

ROADWAY DESIGN
ENGINEER

GENERAL NOTES

INDEX OF SHEETS

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1-D	UTILITIES POLE DATA AND CENTER LINE SHIFT SHEET
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2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	SUMMARY OF QUANTITIES SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
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4 THRU 12	PLAN SHEETS
W-1 THRU W-2	RETAINING WALL SUMMARY
RSS-1	REINFORCED SLOPE DETAIL

8/17/99
09-SEP-2024 11:30
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Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ _{EP}
Property Corner	-----
Property Monument	□ _{ECM}
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	-w.l.b.-
Proposed Wetland Boundary	w.l.b.
Existing Endangered Animal Boundary	-e.a.b.-
Existing Endangered Plant Boundary	-e.p.b.-

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	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- _C
Proposed Slope Stakes Fill	----- _F
Proposed Wheel Chair Ramp	----- _{WCR}
Proposed Wheel Chair Ramp Curb Cut	----- _{WCC}
Curb Cut for Future Wheel Chair Ramp	----- _{CCFR}
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	----- _{Vineyard}

EXISTING STRUCTURES:

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

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	□ _{PH}
H-Frame Pole	-----
Recorded U/G Power Line	----- _P
Designated U/G Power Line (S.U.E.*)	----- _P

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	□
Telephone Pedestal	⊕
Telephone Cell Tower	⊗
U/G Telephone Cable Hand Hole	□ _{PH}
Recorded U/G Telephone Cable	----- _T
Designated U/G Telephone Cable (S.U.E.*)	----- _T
Recorded U/G Telephone Conduit	----- _{TC}
Designated U/G Telephone Conduit (S.U.E.*)	----- _{TC}
Recorded U/G Fiber Optics Cable	----- _{T FO}
Designated U/G Fiber Optics Cable (S.U.E.*)	----- _{T FO}

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	----- _{A/G Water}

TV:

TV Satellite Dish	⊗
TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	□ _{PH}
Recorded U/G TV Cable	----- _{TV}
Designated U/G TV Cable (S.U.E.*)	----- _{TV}
Recorded U/G Fiber Optic Cable	----- _{TV FO}
Designated U/G Fiber Optic Cable (S.U.E.*)	----- _{TV FO}

GAS:

Gas Valve	◇
Gas Meter	⊕
Recorded U/G Gas Line	----- _G
Designated U/G Gas Line (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}
Recorded SS Forced Main Line	----- _{FSS}
Designated SS Forced Main Line (S.U.E.*)	----- _{FSS}

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	----- _{UTIL}
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

7/2/99

ENTERED BY: MJG DATE: 07/11/18
 CHECKED BY: MJG DATE: 07/11/18

REVISIONS

DATE:

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. IIC.095114
 SHEET NO. 1-D

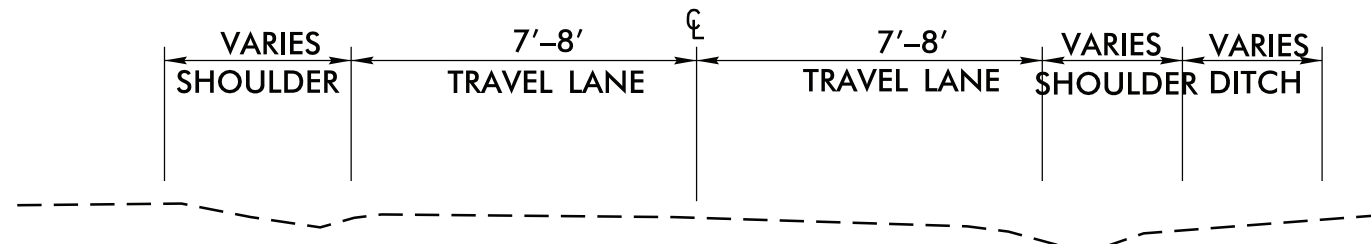
POLE DATA SHEET

**CENTERLINE
 SHIFT STA'S**

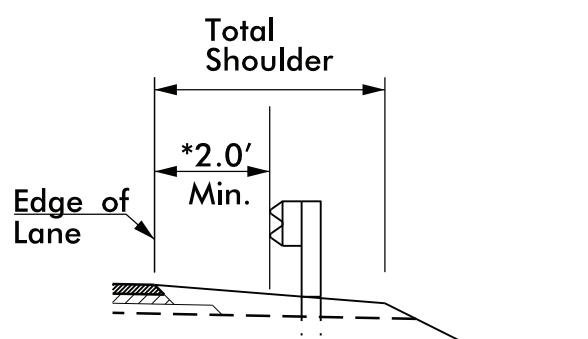
OWNER OF THE POLE LINE: AT&T								OWNER OF THE POLE LINE: CHARTER								STATION		STATION				
STATION	POLE NUMBER	DIST. FROM CENTER PRESENT ROAD		DIST. FROM CENTER PROJECT		DIST. FROM PROJECT AFTER MOVING		REMARKS	STATION	POLE NUMBER	DIST. FROM CENTER PRESENT ROAD		DIST. FROM CENTER PROJECT		DIST. FROM PROJECT AFTER MOVING		REMARKS	LEFT	RIGHT	LEFT	RIGHT	
		LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT				LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT						
																		1+00			37+00	
																		2+00	1		38+00	
																		3+00	6		39+00 1	
0+32			24.3		24.3		25	PED	11+98			13.4		7.4		25	1 CATV	4+00	1	1	40+00	
																		5+00	1		41+00	
4+15		16.8		16.8		25		PED	12+93			12.4		12.4		25	1 CATV	6+00			42+00	
																		7+00		E.O.P	42+85 E.O.P	
8+09			23.1		23.1		25	PED	31+04			14.2		13.2		25	1 CATV	8+00			44+00	
																		9+00			45+00	
11+37			11.7		5.7		25	PED	33+30			18.3		13.3		25	1 CATV	10+00		2	46+00	
																		11+00	6	2	47+00	
11+37			11.7		5.7		25	2STL	35+48			27		23		25	1 CATV	12+00	6	2	48+00	
																		13+00		3	49+00	
11+98			13.4		7.4		25	2STL	36+86		22		22		25	1 CATV	14+00			50+00		
																		15+00			51+00	
13+97					16.9		25	NO ATTACHMENTS										16+00			52+00	
																		17+00			53+00	
15+29		24.4		24.4		25		PED										2	18+00		54+00	
																		2	19+00		55+00	
15+36			19.4		19.4		25	PED										3	20+00		56+00	
																			21+00	1	57+00	
20+18		7		10		25		PED	11+98			13.4		7.4		25	1PC	22+00	1		58+00	
																		2	23+00		59+00	
26+21		24.5		23.4		25		PED	12+93			12.4		12.4		25	1PC	1	24+00		60+00	
																			25+00		61+00	
35+47			27.5		23.5		25	PED	13+04			14.2		13.2		25	4PW, 4OHGW	26+00	1		62+00	
																			27+00		63+00	
									33+30			18.3		13.3		25	4PW, 3GW	5	28+00		64+00	
																		2	29+00		65+00	
									35+48			27		23		25	4PW, 3GW				66+00	
																			31+00	1		67+00
									36+86		22		22		25	4PW, 1TRNS, 4GW				32+00	68+00	
																			33+00	5		69+00
																			34+00	4		70+00
																			35+00	4		71+00
																			36+00			72+00

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PROJECT REFERENCE NO.	SHEET NO.
11C.095114	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

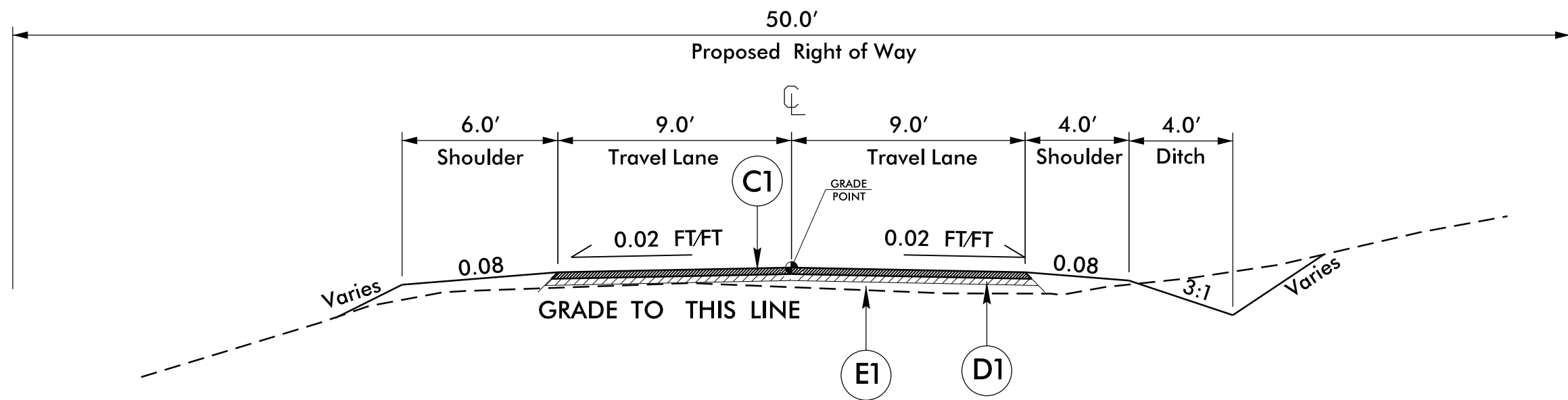


14'-16' EXISTING TYPICAL SECTION



GUARDRAIL PLACEMENT

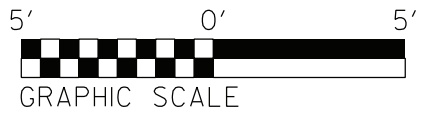
*GUARDRAIL LOCATIONS DIRECTED BY THE ENGINEER



TYPICAL SECTION NO. 1

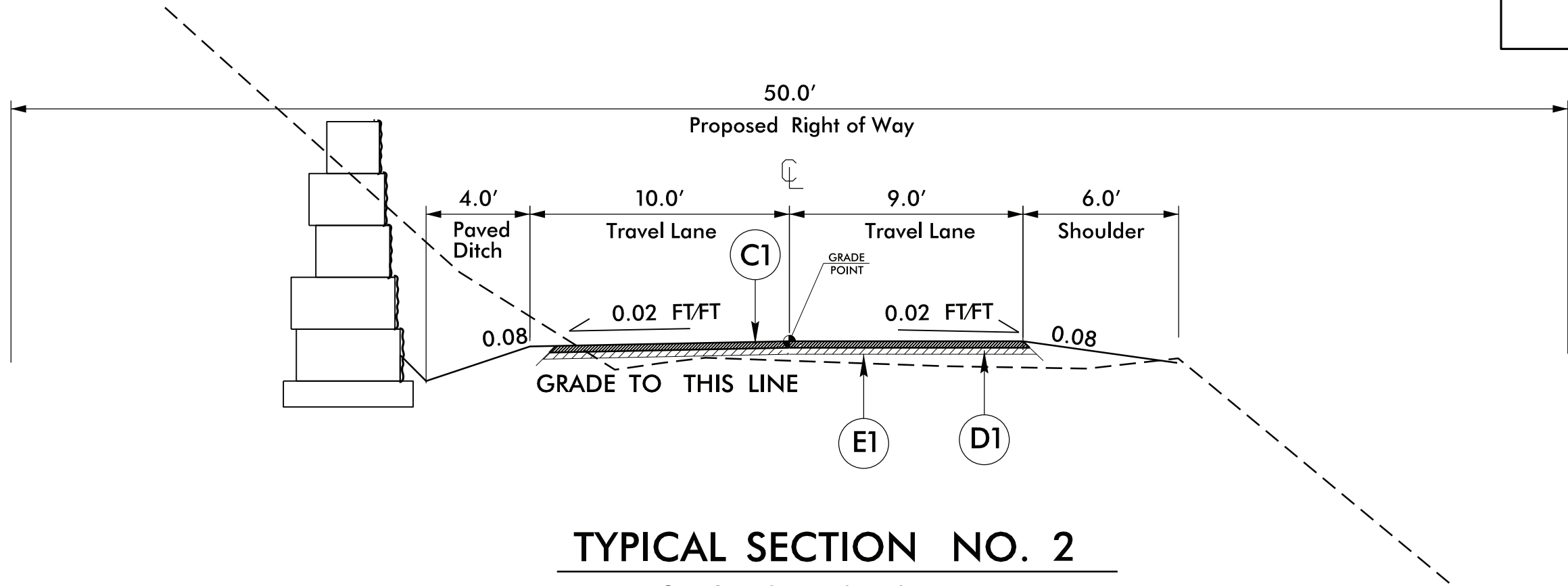
Sta 0+00 to 8+50
 Sta 10+50 to 13+13
 Sta 15+64 to 44+50

C1	PROP. ASPHALT SURFACE TREATMENT (TRIPLE SEAL).
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E1	PROP. APPROX. 6" AGGREGATE BASE COURSE.



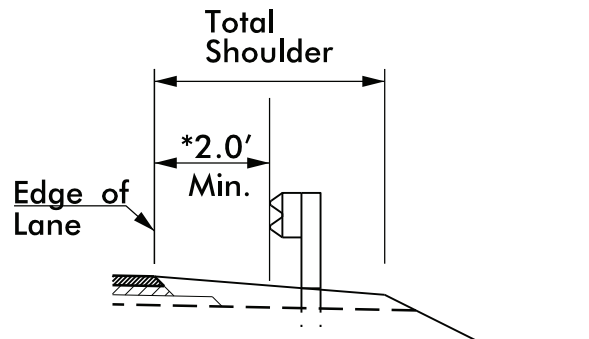
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PROJECT REFERENCE NO. <i>11C.095114</i>	SHEET NO. <i>2A</i>
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



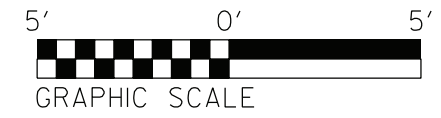
TYPICAL SECTION NO. 2

Sta 8+50 to 10+50



GUARDRAIL PLACEMENT

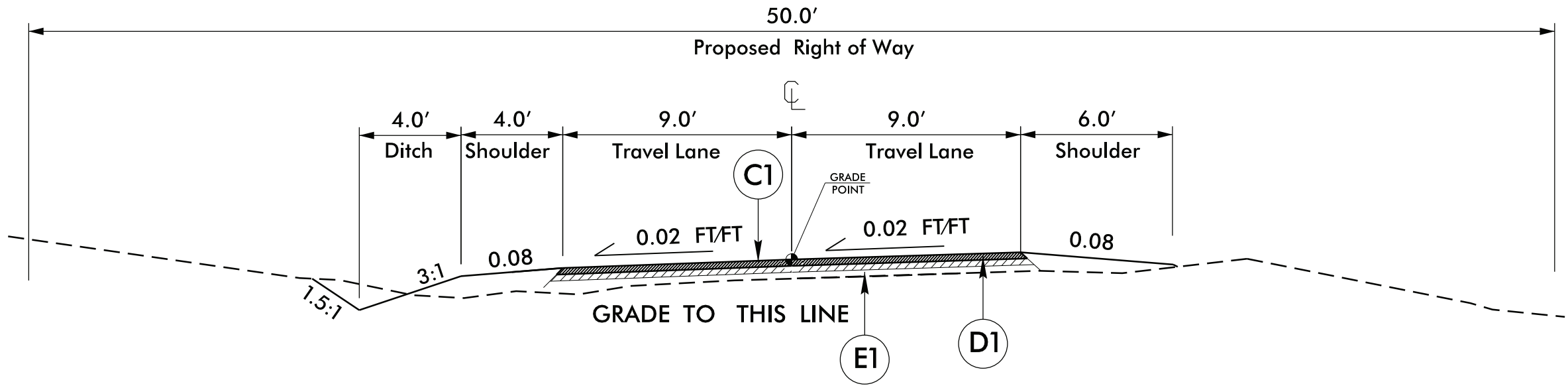
*GUARDRAIL LOCATIONS DIRECTED BY THE ENGINEER



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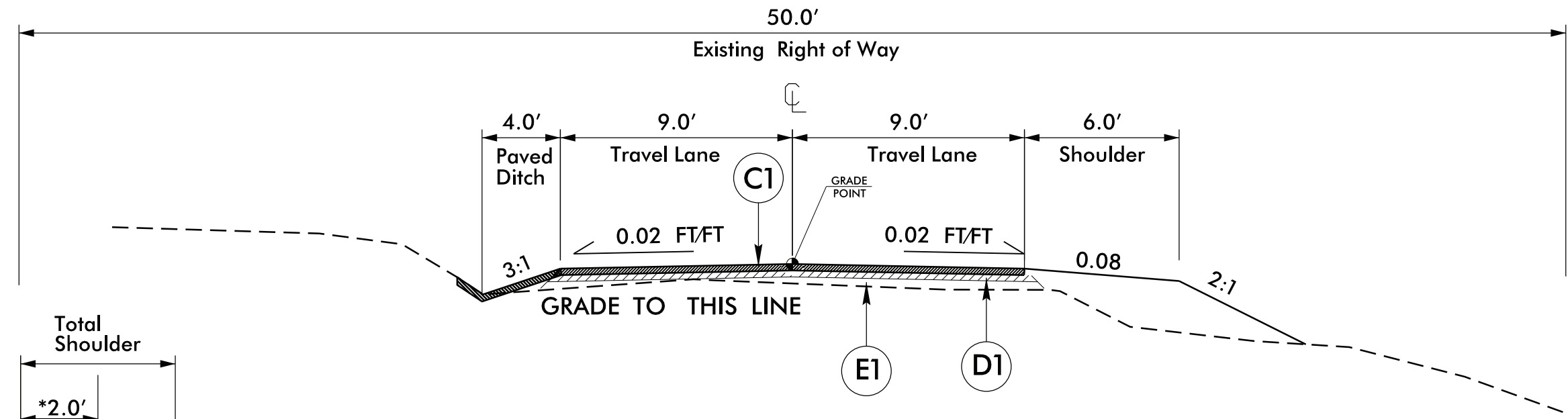
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PROJECT REFERENCE NO. 11C.095114	SHEET NO. 2B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



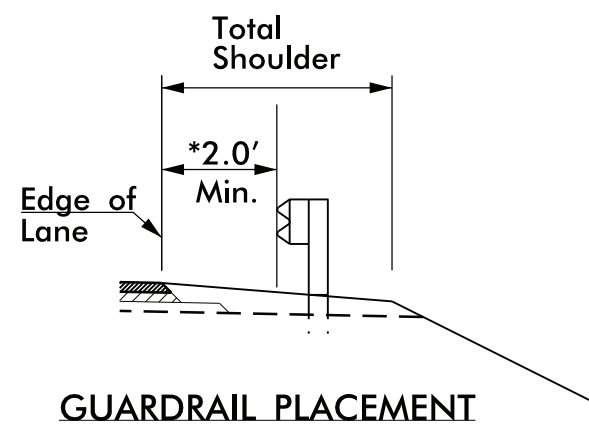
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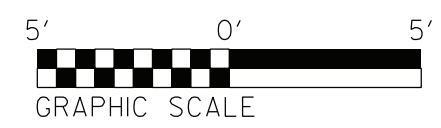


TYPICAL SECTION NO. 4

Sta 13+13 to 15+64



***GUARDRAIL LOCATIONS DIRECTED BY THE ENGINEER**



C1	PROP. ASPHALT SURFACE TREATMENT (TRIPLE SEAL).
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E1	PROP. APPROX. 6" AGGREGATE BASE COURSE.

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 \$\$\$\$SHEET NUMBER\$\$\$\$

12/06/05
 ENTERED BY: JG DATE: 06/26/18
 CHECKED BY: JG DATE: 06/26/18
 DATE: REVISIONS
 8/22/2023 Updated Property Owners & ParcelInfo

PROJECT REFERENCE NO. SHEET NO.
 IIC.095114 3-B

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

RIGHT OF WAY DATA SHEET

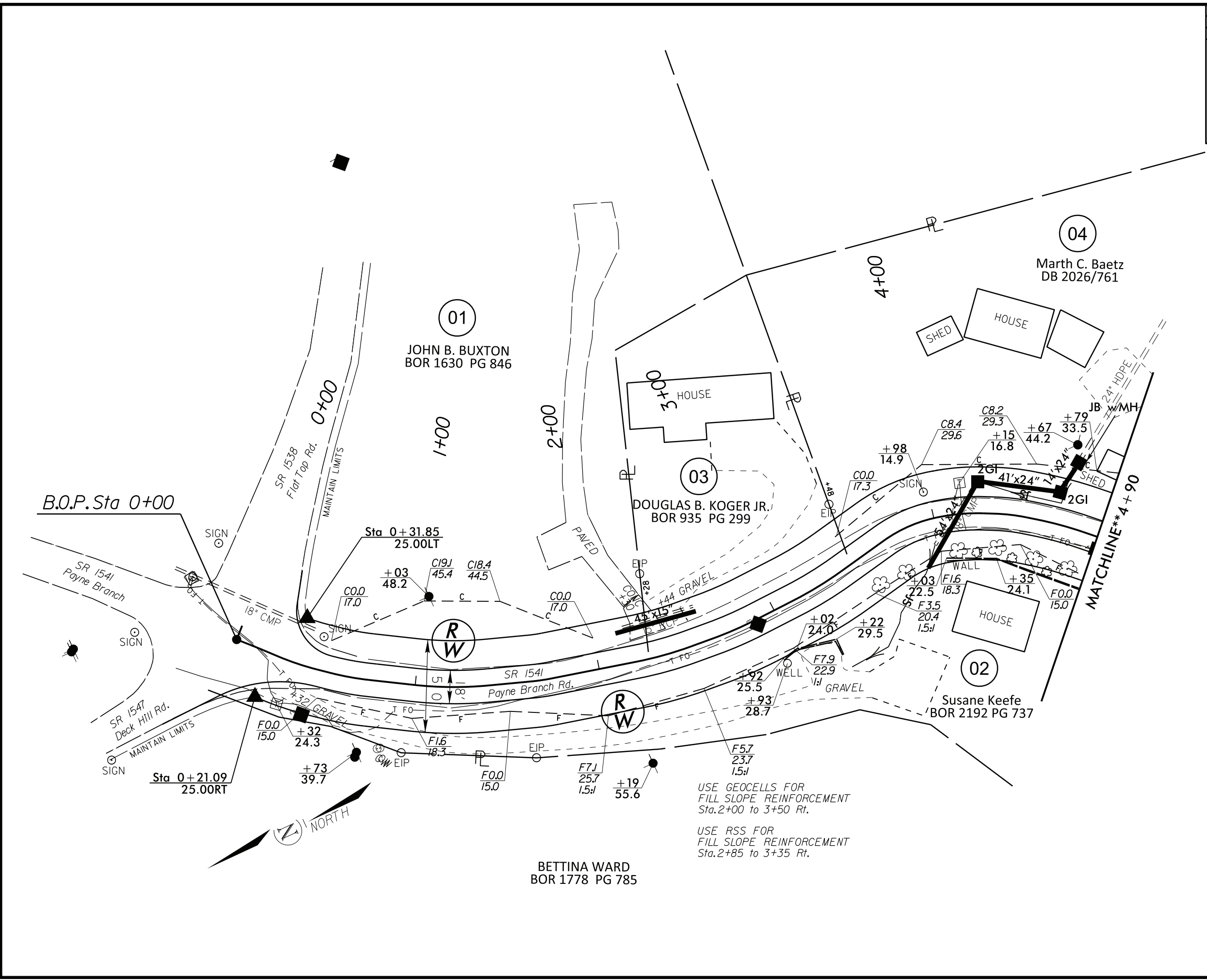
PARCEL NO.	PROPERTY OWNERS NAME	ADDRESS	CITY	STATE	ZIP	DEED BOOK / PAGE	NCPIN	PHONE	PARCEL NO.	PROPERTY OWNERS NAME	ADDRESS	CITY	STATE	ZIP	DEED BOOK / PAGE	NCPIN	PHONE
1	John B. Buxton	32 BEVERLY DR	Durham	NC	27707	1630846	2819132229		27	Richard G. Dunn	137 SADDLE SPRINGS DR	Blowing Rock	NC	28605	1996/40	2809714573	
2	Susan E. Keefe	P.O. BOX 949	Blowing Rock	NC	28605	2192/737	2819037168		14A	Maria & Kevin Dehaven	2269 PAYNE BRANCH RD	Blowing Rock	NC	28605	2306/394	2809917809	
3	Douglas B. Koger Jr.	16 Cady Lane	Wappingers Fall	NY	12590	935/299	2819039224										
4	Martha C. Baetz	P.O. BOX 863	Blowing Rock	NC	28605	2026/761	2819038084										
5	Cool Springs Baptist Church	256 Willy Austin Rd.	Blowing Rock	NC	28605	095/300	2819024974										
6	Berry Blessed Cabin, LLC	11767 S. DIXIE HWY, # 108	Pinecrest	FL	33156	2093/144	2819027847										
6	Berry Blessed Cabin, LLC	11767 S. DIXIE HWY, # 108	Pinecrest	FL	33156	2093/144	2819026775										
7	Steve M. Pitts	2007 Payne Branch Rd.	Blowing Rock	NC	28605	170/250	2819026518										
8	Lucy Reid Rentals, LLC	191 BROOKSIDE DR	Boone	NC	28607	1908/824	2819023885										
9	Kenneth P. Howell	219 Cool Springs Drive	Blowing Rock	NC	28605	570/276	2819023717										
10	Jimmy & Virginia D. Ward	P.O. Box 2063	Boone	NC	28607	242/741	2819022629										
11	Roy V. Nicholson	2057 Payne Branch Rd.	Blowing Rock	NC	28605	762/416	2819024474										
12	Benjamin E. & Emily S. Link	2196 PAYNE BRANCH RD	Blowing Rock	NC	28605	1966/430	2809927655										
12	Benjamin E. & Emily S. Link	2196 PAYNE BRANCH RD	Blowing Rock	NC	28605	1966/430	2809927655										
12	Benjamin E. & Emily S. Link	2196 PAYNE BRANCH RD	Blowing Rock	NC	28605	1966/430	2809927655										
12	Benjamin E. & Emily S. Link	2196 PAYNE BRANCH RD	Blowing Rock	NC	28605	1966/430	2809927655										
13	Ashley S. Craig	P.O. Box 574	Blowing Rock	NC	28605	1676/866	2819021299										
14	Zelma Verlee Shore	2269 Payne Branch Rd.	Blowing Rock	NC	28605	1026/266	2809911968										
15	Wendell E. & Dora Hicks	2240 Payne Branch Rd.	Blowing Rock	NC	28605	640/597	2809924007										
16	Thelma Cannon Life Estate	2588 Payne Branch Rd.	Blowing Rock	NC	28605	1403/245	2809815583										
16	Thelma Cannon Life Estate	2588 Payne Branch Rd.	Blowing Rock	NC	28605	1403/245	2809815462										
16	Thelma Cannon Life Estate	2588 Payne Branch Rd.	Blowing Rock	NC	28605	1403/245	2809814447										
16	Thelma Cannon Life Estate	2588 Payne Branch Rd.	Blowing Rock	NC	28605	1403/245	2809811760										
16	Thelma Cannon Life Estate	2588 Payne Branch Rd.	Blowing Rock	NC	28605	1403/245	2809809806										
17	Charles G. Travis	P.O. Box 670	Blowing Rock	NC	28605	1238/853	2809910374										
18	Leigh C. Kollmer Antoinette P. Ferraro	2453 PAYNE BRANCH RD	Blowing Rock	NC	28605	2174/377	2809818385										
19	Jeffrey Peacock	7990 GLENN FERRY RD	PFAFFTOWN	NC	27040	2294/680	2809817342										
20	Payne Branch Farms LLC,	2555 PAYNE BRANCH RD	Blowing Rock	NC	28605	2092/830	2809806762										
21	Ricky A Ruppert Stephanie T Ruppert	268 ROBESON ST	Spring Lake	NC	28390	2211/569	2809811297										
22	Kenneth H Jacker Revoc Tr AGRMT	2664 Payne Branch Rd.	Blowing Rock	NC	28605	1544/679	2809718773										
23	Stephen W. Lion	2687 Payne Branch Rd.	Blowing Rock	NC	28605	361/073	2809708906										
24	Carl T. Smith Allison J. Smith	334 GLENBURNNEY DR	Fayetteville	NC	28303	2125/272	2809716664										
25	Stephen W. Lion	2687 Payne Branch Rd.	Blowing Rock	NC	28605	361/069	2809716245										
26	Wellfleet LLC,	821 WAKE FOREST RD	Raleigh	NC	27604	1996/43	2809715416										

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PROJECT REFERENCE NO.	SHEET NO.
11C.095114	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS
 REVISED 9-14-23: UPDATED PARCEL 2 OWNER

09-SEP-2024 11:48
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 8/17/99



USE GEOCELLS FOR
 FILL SLOPE REINFORCEMENT
 Sta. 2+00 to 3+50 Rt.

USE RSS FOR
 FILL SLOPE REINFORCEMENT
 Sta. 2+85 to 3+35 Rt.

BETTINA WARD
 BOR 1778 PG 785

04
 Marth C. Baetz
 DB 2026/761

01
 JOHN B. BUXTON
 BOR 1630 PG 846

03
 DOUGLAS B. KOGER JR.
 BOR 935 PG 299

02
 Susane Keefe
 BOR 2192 PG 737

B.O.P. Sta 0+00

Sta 0+21.09
25.00RT

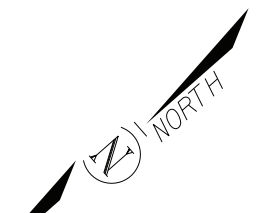
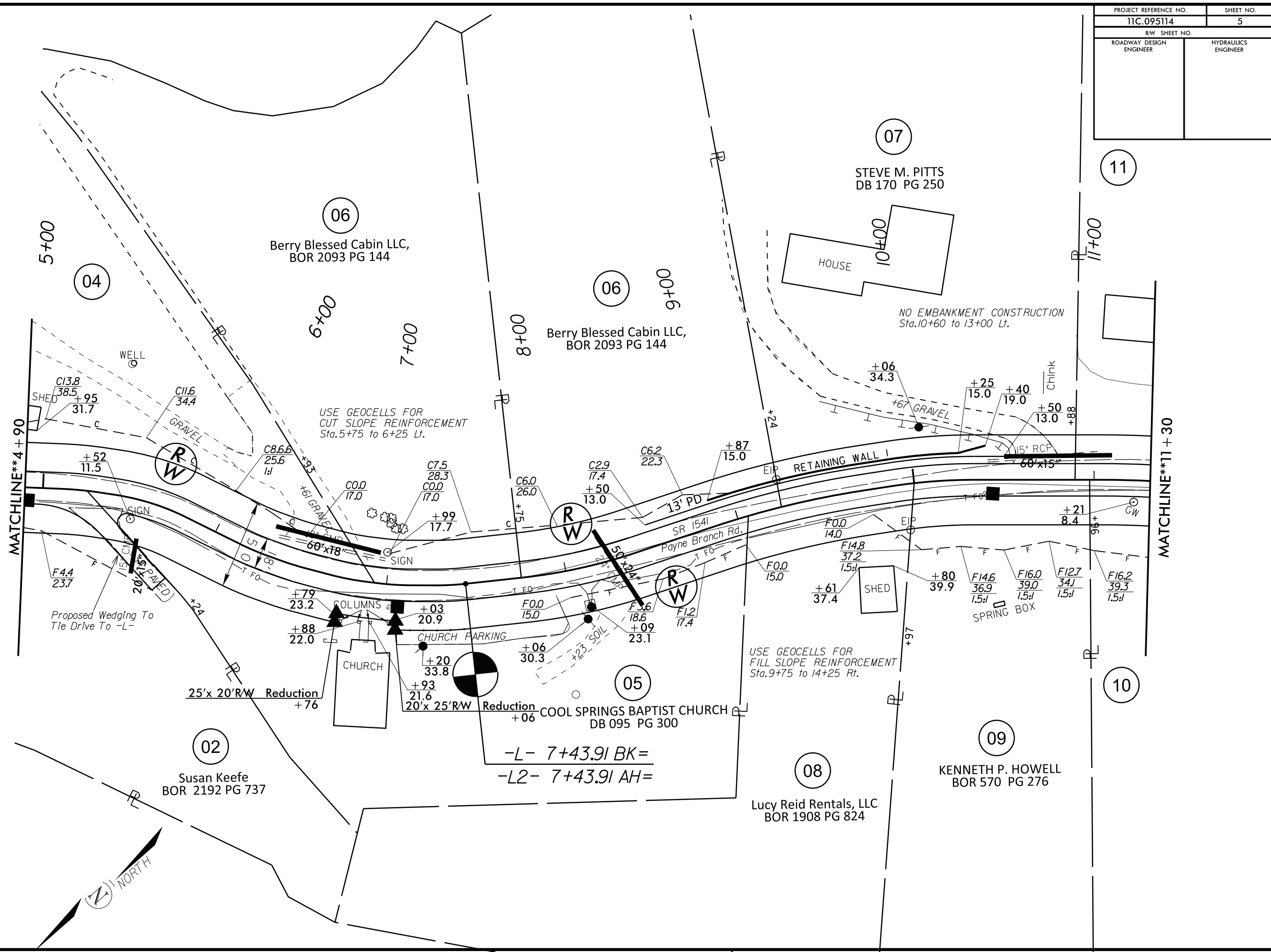
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MATCHLINE** 4+90

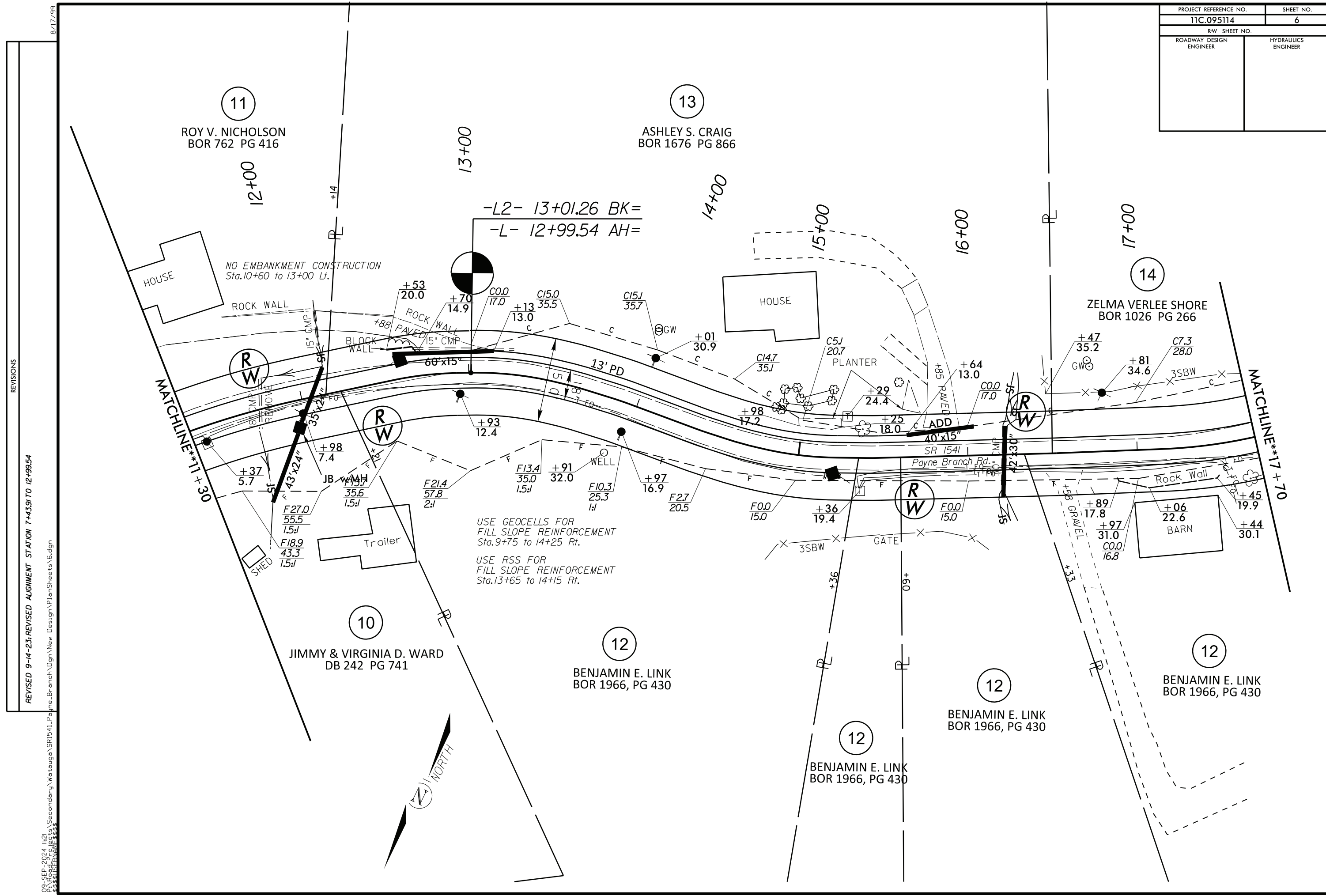
PROJECT REFERENCE NO.	SHEET NO.
11C.095114	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS
 REVISED 9-14-23: UPDATED PARCELS 2, 4, 6, AND 8 OWNERS
 REVISED 9-14-23: REMOVED RETAINING WALLS 1 AND 2, ADDED RETAINING WALL 1 AT NEW LOCATION
 REVISED 9-14-23: REVISED ALIGNMENT STATION 7+43.91 TO 12+99.54

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PROJECT REFERENCE NO.	SHEET NO.
11C.095114	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



11
ROY V. NICHOLSON
BOR 762 PG 416

13
ASHLEY S. CRAIG
BOR 1676 PG 866

14
ZELMA VERLEE SHORE
BOR 1026 PG 266

10
JIMMY & VIRGINIA D. WARD
DB 242 PG 741

12
BENJAMIN E. LINK
BOR 1966, PG 430

12
BENJAMIN E. LINK
BOR 1966, PG 430

12
BENJAMIN E. LINK
BOR 1966, PG 430

-L2- 13+01.26 BK=
-L- 12+99.54 AH=

USE GEOCELLS FOR
FILL SLOPE REINFORCEMENT
Sta.9+75 to 14+25 Rt.

USE RSS FOR
FILL SLOPE REINFORCEMENT
Sta.13+65 to 14+15 Rt.

NO EMBANKMENT CONSTRUCTION
Sta.10+60 to 13+00 Lt.

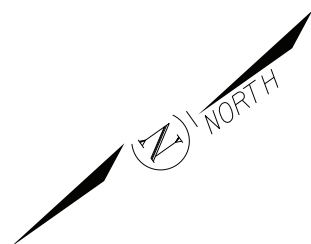
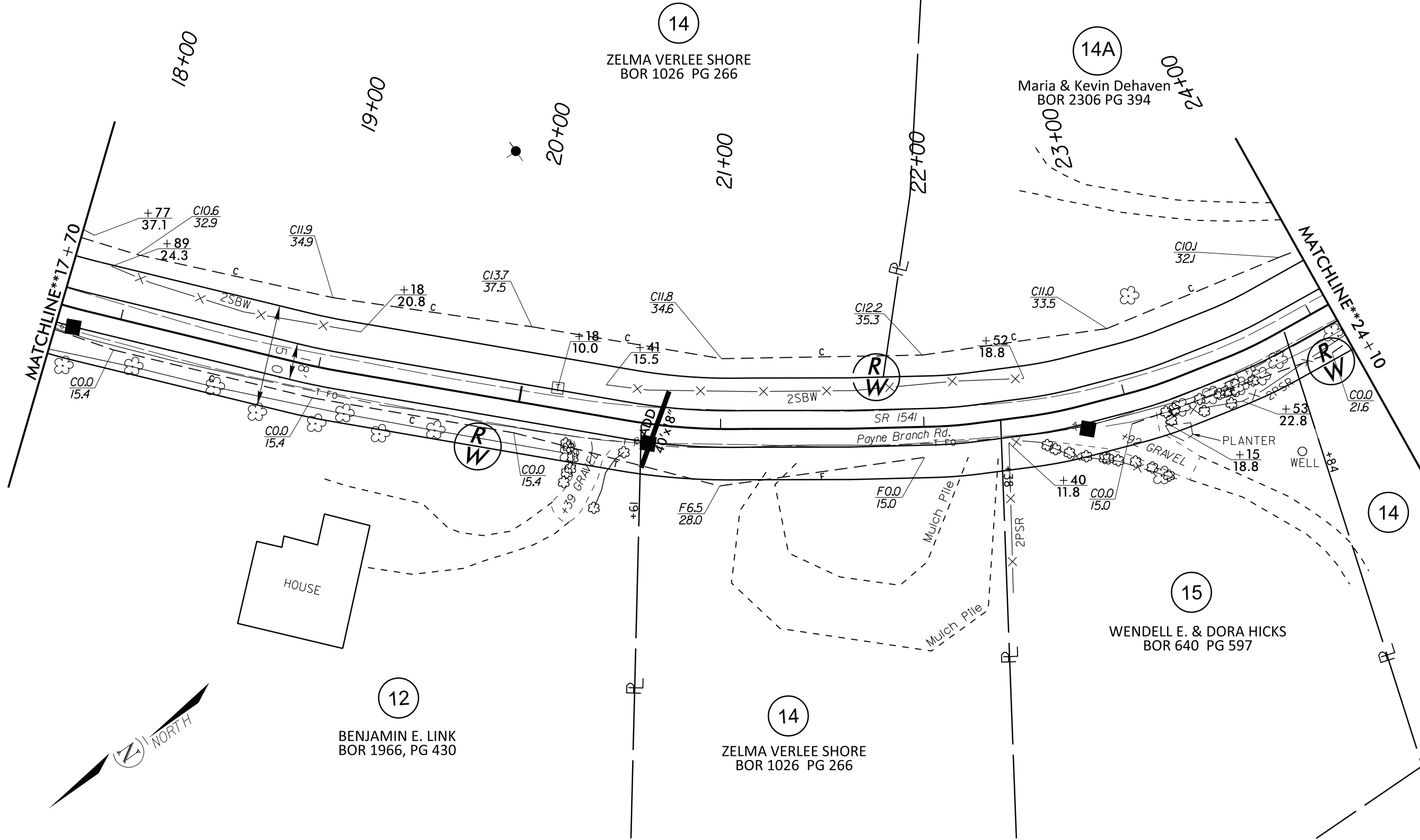
REVISIONS
 REVISED 9-14-23; REVISED ALIGNMENT STATION 7+43.9 TO 12+99.54
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MATCHLINE**11+30

MATCHLINE**17+70

PROJECT REFERENCE NO.	SHEET NO.
11C.095114	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



REVISIONS

REVISED 9-14-23: ADDITION OF PARCEL 14A

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8/17/99

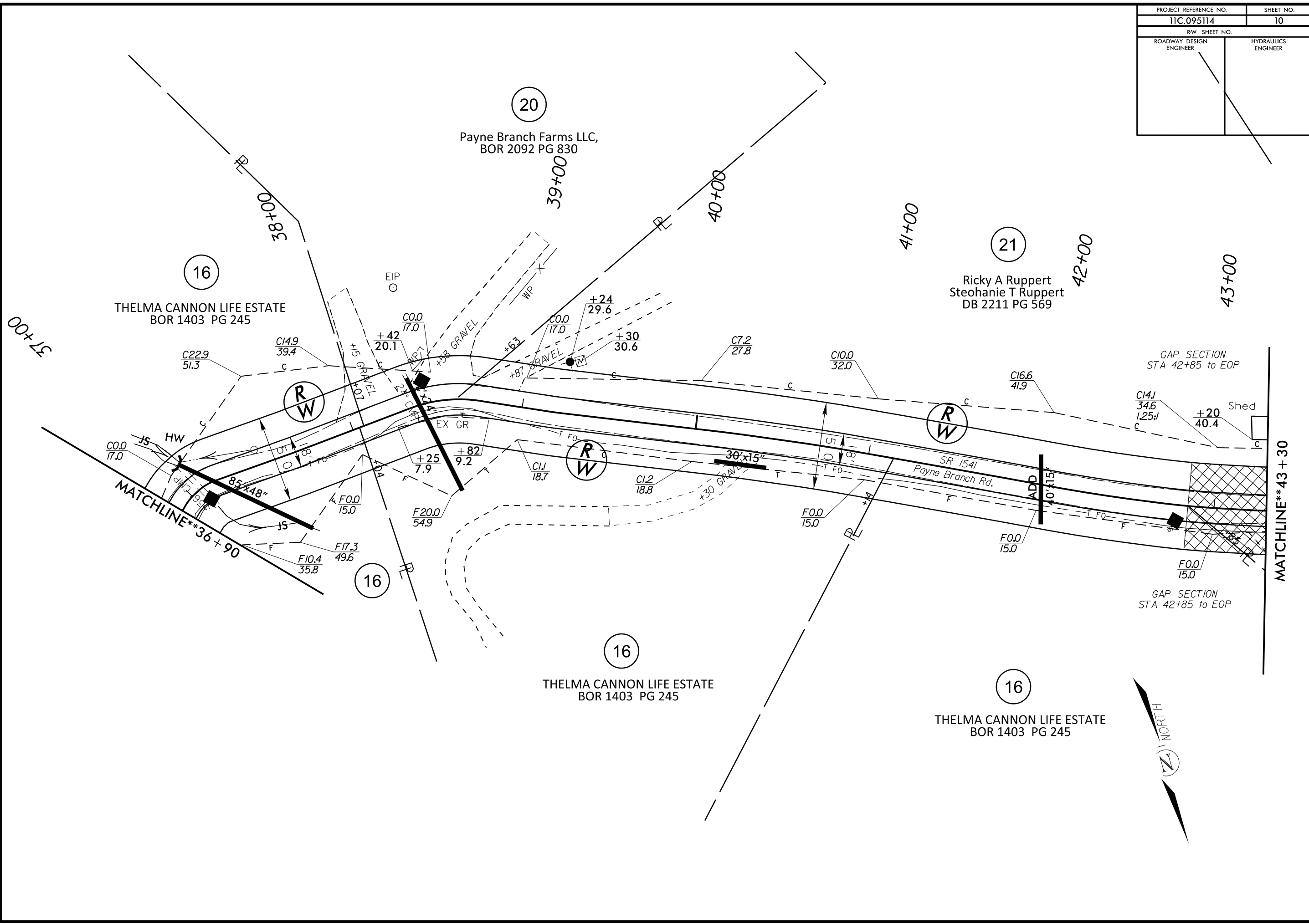
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11C.095114	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

REVISED 9-14-23: UPDATED PARCEL 20 OWNER
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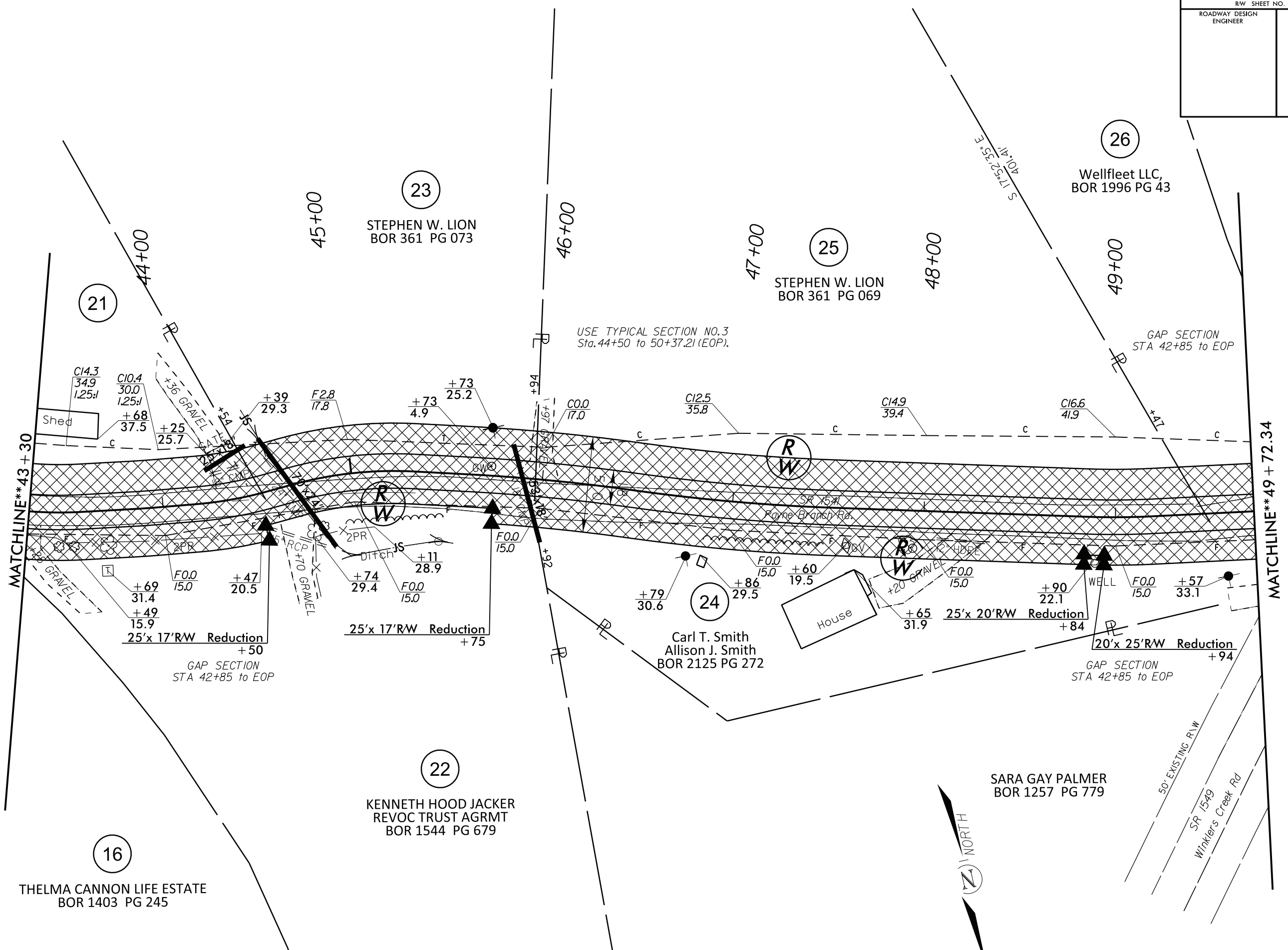


PROJECT REFERENCE NO.	SHEET NO.
11C.095114	11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

REVISED 9-14-2023; UPDATED PARCELS 24 & 25 OWNER CHANGE

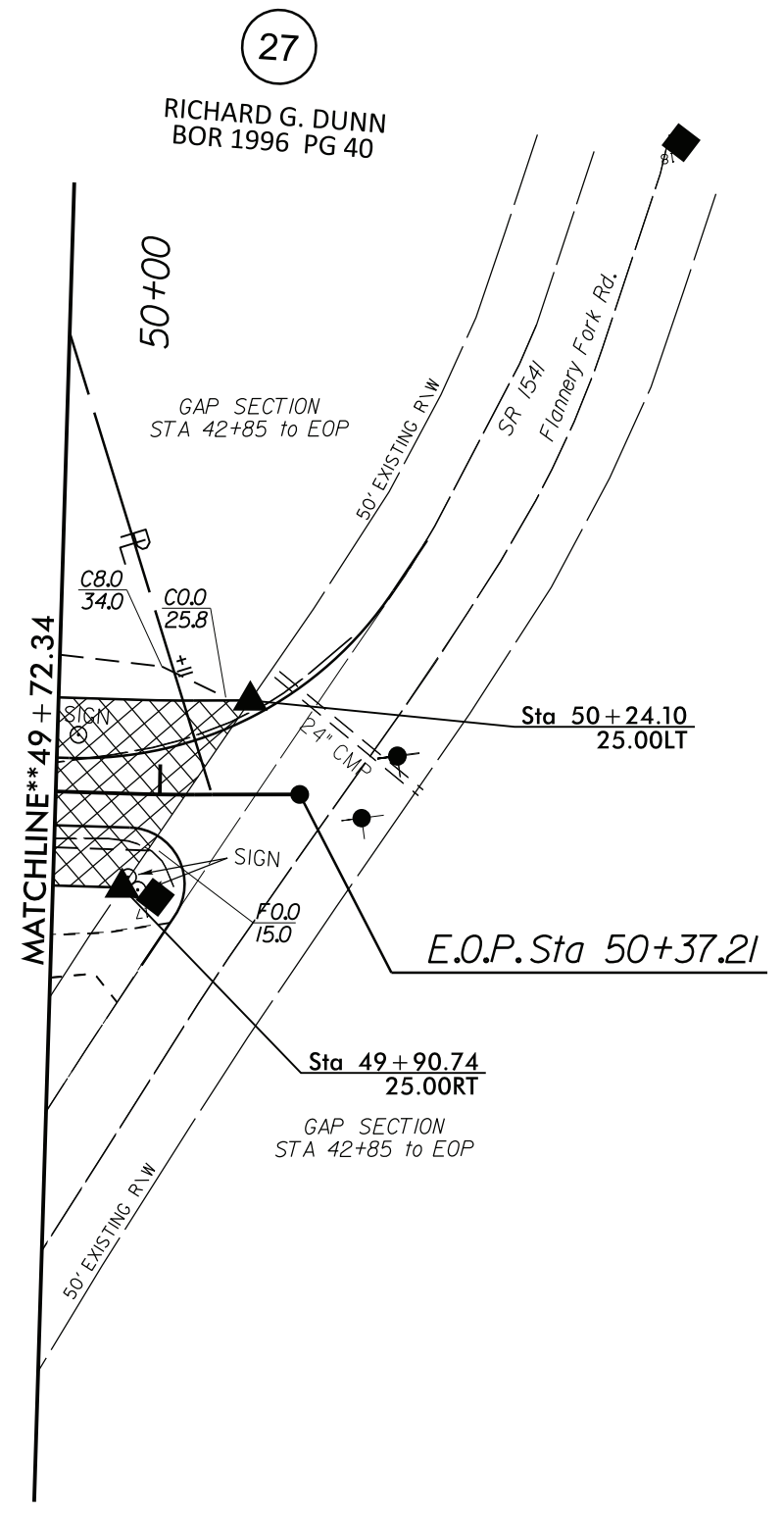
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PROJECT REFERENCE NO.	SHEET NO.
11C.095114	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

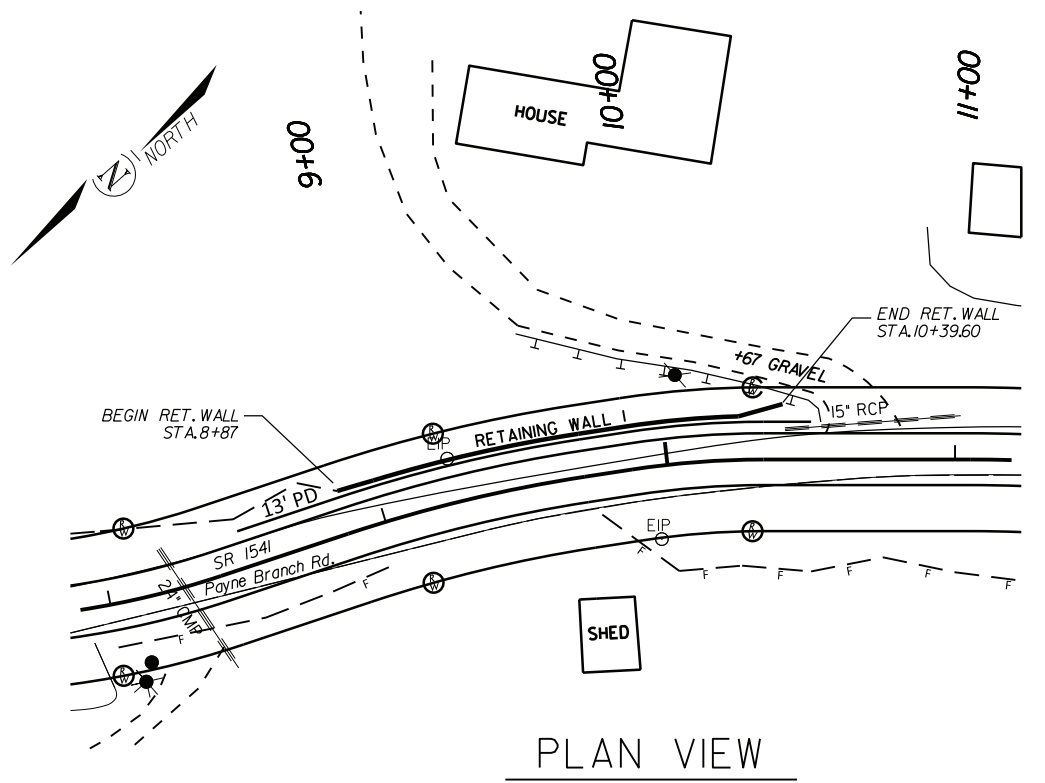
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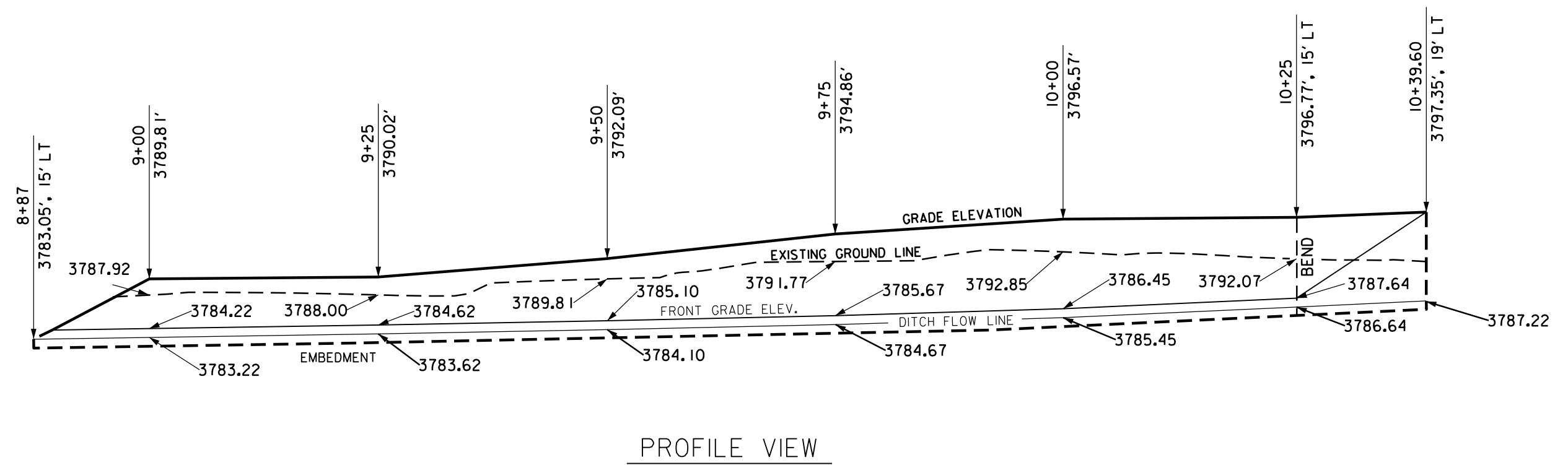
GEOTECHNICAL ENGINEER

DocuSigned by: *Dean Hardister* 09/06/2024

6E970DAF0D0D403... **CONSIDERED FINAL**
UNLESS ALL SIGNATURES COMPLETED



ESTIMATED PRECAST GRAVITY WALL QUANTITIES	
RETAINING WALL NO. 1	1,874 SQ. FEET (WALL FACE)
	2,054 SQ. FEET (STAINING)



PROJECT NO.: 11C.095114
WATAUGA COUNTY
STATION: 8+87
SHEET 1 OF 2


NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

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

PREPARED BY: JDH	DATE: 9/2023
REVIEWED BY: ENW	DATE: 9/2023

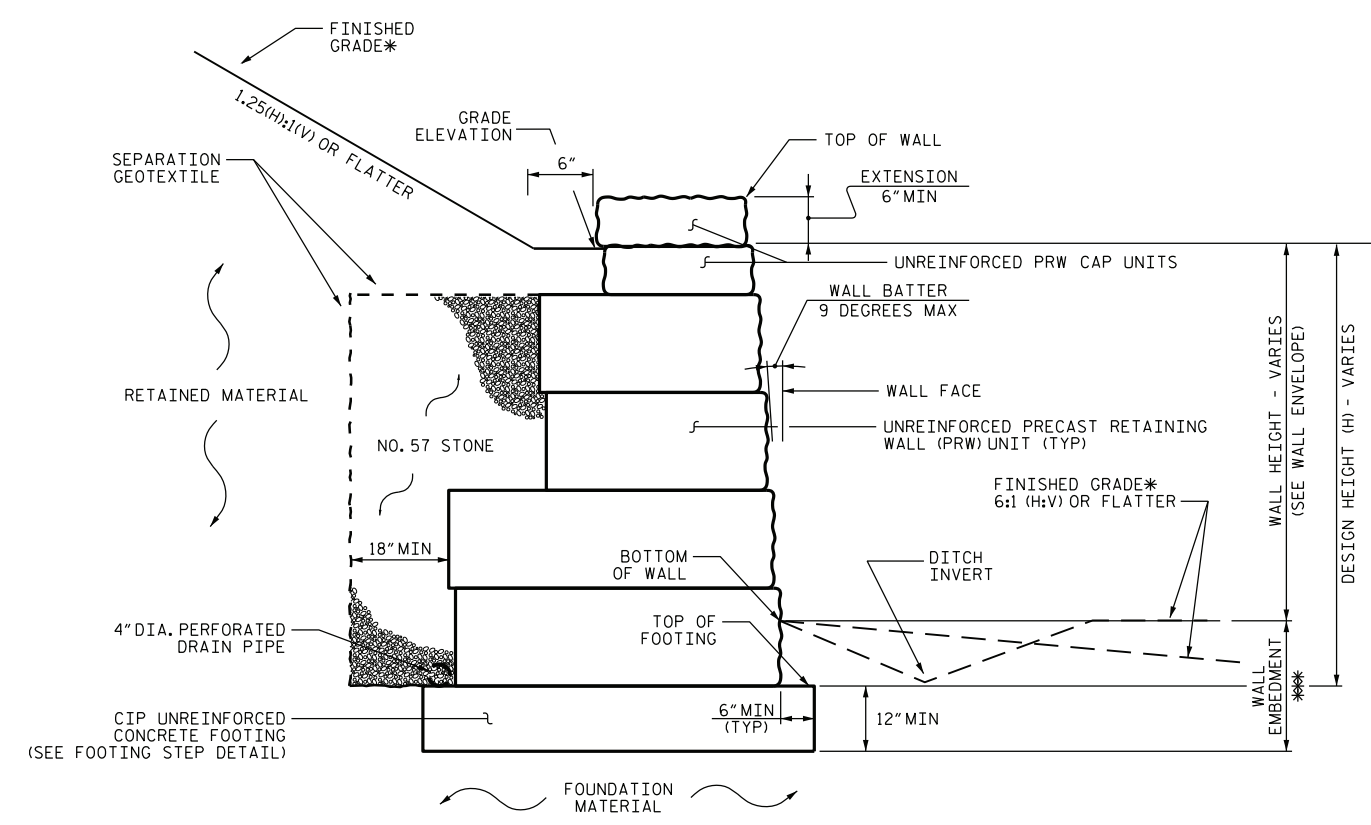
GEOTECHNICAL ENGINEER



na/na/2024

DocuSigned by:
Dean Hardister

6E970DAF0D0403... **ISIDERED FINAL**
UNLESS ALL SIGNATURES COMPLETED



PRECAST GRAVITY WALL - TYPICAL SECTION

* SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.
 *** MIN. WALL EMBEDMENT SHALL BE THE DEEPER OF 2 FEET BELOW BOTTOM OF WALL, AS SHOWN ABOVE, OR 1 FOOT BELOW DITCH INVERT

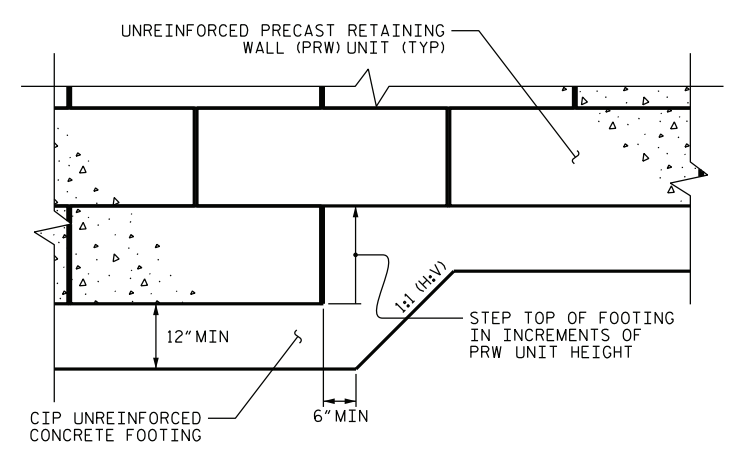
NOTES:

- FOR PRECAST GRAVITY RETAINING WALLS, SEE SECTION 455 OF THE STANDARD SPECIFICATIONS.
- FOR STAINING OF RETAINING WALLS, SEE ARCHITECTURAL COLORATION & STAINING PROVISION.
- USE PRW UNITS WITH A LEDGESTONE FACE FOR RETAINING WALL 1. ALL VISIBLE FACES AND EDGES SHALL HAVE A LEDGESTONE TREATMENT.
- STAIN PRW UNITS WITH DARK GRAY COLOR (AMS-STD 26008) FOR RETAINING WALL 1. THE STAIN SHALL BE APPLIED TO THE FRONT FACE OF ALL UNITS, THE TOP AND BACK OF ALL TOP UNITS, AND THE SIDES OF ALL END UNITS.
- THE MAXIMUM STEP HEIGHT BETWEEN TOP UNITS SHALL BE LIMITED TO 6". USE MULTIPLE CAP UNITS, AS NEEDED, TO REDUCE THE STEP HEIGHT. ADHERE CAP UNITS WITH CONSTRUCTION ADHESIVE IF SHEAR KEYS ARE NOT PRESENT.
- A DRAIN PIPE IS REQUIRED FOR RETAINING WALL 1.
- BEFORE BEGINNING PRECAST GRAVITY WALL DESIGN FOR RETAINING WALL 1, SURVEY WALL LOCATION AND SUBMIT A REVISED WALL PROFILE VIEW (WALL ENVELOPE) FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THE REVISED WALL ENVELOPE IS ACCEPTED.
- DESIGN RETAINING WALL 1 FOR DESIGN HEIGHTS EQUAL TO THE WALL HEIGHT PLUS DEPTH TO TOP OF FOOTING (DIFFERENCE BETWEEN GRADE ELEVATION AND TOP OF FOOTING ELEVATION).

DESIGN RETAINING WALL 1 FOR THE FOLLOWING:
 1) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 2,500 PSF
 2) IN-SITU ASSUMED MATERIAL PARAMETERS:

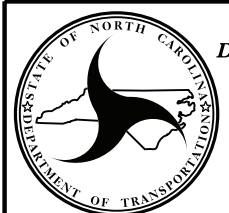
MATERIAL TYPE	UNIT WEIGHT (γ) PCF	FRICTION ANGLE (φ) DEGREES	COHESION (c) PSF
RETAINED	120	36	0
FOUNDATION	120	36	0

DO NOT PLACE CONCRETE FOR FOOTINGS FOR RETAINING WALL 1 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.



FOOTING STEP DETAIL

PROJECT NO.: 11C.095114
WATAUGA COUNTY
 STATION: 8+87
 SHEET 2 OF 2

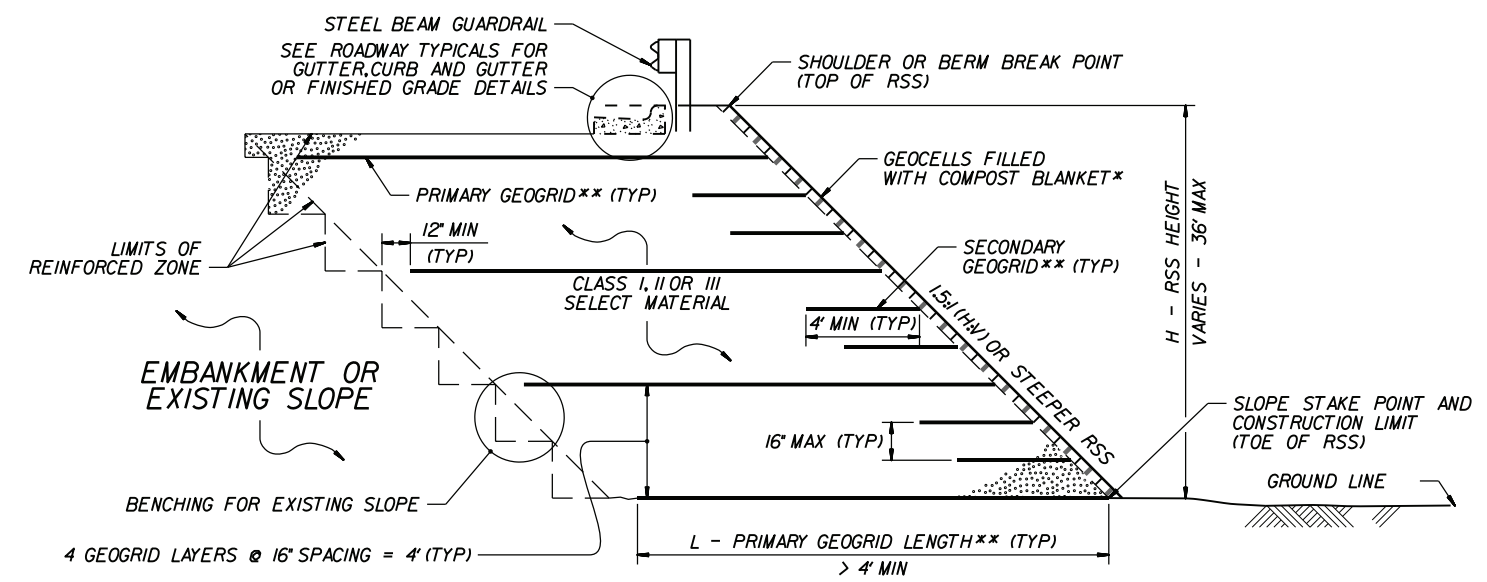


**NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS**

**GEOTECHNICAL
 ENGINEERING UNIT**

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

PREPARED BY: JDH DATE: 9/2023
 REVIEWED BY: ENW DATE: 9/2023

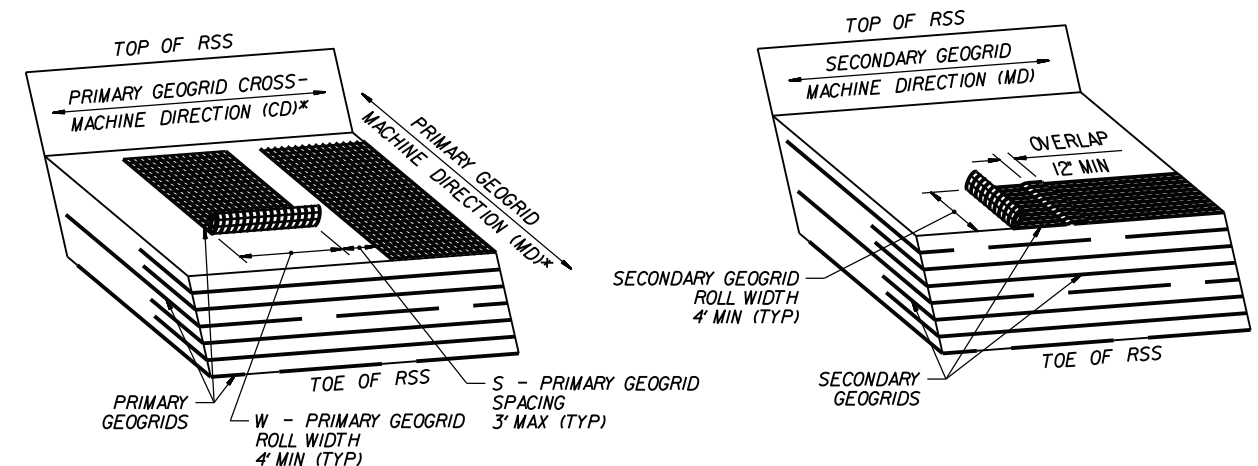


GEOCELLS WITH COMPOST BLANKET

*SEE NOTE 3.
 **SEE TABLES AND GEOGRID PLACEMENT DETAILS.

H (FT)	0 - < 12	12 - 24	> 24 - 36
SELECT MATERIAL CLASS	I	I	I
I:1 TO < 1.5:1 (H:V) RSS	1.10	0.90	0.85

L / H RATIO (L > 4' MIN)
 (IF L ≤ 4', USE SECONDARY GEOGRID INSTEAD OF PRIMARY GEOGRID.)



GEOGRID PLACEMENT DETAILS

(% COVERAGE = $\frac{W}{W+S} \times 100 \geq 75\%$)

*SEE NOTES 8 AND 9.

GEOGRID TYPE, DIRECTION	H (FT)	0 - < 12	12 - 24	> 24 - 36
	SELECT MATERIAL CLASS	I	I	I
PRIMARY GEOGRID, MD (SUBSTITUTE SECONDARY GEOGRID FOR PRIMARY GEOGRID FOR 2:1 (H:V) OR FLATTER RSS)	I:1 TO < 1.5:1 (H:V) RSS	900	1200	1800
SECONDARY GEOGRID, CD	I:1 (H:V) OR FLATTER RSS	185		

LTDS - MINIMUM REQUIRED LONG-TERM DESIGN STRENGTH (LB/FT)

(LTDS IS BASED ON 100% COVERAGE FOR PRIMARY GEOGRID. SEE NOTE 9 FOR LESS THAN 100% COVERAGE.)

NOTES:

- FOR REINFORCED SOIL SLOPES, SEE REINFORCED SOIL SLOPES PROVISION. FOR STEEL BEAM GUARDRAIL, SEE SECTION 862 OF THE STANDARD SPECIFICATIONS.
- FOR GEOCELLS AND COMPOST BLANKET, SEE CELLULAR CONFINEMENT SYSTEMS PROVISION.
- THE RSS DESIGN IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
 UNIT WEIGHT, $\gamma = 120$ PCF
 FRICTION ANGLE, $\phi = 30$ DEGREES
 COHESION, $c = 0$ PSF
- DO NOT USE THIS RSS DESIGN IF DEPTH TO GROUNDWATER IS LESS THAN 7 FT.
- DO NOT USE THIS RSS DESIGN WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW RSS.
- GEOGRIDS ARE TYPICALLY APPROVED FOR ULTIMATE TENSILE STRENGTHS IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) OR LONG-TERM DESIGN STRENGTHS FOR A 75-YEAR DESIGN LIFE IN THE MD BASED ON MATERIAL TYPE. THE LIST OF APPROVED GEOGRIDS WITH DESIGN STRENGTHS IS AVAILABLE FROM:
connect.ncdot.gov/resources/Materials/Pages/Materials-Manual-by-Material.aspx
 DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SELECT MATERIAL AS FOLLOWS:

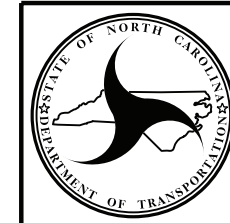
MATERIAL TYPE	SELECT MATERIAL
BORROW	CLASS I SELECT MATERIAL

IF THE WEBSITE DOES NOT LIST A LONG-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID IN THE MD, DO NOT USE THE GEOGRID FOR PRIMARY GEOGRID. IF THE WEBSITE DOES NOT LIST A LONG-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID IN THE CD, USE A LONG-TERM DESIGN STRENGTH EQUAL TO THE ULTIMATE TENSILE STRENGTH DIVIDED BY 7 FOR THE SECONDARY GEOGRID.

- DO NOT OVERLAP PRIMARY GEOGRIDS IN THE MD SO OVERLAPS ARE PARALLEL TO THE TOE OF RSS. POLYOLEFIN (e.g., HDPE OR PP) GEOGRIDS MAY BE SPLICED ONCE PER PRIMARY GEOGRID LENGTH IN ACCORDANCE WITH THE GEOGRID MANUFACTURER'S INSTRUCTIONS. USE POLYOLEFIN GEOGRID PIECES AT LEAST 4' LONG. DO NOT SPLICE POLYESTER TYPE (PET) GEOGRIDS.
- FOR PRIMARY GEOGRIDS WITH 100% COVERAGE, PLACE PRIMARY GEOGRIDS SO GEOGRIDS ARE ADJACENT TO EACH OTHER IN THE CD. FOR PRIMARY GEOGRIDS WITH 75% TO LESS THAN 100% COVERAGE,

$$\text{MINIMUM REQUIRED LONG-TERM DESIGN STRENGTH} = \text{LTDS BASED ON 100\% COVERAGE} \times (W + S) / W$$
 SEE TABLE FOR LTDS BASED ON 100% COVERAGE AND GEOGRID PLACEMENT DETAILS FOR PRIMARY GEOGRID ROLL WIDTH (W) AND SPACING (S). FOR PRIMARY GEOGRIDS WITH LESS THAN 100% COVERAGE, STAGGER PRIMARY GEOGRIDS SO GEOGRIDS ARE CENTERED OVER GAPS IN THE PRIMARY GEOGRID LAYER BELOW. DO NOT USE LESS THAN 75% COVERAGE FOR PRIMARY GEOGRIDS.
- DO NOT PLACE ANY GEOGRIDS UNTIL EXCAVATION DIMENSIONS AND IN-SITU MATERIAL ARE APPROVED.

ESTIMATED RSS AND ASSOCIATED GEOCELL & COMPOST QUANTITIES	
STA. 2+85 to 3+35 -L-	60 SQ. YD.
STA. 13+65 to 14+15 -L-	115 SQ. YD.



NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GEOTECHNICAL
 ENGINEERING UNIT

REINFORCED SOIL SLOPE (RSS)
 STA. 2+85 to 3+35 -L-
 STA. 13+65 to 14+15 -L-

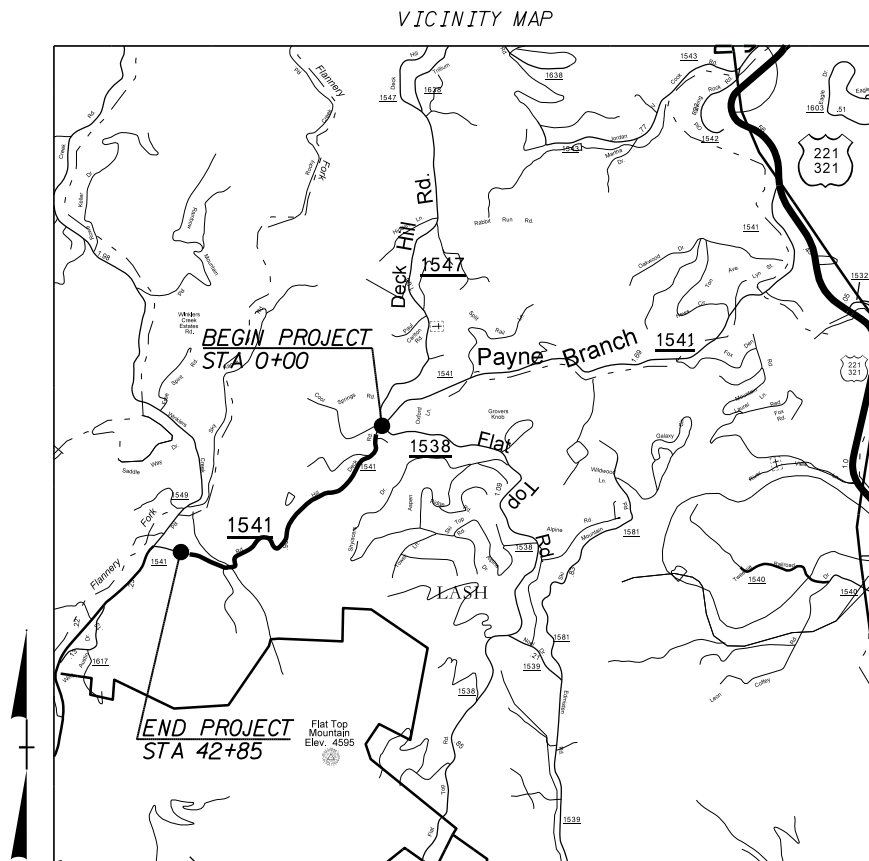
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WATAUGA COUNTY

**LOCATION: SR 1541B PAYNE BRANCH ROAD
FROM SR 1547 0.81 Mi. TO GAP SECTION
STA. 0+00 TO GAP STA. 42+85**

**TYPE OF WORK: GRADING, DRAINAGE, BASE
AND PAVING - 0.81 MILES**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	11C.095114	EC-1	22
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.05	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	TSF
1606.01	Special Sediment Control Fence	SSCF
1622.01	Temporary Berms and Slope Drains	TBSD
1630.02	Silt Basin Type B	SBS
1633.01	Temporary Rock Silt Check Type-A	TRSCA
1633.02	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA-PAM
1633.02	Temporary Rock Silt Check Type-B	TRSCB
1633.02	Wattle / Coir Fiber Wattle	WCFW
1633.02	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	WCFW-PAM
1634.01	Temporary Rock Sediment Dam Type-A	TRSDA
1634.02	Temporary Rock Sediment Dam Type-B	TRSDA-B
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPISTRA
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPISTRA-B
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SSB
1632.01	Rock Inlet Sediment Trap Type A	RISTRA-A
1632.02	Type B	RISTRA-B
1632.03	Type C	RISTRA-C
1630.04	Skimmer Basin	SKB
1630.04	Tiered Skimmer Basin	TSKB
1630.06	Infiltration Basin	IB

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

ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT

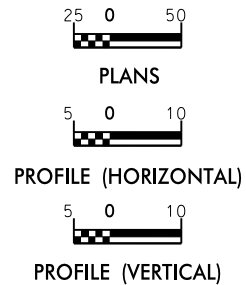
HIGH QUALITY WATER(S) EXIST
ON THIS PROJECT

High Quality Water Zone(s) Exist	
From Sta.	0+00
to Sta.	42+85

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

REVISION:

GRAPHIC SCALE



ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared In the Office of:
DIVISION OF HIGHWAYS
DIVISION 11, DISTRICT 2 BOONE
P.O. BOX 1460, BOONE, N.C. 28607
2024 STANDARD SPECIFICATIONS

Roadway Standard Drawings

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

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type 3	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Wattle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

EROSION CONTROL & PIPE INSTALLATION SCHEDULE

TROUT BUFFER ZONE SEQUENCE

GENERAL E&SC NOTES

GROUND STABILIZATION CHART

Erosion Control Schedule and Notes

1. Generally, the order of installation of the erosion control measures will be as follows:
 - A. Temporary silt basins shall be installed before clearing and grubbing begins.
 - B. Silt fences and temporary silt ditches shall be installed after clearing and before grading.
 - C. Temporary stone ditch checks with PAM or wattles with PAM shall be installed in all disturbed areas as soon as the disturbance begins.
 - D. Final stone ditch checks or wattles shall be installed as soon as ditch line is established.
 - E. Pipe outlet and inlet protection will be done as soon as the pipe is installed.
 - F. Other permanent erosion control measures are to be implemented as soon as practical.
2. Temporary rock silt checks, type B will be spaced by percent grade as shown in the erosion control plan.
3. No. 5 stone, or equivalent, will be used in conjunction with the temporary rock silt checks in locations where water is leaving the project or entering a pipe.
4. All devices are to be cleaned out when half full.
5. Establish permanent vegetation per ground stabilization chart.

Notes:

For silt basin size see the attached erosion control plans.

PAM is to be placed on all Type A checks and wattles in the erosion control chain except for the final device in HWQ and Trout projects.

Wet Pipe Installation Schedule and Notes

1. Prior to installing any E&SC measures identify permit conditions and impact area limits.
2. Install erosion control devices.
3. Manage the water course. The pipe must be placed in the dry. Install dewatering measures.
4. Remove material and existing pipe while limiting material and sediment from entering stream and escaping the project.
5. Excavation of stream channel shall not exceed 10' on either side of new pipe or culvert unless indicated on permit.
6. Per permit conditions for Corps of Engineers and the Wildlife Resources Commission, all pipes in streams 48" or greater must be buried 12" below streambed elevation. Pipes less than 48" must be buried with 20% of the diameter below streambed elevation.
7. Place the new pipe and compact backfill.
8. Install slope protection on the outlet and inlet ends of the pipe. Also complete installation of erosion control measures and perform maintenance as needed on existing measures.
9. Establish permanent vegetation per ground stabilization chart.
10. More information on wet pipe installation can be found in the BMP manual section 4.2 "Pipe & Culvert installation"

General Erosion Control Sequence & Notes for NC DOT Projects in Trout Buffer Zones

1. Prior to installing any E&SC measures identify permit conditions and impact area limits. Review trout buffer variance approval conditions for any special provisions.
2. All materials should be on the hand before work is commenced.
3. Install EC devices
4. Work within the buffer zone should be sequenced to minimize the length of time that disturbed areas are exposed. Stream bank stabilization, which includes the area from the edge of water to the top of bank, should be phased so that each day's work is a completed work, including provision of adequate ground cover.
5. Graded slopes and fills within the trout buffer zone will within 7 calendar days of completion of any phase of grading be planted or otherwise provided with temporary or permanent ground cover, devices, or structures sufficient to restrain erosion.
6. Graded slopes and fills within the trout buffer zone (excluding road shoulders) shall be protected with rolled erosion control product, bonded fiber matrix, or flexible growth medium after seeding.

Notes:

Silt fence backed by woven wire, with a post spacing of 6 feet, shall be used instead of standard silt fence in trout buffer zone. Special sediment control fence shall be used in areas where bedrock is encountered which prohibits the proper anchoring of fabric, and in low points of the silt fence in 3-foot sections to allow for concentrated flows.

The disturbed areas within the stream buffer shall be restored to native vegetation characteristic of an undisturbed buffer to the extent practical upon completion of construction.

Flyrock protection such as blast mats should be provided for blasting in close proximity to streams.

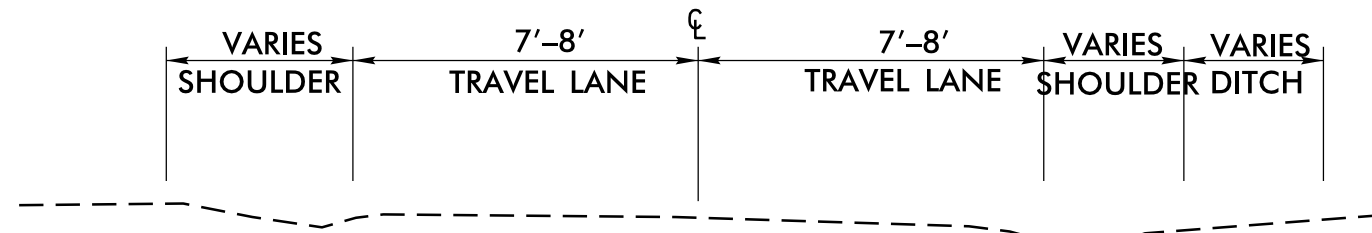
PAM is to be placed on all Type A checks and wattles in the erosion control chain except for the final device in HWQ and Trout projects.

GROUND STABILIZATION CHART

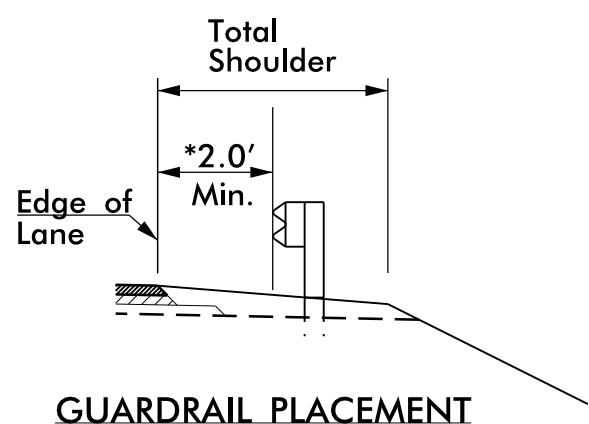
Site Area Description	Stabilization Time Frame	Stabilization Time Frame Exceptions
Perimeter dikes, swales, ditches and slopes	7 days	None
High Quality Water Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10 ft. or less in length and are not steeper than 2:1, 14 days are allowed
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length
All other areas flatter than 4:1	14 days	None (except for perimeters and HQW zones)

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
11C.095114	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

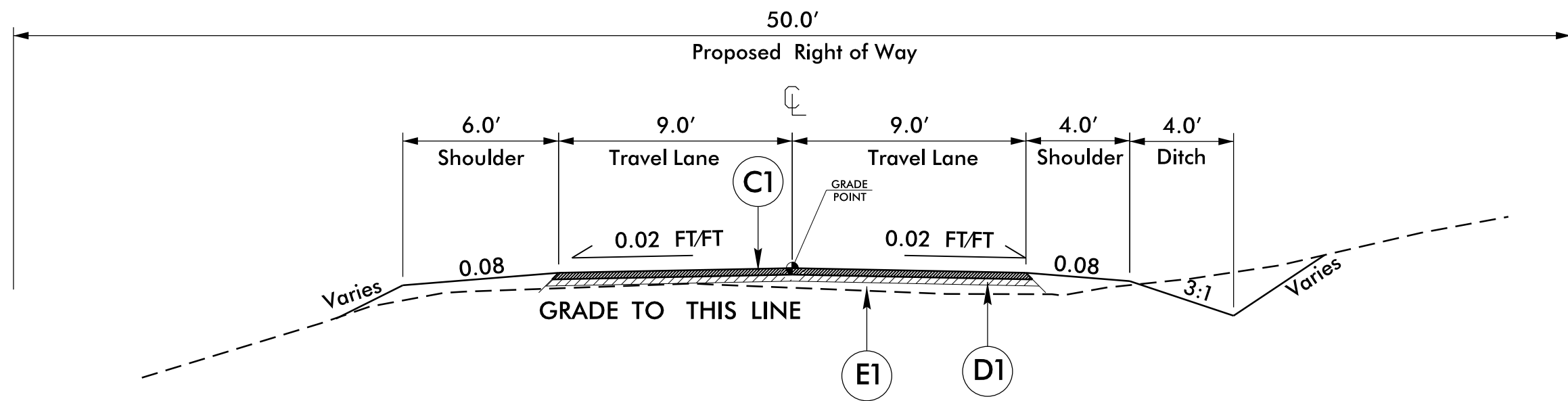


14'-16' EXISTING TYPICAL SECTION



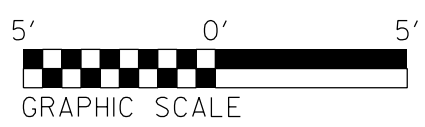
GUARDRAIL PLACEMENT

*GUARDRAIL LOCATIONS DIRECTED BY THE ENGINEER



TYPICAL SECTION NO. 1

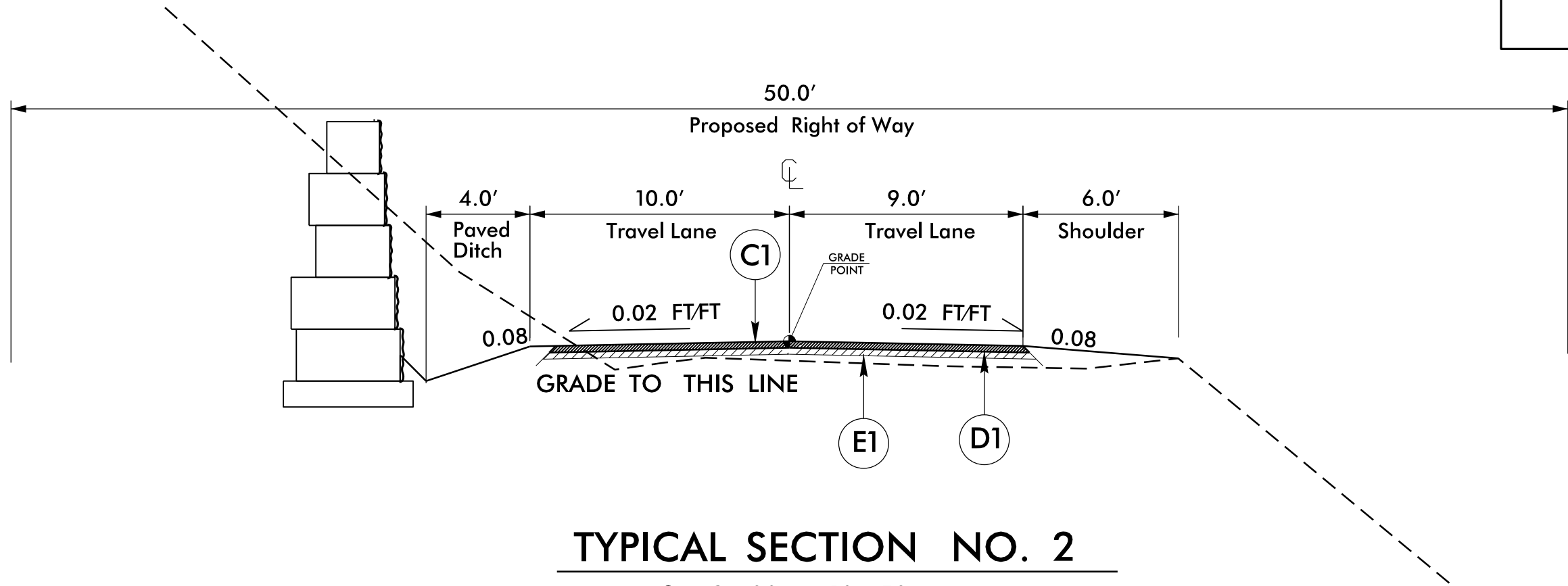
Sta 0+00 to 8+95
 Sta 10+05 to 13+13
 Sta 15+64 to 44+50



C1	PROP. ASPHALT SURFACE TREATMENT (TRIPLE SEAL).
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E1	PROP. APPROX. 6" AGGREGATE BASE COURSE.

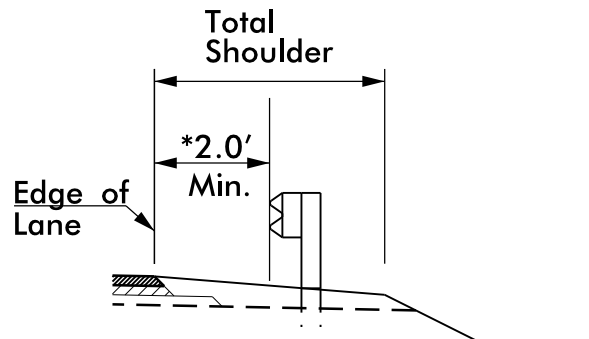
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PROJECT REFERENCE NO. <i>11C.095114</i>	SHEET NO. <i>2A</i>
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



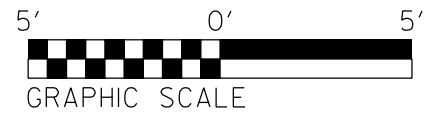
TYPICAL SECTION NO. 2

Sta 9+00 to 10+50



GUARDRAIL PLACEMENT

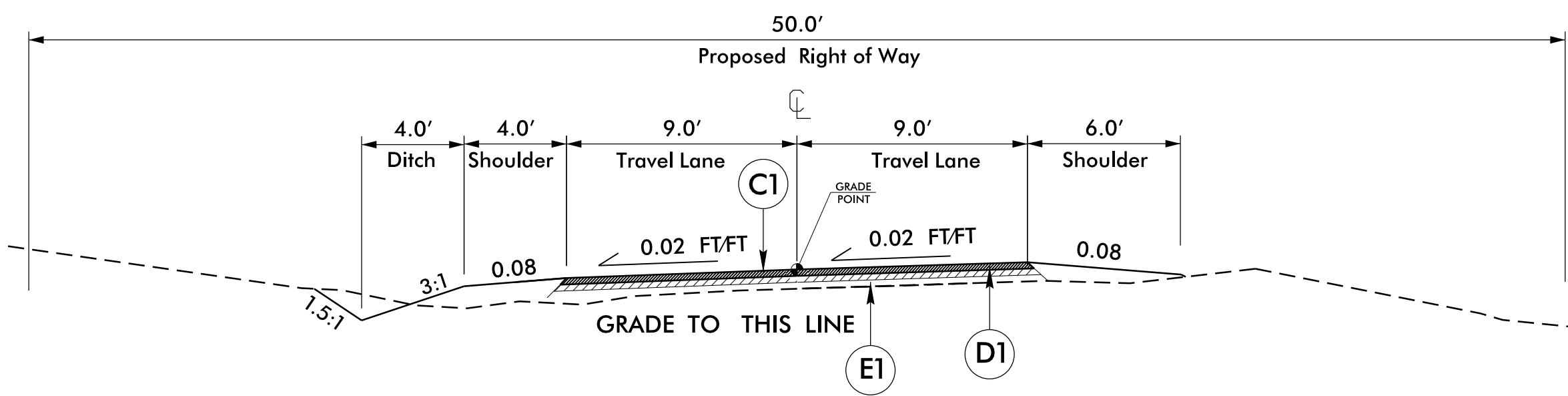
*GUARDRAIL LOCATIONS DIRECTED BY THE ENGINEER



C1	PROP. ASPHALT SURFACE TREATMENT (TRIPLE SEAL).
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E1	PROP. APPROX. 6" AGGREGATE BASE COURSE.

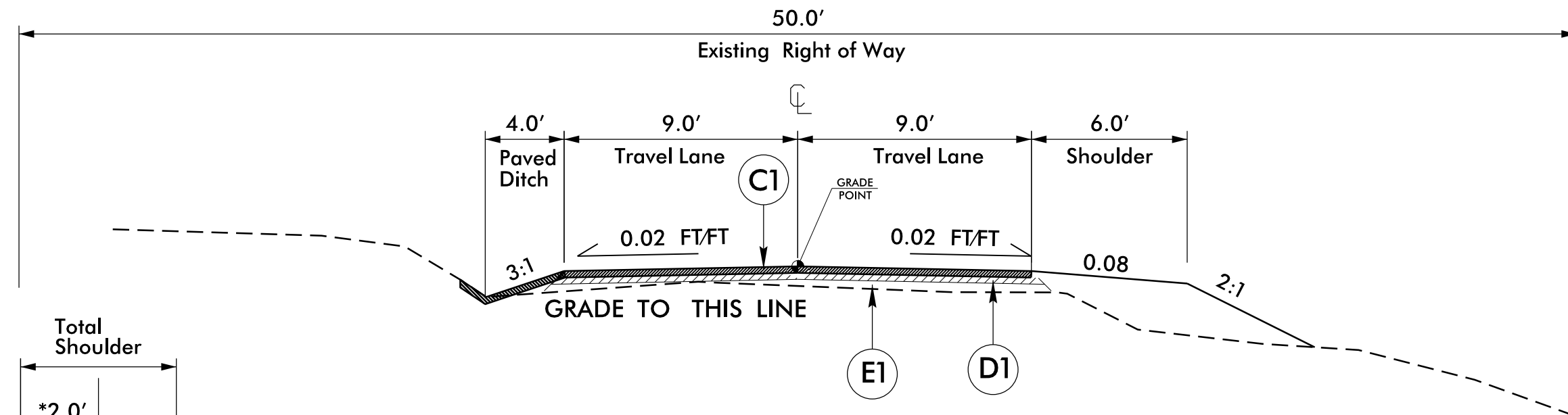
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 PLEASE REVIEW

PROJECT REFERENCE NO. <i>11C.095114</i>	SHEET NO. <i>2B</i>
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



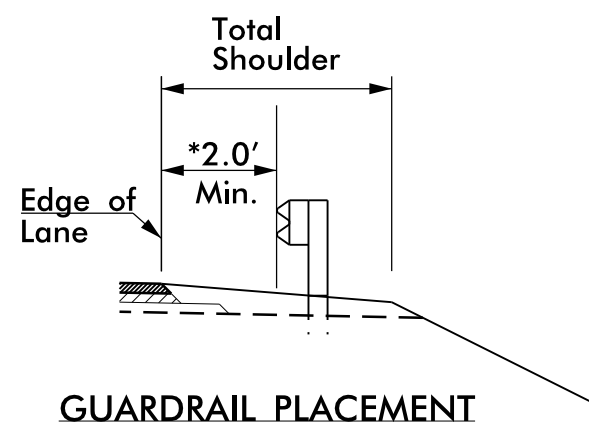
TYPICAL SECTION NO. 3

Sta 44+50 to 50+37.21

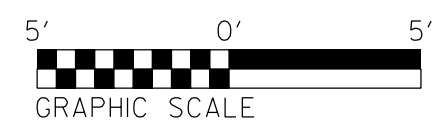


TYPICAL SECTION NO. 4

Sta 13+13 to 15+64



***GUARDRAIL LOCATIONS DIRECTED BY THE ENGINEER**



C1	PROP. ASPHALT SURFACE TREATMENT (TRIPLE SEAL).
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E1	PROP. APPROX. 6" AGGREGATE BASE COURSE.

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 PLEASE REVIEW

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>11C.095114</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	4+24	8+24	LT	295
5	-L-	8+24	12+12	LT	285
6	-L-	12+12	14+93	LT	205
6	-L-	16+22	20+71	LT	330
8	-L-	23+15	24+66	LT	110
8	-L-	24+66	26+29	LT	120
8	-L-	26+29	27+96	LT	125
			SUBTOTAL		1470
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					
			TOTAL		1470
			SAY		1470

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
10	-L-	41+99	43+00	LT	75
			SUBTOTAL		75
			ADDITIONAL PSRM TO BE INSTALLED		
			TOTAL		75
			SAY		75

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
11C.095114	EC-3B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

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

**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

PROJECT NO. SHEET NO.

11C.095114 3-C

D:\11CAD-224780

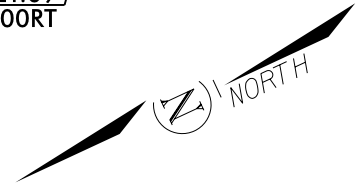
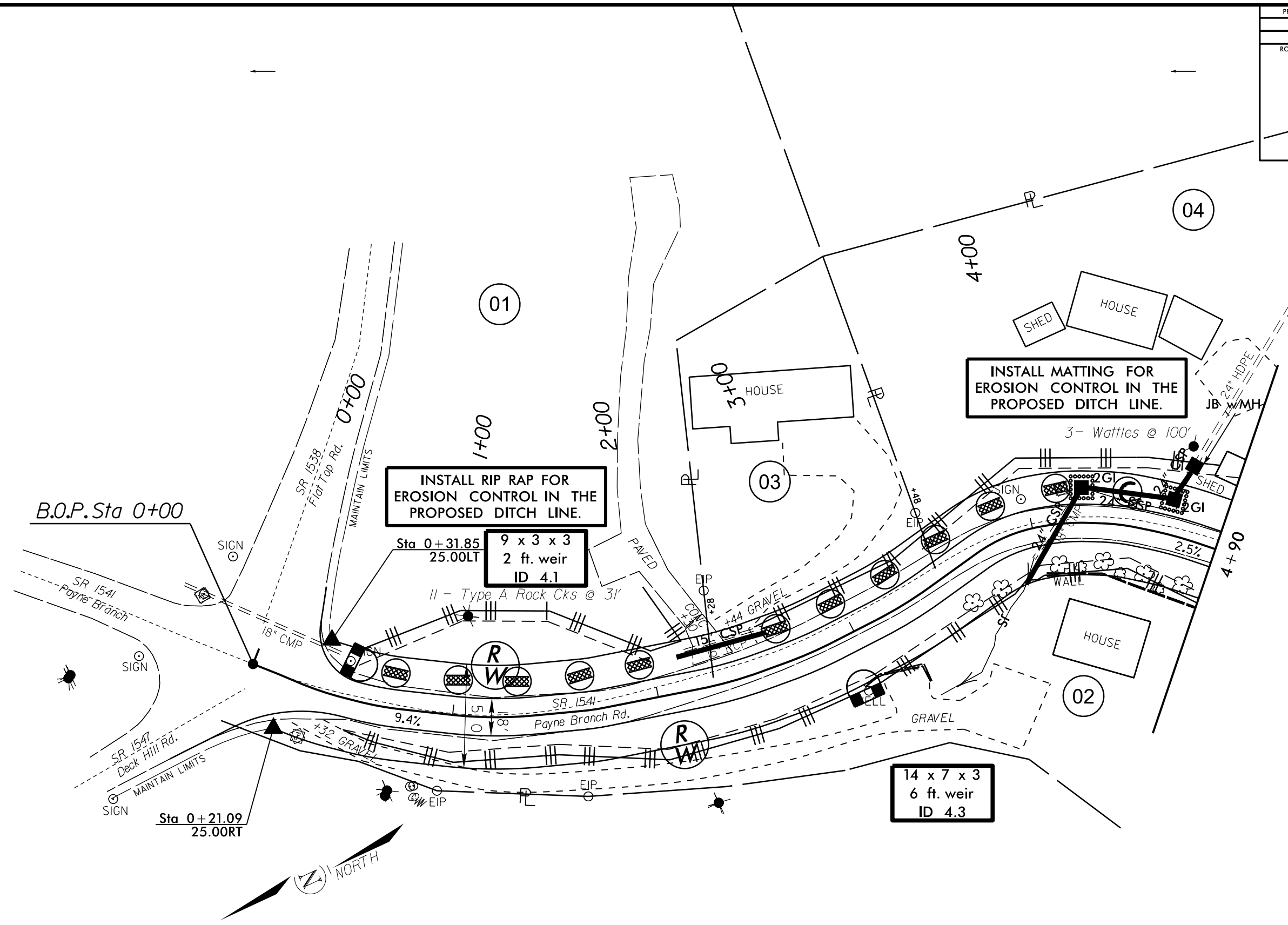
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (L, R, OR CU)	NEW PIPES								EXISTING PIPES								PIPE REMOVAL D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	SPRING BOX STD. 840.41	HEADWALL STD. 838.05	TB F & G STD 840.36	J.B. STD. 840.31 OR 840.32	REMARKS	
		DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, OR PVC)																							
		12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"								
0+00	CL											86'						0'							DO NOT DISTURB
2+38	LT		45'								40'							40'							REPLACE
4+12	CL				54'							41'						41'							REPLACE WET PIPE
4+24	LT																		1	1					ADD DROP INLET
4+44	LT				41'																				ADD WET PIPE
4+65	LT																		1	1					ADD DROP INLET
4+67	LT				14'																				ADD WET PIPE
4+70	LT																							1	ADD JUNCTION BOX
5+60	RT		20'								20'							20'							REPLACE
6+66	LT			60'								60'						60'							REPLACE
8+26	CL				50'								50'					50'							REPLACE
10+70	LT		60'								61'							61'							REPLACE
11+73	CL											30'						30'							REMOVE
12+04	CL				78'													0'					1		ADD WET CROSSPIPE AND JB
12+85	LT		60'								60'							60'							REPLACE
15+84	LT		40'																						ADD DRIVEWAY PIPE
16+22	CL					42'								37'				37'							REPLACE EXISTING WET PIPE
20+70	CL			40'														0'							ADD CROSSPIPE
24+67	CL			35'								30'						30'							REPLACE
24+85	LT			40'								40'						40'							REPLACE
26+26	CL				40'							26'						26'							REPLACE
27+56	RT																	0'			1				TWO 20"x6" PERFORATED DRAIN PIPES
29+26	LT		75'															0'							ADD DRIVEWAY PIPE
31+81	CL			50'								30'						30'							REPLACE
33+63	LT		30'								30'							30'							REPLACE
34+51	LT		30'								30'							30'							REPLACE
36+13	CL			50'							34'							34'				1			REPLACE WITH NEW SKEW
36+53	LT		40'																						ADD DRIVEWAY PIPE
37+01	CL					85'							38'					38'							REPLACE WET WITH NEW SKEW
38+41	CL				72'								31'					31'							REPLACE
40+28	RT		30'															0'							ADD DRIVEWAY PIPE
42+01	CL		40'															0'							ADD CROSSPIPE
44+37	LT			25'								20'						20'							REPLACE
44+63	RT										22'							0'							DO NOT DISTURB
44+68	CL				70'								60'					60'							REPLACE WET CROSSPIPE
45+93	CL			52'								44'						44'							REPLACE
48+21	RT										28'							0'							DO NOT DISTURB
SHEET TOTALS		0	470	2750	349	42	85	0	0	3696	0	275	257	119	37	0	0	687	2	2	1	1	1	1	

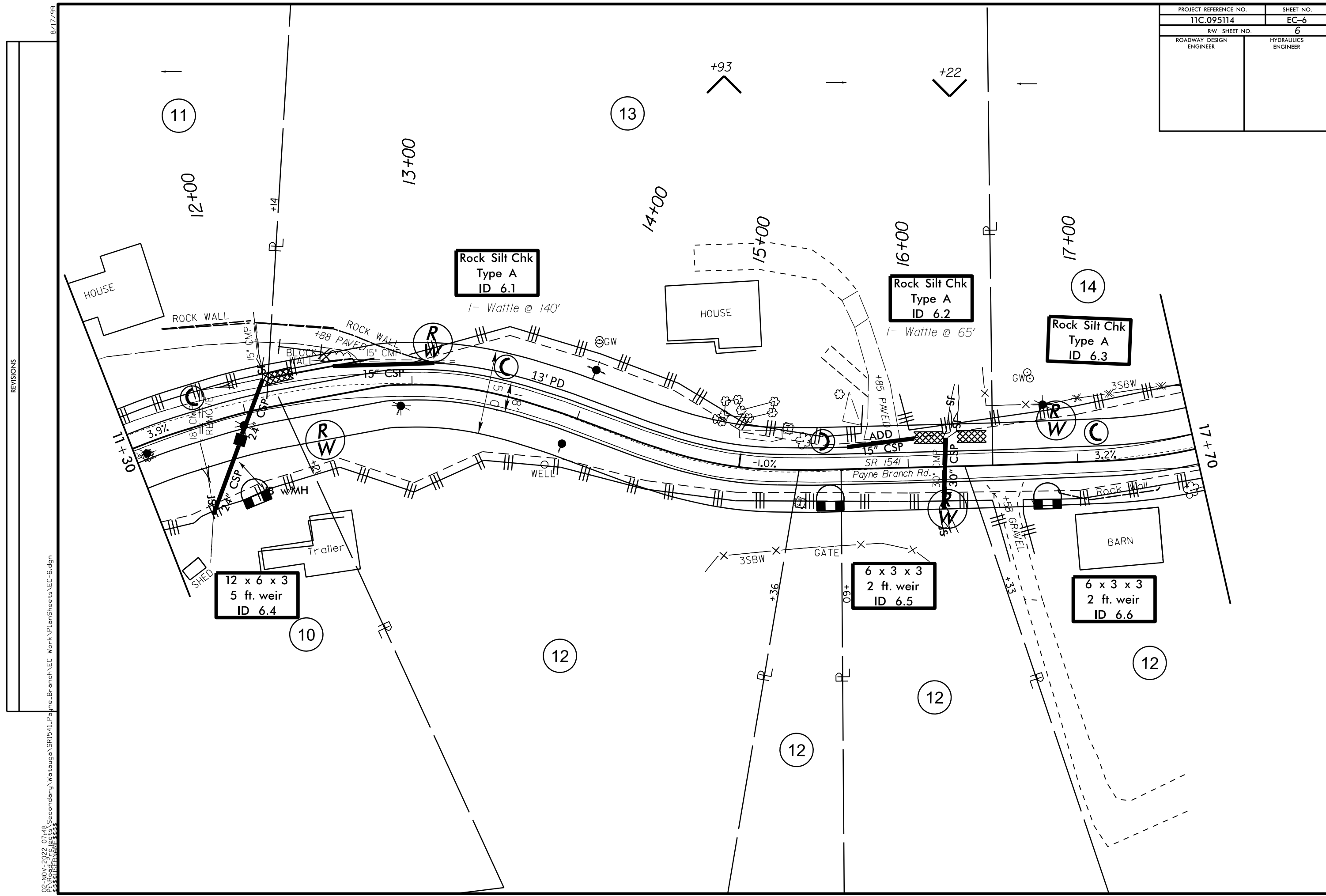
PROJECT REFERENCE NO.	SHEET NO.
11C.095114	EC-4
R/W SHEET NO.	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

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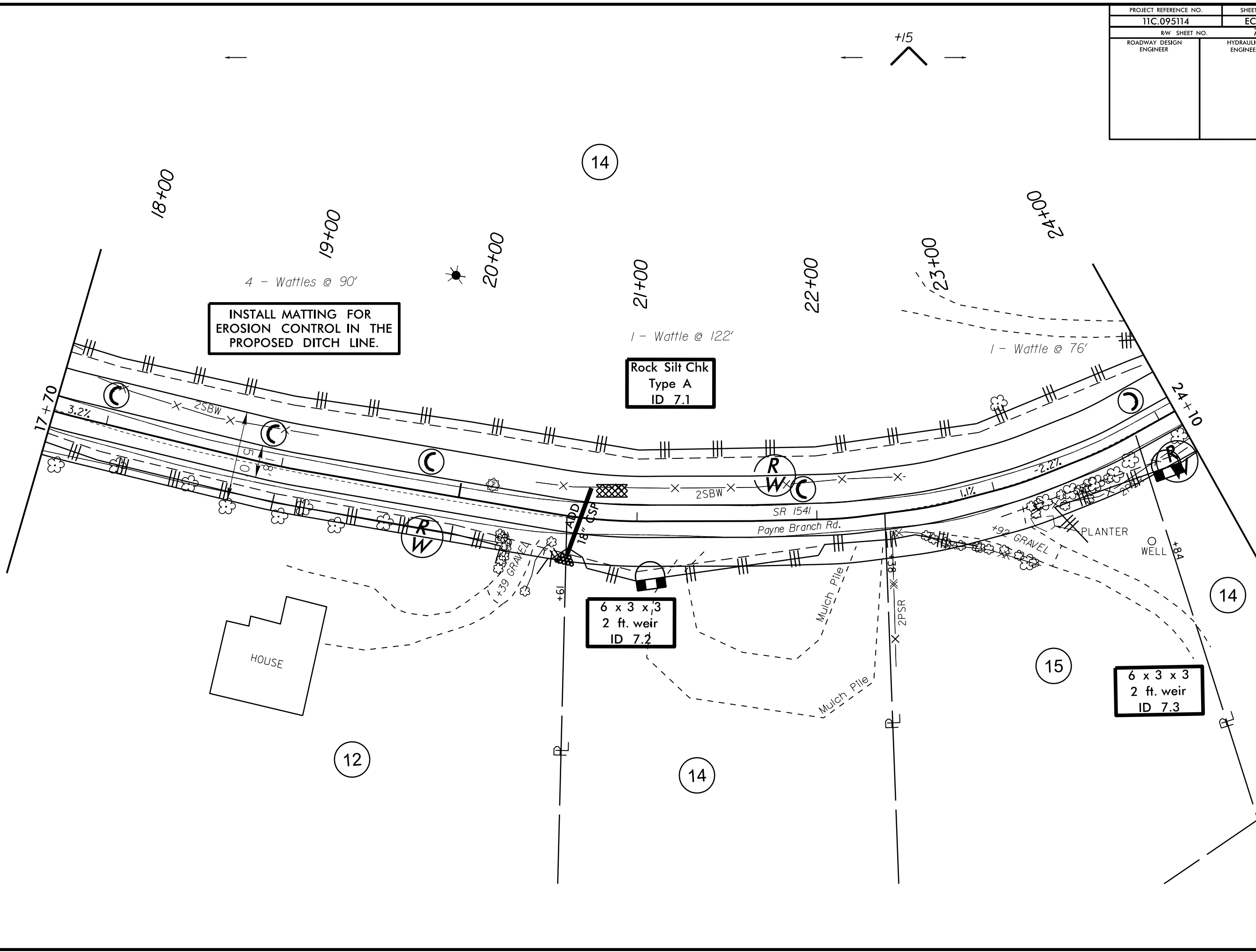
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11C.095114	EC-6
R/W SHEET NO.	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
11C.095114	EC-7
R/W SHEET NO.	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**INSTALL MATTING FOR
EROSION CONTROL IN THE
PROPOSED DITCH LINE.**

**Rock Silt Chk
Type A
ID 7.1**

**6 x 3 x 3
2 ft. weir
ID 7.2**

**6 x 3 x 3
2 ft. weir
ID 7.3**

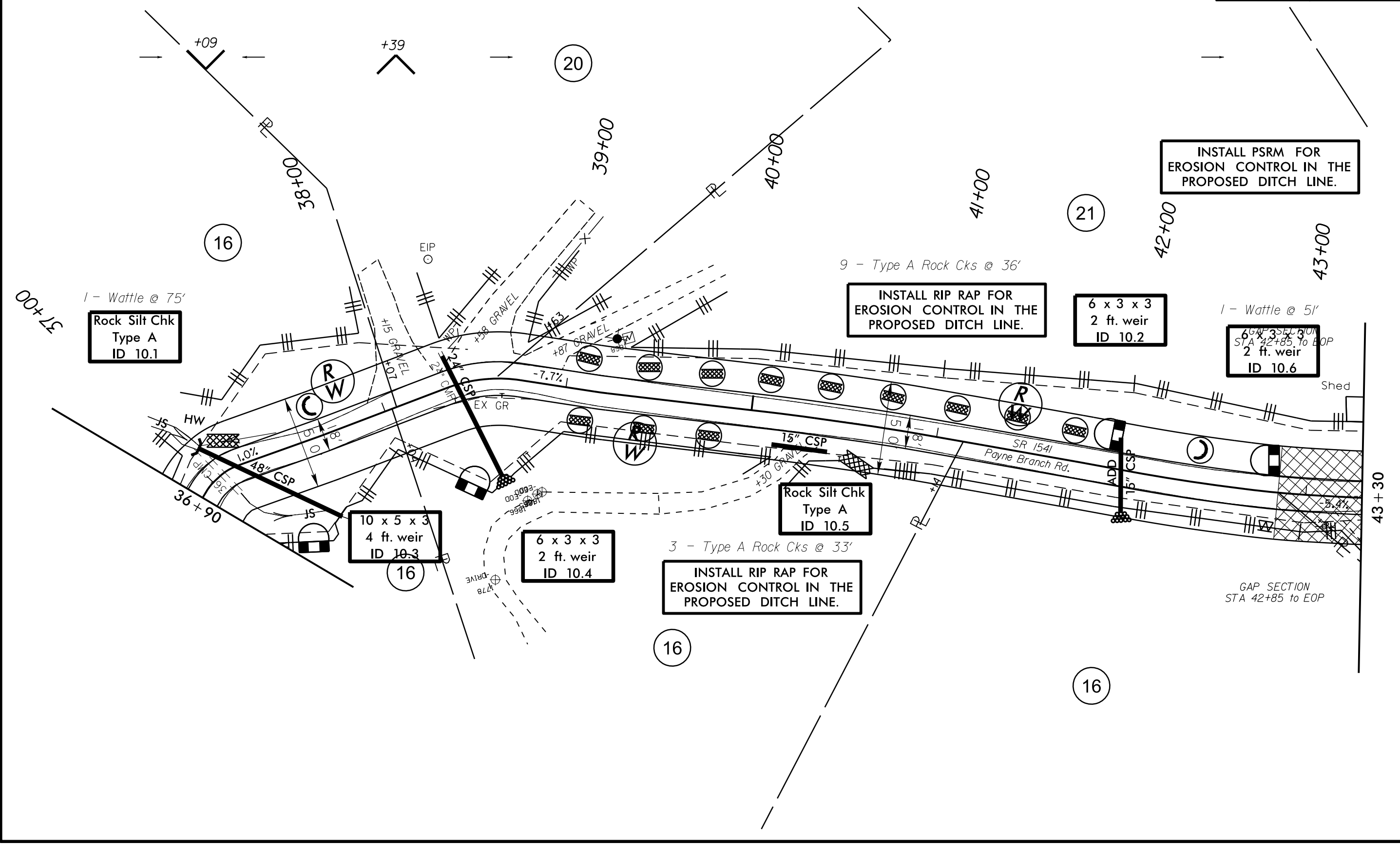
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PROJECT REFERENCE NO.	SHEET NO.
11C.095114	EC-10
R/W SHEET NO.	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

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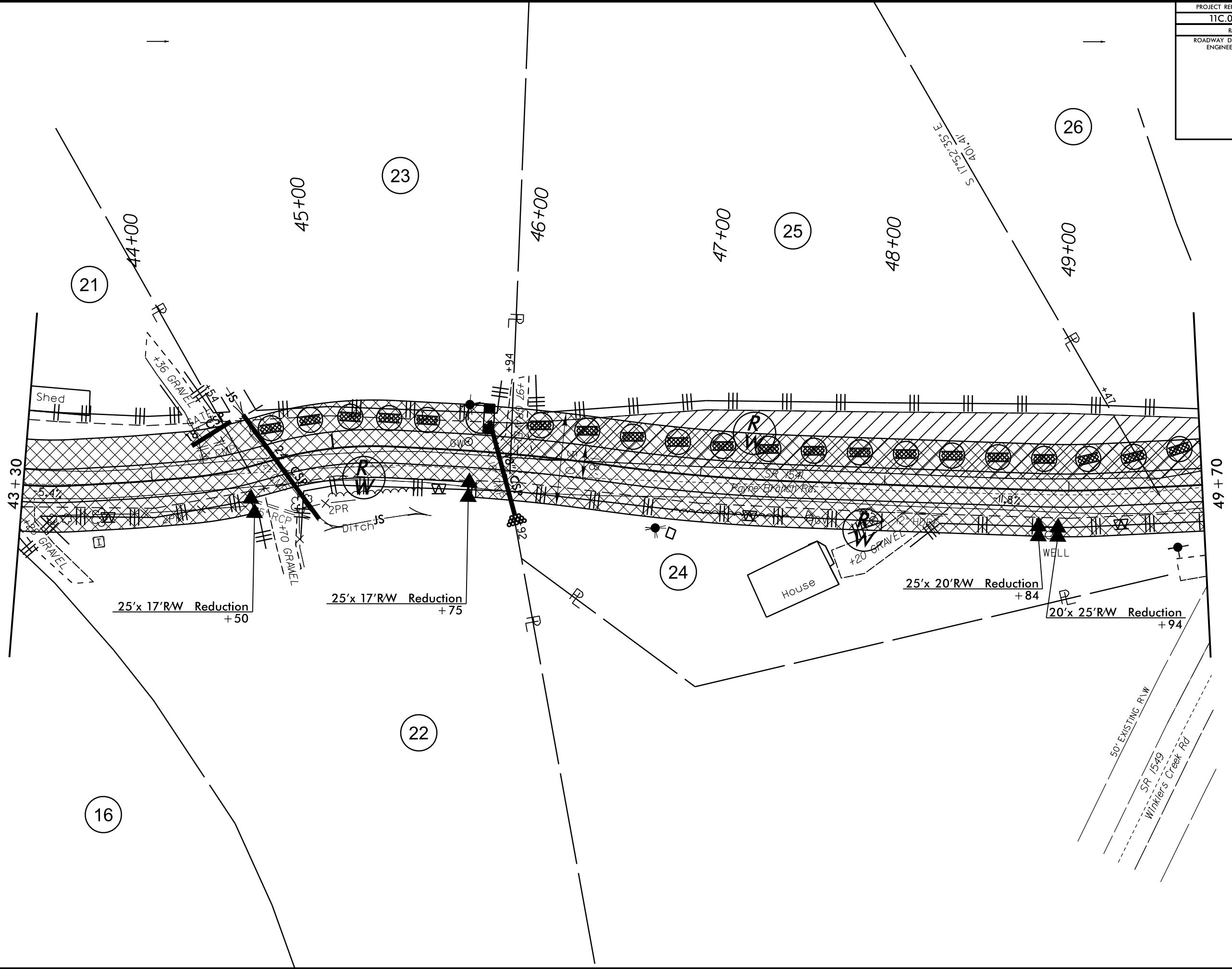


GAP SECTION
 STA 42+85 to EOP

PROJECT REFERENCE NO.	SHEET NO.
11C.095114	EC-11
R/W SHEET NO.	//
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

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43+30

44+00

45+00

46+00

47+00

48+00

49+00

49+70

21

23

25

26

16

22

24

Shed

House

WELL

25'x 17'RW Reduction +50

25'x 17'RW Reduction +75

25'x 20'RW Reduction +84

20'x 25'RW Reduction +94

50' EXISTING R/W
 SR 1549
 Winkler's Creek Rd

S 17°27'35\"/>

25' GRAVEL

RCP +70 GRAMEL

DITCH

+20 GRAMEL

+94

+76

+67

+58

+49

+40

+31

+22

+13

+4

-5

-14

-23

-32

-41

-50

-59

-68

-77

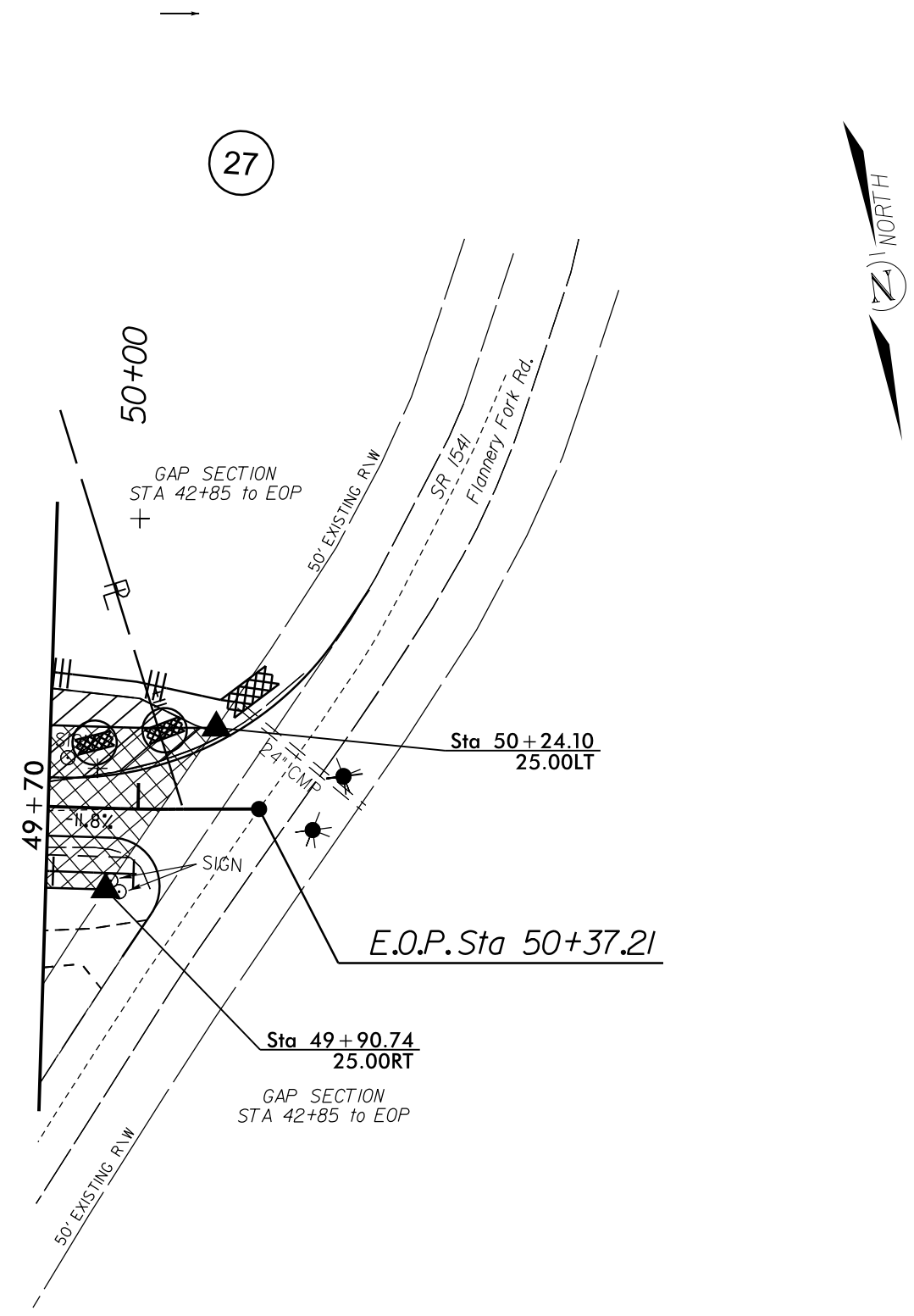
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-95

PROJECT REFERENCE NO.	SHEET NO.
11C.095114	EC-12
R/W SHEET NO.	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

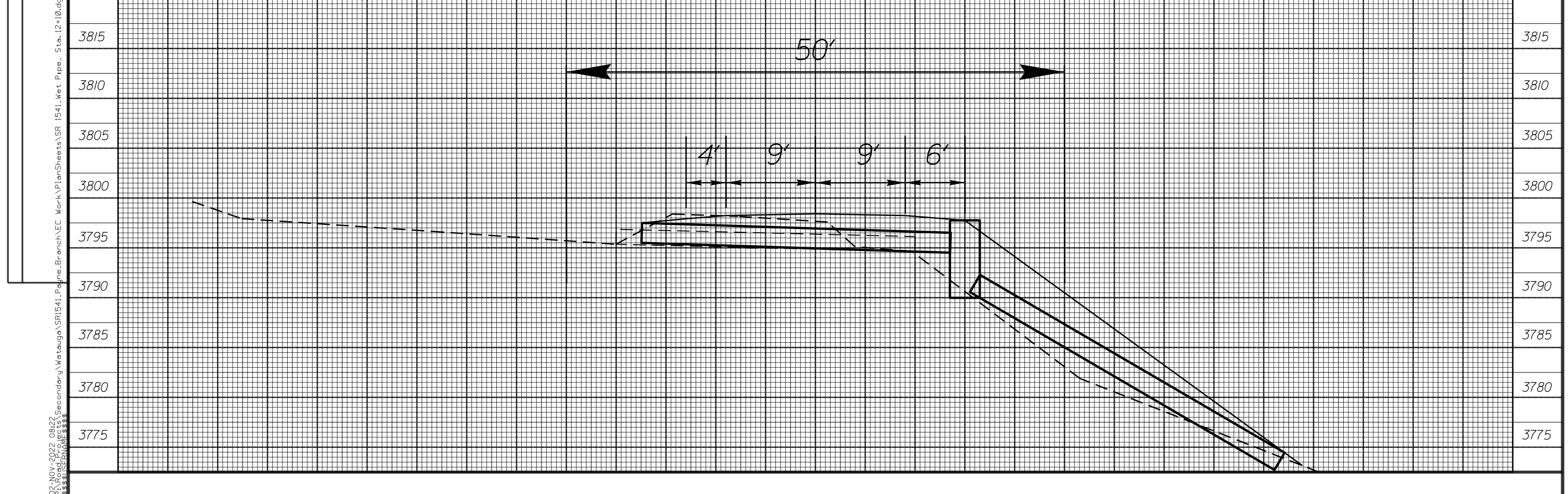
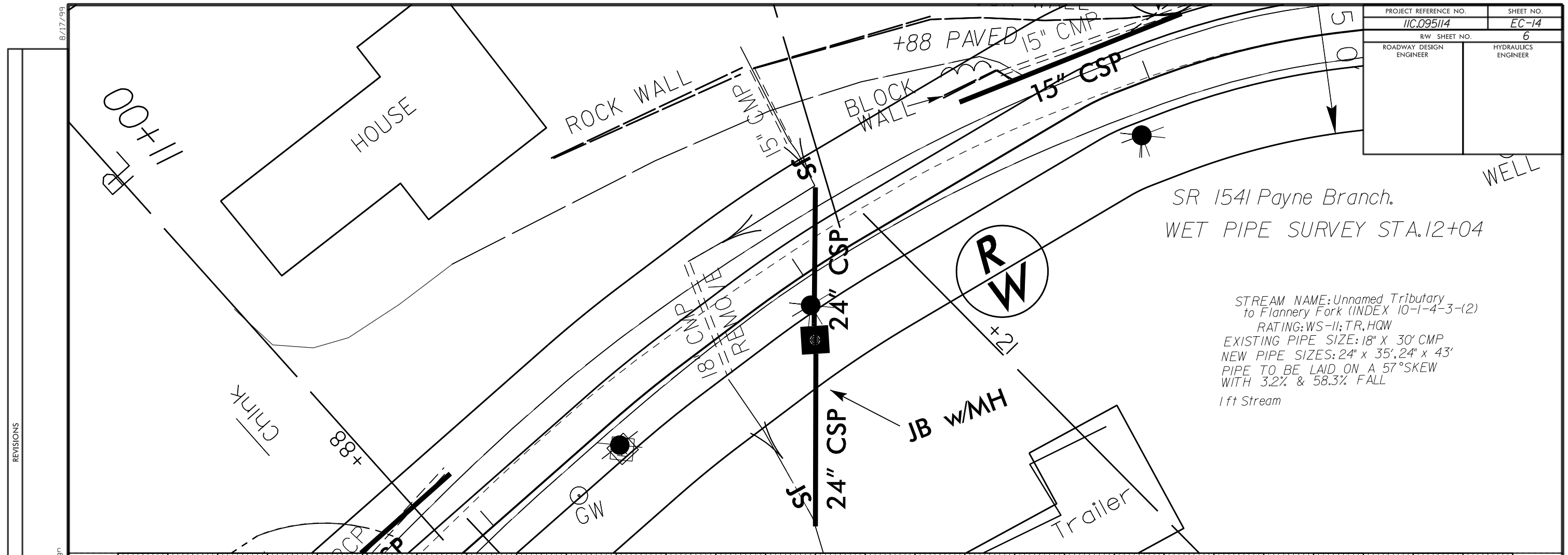
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 8/17/99



PROJECT REFERENCE NO. 11C.095114	SHEET NO. EC-14
R/W SHEET NO. 6	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SR 1541 Payne Branch.
WET PIPE SURVEY STA. 12+04

STREAM NAME: Unnamed Tributary
to Flannery Fork (INDEX 10-1-4-3-(2))
RATING: WS-II; TR, HQW
EXISTING PIPE SIZE: 18" X 30' CMP
NEW PIPE SIZES: 24" x 35', 24" x 43'
PIPE TO BE LAID ON A 57° SKEW
WITH 3.2% & 58.3% FALL
1 ft Stream



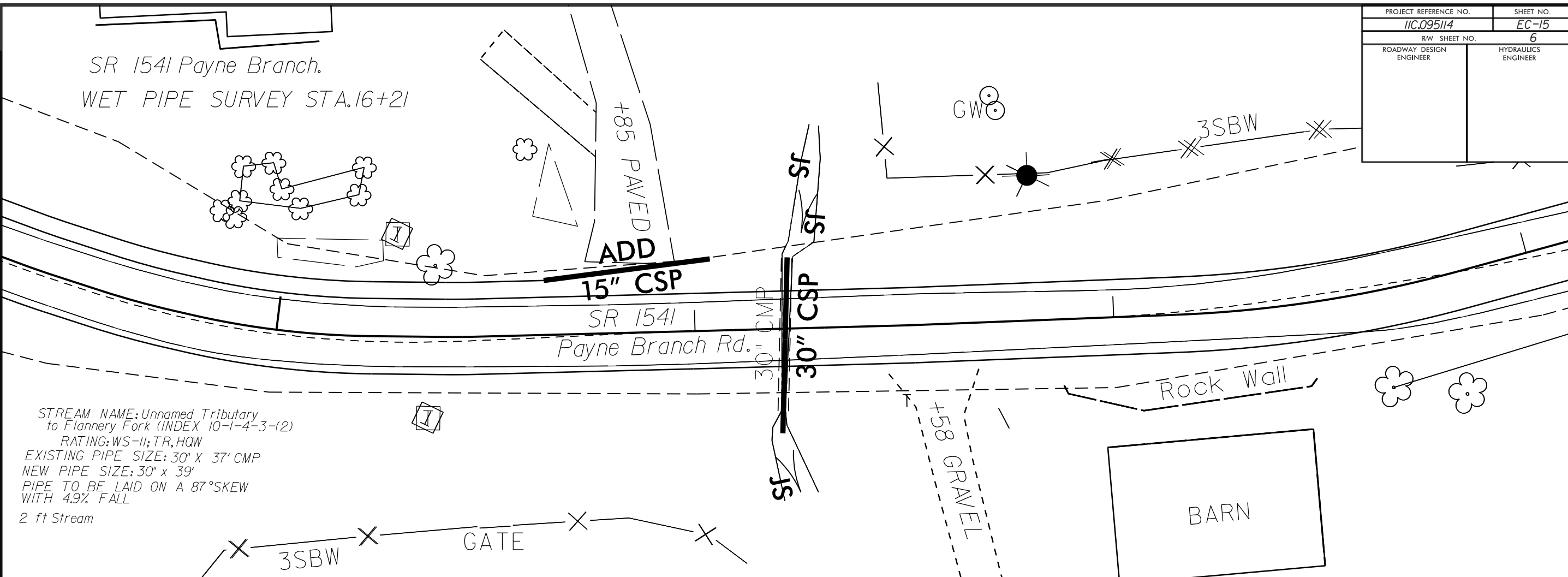
REVISIONS

8/17/99

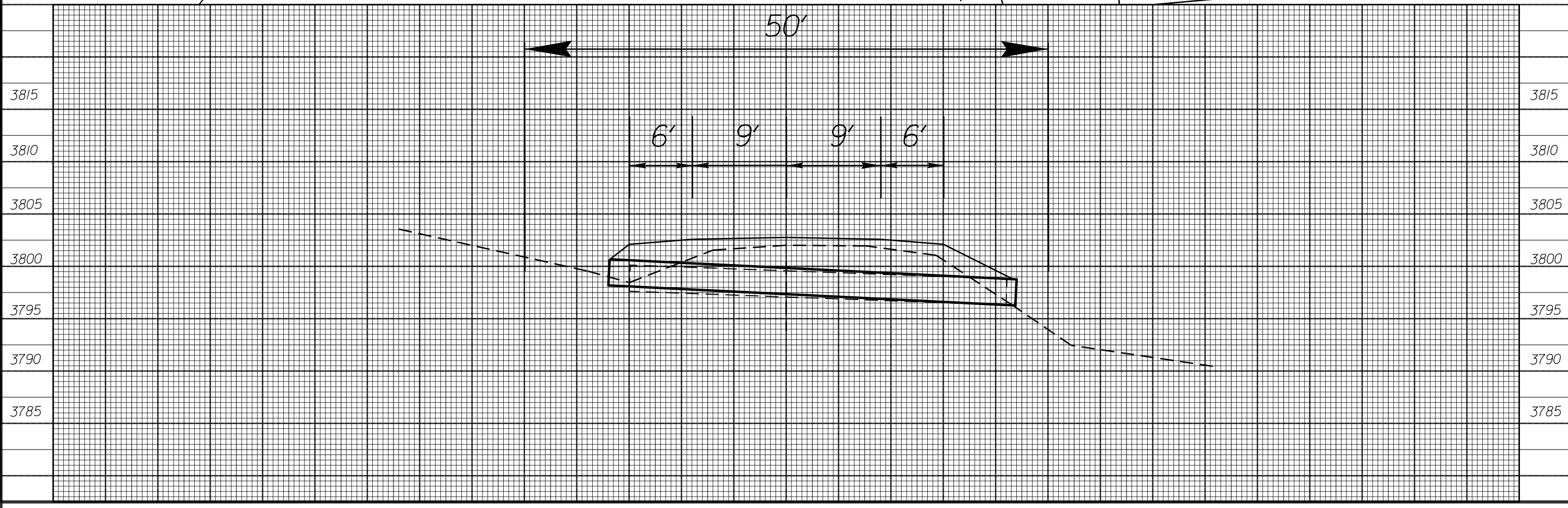
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PROJECT REFERENCE NO.	SHEET NO.
IIC.095114	EC-15
RW SHEET NO.	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SR 1541 Payne Branch.
WET PIPE SURVEY STA.16+21



STREAM NAME: Unnamed Tributary
to Flannery Fork (INDEX 10-1-4-3-(2))
RATING: WS-II; TR, HQW
EXISTING PIPE SIZE: 30" x 37' CMP
NEW PIPE SIZE: 30" x 39'
PIPE TO BE LAID ON A 87° SKEW
WITH 4.9% FALL
2 ft Stream



REVISIONS

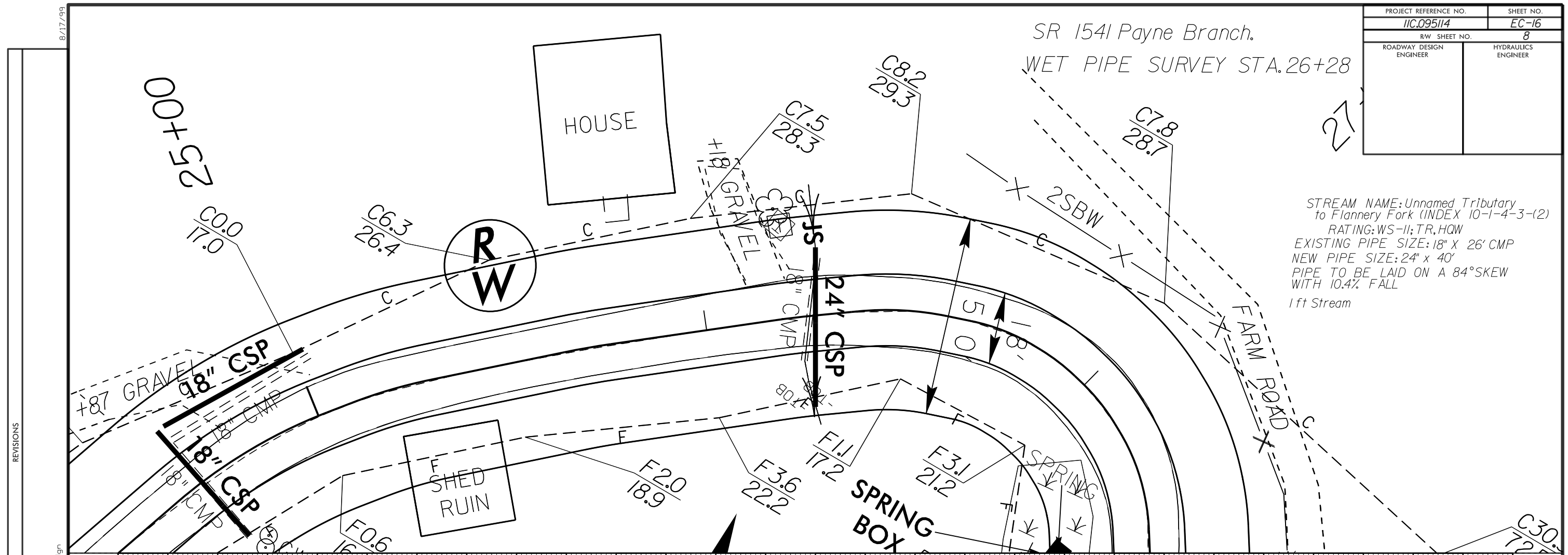
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PROJECT REFERENCE NO.	SHEET NO.
IIC.095114	EC-16
R/W SHEET NO.	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SR 1541 Payne Branch.
WET PIPE SURVEY STA. 26+28

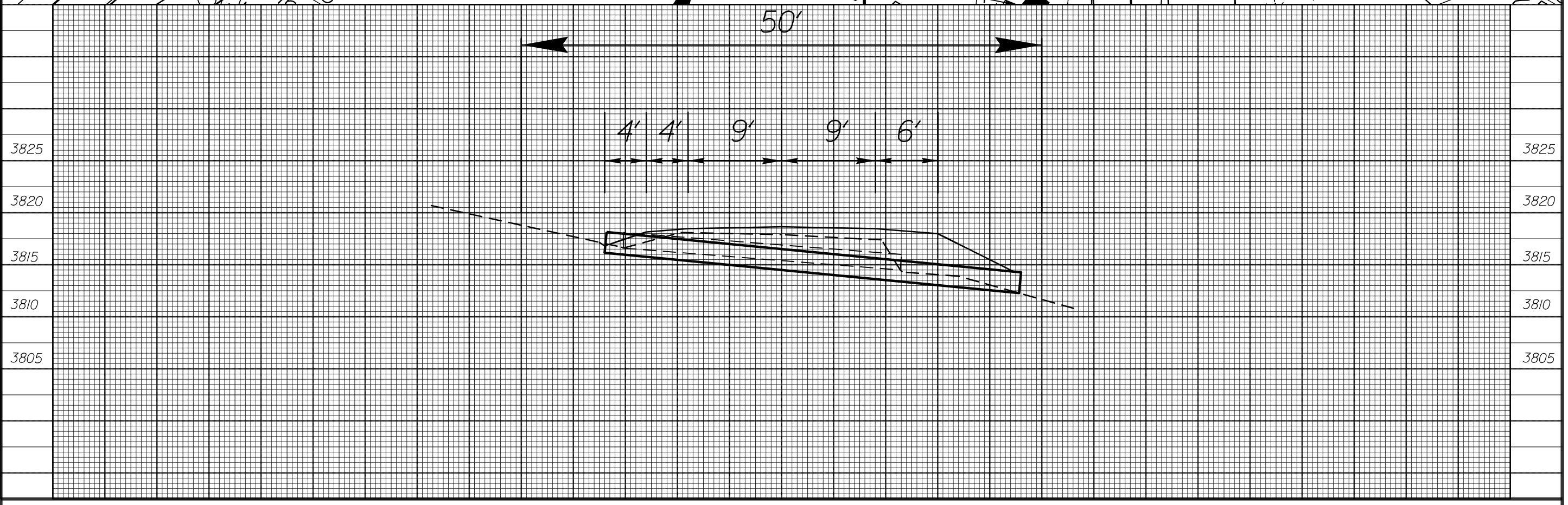
27

STREAM NAME: Unnamed Tributary to Flannery Fork (INDEX 10-1-4-3-(2))
 RATING: WS-II, TR, HQW
 EXISTING PIPE SIZE: 18" X 26' CMP
 NEW PIPE SIZE: 24" X 40'
 PIPE TO BE LAID ON A 84° SKEW WITH 10.4% FALL
 1 ft Stream



REVISIONS

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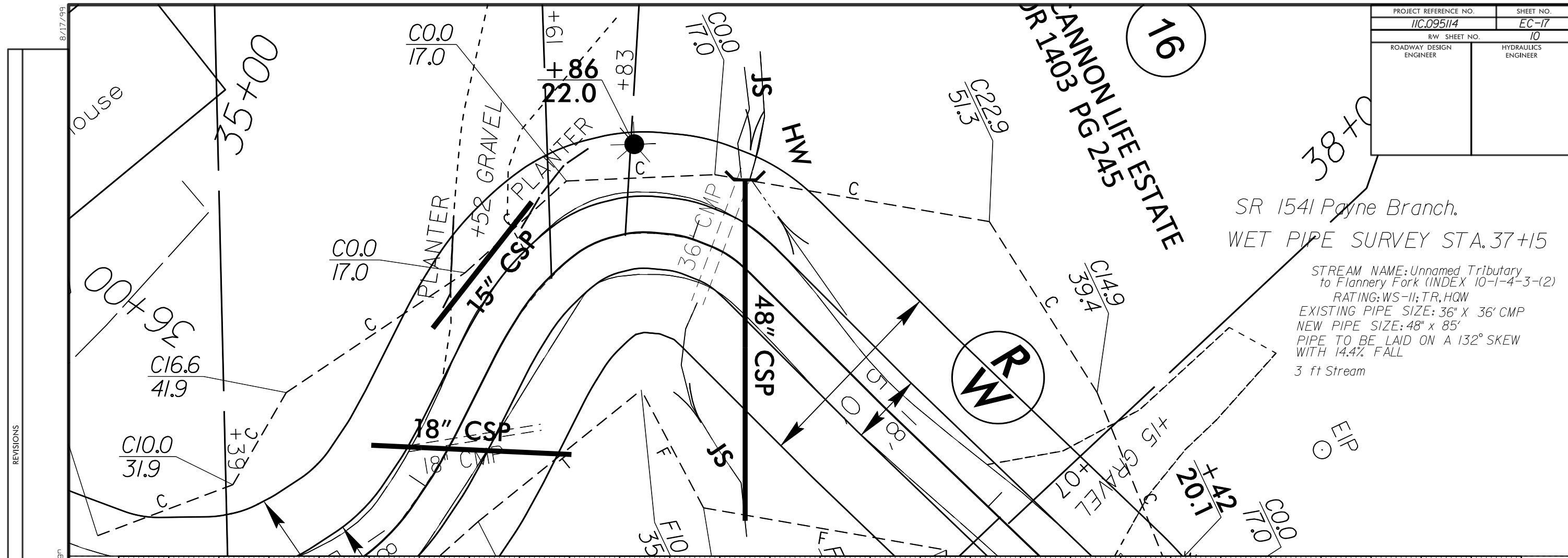
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R/W SHEET NO. 10	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

16

ANNON LIFE ESTATE
PG 245

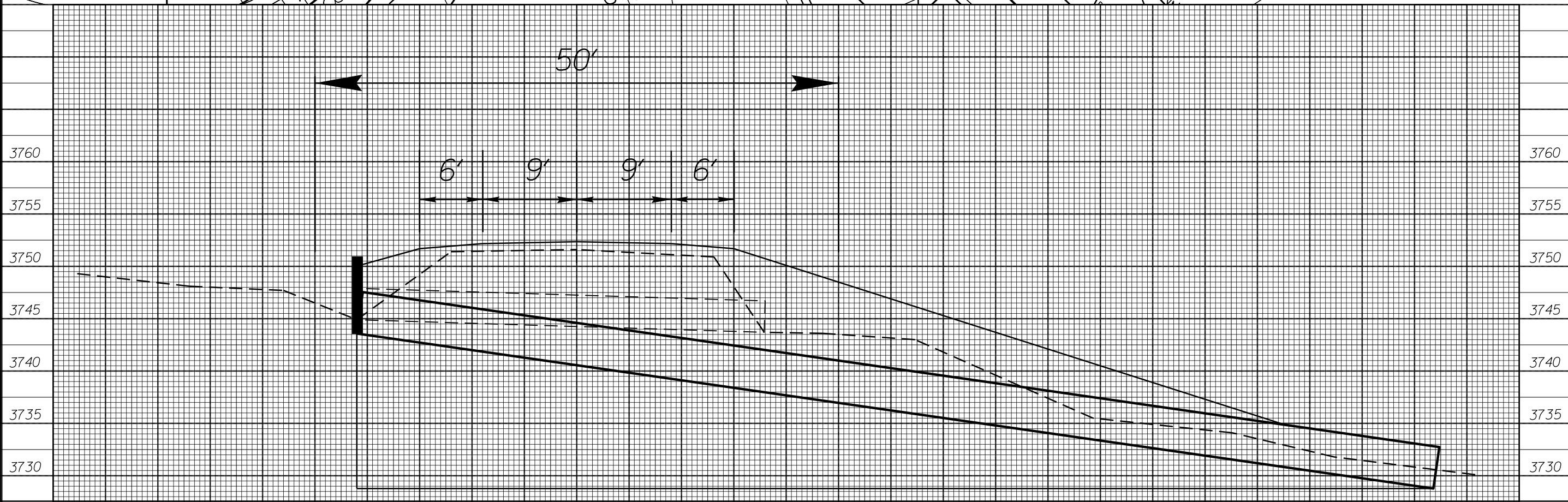
SR 1541 Payne Branch.
WET PIPE SURVEY STA. 37+15

STREAM NAME: Unnamed Tributary
to Flannery Fork (INDEX 10-1-4-3-(2))
RATING: WS-II; TR, HQW
EXISTING PIPE SIZE: 36" X 36' CMP
NEW PIPE SIZE: 48" X 85'
PIPE TO BE LAID ON A 132° SKEW
WITH 14.4% FALL
3 ft Stream



REVISIONS

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09/06/99

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REVISED: 08-8-24

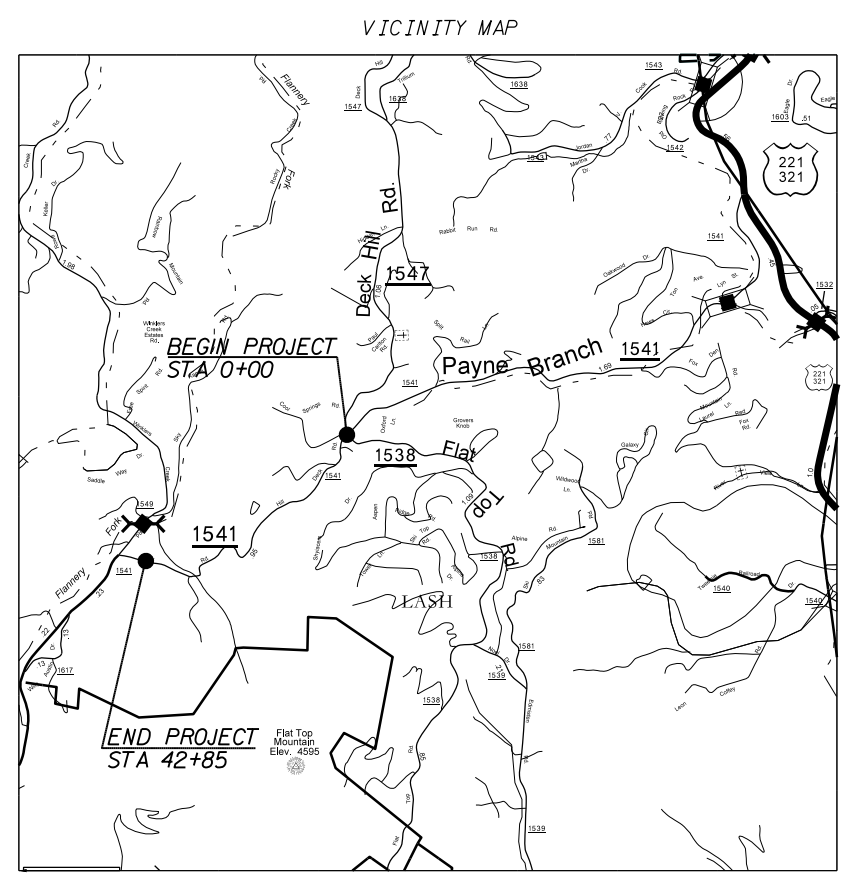
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WATAUGA COUNTY

**LOCATION: SR 1541B PAYNE BRANCH ROAD
FROM SR 1547 0.81 Mi. TO GAP SECTION
STA. 0+00 TO GAP STA. 42+85**

**TYPE OF WORK: GRADING, DRAIN, BASE
AND PAVING - 0.81 MILES**

**BEGAN SURVEY: 06/16/2016
END SURVEY: 06/26/2018**



Utilities By Others Plans

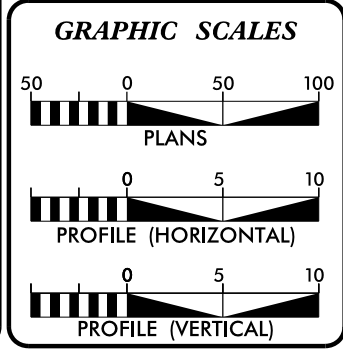
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	11C.095114	1	22
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

Utility Investigation 09/25/24

Blue Ridge Energy
Andrew Ellis

Spectrum
Andrew Watson

NCDOT
Travis Chrisawn, Tanner Elliott
Daniel Pruitt, Brandon Greer



DESIGN DATA

ADT	=	
ADT	=	
DHV	=	%
D	=	%
T	=	% *
V	=	MPH
* TTST		DUAL

PROJECT LENGTH
0.81 Miles

Prepared in the Office of:
DIVISION OF HIGHWAYS
DIVISION 11, DISTRICT 2 BOONE
P.O. BOX 1460, BOONE, N.C. 28607

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MICHAEL L. POE P.E.
DIVISION ENGINEER

LETTING DATE: K. Heavner P.E.
DISTRICT ENGINEER

DIVISION ENGINEER

SIGNATURE: _____ P.E.

DISTRICT ENGINEER

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

ROADWAY DESIGN
ENGINEER

GENERAL NOTES

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	
1-D	UTILITIES POLE DATA AND CENTER LINE SHIFT SHEET
1-E	
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	SUMMARY OF QUANTITIES SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
3-B	RIGHT OF WAY DATA SHEET
3-C	DRAINAGE SUMMARY SHEET (48" AND UNDER)
4 THRU 12	PLAN SHEETS
W-1 THRU W-2	RETAINING WALL SUMMARY
G-1 THRU G-2	REINFORCED SLOPE DETAIL

8/17/99
29 JUL 2024 10:05
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Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ _{EP}
Property Corner	-----
Property Monument	□ _{ECM}
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	-w.l.b.-
Proposed Wetland Boundary	w.l.b.
Existing Endangered Animal Boundary	-e.a.b.-
Existing Endangered Plant Boundary	-e.p.b.-

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	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- _C
Proposed Slope Stakes Fill	----- _F
Proposed Wheel Chair Ramp	----- _{WCR}
Proposed Wheel Chair Ramp Curb Cut	----- _{WCC}
Curb Cut for Future Wheel Chair Ramp	----- _{CCFR}
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	----- _{Vineyard}

EXISTING STRUCTURES:

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

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	□ _{PH}
H-Frame Pole	-----
Recorded U/G Power Line	----- _P
Designated U/G Power Line (S.U.E.*)	----- _P

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	□
Telephone Pedestal	⊕
Telephone Cell Tower	⊗
U/G Telephone Cable Hand Hole	□ _{PH}
Recorded U/G Telephone Cable	----- _T
Designated U/G Telephone Cable (S.U.E.*)	----- _T
Recorded U/G Telephone Conduit	----- _{TC}
Designated U/G Telephone Conduit (S.U.E.*)	----- _{TC}
Recorded U/G Fiber Optics Cable	----- _{T FO}
Designated U/G Fiber Optics Cable (S.U.E.*)	----- _{T FO}

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	----- _{A/G Water}

TV:

TV Satellite Dish	⊗
TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	□ _{PH}
Recorded U/G TV Cable	----- _{TV}
Designated U/G TV Cable (S.U.E.*)	----- _{TV}
Recorded U/G Fiber Optic Cable	----- _{TV FO}
Designated U/G Fiber Optic Cable (S.U.E.*)	----- _{TV FO}

GAS:

Gas Valve	◇
Gas Meter	⊕
Recorded U/G Gas Line	----- _G
Designated U/G Gas Line (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}
Recorded SS Forced Main Line	----- _{FSS}
Designated SS Forced Main Line (S.U.E.*)	----- _{FSS}

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	----- _{UTIL}
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

7/2/99

ENTERED BY: MJG DATE: 07/11/18
 CHECKED BY: MJG DATE: 07/11/18

REVISIONS

DATE:

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

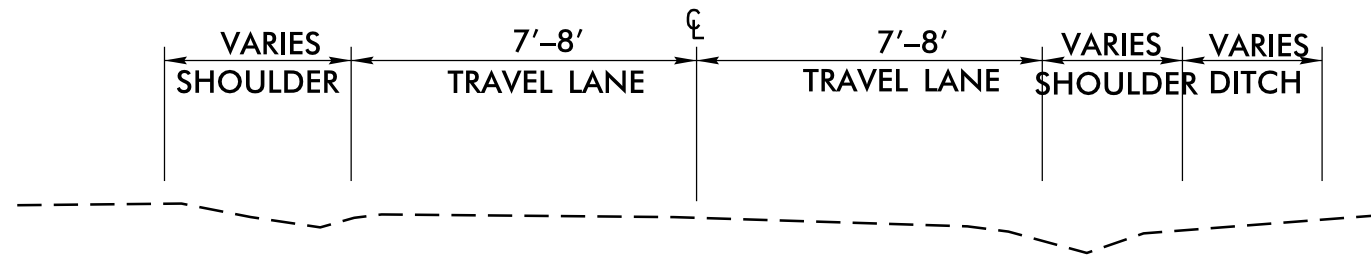
POLE DATA SHEET

CENTERLINE
 SHIFT STA'S

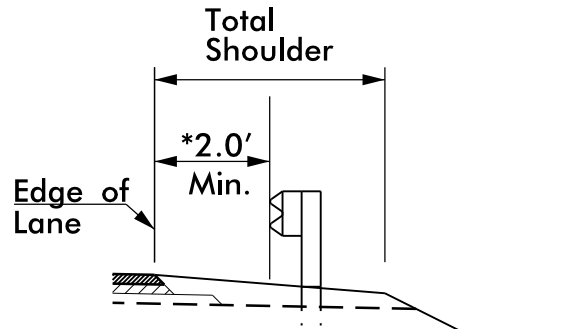
OWNER OF THE POLE LINE: AT&T								OWNER OF THE POLE LINE: CHARTER								STATION		STATION				
STATION	POLE NUMBER	DIST. FROM CENTER PRESENT ROAD		DIST. FROM CENTER PROJECT		DIST. FROM PROJECT AFTER MOVING		REMARKS	STATION	POLE NUMBER	DIST. FROM CENTER PRESENT ROAD		DIST. FROM CENTER PROJECT		DIST. FROM PROJECT AFTER MOVING		REMARKS	LEFT	RIGHT	LEFT	RIGHT	
		LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT				LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT						
0+32			24.3		24.3		25	PED	11+98			13.4		7.4		25	1 CATV	1+00		37+00		
		Remain									Move 17-ft.							2+00	1	38+00		
4+15			16.8		16.8		25	PED	12+93			12.4		12.4		25	1 CATV	3+00	6	39+00	1	
		Move 7-ft.									Eliminate							4+00	1	40+00		
8+09			23.1		23.1		25	PED	31+04			14.2		13.2		25	1 CATV	5+00	1	41+00		
		Remain									Move 10-ft.							6+00		42+00		
11+37			11.7		5.7		25	PED	33+30			18.3		13.3		25	1 CATV	7+00		E.O.P 42+85	E.O.P	
		Move 17-ft.									Move 10-ft. - GW to Remain							8+00		44+00		
11+37			11.7		5.7		25	2STL	35+48			27		23		25	1 CATV	9+00		45+00		
		Move 17-ft.									Remain							10+00	2	46+00		
11+98			13.4		7.4		25	2STL	36+86		22		22		25	1 CATV	11+00	6	2	47+00		
		Move 17-ft.									Remain							12+00	6	2	48+00	
13+97					16.9		25	NO ATTACHMENTS										13+00		3	49+00	
		Remove																14+00		50+00		
15+29			24.4		24.4		25	PED										15+00		51+00		
		Remain																16+00		52+00		
15+36			19.4		19.4		25	PED	OWNER OF THE POLE LINE: BREMCO								2	18+00		54+00		
		Remain							STATION	POLE NUMBER	DIST. FROM CENTER PRESENT ROAD		DIST. FROM CENTER PROJECT		DIST. FROM PROJECT AFTER MOVING		REMARKS	2	19+00		55+00	
		Remain									LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT			3	20+00		56+00
20+18			7		10		25	PED	11+98			13.4		7.4		25	1PC	21+00	1	57+00		
		Move 15-ft.									Move 17-ft.							22+00	1	58+00		
26+21			24.5		23.4		25	PED	12+93			12.4		12.4		25	1PC	2	23+00		59+00	
		Remain - Adjust in Cut									Eliminate							24+00		60+00		
35+47			27.5		23.5		25	PED	13+04 31+04			14.2		13.2		25	4PW, 4OHGW	25+00		61+00		
		Remain									Move 10-ft.							26+00	1	62+00		
									33+30			18.3		13.3		25	4PW, 3GW	27+00		63+00		
											Move 10-ft. - GW to Remain							28+00	5	64+00		
									35+48			27		23		25	4PW, 3GW	2	29+00		65+00	
											Remain							30+00		66+00		
									36+86		22		22		25		4PW, 1TRNS, 4GW	31+00	1	67+00		
											Remain							32+00		68+00		
																		33+00	5	69+00		
																		34+00	4	70+00		
											14+01 - Remain - Possible upsize and reset in cut slope							35+00	4	71+00		
																		36+00		72+00		

I:\SEP-2023 0814
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 7/2/99

PROJECT REFERENCE NO.	SHEET NO.
11C.095114	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

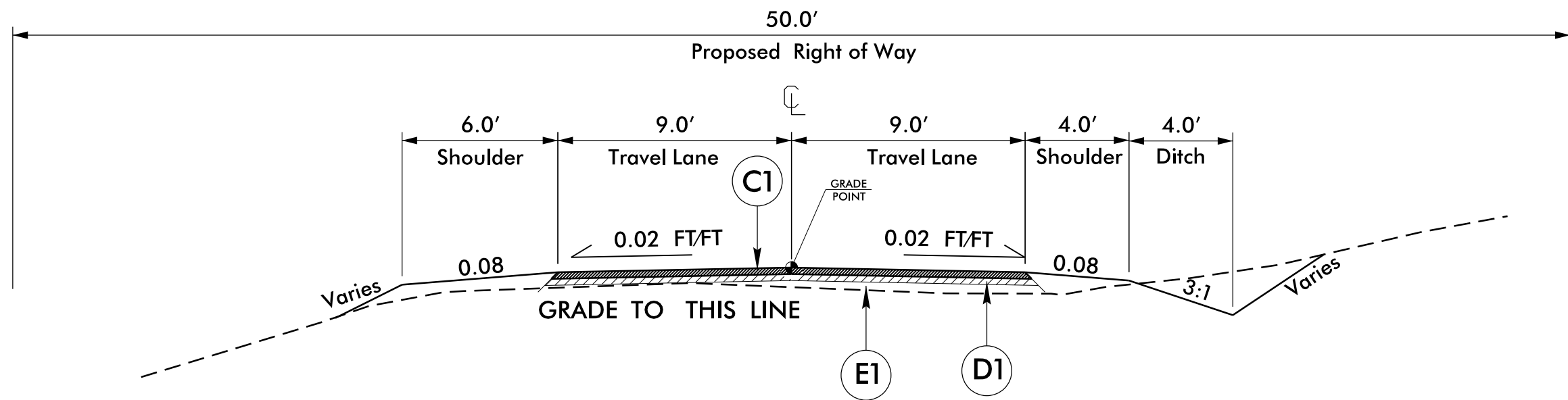


14'-16' EXISTING TYPICAL SECTION



GUARDRAIL PLACEMENT

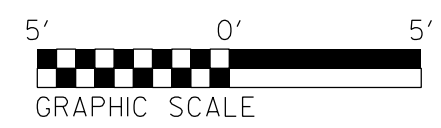
*GUARDRAIL LOCATIONS DIRECTED BY THE ENGINEER



TYPICAL SECTION NO. 1

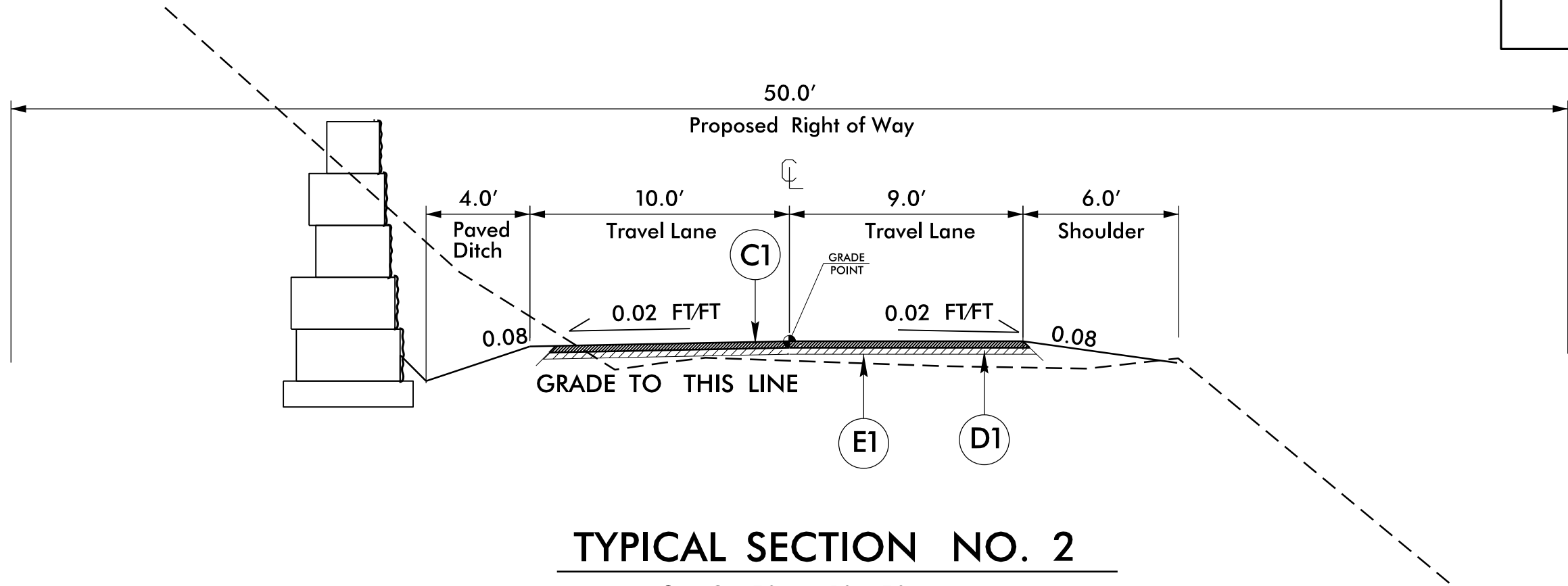
Sta 0+00 to 8+50
Sta 10+50 to 13+13
Sta 15+64 to 44+50

C1	PROP. ASPHALT SURFACE TREATMENT (TRIPLE SEAL).
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E1	PROP. APPROX. 6" AGGREGATE BASE COURSE.



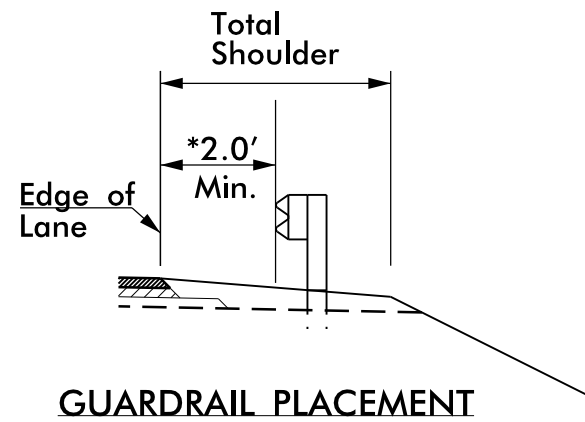
6/2/99
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PROJECT REFERENCE NO. <i>11C.095114</i>	SHEET NO. <i>2A</i>
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

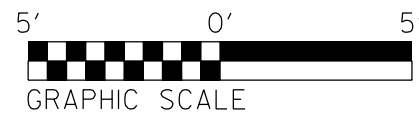


TYPICAL SECTION NO. 2

Sta 8+50 to 10+50



***GUARDRAIL LOCATIONS DIRECTED BY THE ENGINEER**

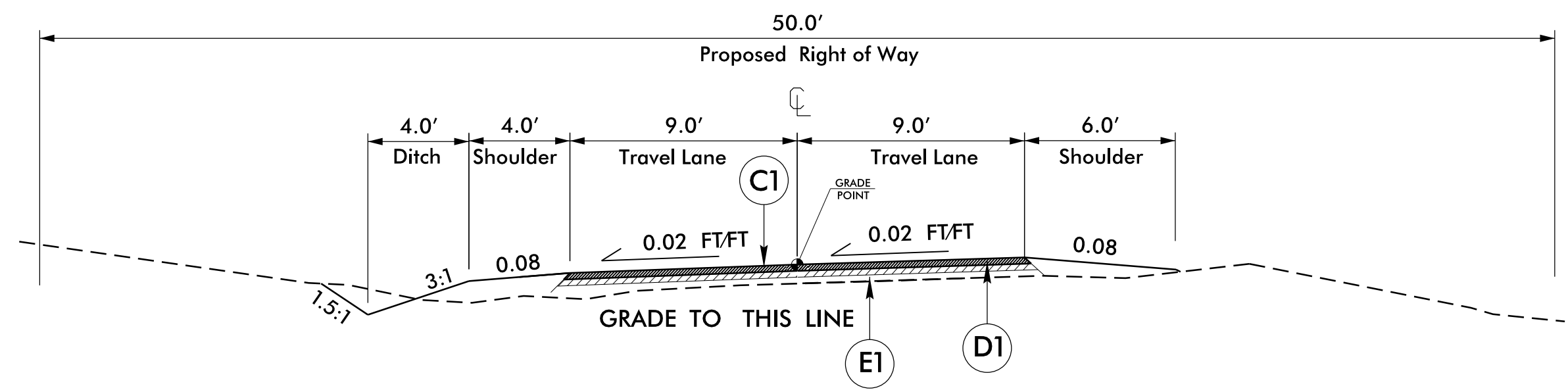


C1	PROP. ASPHALT SURFACE TREATMENT (TRIPLE SEAL).
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E1	PROP. APPROX. 6" AGGREGATE BASE COURSE.

6/2/09

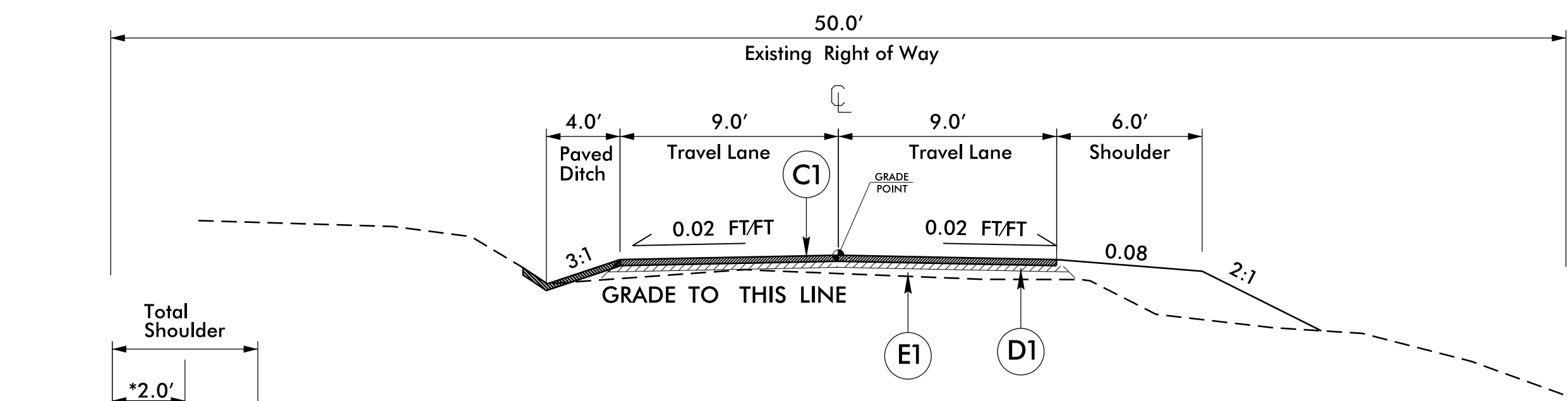
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PROJECT REFERENCE NO. 11C.095114	SHEET NO. 2B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



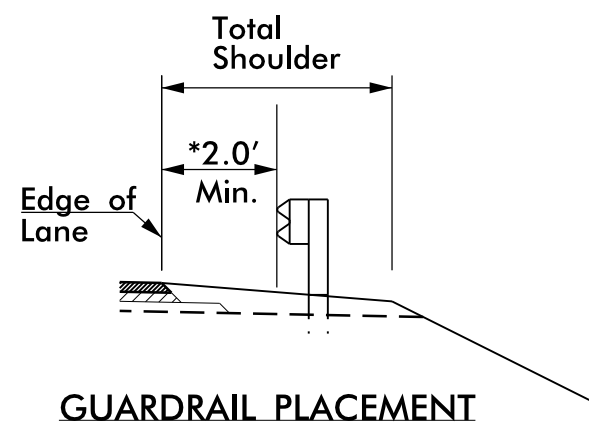
TYPICAL SECTION NO. 3

Sta 44+50 to 50+37.21

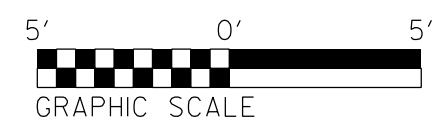


TYPICAL SECTION NO. 4

Sta 13+13 to 15+64



***GUARDRAIL LOCATIONS DIRECTED BY THE ENGINEER**



C1	PROP. ASPHALT SURFACE TREATMENT (TRIPLE SEAL).
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E1	PROP. APPROX. 6" AGGREGATE BASE COURSE.

6/2/99
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12/06/05
 ENTERED BY: JG DATE: 06/26/18
 CHECKED BY: JG DATE: 06/26/18
 DATE: REVISIONS
 8/22/2023 Updated Property Owners & Parcel Info

PROJECT REFERENCE NO. SHEET NO.
 IIC.095114 3-B

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

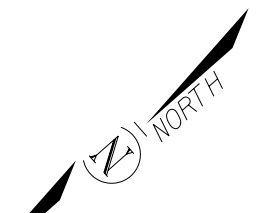
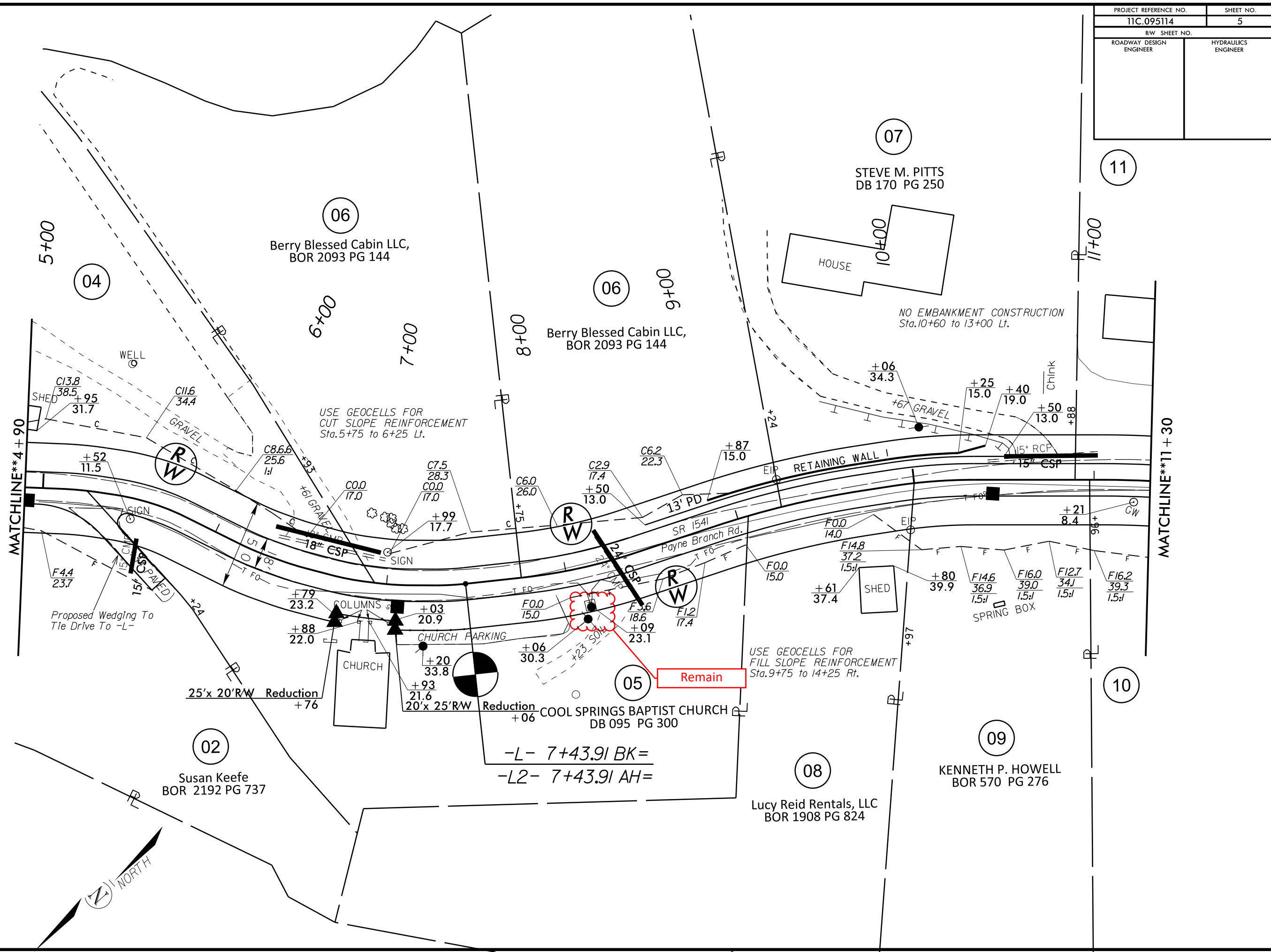
RIGHT OF WAY DATA SHEET

PARCEL NO.	PROPERTY OWNERS NAME	ADDRESS	CITY	STATE	ZIP	DEED BOOK / PAGE	NCPIN	PHONE	PARCEL NO.	PROPERTY OWNERS NAME	ADDRESS	CITY	STATE	ZIP	DEED BOOK / PAGE	NCPIN	PHONE
1	John B. Buxton	32 BEVERLY DR	Durham	NC	27707	1630846	2819132229		27	Richard G. Dunn	137 SADDLE SPRINGS DR	Blowing Rock	NC	28605	1996/40	2809714573	
2	Susan E. Keefe	P.O. BOX 949	Blowing Rock	NC	28605	2192/737	2819037168		14A	Maria & Kevin Dehaven	2269 PAYNE BRANCH RD	Blowing Rock	NC	28605	2306/394	2809917809	
3	Douglas B. Koger Jr.	16 Cady Lane	Wappingers Fall	NY	12590	935/299	2819039224										
4	Martha C. Baetz	P.O. BOX 863	Blowing Rock	NC	28605	2026/761	2819038084										
5	Cool Springs Baptist Church	256 Willy Austin Rd.	Blowing Rock	NC	28605	095/300	2819024974										
6	Berry Blessed Cabin, LLC	11767 S. DIXIE HWY, # 108	Pinecrest	FL	33156	2093/144	2819027847										
6	Berry Blessed Cabin, LLC	11767 S. DIXIE HWY, # 108	Pinecrest	FL	33156	2093/144	2819026775										
7	Steve M. Pitts	2007 Payne Branch Rd.	Blowing Rock	NC	28605	170/250	2819026518										
8	Lucy Reid Rentals, LLC	191 BROOKSIDE DR	Boone	NC	28607	1908/824	2819023885										
9	Kenneth P. Howell	219 Cool Springs Drive	Blowing Rock	NC	28605	570/276	2819023717										
10	Jimmy & Virginia D. Ward	P.O. Box 2063	Boone	NC	28607	242/741	2819022629										
11	Roy V. Nicholson	2057 Payne Branch Rd.	Blowing Rock	NC	28605	762/416	2819024474										
12	Benjamin E. & Emily S. Link	2196 PAYNE BRANCH RD	Blowing Rock	NC	28605	1966/430	2809927655										
12	Benjamin E. & Emily S. Link	2196 PAYNE BRANCH RD	Blowing Rock	NC	28605	1966/430	2809927655										
12	Benjamin E. & Emily S. Link	2196 PAYNE BRANCH RD	Blowing Rock	NC	28605	1966/430	2809927655										
12	Benjamin E. & Emily S. Link	2196 PAYNE BRANCH RD	Blowing Rock	NC	28605	1966/430	2809927655										
13	Ashley S. Craig	P.O. Box 574	Blowing Rock	NC	28605	1676/866	2819021299										
14	Zelma Verlee Shore	2269 Payne Branch Rd.	Blowing Rock	NC	28605	1026/266	2809911968										
15	Wendell E. & Dora Hicks	2240 Payne Branch Rd.	Blowing Rock	NC	28605	640/597	2809924007										
16	Thelma Cannon Life Estate	2588 Payne Branch Rd.	Blowing Rock	NC	28605	1403/245	2809815583										
16	Thelma Cannon Life Estate	2588 Payne Branch Rd.	Blowing Rock	NC	28605	1403/245	2809815462										
16	Thelma Cannon Life Estate	2588 Payne Branch Rd.	Blowing Rock	NC	28605	1403/245	2809814447										
16	Thelma Cannon Life Estate	2588 Payne Branch Rd.	Blowing Rock	NC	28605	1403/245	2809811760										
16	Thelma Cannon Life Estate	2588 Payne Branch Rd.	Blowing Rock	NC	28605	1403/245	2809809806										
17	Charles G. Travis	P.O. Box 670	Blowing Rock	NC	28605	1238/853	2809910374										
18	Leigh C. Kollmer Antoinette P. Ferraro	2453 PAYNE BRANCH RD	Blowing Rock	NC	28605	2174/377	2809818385										
19	Jeffrey Peacock	7990 GLENN FERRY RD	PFAFFTOWN	NC	27040	2294/680	2809817342										
20	Payne Branch Farms LLC,	2555 PAYNE BRANCH RD	Blowing Rock	NC	28605	2092/830	2809806762										
21	Ricky A Ruppert Stephanie T Ruppert	268 ROBESON ST	Spring Lake	NC	28390	2211/569	2809811297										
22	Kenneth H Jacker Revoc Tr AGRMT	2664 Payne Branch Rd.	Blowing Rock	NC	28605	1544/679	2809718773										
23	Stephen W. Lion	2687 Payne Branch Rd.	Blowing Rock	NC	28605	361/073	2809708906										
24	Carl T. Smith Allison J. Smith	334 GLENBURNIE DR	Fayetteville	NC	28303	2125/272	2809716664										
25	Stephen W. Lion	2687 Payne Branch Rd.	Blowing Rock	NC	28605	361/069	2809716245										
26	Wellfleet LLC,	821 WAKE FOREST RD	Raleigh	NC	27604	1996/43	2809715416										

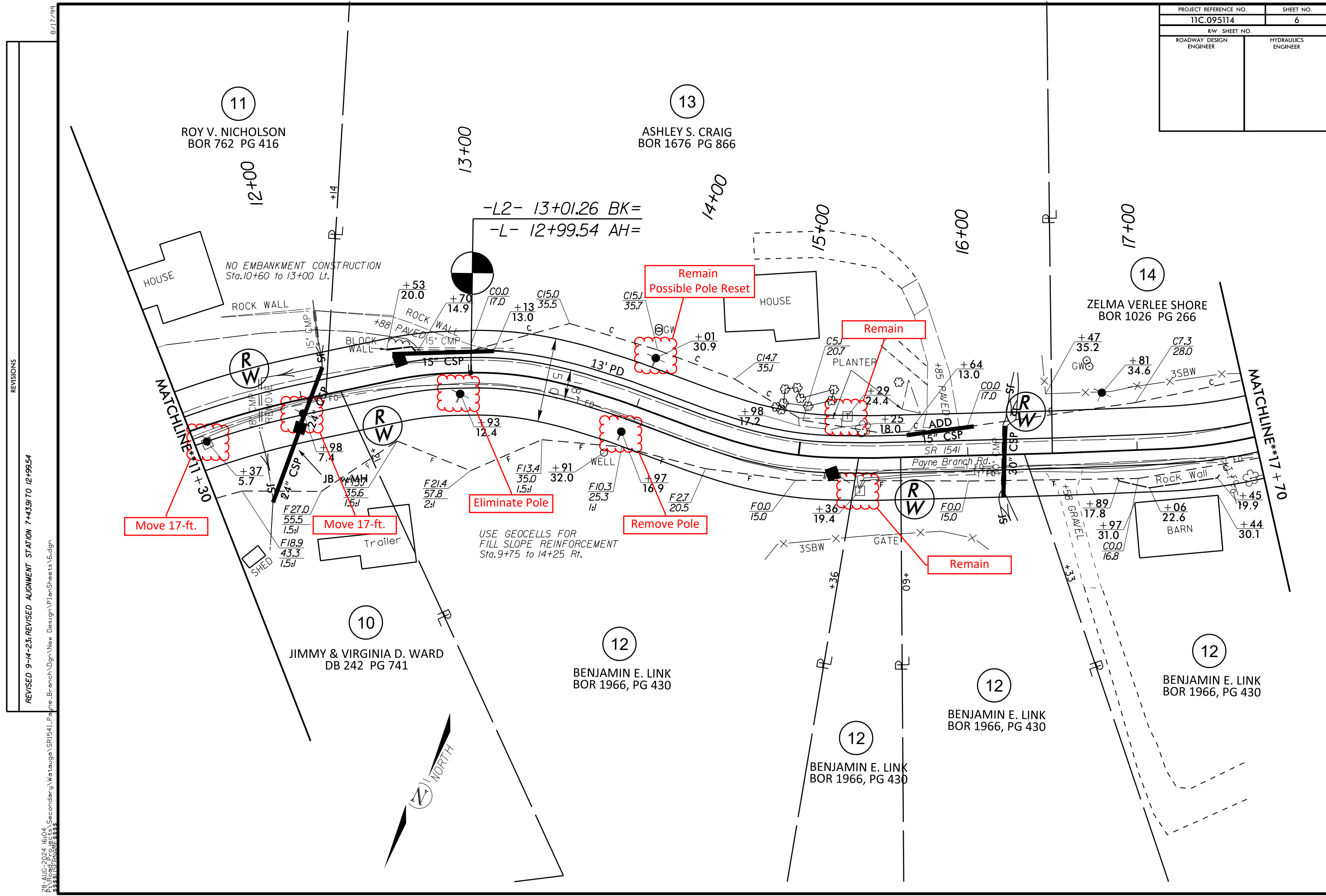
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PROJECT REFERENCE NO.	SHEET NO.
11C.095114	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS
 REVISED 9-14-23: UPDATED PARCELS 2, 4, 6, AND 8 OWNERS
 REVISED 9-14-23: REMOVED RETAINING WALLS 1 AND 2, ADDED RETAINING WALL 1 AT NEW LOCATION
 REVISED 9-14-23: REVISED ALIGNMENT STATION 7+43.91 TO 12+99.54
 28-AUG-2024 16:03
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 11C.095114.dwg



PROJECT REFERENCE NO.	SHEET NO.
11C.095114	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



11
ROY V. NICHOLSON
BOR 762 PG 416

13
ASHLEY S. CRAIG
BOR 1676 PG 866

14
ZELMA VERLEE SHORE
BOR 1026 PG 266

10
JIMMY & VIRGINIA D. WARD
DB 242 PG 741

12
BENJAMIN E. LINK
BOR 1966, PG 430

12
BENJAMIN E. LINK
BOR 1966, PG 430

12
BENJAMIN E. LINK
BOR 1966, PG 430

-L2- 13+01.26 BK=
-L- 12+99.54 AH=

USE GEOCELLS FOR
FILL SLOPE REINFORCEMENT
Sta. 9+75 to 14+25 Rt.

NO EMBANKMENT CONSTRUCTION
Sta. 10+60 to 13+00 Lt.

Move 17-ft.

Move 17-ft.

Eliminate Pole

Remove Pole

Remain
Possible Pole Reset

Remain

Remain

REVISIONS

REVISED 9-14-23; REVISED ALIGNMENT STATION 7+43.9 TO 12+99.54

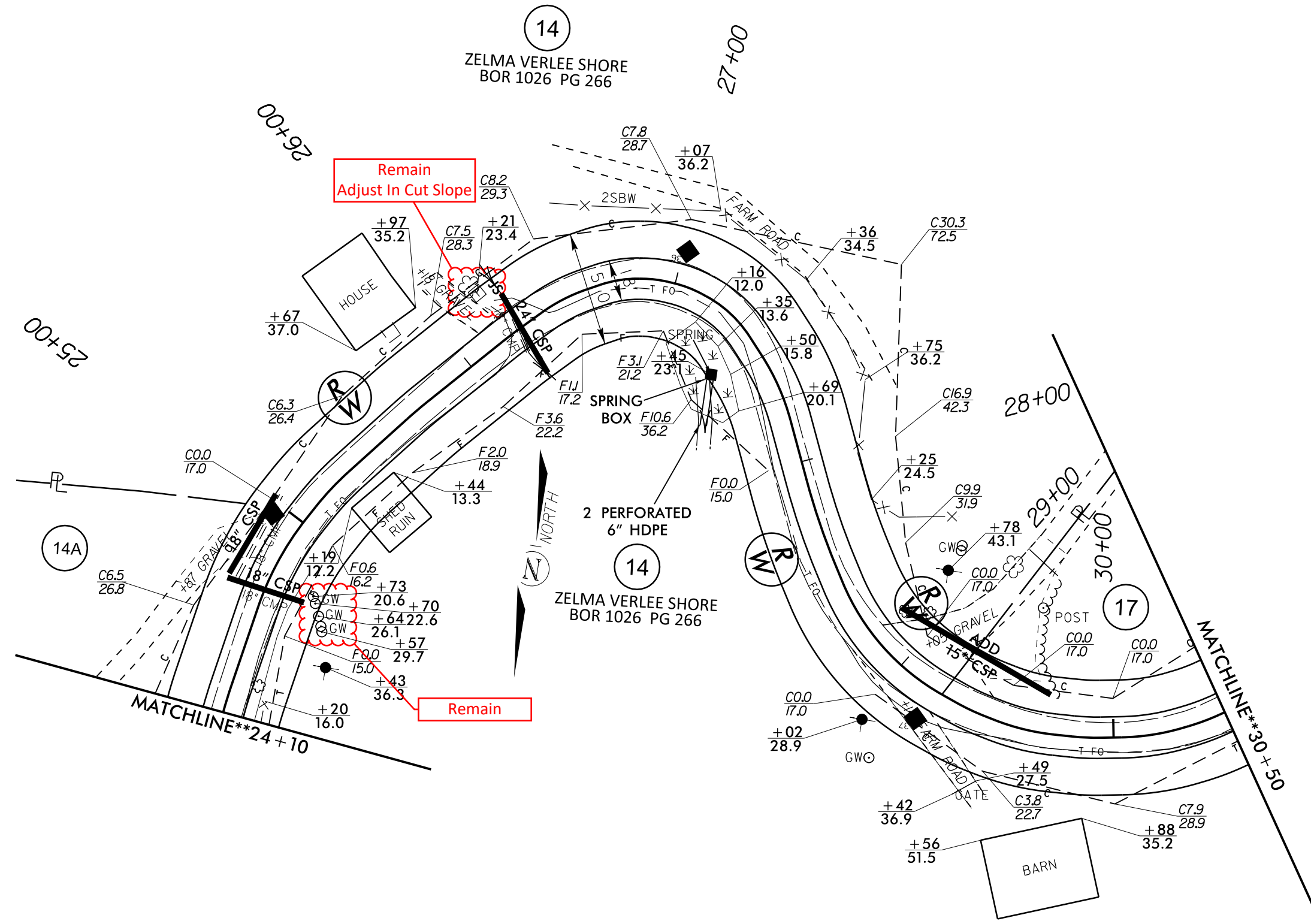
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MATCHLINE**11+30

MATCHLINE**17+70

PROJECT REFERENCE NO.	SHEET NO.
11C.095114	8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

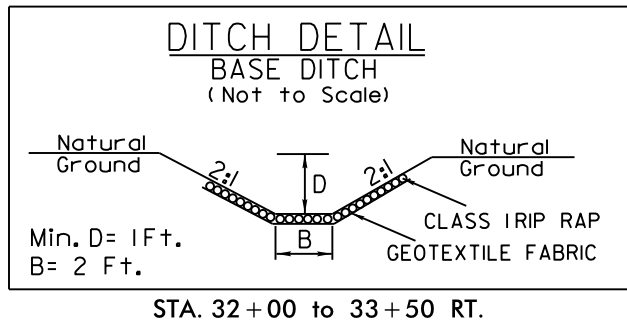
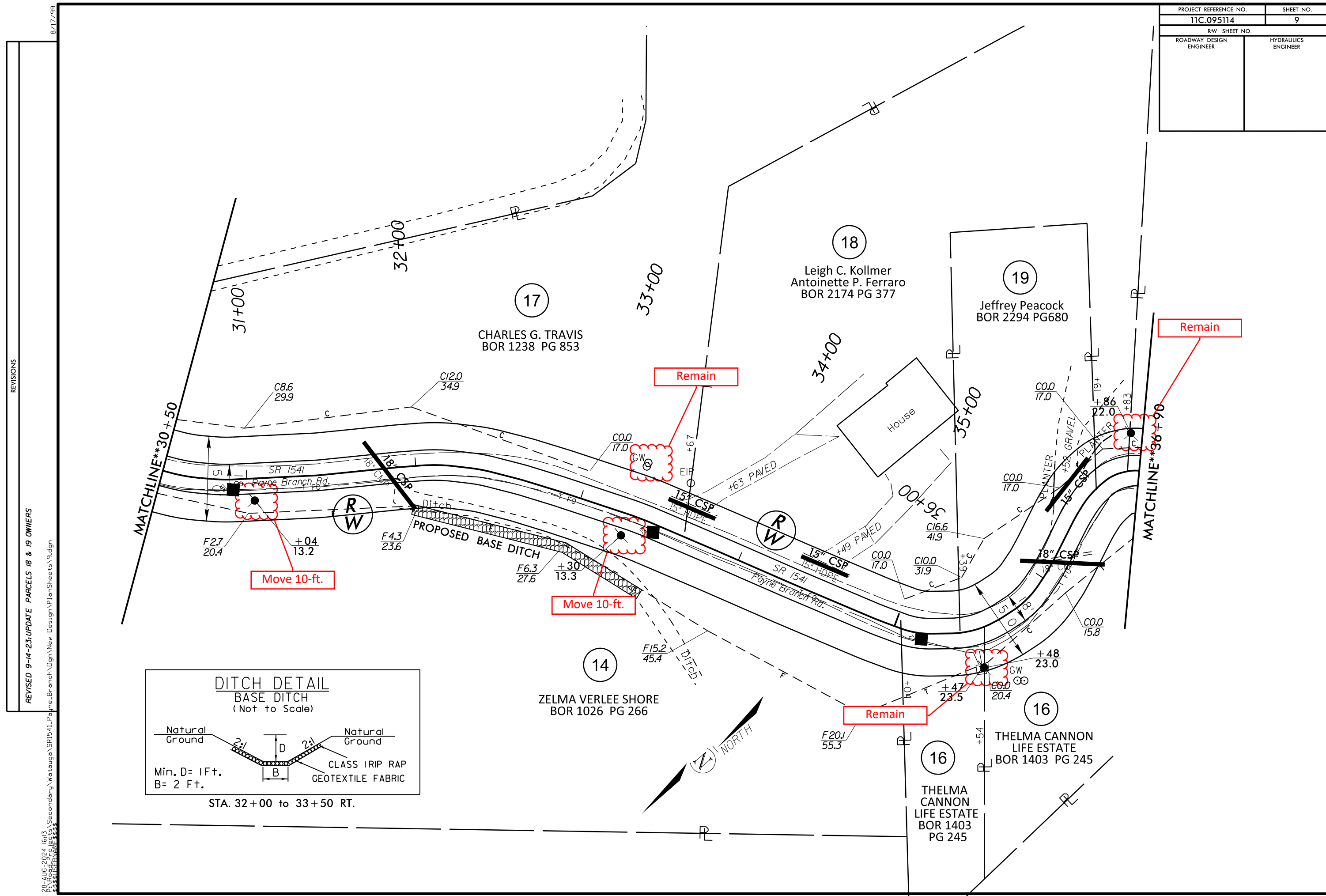


REVISIONS

REVISED 9-14-2023; ADDITION OF PARCEL 14A

28-AUG-2024 16:08
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 8/17/99

PROJECT REFERENCE NO.	SHEET NO.
11C.095114	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



REVISIONS

REVISED 9-14-23: UPDATE PARCELS 18 & 19 OWNERS

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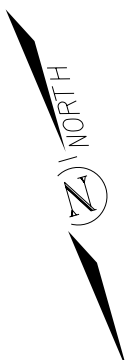
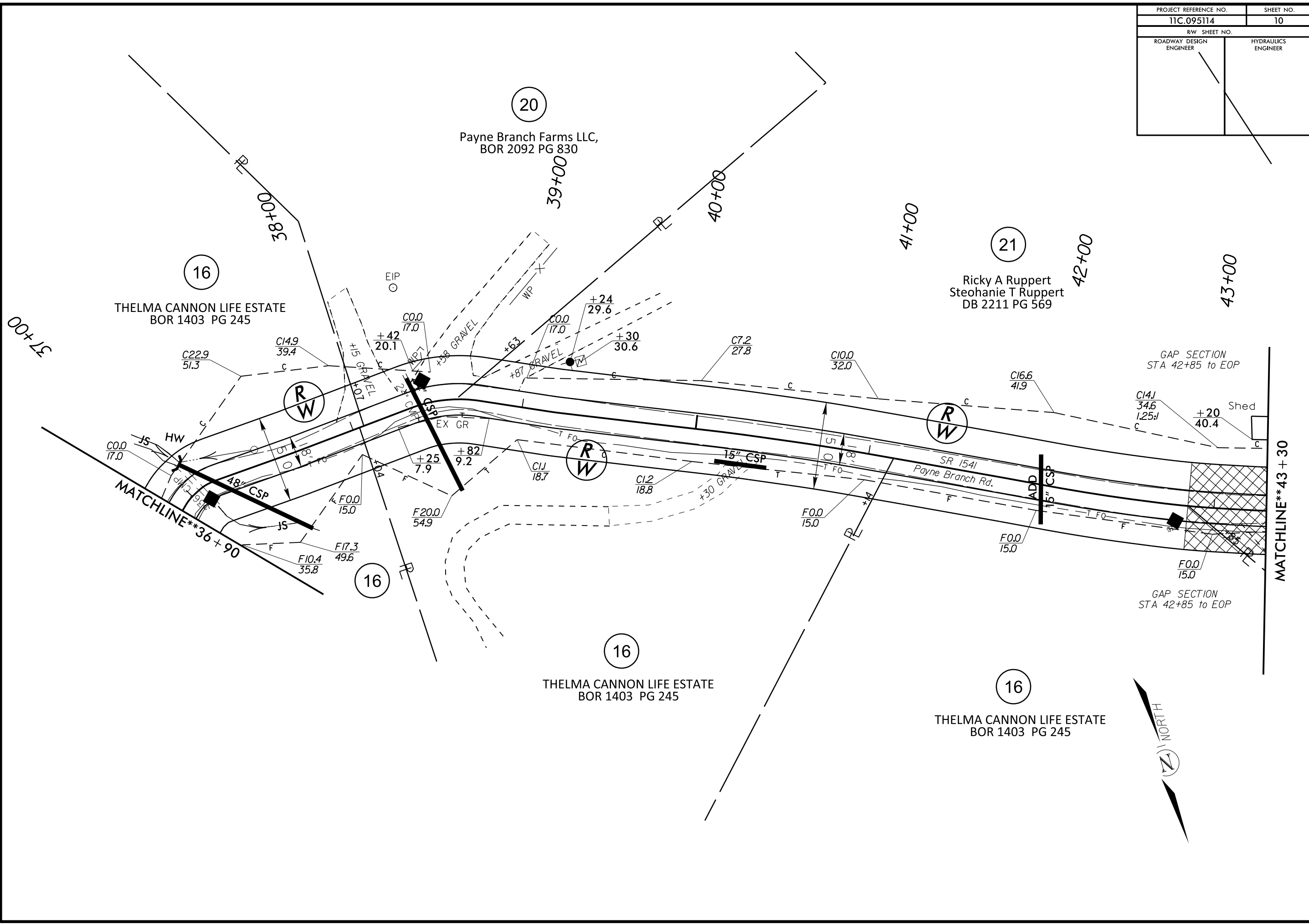
PROJECT REFERENCE NO.	SHEET NO.
11C.095114	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

REVISED 9-14-23: UPDATED PARCEL 20 OWNER

28-AUG-2024 16:16
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 3331515114.dwg



MATCHLINE**43+30

MATCHLINE**36+90

GAP SECTION
 STA 42+85 to EOP

GAP SECTION
 STA 42+85 to EOP

Payne Branch Farms LLC,
 BOR 2092 PG 830

Ricky A Ruppert
 Steohanie T Ruppert
 DB 2211 PG 569

THELMA CANNON LIFE ESTATE
 BOR 1403 PG 245

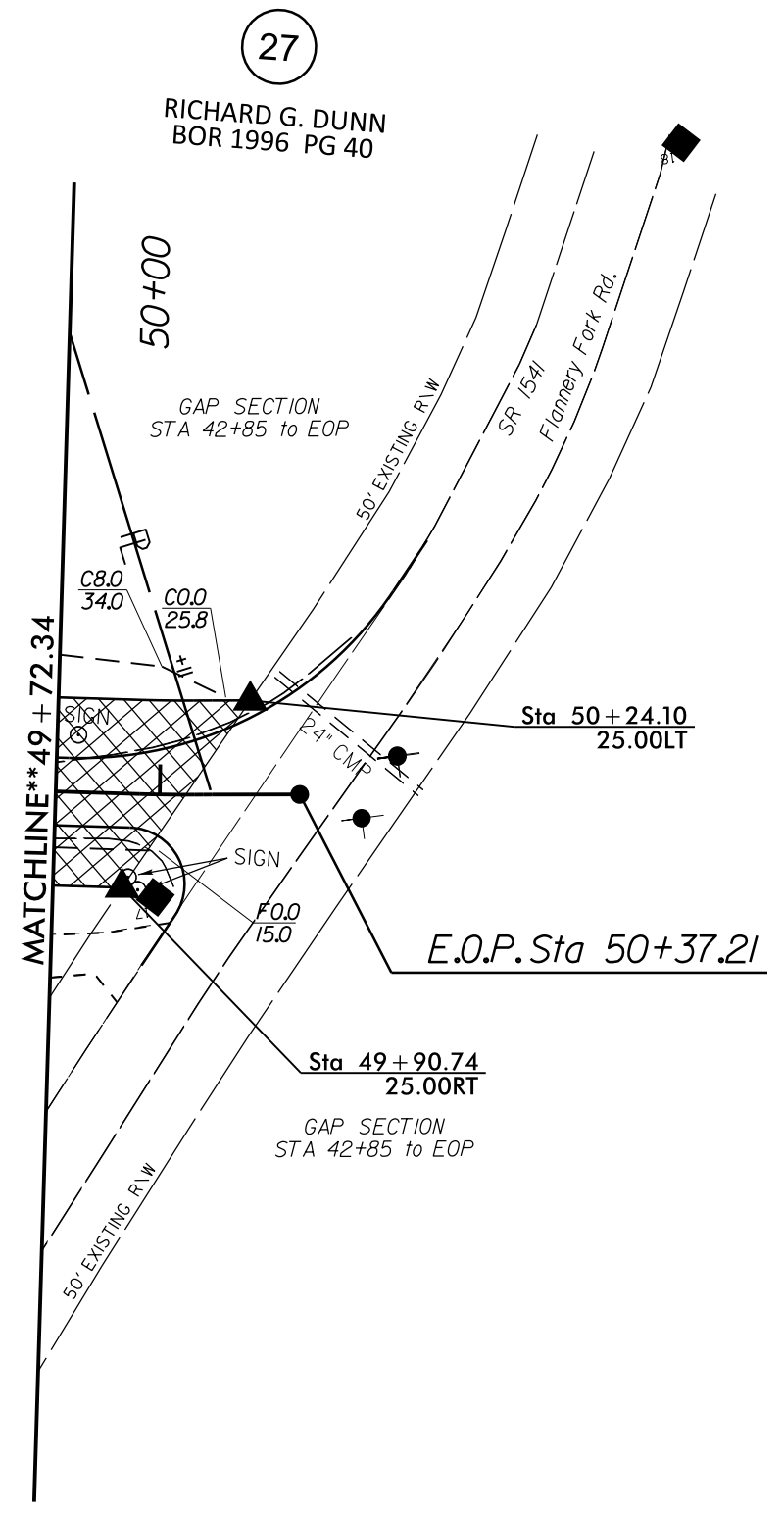
THELMA CANNON LIFE ESTATE
 BOR 1403 PG 245

THELMA CANNON LIFE ESTATE
 BOR 1403 PG 245

PROJECT REFERENCE NO.	SHEET NO.
11C.095114	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

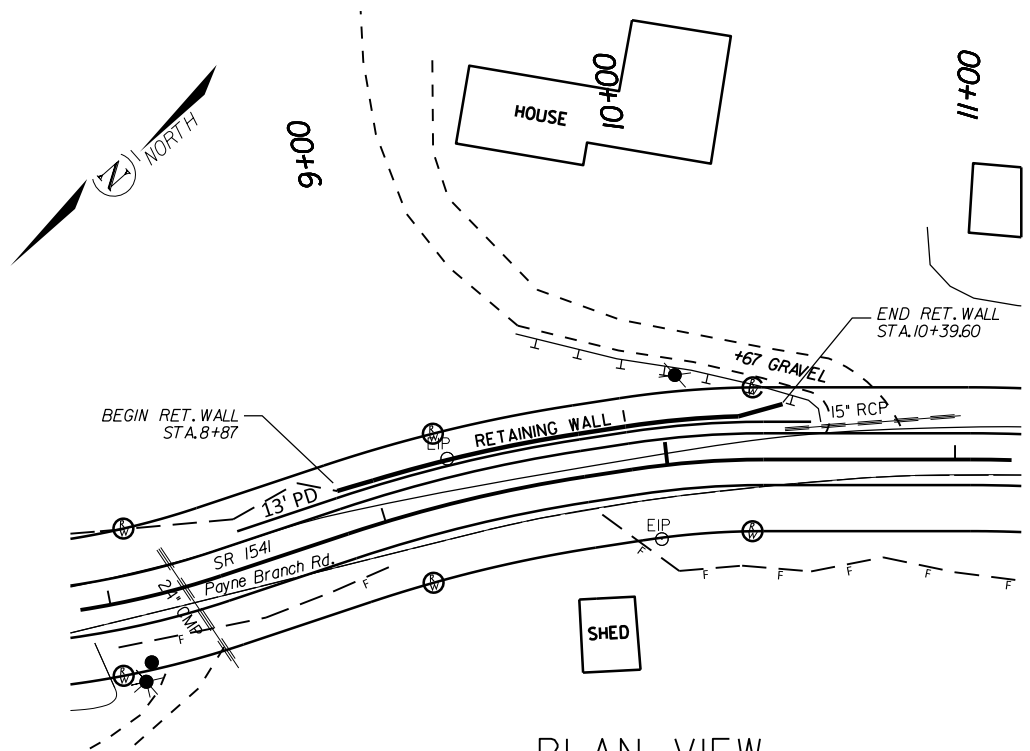
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GEOTECHNICAL ENGINEER

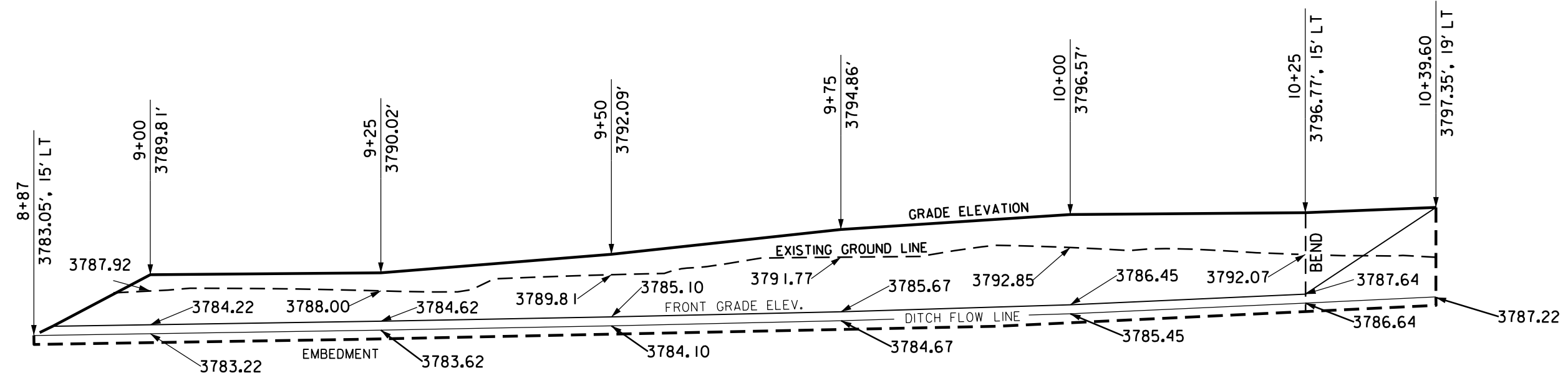
SIGNATURE _____ DATE _____

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



PLAN VIEW

ESTIMATED PRECAST GRAVITY WALL QUANTITIES	
RETAINING WALL NO. 1	1,874 SQ. FEET (WALL FACE)
	2,054 SQ. FEET (STAINING)



PROFILE VIEW

PROJECT NO.: 11C.095114
 WATAUGA COUNTY
 STATION: 8+87
 SHEET 1 OF 2

**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**GEOTECHNICAL
ENGINEERING UNIT**

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

PREPARED BY: JDH	DATE: 9/2023
REVIEWED BY: ENW	DATE: 9/2023

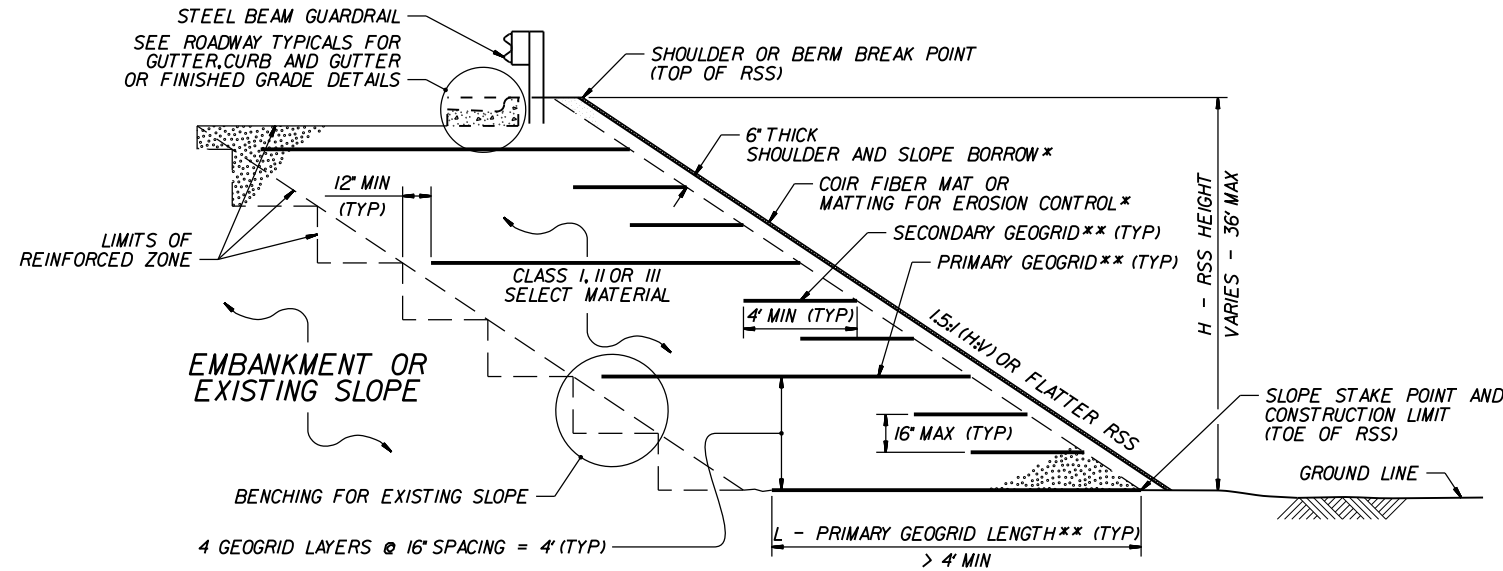
GEOTECHNICAL ENGINEER

ENGINEER



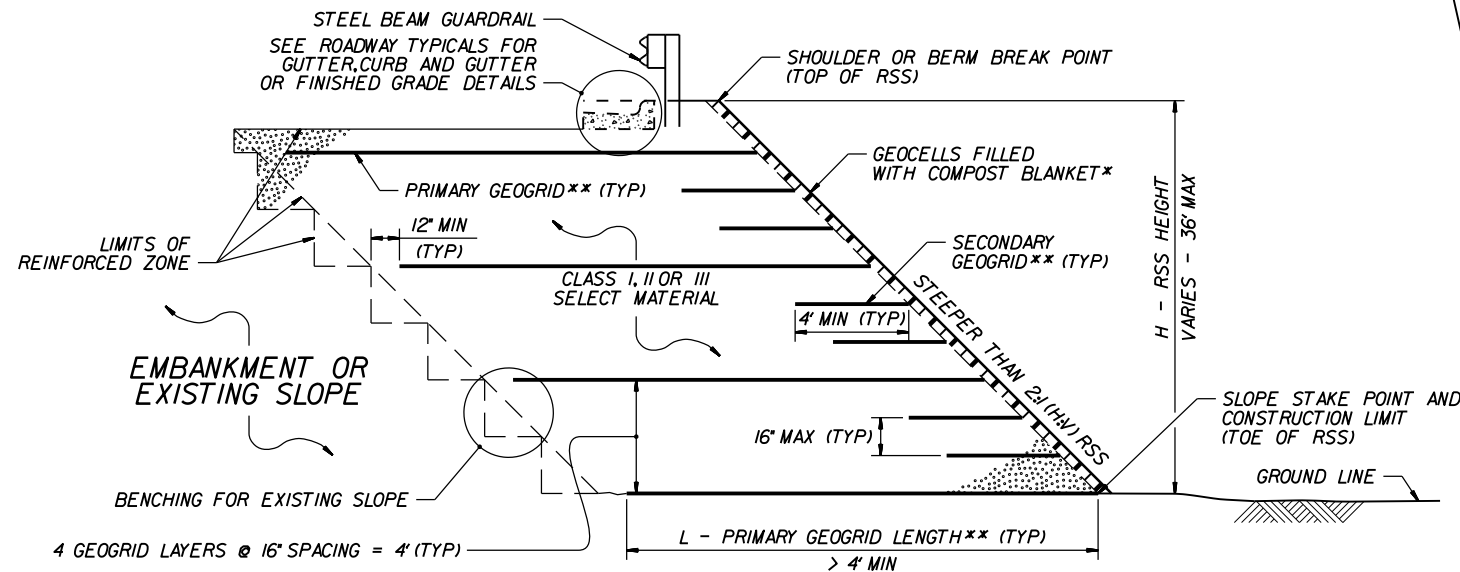
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



MATTING WITH SHOULDER AND SLOPE BORROW

*SEE NOTES 3 AND 11 ON SHEET 2.

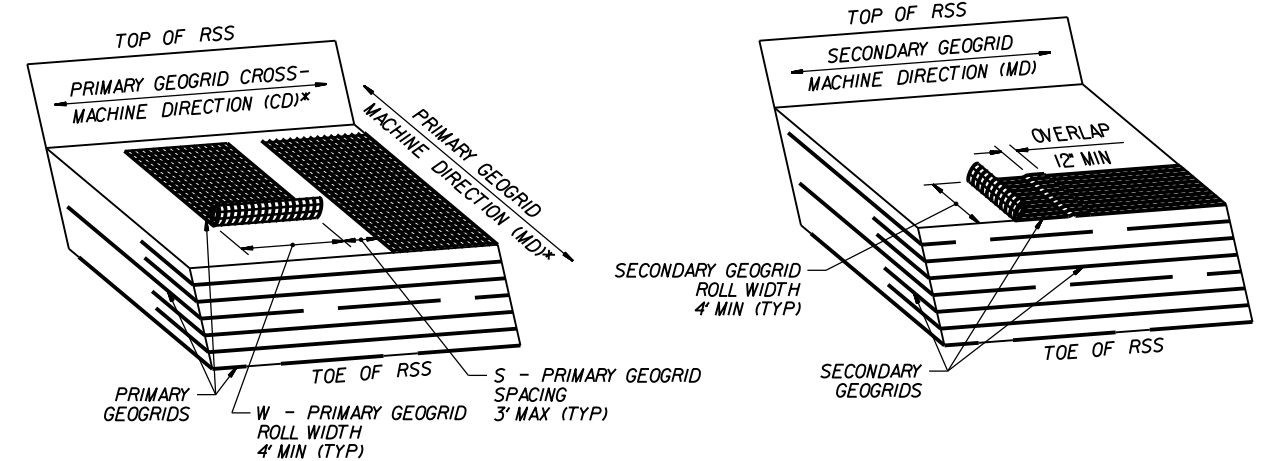


GEOCELLS WITH COMPOST BLANKET

*SEE NOTES 3 AND 11 ON SHEET 2.

STANDARD REINFORCED SOIL SLOPE (RSS)

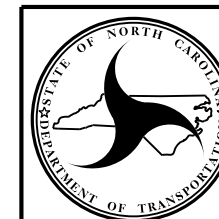
**SEE TABLES ON SHEET 2 AND GEOGRID PLACEMENT DETAILS.



GEOGRID PLACEMENT DETAILS

$$(\% \text{ COVERAGE}) = \frac{W}{W+S} \times 100 \geq 75\%$$

*SEE NOTES 8 AND 9 ON SHEET 2.




NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1802.02

STANDARD REINFORCED SOIL SLOPE (RSS) WITH LOW GROUNDWATER SHEET 1 OF 2

GEOGRID TYPE, DIRECTION	H (FT)	0 - < 12		12 - 24		> 24 - 36	
	SELECT MATERIAL CLASS	I	II OR III	I	II OR III	I	II OR III
PRIMARY GEOGRID, MD (SUBSTITUTE SECONDARY GEOGRID FOR PRIMARY GEOGRID FOR 2:1 (HV) OR FLATTER RSS)	1:1 TO < 1.5:1 (HV) RSS	900	500	1200	900	1800	1200
	1.5:1 TO 1.75:1 (HV) RSS	500	500	900	500	1400	1000
	> 1.75:1 TO < 2:1 (HV) RSS	500	500	600	500	1000	800
SECONDARY GEOGRID, CD	1:1 (HV) OR FLATTER RSS	185					

 <p>GEOTECHNICAL ENGINEER</p>	<p>ENGINEER</p>
<p>SIGNATURE _____ DATE _____</p>	<p>SIGNATURE _____ DATE _____</p>
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	

LTDS – MINIMUM REQUIRED LONG-TERM DESIGN STRENGTH (LB/FT)

(LTDS IS BASED ON 100% COVERAGE FOR PRIMARY GEOGRID.
SEE NOTE 9 FOR LESS THAN 100% COVERAGE.)

NOTES:

- SEE EROSION CONTROL AND ROADWAY PLANS AND SUMMARY SHEETS FOR REINFORCED SOIL SLOPE (RSS) AND SLOPE EROSION CONTROL LOCATIONS.
- FOR STANDARD REINFORCED SOIL SLOPES, SEE REINFORCED SOIL SLOPES PROVISION. FOR STEEL BEAM GUARDRAIL, SEE SECTION 862 OF THE STANDARD SPECIFICATIONS.
- FOR SHOULDER AND SLOPE BORROW, SEE ARTICLE 1019-2 OF THE STANDARD SPECIFICATIONS. FOR GEOCELLS, SEE CELLULAR CONFINEMENT SYSTEMS PROVISION. FOR COIR FIBER MAT, MATTING FOR EROSION CONTROL AND COMPOST BLANKET, SEE EROSION CONTROL PROVISIONS, SECTION 1631 OF THE STANDARD SPECIFICATIONS AND ROADWAY STANDARD DRAWING NO. 1633.01.
- STANDARD RSS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ PCF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ PSF
- DO NOT USE STANDARD RSS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR DEPTH TO GROUNDWATER IS LESS THAN 7 FT.
- DO NOT USE STANDARD RSS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW RSS.
- GEOGRIDS ARE TYPICALLY APPROVED FOR ULTIMATE TENSILE STRENGTHS IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) OR LONG-TERM DESIGN STRENGTHS FOR A 75-YEAR DESIGN LIFE IN THE MD BASED ON MATERIAL TYPE. THE LIST OF APPROVED GEOGRIDS WITH DESIGN STRENGTHS IS AVAILABLE FROM:
connect.ncdot.gov/resources/Materials/Pages/Materials-Manual-by-Material.aspx
DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SELECT MATERIAL AS FOLLOWS:

MATERIAL TYPE	SELECT MATERIAL
BORROW	CLASS I SELECT MATERIAL
FINE AGGREGATE	CLASS II OR III SELECT MATERIAL

IF THE WEBSITE DOES NOT LIST A LONG-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID IN THE MD, DO NOT USE THE GEOGRID FOR PRIMARY GEOGRID. IF THE WEBSITE DOES NOT LIST A LONG-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID IN THE CD, USE A LONG-TERM DESIGN STRENGTH EQUAL TO THE ULTIMATE TENSILE STRENGTH DIVIDED BY 7 FOR THE SECONDARY GEOGRID.

- DO NOT OVERLAP PRIMARY GEOGRIDS IN THE MD SO OVERLAPS ARE PARALLEL TO THE TOE OF RSS. POLYOLEFIN (e.g., HDPE OR PP) GEOGRIDS MAY BE SPLICED ONCE PER PRIMARY GEOGRID LENGTH IN ACCORDANCE WITH THE GEOGRID MANUFACTURER'S INSTRUCTIONS. USE POLYOLEFIN GEOGRID PIECES AT LEAST 4' LONG. DO NOT SPLICE POLYESTER TYPE (PET) GEOGRIDS.
- FOR PRIMARY GEOGRIDS WITH 100% COVERAGE, PLACE PRIMARY GEOGRIDS SO GEOGRIDS ARE ADJACENT TO EACH OTHER IN THE CD. FOR PRIMARY GEOGRIDS WITH 75% TO LESS THAN 100% COVERAGE,

$$\text{MINIMUM REQUIRED LONG-TERM DESIGN STRENGTH} = \text{LTDS BASED ON 100\% COVERAGE} \times (W + S) / W$$

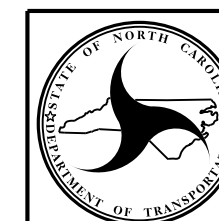
SEE TABLE FOR LTDS BASED ON 100% COVERAGE AND GEOGRID PLACEMENT DETAILS FOR PRIMARY GEOGRID ROLL WIDTH (W) AND SPACING (S). FOR PRIMARY GEOGRIDS WITH LESS THAN 100% COVERAGE, STAGGER PRIMARY GEOGRIDS SO GEOGRIDS ARE CENTERED OVER GAPS IN THE PRIMARY GEOGRID LAYER BELOW. DO NOT USE LESS THAN 75% COVERAGE FOR PRIMARY GEOGRIDS.
- DO NOT PLACE ANY GEOGRIDS UNTIL EXCAVATION DIMENSIONS AND IN-SITU MATERIAL ARE APPROVED.
- FOR SLOPE EROSION CONTROL, USE GEOCELLS OR MATTING ON SLOPE FACES OF RSS AS FOLLOWS:

RSS ANGLE	SLOPE EROSION CONTROL
1:1 TO < 1.5:1 (HV)	GEOCELLS WITH COMPOST BLANKET
1.5:1 TO < 2:1 (HV)	GEOCELLS WITH COMPOST BLANKET OR COIR FIBER MAT WITH SHOULDER AND SLOPE BORROW*
2:1 (HV) OR FLATTER	MATTING FOR EROSION CONTROL WITH SHOULDER AND SLOPE BORROW

*SEE REINFORCED SOIL SLOPES AND SLOPE EROSION CONTROL SUMMARY TABLE IN THE ROADWAY SUMMARY SHEETS FOR SLOPE EROSION CONTROL ON SLOPE FACES OF RSS 1.5:1 (HV) TO STEEPER THAN 2:1.

H (FT)	0 - < 12		12 - 24		> 24 - 36	
SELECT MATERIAL CLASS	I	II OR III	I	II OR III	I	II OR III
1:1 TO < 1.5:1 (HV) RSS	1.00	1.00	0.90	0.85	0.85	0.80
1.5:1 TO 1.75:1 (HV) RSS	0.90	0.80	0.75	0.70	0.75	0.70
> 1.75:1 TO < 2:1 (HV) RSS	0.75	0.70	0.65	0.60	0.65	0.60

L/H RATIO (L > 4' MIN)
(IF $L \leq 4'$, USE SECONDARY GEOGRID
INSTEAD OF PRIMARY GEOGRID.)



NORTH CAROLINA
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**GEOTECHNICAL
ENGINEERING UNIT**

STANDARD DETAIL NO. 1802.02

STANDARD
REINFORCED SOIL SLOPE (RSS)
WITH LOW GROUNDWATER
SHEET 2 OF 2