REFERENCE NO. W-5704E	SHEET NO. 2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

**DETAIL OF EXISTING
RIGHT OF WAY
TO BE ABANDONED**



1/26/2026
 C:\Users\jrd\OneDrive\Documents\Roadway\proj\W-5704E_Rdy_psh02B-1 ROW To Be Abandoned.dgn
 jrd



GENERAL NOTES:
 I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
 O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
 H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.
 TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.
 LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.
 REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINGLINE OF PIPE
 SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.
 UNDISTURBED EARTH MATERIAL
 SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
 FLEXIBLE PIPE

SHEET 1 OF 2
300.01



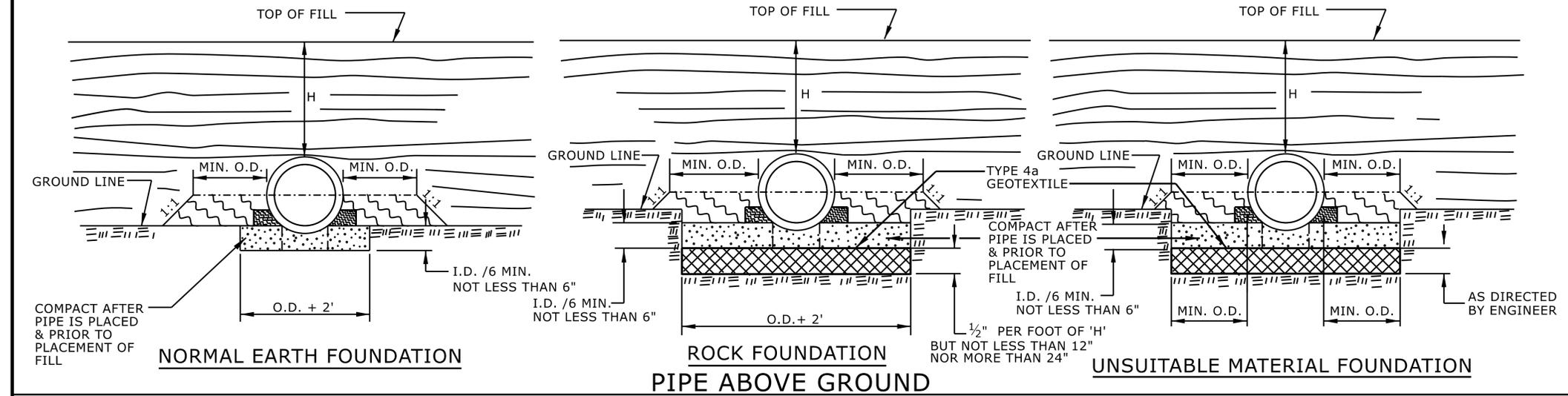
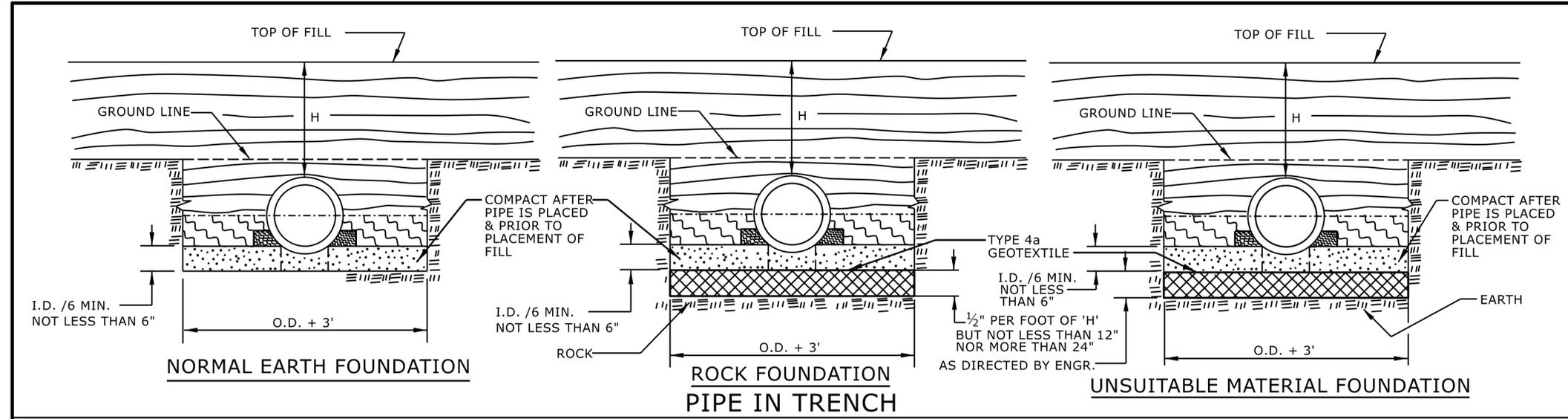
Signed by:
 Nicole M. Heckler
 588432030418405
 1/28/2026

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

SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
 MODIFIED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: _____



GENERAL NOTES:
 I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
 O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
 H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

-  APPROVED SUITABLE LOCAL MATERIAL.
-  TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.
-  LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

-  SPRINGLINE OF PIPE
-  SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.
-  UNDISTURBED EARTH MATERIAL
-  SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
 RIGID PIPE

SHEET 2 OF 2
300.01



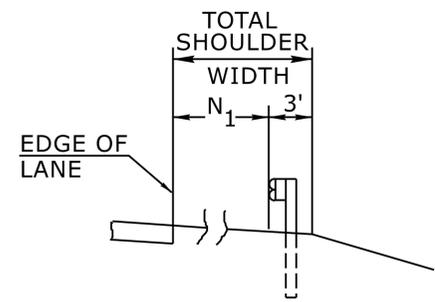
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 Nicole M. Heckler
 588432303416405
 1/26/2026

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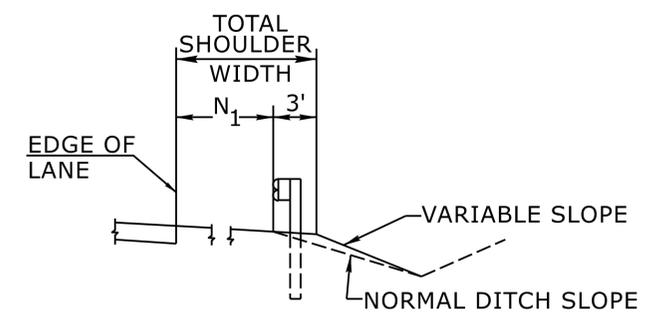
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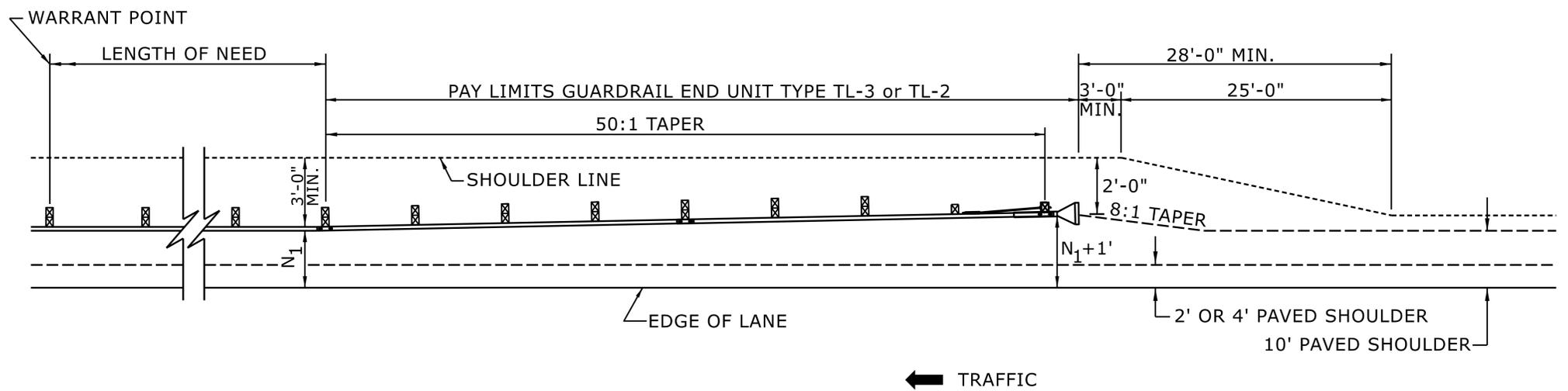


FILL SECTION



CUT SECTION

"N₁" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL WHERE GUARDRAIL IS PARALLEL TO LANE.



FOR POSTED SPEEDS ≥ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT



Signed by:
Nicole M. Hackler
1/28/2026

SHEET 6 OF 15
862D01

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AND DEVELOPMENT UNIT**
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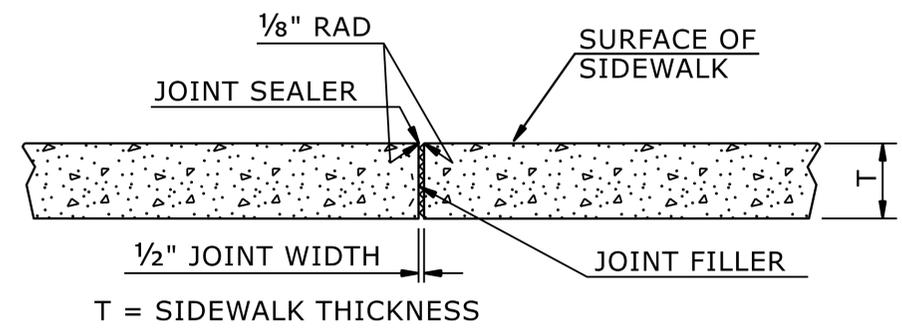
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FILE SPEC.:	

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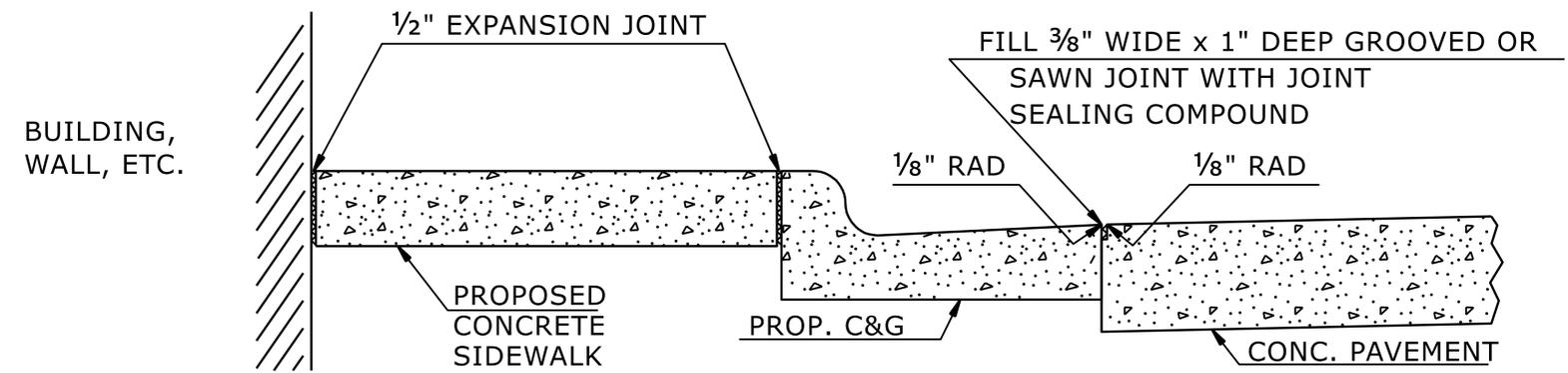
CONSTRUCT STANDARD SIDEWALK 5' WIDE AND 4" THICK UNLESS OTHERWISE DENOTED ON PLANS.

PLACE A GROOVE JOINT 1" DEEP WITH 1/8" RADII IN THE CONCRETE SIDEWALK AT 5' INTERVALS. ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 50' INTERVALS. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK JOINS ANY RIGID STRUCTURE.

SEE STD. DWG. 848.06 FOR CURB RAMP LOCATION REQUIREMENTS AND CONSTRUCTION GUIDELINES.



TRANSVERSE EXPANSION JOINT IN SIDEWALK



DETAILS SHOWING JOINTS IN CONCRETE SIDEWALK

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

ROADWAY DETAIL DRAWING FOR
CONCRETE SIDEWALK



Signed by:
Nicole M. Hackler
1/28/2026

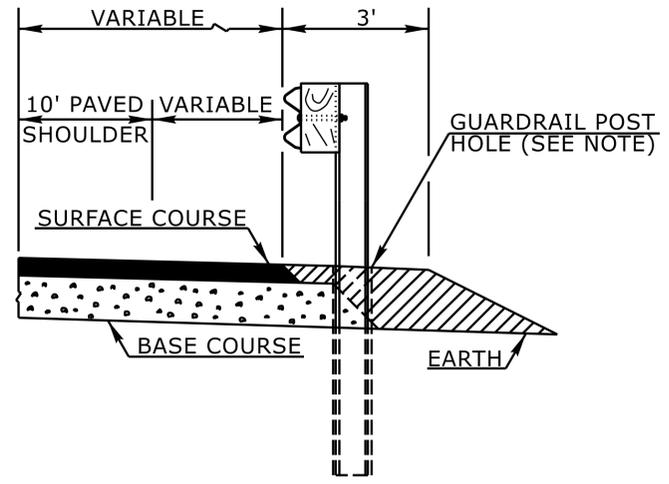
SHEET 1 OF 1
848D01

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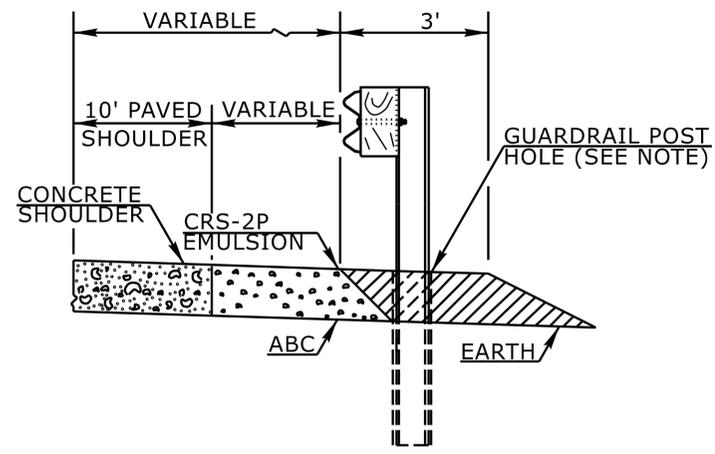
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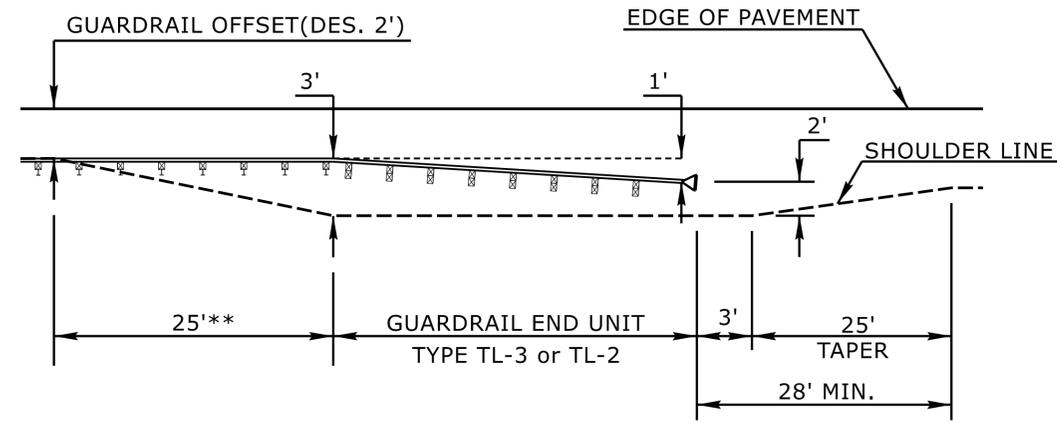
ORIGINAL BY: S.CALHOUN	DATE: 7-25-2024
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC.: _____	



FLEXIBLE PAVED SHOULDER

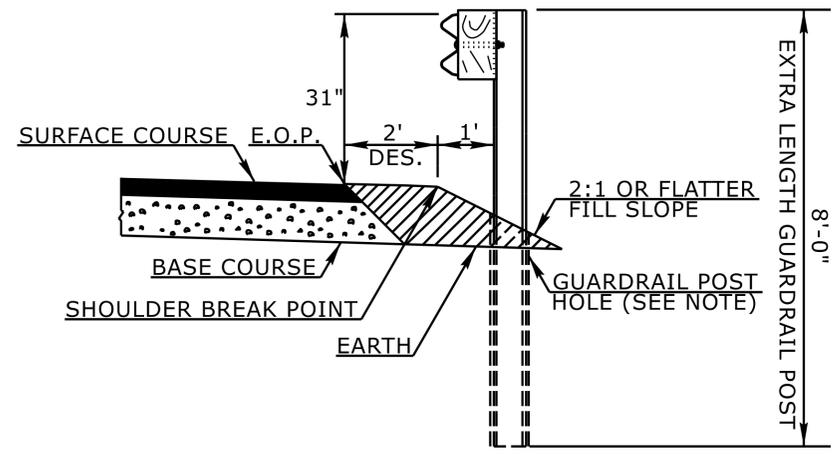


CONCRETE PAVED SHOULDER



8' GUARDRAIL POST ON 2:1 SLOPE-END UNIT TRANSITION*
PLAN VIEW

* THE 8' GUARDRAIL POST ON 2:1 SLOPE DETAIL IS INTENDED FOR USE ONLY IN SEVERELY CONSTRAINED AREAS WITH A POSTED SPEED ≤ 60 MPH. GUARDRAIL END UNITS MAY NOT BE PLACED ON THE 2:1 SLOPE AND MUST TRANSITION TO THE SHOULDER.
** 8' GUARDRAIL POST SHOULD BE USED IN THIS RANGE



8' GUARDRAIL POST ON 2:1 SLOPE*

NOTE:
WHEN WOODEN GUARDRAIL POSTS ARE USED, DRILL HOLES THROUGH EARTH MATERIAL AND BASE COURSE. THE POST MAY THEN BE DRIVEN TO THE PROPER DEPTH. DRILL THE HOLE OF SUFFICIENT SIZE TO ACCOMMODATE THE PARTICULAR POST BEING USED. BACKFILL AND TAMP HOLES USING THE EXCAVATED MATERIAL.

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT



Signed by:
Nicole M. Hecker
1/26/2026

SHEET 11 OF 15
862D01

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ORIGINAL BY: L.SMITH DATE: 10-14-2025
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: DATE:

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

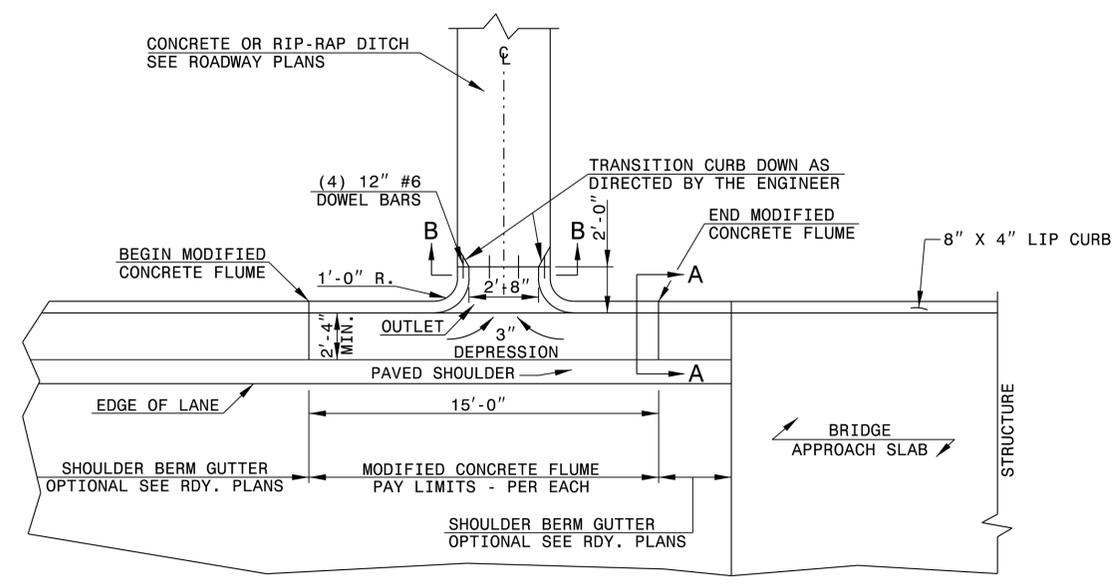
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR MODIFIED CONCRETE FLUME WITH CONCRETE OR RIP-RAP DITCH

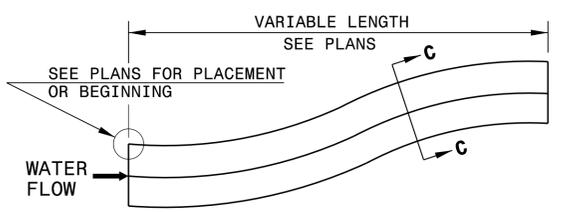
ENGLISH DETAIL DRAWING FOR MODIFIED CONCRETE FLUME WITH CONCRETE OR RIP-RAP DITCH

SHEET 1 OF 1 MODFLMDTCH

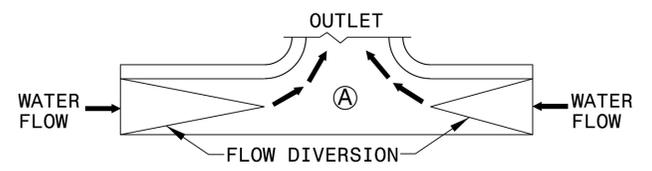
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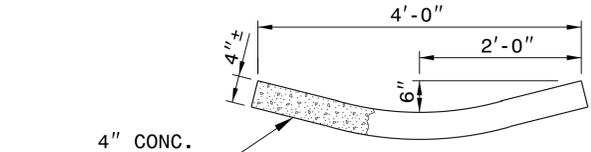
PLAN VIEW



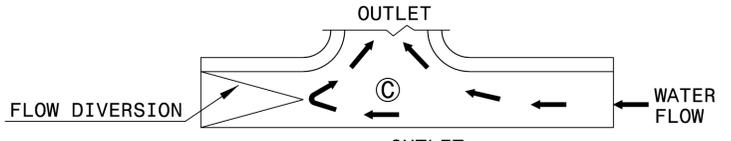
DOWNGRADE OR SAG



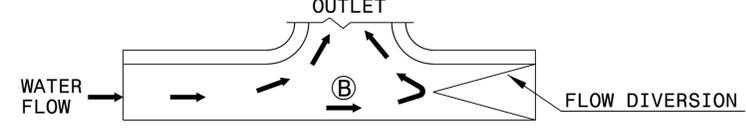
SAG



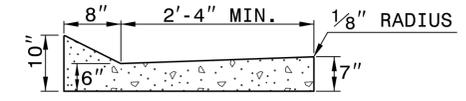
SECTION C-C



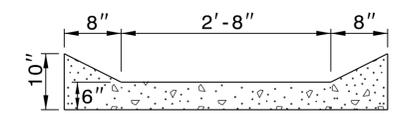
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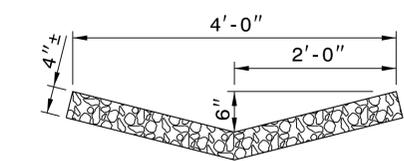
DOWN GRADE



SECTION A-A



SECTION B-B



RIP-RAP LINED DITCH

- NOTES: - CONSTRUCT MODIFIED CONCRETE FLUME AND SHOULDER BERM GUTTER IN ACCORDANCE WITH THIS DETAIL. - CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01. - CONSTRUCT RIP RAP LINED DITCH IN ACCORDANCE WITH THIS DETAIL, IF CALLED FOR IN PLANS. - CONCRETE OR RIP RAP LINED DITCH SHALL BE THE TYPE AND LENGTH SPECIFIED BY THE ROADWAY PLANS. THE DITCH SHALL TERMINATE AS SHOWN ON THE PLANS. IF NO TERMINATION IS INDICATED PLACE RIP-RAP AT THE END OF THE DITCH AS INDICATED BY STD. DWG. 876.02 FOR AN 18" PIPE. TRANSITIONS FROM THE DITCH TO TERMINATION SHALL BE AS DIRECTED BY THE ENGINEER. - MODIFICATIONS SHALL BE AS DICTATED BY SITE CONDITIONS AND DIRECTED BY THE ENGINEER.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. Ward DATE: Apr. 2002 MODIFIED BY: J.S. Howerton DATE: October 2017 CHECKED BY: DATE: FILE SPEC.: w:\details\stand\modifiedflume.dgn



Signed by: Nicole M. Hester 1/26/2026

18-QCT-2017 1417 S:\Contracts\Contract\Stand\stand\modiflume.dgn J:\power\ton AI CS0-212945

**SUMMARY OF EARTHWORK
 IN CUBIC YARDS**

STATION	STATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- 13+00.00 LT	-L- 42+00.00 LT	1,790		1,206		584
-L- 13+00.00 RT	-L- 42+00.00 RT	1,843		1,954	111	
-Y1- 14+50.00	-Y1- 14+93.61	32		20		12
-Y2- 10+22.00	-Y2- 13+25.00	447		294		153
-DRW2- 10+18.00	-DRW2- 11+70.00	41		16		25
-Y3- 15+00.00	-Y3- 15+37.16	34		1		33
-Y3- 15+81.16	-Y3- 16+50.00	120		7		113
SUBTOTAL		4,307		3,498	111	920
-L- 42+00.00 LT	-L- 70+50.00 LT	1,613		1,160		453
-L- 42+00.00 RT	-L- 70+50.00 RT	1,568		1,411		157
-Y4- 10+34.00	-Y4- 14+50.00	471		429		42
-Y5- 15+00.00	-Y5- 15+42.30	92				92
-Y6- 14+50.00	-Y6- 14+97.55	53		1		52
-Y6- 15+57.55	-Y6- 16+00.00	6		2		4
-Y7- 11+50.00	-Y7- 15+10.15	167		222	55	
-Y7- 15+59.69	-Y7- 25+82.48	2,634		1,502		1,132
-Y9- 14+00.00	-Y9- 15+15.89	65		16		49
-DRW1- 11+22.11	-DRW1- 11+88.08	2		2		
-DRW3- 10+18.00	-DRW3- 11+06.99	16		147	131	
SUBTOTAL		6,687		4,892	186	1,981
-L- 70+50.00 LT	-L- 82+00.00 LT	17		756	739	
-L- 70+50.00 RT	-L- 82+00.00 RT	377		2,571	2,194	
-Y8- 12+00.00	-Y8- 15+20.84	501		143		358
-Y8- 15+76.51	-Y8- 21+00.00	148		124		24
SUBTOTAL		1,043		3,594	2,933	382
-L- 82+00.00 LT	-L- 91+66.65 LT	694		219		475
-L- 82+00.00 RT	-L- 91+66.65 RT	1,610		328		1,282
SUBTOTAL		2,304		547		1,757

STATION	STATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
TOTAL		14,341		12,531	3,230	5,040
WASTE IN LIEU OF BORROW					-3,230	-3,230
PROJECT TOTAL		14,341		12,531		1,810
GRAND TOTAL		14,341		12,531		1,810
SAY		14,500				

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN ENGINEER. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

ESTIMATED DDE = 670 CY
 SHOULDER BORROW = 662 CY
 ESTIMATED PAVEMENT STRUCTURE VOLUME -L- = 735 CY

THE FOLLOWING QUANTITIES ARE PER THE "GEOTECHNICAL REPORT - RECOMMENDATIONS" LETTER REVISED DATED JULY 13, 2018:

EST. SHALLOW UNDERCUT = 100 CY (CONTINGENCY, AS DIRECTED BY THE ENGINEER)
 EST. UNDERCUT FOR EMBANKMENT STABILITY = 200 CY (CONTINGENCY, AS DIRECTED BY THE ENGINEER)
 EST. GRADE POINT UNDERCUT = 50 CY (CONTINGENCY, AS DIRECTED BY THE ENGINEER)
 EST. UNDERCUT FOR SUBGRADE STABILITY = 200 CY (CONTINGENCY, AS DIRECTED BY THE ENGINEER)
 EST. CLASS IV SUBGRADE STABILIZATION = 200 TONS (CONTINGENCY, AS DIRECTED BY THE ENGINEER)
 EST. SELECT GRANULAR MATERIAL = 400 CY (CONTINGENCY, AS DIRECTED BY THE ENGINEER.)

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

**ASPHALT PAVEMENT REMOVAL SUMMARY
 IN SQUARE YARDS**

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	SY
-L-/-Y2-	30+98.30	10+71.24	RT/LT	419
-Y2-	10+83.81	11+35.82	LT	87
-L-/-DRW1-	68+20.86	11+86.96	RT/LT	615
-Y7-	20+75.19	21+47.85	RT	80
-L-/-Y7-	69+87.19	14+84.98	LT/RT	39
-Y9-	14+35.00	14+75.26	LT	12
-Y9-	14+36.65	14+94.46	RT	40
-L-	71+47.55	78+00.52	LT	145
-L-/-Y8-	81+28.93	14+32.86	LT/RT	82
-Y7-	85+95.65	88+01.87	LT	54
-Y8-	15+65.89	16+53.25	RT	7
TOTAL				1580
SAY				1600

GUARDRAIL SUMMARY

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.

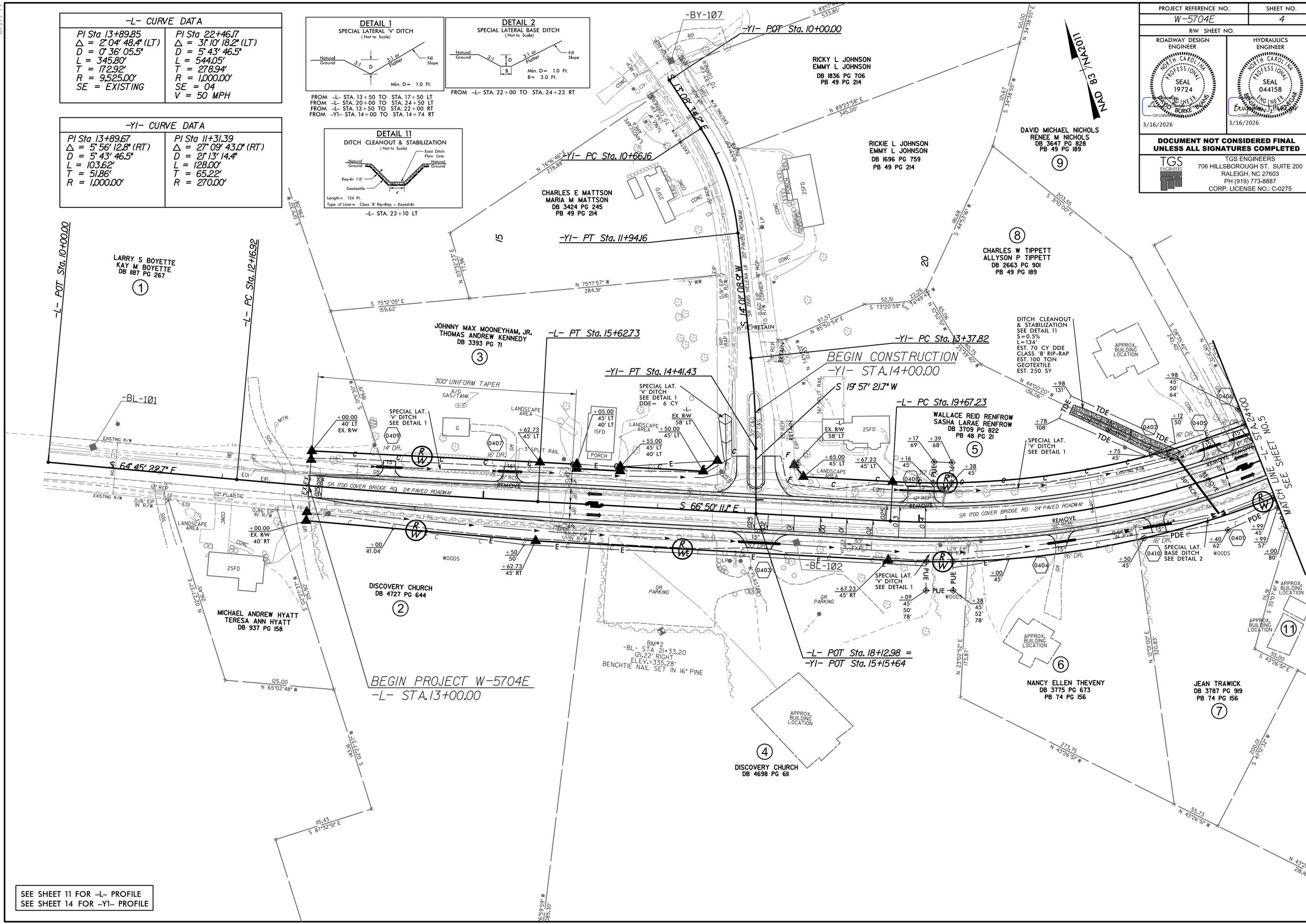
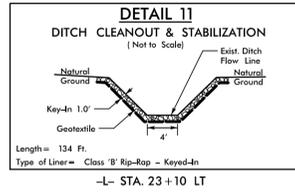
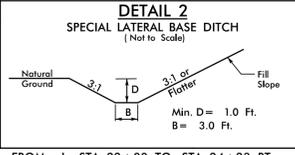
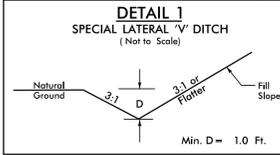
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS				IMPACT ATTENUATOR TYPE 350			REMOVE EXISTING GUARDRAIL (LF)	REMARKS					
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	CAT-1	GREU TL-3	EA	G	NG									
-L-	37+91.62	41+40.53	RT	356.25'			40+63.00	41+17.00	8'	11'	50'		1'		1	1												
SUBTOTAL (LF)				356.25'											TOTAL ANCHORS (EA)													
LESS ANCHORS (LF)				56.25'											ANCHOR UNIT LENGTH (LF)													
TOTAL (LF)				300'											DEDUCTION PER TYPE (LF)													
SAY (LF)				300'											TOTAL DEDUCTION (LF)				56.25'									
												ADDITIONAL GUARDRAIL POSTS: SAY 5 EA																

8.17.19

-L- CURVE DATA	
PI Sta 13+89.85	PI Sta 22+46.17
$\Delta = 2^{\circ} 04' 48.4" (LT)$	$\Delta = 3^{\circ} 10' 18.2" (LT)$
$D = 0' 36' 05.5"$	$D = 5' 43' 46.5"$
$L = 345.80'$	$L = 544.05'$
$T = 172.92'$	$T = 278.94'$
$R = 9,525.00'$	$R = 1,000.00'$
$SE = EXISTING$	$V = 50 MPH$

-YI- CURVE DATA	
PI Sta 13+89.67	PI Sta 11+31.39
$\Delta = 5^{\circ} 56' 12.8" (RT)$	$\Delta = 2^{\circ} 09' 43.0" (RT)$
$D = 5' 43' 46.5"$	$D = 2' 13' 14.4"$
$L = 103.62'$	$L = 128.00'$
$T = 51.86'$	$T = 65.22'$
$R = 1,000.00'$	$R = 270.00'$



PROJECT REFERENCE NO. W-5704E	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PROJECT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

SEE SHEET 11 FOR -L- PROFILE
SEE SHEET 14 FOR -YI- PROFILE

3/16/2026
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 User:bevans

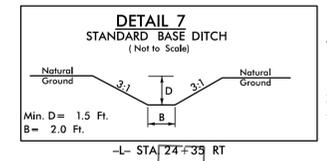
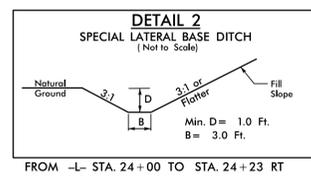
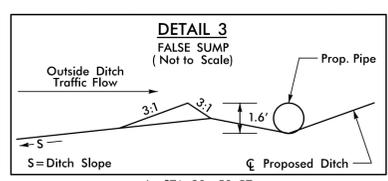
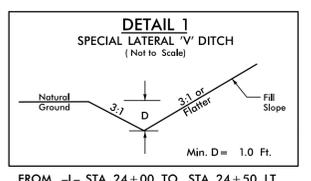
8.17.2026

-L- CURVE DATA		
PI Sta 22+46.17 Δ = 31° 10' 18.2" (LT) D = 5' 43' 46.5" L = 544.05' T = 278.94' R = 1,000.00' SE = 04 V = 50 MPH	PI Sta 29+15.52 Δ = 2° 17' 14.9" (RT) D = 0' 57' 58.3" L = 236.75' T = 118.39' R = 5,930.00' SE = NC V = 45 MPH	PI Sta 39+41.70 Δ = 22° 07' 12.3" (LT) D = 2' 51' 53.2" L = 772.14' T = 390.94' R = 2,000.00' SE = 04 V = 50 MPH

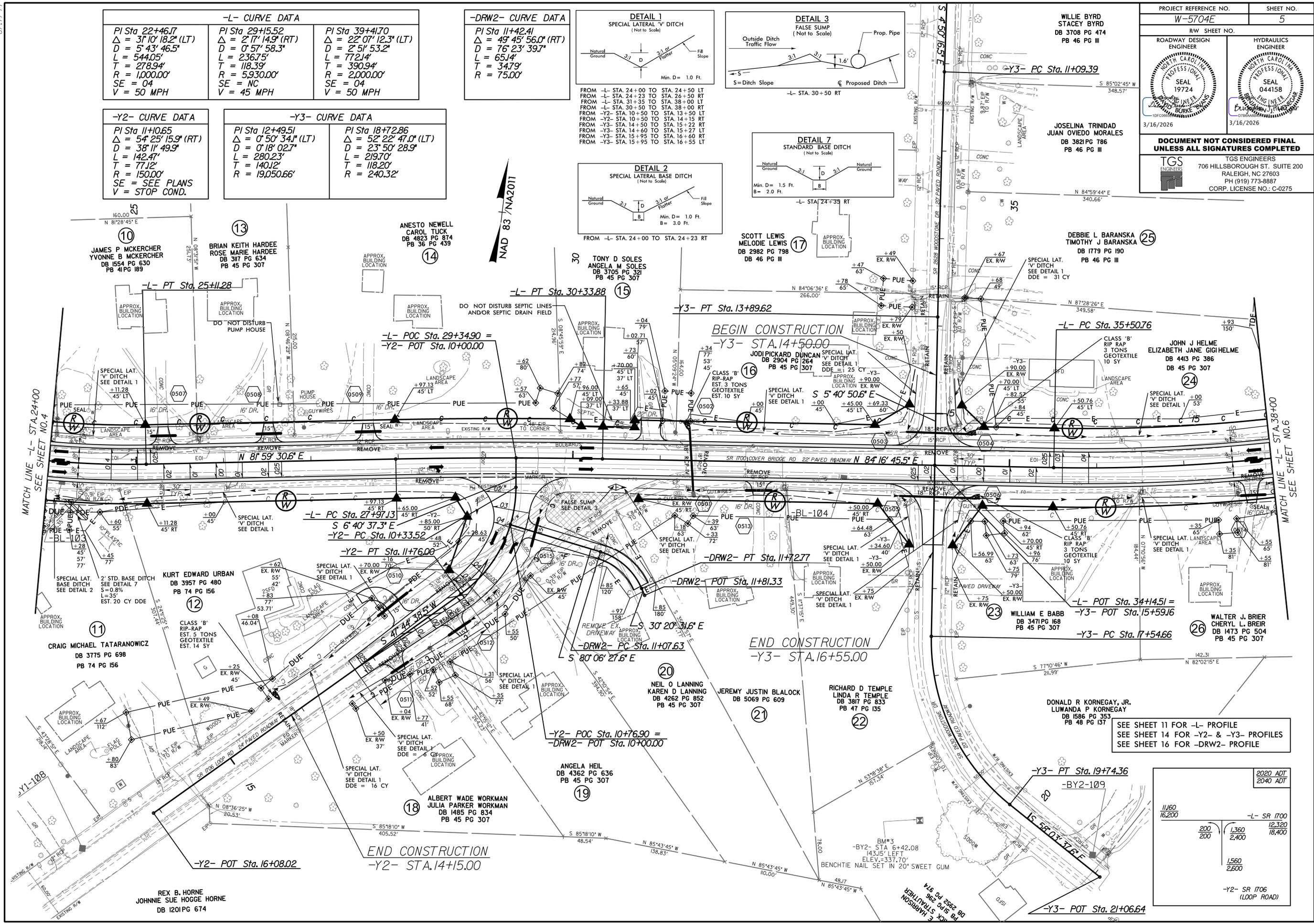
-DRW2- CURVE DATA
PI Sta 11+42.41 Δ = 49° 45' 56.0" (RT) D = 76' 23' 39.7" L = 65.14' T = 34.79' R = 75.00'

-Y2- CURVE DATA
PI Sta 11+10.65 Δ = 54° 25' 15.9" (RT) D = 38' 11" 49.9" L = 142.47' T = 77.12' R = 150.00' SE = SEE PLANS V = STOP COND.

-Y3- CURVE DATA	
PI Sta 12+49.51 Δ = 0° 50' 34.1" (LT) D = 0' 18' 02.7" L = 280.23' T = 140.12' R = 19,050.66'	PI Sta 18+72.86 Δ = 52° 22' 47.0" (LT) D = 23' 50' 28.9" L = 219.70' T = 118.20' R = 240.32'



PROJECT REFERENCE NO. W-5704E	SHEET NO. 5
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 19724 3/16/2026
SEAL 044158 3/16/2026	SEAL 044158 3/16/2026
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	



MATCH LINE -L- STA. 24+00
SEE SHEET NO. 4

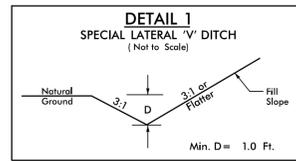
MATCH LINE -L- STA. 38+00
SEE SHEET NO. 6

SEE SHEET 11 FOR -L- PROFILE
SEE SHEET 14 FOR -Y2- & -Y3- PROFILES
SEE SHEET 16 FOR -DRW2- PROFILE

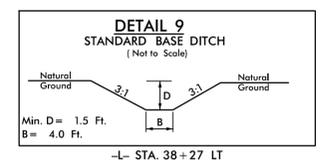
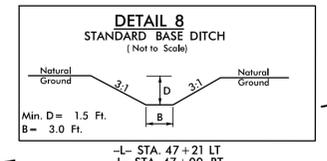
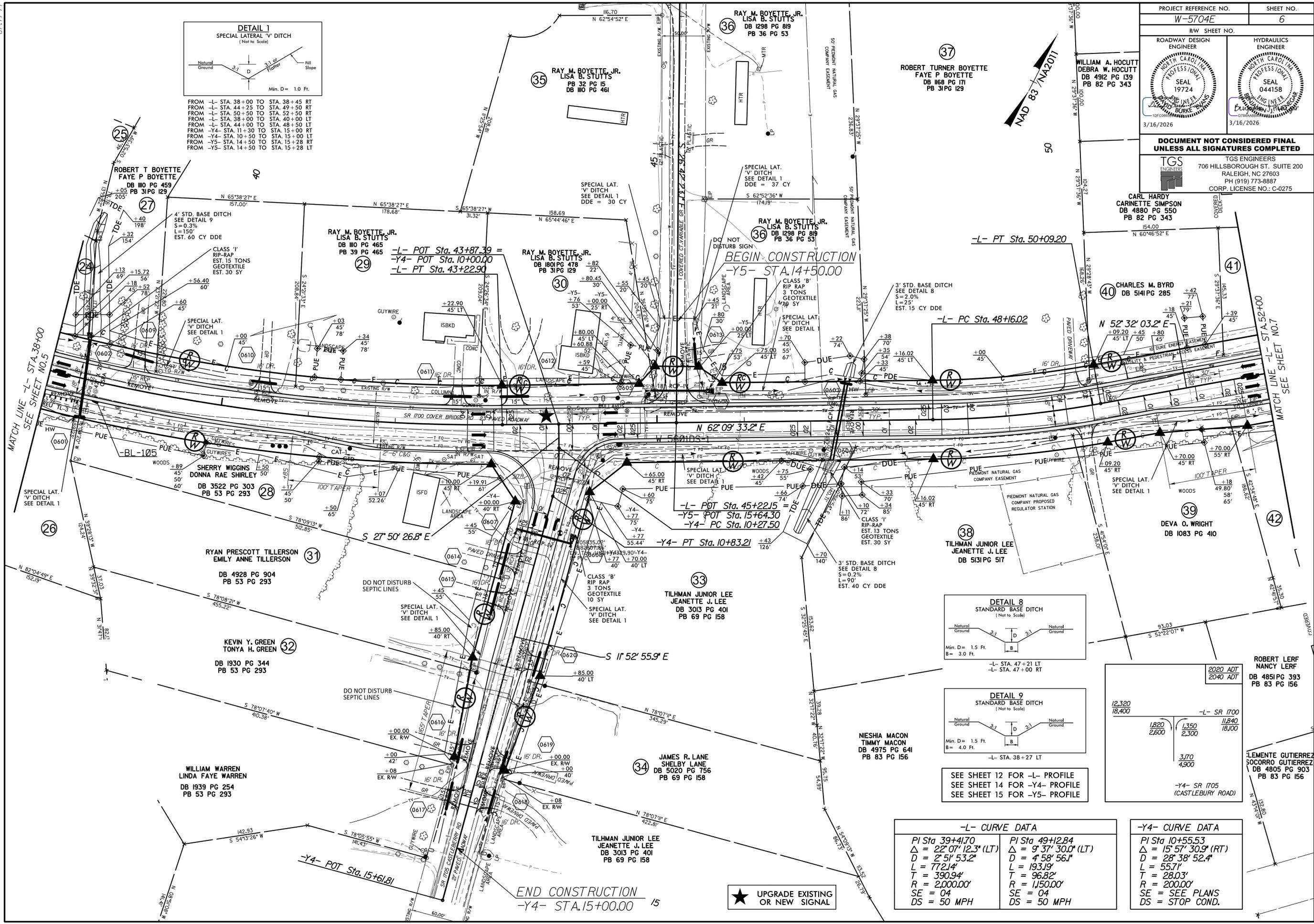
11/60 16,200	1,360 2,400	12,320 18,400
-L- SR 1700		
-Y2- SR 1706 (LOOP ROAD)		

3/16/2026
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User:bevans

PROJECT REFERENCE NO. W-5704E		SHEET NO. 6	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			
3/16/2026		3/16/2026	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
		TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	



FROM -L- STA. 38+00 TO STA. 38+45 RT
 FROM -L- STA. 44+25 TO STA. 49+50 RT
 FROM -L- STA. 50+50 TO STA. 52+50 RT
 FROM -L- STA. 38+00 TO STA. 40+00 LT
 FROM -L- STA. 44+00 TO STA. 48+50 LT
 FROM -Y4- STA. 11+30 TO STA. 15+00 RT
 FROM -Y4- STA. 10+50 TO STA. 15+00 LT
 FROM -Y5- STA. 14+50 TO STA. 15+28 RT
 FROM -Y5- STA. 14+50 TO STA. 15+28 LT



SEE SHEET 12 FOR -L- PROFILE
 SEE SHEET 14 FOR -Y4- PROFILE
 SEE SHEET 15 FOR -Y5- PROFILE

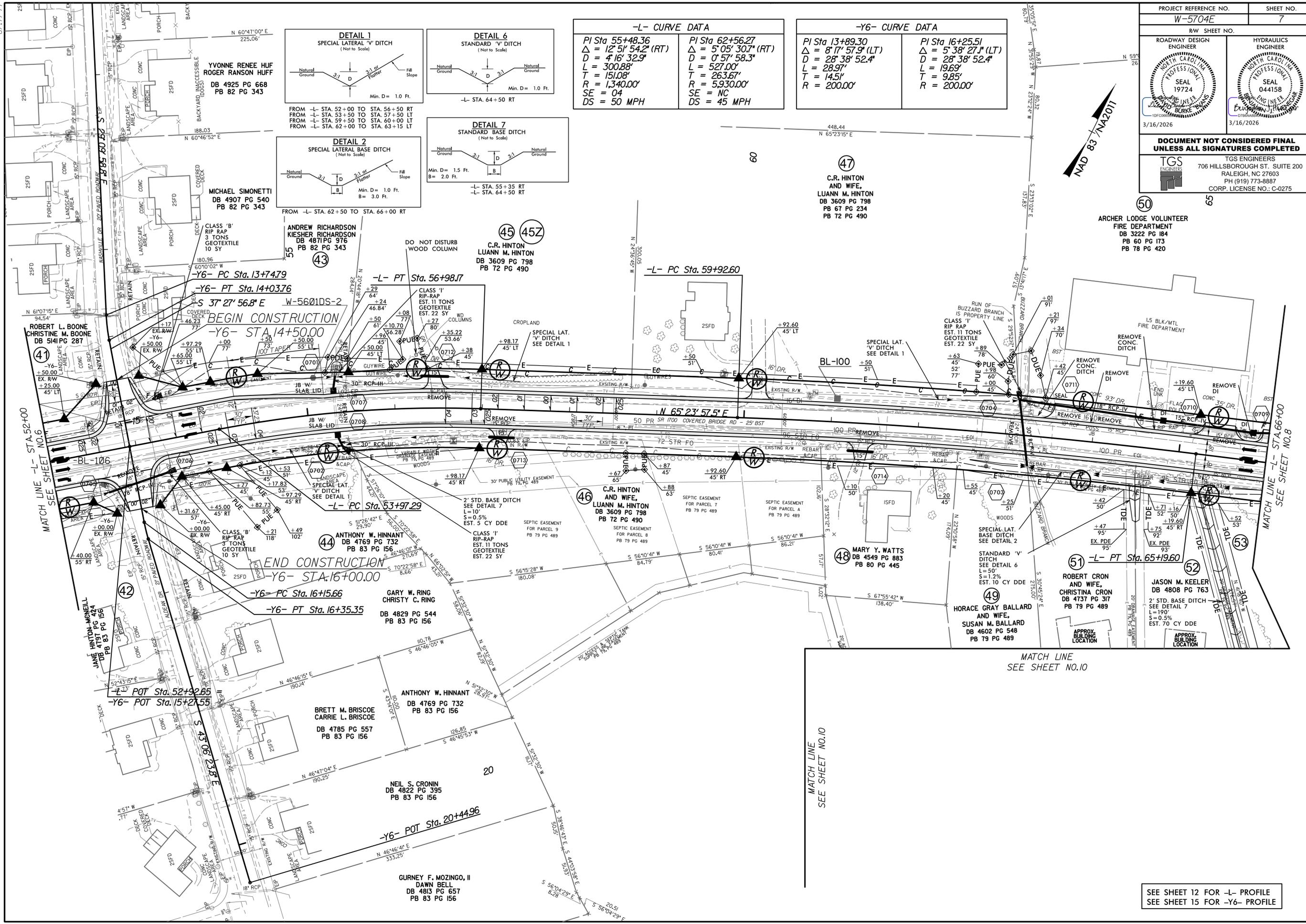
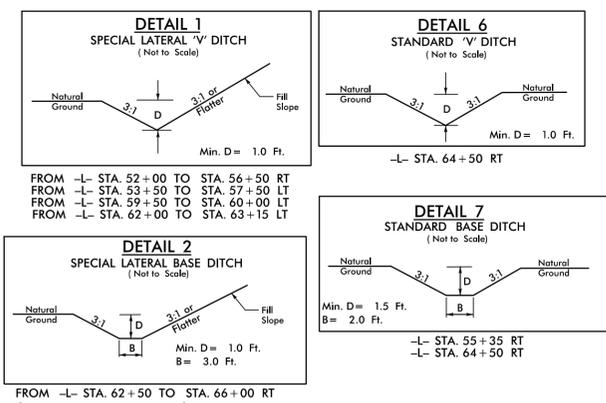
-L- CURVE DATA		-Y4- CURVE DATA	
PI Sta 39+41.70	PI Sta 49+12.84	PI Sta 10+55.53	PI Sta 10+55.53
$\Delta = 22^{\circ} 07' 12.3''$ (LT)	$\Delta = 9^{\circ} 37' 30.0''$ (LT)	$\Delta = 15^{\circ} 57' 30.9''$ (RT)	$\Delta = 15^{\circ} 57' 30.9''$ (RT)
$D = 2^{\circ} 51' 53.2''$	$D = 4^{\circ} 58' 56.1''$	$D = 28^{\circ} 38' 52.4''$	$D = 28^{\circ} 38' 52.4''$
$L = 772.14'$	$L = 193.19'$	$L = 55.71'$	$L = 55.71'$
$T = 390.94'$	$T = 96.82'$	$T = 28.03'$	$T = 28.03'$
$R = 2,000.00'$	$R = 1,150.00'$	$R = 200.00'$	$R = 200.00'$
$SE = 04$	$SE = 04$	$SE = SEE PLANS$	$SE = SEE PLANS$
$DS = 50$ MPH	$DS = 50$ MPH	$DS = STOP COND.$	$DS = STOP COND.$

2020 ADT 18,400	2040 ADT 18,400	-L- SR 1700 11,840
1,820 2,600	1,350 2,300	11,840 18,100
3,170 4,900		-Y4- SR 1705 (CASTLEBURY ROAD)

3/16/2026
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 User: bbevans

PROJECT REFERENCE NO. W-5704E		SHEET NO. 7	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
		TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

-L- CURVE DATA		-Y6- CURVE DATA	
PI Sta 55+48.36	PI Sta 62+56.27	PI Sta 13+89.30	PI Sta 16+25.51
$\Delta = 12' 51" 54.2' (RT)$	$\Delta = 5' 05" 30.7' (RT)$	$\Delta = 8' 17" 57.9' (LT)$	$\Delta = 5' 38" 27.1' (LT)$
$D = 4' 16" 32.9'$	$D = 0' 57" 58.3'$	$D = 28' 38" 52.4'$	$D = 28' 38" 52.4'$
$L = 300.88'$	$L = 527.00'$	$L = 28.97'$	$L = 19.69'$
$T = 151.08'$	$T = 263.67'$	$T = 14.51'$	$T = 9.85'$
$R = 1,340.00'$	$R = 5,930.00'$	$R = 200.00'$	$R = 200.00'$
$SE = 04$	$SE = NC$		
$DS = 50 MPH$	$DS = 45 MPH$		



8.17/99

MATCH LINE -L- STA. 52+00
SEE SHEET NO. 6

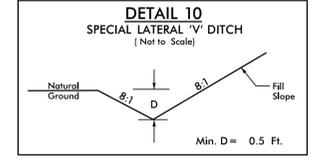
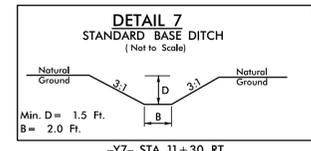
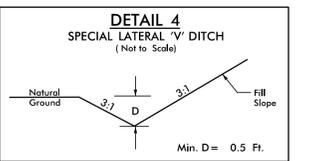
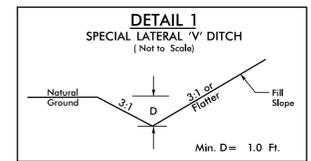
MATCH LINE -L- STA. 66+00
SEE SHEET NO. 8

MATCH LINE
SEE SHEET NO. 10

MATCH LINE
SEE SHEET NO. 10

SEE SHEET 12 FOR -L- PROFILE
SEE SHEET 15 FOR -Y6- PROFILE

PROJECT REFERENCE NO. W-5704E		SHEET NO. 8	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			
<p>TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</p>			

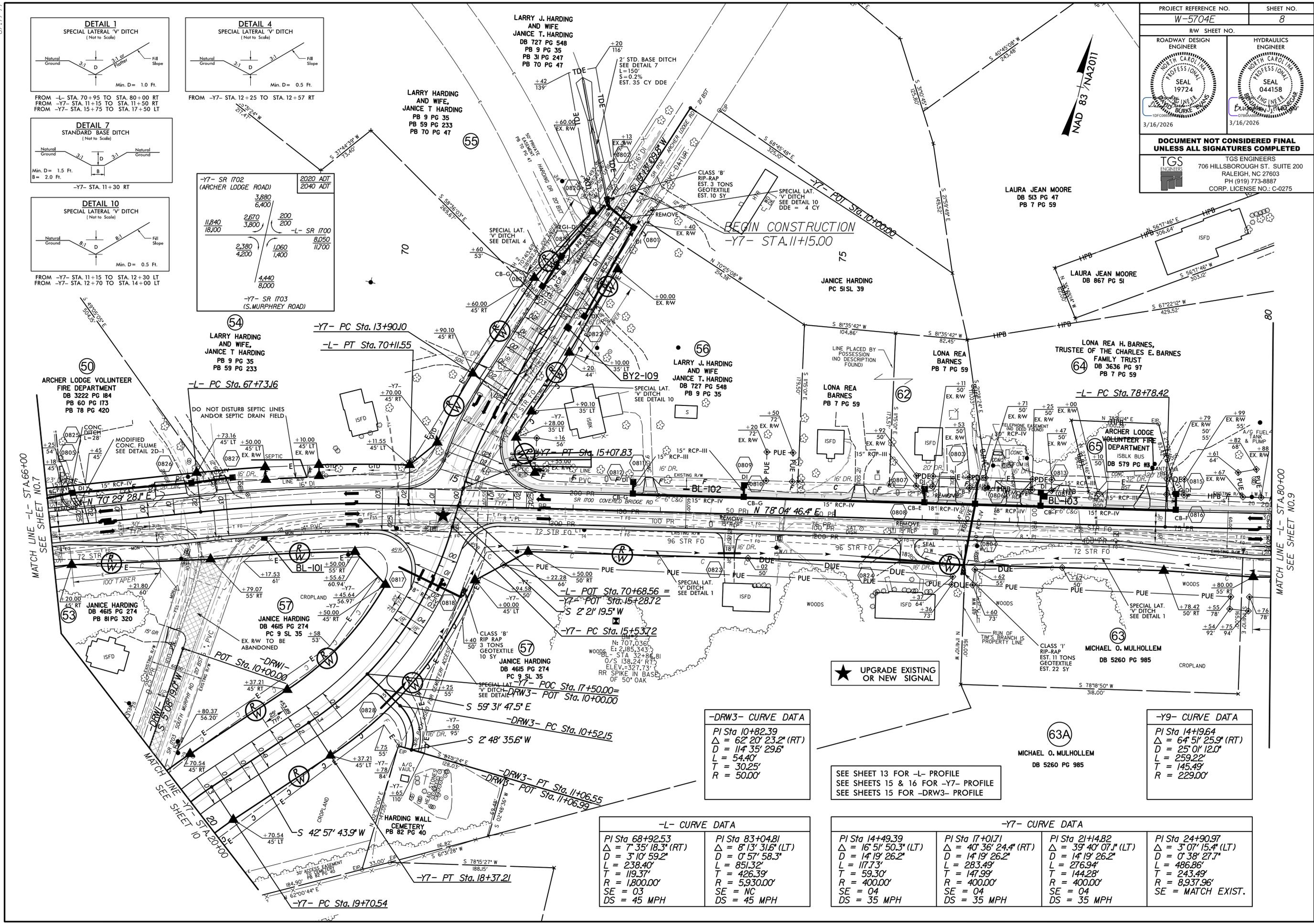


FROM -L- STA. 70+95 TO STA. 80+00 RT
FROM -Y7- STA. 11+15 TO STA. 11+50 RT
FROM -Y7- STA. 15+75 TO STA. 17+50 LT

FROM -Y7- STA. 12+25 TO STA. 12+57 RT

FROM -Y7- STA. 11+15 TO STA. 12+30 LT
FROM -Y7- STA. 12+70 TO STA. 14+00 LT

-Y7- SR 1702 (ARCHER LODGE ROAD)	2020 ADT 3,880	2040 ADT 6,400
-L- SR 1700	2,670 3,800	200 200
-Y7- SR 1703 (S. MURPHREY ROAD)	11,840 18,100	8,050 11,700
	2,380 4,200	1,060 1,400
	4,440 8,000	



MATCH LINE -L- STA. 66+00
SEE SHEET NO. 7

MATCH LINE -L- STA. 80+00
SEE SHEET NO. 9

MATCH LINE -Y7- STA. 22+00
SEE SHEET 10

-DRW3- CURVE DATA

PI Sta 10+82.39	$\Delta = 62^\circ 20' 23.2''$ (RT)
D = 114' 35" 29.6"	L = 54.40'
T = 30.25'	R = 50.00'

SEE SHEET 13 FOR -L- PROFILE
SEE SHEETS 15 & 16 FOR -Y7- PROFILE
SEE SHEETS 15 FOR -DRW3- PROFILE

-Y9- CURVE DATA

PI Sta 14+19.64	$\Delta = 64^\circ 51' 25.9''$ (RT)
D = 25' 01" 12.0"	L = 259.22'
T = 145.49'	R = 229.00'

-L- CURVE DATA

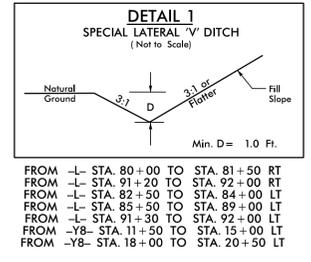
PI Sta 68+92.53	$\Delta = 7^\circ 35' 18.3''$ (RT)	PI Sta 83+04.81	$\Delta = 8^\circ 13' 31.6''$ (LT)
D = 3' 10" 59.2"	L = 238.40'	D = 0' 57" 58.3"	L = 851.32'
T = 119.37'	R = 1,800.00'	T = 426.39'	R = 5,930.00'
SE = 03	DS = 45 MPH	SE = NC	DS = 45 MPH

-Y7- CURVE DATA

PI Sta 14+49.39	$\Delta = 16^\circ 51' 50.3''$ (LT)	PI Sta 17+01.71	$\Delta = 40^\circ 36' 24.4''$ (RT)	PI Sta 21+14.82	$\Delta = 39^\circ 40' 07.1''$ (LT)	PI Sta 24+90.97	$\Delta = 3^\circ 07' 15.4''$ (LT)
D = 14' 19" 26.2"	L = 117.73'	D = 14' 19" 26.2"	L = 283.49'	D = 14' 19" 26.2"	L = 276.94'	D = 0' 38" 27.7"	L = 486.86'
T = 59.30'	R = 400.00'	T = 147.99'	R = 400.00'	T = 144.28'	R = 400.00'	T = 243.49'	R = 8,937.96'
SE = 04	DS = 35 MPH	SE = 04	DS = 35 MPH	SE = 04	DS = 35 MPH	SE = MATCH EXIST.	DS = 35 MPH

8.17.19

PROJECT REFERENCE NO. W-5704E		SHEET NO. 9	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
3/16/2026		3/16/2026	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
		TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

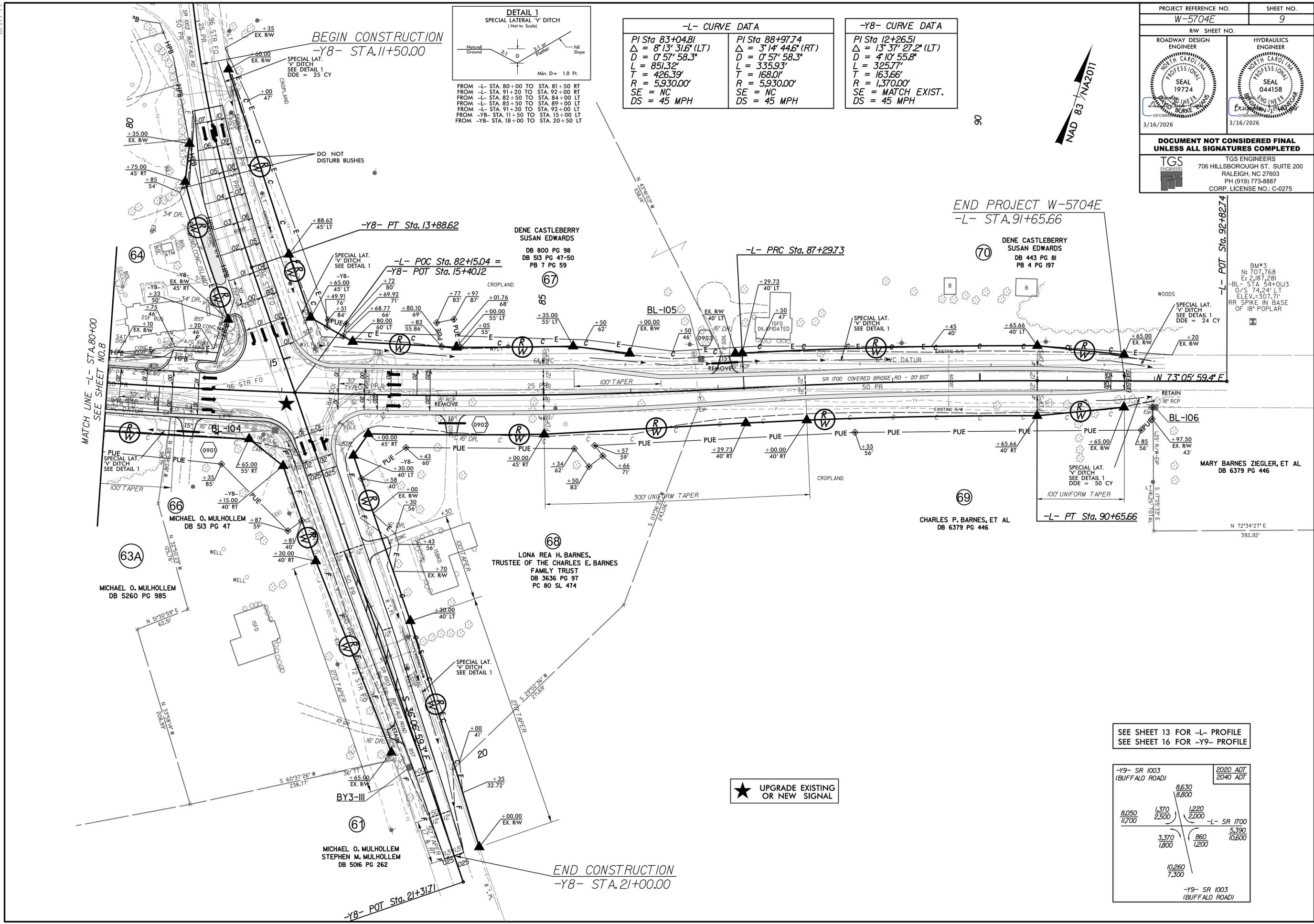


-L- CURVE DATA

PI Sta 83+04.81	PI Sta 88+97.74
$\Delta = 8^{\circ}13'31.6"$ (LT)	$\Delta = 3^{\circ}14'44.6"$ (RT)
$D = 0^{\circ}57'58.3"$	$D = 0^{\circ}57'58.3"$
$L = 851.32'$	$L = 335.93'$
$T = 426.39'$	$T = 168.01'$
$R = 5,930.00'$	$R = 5,930.00'$
SE = NC	SE = NC
DS = 45 MPH	DS = 45 MPH

-Y8- CURVE DATA

PI Sta 12+26.51
$\Delta = 13^{\circ}37'27.2"$ (LT)
$D = 4^{\circ}10'55.8"$
$L = 325.77'$
$T = 163.66'$
$R = 1,370.00'$
SE = MATCH EXIST.
DS = 45 MPH



MATCH LINE -L- STA. 80+00
SEE SHEET NO. 8

-L- POT Sta. 92+182.74

SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 16 FOR -Y9- PROFILE

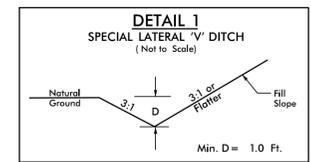
-Y9- SR 1003 (BUFFALO ROAD)		2020 ADT		2040 ADT	
8,050	1,370	8,630	1,220	8,800	2,000
11,700	2,500	10,260	2,000	10,800	2,000
		-L- SR 1700			
3,370	860	5,390	1,200	10,600	
1,800		7,300			
		-Y9- SR 1003 (BUFFALO ROAD)			

★ UPGRADE EXISTING OR NEW SIGNAL

3/16/2026
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User:bevans

8/17/26

PROJECT REFERENCE NO. W-5704E		SHEET NO. 10	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
		TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

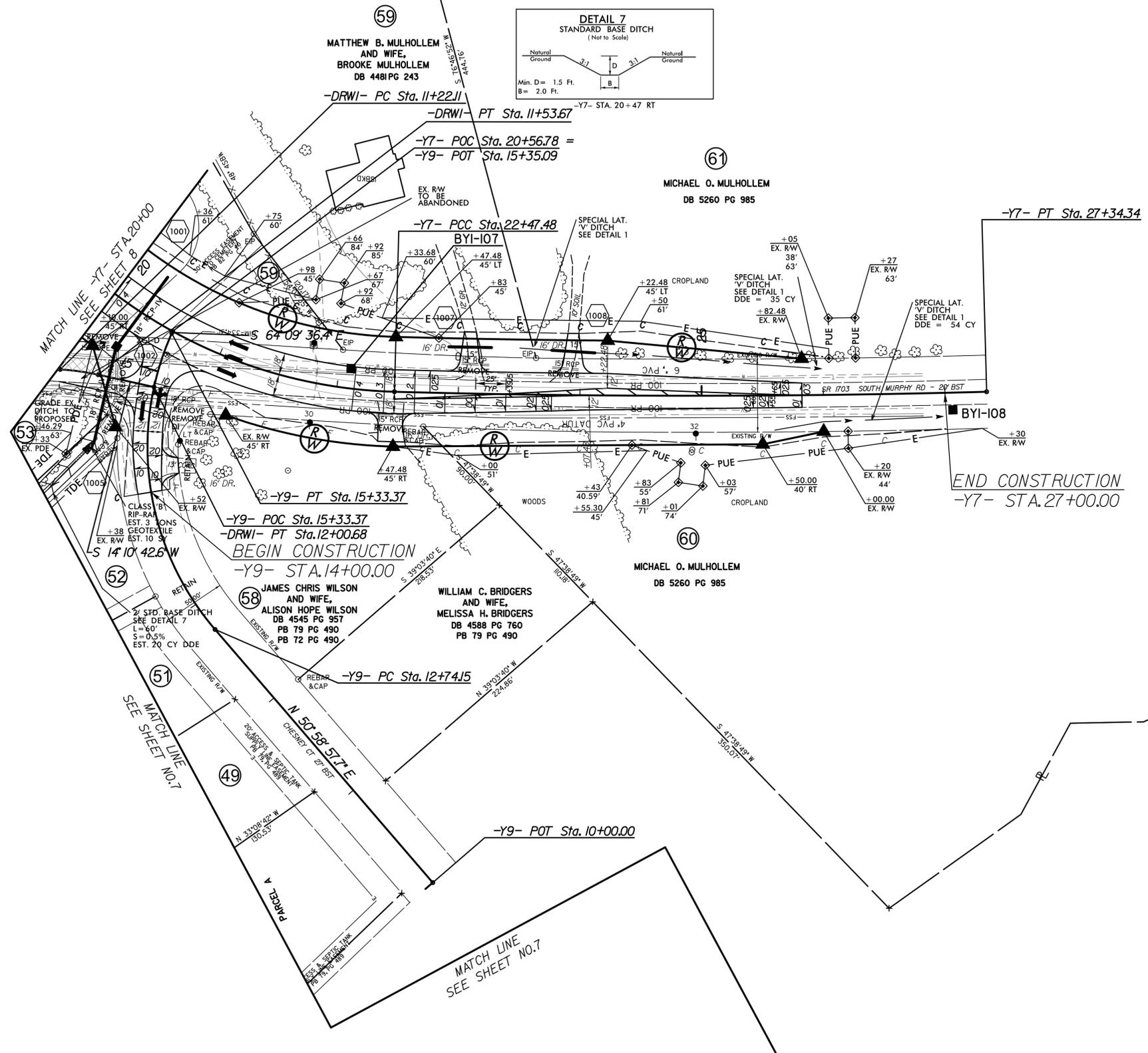
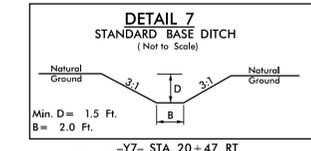
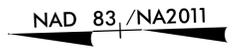


-Y7- CURVE DATA

PI Sta 24+90.97
$\Delta = 3^{\circ} 07' 15.4''$ (LT)
$D = 0' 38' 27.7''$
$L = 486.86'$
$T = 243.49'$
$R = 8,937.96'$
SE = MATCH EXIST.

-DRWI- CURVE DATA

PI Sta 11+37.92
$\Delta = 9^{\circ} 02' 23.6''$ (RT)
$D = 28' 38' 52.4''$
$L = 31.56'$
$T = 15.81'$
$R = 200.00'$



SEE SHEETS 15 & 16 FOR -Y7- PROFILE
SEE SHEET 16 FOR -Y9- & -DRWI- PROFILES

5/28/2026

-L- SR 1100 COVERED BRIDGE RD.

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

EXISTING GROUND _____
PROPOSED GRADE _____
LEFT DITCH GRADE _____
RIGHT DITCH GRADE _____

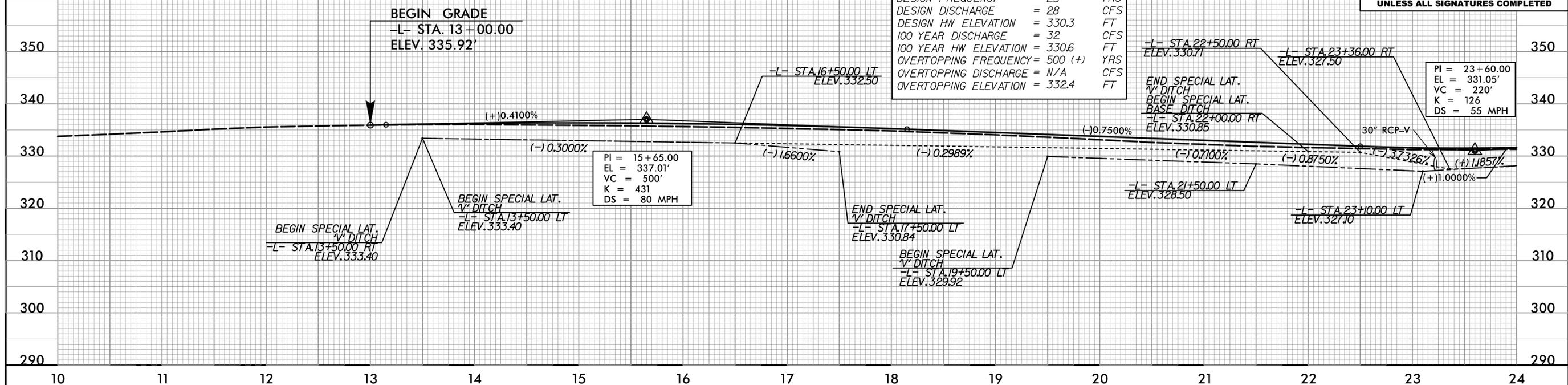
PROJECT REFERENCE NO. W-5704E	SHEET NO. 11
ROADWAY DESIGN ENGINEER SEAL 19724	HYDRAULICS ENGINEER SEAL 044158
1/26/2026	1/26/2026

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UNLESS ALL SIGNATURES COMPLETED**

BM # 2
-L- STA. 17+12.36
140.22' RT.
BENCHTIE NAIL SET IN 16" PINE
ELEV. 335.28'

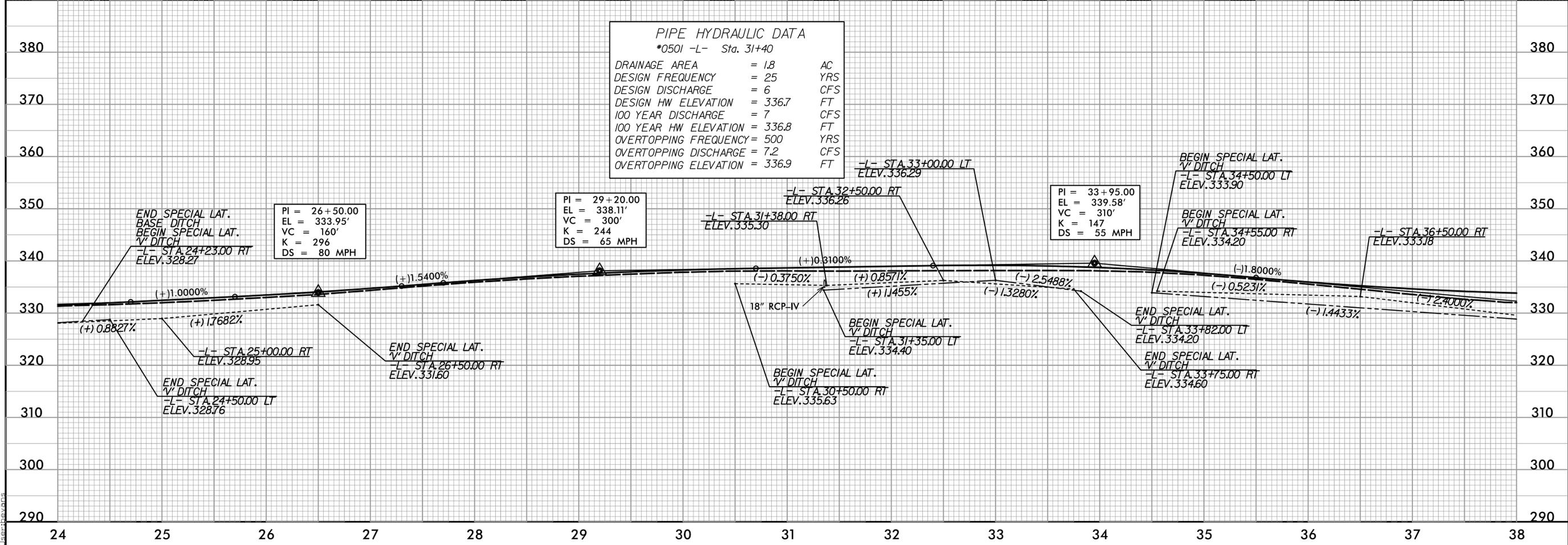
PIPE HYDRAULIC DATA
*0401 -L- Sta. 23+22

DRAINAGE AREA	= 11.6	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 28	CFS
DESIGN HW ELEVATION	= 330.3	FT
100 YEAR DISCHARGE	= 32	CFS
100 YEAR HW ELEVATION	= 330.6	FT
OVERTOPPING FREQUENCY	= 500 (+)	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 332.4	FT



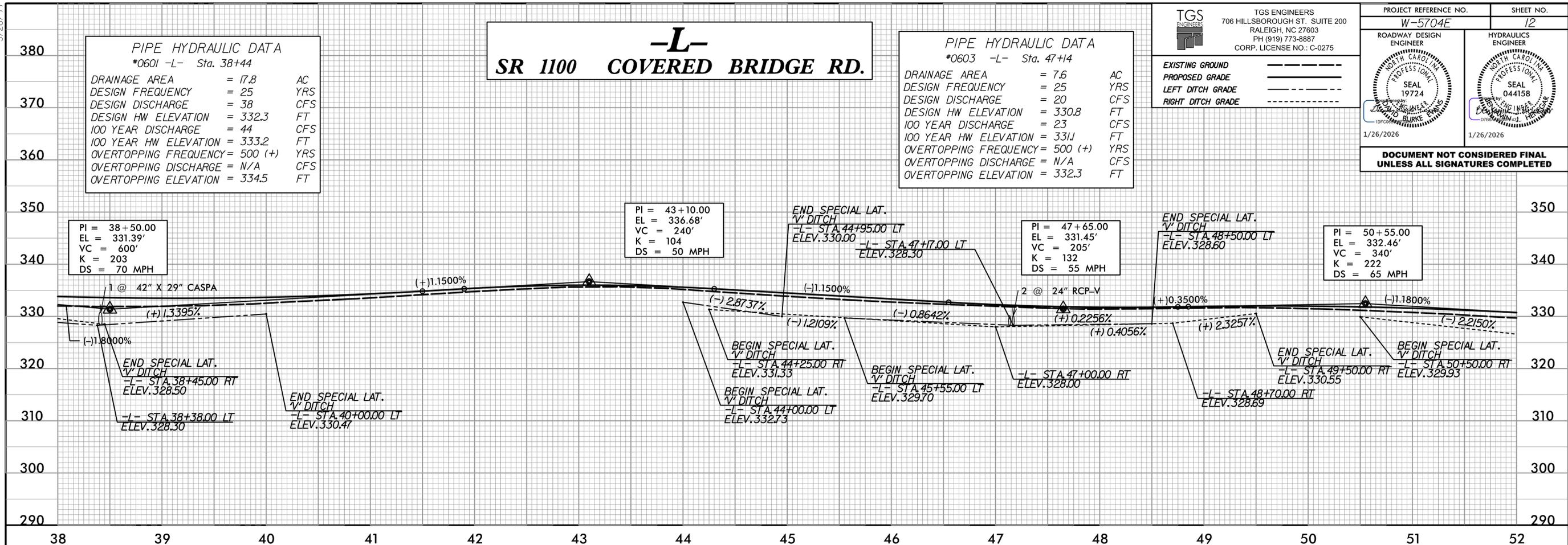
PIPE HYDRAULIC DATA
*0501 -L- Sta. 31+40

DRAINAGE AREA	= 1.8	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 6	CFS
DESIGN HW ELEVATION	= 336.7	FT
100 YEAR DISCHARGE	= 7	CFS
100 YEAR HW ELEVATION	= 336.8	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 7.2	CFS
OVERTOPPING ELEVATION	= 336.9	FT



5/17/2025
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luser@tgs.com

5/28/2026



PIPE HYDRAULIC DATA
*0601 -L- Sta. 38+44

DRAINAGE AREA	= 17.8	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 38	CFS
DESIGN HW ELEVATION	= 332.3	FT
100 YEAR DISCHARGE	= 44	CFS
100 YEAR HW ELEVATION	= 333.2	FT
OVERTOPPING FREQUENCY	= 500 (+)	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 334.5	FT

**-L-
SR 1100 COVERED BRIDGE RD.**

PIPE HYDRAULIC DATA
*0603 -L- Sta. 47+14

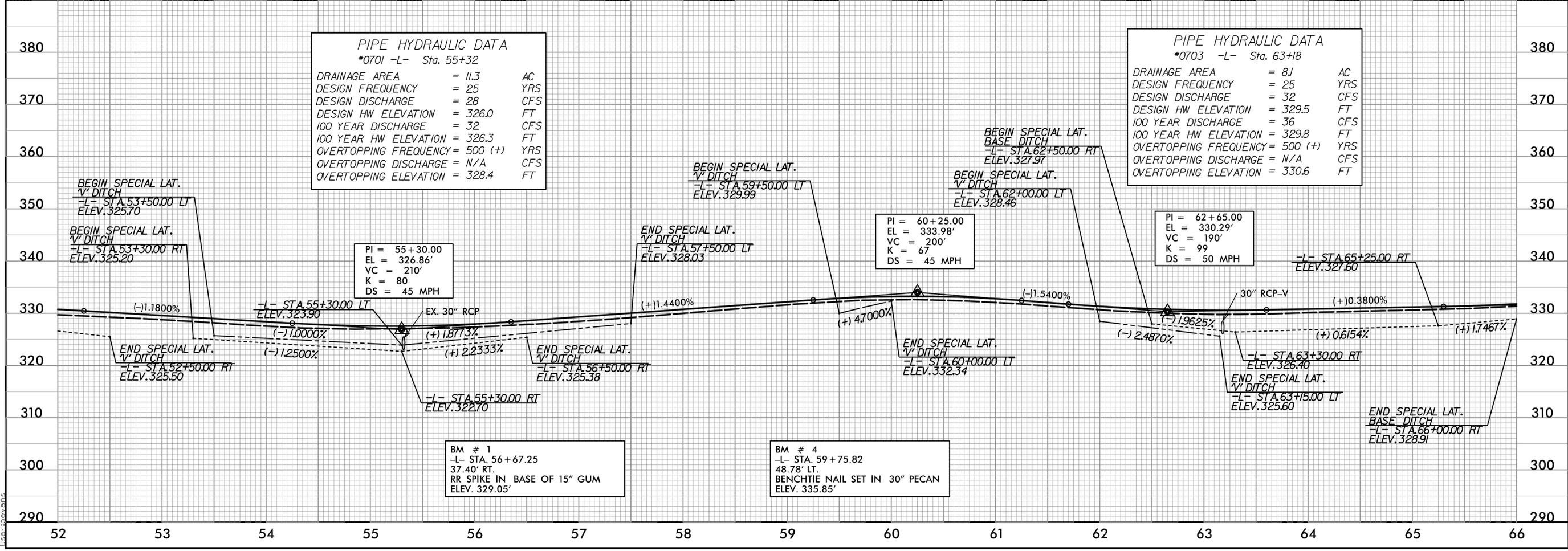
DRAINAGE AREA	= 7.6	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 20	CFS
DESIGN HW ELEVATION	= 330.8	FT
100 YEAR DISCHARGE	= 23	CFS
100 YEAR HW ELEVATION	= 331.1	FT
OVERTOPPING FREQUENCY	= 500 (+)	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 332.3	FT

TGS ENGINEERS
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EXISTING GROUND -----
PROPOSED GRADE -----
LEFT DITCH GRADE -----
RIGHT DITCH GRADE -----

PROJECT REFERENCE NO.	W-5704E
SHEET NO.	12
ROADWAY DESIGN ENGINEER	SEAL 19724
HYDRAULICS ENGINEER	SEAL 044158
DATE	1/26/2026

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PIPE HYDRAULIC DATA
*0701 -L- Sta. 55+32

DRAINAGE AREA	= 11.3	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 28	CFS
DESIGN HW ELEVATION	= 326.0	FT
100 YEAR DISCHARGE	= 32	CFS
100 YEAR HW ELEVATION	= 326.3	FT
OVERTOPPING FREQUENCY	= 500 (+)	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 328.4	FT

PIPE HYDRAULIC DATA
*0703 -L- Sta. 63+18

DRAINAGE AREA	= 8.1	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 32	CFS
DESIGN HW ELEVATION	= 329.5	FT
100 YEAR DISCHARGE	= 36	CFS
100 YEAR HW ELEVATION	= 329.8	FT
OVERTOPPING FREQUENCY	= 500 (+)	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 330.6	FT

BM # 1
-L- STA. 56+67.25
37.40' RT.
RR SPIKE IN BASE OF 15" GUM
ELEV. 329.05'

BM # 4
-L- STA. 59+75.82
48.78' LT.
BENCHTIE NAIL SET IN 30" PECAN
ELEV. 335.85'

5/17/2026
S:\Projects\w-5704e\roadway\proj\w-5704e_RDY_PFL.dgn
lisc@pevans

5/28/2025

-L- SR 1100 COVERED BRIDGE RD.

PIPE HYDRAULIC DATA
*0803 -L- Sta. 76+50

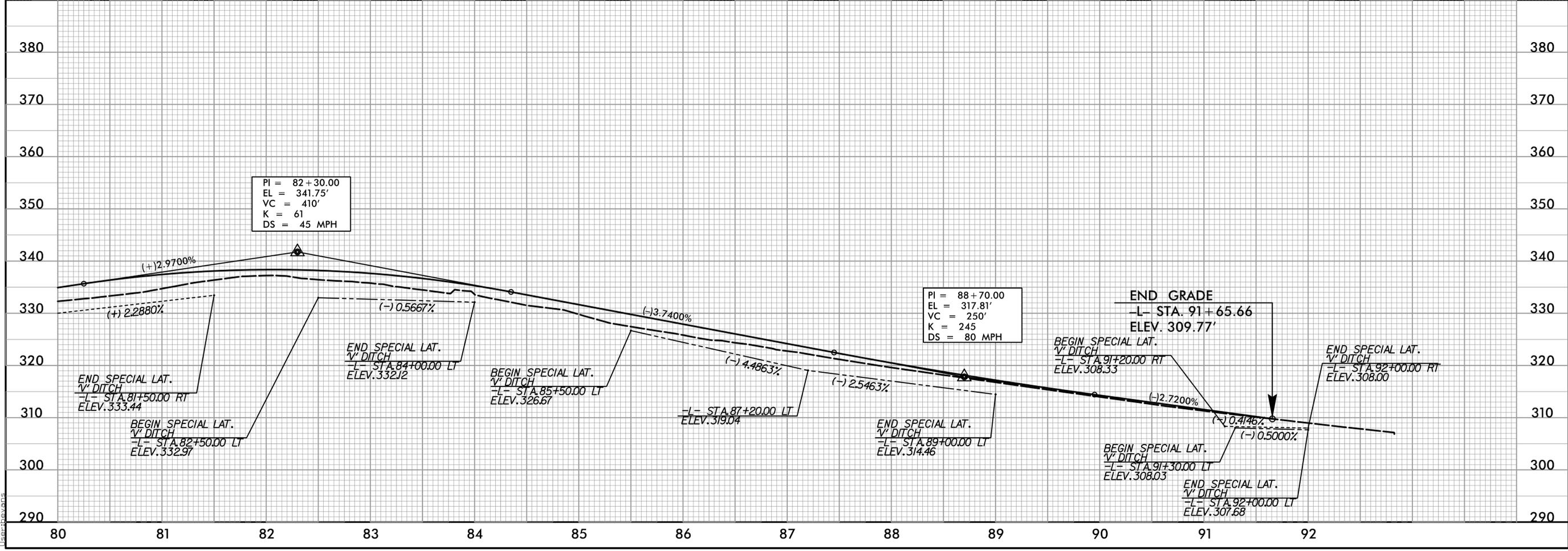
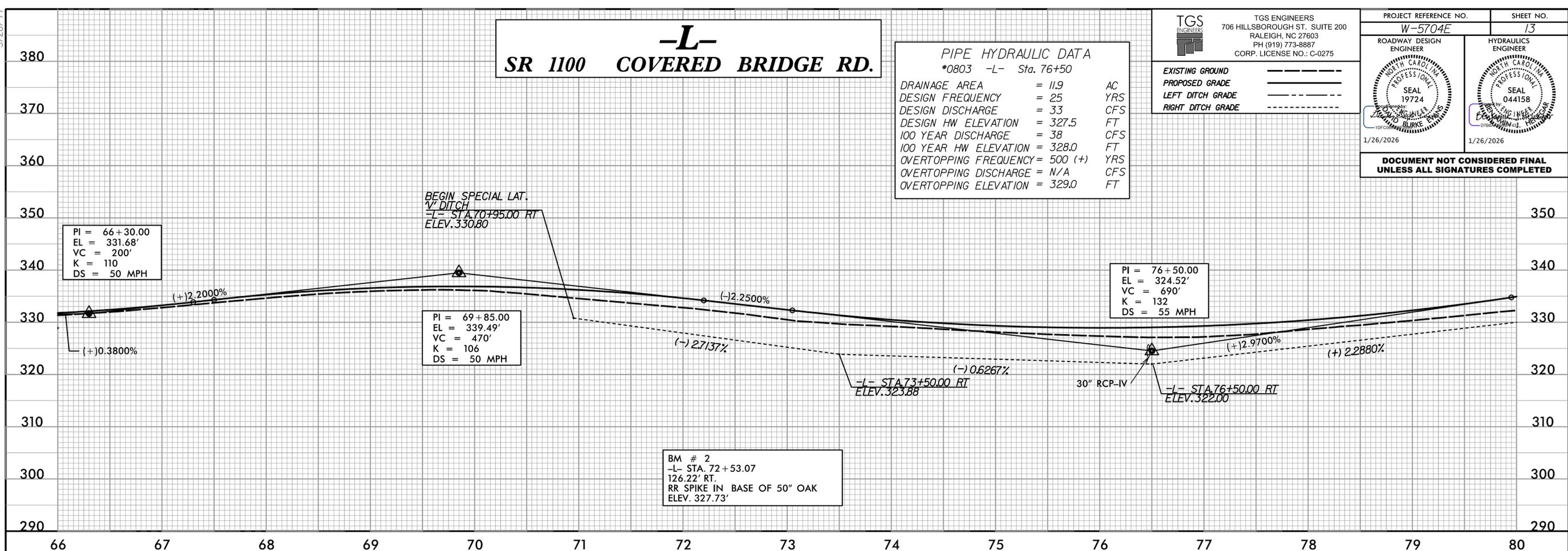
DRAINAGE AREA	= 11.9	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 33	CFS
DESIGN HW ELEVATION	= 327.5	FT
100 YEAR DISCHARGE	= 38	CFS
100 YEAR HW ELEVATION	= 328.0	FT
OVERTOPPING FREQUENCY	= 500 (+)	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 329.0	FT

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CORP. LICENSE NO.: C-0275

EXISTING GROUND: - - - - -
PROPOSED GRADE: _____
LEFT DITCH GRADE: - - - - -
RIGHT DITCH GRADE: - - - - -

PROJECT REFERENCE NO.	W-5704E	SHEET NO.	13
ROADWAY DESIGN ENGINEER	SEAL 19724	HYDRAULICS ENGINEER	SEAL 044158
1/26/2026		1/26/2026	

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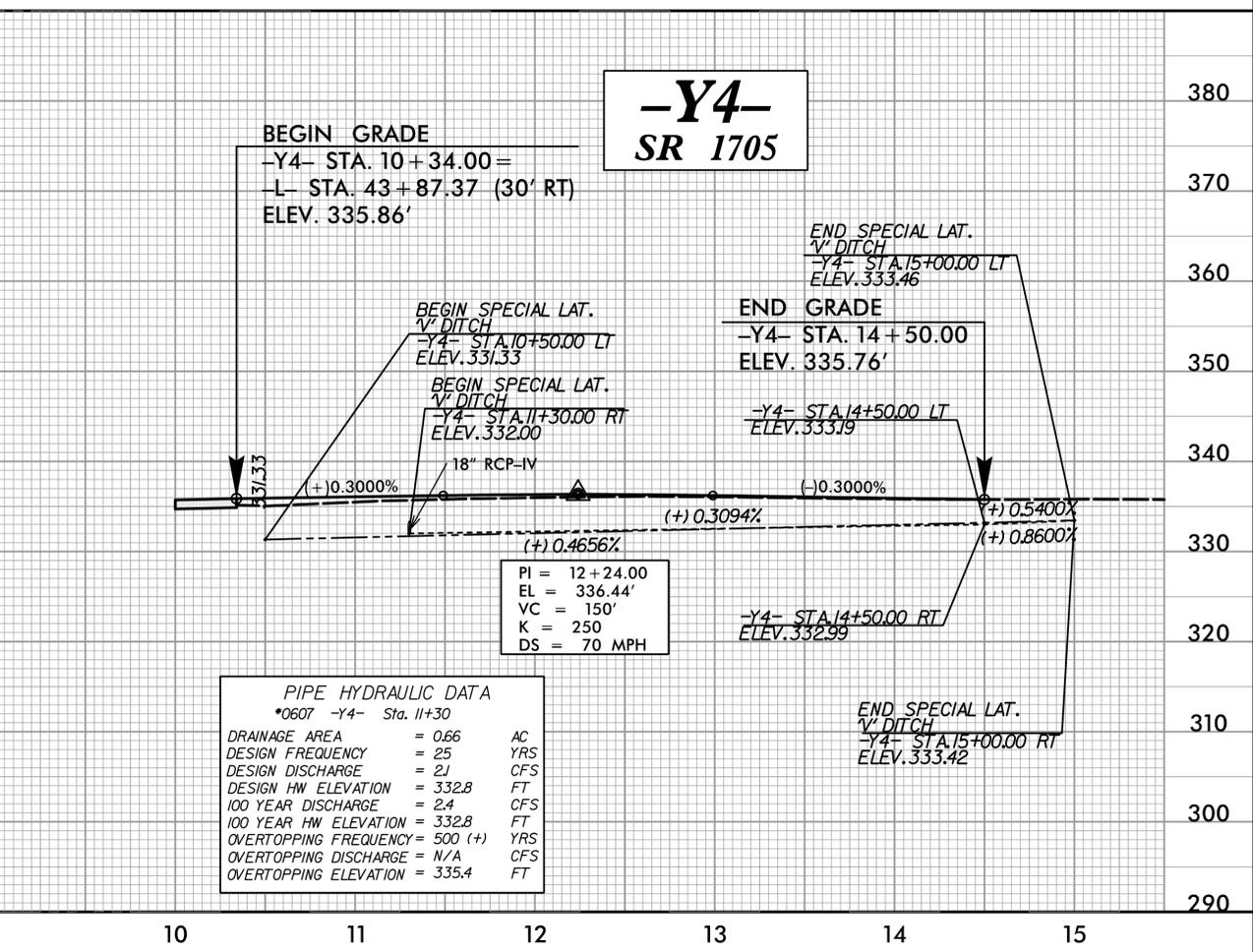
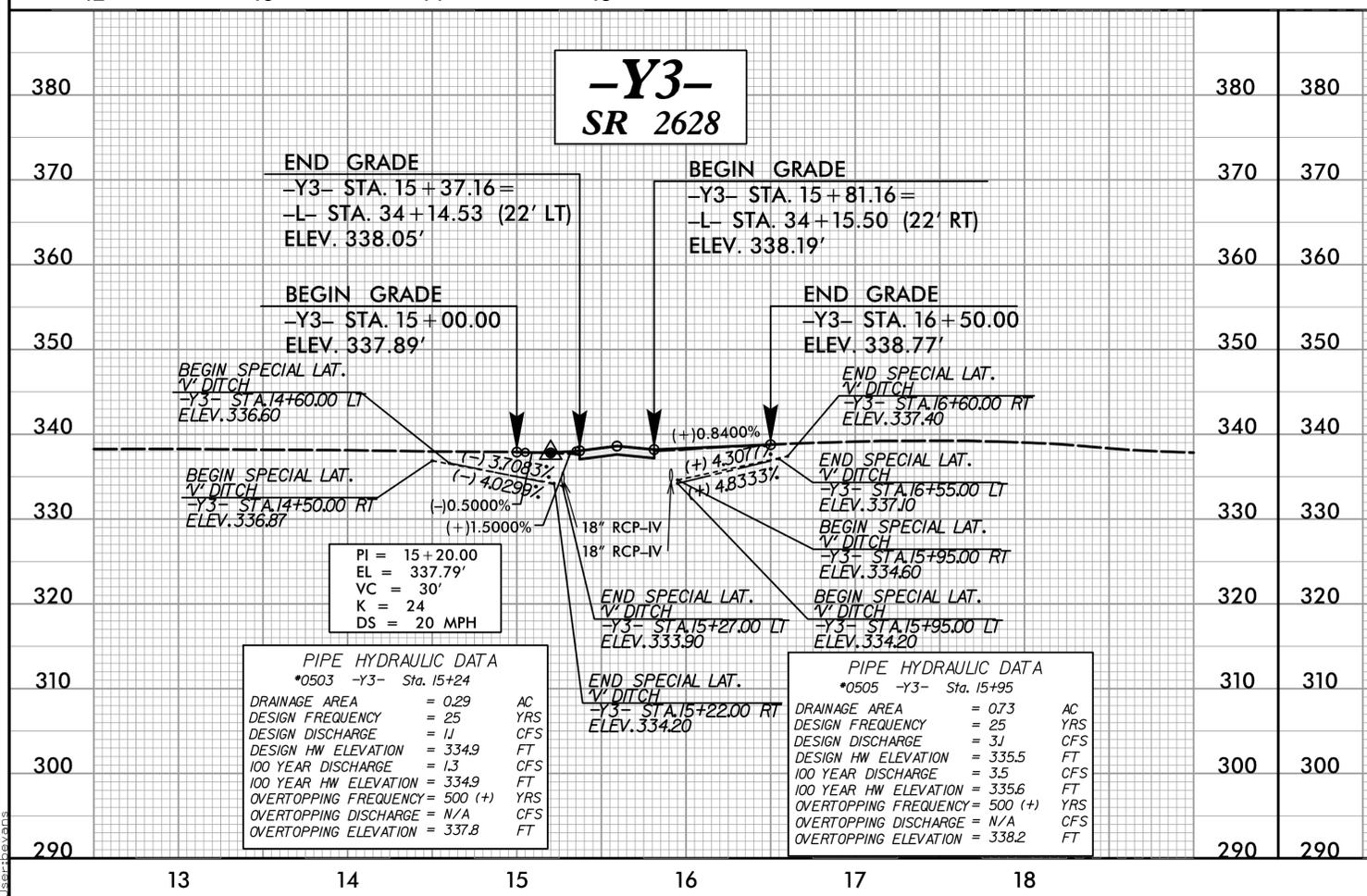
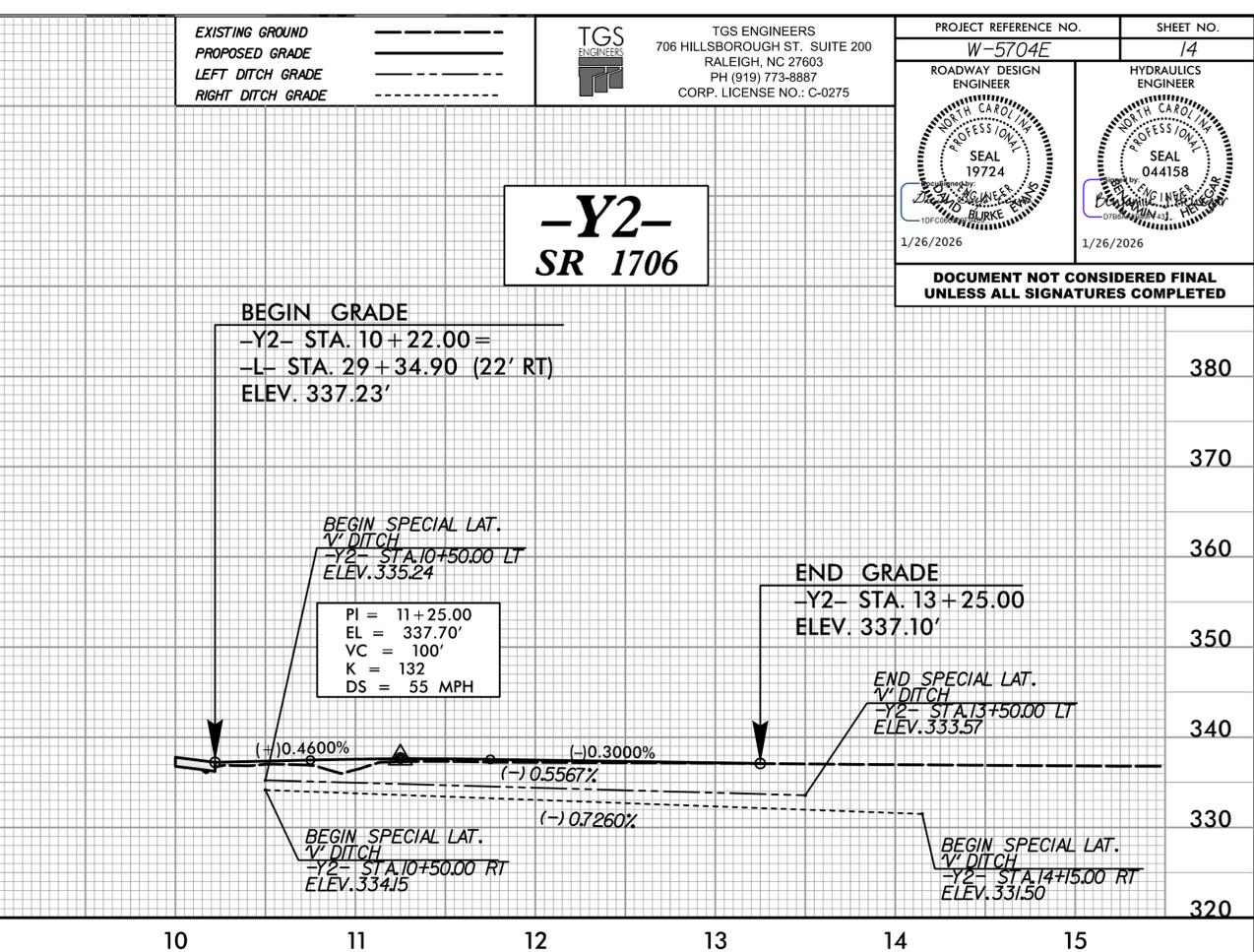
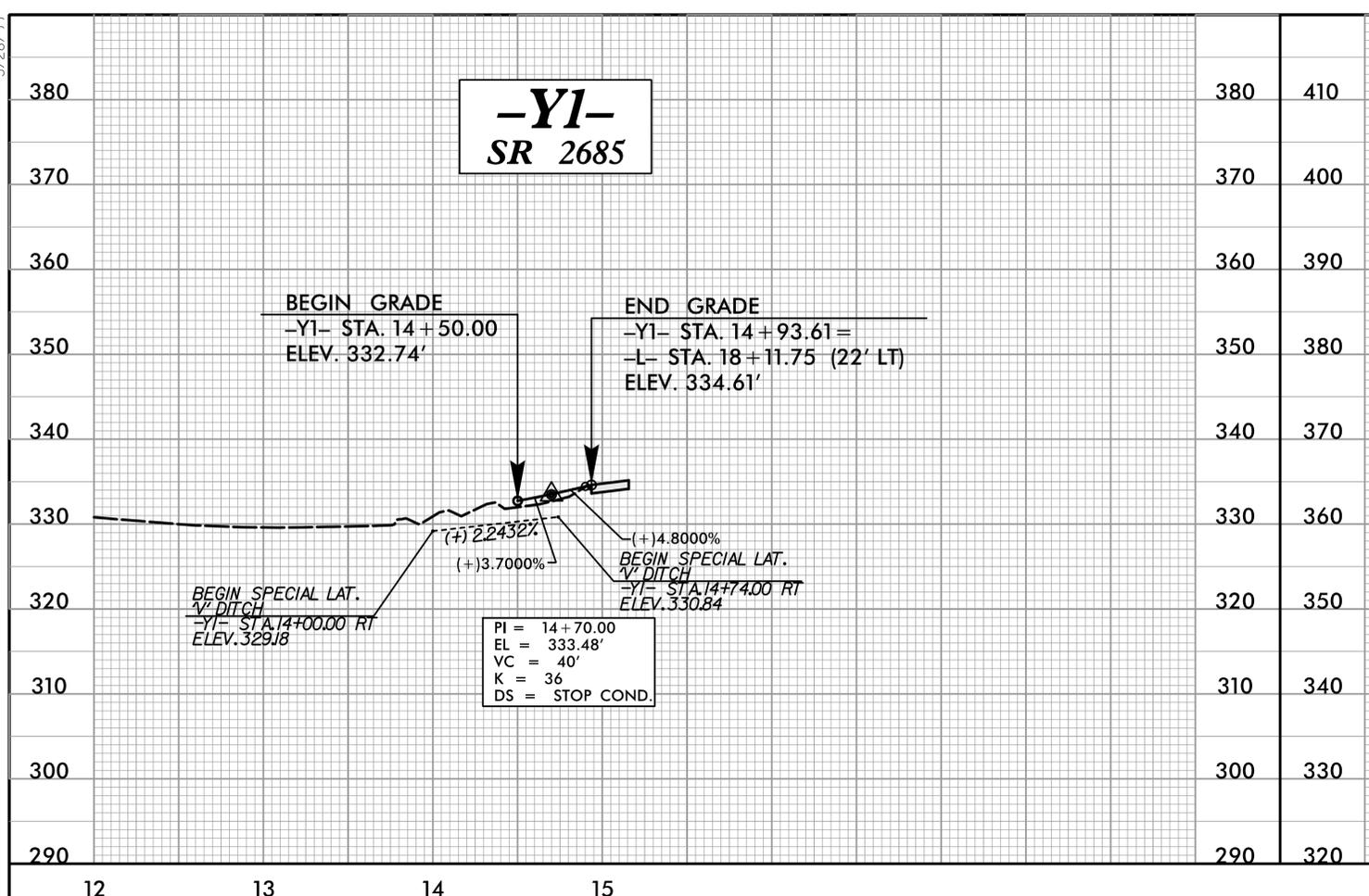
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User: jpeavans

5/28/2025

EXISTING GROUND
PROPOSED GRADE
LEFT DITCH GRADE
RIGHT DITCH GRADE

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PROJECT REFERENCE NO. W-5704E SHEET NO. 14
ROADWAY DESIGN ENGINEER SEAL 19724
HYDRAULICS ENGINEER SEAL 044158
1/26/2026 1/26/2026
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PIPE HYDRAULIC DATA
*0503 -Y3- Sta. 15+24

DRAINAGE AREA	= 0.29	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 11	CFS
DESIGN HW ELEVATION	= 334.9	FT
100 YEAR DISCHARGE	= 13	CFS
100 YEAR HW ELEVATION	= 334.9	FT
OVERTOPPING FREQUENCY	= 500 (+)	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 337.8	FT

PIPE HYDRAULIC DATA
*0505 -Y3- Sta. 15+95

DRAINAGE AREA	= 0.73	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 31	CFS
DESIGN HW ELEVATION	= 335.5	FT
100 YEAR DISCHARGE	= 3.5	CFS
100 YEAR HW ELEVATION	= 335.6	FT
OVERTOPPING FREQUENCY	= 500 (+)	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 338.2	FT

PIPE HYDRAULIC DATA
*0607 -Y4- Sta. 11+30

DRAINAGE AREA	= 0.66	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 21	CFS
DESIGN HW ELEVATION	= 332.8	FT
100 YEAR DISCHARGE	= 2.4	CFS
100 YEAR HW ELEVATION	= 332.8	FT
OVERTOPPING FREQUENCY	= 500 (+)	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 335.4	FT

12/3/2025
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11/26/2025

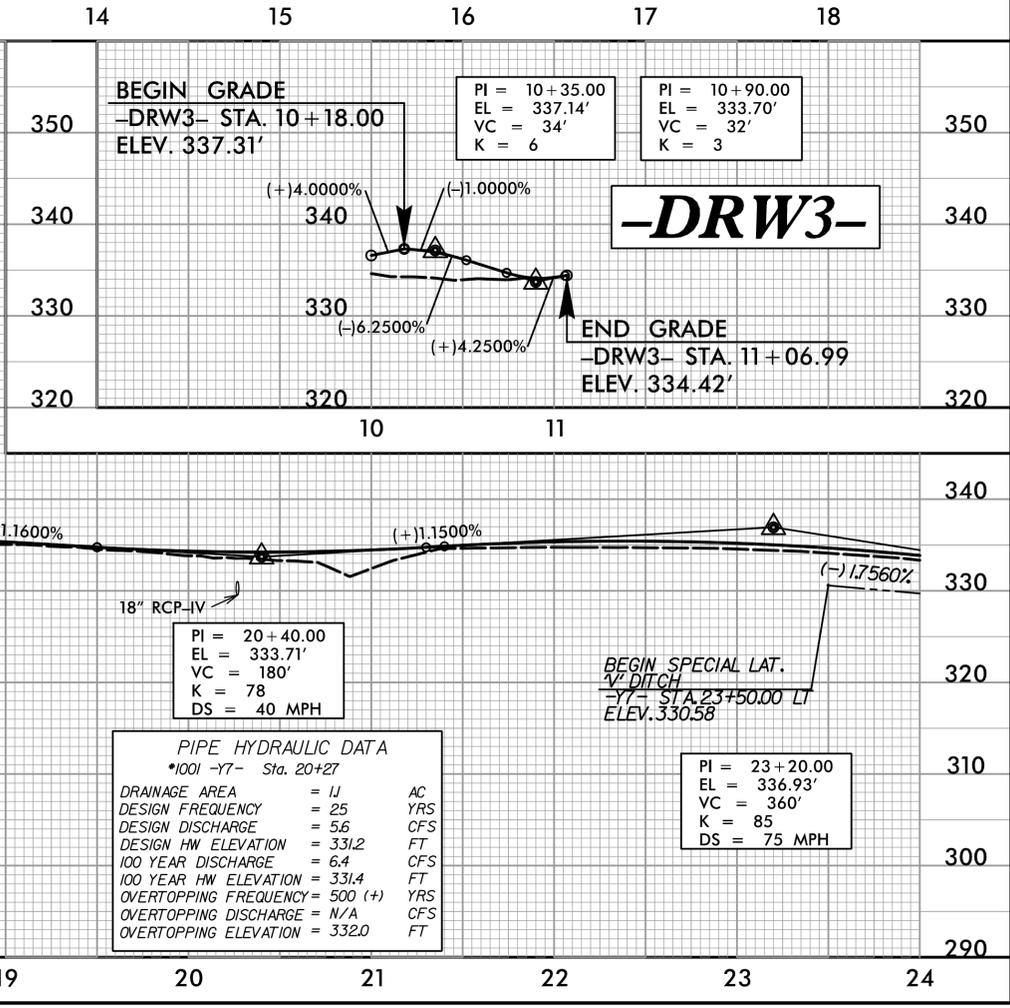
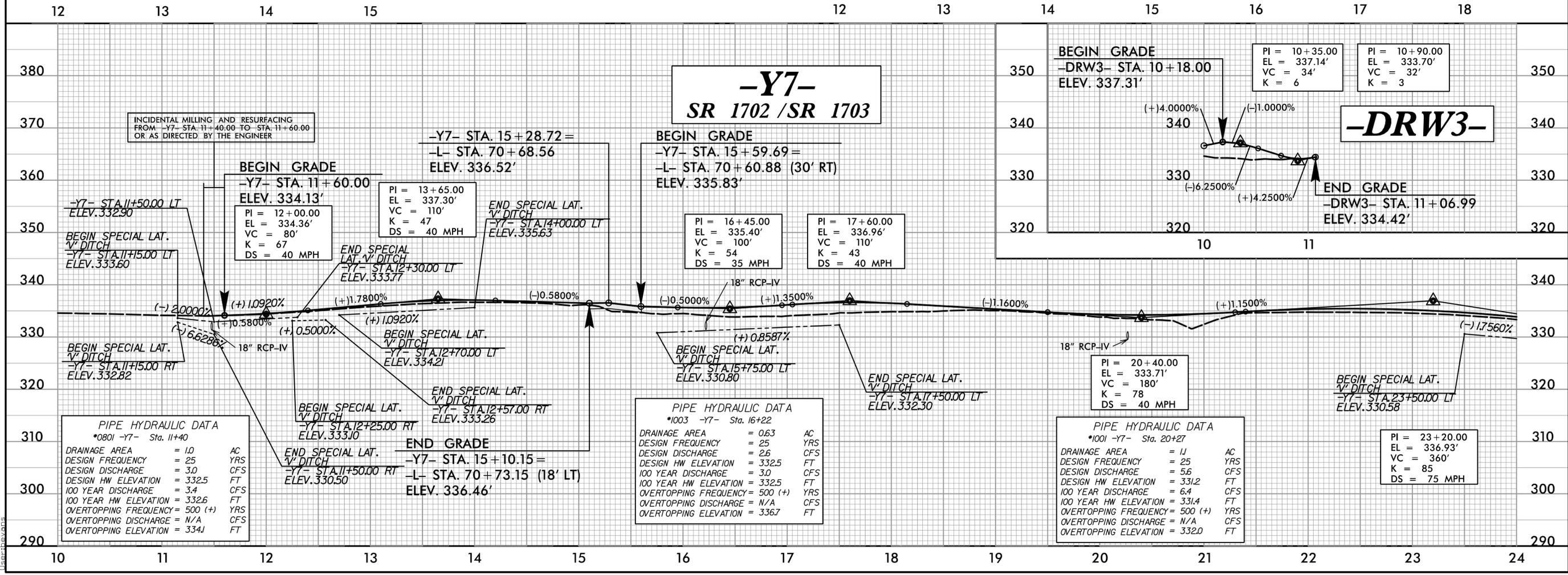
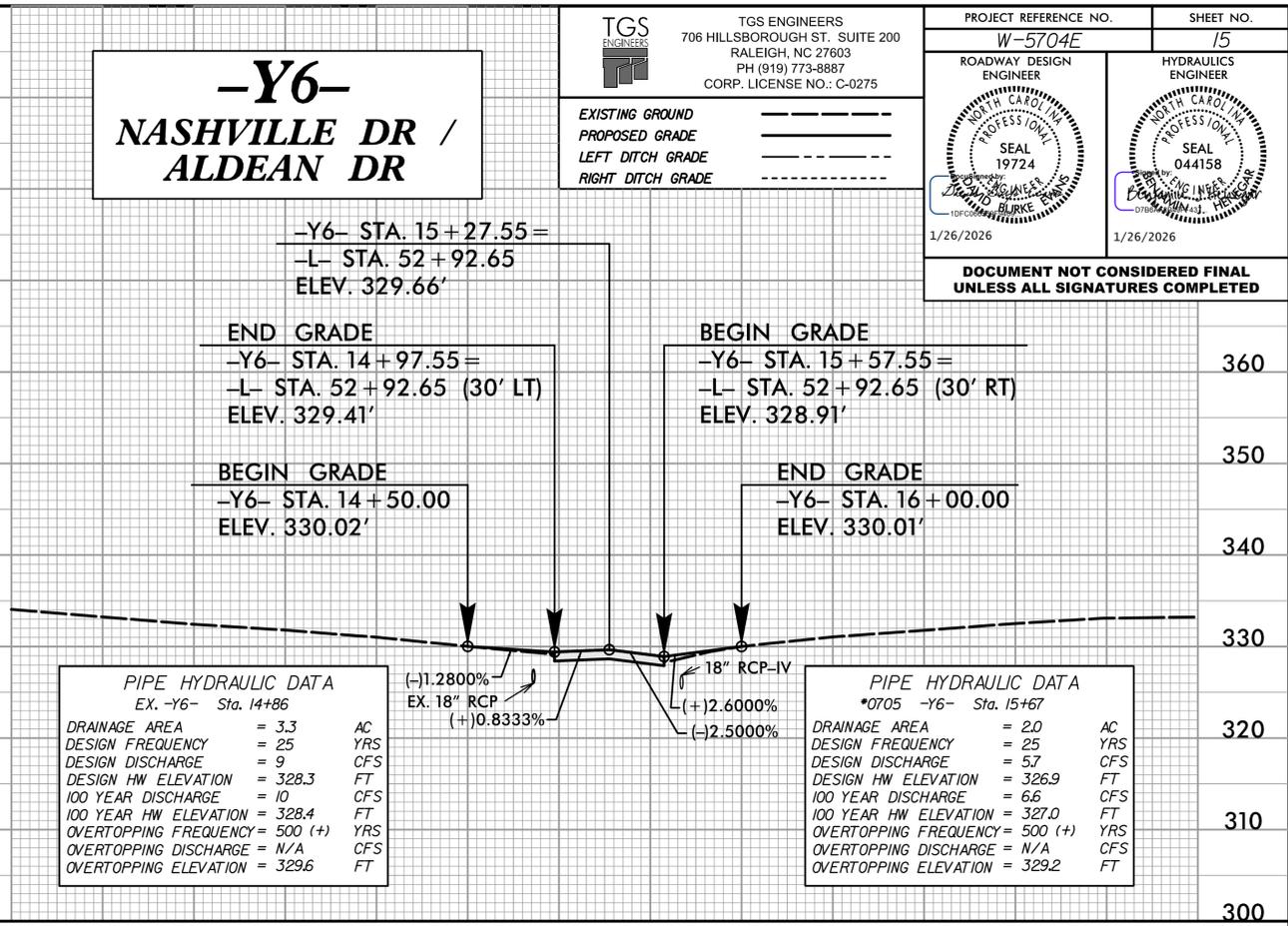
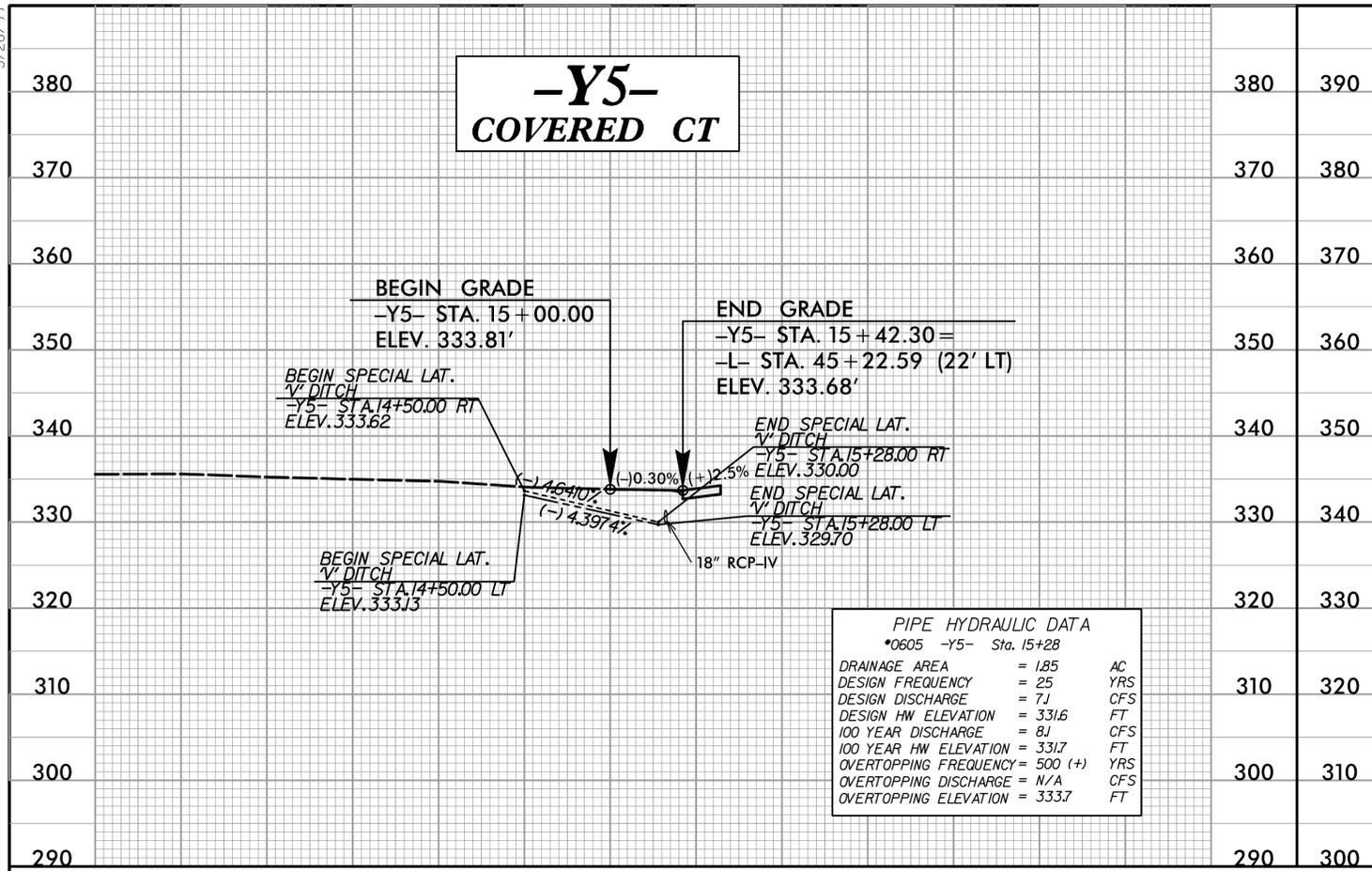
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 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO.: C-0275

EXISTING GROUND _____
 PROPOSED GRADE _____
 LEFT DITCH GRADE _____
 RIGHT DITCH GRADE _____

PROJECT REFERENCE NO. W-5704E	SHEET NO. 15
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	HYDRAULICS ENGINEER <i>[Signature]</i>
SEAL 19724 1/26/2026	SEAL 044158 1/26/2026

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5/28/24

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

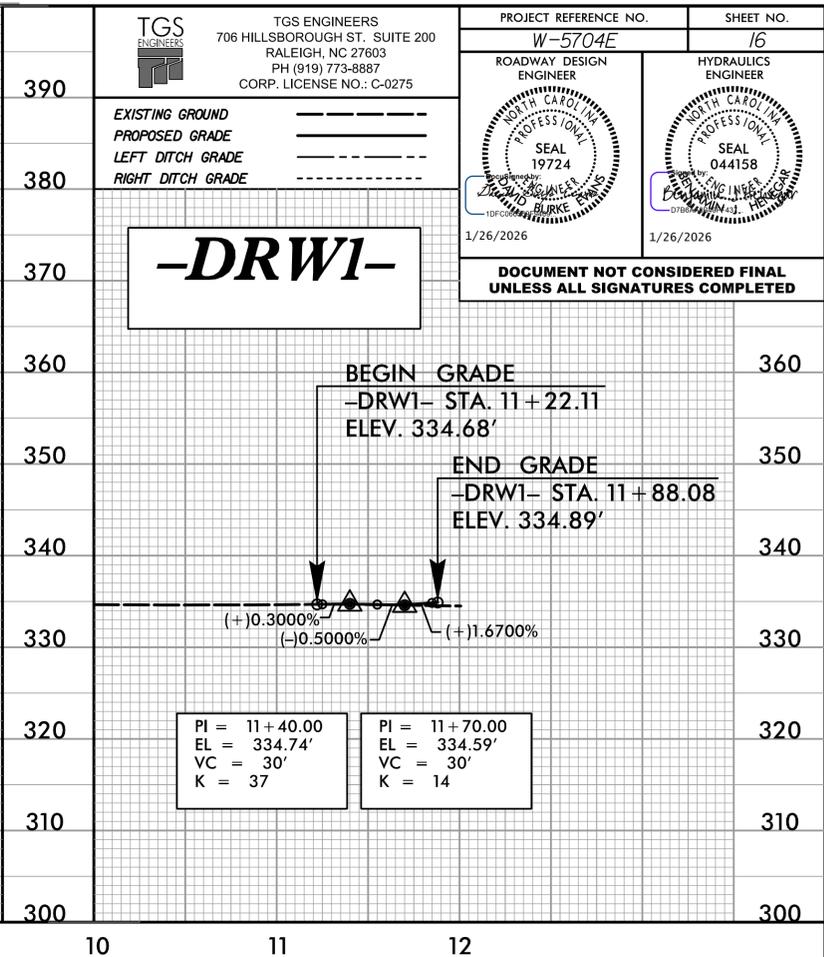
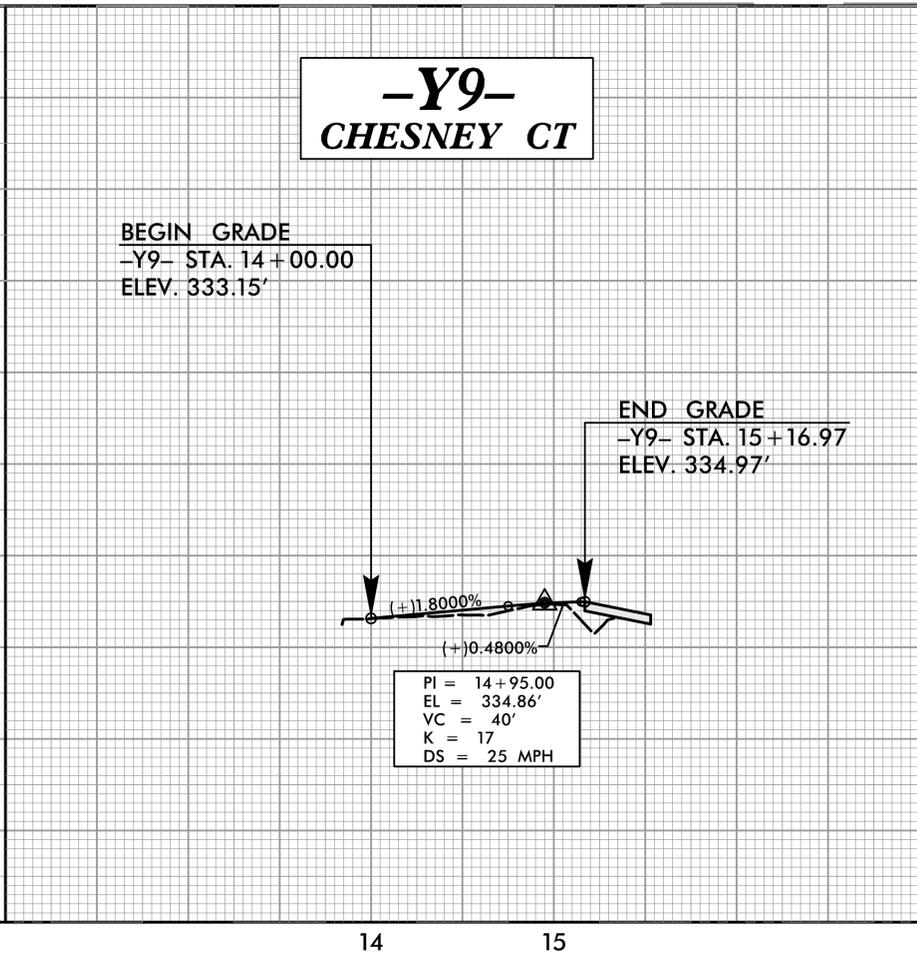
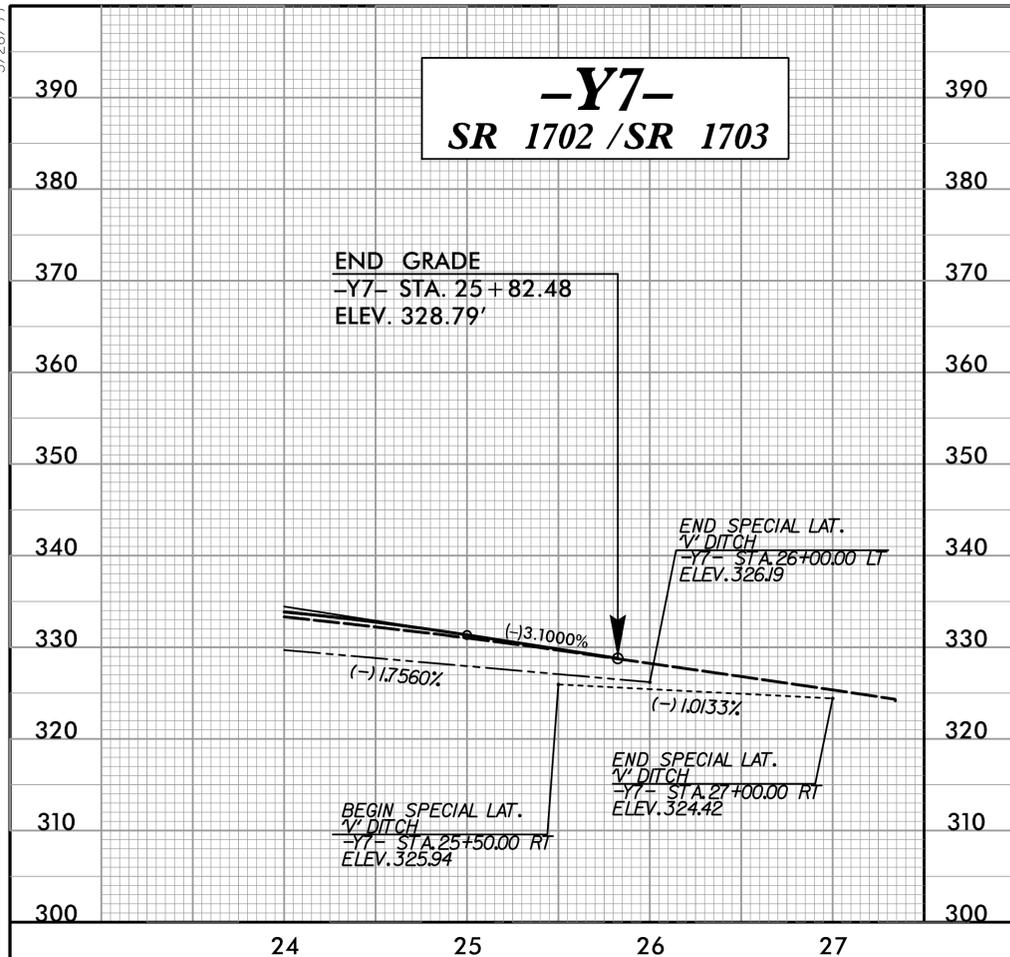
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ROADWAY DESIGN ENGINEER
SEAL 19724
1/26/2026

HYDRAULICS ENGINEER
SEAL 044158
1/26/2026

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EXISTING GROUND _____
PROPOSED GRADE _____
LEFT DITCH GRADE _____
RIGHT DITCH GRADE _____



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