STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

April 5, 2019

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTN: Mr. Steve Kichefski
NCDOT Coordinator

Subject: **Request for Modification and Extension to the Section 404 Individual Permit and Section 401 Water Quality Certification** for the proposed US 221 Widening from US 421 to US 221 Business/NC 88 in Jefferson in Watauga and Ashe Counties. Federal Aid Project No. STP-0221(13), Division 11, TIP No. R-2915. Debit $570 from WBS 34518.1.FR6.

Reference: USACE Individual Permit Action ID SAW-2012-00882, January 7, 2015.
USACE Individual Permit Modification ID SAW-2012-00882, August 31, 2016
USACE Individual Permit Modification ID SAW-2012-00882, December 7, 2017
Request for 404 Modification, April 7, 2017
Request for 404 Modification, June 15, 2018
NCDWR Project No. 20140762, Certification No. 4001, September 8, 2014.
NCDWR Project No. 20140762_v2, Certification No. 4001, August 23, 2016
NCDWR Project No. 20140762_v3, Certification No. 4001, April 28, 2017
NCDWR Project No. 20140762, e-mail authorization, November 27, 2017
NCDWR Project No. 20140762_v4, Certification No. 4001, June 26, 2018

Dear Sir:

The purpose of this letter is to request a modification and extension of the United Stated Army Corps of Engineers (USACE) Section 404 Individual Permit and North Carolina Division of Water Resources Section 401 Certification for the above referenced project. The original 2014 permit application and subsequent permit modifications presented final impacts for R-2915A, R-2915B, R-2915C, and R-2915D. This modification presents the final impacts for R-2915E.

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Please see the enclosed Division of Mitigation Services (DMS) mitigation acceptance letter (March 29, 2019), permit drawing review minutes (4B and 4C), stormwater management plan (SMP), permit drawings, and design plans for Section E.

Summary of R-2915 Jurisdictional Impacts:
Impacts for the overall (Sections A-E) project will include 3.05 acres of permanent wetland impacts, 0.15 acre of temporary wetland impacts, and 0.05 acre of hand clearing in wetlands. There will also be 9,137 linear feet of permanent stream impacts (7,485 linear feet of fill and 1,652 linear feet of bank stabilization), and 0.41 acre of temporary stream impacts (see Tables 2 and 3 for a breakdown of impacts by Section). A total of the individual water resources impacted by each section can be found in Table 1.

Table 1 – Summary of Water Resources Impacted

Section	Design Stage	Total # Wetlands Impacted	Total # Streams Impacted
R-2915A	Final	6	12
R-2915B	Final	6	7
R-2915C	Final	6	21
R-2915D	Final	20	24
R-2915E	Final	16	24
Total		**52***	**91***

* S1 included in both Section A and B totals, S56 included in both Section C and D totals, S128 included in both D and E totals, W96 and W98 included in both D and E totals

Table 2 – Summary of Wetland Impacts for R-2915

Section	Design Stage	Wetland Impact Type	Wetland Impact Area (ac)	Wetland Impacts Requiring Mitigation (ac)*
R-2915A	Final	Perm. Wetland Fill	0.48	0.57
		Excavation in Wetlands	0.01	
		Mechanized Clearing in Wetlands	0.08	
		Hand Clearing in Wetlands	0.05†	
R-2915B	Final	Perm. Wetland Fill	0.32	0.43
		Excavation in Wetlands	0.04	
		Mechanized Clearing in Wetlands	0.06	
		Temporary Fill in Wetlands	0.15	
R-2915C	Final	Perm. Wetland Fill	0.22	0.27
		Excavation in Wetlands	--	
		Mechanized Clearing in Wetlands	0.05	
R-2915D	Final	Perm. Wetland Fill	1.01	1.32
		Excavation in Wetlands	0.01	
		Mechanized Clearing in Wetlands	0.30	
R-2915E	Final	Perm. Wetland Fill	0.28	0.46
		Excavation in Wetlands	0.05	
		Mechanized Clearing in Wetlands	0.13	
		Temporary Fill in Wetlands	<0.01	
			Total	**3.05**

†Additionally, 0.01 acre of temporary fill in wetlands will occur in the hand clearing areas for erosion control measures
* Values are based on rounding, due to calculating totals with actual numbers to the thousandths

Table 3 – Summary of Stream Impacts for R-2915

Section	Design Stage	Stream Impact Type	Impact Length (lf)	Temporary Impacts (ac)	Stream Impacts Requiring Mitigation (lf)
R-2915A	Final	Permanent Fill	1,119	--	1,119
		Bank Stabilization	402	--	
		Temporary	--	0.05	
R-2915B	Final	Permanent Fill	493	--	493
		Bank Stabilization	431	--	
		Temporary	--	0.15	
R-2915C	Final	Permanent Fill	2,339	--	2,339
		Bank Stabilization	234	--	
		Temporary	--	0.09	
R-2915D	Final	Permanent Fill	2,627	--	2,627
		Bank Stabilization	126	--	
		Temporary	--	0.05	
R-2915E	Final	Permanent Fill	907	--	907*
		Bank Stabilization	459	--	
		Temporary	--	0.07	
		Total	**9,137**	**0.41**	**7,485**

* See Table 6

Summary of Utility Impacts:
There will be no additional impacts associated with utility relocations in the E Section of this project.

Summary of Mitigation:
Mitigation for impacts resulting from Section E will be provided by DMS. See tables 5 and 6 for a summary of the mitigable impacts resulting from this Section. Total mitigable impacts for Section E include 0.46 acre of wetlands and 907 linear feet of stream.

NEPA DOCUMENT STATUS

An Environmental Assessment (EA) was completed for this project in October 2012. A Finding of No Significant Impact (FONSI) was completed in May 2013. In addition, a FONSI Addendum was completed in December 2013. Additional copies will be provided upon request.

In compliance with the NEPA/404 Merger Process, Concurrence Point 4B was reached for R-2915E on June 7, 2017. Concurrence Point 4C was reached March 21, 2018.

PROJECT SCHEDULE

The project has been permitted in phases due to project size, funding and TIP schedule (see Table 4). Sections A, B, and D were permitted together in 2014/2015. Section C of this project was permitted in 2016. Section E of this project is scheduled to let on September 17, 2019 and is covered in this phased permit modification request.

Table 4 – Project phasing for US 221 Widening (R-2915)

Section	Approximate Section Limits	Approximate Length	Construction Letting
R-2915A	US 421 in Watauga County to SR 1003 (Idlewild Road)	2.8 miles	Sept 2015
R-2915B	SR 1003 (Idlewild Road) to north of the South Fork New River	1.77 miles	Sept 2015
R-2915C	North of the South Fork New River to south of NC 194	3.98 miles	Nov 2016
R-2915D	South of NC 194 to US 211 Bypass	4.3 miles	Feb 2015
R-2915E	US 221 Bypass to US 221 Business/NC 88 in Jefferson	3.3 miles	Sept 2019
	TOTAL	**16.1 miles**	

IMPACTS TO WATERS OF THE U.S.

Tables 5 and 6 summarize the impacts to jurisdictional water resources for the final design of R-2915E. Site numbers correspond with the permit (hydraulic) drawings included in this application. The stream and wetland numbers correspond to the NRTR. A brief description of each impact site will follow the tables. The total stream impacts for R-2915E have increased since the preliminary impacts presented in 2014 as a few streams have been delineated since then, the slopes have changed in a few locations, bank stabilization impacts have been added, and drainage design at the time was very preliminary.

Table 5 – R-2915E Wetland Impacts*

Site	Wetland Number	Wetland Size (ac)	Permanent Fill in Wetlands (ac)	Temporary Fill in Wetlands (ac)	Excavation (ac)	Mechanized Clearing (ac)	Impacts Requiring Mitigation (ac)
1	W96	0.30	--	--	--	<0.01	<0.01
2B	W98	0.07	0.02	--	--	<0.01	0.03
3	W100a	0.39	<0.01	--	--	0.03	0.03
4A	W101**	<0.01	<0.01	--	--	--	<0.01
4B	W102	0.27	<0.01	--	--	0.03	0.03
5	W102	0.27	<0.01	--	--	0.01	0.01
6A	W104	0.17	0.04	--	--	0.02	0.07
8B	W110	0.71	--	<0.01	--	--	0
9A	W109**	0.09	0.09	--	--	--	0.09
10	W112	0.46	<0.01	--	--	<0.01	<0.01
13B	W113**	0.01	0.01	--	--	--	0.01
15A	W115	0.03	0.01	--	--	<0.01	0.02
15B	W117	0.22	--	--	--	0.01	0.01
16	W116**	0.03	0.03	--	--	--	0.03
21	W121	0.06	0.03	--	0.01	<0.01	0.04
26A	W123**	0.05	0.01	--	0.04	--	0.05
31	W125**	0.02	0.02	--	--	--	0.02
	Total Impacts		**0.28**	**<0.01**	**0.05**	**0.13**	**0.46*** **

* All wetlands impacted are riparian
** Total take of wetland
*** Values are based on rounding, due to calculating totals with actual numbers to the thousandths

Table 6 – R-2915E Stream Impacts

Site	Stream Name & Intermittent (I) or Perennial (P) [1]	Stream Number	Impact Type	Impact Length (linear feet)	Temporary Impacts (acres) (feet)	Mitigation Requirement (linear feet)
1	N/A (wetland)	--	--	--	--	--
2A	UT to Beaver Creek (P)	S128	Perm. Fill	--	--	--
			Bank Stabilization	14	--	--
			Temp Fill	--	<0.01 (17')	--
2B	UT to Beaver Creek (P)	S128	Perm. Fill	57	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (21')	--
3	N/A (wetland)	--	--	--	--	--
4A	N/A (wetland)	--	--	--	--	--
4B	UT to Cole Branch (I)	S132	Perm. Fill	--	--	--
			Bank Stabilization	11	--	--
			Temp Fill	--	<0.01 (10')	--
5	N/A (wetland)	--	--	--	--	--
6A	UT to Cole Branch (P)	S134	Perm. Fill	52	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (10')	--
6B	UT to Cole Branch (P)	S134	Perm. Fill	--	--	--
			Bank Stabilization	27	--	--
			Temp. Fill	--	<0.01 (10')	--
7	Little Buffalo Creek (P)	S135	Perm. Fill	--	--	--
			Bank Stabilization	--	--	--
			Temp. Fill	--	<0.01 (24')	--
8A	Little Buffalo Creek (P)	S135	Perm. Fill	--	--	--
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (32')	--
8B	Little Buffalo Creek (P)	S135	Perm. Fill	--	--	--
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (20')	--
9A	UT to Little Buffalo Creek (I)	S136	Perm. Fill	33	--	USACE
			Bank Stabilization	10	--	--
			Temp Fill	--	<0.01 (7')	--
9B	Little Buffalo Creek (P)	S135	Perm. Fill	--	--	--
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (19')	--
10	N/A (wetland)	--	--	--	--	--
11A	Little Buffalo Creek (P)	S135	Perm. Fill	--	--	--
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (22')	--
11B	UT to Little Buffalo Creek (P)	S139	Perm. Fill	--	--	--
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (10')	--

Table 6 Continued – R-2915E Stream Impacts

Site	Stream Name & Intermittent (I) or Perennial (P) [1]	Stream Number	Impact Type	Impact Length (linear feet)	Temporary Impacts (acres) (feet)	Mitigation Requirement (linear feet)
11C	UT to Little Buffalo Creek (P)	S140	Perm. Fill	--	--	--
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (11')	--
11D	Little Buffalo Creek (P)	S135	Perm. Fill	27	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (10')	--
12	Little Buffalo Creek (P)	S135	Perm. Fill	--	--	--
			Bank Stabilization	17	--	--
			Temp Fill	--	<0.01 (10')	--
13A	UT to Little Buffalo Creek (P)	S141	Perm. Fill	31	--	USACE
			Bank Stabilization	11	--	--
			Temp Fill	--	<0.01 (10')	--
13B	UT to Little Buffalo Creek (P)	S141	Perm. Fill	60	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	--	--
13C	UT to Little Buffalo Creek (I)	SA	Perm. Fill	25	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (23')	--
14A	UT to Little Buffalo Creek (P)	S142	Perm. Fill	23	--	USACE
			Bank Stabilization	23	--	--
			Temp Fill	--	<0.01 (10')	--
14B	UT to Little Buffalo Creek (P)	S142	Perm. Fill	63	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	--	--
15A	UT to Little Buffalo Creek (P)	S143	Perm. Fill	31	--	USACE
			Bank Stabilization	15	--	--
			Temp Fill	--	<0.01 (10')	--
15B	UT to Little Buffalo Creek (P)	S143	Perm. Fill	--	--	--
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (23')	--
16	N/A (wetland)	--	--	--	--	--
17A	UT to Little Buffalo Creek (P)	S144	Perm. Fill	115	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	--	--
17B	UT to Little Buffalo Creek (I)	SB	Perm. Fill	146	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	--	--
18	UT to Little Buffalo Creek (P)	S145	Perm. Fill	39	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (12')	--
19	UT to Naked Creek (P)	S147	Perm. Fill	22	--	USACE
			Bank Stabilization	8	--	--
			Temp Fill	--	<0.01 (10')	--

Table 6 Continued – R-2915E Stream Impacts

Site	Stream Name & Intermittent (I) or Perennial (P) [1]	Stream Number	Impact Type	Impact Length (linear feet)	Temporary Impacts (acres) (feet)	Mitigation Requirement (linear feet)
20	UT to Naked Creek (P)	S146	Perm. Fill	--	--	--
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (25')	--
21	N/A (wetland)	--	--	--	--	--
22A	UT to Naked Creek (P)	S148	Perm. Fill	--	--	--
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (22')	--
22B	UT to Naked Creek (P)	S148	Perm. Fill	61	--	USACE
			Bank Stabilization	31	--	--
			Temp Fill	--	<0.01 (10')	--
23	UT to Naked Creek (P)	S155	Perm. Fill	55	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	--	--
24A	UT to Naked Creek (P)	S156	Perm. Fill	30	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (22')	--
24B	UT to Naked Creek (P)	S156	Perm. Fill	--	--	--
			Bank Stabilization	18	--	--
			Temp Fill	--	--	--
24C	Naked Creek (P)	S151	Perm. Fill	--	--	--
			Bank Stabilization	20	--	--
			Temp Fill	--	<0.01 (20')	--
25A	UT to Naked Creek (P)	S157	Perm. Fill	13	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (12')	--
25B	Naked Creek (P)	S151	Perm. Fill	--	--	--
			Bank Stabilization	17	--	--
			Temp Fill	--	<0.01 (20')	--
26A	UT to Naked Creek (P)	S158	Perm. Fill	19	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (8')	--
26B	UT to Naked Creek (P)	S158	Perm. Fill	--	--	--
			Bank Stabilization	8	--	--
			Temp Fill	--	--	--
26C	Naked Creek (P)	S151	Perm. Fill	--	--	--
			Bank Stabilization	32	--	--
			Temp Fill	--	<0.01 (20')	--
27A	UT to Naked Creek (P)	S159	Perm. Fill	--	--	--
			Bank Stabilization	15	--	--
			Temp Fill	--	--	--
27B	Naked Creek (P)	S151	Perm. Fill	--	--	--
			Bank Stabilization	18	--	--
			Temp Fill	--	<0.01 (30')	--
28A	Naked Creek (P)	S151	Perm. Fill	--	--	--
			Bank Stabilization	88	--	--
			Temp Fill	--	<0.01 (10')	--

Table 6 Continued – R-2915E Stream Impacts

Site	Stream Name & Intermittent (I) or Perennial (P) [1]	Stream Number	Impact Type	Impact Length (linear feet)	Temporary Impacts (acres) (feet)	Mitigation Requirement (linear feet)
28B	Naked Creek (P)	S151	Perm. Fill	--	--	--
			Bank Stabilization	59	--	--
			Temp Fill	--	<0.01 (10')	--
29	UT to Naked Creek (P)	S163	Perm. Fill	5	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	<0.01 (15')	--
30	Naked Creek (P)	S151	Perm. Fill	--	--	--
			Bank Stabilization	17	--	--
			Temp Fill	--	<0.01 (21')	--
31	N/A (wetland)	--	--	--	--	--
Total Temporary Impacts:				**--**	**0.07[2] (576')**	**--**
Total Perm. Impacts (Perm. Fill + Bank Stabilization):				**1,366**	**--**	**--**
Permanent Impacts Requiring DWR Mitigation:				**0**	**--**	**--**
Permanent Impacts Requiring USACE Mitigation:				**907**	**--**	**--**
Total Impacts Requiring Mitigation:				**907**	**--**	†

1 – Naked Creek and its UTs are Class C+ waters. All other streams are Class C; Tr+ waters.
2 – Values are based on rounding
† – Final mitigation requirement will be up to the USACE and DWR

Permit Site 1: There will be <0.01 acre of mechanized clearing in wetland W96 at the outlet of a new lateral ditch that will drain into the wetland.

Permit Site 2A: The existing 24" corrugated metal pipe (CMP) will be replaced and extended with a 42" reinforced concrete pipe (RCP). (Previously, R-2915D extended the 24" CMP, but the new roadway slopes for R-2915E necessitate a longer pipe.) There will be 14 linear feet (lf) of stream bank stabilization to stream S128 at the outlet of the new 42" RCP. There will also be <0.01 acre (17 lf) of temporary stream impacts to S128.

Permit Site 2B: The replacement and extension of the existing pipe in this location will result in 57 lf of permanent impacts and <0.01 acre (21 lf) of temporary stream impacts to stream S128. The new roadway slopes and ditch tie-ins at this location will also result in 0.02 acre of permanent wetland fill and <0.01 acre of mechanized clearing in wetland W98.

Permit Site 3: A ditch tie-in and pipe extension will result in <0.01 acre of permanent fill and 0.03 acre of mechanized clearing in wetland W100a.

Permit Site 4A: The existing 24" CMP will be extended to the west and lined to accommodate the new roadway slopes, which results in <0.01 acre of permanent fill (total take) in wetland W101.

Permit Site 4B: There will be 11 lf of stream bank stabilization and <0.01 acre (10 lf) of temporary stream impacts to stream S132 at the outlet of the 30" RCP. In addition, there will be <0.01 ac of permanent wetland fill and 0.03 acre of mechanized clearing in wetland W102 due to the new roadway slopes.

Permit Site 5: Due to the new roadway slopes and a ditch tie-in, there will be <0.01 acre of permanent wetland fill and 0.01 acre of mechanized clearing in wetland W102.

Permit Site 6A: The existing 42" CMP will be replaced and extended with a new 42" RCP (not buried) resulting in 52 lf of permanent stream impacts and <0.01 acre (10 lf) of temporary stream impacts to stream S134. There will also be 0.04 acre of permanent wetland fill and 0.02 acre of mechanized clearing in wetland W104 from the new roadway slopes.

Permit Site 6B: There will be 27 lf of stream bank stabilization and <0.01 acre (10 lf) of temporary stream impacts to stream S134 due to the ditch tie-in and the replacement of the 42" pipe (not buried).

Permit Site 7: There will be <0.01 acre (24 lf) of temporary impacts to stream S135 (Little Buffalo Creek) from a ditch tie-in.

Permit Site 8A: There will be <0.01 acre (32 lf) of temporary impacts to stream S135 (Little Buffalo Creek) from a ditch tie-in.

Permit Site 8B: There will be <0.01 acre (20 lf) of temporary impacts to stream S135 (Little Buffalo Creek) and <0.01 acre of temporary wetland impacts in wetland W110 due to plugging and filling the nearby 24" CMP.

Permit Site 9A: The new roadway slopes will necessitate rerouting the flow from the spring feeding stream S136 into a 15" and then 30" RCP, resulting in 33 linear feet of permanent stream impacts, <0.01 acre (7 lf) of temporary stream impacts, and 10 linear feet of stream bank stabilization. The new slopes will also result in 0.09 acre of permanent fill in wetland W109, resulting in a total take of this wetland.

Permit Site 9B: There will be <0.01 acre (19 lf) of temporary stream impacts to S135 (Little Buffalo Creek) associated with the bank stabilization on S136 coming into S135 at this location.

Permit Site 10: The installation and outlet protection of a new 15" RCP drainage pipe at this location will result in <0.01 acre of permanent wetland fill and <0.01 acre of mechanized clearing in wetland W112.

Permit Site 11A: There will be <0.01 acre (22 lf) of temporary impacts to S135 (Little Buffalo Creek) associated with lining the existing 66" CMP.

Permit Site 11B: There will be <0.01 acre (10 lf) of temporary impacts to stream S139 associated with lining the existing 66" CMP carrying Little Buffalo Creek.

Permit Site 11C: There will be <0.01 acre (11 lf) of temporary impacts to stream S140 associated with lining the existing 66" CMP carrying Little Buffalo Creek

Permit Site 11D: There will be 27 lf of permanent stream impacts to S135 (Little Buffalo Creek) associated with stabilizing the outlet of the 66" CMP with riprap (which will be embedded on the stream bed). There will also be <0.01 acre (10 lf) of temporary stream impacts associated with this activity and the lining of the existing 66" CMP.

Permit Site 12: There will be 17 linear feet of stream bank stabilization and <0.01 acre (10 lf) of temporary stream impacts to S135 (Little Buffalo Creek) associated with the lining of the existing 66" CMP in this location.

Permit Site 13A: The existing 24" CMP carrying stream S141 will be replaced and extended with a 30" RCP (not buried) in order to accommodate the new roadway slopes. This will result in 31 lf of permanent fill, 11 lf of stream bank stabilization and <0.01 acre (10 lf) of temporary stream impacts to S141 on the west side of the road.

Permit Site 13B: The replacement and extension of the 24" CMP carrying stream S141 with a 30" RCP (no buried), including the embedded riprap in the streambed between this extension and the existing 24" CMP to the east, will result in 60 lf of permanent stream impacts to S141 on the east side of the road. The new roadway slopes in this location will also result on 0.01 acre of permanent fill in wetland W113, resulting in a total take of this wetland.

Permit Site 13C: The new roadway slopes will result in 25 lf of permanent stream impacts and <0.01 acre (23 lf) of temporary stream impacts to stream SA. A spring box will be used to capture flow from SA.

Permit Site 14A: The existing 42" CMP carrying stream S142 will be replaced and extended with a 60" corrugated steel pipe (CSP) and 60" RCP (not buried) to accommodate the wider roadway. This will result in 23 lf of permanent stream impacts, 23 lf of stream bank stabilization, and <0.01 acre (10 lf) of temporary impacts to S142 on the west side of the road.

Permit Site 14B: The replacement and extension of the 42" CMP carrying stream S142 described in site 14A above, including the embedded riprap in the streambed between this extension and the existing CMP to the east, will result in 63 lf of permanent stream impacts to S142 on the east side of the road.

Permit Site 15A: The extension and lining of the existing 36" CMP carrying stream S143 to accommodate the wider roadway will result in 31 lf of permanent stream impacts, 15 lf of stream bank stabilization, and <0.01 acre (10 lf) of temporary impacts to S143 on the west side of the road. The wider roadway slopes will also result in 0.01 acre of permanent wetland fill and <0.01 acre of mechanized clearing in wetland W115.

Permit Site 15B: The lining of the existing 36" CMP will result in <0.01 acre (23 lf) of temporary stream impacts to stream S143 on the east side of the road and 0.01 acre of mechanized clearing in wetland W117.

Permit Site 16: Fill from the widened roadway will result in 0.03 acre of permanent fill in wetland W116, which is a total take of this wetland.

Permit Site 17A: The existing 42" CMP carrying stream S144 will be replaced and extended with a 42" RCP. The stream at the outlet of this pipe will be stabilized with riprap until it flows into the existing 36" pipe just downstream. This will result in 115 lf of permanent stream impacts to S144.

Permit Site 17B: Fill slopes from the widened roadway will result in 146 lf of permanent impacts to stream SB. A ditch will be cut into the new roadway slope to capture roadside flow previously captured by SB.

Permit Site 18: The existing 24" CMP carrying stream S145 will be replaced with a new 24" RCP. There will be a short section of channel realignment to tie in the outlet of the new pipe with the existing channel. This will result in 39 lf of permanent stream impacts and <0.01 acre (12 lf) of temporary stream impacts to S145.

Permit Site 19: The existing pipes carrying stream S147 will be replaced and extended with a 15" and 24" RCP. This will result in 22 lf of permanent impacts, 8 lf of stream bank stabilization, and <0.01 acre (10 lf) of temporary impacts to stream S147.

Permit Site 20: There will be <0.01 acre (25 lf) of temporary stream impacts to stream S146 where a new ditch will tie into the creek.

Permit Site 21: New roadway slopes from the widened roadway and a lateral base ditch in this location will result in 0.03 acre of permanent fill, 0.01 acre of excavation, and <0.01 acre of mechanized clearing in wetland W121.

Permit Site 22A: The existing 48" CMP carrying stream S148 will be extended to the west with a 66" RCP (not buried) and lined to accommodate the wider roadway. This will result in <0.01 acre (22 lf) of temporary stream impacts to S148 on the east side of the road.

Permit Site 22B: The existing 48" CMP carrying stream S148 will be extended to the west with a 66" RCP (not buried) and lined to accommodate the wider roadway. This will result in 61 lf of permanent impacts, 31 lf of stream bank stabilization, and <0.01 acre (10 lf) of temporary stream impacts to S148 on the west side of the road.

Permit Site 23: The new roadway slopes will result in 55 lf of permanent stream impacts to stream S155.

Permit Site 24A: The existing 42" CMP carrying stream S156 will be replaced with a new 60" RCP (not buried). In addition, two new lateral base ditches will tie into the banks of the stream near the inlet of the new pipe and the stream will be slightly realigned to route it into the new adjacent RCP. This will result in 30 lf of permanent impacts and <0.01 acre (22 lf) of temporary stream impacts to S156 on the east side of the road.

Permit Site 24B: The existing 42" CMP carrying stream S156 will be replaced with a new 60" RCP (not buried). There will be 18 lf of stream bank stabilization to S156 at the pipe outlet.

Permit Site 24C: There will be 20 lf of stream bank stabilization and <0.01 acre (20 lf) of temporary impacts to stream S151 (Naked Creek) at the confluence of this stream and S156.

Permit Site 25A: The existing 24" CMP carrying stream S157 will be lined and a new ditch will tie in to the stream at the pipe inlet. This will result in 13 lf of permanent impacts and <0.01 acre (12 lf) of temporary impacts to stream S157.

Permit Site 25B: There will be 17 lf of stream bank stabilization and <0.01 acre (20 lf) of temporary stream impacts to stream S151 (Naked Creek) at the outlet of the pipe carrying S157.

Permit Site 26A: The existing 48" CMP carrying stream S158 will be replaced in place with a new 60" RCP. There will also be two new ditches that will tie into S158 at the inlet of this pipe. This will result in 19 lf of permanent impacts and <0.01 acre (8 lf) of temporary impacts to S158. In addition, the wider roadway slopes and new ditch in this location will result in 0.01 acre of permanent fill and 0.04 acre of excavation in wetland W123 resulting in a total take of this wetland.

Permit Site 26B: There will be 8 lf of stream bank stabilization to stream S158 at the outlet of the new 60" RCP.

Permit Site 26C: There will be 32 lf of stream bank stabilization and <0.01 acre (20 lf) of temporary impacts to stream S151 (Naked Creek) at the confluence of this stream and S158.

Permit Site 27A: The existing 24" CMP carrying stream S159 will be replaced in place with a new 30" RCP. There will be 15 lf of stream bank stabilization to S159 at the outlet of this pipe.

Permit Site 27B: There will be 18 lf of stream bank stabilization and <0.01 acre (30 lf) of temporary impacts to stream S151 (Naked Creek) at the confluence of this stream and S159.

Permit Site 28A: Two additional 7'x4' cells will be added to the existing reinforced concrete box culvert (RCBC) carrying stream S151 (Naked Creek) to provide additional capacity. Additionally, a new base ditch will tie into S151 on the outlet end of the existing RCBC. This will result in 88 lf of stream bank stabilization and <0.01 acre (10 lf) of temporary impacts to S151 on the north side of the road.

Permit Site 28B: Two additional 7'x4' cells will be added to the existing reinforced concrete box culvert (RCBC) carrying stream S151 (Naked Creek) to provide additional capacity. Additionally, a small new ditch will tie into S151 on the inlet end of the existing RCBC. This will result in 59 lf of stream bank stabilization and <0.01 acre (10 lf) of temporary impacts to S151 on the south side of the road.

Permit Site 29: The existing 24" CMP carrying stream S163 will be replaced with a new 42" RCP (not buried). A small portion of the downstream section of existing CMP will be retained to avoid a Section 4(f) impact to the park property. This will result in 5 lf of permanent impacts and <0.01 acre (15 lf) of temporary impacts to stream S163.

Permit Site 30: There will be 17 lf of stream bank stabilization and <0.01 acre (21 lf) of temporary impacts to stream S151 (Naked Creek) at the outlet of a new 18" RCP.

Permit Site 31: Plugging and filling the existing 18" CMP that drains to wetland W125 will result in 0.02 acre of permanent fill impacts to this wetland, resulting in a total take.

FEDERALLY PROTECTED SPECIES

As of June 27, 2018, the USFWS lists eleven federally protected species for Watauga County and twelve federally protected species for Ashe County. The only change since the last permit modification is that the gray bat (*Myotis grisescens*) and rusty-patched bumble bee (*Bombus affinis*) were added to the list for both counties. The biological conclusion for the gray bat is No Effect (confirmed by the USFWS via email on November 15, 2018). No biological conclusion is required for the rusty-patched bumble bee as the USFWS assumes the state is unoccupied by this species.

MITIGATION OPTIONS

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and NEPA compliance stages; minimization measures were incorporated as part of the project design.

R-2915E Avoidance and Minimization:
NCDOT has avoided impacting many wetlands and streams and reduced impacts to wetlands and streams to the greatest extent practicable. Wetland impacts have been kept to a minimum by avoiding ditching and channelization through wetlands. In addition to all of the measures listed in the 2014 phased permit application, other specific examples of avoidance and minimization measures include:

- There is a proposed dry detention basin at station -L- 718+00 RT to help minimize the increase in water at the existing 48" CMP under Mt. Jefferson Road which later travels under the Walmart Supercenter.
- Efforts were made to minimize impacts to Naked Creek, specifically in the Town of Jefferson's park property.
- Where excavation is necessary, coir fiber matting and rip-rap were utilized for bank stabilization in an attempt to reduce sediment transport and streambank erosion.
- Measures have been taken, including reduction of pipe slopes and the use of drop structures (which are labeled on the plans) to lower velocities at jurisdictional features to non-erosive.

Compensation:
The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent practicable as described above. Tables 5 and 6 summarize the wetland and stream impacts for Section E of this project. Section E will permanently impact 0.46 acre of wetlands, 1,366 linear feet of streams (907 linear feet of permanent fill and 459 linear feet of bank stabilization), and temporarily impact <0.01 acre of wetlands and 0.07 acre of streams.

The DMS will provide compensatory mitigation for the impacts in all sections of this project. Table 7 summarizes the total mitigation needs for all sections as 3.05 acre of wetlands impacts and 7,485 linear feet of stream impacts.

Table 7 – Summary of Mitigation Requested from DMS

Section	Design Stage	Wetland Impacts Requiring Mitigation (ac)	Stream Impacts Requiring Mitigation (ac)
R-2915A	Final	0.57	1,119
R-2915B	Final	0.43	493
R-2915C	Final	0.27	2,339
R-2915D	Final	1.32	2,627
R-2915E	Final	0.46	907
Total		**3.05**	**7,485**

REGULATORY APPROVALS

Section 404: Application is hereby made for a modification and extension to the USACE Individual 404 Permit as required for the above-described activities in addition to the activities described in the modification requests sent April 7, 2017 and June 15, 2018 (identified in the reference list in this application).

Section 401: We are hereby requesting a modification and extension to the 401 Water Quality Certification from the N. C. Division of Water Resources for the above-described activities.

A copy of this application and distribution list will also be posted on the NCDOT website at: http://connect.ncdot.gov/resources/Environmental. If you have any questions or need additional information, please contact Erin Cheely at ekcheely@ncdot.gov or (919) 707-6108.

Sincerely,

Carla Dagnino

for Philip S. Harris III, P.E., C.P.M.
Environmental Analysis Unit Head

cc:
NCDOT Permit Application Standard Distribution List

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
TIM BAUMGARTNER
Director

NORTH CAROLINA
Environmental Quality

March 29, 2019

Mr. Philip S. Harris, III, P.E.
Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

R-2915E, US 221 from US 221 Bypass to US 221 Business / NC 88 in Jefferson, Ashe County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream and wetland mitigation for the subject project. Based on the information supplied by you on March 26, 2019, the impacts are located in CU 05050001 of the New River basin in the Northern Mountains (NM) Eco-Region, and are as follows:

New 05050001 NM	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	907.0	0	0	0.46	0	0	0	0

*Some of the stream and/or wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

DMS commits to implementing sufficient compensatory stream and wetland mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies in accordance with the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

If you have any questions or need additional information, please contact Beth Harmon at 919-707-8420.

Sincerely,

James B. Stanfill
DMS Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, NCDWR
File: R-2915E

Memorandum of Meeting

Date: June 7th, 2017

Place: NCDOT, Structures Conference Room

Team Members:
Felix Davila (FHWA) – Absent
Steve Kichefski (USEPA) - Phone
Marella Buncick (USFWS) – Phone
Marla Chambers (NCWRC) – Absent
Dr. Cynthia Van Der Wiele (USEPA)
April Norton (DWR) - Phone (for Dave Wanucha)

Others Present:
Bill Zerman, PE (NCDOT Hydraulics)
Jeff Meador, PE (RK&K)
Alexis Stys, EI (RK&K)
Mark Staley (NCDOT-REU) - Phone
Carla Dagnino (NCDOT-EAU)
Trent Beaver, PE (NCDOT – Division 11) - Phone
Joe Laws, PE (NCDOT – Division 11) - Phone

Subject:
NEPA\404 Merger Team - Concurrence Point 4B Meeting
R-2915E – US 221 from US 221 Bypass to US 221 Business/NC 88 in Jefferson, Ashe County

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The Concurrence Point 4B Meeting for R-2915E in Ashe County was held on June 7th, 2017 in accordance with NCDOT policy. The meeting was held in the Structures conference room. The following items were discussed and conclusions reached. *Notes in red italics text were added to the notes following a field review by NCDOT staff on July 7, 2017.*

Bill Zerman opened the meeting with introductions and a brief description of the project. Jeff continued by providing a summary of the preliminary drainage design at each jurisdictional feature on the plans. The following comments and decisions were reached.

Sheet 4: Jeff explained the differing colors on the plan sheet, pink being project R-2915D that is currently under construction. It was also requested to receive the permit impacts from R-2915D to avoid double counting impacts between the two projects. No comments on Sites 1 and 2, both propose the removal of existing R-2915D drainage. Site 2 includes a buried 42" pipe with no drop in the pipe. Velocities entering all wetlands should be stable (V10 less than 2.0 ft/s)

Sheet 5: No jurisdictional features

Sheet 6: Jeff explained both sites 3 & 4 included rip-rapped energy dissipator basins to help lower the outlet velocities. April noted that Dave wanted to ensure these locations are non-erosive. Jeff pointed out that ditch designs for site 5 will be sure to include velocities entering the wetland lower than 2 feet per second. Velocities will be shown on the drawings. The plans show a JS stream leaving the existing 24" CMP at site 3. This stream is not jurisdictional and will be removed from the plans. At site 5 there is a jurisdictional stream leaving the existing 18" CMP that is not shown but will be added to the plans.

Sheet 7: Jeff explained that site 6 included jurisdictional streams and wetlands both up and downstream. The stream begins at a spring approximately 230 feet upstream of the proposed crossing. He also indicated a drop structure is proposed near the outlet to lower the velocity exiting the pipe. The group agreed that NCDOT would coordinate with Marla Chambers to get her

opinion on whether the short section of stream is providing aquatic habitat. If it is, the use of a drop structure may need to be revisited. Carla pointed out there is an additional Jurisdictional stream that is not shown that will be added to the plans at the outlet of the proposed 60 " pipe.

Sheet 8: Jeff noted there was a proposed ditch to tie down to the stream at site 7. Marella noted the angle of the proposed ditch would be entering an outside bend and asked if this ditch could be realigned. Jeff responded that this could be done.

Sheet 9: Jeff noted at site 8 that Bill had recommended the removal of the rip rap on stream banks (detail X). The attendees agreed this rip rap could be removed due to the low velocity in the proposed ditch. Jeff then pointed out the difficult design of site 9 with multiple springs and jurisdictional features traveling down a very steep hill. Carla noted that both spring/JS combinations upstream of S136 were not jurisdictional streams, only wetlands. *A field visit by NCDOT biologists on 7/7/17 found that the JS line west of US 221 nearest the road (the headwaters of S136 originating in wetlands W109) can stay JS. The JS line further west within W108 can be removed.* April asked if impacts would be to buffalo creek or just a tributary. Jeff noted there to be a small unnamed tributary just at outlet 0907, therefore impacts will not occur to Little Buffalo Creek. An additional site is recommended to be added on sheet 9 at the outlet of the existing pipe near proposed box 0911. There is a 1.5' head cut at the outlet of the existing pipe and it is proposed to be plugged & filled, therefore some temporary impacts will be required during construction to re-grade the head cut.

Sheet 10: Jeff explained the decision to retain the existing 66" CMP, which has been recommended by RK&K to have a smooth lining installed within. It was pointed out that temporary impacts will be needed for the upstream and downstream end during lining install, so a site will need to be added (site 11A). Bill also requested the addition of riprap at the outlet of this existing pipe and to also line the stream with embedded riprap for further stabilization. Jeff noted that at site 10 there is a proposed preformed scour hole. Bill requested a standard rip rap pad to be installed instead. Attendees agreed to replace the preformed scour hole with standard rip-rap. Carla informed the attendees that site 12 was not a jurisdictional feature and should be removed. *During a 7/7/17 field visit, the stream at site 12 exiting the 18" CMP was found to be an intermittent jurisdictional stream, and should remain on the plans as a permit site.* Steve questioned the quality of the stream at site 13 where a jurisdictional stream will be a total take with a proposed riprap lined standard ditch. April noted that a portion of Buffalo creek is a trout stream and she will need to review this area with Dave. Marella asked if site 13 was connected to the pond. Jeff responded by stating the system is believed to attach to a neighborhood upstream but the entrance was not found. Cara informed the attendees that the stream was not listed for a work moratorium, and asked to have agencies double check the list is up to date. Attendees agreed the current design was sufficient.

Sheet 11: Site 14B was noted to connect to the existing pond and Jeff explained the existing pipe was well undersized. The existing pipe was currently laid at about 14%, therefore Steve commented that the current design seems sufficient to not be buried and include a drop structure. Sites 15 & 16 did not have any comments, however Jeff asked Carla if she believed the stream to begin where it was shown on the plan sheet or if it extended up into the wetland (S143a & W117). Carla shared that she believed the beginning of the stream to be shown at the correct location. Site 17 was noted to have no jurisdictional features upstream and Jeff explained that during the field visit, the exiting pond at the outlet of the system was dry. DWR and NCDOT Division staff do not know the current condition of the pond. Bill recommended the toe of rock fill be shown outside of the right-of-way. NCDOT does not want ponded water within the right-of-way. Add PDE and keep proposed pipe outlet at the current location. *The JS lines on the east side of US 221 across from Site 17 (one parallel to the tree line/US 221 and one carried under US 221 in 42" CMP to the pond) were determined to be jurisdictional during a 7/7/17 site visit. These JS lines should stay on the plans.*

Sheet 12: At site 18, Bill requested to have the outlet pipe be realigned straighter and to have the outlet be ditched down to the current location of the jurisdictional stream. Attendees agreed to this design. At site 19, Jeff noted that a possible drop structure might be later incorporated into the design near the outlet of the pipe due to the current poor condition of the existing outlet, which attendees agreed was fine due to there being no jurisdictional feature upstream. *A short JS stream (S147) will be added at the outlet of the 15" CMP near Site 19.*

Sheet 13: Site 21 includes retaining the existing 48" CMP and adding a smooth liner. Steve noted that the existing pipe was over 400' long and therefore fish passage will be difficult through such a long stretch. Marella agreed that there is probably not much passage and that the current design with a drop structure is okay.

Sheet 14: The stream shown parallel to the roadway from 812+50 to 814+50 left is not jurisdictional and should be removed from the plans. There is a stream at Y36 11+50 right that will not be impacted that needs to be added to the plans. Jeff explained that site 22 includes a buried 66" pipe with a junction box but no drop structure. The proposed pipe slopes are 8% (HW to JB) and 0.5% (JB to outlet). Bill asked the attendees if we would in fact want to bury this pipe due to the steep slope. He stated as a rule of thumb, he usually uses a max of 4% slope for pipe burial. Because of the slope and the potential for headcutting the pipe will not be buried. Marella asked if there was any way to place baffles in the concrete pipe. Bill responded that there was not a way to put baffles in a concrete pipe. Carla noted that Naked Creek has no work moratorium and was not designated as TR. April noted that Dave had a question as to if the area was HQW. Steve requested that further investigation into the quality of water be done at this site and to keep the current design until 4C discussion. At site 23 Jeff noted that RK&K will add riprap to the outlet of the existing pipe to insure stability, attendees agreed.

Sheet 15: At site 24 Jeff explained the design which includes a new 60" RCP buried 1.0' and removal of the existing pipe upstream of the crossing. Wetland W123 will be a total take.

Sheet 16: At the culvert on Sheet 16, Jeff explained that the current culvert would be retained and two additional 7'x4' cells would be added parallel to the exiting one to provide additional capacity. One of the two existing barrels will have a sill added to confine normal stream flow to one of the existing barrels (water can currently flow in both). The invert of the two new barrels will match the sill height. At site 27 the proposed pipe will not be buried because the slope exceeds 9.5%.

Sheet 17: Wetland W125 will be a total take.

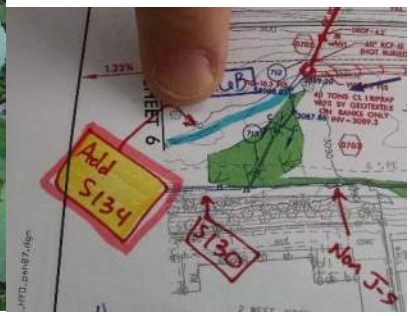
Upon the conclusion of the 4B meeting, it was determined that NCDOT will coordinate sites 6 and 22 with Marla and double check with Dave at DWQ.

Sheet 6
Counterclockwise from top:

* Site 6B 42” CMP outlet

* S134 just prior to split with S130

* S134



Sheet 9

Section of S136 just west of US 221 is JS. Section further upstream (in wetland W108) can be removed.

Sheet 9

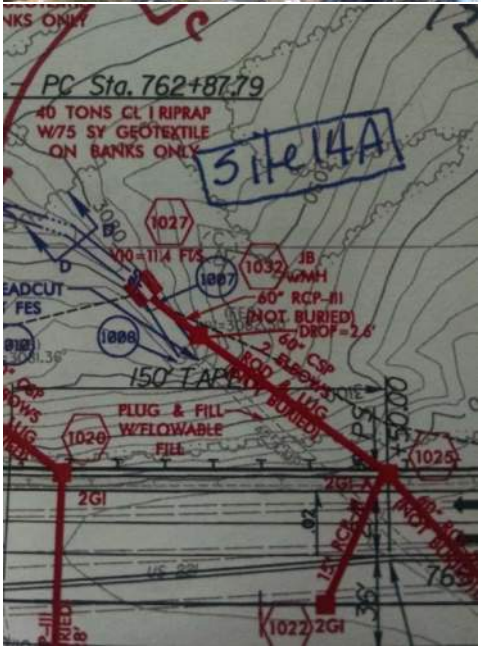
Clockwise from top:

* UT to Little Buffalo looking DS

* Outlet of 24”CMP

* UT to Little Buffalo looking DS

UT scored a 20 (intermittent) on DWR stream form. Caddisfly and small stoneflies present



Sheet 10

Site 14A

* Left: Outlet of 42” CMP – S142

* Right: Looking DS S142

Could hear water dripping into pipe further upstream, maybe coming from a drop inlet somewhere along the length of existing pipe?

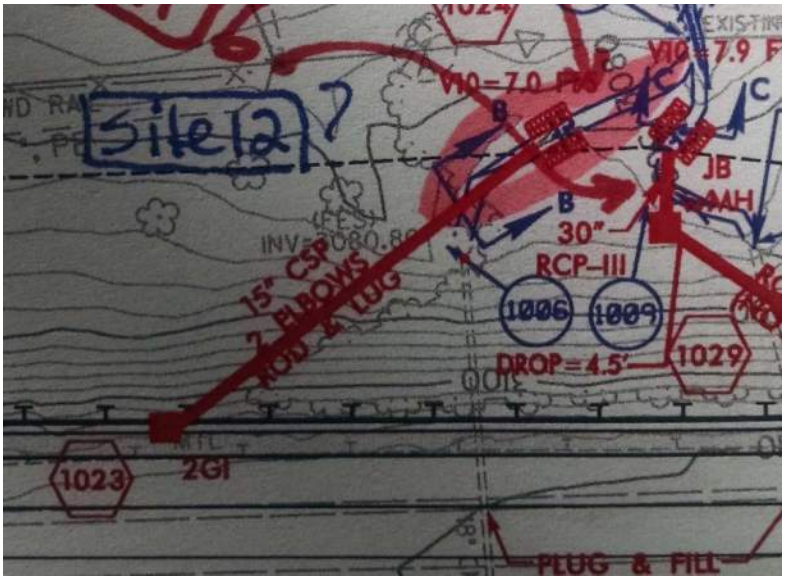
Sheet 10

Site 13A

* Left: Outlet of 24” CMP – S141

* Right: Looking DS S141

S141 joins with another (previously non-JS) trib coming in slightly south at a substantial headcut.



Sheet 10

Site 12

* Left: Outlet of 18” CMP

* Right: Looking DS from outlet

Previously stated this was non-JS, but it scored a 26 (intermittent) on DWR stream form. Abundant iron oxidizing bacteria, aquatic beetle and fingernail clams observed

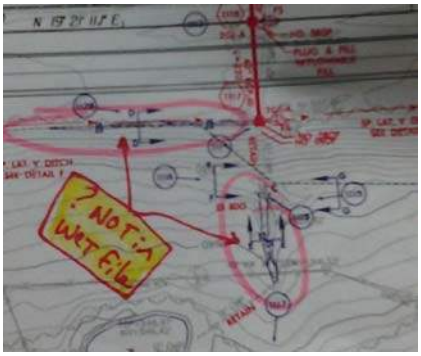
Sheet 11

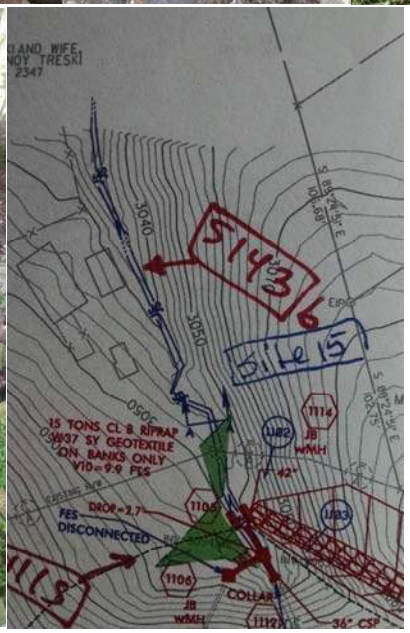
Stream parallel to US 221 in NE quad. Flows into 42” CMP via DI at edge of woods

* Top left: Drop inlet closest to US 221

* Top right and bottom left: parallel stream

Both JS lines were previously thought to be non-JS, but they should remain JS. Parallel stream scored 19 (intermittent) on DWR ID form (had caddisflies and aquatic worms)



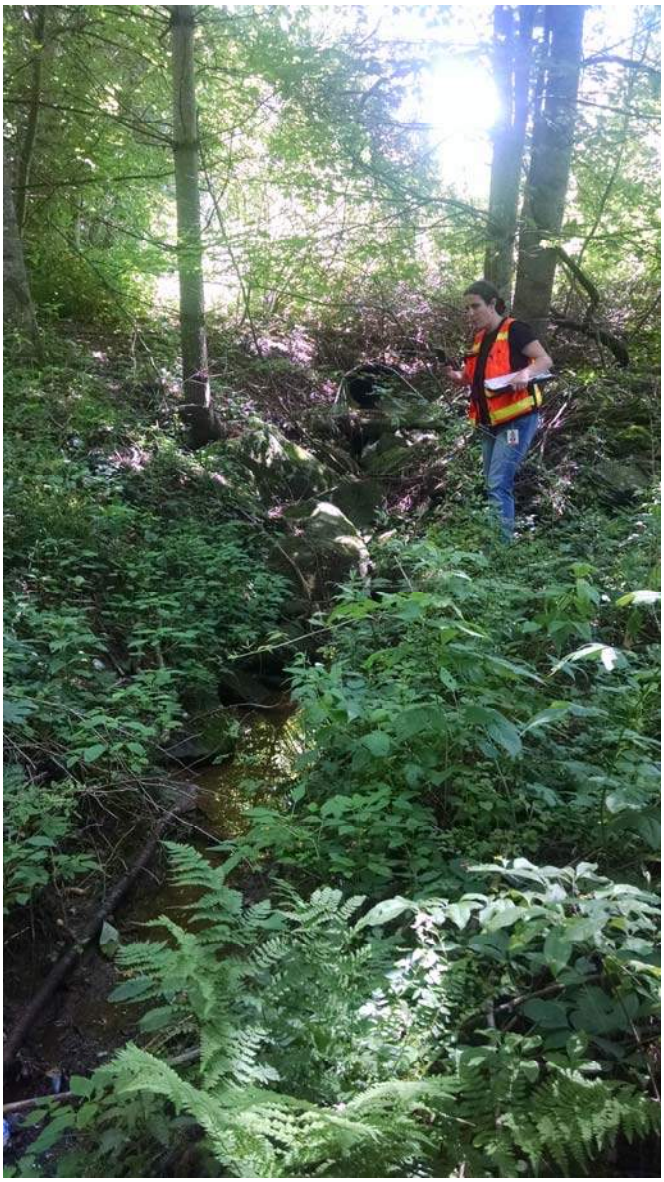


Sheet 11

Site 15

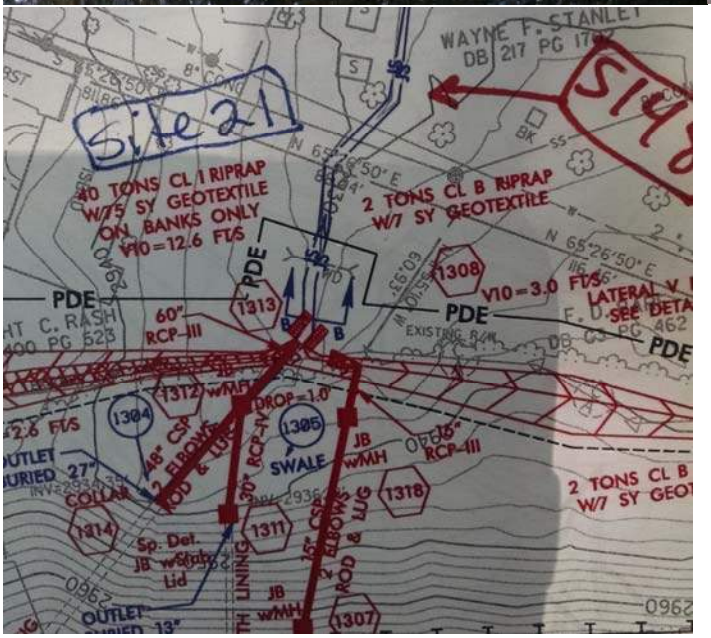
Pics taken upstream and downstream of the places where S143 crosses Wade E. Vannoy Road just west of project footprint

With regard to aquatic passage, S143 is very small. Outlet at Site 15 is perched 1' ad the outlet pipe under Wade E. Vannoy Road is also perched.



Sheet 12

Stream S147 was missing flowing out of 15” CMP. Should be added back.



Sheet 13

Site 21

* Left: Outlet of 48” CMP – S148 – outlet is partially buried

* Right – Looking DS from pipe outlet

See next page to see how quickly S148 becomes a much smaller channel running through a lawn just west of the study area

Sheet 13

Stream S148 just west of project area.

Sheet 14

Site 22

Clockwise from top left:

* Inlet of 42” CMP – S156 (outlet is perched 1’)

* Looking DS through 42” CMP

* Stream S156 SE of US 221 where it crosses under a driveway near Willowbend Lane

Memorandum of Meeting

Date: March 21st, 2018

Place: NCDOT, Structures Conference Room

Attendees: Steve Kichefski (USEPA) - Phone
Marella Buncick (USFWS)
Marla Chambers (NCWRC)
Dave Wanucha (DWR) - Phone
Bill Zerman, PE (NCDOT Hydraulics)
Matt York, PE (NCDOT Hydraulics)
Jeff Meador, PE (RK&K)
Alexis Stys, PE (RK&K)
Scott Blevins, PE (RK&K)
Carla Dagnino (NCDOT-EAU)
Ramie Shaw (NCDOT – Division 11) - Phone
Joe Laws, PE (NCDOT – Division 11) – Phone

Subject: NEPA\404 Merger Team - Concurrence Point 4C Meeting
R-2915E – US 221 from US 221 Bypass to US 221 Business/NC 88 in Jefferson, Ashe County

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The Concurrence Point 4C Meeting for R-2915E in Ashe County was held on March 21st, 2018 in accordance with NCDOT policy. The meeting was held in the Structures conference room. The following items were discussed and conclusions reached.

Bill Zerman opened the meeting with introductions and a brief description of the project. Jeff continued by providing a summary of the design and previously discussed features at each jurisdictional site on the plans. The following comments and decisions were reached.

Sheet 4: Jeff explained the differing colors on the plan sheet, pink being project R-2915D that is permitted currently under construction. Once coloring was explained, there were no further questions about Site 1. At Site 2A, Marella requested to have embedded rock at the outlet bed looked into since she was concerned with energy dissipation. Jeff explained that the proposed pipe was buried and the junction box was not a drop structure. Additionally, it was explained that the current designs velocity is under the 15 ft/s which is considered the threshold for scour, Bill agreed and that updating this outlet would set a precedence. After discussion, it was decided to monitor this site after the pipe construction to decide if embedding rock in the channel would be warranted. Carla noted that Site 2B was labeled as bank stabilization on the impact summary sheet. Detail AF would need to be called out at the inlet end of the site if there is truly stabilization, updates to the plans are needed at similar situations along the project to ensure the summary table and plan view match.

Sheet 6: Jeff explained that since the 4B meeting, both sites 3 & 4 have had the energy dissipaters removed after redline drainage review. Marla commented on the “retain & install smooth lining” label on the cross pipe at site 3, stating that this will not help with slowing down the velocity in the pipes. Joe and Matt agreed that the material of the liner has been discussed but not finalized. Matt explained that the lining won’t be concrete but that the smooth liner increases the capacity in the pipe even though we would be decreasing the size of the existing pipe. Jeff noted that smooth liner is approximately the same roughness as a concrete pipe. Carla explained that the jurisdictional stream leaving Site 5 was added to the plans after confirmation from Erin Cheely (NCDOT Environmental Analysis Unit) following the 4B meeting.

Sheet 7: Jeff noted at Site 6 that Dave had conducted a field visit here and noted that the land owner had trapped the spring, leaving a minimal aquatic habitat and that a drop structure would be warranted. Bill noted at site 6 that the proposed cross-pipe used to be a 60" jurisdictional cross-pipe. Alexis explained that it was requested during hydraulic review from Matt to separate the BDO and the HW to cross separately, lowering the jurisdictional crossing to a 42" pipe. Jeff explained that there is now a dry detention basin designed on sheet 7 which has no jurisdictional features nearby but helps minimize the impact to a downstream pipe. Marla questioned that Site 6B forks into two jurisdictional features downstream and it was confirmed to be correct. It was requested to move the HW to be directly at the fill slope line to ensure the headwall is within the "V" created from the toe protection.

Sheet 8: Carla asked at Site 7 if bank stabilization would be necessary but was decided against due to the low velocity and flat elevation in the proposed ditch. Jeff also noted that the proposed ditch is aligned to better fit the streams current direction of flow.

Sheet 9: Jeff explained how the current jurisdictional features have been agreed upon at Site 9 after NEU confirmation after the 4B meeting. Marla asked what the temporary impacts were regarding at Site 8B, which Jeff explained was due to the existing 24" CMP being plugged/filled and the regrading of the existing headcut.

Sheet 10: Jeff explained the decision to retain the existing 66" CMP, which has been recommended by RK&K to have a smooth lining installed within. Temporary impacts were added at the inlet and outlet of the lined existing pipe due to installation of this smooth liner. Carla requested that the inlet end of the Site 11 be labeled with A, B, & C for the 3 differing streams coming in to the headwall and to make sure the impact summary sheet reflects these values. It was also requested to add a label to the plans to ensure the outlet of the existing 66" pipe has the riprap embedded in the channel stream. Marla requested to know the condition of the exiting 66" pipe that traveled under the private property rock quarry. Joe explained that the video inspection could not get past the "possible junction box" labeled on the plans so condition was not confirmed. It was requested that the label for site 10 be moved closer to the impact to help clarify the right side of the roads impacts. Joe requested the addition of a spring box near the outlet of the plugged and filled 18" CMP at site 13 C. This site was discussed as a possible total take due to the removal of the water but it was agreed that the site is likely to be a spring and the addition of a spring box should be sufficient and help minimize impacts. Marella asked if Site 12 ties down to the headwall, which Jeff explained it does not tie to the headwall but does provide bank stabilization down to Little Buffalo Creek.

Sheet 11: Sites 14, 15 and 16 had no comments. Carla noted that Site 17B needed impacts added to the impact summary sheet as well as separating out the pond impacts from the stream for site 17A.

Sheet 12: No comments on Site 18. Marla asked why the pipe at Site 19 wasn't outleting at the entrance to the stream outside the fill slope. Alexis explained that the field survey uncovered a large headcut and an unstable outfall so it was determined that laying a pipe and repairing the outlet condition would be best. Carla asked to add a line to the impact summary sheet for the bank stabilization provided. At Site 19, it was requested to have the wetland boundary line appear better on the plans and to show the small JS tying all the way down to the larger JS.

Sheet 13: Site 20 and 22 had no comments. Site 21 was requested to show velocity on the plans and add rip rap in the channel due to the possibility that the area will always stay wet.

Sheet 14: Site 23 had no comments. Carla requested at Site 24 to have the separate streams be called out for clarity (Site 24 A, B, C, & D) and to have the impact summary sheet updated accordingly with labels for tributary and creek names. At Site 25, Marla asked if both barrels are used in the existing double culvert. Jeff confirmed that they are and showed pictures from a field

visit. He also explained that in order to add a Sill, that a design would need to be included for additional barrels due to the stream being a FEMA site and the restriction of not further impacting the surrounding homes in the floodplain. Marella asked if we were extending the triple existing cross pipes outleting to the rip rap at embankment near the culvert outlet (Site 25B), which Jeff confirmed we were not.

Sheet 15: Marella requested Site 26A to install embedded rip rap in the proposed ditch where the existing 18" CMP will be removed to daylight the jurisdictional feature. The removal label was also requested to be turned on at Site 26A. Carla requested at Site 26B & Site 27 to have the two streams be broken out (Sites 26B & C, Site 27A & B) and updated in the impact summary sheet.

Sheet 16: Jeff explained that the current culvert would be retained and two additional 7'x4' cells would be added parallel to the exiting one to provide additional capacity. Jeff noted the label on the plan sheet which states there will be a proposed 2' concrete sill inset 1' to confine normal stream flow to 1 barrel. No comments were made on Site 28. Carla noted that Site 29 should not be called out as bank stabilization. Marella explained that she would prefer the removal of the entire 24" CMP traveling to Naked Creek. Jeff explained that we have to stay off of the existing park property to avoid a section 4F impact.

Sheet 17: Jeff explained that the layout of the system on sheet 17 has changed since 4B due to the removal of the impact on the park property. Since the existing 18" CMP will be plugged and filled causing dewatering of the wetland, it was requested to have the wetland be total take. Bill confirmed that the wetland can be called a total take without the requirement of ROW on the park property.

Upon the conclusion of the 4C meeting, it was requested by Dave Wanucha to back check the bank stabilization call outs and ensure that each stream section has its own quantity on the impact summary sheet. David also requested to have a separate sheet compiled in the permit application to include where there are drop structures and which boxes will be tying to buried pipes.

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

WBS Element: 34518.1.FR6 **TIP No.:** R-2915E **County(ies):** Ashe

General Project Information

WBS Element:	34518.1.FR6	**TIP Number:**	R-2915E	**Project Type:**	Roadway Widening	**Date:**	4/24/2018
NCDOT Contact:	Joe Dunnehoo, PE			**Contractor / Designer:**	RK&K: Jeff Meador, PE		
Address:	1000 Birch Ridge Dr. Raleigh, NC 27610			**Address:**	900 Ridgefield Drive, Suite 350 Raleigh, NC 27609		
Phone:	919-707-6707			**Phone:**	919-878-9560		
Email:	jwdunnehoo@ncdot.gov			**Email:**	jmeador@rkk.com		
City/Town:	Jefferson			**County(ies):**	Ashe		
River Basin(s):	New			**CAMA County?**	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	3.54	**Surrounding Land Use:**	Residential, Commercial	
	Proposed Project		**Existing Site**	
Project Built-Upon Area (ac.)	61.7 ac.		53.0 ac.	
Typical Cross Section Description:	4 lane divided highway; 4 paved lanes (total 48' wide), 8' shoulder on each side (11' with guardrail). Varying fill and cut slopes (see project XSC's for detailed information). Median varies between 6:1 grassed ditch and monolithic islands. Total roadway width varies from 73.5'-92'		Existing 2 lane partially divided highway; 12' lanes, 2'-4' shoulders on each side (wider in locations with guardrail), paint striped medians at some locations with turn lanes and division at intersections. Raised median/protected turn lanes at intersections with candlelight drive and E. Main street.	
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 19,400	Year: 2039	Existing: 15,900	Year: 2019
General Project Narrative: (Description of Minimization of Water Quality Impacts)	The project (R-2915E) is proposed to widen the existing US 221 from two lanes to a four-lane divided highway from US 221 Bypass to US 221 Business/NC 88 in Jefferson. This project begins with the currently under construction R-2915D section. This project will have signalized intersections with Campus Drive, Long Street, NC 88/US 221 BUS and median/dedicated turn lanes at the intersections with Mt. Jefferson State Park Rd and Mt. Jefferson Rd. There are two major existing structures along the project; a 5'x8' double barreled culvert conveying Naked Creek (that will not be impacted), and an existing 6'x10' double barreled culvert also conveying Naked creek. This second culvert will have an additional (2) 7'x4' RCBC proposed parallel to the existing barrells. There are 9 pipes (sizes varying from 24" to 66") that are proposed to be repaired by the installation of a smooth liner. Additionally, there is a proposed dry detention basin at station -L- 718+00 RT to help minimize the increase in water at the exitsing 48" CMP under Mt. Jefferson road which later travels under the Walmart Supercenter. Efforts were made to minimize impacts to Naked Creek, specificially inside the Town of Jefferson's park property (Plan Sheet 16). Where excavation is necessary, coir fiber matting and rip-rap were utilized for bank stabilization in an attempt to reduce sediment transport and streambank erosion. Measures have been taken, including reduction of pipe slopes, to lower velocities at jurisdictional features to non-erosive, including the use of drop structures which are clearly labeled on the plans. In an effort to minimize impacts to the project, the team used 2:1 side slopes with guardrail in stream areas where feasible. All of the design is within the New River Basin.			

Waterbody Information

Surface Water Body (1):	Naked Creek		**NCDWR Stream Index No.:**	10-1-32	
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C		
		Supplemental Classification:	+		
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	S-151e, S-151f, S-151g, S-151d			**Buffer Rules in Effect:**	N/A
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

Additional Waterbody Information

Surface Water Body (2):	Little Buffalo Creek		**NCDWR Stream Index No.:**	10-2-20-1		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	Trout Waters (Tr)	+		
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:	S-135b, S-135c, S-135d			**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

Surface Water Body (3):	UT to Beaver Creek		**NCDWR Stream Index No.:**	10-1-25		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	Trout Waters (Tr)	+		
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:	S-128a, S-128b			**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

Surface Water Body (4):	UT to Cole Branch		**NCDWR Stream Index No.:**	10-1-25-1		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	Trout Waters (Tr)	+		
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:	S-130, S-132, S-133, S-134b, S-134c			**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

Surface Water Body (5):	UT to Little Buffalo Creek		**NCDWR Stream Index No.:**	10-2-20-1		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	Trout Waters (Tr)	+		
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:	S-136, S-139b, S-140, S-141-a, S-141b, S-142b, S-142c, S-143b, S-144, S-145, SA, SB			**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

WBS Element:	34518.1.FR6	**TIP No.:**	R-2915E	**County(ies):**	Ashe	**Page**	**3**	**of** **3**

Additional Waterbody Information

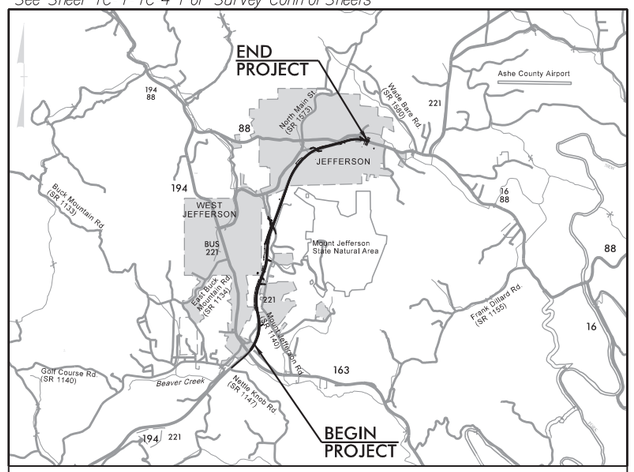
Surface Water Body (6):	UT to Naked Creek		**NCDWR Stream Index No.:**	10-1-32		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	+			
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:	S-147, S-146, S-148b, S-155, S-156, S-157b, S-158a, S-158b, S-159, S-163			**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

09/08/99

TIP PROJECT: R-2915E

CONTRACT: C204356

See Sheet 1-A For Index of Sheets, General Notes, and List of Standards
See Sheet 1-B For Conventional Symbols
See Sheet 1C-1-1C-4 For Survey Control Sheets



VICINITY MAP (NTS)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ASHE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2915E	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34518.1.FR6	STP-0221(45)	PE
34518.2.6	STP-0221(45)	R/W
34518.2.7	STP-0221(45)	UTIL.
34518.3.8	STP-0221(45)	CONST.

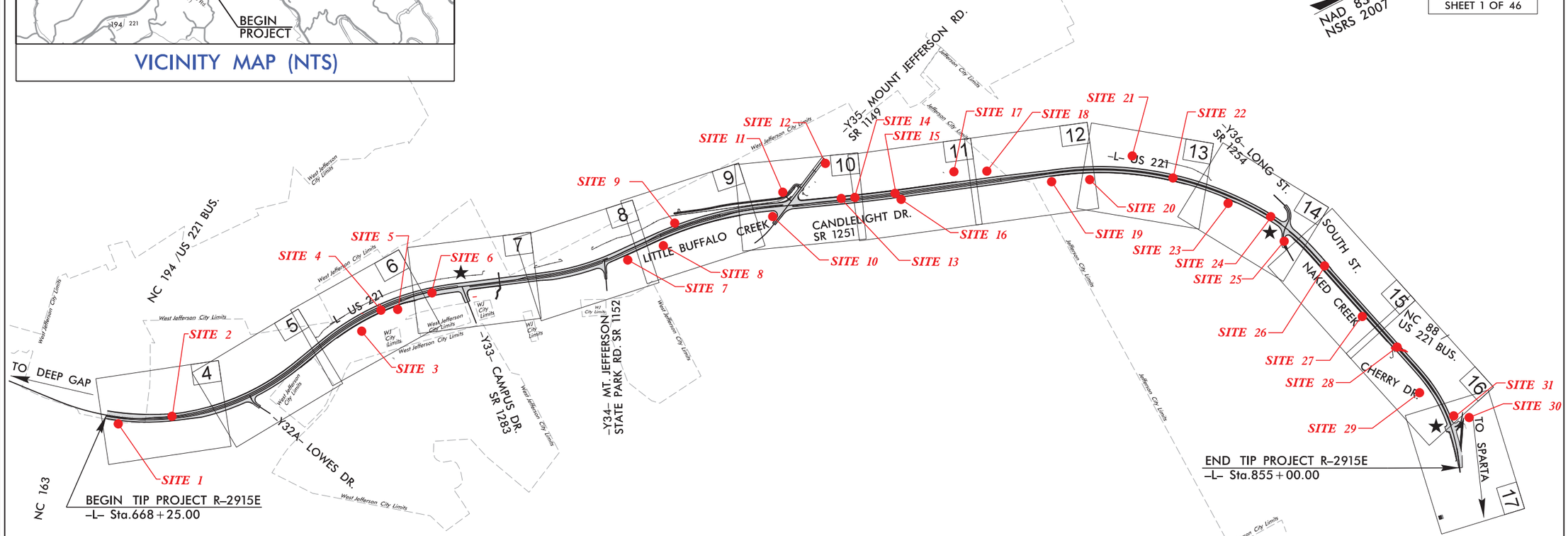
LOCATION: US 221 FROM US 221 BYPASS TO US 221 BUSINESS/NC 88 IN JEFFERSON

TYPE OF WORK: GRADING, DRAINAGE, PAVING, WIDENING, RESURFACING, CULVERTS, AND SIGNALS

WETLAND AND STREAM IMPACTS

NAD 83/ NSRS 2007

PERMIT DRAWING SHEET 1 OF 46



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

★ PROPOSED TRAFFIC SIGNAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100 — PLANS

50 25 0 50 100 — PROFILE (HORIZONTAL)

10 5 0 10 20 — PROFILE (VERTICAL)

DESIGN DATA

ADT 2019 = 15,900
ADT 2039 = 19,400
K = 8%
D = 55%
T = 6%*
V = 60 MPH
FUNC. CLASSIFICATION = RURAL ARTERIAL
* TTST=3% + DUALS=3%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2915E..... 3.533 mi
LENGTH CULVERT TIP PROJECT R-2915E..... 0.004 mi
TOTAL LENGTH TIP PROJECT R-2915E..... 3.537 mi

NCDOT CONTACT

Joe Laws, P.E.
PROJECT ENGINEER - DIVISION 11

PLANS PREPARED BY:

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. F-0112

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 8, 2018

LETTING DATE:
SEPTEMBER 17, 2019

Scott D. Blevins, P.E.
PROJECT ENGINEER
RK&K, LLP

Cathy S. Houser, P.E.
PROJECT DESIGN ENGINEER
RK&K, LLP

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION *

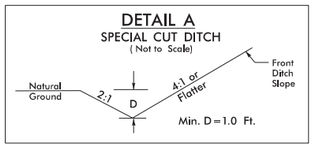
3/14/2019
R:\Hydraulics\PERMITS_Environmental\Drawings\4C\R-2915E_PRM_WET_tsh.dgn
aburke

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2D-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

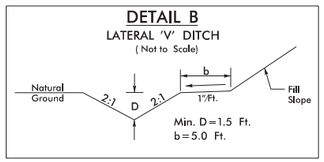
PERMIT DRAWING
SHEET 2 OF 46

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



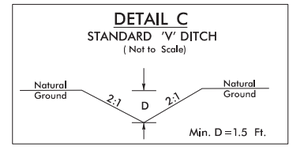
–L– STA. 669+50 TO STA. 670+00 LT
–L– STA. 675+25 TO STA. 676+00 RT
–L– STA. 677+00 TO STA. 691+50 LT
–L– STA. 767+50 TO STA. 772+00 RT

DETAIL B
LATERAL 'V' DITCH
(Not to Scale)



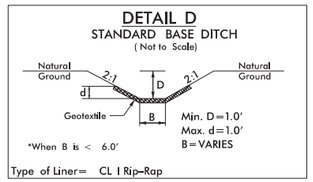
–L– STA. 670+25 TO STA. 670+50 RT
–L– STA. 676+00 TO STA. 677+03 RT
–L– STA. 677+21 TO STA. 677+50 RT
–L– STA. 693+00 TO STA. 694+50 LT
–L– STA. 707+50 TO STA. 708+25 LT
–L– STA. 805+05 TO STA. 805+19 LT
–L– STA. 816+50 TO STA. 817+75 RT
–L– STA. 826+80 TO STA. 827+50 LT
–Y36– STA. 15+24 TO STA. 16+43 RT

DETAIL C
STANDARD 'V' DITCH
(Not to Scale)



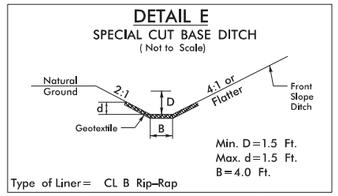
–L– STA. 734+90 RT, L=55', BEG. ELEV=3116.00, END ELEV=3114.99, S=1.84%

DETAIL D
STANDARD BASE DITCH
(Not to Scale)



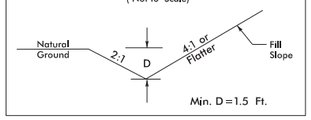
–L– STA. 771+06 LT, B=1.5', L=44', BEG. ELEV=3080.32, END ELEV=3085.00, S=10.8%
–L– STA. 780+92 LT, B=4', L=34', BEG. ELEV=3087.26, END ELEV=3090.0, S=8.1%
–L– STA. 793+00 RT, B=4', L=48', BEG. ELEV=3035.50, END ELEV=3025.26, S=21.3%
–L– STA. 812+65 LT, B=4', L=24', BEG. ELEV=2907.0, END ELEV=2904.96, S=8.5%

DETAIL E
SPECIAL CUT BASE DITCH
(Not to Scale)



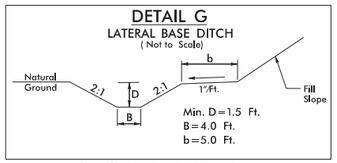
–L– STA. 839+00 TO STA. 841+77 RT

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



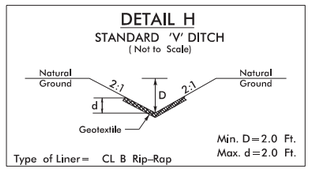
–L– STA. 729+50 TO STA. 732+15 RT
–L– STA. 741+50 TO STA. 743+00 LT
–L– STA. 757+00 TO STA. 758+00 RT
–Y34– STA. 11+00 TO STA. 12+30 RT

DETAIL G
LATERAL BASE DITCH
(Not to Scale)



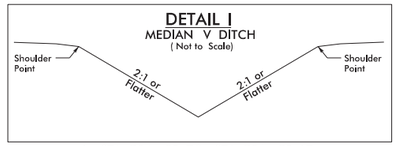
–L– STA. 694+50 TO STA. 704+50 LT
–L– STA. 705+32 TO STA. 707+50 LT
–L– STA. 708+25 TO STA. 711+00 LT
–L– STA. 796+00 TO STA. 797+50 LT
–L– STA. 810+50 TO STA. 816+50 RT
–L– STA. 820+00 TO STA. 826+80 LT

DETAIL H
STANDARD 'V' DITCH
(Not to Scale)



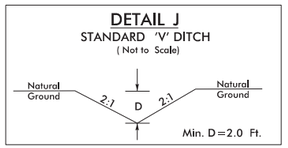
–L– STA. 740+00 TO STA. 740+37 RT, L=37' BEG. ELEV=3101.0, END ELEV=3100.0, S=2.7%
–L– STA. 836+82 TO STA. 837+14 RT, L=43' BEG. ELEV=2872.0, END ELEV=2870.28,S=4.0%

DETAIL I
MEDIAN V DITCH
(Not to Scale)



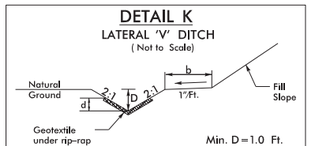
–L– STA. 754+50 TO STA. 756+72 LT

DETAIL J
STANDARD 'V' DITCH
(Not to Scale)



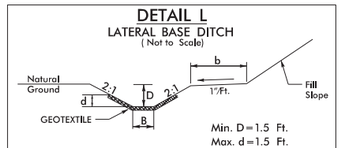
–L– STA. 700+00 TO STA. 701+29 RT
BEG. ELEV=3068.15, END ELEV=3067.75, S=0.3%

DETAIL K
LATERAL 'V' DITCH
(Not to Scale)



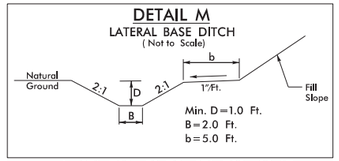
–L– STA. 670+50 TO STA. 671+50 RT, PSRM
–L– STA. 802+00 TO STA. 805+05 LT, CL I
–L– STA. 804+00 TO STA. 806+00 RT, CL B

DETAIL L
LATERAL BASE DITCH
(Not to Scale)



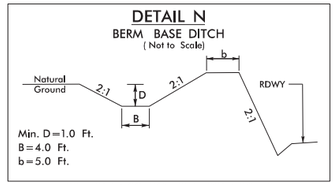
–L– STA. 704+50 TO STA. 705+32 LT, CL B
–L– STA. 797+50 TO STA. 799+13 LT, CL B
–L– STA. 809+73 TO STA. 810+50 RT, CL I
–L– STA. 838+00 TO STA. 838+92 LT, CL B

DETAIL M
LATERAL BASE DITCH
(Not to Scale)



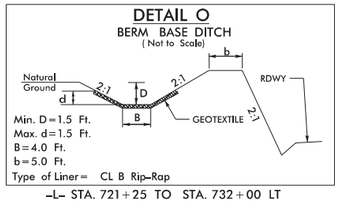
–L– STA. 788+50 TO STA. 793+00 LT

DETAIL N
BERM BASE DITCH
(Not to Scale)



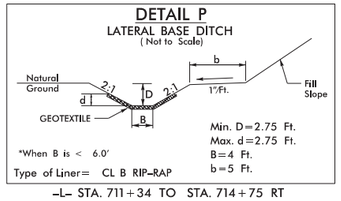
–L– STA. 714+50 TO STA. 721+25 LT
–L– STA. 738+50 TO STA. 741+00 LT
–SR1– STA. 15+16 TO STA. 17+38 LT

DETAIL O
BERM BASE DITCH
(Not to Scale)



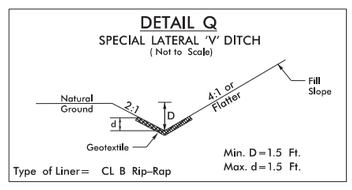
–L– STA. 721+25 TO STA. 732+00 LT

DETAIL P
LATERAL BASE DITCH
(Not to Scale)



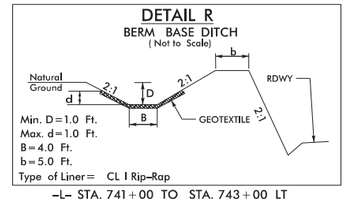
–L– STA. 711+34 TO STA. 714+75 RT

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



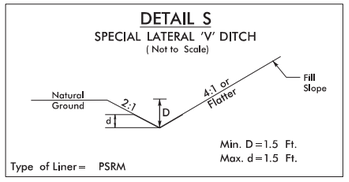
–SR1– STA. 10+00 TO STA. 10+53 LT

DETAIL R
BERM BASE DITCH
(Not to Scale)



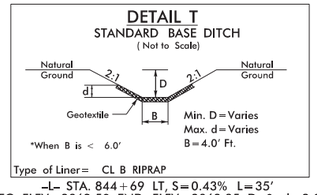
–L– STA. 741+00 TO STA. 743+00 LT

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



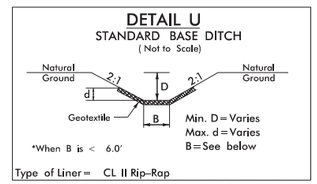
–SR1– STA. 11+70 TO STA. 15+16 LT

DETAIL T
STANDARD BASE DITCH
(Not to Scale)



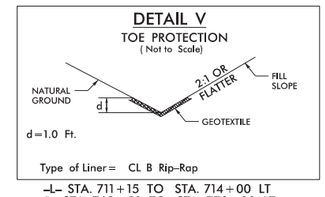
–L– STA. 844+69 LT, S=0.43% L=35'
BEG. ELEV=2862.50, END ELEV=2862.35, D & d=2.0'

DETAIL U
STANDARD BASE DITCH
(Not to Scale)



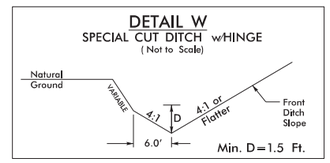
–L– STA. 763+26 RT, B=4.0', L=25', BEG. ELEV=3107.59, END ELEV.=3104.72, S=11.5%, D=1.0', d=1.0'
–L– STA. 765+60 RT, B=5', L=15', BEG. ELEV=3109.0, END ELEV=3108.5, S=3.3%, D=2.5', d=2.5'

DETAIL V
TOE PROTECTION
(Not to Scale)



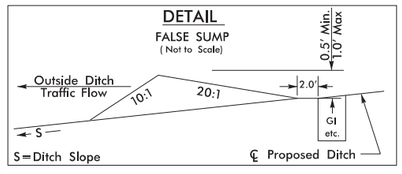
–L– STA. 711+15 TO STA. 714+00 LT
–L– STA. 768+50 TO STA. 770+30 LT
–L– STA. 793+50 TO STA. 795+42 LT

DETAIL W
SPECIAL CUT DITCH w/HINGE
(Not to Scale)

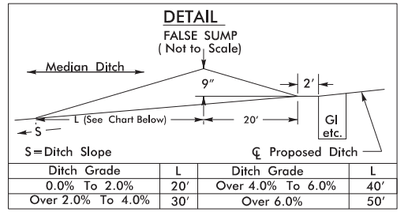


–L– STA. 720+15 TO STA. 723+50 RT
–L– STA. 726+00 TO STA. 727+50 RT
–L– STA. 761+50 TO STA. 767+50 RT
–L– STA. 774+00 TO STA. 783+50 RT
–L– STA. 841+77 TO STA. 849+50 RT

DETAIL
FALSE SUMP
(Not to Scale)

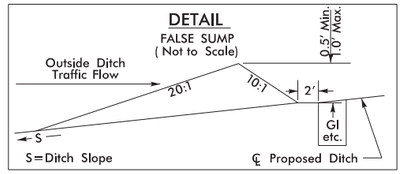


DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL
FALSE SUMP
(Not to Scale)



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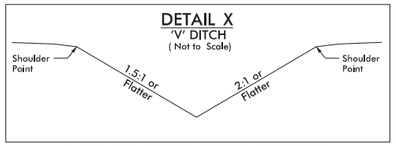
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2D-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

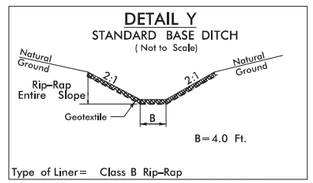
PERMIT DRAWING
SHEET 3 OF 46

DETAIL X
'V' DITCH
(Not to Scale)



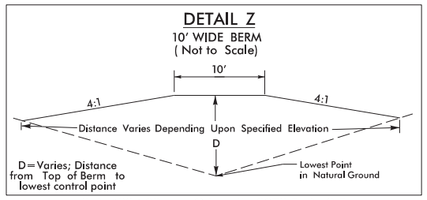
–L– STA. 743+00 TO STA. 751+50 MED/LT

DETAIL Y
STANDARD BASE DITCH
(Not to Scale)



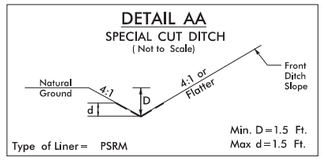
–L– STA. 776+71 LT, L=50', S=0.3%
BEG. ELEV=3093.65, END ELEV=3093.50

DETAIL Z
10' WIDE BERM
(Not to Scale)



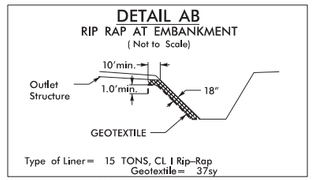
–L– STA. 693+00 LT, TOP ELEV=3079.5, D=2.5'
–L– STA. 697+87 LT, TOP ELEV=3088.0', D=2.0'
–L– STA. 704+50 LT, TOP ELEV=3087.0', D=2.0'
–L– STA. 711+00 LT, TOP ELEV=3102.5', D=3.1'
–L– STA. 802+90 RT, TOP ELEV=2964.0', D=8.3'
–L– STA. 812+30 RT, TOP ELEV=2928.0', D=2.5'
–L– STA. 816+50 RT, TOP ELEV=2914.0', D=3.1'
–L– STA. 827+50 LT, TOP ELEV=2887.0', D=1.6'

DETAIL AA
SPECIAL CUT DITCH
(Not to Scale)



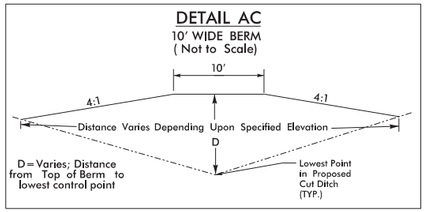
–L– STA. 783+50 TO STA. 787+00 RT

DETAIL AB
RIP RAP AT EMBANKMENT
(Not to Scale)



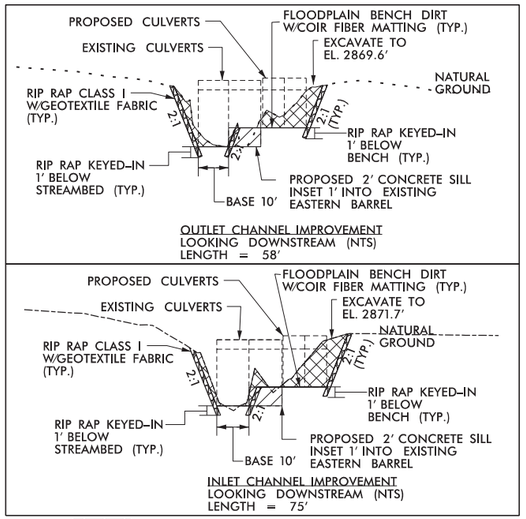
–Y36– STA. 16+94 LT
–L /US 221 BUS– STA. 849+62 LT

DETAIL AC
10' WIDE BERM
(Not to Scale)



–L– STA. 675+25 RT, TOP ELEV=3031.0', D=2.1'
–L– STA. 767+00 RT, TOP ELEV=3117.0', D=1.8'
–L– STA. 761+50 RT, TOP ELEV=3108.0', D=2.5'
–L– STA. 765+00 RT, TOP ELEV=3114.5', D=2.4'
–L– STA. 844+00 RT, TOP ELEV=2870.5', D=2.5'

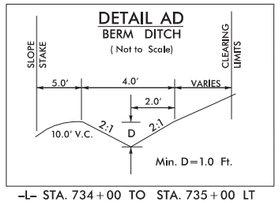
CULVERT @ –L– STA. 838+56



PERMANENT CHANNEL EXCAVATION

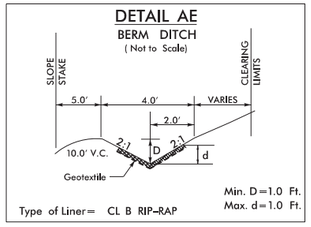
TOTAL CHANNEL EXCAVATION = 485 CY
TOTAL CL II RIP RAP = 255 TONS
TOTAL GEOTEXTILE FAB. = 270 SY

DETAIL AD
BERM DITCH
(Not to Scale)



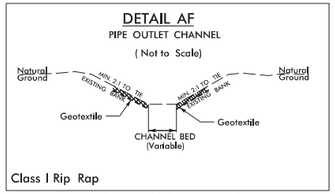
–L– STA. 734+00 TO STA. 735+00 LT

DETAIL AE
BERM DITCH
(Not to Scale)



–L– STA. 732+00 TO STA. 734+00 LT
–L– STA. 735+00 TO STA. 736+00 LT

DETAIL AF
PIPE OUTLET CHANNEL
(Not to Scale)



–L– STA. 675+55 LT, L=14'
–L– STA. 702+52 RT, L=11'
–L– STA. 704+71 RT, L=10'
–L– STA. 711+37 RT, L=20'
–L– STA. 742+12 RT, L=10'
–Y35– STA. 9+49 LT, L=22'
–L– STA. 762+56 LT, L=10'
–L– STA. 763+56 LT, L=20'
–L– STA. 768+48 LT, L=14'
–L– STA. 788+24 RT, L=8'
–L– STA. 804+92 LT, L=30'
–L– STA. 816+26 LT, L=18'
–L– STA. 827+06 RT, L=10'
–L– STA. 832+60 RT, L=10'

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 4 OF 46

ENGLISH

SCALE FOR INSET: 25 0 25 50

SCALE: 50 25 0 50 100

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/NSRS 2007

IT REAL ESTATE HOLDINGS, LLC

WILEY AUSTIN BAKER

INSET A

INSET B

BEGIN TIP PROJECT R-2915E
-L- POC Sta. 668+25.00

END TIP PROJECT R-2915D
-L- POT Sta. 679+90.00

MATCHLINE -L- STA. 682+00 SEE SHEET 5

R-2915D TO BE CONST. BY OTHERS

SITE 1

SITE 2A

SITE 2B

SEE INSET A

SEE INSET B

SEE OUTFALL ANALYSIS PACKAGE

RETAIN PROPOSED SYSTEM IN R-2915D AND TIE PROPOSED DITCH TO BOX AT -L- STA. 669+50 LT

SPECIAL CUT DITCH SEE DETAIL A

RETAIN REMAINDER OF PROPOSED SYSTEM IN R-2915D

PERMIT IMPACTS FROM R-2915D

Q10=4.44 cfs
V10=1.42 fps

REMOVE DI & PIPE IN R-2915D

LATERAL V DITCH W/94 SY PSRM SEE DETAIL K

LATERAL V DITCH SEE DETAIL B

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

REMOVE 2GI AND PIPE FROM PROPOSED DRAINAGE IN R-2915D

20 TONS CL I RIPRAP W/39 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AE

V10=9.3 fps

42" RCP-III (BURIED 0.7')

REMOVE JB W/HH

REMOVE 30" CMP

30" RCP-III

REMOVE EX 24" CMP

2GI-A REMOVE SYSTEM

SPECIAL CUT DITCH SEE DETAIL A

REMOVE JB AND PIPE

SP. CUT DITCH SEE DETAIL A

Q10=1.72 cfs
V10=1.06 fps

RISER TOP=3049.34'

36" CMP

PLUG & FILL W/FF

FIRST COMMUNITY BANK

BRADLEY W. JORDAN

KENNETH TIMOTHY PARSONS
HUSBAND, AND WIFE
BETTY WADDELL PARSONS

WILEY AUSTIN BAKER
AND KAY M. BAKER

LOWE'S HOME CENTERS, INC.

K. DICKSON

LARRY D. BOOTH

POND

A–A 3.0' 0.0' 0.5' 0.0' ROADSIDE

B–B 5.0' 0.0' 0.5' 0.0' INFALL

C–C 3.0' 0.0' 1.0' 0.0' ROADSIDE

D–D 12.0' 0.25' 3.0' 7.0' OUTFALL

E–E 16.0' 0.25' 1.0' 8.0' INFALL

F–F 5.0' 0.0' 0.5' 0.0' ROADSIDE

R-2915D PROPOSED DRAINAGE

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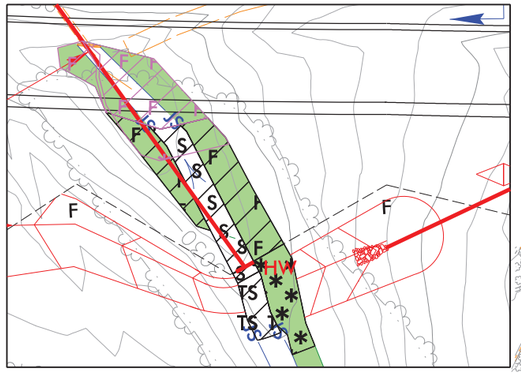
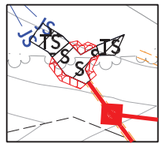
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER





25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

PERMIT DRAWING
SHEET 5 OF 46

ENGLISH

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LIT REAL ESTATE HOLDINGS, LLC

NAD 83/NSRS 2007

WILEY AUSTIN BAKER

FIRST COMMUNITY BANK

BRADLEY W. JORDAN

KENNETH TIMOTHY PARSONS
HUSBAND AND WIFE
BETTY WADDELL PARSONS

WILEY AUSTIN BAKER
AND KAY M. BAKER

LOWE'S HOME CENTERS, INC.

K. DICKSON

LARRY D. BOOTH

R–2915D TO BE
CONST. BY OTHERS

RETAIN PROPOSED SYSTEM
IN R–2915D AND TIE
PROPOSED DITCH
TO BOX AT
–L– STA. 669+30 LT

SPECIAL CUT DITCH
SEE DETAIL A

SEE OUTFALL
ANALYSIS PACKAGE

SEE INSET B

SITE 2A

V10=9.3 ft/s

42" RCP–III
(BURIED 0.7')

20 TONS CL I RIPRAP
W/59 SY GEOTEXTILE
ON BANKS ONLY
SEE DETAIL AE

JB
w/MH

REMOVE

30" RCP–III

REMOVE EX
24" CMP

2GI–A REMOVE
SYSTEM

SPECIAL CUT DITCH
SEE DETAIL A

24" RCP–III

18" RCP–III

2GI–A

PLUG &
FILL W/FF

2GI

END TIP PROJECT R–2915D
–L– POT Sta. 679+90.00

SEE SHEET 5
MATCHLINE –L– STA. 682+00

RETAIN
REMAINDER
OF PROPOSED
SYSTEM
IN R–2915D

Q10=4.44 cfs
V10=1.42 ft/s

REMOVE DI & PIPE
IN R–2915D

18" RCP–III

15" RCP–III

2GI

PERMIT
IMPACTS FROM
R–2915D

LATERAL V DITCH
W/94 SY PSRM
SEE DETAIL K

LATERAL V DITCH
SEE DETAIL B

2 TONS CL B RIPRAP
W/7 SY GEOTEXTILE

REMOVE 2GI
AND PIPE FROM
PROPOSED DRAINAGE
IN R–2915D

SITE 1

REMOVE JB
AND PIPE

24" RCP–III

SP. CUT DITCH
SEE DETAIL A

LATERAL V DITCH
SEE DETAIL B

2 TONS CL B RIPRAP
W/7 SY GEOTEXTILE

SEE INSET A

SITE 2B

Q10=1.72 cfs
V10=1.06 ft/s

RISER
TOP=3049.34'

POND

BEGIN TIP PROJECT R–2915E
–L– POC Sta. 668+25.00

A–A	B–B	C–C	D–D	E–E	F–F
3.0'	5.0'	3.0'	12.0'	16.0'	5.0'
0.0'	0.0'	0.0'	0.25'	0.25'	0.0'
0.5'	0.5'	1.0'	3.0'	1.0'	0.5'
0.0' ROADSIDE	0.0' INFALL	0.0' ROADSIDE	7.0' OUTFALL	8.0' INFALL	0.0' ROADSIDE

R–2915D PROPOSED
DRAINAGE

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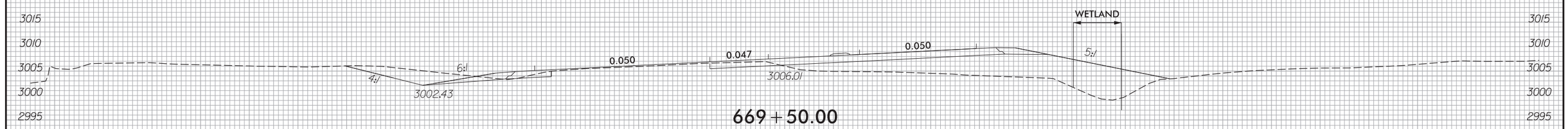
6/23/16

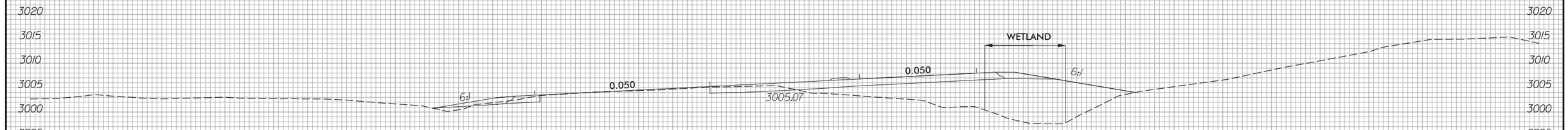
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-1

PERMIT DRAWING
SHEET 6 OF 46

SITE 1



669+50.00



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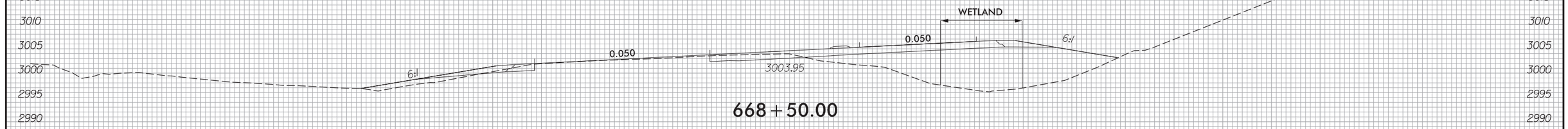

668+50.00

668+00.00

—L—

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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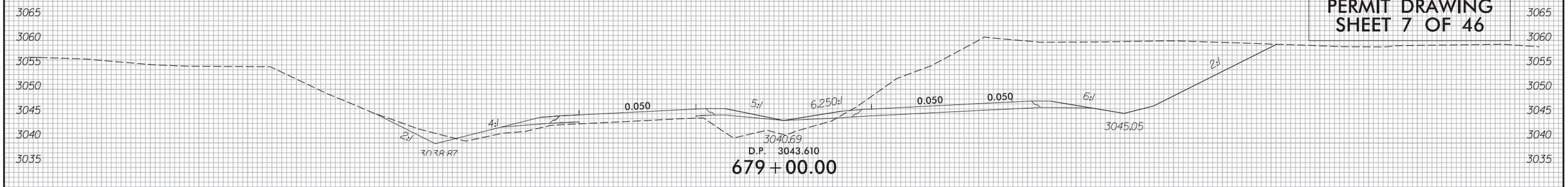
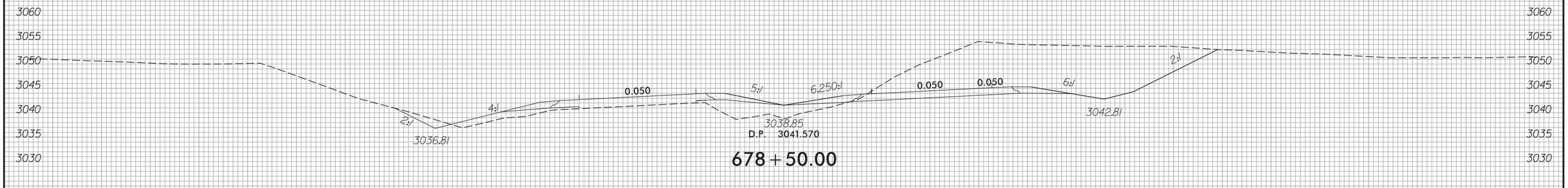
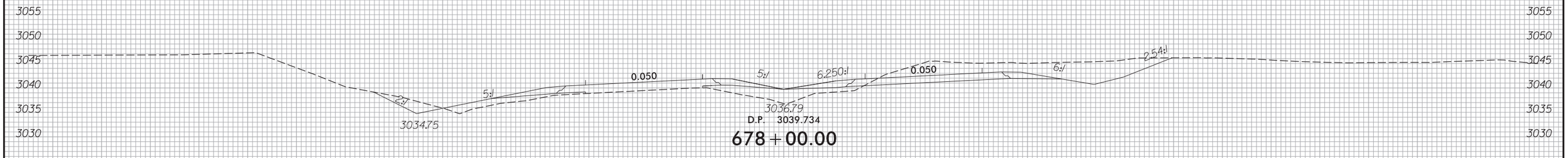
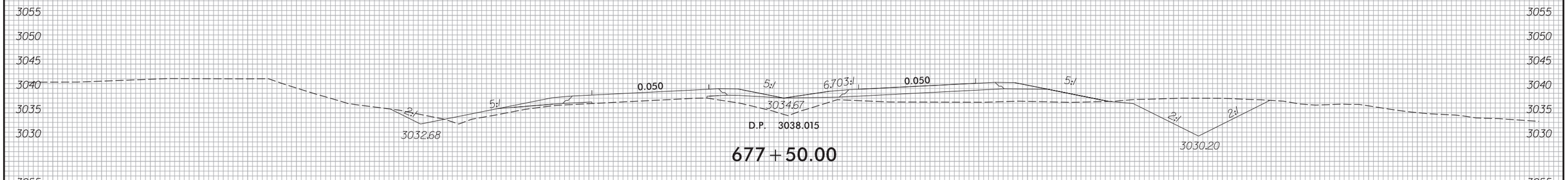
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-6

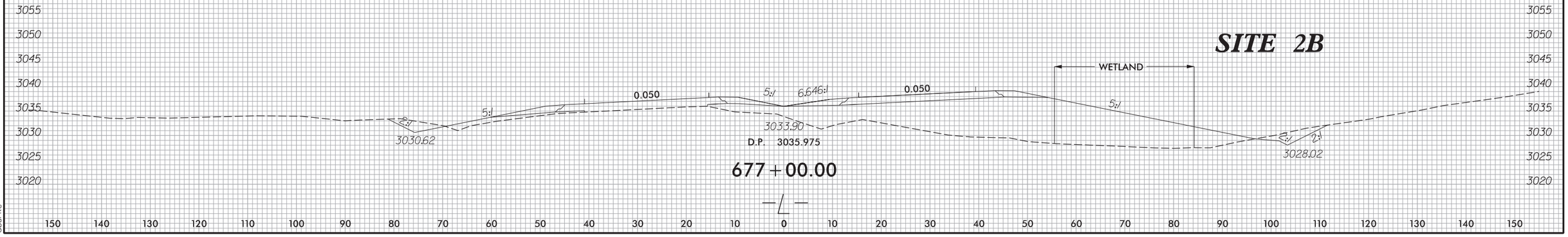
PERMIT DRAWING
SHEET 7 OF 46











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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

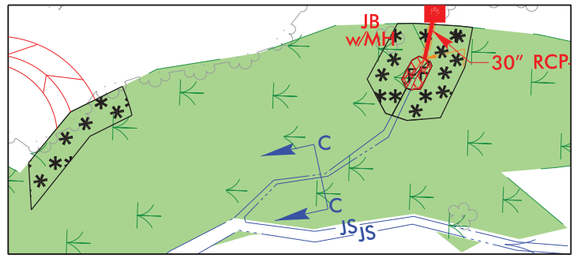
A–A: 15.0′ / 0.0′ / 1.0′ / 4.0′ ROADSIDE
B–B: 16.0′ / 0.25′ / 2.0′ / 4.0′ OUTFALL
C–C: 4.0′ / 0.2′ / 0.5′ / 1.0′ OUTFALL
D–D: 6.0′ / 0.25′ / 2.0′ / 4.0′ OUTFALL
E–E: 5.0′ / 0.2′ / 0.5′ / 1.0′ OUTFALL
F–F: 16.0′ / 0.5′ / 3.5′ / 5.0′ OUTFALL
G–G: 3.0′ / 0.0′ / 0.5′ / 0.0′ OUTFALL
H–H: 10.0′ / 0.25′ / 2.0′ / 4.0′ OUTFALL

ENGLISH

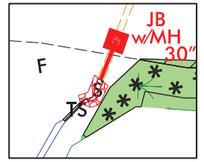
PERMIT DRAWING SHEET 8 OF 46

F F DENOTES FILL IN WETLAND
S S DENOTES IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

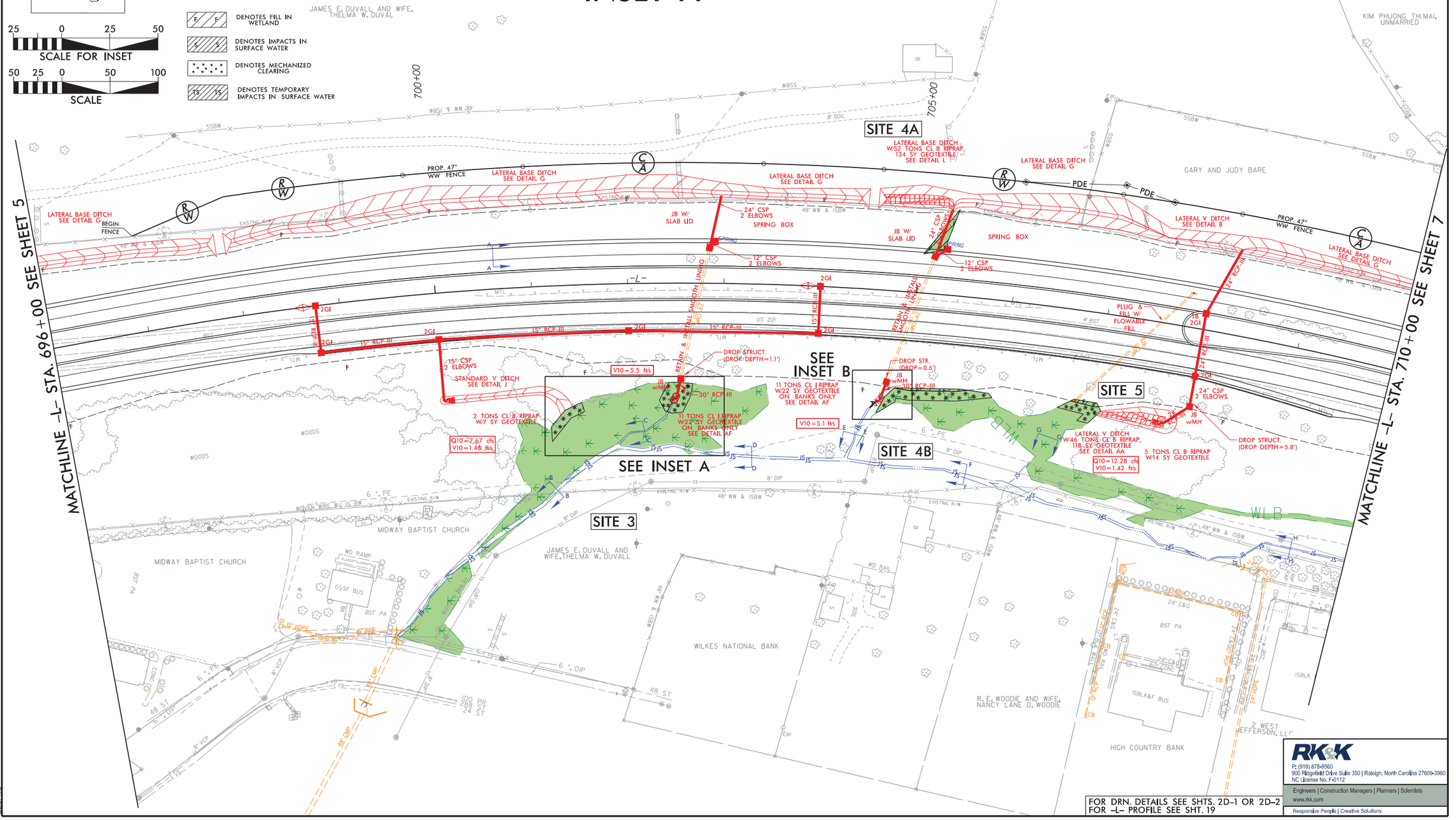
25 0 25 50 SCALE FOR INSET
50 25 0 50 100 SCALE



INSET A



INSET B



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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

A–A: 15.0′, 0.0′, 1.0′, 4.0′ ROADSIDE
B–B: 16.0′, 0.25′, 2.0′, 4.0′ OUTFALL
C–C: 4.0′, 0.2′, 0.5′, 1.0′ OUTFALL
D–D: 6.0′, 0.25′, 2.0′, 4.0′ OUTFALL
E–E: 5.0′, 0.2′, 0.5′, 1.0′ OUTFALL
F–F: 16.0′, 0.5′, 3.5′, 5.0′ OUTFALL
G–G: 3.0′, 0.0′, 0.5′, 0.0′ OUTFALL
H–H: 10.0′, 0.25′, 2.0′, 4.0′ OUTFALL

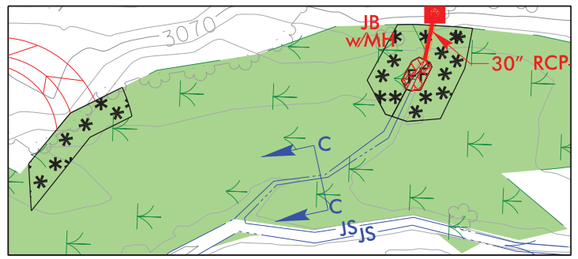
ENGLISH

PERMIT DRAWING SHEET 9 OF 46

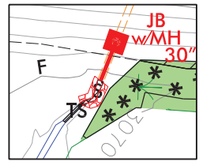
F F DENOTES FILL IN WETLAND
S S DENOTES IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 0 25 50
SCALE FOR INSET

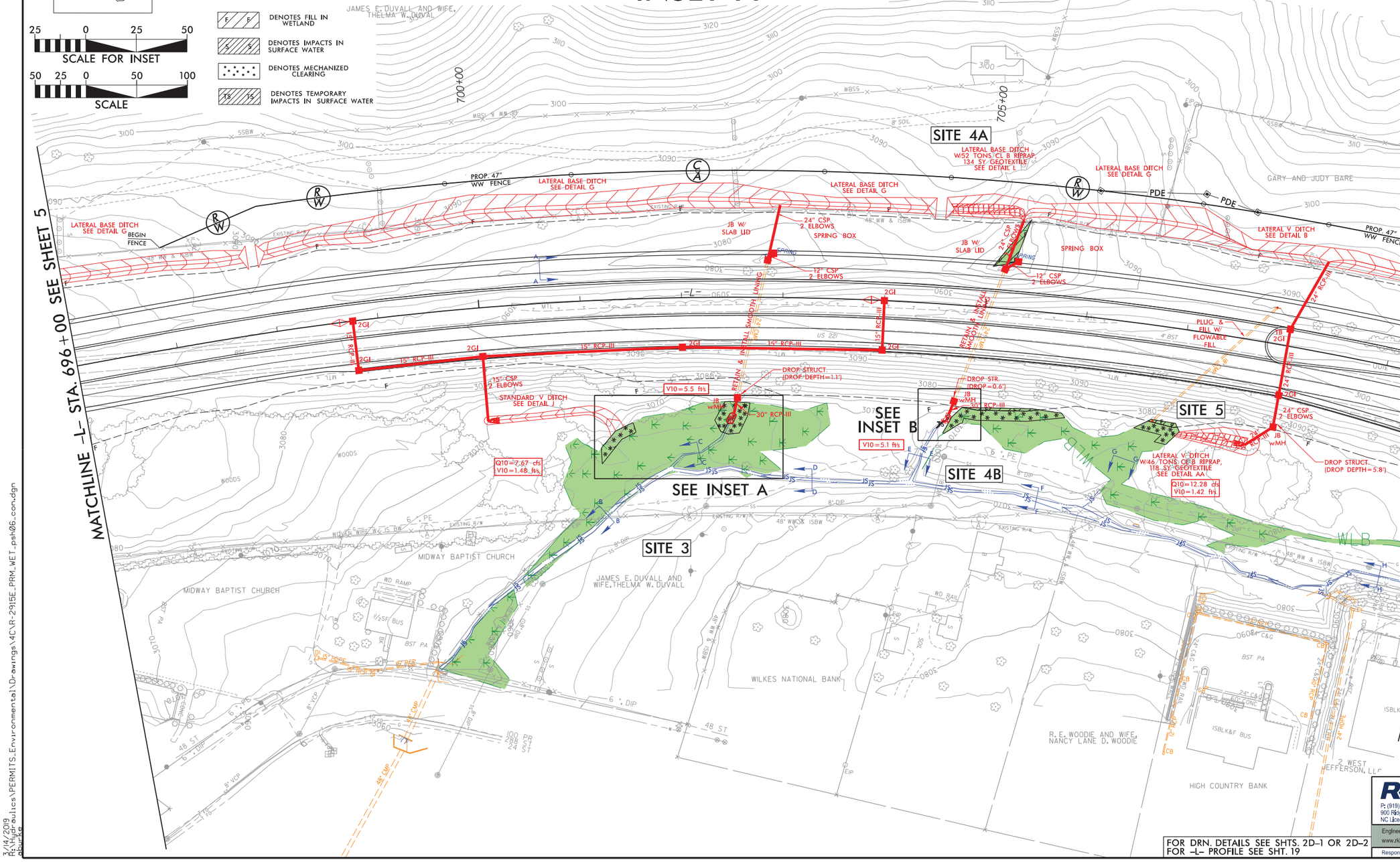
50 25 0 50 100
SCALE



INSET A



INSET B



FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR –L– PROFILE SEE SHT. 19

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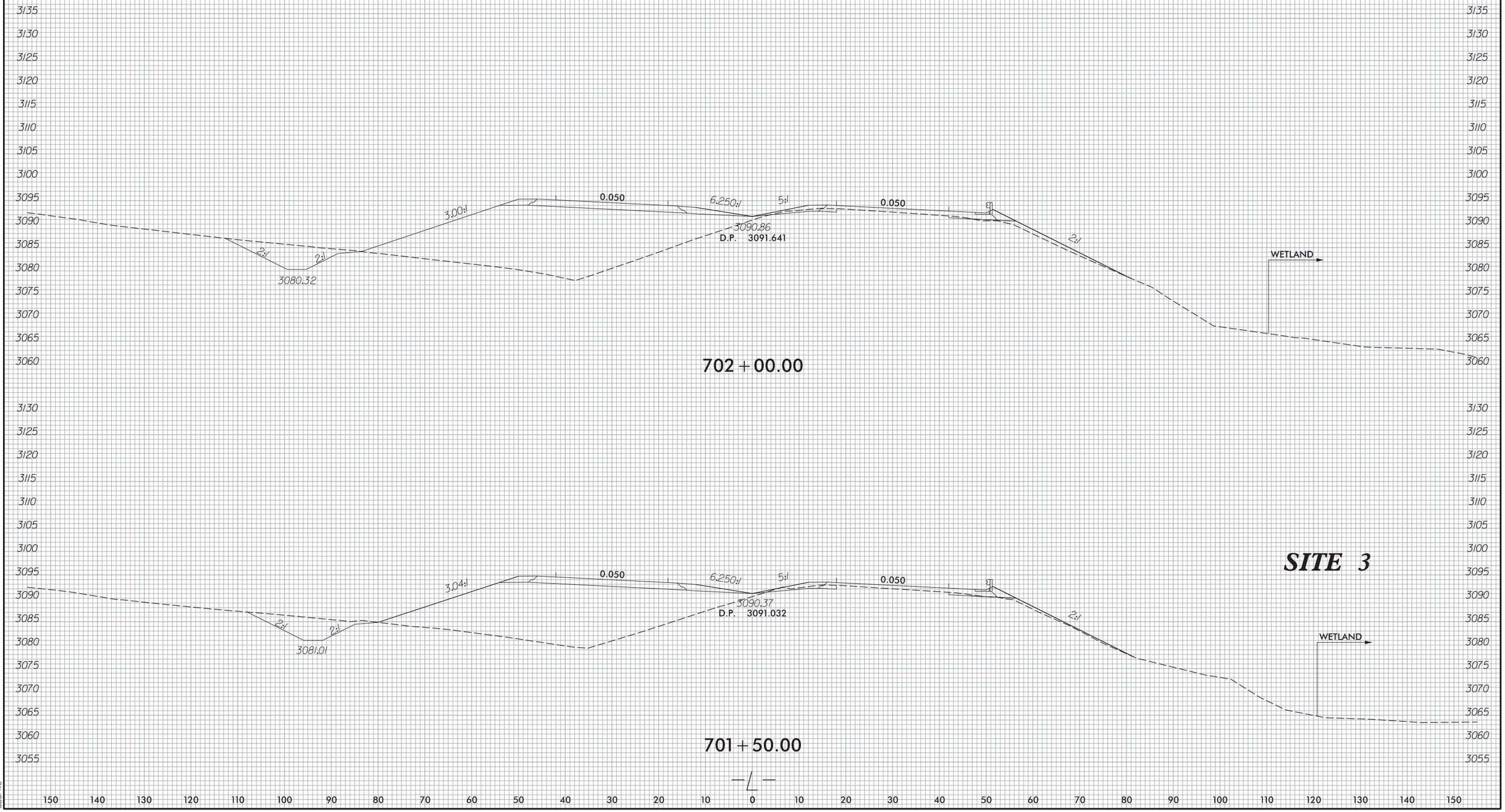
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-24

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 10 OF 46



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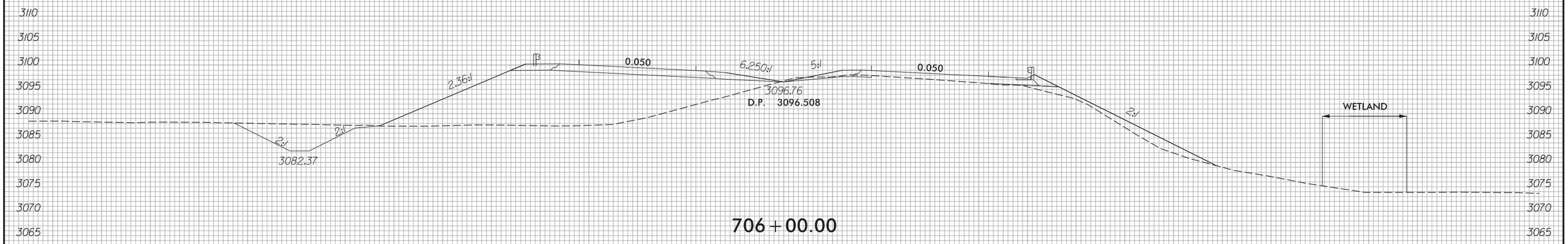
6/23/16

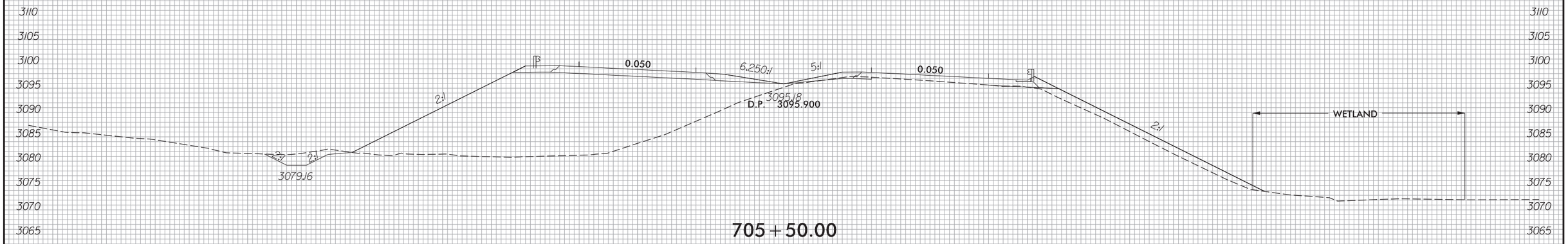
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-27

PERMIT DRAWING
SHEET 11 OF 46

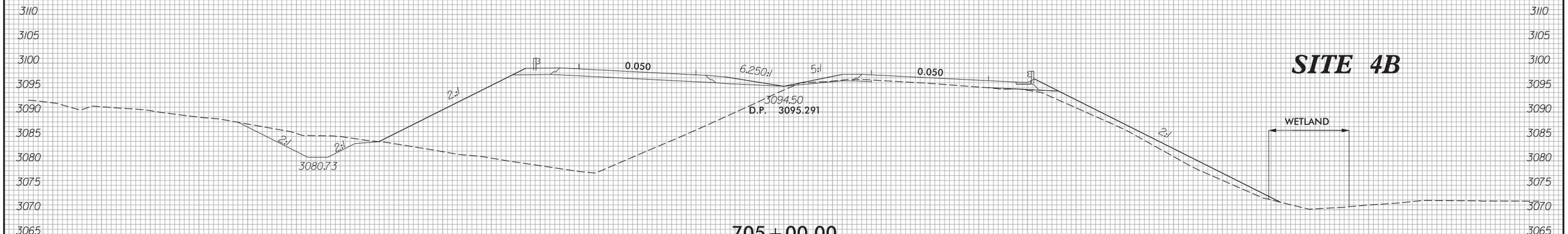
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



706+00.00



705+50.00



SITE 4B

705+00.00

—℄—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-28

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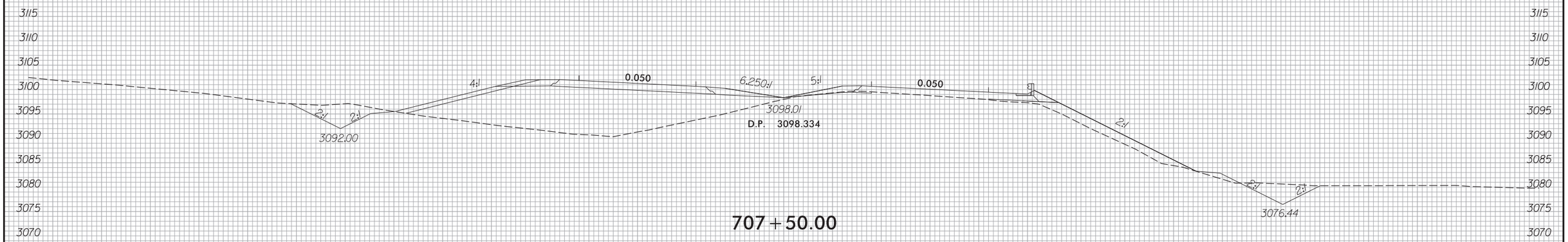
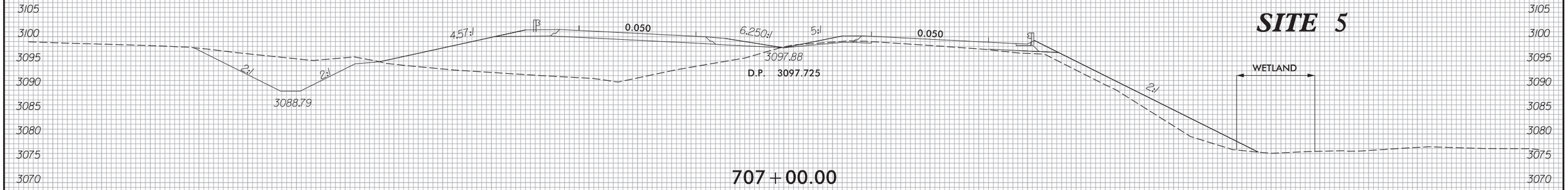
PERMIT DRAWING
SHEET 12 OF 46

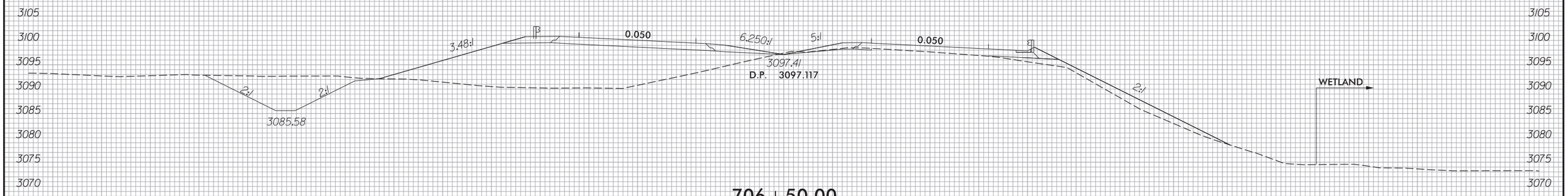


707+50.00



SITE 5

707+00.00



706+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 13 OF 46

ENGLISH

SCALE FOR INSET: 25 0 25 50

SCALE: 50 25 0 50 100

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

A–A 3.0' 0.0' 0.5' 0.0' INFALL

B–B 6.0' 0.0' 0.5' 0.0' ROADSIDE

C–C 2.5' 0.0' 0.5' 0.0' OUTFALL

D–D 7.0' 0.0' 0.3' 4.0' ROADSIDE

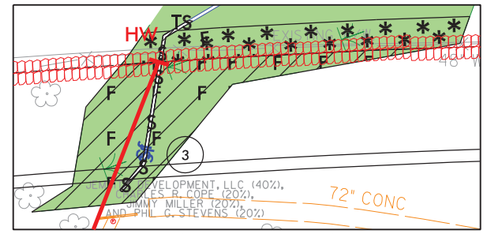
E–E 13.0' 0.0' 3.0' 5.0' ROADSIDE

F–F 5.0' 0.0' 0.5' 0.0' OUTFALL

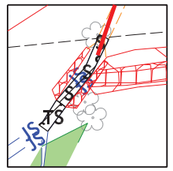
G–G 5.0' 0.0' 5.0' 0.0' INFALL

H–H 5.0' 0.0' 0.5' 0.0' OUTFALL

I–I 5.0' 0.0' 0.3' 0.0' ROADSIDE



INSET A



INSET B

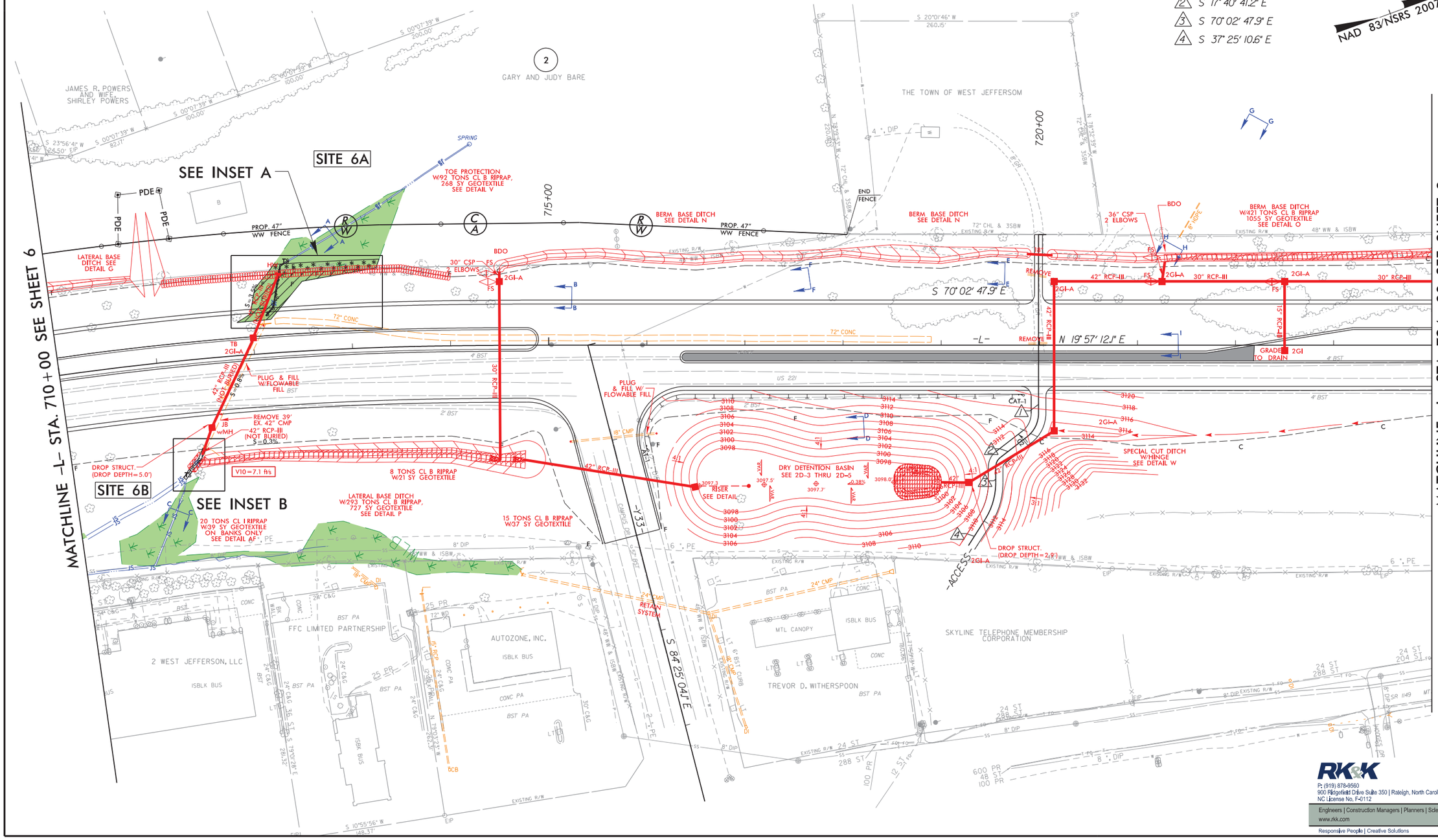
1 S 70° 02' 47.9" E

2 S 17° 40' 41.2" E

3 S 70° 02' 47.9" E

4 S 37° 25' 10.6" E

NAD 83/NSRS 2007



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A–A	B–B	C–C
3.0′ / 0.0′ / 0.5′ / 0.0′ INFALL	6.0′ / 0.0′ / 0.5′ / 0.0′ ROADSIDE	2.5′ / 0.0′ / 0.5′ / 0.0′ OUTFALL
D–D	**E–E**	**F–F**
7.0′ / 0.0′ / 0.3′ / 4.0′ ROADSIDE	13.0′ / 0.0′ / 3.0′ / 5.0′ ROADSIDE	5.0′ / 0.0′ / 0.5′ / 0.0′ OUTFALL
G–G	**H–H**	**I–I**
5.0′ / 0.0′ / 5.0′ / 0.0′ INFALL	5.0′ / 0.0′ / 0.5′ / 0.0′ OUTFALL	5.0′ / 0.0′ / 0.3′ / 0.0′ ROADSIDE

PERMIT DRAWING
SHEET 14 OF 46

ENGLISH

25 0 25 50
SCALE FOR INSET

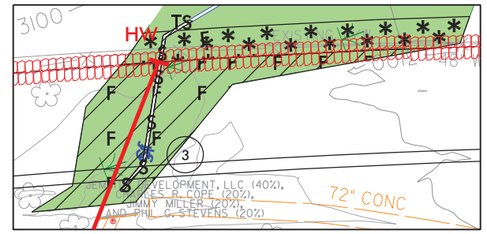
50 25 0 50 100
SCALE

F F DENOTES FILL IN WETLAND

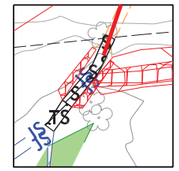
S S DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER



INSET A



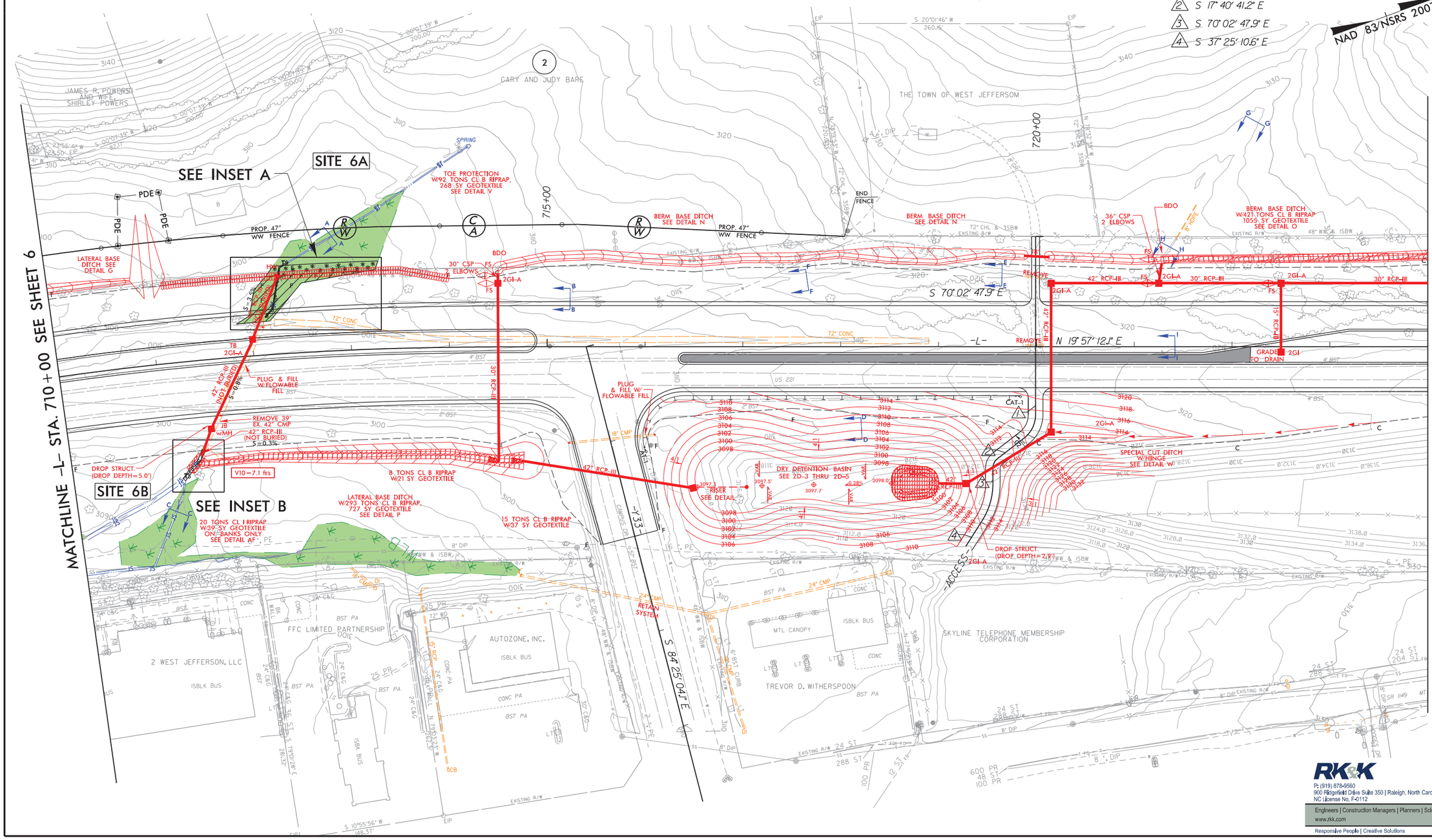
INSET B

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

1 S 70° 02' 47.9" E
2 S 17° 40' 41.2" E
3 S 70° 02' 47.9" E
4 S 37° 25' 10.6" E

NAD 83/NSRS 2007



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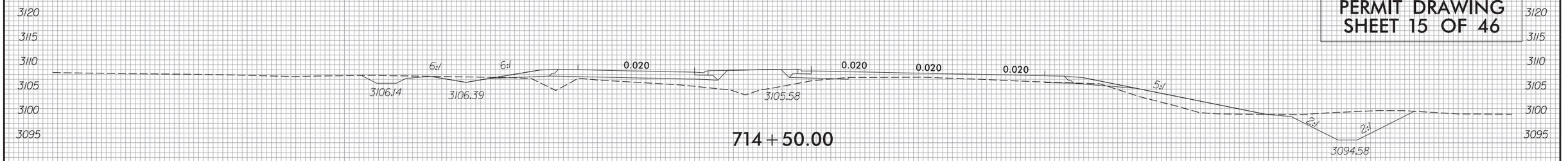
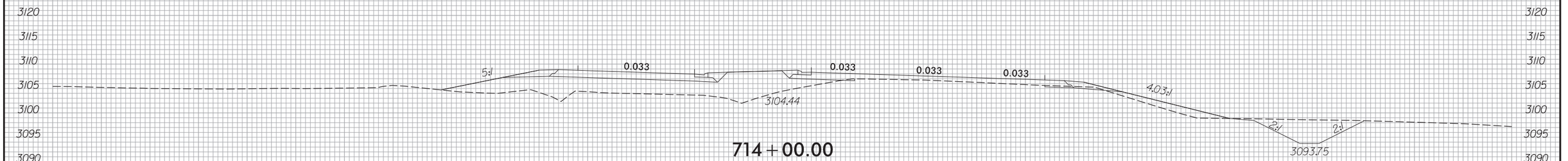
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-32

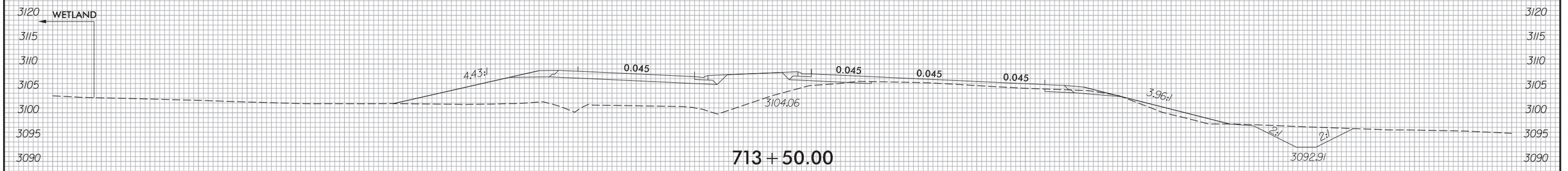
PERMIT DRAWING
SHEET 15 OF 46



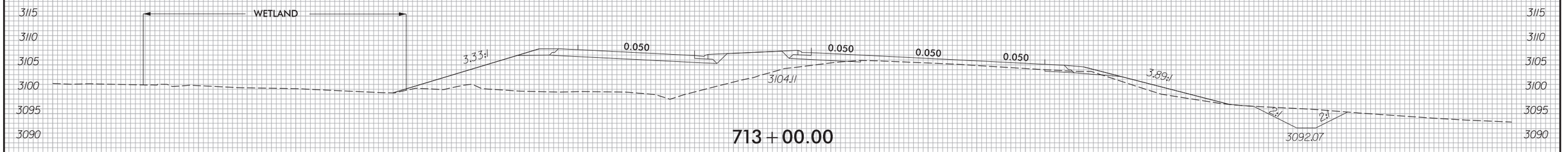
714 + 50.00



714 + 00.00

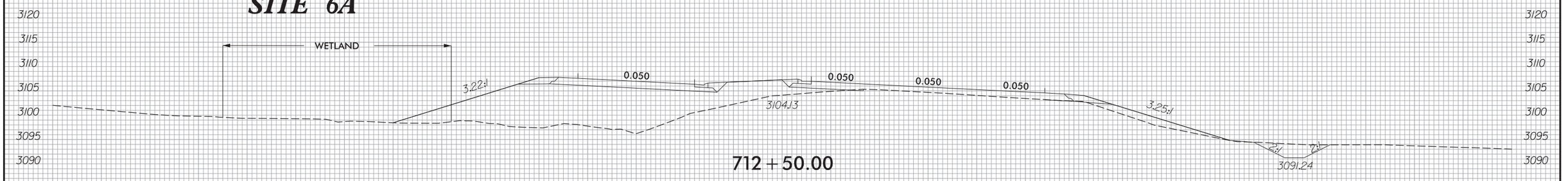


713 + 50.00



713 + 00.00

SITE 6A



712 + 50.00

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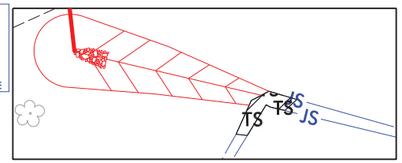
8/17/99

ENGLISH

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

A–A 8.0′ 0.0′ 0.5′ 0.0′ ROADSIDE
B–B 8.0′ 0.0′ 0.5′ 0.0′ ROADSIDE
C–C 5.0′ 0.0′ 0.5′ 0.0′ ROADSIDE
D–D 5.0′ 0.0′ 0.5′ 0.0′ INFALL
E–E 9.0′ 0.2′ 2.0′ 3.0′ INFALL



INSET A

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 16 OF 46

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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JEMSITE DEVELOPMENT, LLC (40%),
CHARLES R. COPE (20%),
JIMMY MILLER (20%),
AND PHIL G. STEVENS (20%)

725+00 730+00 735+00

MATCHLINE –L– STA. 724+00 SEE SHEET 7

MATCHLINE –L– STA. 738+00 SEE SHEET 9

N 19° 57′ 12.1″ E

N 2° 28′ 45.8″ E

S 66° 03′ 536″ E

–L134–

–L–

US 221

BEGIN FENCE

END FENCE

BERM BASE DITCH
W/421 TONS CL B RIPRAP
1055 SY GEOTEXTILE
SEE DETAIL O

PROP. 47" WW FENCE

48" WW & ISBW

EXISTING R/W

FS

BDO

30" RCP-III

30" CSP 2 ELBOWS

2GI-A

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE CUT/FILL TRANSITION

SPECIAL CUT DITCH
SEE DETAIL W

SP. LAT. V DITCH
SEE DETAIL F

BERM V DITCH
W/65 TONS CL B RIPRAP
188 SY GEOTEXTILE
SEE DETAIL AE

BERM V DITCH
SEE DETAIL AD

BERM V DITCH
W/32 TONS CL B RIPRAP
94 SY GEOTEXTILE
SEE DETAIL AE

BERM BASE DITCH
W/773 TONS CL B RIPRAP
1937 SY GEOTEXTILE
SEE DETAIL O

PDE

15" CSP 2 ELBOWS

15" RCP-III

2GI

FS

DI

TB 2GI

24" RCP-III

CONC MEDIAN ISLAND

PLUG & FILL W/FLOWABLE FILL

5 TONS CL B RIPRAP W/14 SY GEOTEXTILE

GREU TL-3

STANDARD V DITCH SEE DETAIL C

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

V10=2.9 f/s

JS

LITTLE

SEE INSET A

SITE 7

6 " PE

24" C&G

COUNTY OF ASHE

BST PA

ISM BUS

LITTLE BUFFALO CREEK

2 " PVC

SKYLINE TELEPHONE MEMBERSHIP CORPORATION

EMY D. HANDAL

VEL H. PIERCE AND WIFE, CATHY H. PIERCE

CATACORNER INVESTMENTS, INC.

WOODLAND COMMERCIAL PROPERTIES, LLC

MT JEFFERSON RD

SR 1149

21' BST

GR PA

24 ST

60 ST

12" RCP

8" HDPE

8" DIP

12" CONC

18" C&G

208.21′ S 78°18′36″ E

388.52′ S 78°18′36″ E

354.59′ S 78°18′36″ W

238.67′ N 65°41′36″ E

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pburke

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ENGLISH

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

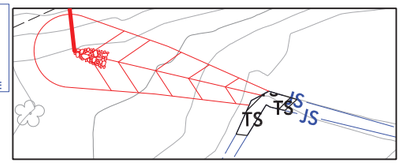
A–A
8.0′ 0.0′ 0.5′ 0.0′ ROADSIDE

B–B
8.0′ 0.0′ 0.5′ 0.0′ ROADSIDE

C–C
5.0′ 0.0′ 0.5′ 0.0′ ROADSIDE

D–D
5.0′ 0.0′ 0.5′ 0.0′ INFALL

E–E
9.0′ 0.2′ 2.0′ 3.0′ INFALL



INSET A

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 17 OF 46

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

JEMSITE DEVELOPMENT, LLC (40%),
CHARLES R. COPE (20%),
JIMMY MILLER (20%),
AND PHIL G. STEVENS (20%)

MATCHLINE –L– STA. 724+00 SEE SHEET 7

MATCHLINE –L– STA. 738+00 SEE SHEET 9

725+00 730+00 735+00

N 19° 57' 12.1" E

N 2° 28' 45.8" E

S 68° 03' 53.6" E 734.

BEGIN FENCE

END FENCE

BERM BASE DITCH
W/421 TONS CL B RIPRAP
1055 SY GEOTEXTILE
SEE DETAIL O

PROP. 47" WW FENCE

30" RCP-III

30" CSP 2 ELBOWS

2GI-A

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE CUT/FILL TRANSITION

SPECIAL CUT DITCH SEE DETAIL W

SP. LAT. V DITCH SEE DETAIL F

BERM V DITCH
W/65 TONS CL B RIPRAP
188 SY GEOTEXTILE
SEE DETAIL AE

BERM V DITCH
SEE DETAIL AD

BERM V DITCH
W/32 TONS CL B RIPRAP
94 SY GEOTEXTILE
SEE DETAIL AE

BERM BASE DITCH
W/73 TONS CL B RIPRAP
1937 SY GEOTEXTILE
SEE DETAIL O

PDE

15" CSP 2 ELBOWS

15" RCP-III

2GI

DI

TB 2GI

STANDARD V DITCH SEE DETAIL C

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

V10=2.9 fps

SEE INSET A

SITE 7

24" RCP-III

5 TONS CL B RIPRAP W/14 SY GEOTEXTILE

PLUG & FILL W/FLOWABLE FILL

GREU TL-3

SKYLINE TELEPHONE MEMBERSHIP CORPORATION

EMY D. HANDAL

WOODLAND COMMERCIAL PROPERTIES, LLC

VEL H. PIERCE AND WIFE, CATHY H. PIERCE

CATACORNER INVESTMENTS, INC.

COUNTY OF ASHE

SR 1148 MT JEFFERSON RD

US 221

LITTLE BUFFALO CREEK

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ENGLISH

PERMIT DRAWING
SHEET 18 OF 46

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

T T DENOTES TEMPORARY FILL IN WETLAND

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

JEMSITE DEVELOPMENT, LLC (40%),
CHARLES R. COPE (20%),
JIMMY MILLER (20%),
AND PHIL C. STEVENS (20%)

A–A
3.0'
0.2'
1.0'
1.0'
INFALL

B–B
13.0'
0.2'
2.0'
8.0'
OUTFALL

C–C
8.0'
0.25'
3.0'
5.0'
OUTFALL

D–D
7.0'
0.3'
2.5'
5.0'
OUTFALL

E–E
8.0'
0.5'
3.0'
6.0'
OUTFALL

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

JOHNNY J. SULLIVAN

740+00

745+00

750+00

MATCHLINE –L– STA. 738+00 SEE SHEET 8

MATCHLINE –L– STA. 751+00 SEE SHEET 10

SITE 9A

SITE 8A
V10=3.6 ft/s

SITE 9B
V10=8.3 ft/s

SITE 8B

SEE INSET A

SEE INSET B

SEE INSET C

BERM BASE DITCH W773 TONS CL B RIPRAP 1937 SY GEOTEXTILE SEE DETAIL O

BERM BASE DITCH SEE DETAIL N

BERM BASE DITCH W181 TONS CL I RIPRAP, 371 SY GEOTEXTILE SEE DETAIL R

SP. LAT. V DITCH W85 TONS CL B RIPRAP, 237 SY GEOTEXTILE SEE DETAIL Q

SP. LAT. V DITCH SEE DETAIL F

SP. LAT. V DITCH W/595 SY-PSRM SEE DETAIL S

BDO REMOVE RISER & 9' EX. 24" CMP

'V' DITCH SEE DETAIL X

PLUG & FILL SYSTEM W/ FLOWABLE FILL

PLUG & FILL W/FLOWABLE FILL

F STD. V DITCH W20 TONS CL B RIPRAP, 53 SY GEOTEXTILE SEE DETAIL H

7 TONS CL I RIPRAP W15 SY GEOTEXTILE

11 TONS CL I RIPRAP W22 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

REMOVE 20' EX. 30" CMP

DROP STRUCTURE (DROP DEPTH=1.4')

CORNER OF BUILDING AT CONTROL ELEV.= 3090.62 (SURVEYED 100616)

PROP. 47" WW FENCE

24" CSP 2 ELBOWS

24" CMP 2 ELBOWS

40TCB

SPRING BOX

SPRING

N 19°17'15.2" E

N 20°25'56.7" E

N 2°28'45.8" E

BUFFALO CREEK

BUTTLE BUFFALO CREEK

COUNTY OF ASHE

CS PROPERTIES OF ASHE, INC.

ISBK BUS

SR 1149 MT JEFFERSON RD

US 221

INSET A

INSET B

INSET C

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR –L– PROFILE SEE SHT. 20
FOR –SR1– PROFILE SEE SHT. 26

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ENGLISH

PERMIT DRAWING
SHEET 19 OF 46

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

T T DENOTES TEMPORARY FILL IN WETLAND

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

JEMSITE DEVELOPMENT, LLC (40%),
CHARLES R. COPE (20%),
JIMMY MILLER (20%),
AND PHIL C. STEVENS (20%)

JOHNNY J. SULLIVAN

A–A
3.0'
0.2'
1.0'
1.0'
INFALL

B–B
13.0'
0.2'
2.0'
8.0'
OUTFALL

C–C
8.0'
0.25'
3.0'
5.0'
OUTFALL

D–D
7.0'
0.3'
2.5'
5.0'
OUTFALL

E–E
8.0'
0.5'
3.0'
6.0'
OUTFALL

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE –L– STA. 738+00 SEE SHEET 8

MATCHLINE –L– STA. 751+00 SEE SHEET 10

740+00

745+00

750+00

SITE 9A

SITE 8A
V10=3.6 ft/s

SITE 9B
V10=8.3 ft/s

SITE 8B

SEE INSET A

SEE INSET B

SEE INSET C

N 19°17'15.2" E

N 20°25'56.7" E

N 2°28'45.8" E

SPRING

SP. LAT. V DITCH W/85 TONS CL B RIPRAP, 237 SY GEOTEXTILE SEE DETAIL Q

BERM BASE DITCH W/181 TONS CL I RIPRAP, 371 SY GEOTEXTILE SEE DETAIL R

BERM BASE DITCH W/73 TONS CL B RIPRAP 1937 SY GEOTEXTILE SEE DETAIL O

BERM BASE DITCH SEE DETAIL N

PROP. 47" WW FENCE

BDO

PDE

24" CSP 2 ELBOWS

40TCB

SP LAT V DITCH SEE DETAIL F

SPRING BOX

SP LAT V DITCH W/85 SY PSRM SEE DETAIL S

BDO REMOVE RISER & 9' EX. 24" CMP

BERM BASE DITCH SEE DETAIL N

"V" DITCH SEE DETAIL X

PLUG & FILL SYSTEM "W" FLOWABLE FILL

24" RCP-III

15" RCP-III

30" RCP-III

2GI

2GI-A

TB 2GI

TB 2GI-A

FS

REMOVE 20' OF EX. 30" CMP

DROP STRUCTURE (DROP DEPTH=1.4')

STD V DITCH W/20 TONS CL B RIPRAP 53 SY GEOTEXTILE SEE DETAIL H

7 TONS CL I RIPRAP W/15 SY GEOTEXTILE

11 TONS CL I RIPRAP W/22 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

CORNER OF BUILDING AT CONTROL ELEV. = 3090.62 (SURVEYED 10/06/16)

BUFFALO CREEK

LITTLE BUFFALO CREEK

COUNTY OF ASHE

CS PROPERTIES OF ASHE, INC.

SR 1149 MT JEFFERSON RD

US 221

INSET A

INSET B

INSET C

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 20
FOR –SR1– PROFILE SEE SHT. 26

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abruce

6/23/16

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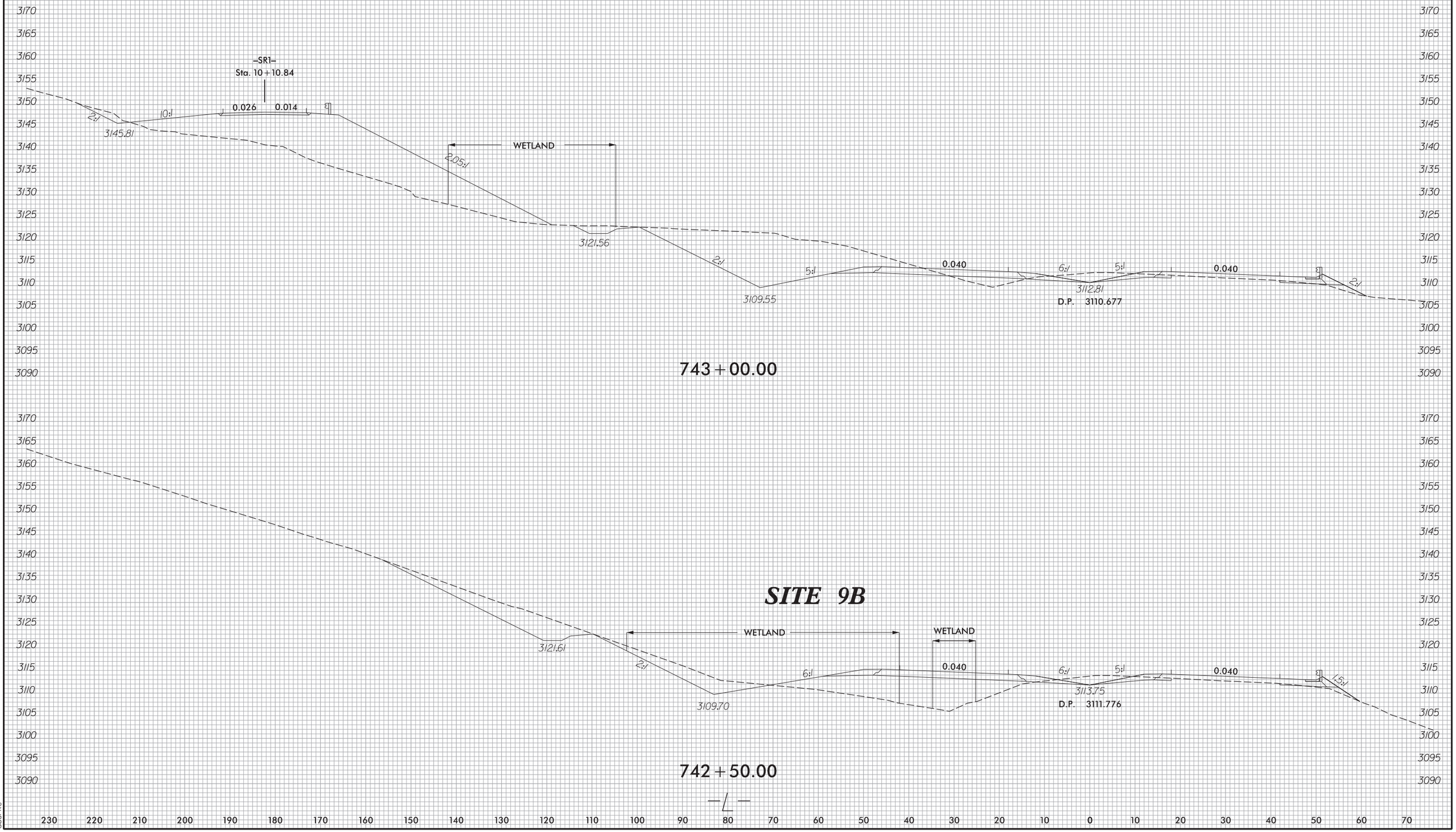
	R-2915E	X-53

PERMIT DRAWING
SHEET 20 OF 46



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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SCALE FOR INSET: 25 0 25 50

SCALE: 50 25 0 50 100

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 21 OF 46

ENGLISH

A–A: 4.0′, 0.2′, 0.5′, 2.0′ INFALL

B–B: 5.0′, 0.1′, 1.0′, 4.0′ OUTFALL

C–C: 7.0′, 0.2′, 2.0′, 3.0′ OUTFALL

D–D: 11.0′, 0.2′, 2.5′, 5.0′ OUTFALL

E–E: 8.0′, 0.2′, 0.5′, 2.0′ INFALL

F–F: 15.5′, 0.7′, 5.0′, 6.5′ OUTFALL

G–G: 19.0′, 0.9′, 8.0′, 10.0′ OUTFALL

INSET A

INSET B

INSET G

NAD 83/NSRS 2007

MATCHLINE –L– STA. 751+00 SEE SHEET 9

MATCHLINE –L– STA. 765+00 SEE SHEET 11

SITE 11D

V10=5.0 ft/s

64 TONS CL II RIPRAP W/119 SY GEOTEXTILE EMBEDDED IN CHANNEL SEE STD. 876.01 (RIP RAP IN CHANNELS)

PIPES DO NOT INTERSECT

SEE INSET A

20 TONS CL I RIPRAP W/39 SY GEOTEXTILE

SITE 10

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

Q10=0.2 cfs

V10=0.3 ft/s

SEE INSET B

FILL IN WETLANDS (RIP-RAP PAD)

SITE 11C

SITE 11A

SITE 11B

SEE INSET F

SITE 12

V10=12.6 ft/s

48 TONS CL I RIPRAP W/89 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

SEE INSET G

SITE 13A

V10=7.6 ft/s

8 TONS CL B RIPRAP W/21 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

SEE INSET C

SITE 13C

SEE INSET D

SITE 14A

V10=9.4 ft/s

40 TONS CL I RIPRAP W/75 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

SEE OUTFALL ANALYSIS PACKAGE

SITE 13B

SEE INSET E

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

RETAIN & INSTALL SMOOTH LINING

REMOVE SYSTEM

REMOVE

RETAIN

RETAIN SYSTEM

PLUG & FILL W/FLOWABLE FILL

DROP STRUCT. (DROP DEPTH=8.5′) MED. V DITCH SEE DETAIL I

DROP STRUCT. (DROP DEPTH=2.6′)

DROP STRUCT. (DROP DEPTH=4.5′)

'V' DITCH SEE DETAIL X

SP. LAT. V. DITCH SEE DETAIL F

10′ WIDE BERM TOP ELEV. 3108.0′ SEE DETAIL AC

10′ WIDE BERM TOP ELEV. 3114.5′ SEE DETAIL AC

SPECIAL CUT DITCH SEE DETAIL W

STD. BASE DITCH W/23 TONS CL II RIPRAP, 46 SY GEOTEXTILE SEE DETAIL U

JURISDICTIONAL STREAM BETWEEN EXISTING PIPES

PROP. 47″ WW FENCE

ROBERT CLAYTON LONG AND WIFE, SARAH DEAN LONG

RUBY R. ABSHER LIVING TRUST

REED REAL ESTATE

JOHNNY SULLIVAN AND WIFE, PHYLLIS SULLIVAN

MICHAEL ALOIA AND WIFE, CINDEE L. ALOIA

CS PROPERTIES OF ASHE, INC.

KATHY H. HOWELL AND LINDA H. BELGER

JAMES P.G. MURRAY, A 99% UNDIVIDED INTEREST AND STANLY DWAYNE ELLIOTT A 1% UNDIVIDED INTEREST

SR 1252 ROCKY RIDGE RD

SR 1251 MT JEFFERSON RD

SR 1251 CANDLELIGHT DR

INSET F

INSET C

INSET D

INSET E

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

F F DENOTES FILL IN WETLAND
S S DENOTES IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 22 OF 46

ENGLISH

INSET A

INSET B

INSET G

A–A: 4.0′, 0.2′, 0.5′, 2.0′ INFALL
B–B: 5.0′, 0.1′, 1.0′, 4.0′ OUTFALL
C–C: 7.0′, 0.2′, 2.0′, 3.0′ OUTFALL
D–D: 11.0′, 0.2′, 2.5′, 5.0′ OUTFALL
E–E: 8.0′, 0.2′, 0.5′, 2.0′ INFALL
F–F: 15.5′, 0.7′, 5.0′, 6.5′ OUTFALL
G–G: 19.0′, 0.9′, 8.0′, 10.0′ OUTFALL

NAD 83/NSRS 2007

MATCHLINE –L– STA. 751+00 SEE SHEET 9

MATCHLINE –L– STA. 765+00 SEE SHEET 11

SITE 11D
V10=5.0 ft/s
64 TONS CL II RIPRAP W/119 SY GEOTEXTILE EMBEDDED IN CHANNEL SEE STD. 876.01 (RIP RAP IN CHANNELS) PIPES DO NOT INTERSECT

SEE INSET A

SITE 12
V10=12.6 ft/s
RETAIN & INSTALL SMOOTH LINING
46 TONS CL I RIPRAP W/89 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

SEE INSET G

SITE 13A
V10=7.6 ft/s
8 TONS CL B RIPRAP W/21 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

SEE INSET C

SEE INSET D

SITE 14A
V10=9.4 ft/s
40 TONS CL I RIPRAP W/75 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

SEE OUTFALL ANALYSIS PACKAGE

SITE 13C

SITE 13B
10′ WIDE BERM TOP ELEV. 3114.5′ SEE DETAIL AC
STD. BASE DITCH W/23 TONS CL II RIPRAP, 46 SY GEOTEXTILE SEE DETAIL U

SEE INSET E

SITE 10
2 TONS CL B RIPRAP W/7 SY GEOTEXTILE
Q10=0.2 cfs
V10=0.3 ft/s

SEE INSET B

SEE INSET F

SITE 11C

SITE 11A

SITE 11B

FILL IN WETLANDS (RIP-RAP PAD)

RETAIN & INSTALL SMOOTH LINING

REMOVE SYSTEM

PLUG & FILL W/FLOWABLE FILL

SP. LAT. V DITCH SEE DETAIL F

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

10′ WIDE BERM TOP ELEV. 3108.0′ SEE DETAIL AC

SPECIAL CUT DITCH SEE DETAIL W

JURISDICTIONAL STREAM BETWEEN EXISTING PIPES

'V' DITCH SEE DETAIL X

PROP. 47″ WW FENCE

ROBERT CLAYTON LONG AND WIFE, SARAH DEAN LONG

CS PROPERTIES OF ASHE, INC.

KATHY H. HOWELL AND LINDA H. BELGER

JAMES P.G. MURRAY A 99% UNDIVIDED INTEREST AND STANLY DWAYNE ELLIOTT A 1% UNDIVIDED INTEREST

MICHAEL ALOIA AND WIFE, CINDEE L. ALOIA

RUBY M. ABSHER LIVING TRUST

REED REAL ESTATE

JOHNNY SULLIVAN AND WIFE, PHYLLIS SULLIVAN

INSET F

INSET C

INSET D

INSET E

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

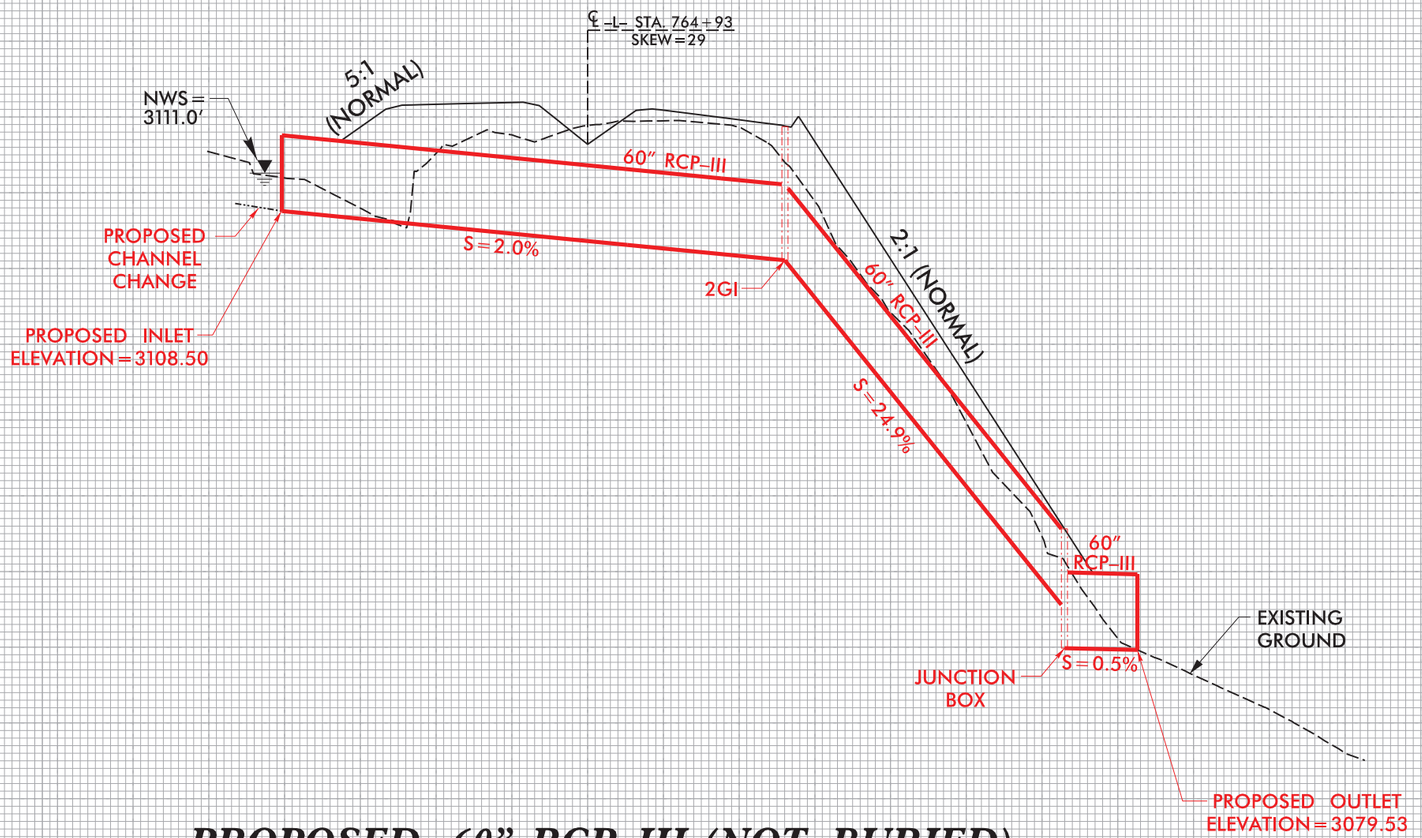
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 23 OF 46

SITE 14
–L– 764+93



PROPOSED 60" RCP–III (NOT BURIED)
(length=283')

3125 3120 3115 3110 3105 3100 3095 3090 3085 3080 3075 3070

300 250 200 150 100 50 0 50 100 150 200 250

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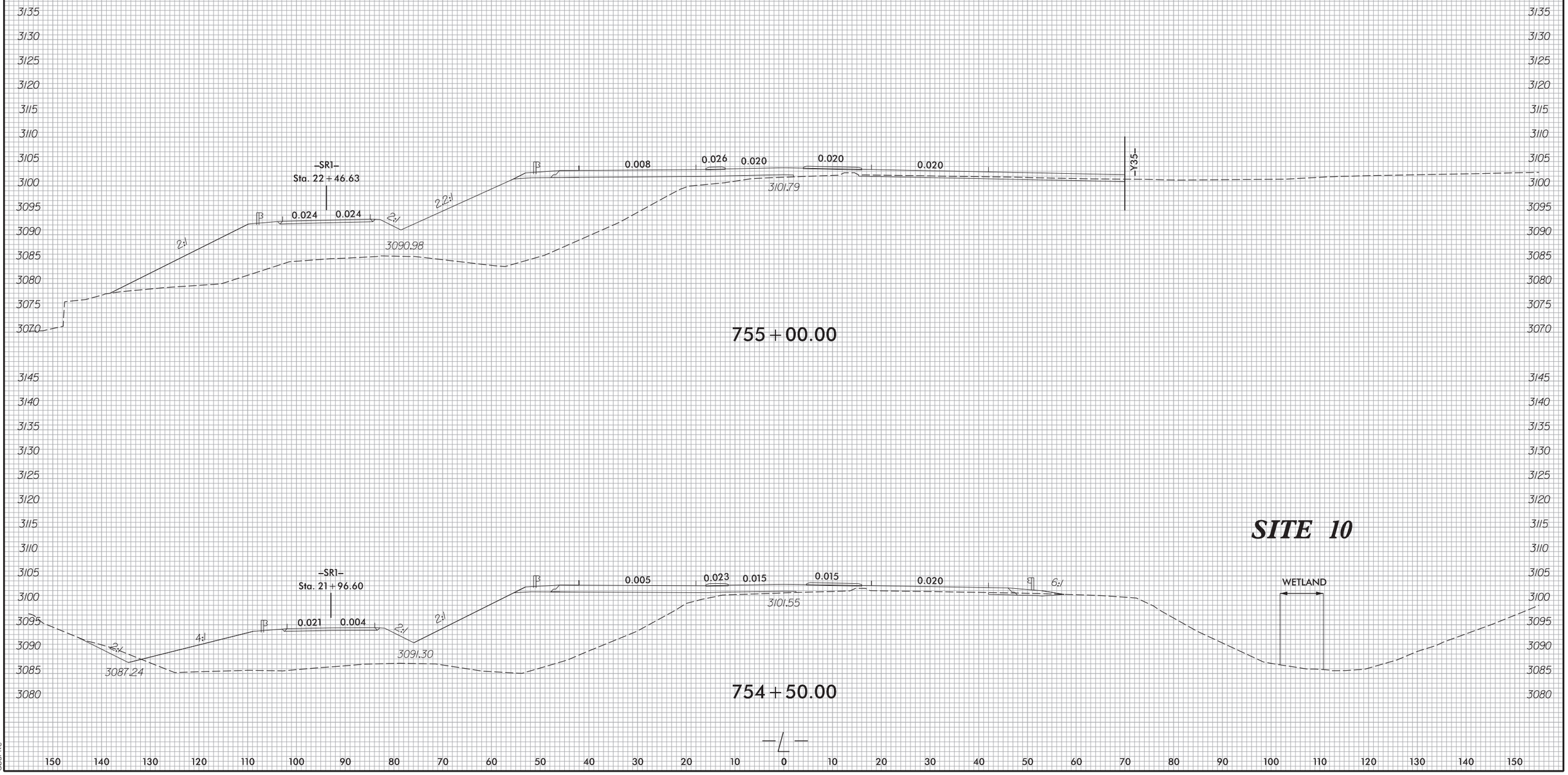
6/23/16

0	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-65

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 24 OF 46



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8/17/99

ENGLISH

F F	DENOTES FILL IN WETLAND
S S	DENOTES IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 25 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

INSET A

INSET B

INSET C

INSET D

MATCHLINE –L– STA. 765+00 SEE SHEET 10

MATCHLINE –L– STA. 779+00 SEE SHEET 12

SITE 15A

SEE INSET A

SEE INSET B

SEE INSET C

SEE INSET D

SITE 14B

SITE 15B

SITE 16

SITE 17A

SITE 17B

MILLARD B. DANCY AND WIFE, GEORGIA L. DANCY

JERRY AND ROBIN BROWN

BOBBY LEE WADDELL WIDOWER

JERRY L. BROWN

RODNEY TERRELL MORGAN, HUSBAND, AND WIFE, CAMILLE MORGAN

MICHAEL ALOIA AND WIFE, CINDEE ALOIA

THOMAS JARMEN AND WIFE, LINDA JARMEN

WILLIAM H. WILKINSON HUSBAND, AND WIFE KAREN WILKINSON

D. NEWTON CAVINESS

CHRIS A. PELEZO AND WIFE, DORIS F. PELEZO

770+00

775+00

US 221

SR 1251 CANDLELIGHT DR

N 19° 21' 11.1" E –L–

V10=7.3 ft/s

18 TONS CL I RIPRAP W/20 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AE

DROP STRUCT. (DROP DEPTH=6.5')

36" RCP-III

JB w/MH

36" CSP 2 ELBOWS

COLLAR

TOE PROTECTION W/58 TONS CL B RIPRAP, 169 SY GEOTEXTILE SEE DETAIL V

STD. BASE DITCH W/31 TONS CL I RIPRAP, 69 SY GEOTEXTILE SEE DETAIL D

4 TONS CL I RIPRAP W/10 SY GEOTEXTILE

18" CSP 2 ELBOWS

PLUG & FILL W/FLOWABLE FILL

DROP STRUCT. (DROP DEPTH=6.8')

18" RCP-III

STD. BASE DITCH W/23 TONS CL II RIPRAP, 40 SY GEOTEXTILE SEE DETAIL U

HW

JB w/MH

60" RCP-III

SP. CUT DITCH SEE DETAIL W

10' WIDE BERM TOP ELEV. 3117.0' SEE DETAIL AC

10' WIDE BERM TOP ELEV. 3114.5' SEE DETAIL AC

SPECIAL CUT DITCH SEE DETAIL W

SPECIAL CUT DITCH SEE DETAIL A

RETAIN & INSTALL SMOOTH LINING

RETAIN

DROP STRUCT. (DROP DEPTH=5.6')

EXISTING 36" CMP UNDER CANDLELIGHT DR. IS UNDERSIZED & PERCHED, INSTALL A JB WITH A DROP IN THE BOX TO TIE THE EXISTING 36" TO A NEW PROPOSED 60" RCP OUTLET

CONV. DI TO JB w/MH

POND REMOVED BY OTHERS. JURISDICTIONAL STREAM REMAINS

HDPE (APPROX. LOCATION)

SEE OUTFALL ANALYSIS PACKAGE

DO NOT DISTURB SHED

STD. BASE DITCH W/71 TONS CL B RIPRAP, 169 SY GEOTEXTILE SEE DETAIL Y

V10=9.1 ft/s

42" CSP 2 ELBOWS

42" RCP-III

DROP STRUCT. (DROP DEPTH=7.4')

15" RCP-III

2GI

2GI-A

GREU TL-3

PLUG & FILL W/FLOWABLE FILL

SPECIAL CUT DITCH SEE DETAIL W

42" CMP

RETAIN

12" CMP RISER

POND

24" HDPE

12" CMP

15" HDPE

24" BST

48" WW & 2SBW

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 21

A–A	B–B	C–C	D–D	E–E	F–F	G–G
8.0' 0.1' 1.0' 5.0' OUTFALL	5.0' 0.0' 1.0' 1.5' OUTFALL	5.0' 0.0' 1.0' 3.0' OUTFALL	7.0' 0.1' 1.5' 2.0' ROADSIDE	12.0' 0.0' 4.5' 4.0' INFALL	6.0' 0.0' 1.5' 1.5' INFALL	6.0' 0.0' 2.5' 1.5' INFALL

H–H	I–I	J–J
6.0' 0.0' 2.0' 1.5' INFALL	5.0' 0.2' 0.5' 2.0' INFALL	6.0' 0.0' 1.0' 3.0' INFALL

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ENGLISH

F F	DENOTES FILL IN WETLAND
S S	DENOTES IMPACTS IN SURFACE WATER
	DENOTES MECHANIZED CLEARING
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

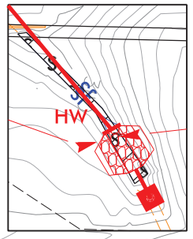
PERMIT DRAWING
SHEET 26 OF 46

25 0 25 50
SCALE FOR INSET

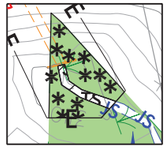
50 25 0 50 100
SCALE

INSET A

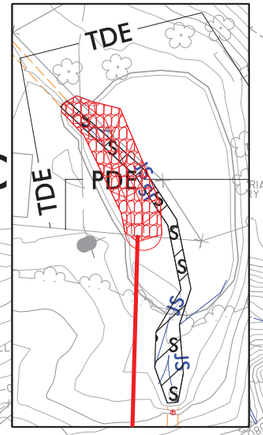
INSET B



INSET C



INSET D



NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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MATCHLINE –L– STA. 765+00 SEE SHEET 10

MATCHLINE –L– STA. 779+00 SEE SHEET 12

SITE 15A

SEE INSET A

SITE 14B

SEE INSET B

SITE 16

SITE 15B

SEE INSET C

SITE 17A

SEE INSET D

SITE 17B

770+00

775+00

MILLARD B. DANCY AND WIFE, GEORGIA L. DANCY

JERRY AND ROBIN BROWN

BOBBY LEE WADDELL WIDOWER

JERRY L. BROWN

RODNEY TERRELL MORGAN, HUSBAND, AND WIFE, CAMILLE MORGAN

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THOMAS JARMEN AND WIFE, LINDA JARMEN

D. NEWTON CAVINESS

CHRIS A. PELEZO AND WIFE, DORIS F. PELEZO

WILLIAM H. WILKINSON HUSBAND, AND WIFE KAREN WILKINSON

SR 1251 CANDELIGHT DR

US 221

NCDOT

V10=7.3 ft/s

18 TONS CL I RIPRAP W/20 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AE

DROP STRUCT. (DROP DEPTH=6.5')

36" RCP-III

JB W/MH

36" CSP 2 ELBOWS

TOE PROTECTION W/58 TONS CL B RIPRAP, 169 SY GEOTEXTILE SEE DETAIL V

STD. BASE DITCH W/31 TONS CL I RIPRAP, 69 SY GEOTEXTILE SEE DETAIL D

4 TONS CL I RIPRAP W/10 SY GEOTEXTILE

18" CSP 2 ELBOWS

18" RCP-III

DROP STRUCT. (DROP DEPTH=6.8')

PLUG & FILL W/FLOWABLE FILL

STD. BASE DITCH W/23 TONS CL II RIPRAP, 44 SY GEOTEXTILE SEE DETAIL U

60" RCP-III

SP. CUT DITCH SEE DETAIL W

10' WIDE BERM TOP ELEV. 3117.0' SEE DETAIL AC

SPECIAL CUT DITCH SEE DETAIL W

SPECIAL CUT DITCH SEE DETAIL A

10' WIDE BERM TOP ELEV. 3114.5' SEE DETAIL AC

DROP STRUCT. (DROP DEPTH=5.6')

EXISTING 36" CMP UNDER CANDLELIGHT DR IS UNDERSIZED & PERCHED, INSTALL A JB WITH A DROP IN THE BOX TO TIE THE EXISTING 36" TO A NEW PROPOSED 60" RCP OUTLET

RETAIN & INSTALL SHOOT IN LINING

RETAIN SYSTEM

CONV. DI TO JB W/MH

POND REMOVED BY OTHERS. JURISDICTIONAL STREAM REMAINS

RETAIN

SEE OUTFALL ANALYSIS PACKAGE

DO NOT DISTURB SHED

STD. BASE DITCH W/71 TONS CL B RIPRAP, 169 SY GEOTEXTILE SEE DETAIL Y

V10=9.1 ft/s

42" CSP 2 ELBOWS

42" RCP-III

JB W/MH

DROP STRUCT. (DROP DEPTH=7.4')

15" RCP-III

2GI-A

GREU. TL-3

PLUG & FILL W/FLOWABLE FILL

2GI

2GI-A

FS

TDE

PDE

N 19° 21' 11" E

A–A 8.0' 0.1' 1.0' 5.0' OUTFALL

B–B 5.0' 0.0' 1.0' 1.5' OUTFALL

C–C 5.0' 0.0' 1.0' 3.0' OUTFALL

D–D 7.0' 0.1' 1.5' 2.0' ROADSIDE

E–E 12.0' 0.0' 4.5' 4.0' INFALL

F–F 6.0' 0.0' 1.5' 1.5' INFALL

G–G 6.0' 0.0' 2.5' 1.5' INFALL

H–H 6.0' 0.0' 2.0' 1.5' INFALL

I–I 5.0' 0.2' 0.5' 2.0' INFALL

J–J 6.0' 0.0' 1.0' 3.0' INFALL

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 21

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-78

PERMIT DRAWING
SHEET 27 OF 46

SITE 15

WETLAND

768+50.00

768+00.00

MATCHLINE

MATCHLINE

MATCHLINE

3/14/2019
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dburke

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-80

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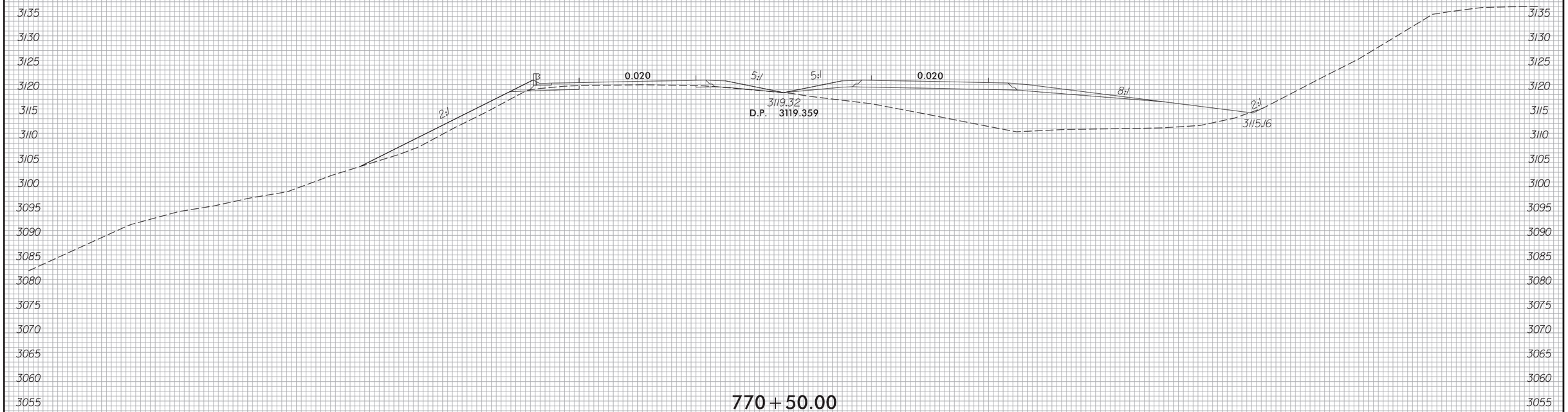
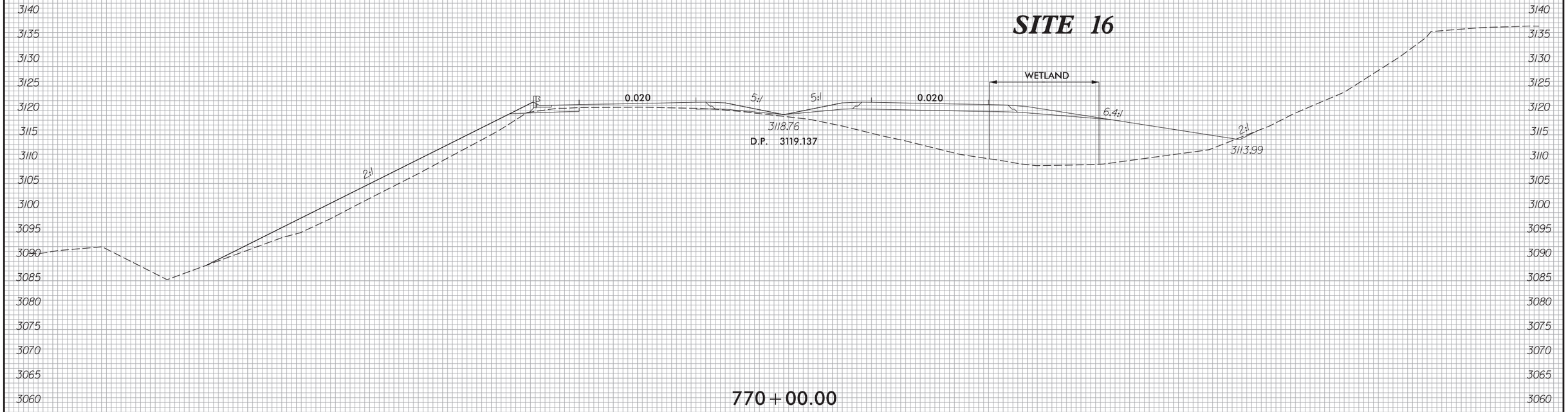
PERMIT DRAWING
SHEET 28 OF 46



770+50.00

SITE 16



770+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 29 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

INSET A

INSET B

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/NSRS 2007

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MATCHLINE –L– STA. 779+00 SEE SHEET 11

MATCHLINE –L– STA. 793+00 SEE SHEET 13

780+00

785+00

790+00

DEREK MCCLURE

ANTHONY GLEN GOODMAN HUSBAND, AND WIFE SARAH FARMER GOODMAN

RODNEY TERREL MORGAN HUSBAND, AND WIFE CAMILLE MORGAN

TRICOUNTY PAVING, INC

JERRY WILLARD AND WIFE, ADELE M. WILLARD

PACK FAN INVESTMENTS, LLC

CINJO, INC

WALTER OLSEN AND WIFE, DONNA RUTH OLSEN

JOHN C. JONES

LEOBARDO REYES CRESCENCIO

JAMES C. LITTLEFIELD AND WIFE, ANN B. LITTLEFIELD

DONNA J H WEAVER

STEPHEN J. BLEVINS & SANDRA E. BLEVINS

JERRY F. WHITLEY AND WIFE, IMOJEAN M. WHITLEY

SITE 18

SEE INSET A

STD. BASE DITCH W/31 TONS CL I RIPRAP 63 SY GEOTEXTILE SEE DETAIL D

V10=4.0 ft/s

PLUG & FILL W/FLOWABLE FILL

REMOVE 25' EX. 24" CMP

SPECIAL CUT DITCH SEE DETAIL W

COLLAR AND EXTEND 24" CSP (2 ELBOWS)

SPECIAL CUT DITCH SEE DETAIL W

SPECIAL CUT DITCH W/602 SY PSRM SEE DETAIL AA

REMOVE SYSTEM

DROP STRUCT (DROP DEPTH=3.4')

V10=6.2 ft/s JB w/MH

7 TONS CL I RIPRAP W/15 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

SITE 19

SEE INSET B

LATERAL BASE DITCH SEE DETAIL M

A–A	B–B	C–C	D–D	E–E	F–F
8.0' / 0.1' / 1.5' / 4.0' OUTFALL	8.0' / 0.1' / 2.0' / 2.0' ROADSIDE	4.0' / 0.0' / 1.0' / 0.0' ROADSIDE	5.0' / 0.0' / 1.5' / 0.0' OUTFALL	11.0' / 0.1' / 3.0' / 3.0' OUTFALL	14.0' / 0.0' / 1.0' / 0.0' ROADSIDE

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 22

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ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 30 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

INSET A

INSET B

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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MATCHLINE –L– STA. 779+00 SEE SHEET 11

MATCHLINE –L– STA. 793+00 SEE SHEET 13

780+00

785+00

790+00

DEREK MCCLOSE

ANTHONY GLEN GOODMAN HUSBAND AND WIFE SARAH FARMER GOODMAN

RODNEY TERREL MORGAN HUSBAND AND WIFE CAMILLE MORGAN

TRICOUNTY PAVING, INC

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PACK FAN INVESTMENTS, LLC

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LEOBARDO REYES CRESCENCIO

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DONNA J H WEAVER

STEPHEN J. BLEVINS & SANDRA E. BLEVINS

JERRY F. WHITLEY AND WIFE, IMOJEAN M. WHITLEY

SITE 18

SEE INSET A

STD. BASE DITCH W/31 TONS CL II RIPRAP 63 SY GEOTEXTILE SEE DETAIL D

V10=4.0 ft/s

24" RCP-III

15" RCP-III

JB w/MH

2GI

FS

PLUG & FILL W/FLOWABLE FILL

REMOVE 25' EX. 24" CMP

SPECIAL CUT DITCH SEE DETAIL W

COLLAR AND EXTEND 24" CSP (2 ELBOWS)

60" CONC

REMOVE SYSTEM

SPECIAL CUT DITCH W/602 SY PSRM SEE DETAIL AA

2GI-A

V10=6.2 ft/s JB w/MH

DROP STRUCT (DROP DEPTH=3.4')

7 TONS CL II RIPRAP W/15 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

SITE 19

SEE INSET B

LATERAL BASE DITCH SEE DETAIL M

TB 2GI

18" RCP-III

A–A	B–B	C–C	D–D	E–E	F–F
8.0'	8.0'	4.0'	5.0'	11.0'	14.0'
0.1'	0.1'	0.0'	0.0'	0.1'	0.0'
1.5'	2.0'	1.0'	1.5'	3.0'	1.0'
4.0' OUTFALL	2.0' ROADSIDE	0.0' ROADSIDE	0.0' OUTFALL	3.0' OUTFALL	0.0' ROADSIDE

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 22

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ENGLISH

PERMIT DRAWING
SHEET 31 OF 46

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/NSRS 2007

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S DENOTES IMPACTS IN SURFACE WATER
F F DENOTES FILL IN WETLAND
E E DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING

INSET A

INSET B

INSET C

MATCHLINE –L– STA. 793+00 SEE SHEET 12

MATCHLINE –L– STA. 807+00 SEE SHEET 14

795+00

805+00

JOHN C. JONES

LEOBARDO REYES CRESCENCIO

TRACIE JORDAN

ANDREW C. JACKSON, JR.

ROBERT STEVEN FREEMAN, GREGORY DENNIS FREEMAN, AND ROY LOGAN FREEMAN

WAYNE F. STANLEY

DWIGHT C. RASH

JOHN F. BARE

BERTHA MCCLURE WOOD

BENNY B. HURLEY AND VICKEY S. HURLEY

MATTHEW FRAMPTON AND CHRISTOPHER FRAMPTON

JERRY F. WHITLEY AND WIFE, IMOJEAN M. WHITLEY

SITE 21
Q10=5.9 cfs
V10=1.9 fps

LATERAL BASE DITCH
SEE DETAIL G

LATERAL BASE DITCH
W/88 TONS CL B RIPRAP,
226 SY GEOTEXTILE,
SEE DETAIL L

TOE PROTECTION
W/62 TONS CL B RIPRAP,
181 SY GEOTEXTILE
SEE DETAIL V

PLUG & FILL W/FLOWABLE FILL

SITE 20
V10=4.4 fps

SEE INSET A

4 TONS CL I RIPRAP
W/10 SY GEOTEXTILE

STD. BASE DITCH
W/43 TONS CL I RIPRAP,
89 SY GEOTEXTILE
SEE DETAIL D

SITE 22B
48 TONS CL I RIPRAP
W/75 SY GEOTEXTILE
ON BANKS ONLY
SEE DETAIL AF
V10=9.1 fps

SEE INSET C

SEE OUTFALL ANALYSIS PACKAGE

2 TONS CL B RIPRAP
W/7 SY GEOTEXTILE

PROP. 47" WW FENCE

BEGIN FENCE

LATERAL V DITCH
W/179 TONS CL I RIPRAP,
431 SY GEOTEXTILE
SEE DETAIL K

DROP STRUCT.
(DROP DEPTH=3.0')

DROP STRUCT.
(DROP DEPTH=4.6')

LATERAL V DITCH SEE DETAIL B

66" RCP–III
15" RCP–III
30" RCP–IV
48" CMP
2 REBARS
JB w/MH
Sp. Det. JB w/Slab Lid
RETAIN & INSTALL SMOOTH LINING
18" RCP–III
2GI
TB 2GI
US 221
5.91%

SITE 22A

SEE INSET B

LATERAL V DITCH
W/118 TONS CL B RIPRAP,
282 SY GEOTEXTILE
SEE DETAIL K

A–A
11.0′
0.1′
3.0′
2.5′
INFALL

B–B
4.0′
0.2′
1.5′
2.0′
OUTFALL

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 23

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8/17/99

ENGLISH

PERMIT DRAWING
SHEET 32 OF 46

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

INSET A

INSET B

INSET C

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE -L- STA. 793+00 SEE SHEET 12

MATCHLINE -L- STA. 807+00 SEE SHEET 14

SITE 21
Q10=5.9 cfs
V10=1.9 fps
LATERAL BASE DITCH
SEE DETAIL G
LATERAL BASE DITCH
W/88 TONS CL B RIPRAP,
226 SY GEOTEXTILE,
SEE DETAIL L

SITE 22B
48 TONS CL I RIPRAP
W/75 SY GEOTEXTILE
ON BANKS ONLY
SEE DETAIL AF
V10=9.1 fps
SEE INSET C

SITE 22A
SEE INSET B

SITE 20
V10=4.4 fps
SEE INSET A

TOE PROTECTION
W/62 TONS CL B RIPRAP,
181 SY GEOTEXTILE
SEE DETAIL V

PLUG & FILL
W/FLOWABLE FILL

4 TONS CL I RIPRAP
W/10 SY GEOTEXTILE

STD. BASE DITCH
W/43 TONS CL I RIPRAP,
89 SY GEOTEXTILE
SEE DETAIL D

LATERAL V DITCH
W/179 TONS CL I RIPRAP,
431 SY GEOTEXTILE
SEE DETAIL K

LATERAL V DITCH
W/118 TONS CL B RIPRAP,
282 SY GEOTEXTILE
SEE DETAIL K

LATERAL V DITCH
SEE DETAIL B

2 TONS CL B RIPRAP
W/2 SY GEOTEXTILE

SEE OUTFALL
ANALYSIS PACKAGE

DROP STRUCT
(DROP DEPTH=3.0')

DROP STRUCT
(DROP DEPTH=4.6')

PROP. 47" WW FENCE

BEGIN FENCE

5.91%

5.91%

JOHN C. JONES

LEOBARDO REYES CRESCENCIO

TRACIE JORDAN

DWIGHT C. RASH

JOHN F. BARE

WAYNE F. STANLEY

ROBERT STEVEN FREEMAN, GREGORY DENNIS FREEMAN, AND ROY LOGAN FREEMAN

BERTHA MCCLURE WOOD

ANDREW C. JACKSON, JR.

JERRY F. WHITLEY AND WIFE, IMOGEAN M. WHITLEY

MATTHEW FRAMPTON AND CHRISTOPHER FRAMPTON

BENNY B. HURLEY AND VICKEY S. HURLEY

A–A
11.0'
0.1'
3.0'
2.5'
INFALL

B–B
4.0'
0.2'
1.5'
2.0'
OUTFALL

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR -L- PROFILE SEE SHT. 23

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abuttrey

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

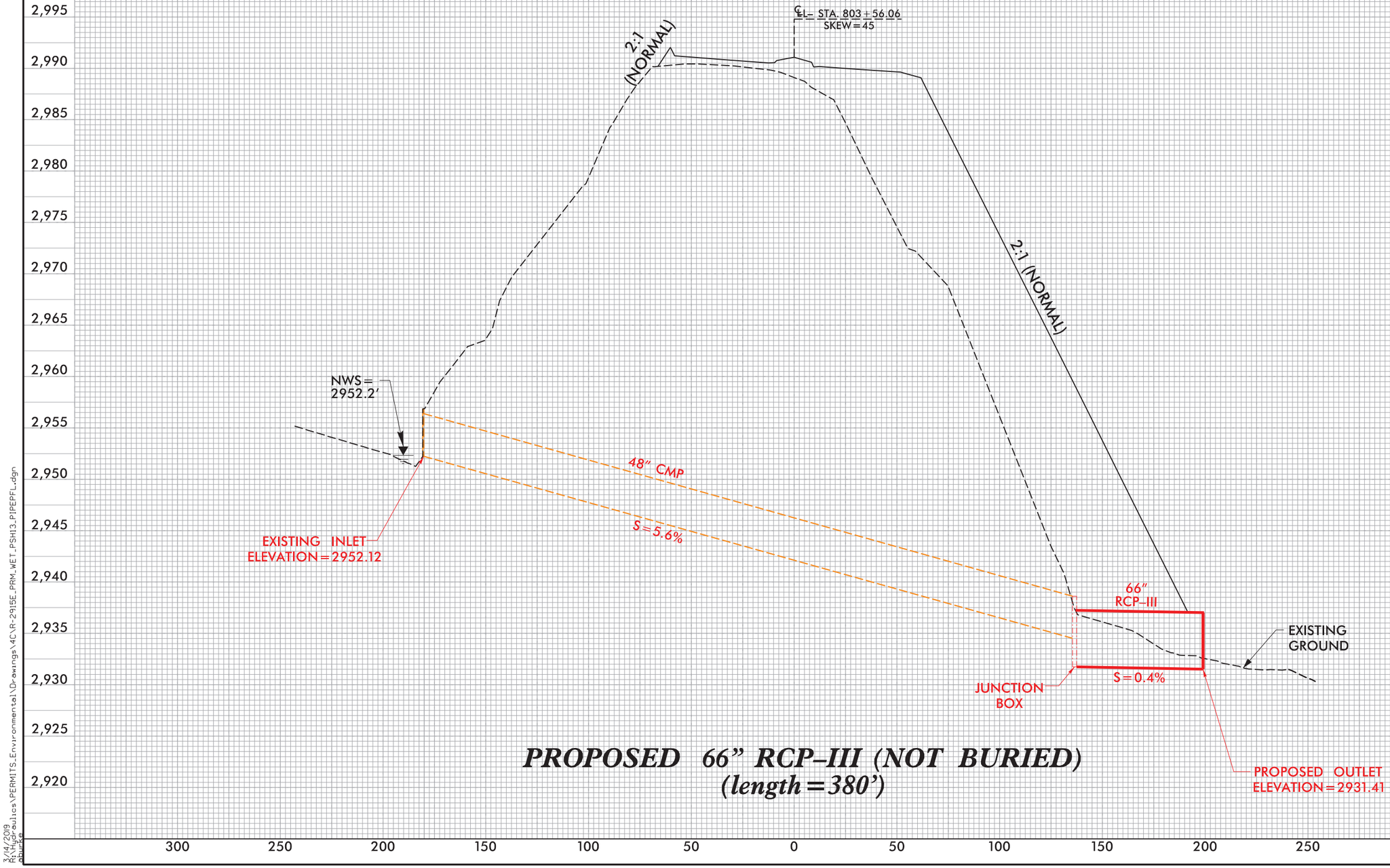
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 33 OF 46

SITE 22
–L– 803+56



PROPOSED 66" RCP–III (NOT BURIED)
(length=380')

3/14/2019
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8/17/99

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 34 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

A–A: 22.0', 0.0', 5.0', 8.0' ROADSIDE
B–B: 7.0', 0.1', 1.5', 2.0' INFALL
C–C: 12.0', 0.0', 1.5', 3.0' OUTFALL
D–D: 5.0', 0.2', 1.0', 2.0' INFALL
E–E: 5.0', 0.1', 1.5', 1.5' OUTFALL

NAD 83/NSRS 2007

MATCHLINE –L– STA. 807+00 SEE SHEET 13

MATCHLINE –L– STA. 821+00 SEE SHEET 15

CHARLOTTE GAIL BLAKE

JOSEPH RONALD GRAYBEAL, HUSBAND AND WIFE, PATRICIA BARKER GRAYBEAL

TONY O. WOODIE

BERTHA MCCLURE WOOD

WANDA WALKER AND HUSBAND, RONALD GIRTMAN, JR

L. F. ANDERSON, JR. AND WIFE INA C. ANDERSON

UNCLE JOE'S LLC

DOUGLAS TAYLOR

BENNY B. HURLEY AND VICKEY S. HURLEY

GURNEY C. MYERS AND WIFE JOANNE S. MYERS

EDWARD VICTOR ARRIOLA AND WIFE EMILY JOHNSON ARRIOLA

CALLOWAY PROPERTIES, LLC

DONALD PROUDFOOT AND WIFE, GLORIA PROUDFOOT

SR 1854 LONG ST

US 221

N 71°12'01.9" E 136'

S 37° 02' 42.2" E

N 87° 27' 21.8" E 136'

SITE 23

SITE 24A

SITE 24B

SITE 24C
V10=9.6 f/s

SITE 25A

SITE 25B
V10=18.6 f/s

SEE INSET A

SEE INSET B

SEE INSET C

SEE INSET D

8 TONS CL B RIPRAP W/21 SY GEOTEXTILE

STD. BASE DITCH W/22 TONS CL I RIPRAP, 45 SY GEOTEXTILE SEE DETAIL D

PLACE SPRING BOX AND 12" CSP OUTLET PIPE AT –L– 812+00 +/– LT. IF SPRING IS IMPACTED BY GRADING OPERATIONS

30" RCP-III

JB w/MH

DROP STRUCT. (DROP DEPTH=6.2')

PLUG & FILL W/FLOWABLE FILL

40 TONS CL I RIPRAP W/75 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

RETAIN 24" CLAY PIPE

60" RCP-III (NOT BURIED)

15" RCP-III

20" RCP-III

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

LATERAL V. DITCH SEE DETAIL B

LATERAL BASE DITCH SEE DETAIL G

LATERAL BASE DITCH W/83 TONS CL I RIPRAP, 172 SY GEOTEXTILE SEE DETAIL L

15" CSP 2 ELBOWS

RETAIN & INSTALL SMOOTH LINER

RIP RAP AT EMBANKMENT SEE DETAIL AB

LATERAL BASE DITCH SEE DETAIL G

BEGIN NOISE WALL AND BARRIER (Sta. 820+00)

NAMED CREEK

INSET A

INSET B

INSET C

INSET D

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abuie

8/17/99

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 35 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

A–A: 22.0', 0.0', 5.0', 8.0' ROADSIDE
B–B: 7.0', 0.1', 1.5', 2.0' INFALL
C–C: 12.0', 0.0', 1.5', 3.0' OUTFALL
D–D: 5.0', 0.2', 1.0', 2.0' INFALL
E–E: 5.0', 0.1', 1.5', 1:5' OUTFALL

NAD 83/NSRS 2007

CHARLOTTE GAIL BLAKE
TONY O. WOODIE
BERTHA MCCLURE WOOD
JOSEPH RONALD GRAYBEAL, HUSBAND, AND WIFE PATRICIA BARKER GRAYBEAL
WANDA WALKER AND HUSBAND, RONALD GIRTMAN, JR
L. F. ANDERSON, JR. AND WIFE INA C. ANDERSON
UNCLE JOE'S LLC
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DONALD PROUDFOOT AND WIFE GLORIA PROUDFOOT
GURNEY G. MYERS AND WIFE JOANNE S. MYERS
EDWARD VICTOR ARRIOLA AND WIFE EMILY JOHNSON ARRIOLA
CALLOWAY PROPERTIES, LLC

SR 1854 LONG ST
WILLOWBEND LA
NAMED CREEK

MATCHLINE –L– STA. 807+00 SEE SHEET 13

MATCHLINE –L– STA. 821+00 SEE SHEET 15

N 71°12'01.9" E
136'

S 37°02'42.2" E
436'

S 87°27'21.8" E
436'

SEE INSET A

SITE 24C
V10=9.6 ft/s

SITE 24B

SEE INSET B

SITE 24A

SEE INSET C

SITE 25A

SEE INSET D
V10=18.6 ft/s
SITE 25B

SITE 23

PLACE SPRING BOX AND 12" CSP OUTLET PIPE AT ~L~ 812+00, +/- LT IF SPRING IS IMPACTED BY GRADING OPERATIONS

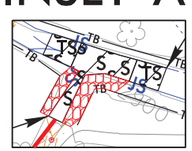
8 TONS CL B RIPRAP W/21 SY GEOTEXTILE

STD. BASE DITCH W22 TONS CL I RIPRAP, 45 SY GEOTEXTILE SEE DETAIL D

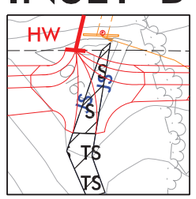
40 TONS CL I RIPRAP W/25 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

30" RCP-III
JB w/MH
DROP STRUCT. (DROP DEPTH= 6.2')
PLUG & FILL W/FLOWABLE FILL
60" RCP-III (NOT BURIED)
60" RCP-III (NOT BURIED)
15" RCP-III
20" RCP-III
15" CSP 2 ELBOWS
2 TONS CL B RIPRAP W/7 SY GEOTEXTILE
LATERAL BASE DITCH SEE DETAIL G
LATERAL BASE DITCH W/83 TONS CL I RIPRAP, 172 SY GEOTEXTILE SEE DETAIL L
LATERAL V. DITCH SEE DETAIL B
LATERAL BASE DITCH SEE DETAIL G
RETAIN & INSTALL SMOOTH LINER
RIP RAP AT EMBANKMENT SEE DETAIL AB
BEGIN NOISE WALL AND BARRIER Sta. 820+00
END FENCE

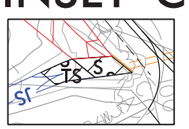
INSET A



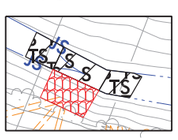
INSET B



INSET C



INSET D



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aburke

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

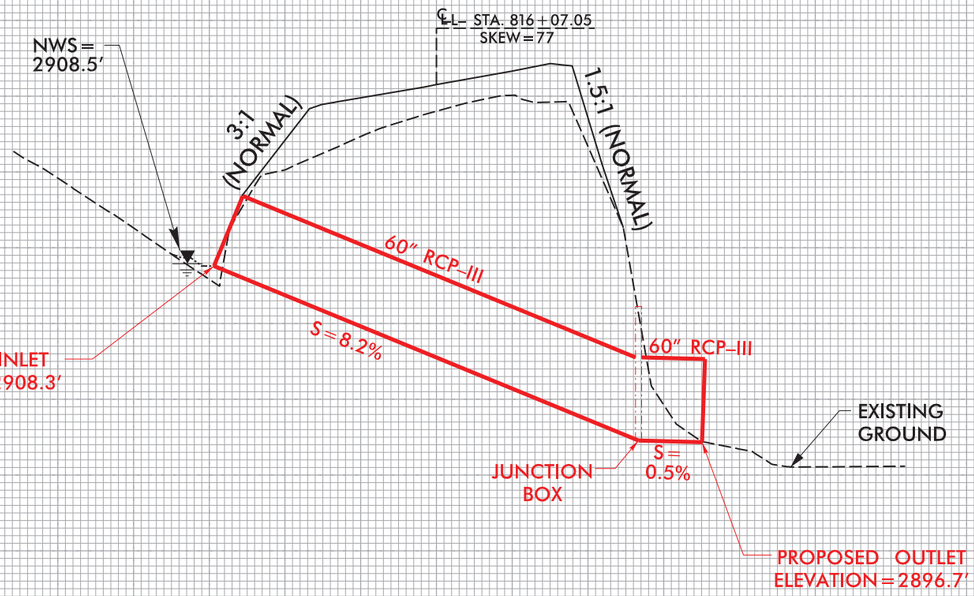
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 36 OF 46

SITE 24
–L– 816+07



PROPOSED 60" RCP–III (NOT BURIED)
(length=162')

2,930 2,925 2,920 2,915 2,910 2,905 2,900 2,895 2,890 2,885 2,880 2,875 2,870

300 250 200 150 100 50 0 50 100 150 200 250

7/14/2019
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dlucas

8/17/99

ENGLISH

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 37 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

INSET A

INSET B

INSET C

NAD 83 NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE –L– STA. 821+00 SEE SHEET 14

MATCHLINE –L– STA. 835+00 SEE SHEET 16

SITE 26A

SEE INSET A

SITE 26B

SEE INSET B

SITE 26C

SITE 27A

SEE INSET C

SITE 27B

REMOVE 18" CMP & RECONNECT –JS– LINE WITH 19 TONS EMBEDDED CL B RIPRAP W/54 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL G

LATERAL V DITCH SEE DETAIL B

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

19 TONS CL B RIPRAP W/25 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AR

2 TONS CL B RIPRAP W/21 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AT

60" RCP (BURIED 10.0')

15" RCP-III

24" CSP 2 ELBOWS

24" RCP-III

30" RCP-III

JB w/MH

V10=9.0 ft/s

V10=9.3 ft/s

PROP. NOISE WALL

NAKED CREEK

-BYE7-37

-BYE6-36

-BLE-17

-L- N 75°12'42.2" E

825+00

830+00

HAROLD H. HUGHES AND WIFE, DIANNE B. HUGHES

JERRY W. ABSHER AND WIFE, SUSAN R. ABSHER

ROANE O. BAKER AND WIFE, RANDY A. BAKER

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ABSHER ENTERPRISES, LLC

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KENNETH A. MAUER AND WIFE, BRENDA JOYCE MAUER

BEULAH M. DARNELL AND LINDA K. DARNELL

GEORGE EUGENE BLACK AND WIFE, THELMA GREEN BLACK

MILLER PROPERTIES OS ASHE, LLC

JOEL W. YATES, JR.

JOEL YATES AND WIFE, KATE YATES

NORTH CAROLINA AND CAROLINA FARM CREDIT, ACA

TRICK O'ROURKE

ASHE COUNTY BOARD OF EDUCATION

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JOE RAY BLEVINS AND WIFE, MARGARET S. BLEVINS

GLADYS S. KESTER

RAYMOND LEE BELCHER AND WIFE, WENDY LEE BELCHER

LARRY E. NEAVES AND JUDY B. NEAVES

CALLOWAY PROPERTIES, LLC

ARC/HDS ASHE COUNTY HOUSING CORPORATION

GREGORY A. FITCHLEE AND WIFE JANE M. FITCHLEE

CHARLES ANDREW CAUDILL

BRENT H. KEITH AND WIFE, MICHELLE C. KEITH

A–A: 4.0' / 0.2' / 1.5' / 1.5' INFALL

B–B: 18.0' / 0.5' / 5.0' / 10.0' OUTFALL

C–C: 5.0' / 0.1' / 1.5' / 3.0' OUTFALL

D–D: 16.0' / 0.1' / 7.0' / 3.0' INFALL

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 24

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aburge

8/17/99

ENGLISH

F F	DENOTES EXCAVATION IN WETLAND
F F	DENOTES FILL IN WETLAND
S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 38 OF 46

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/NSRS 2007

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INSET A

INSET B

INSET C

MATCHLINE –L– STA. 821+00 SEE SHEET 14

MATCHLINE –L– STA. 835+00 SEE SHEET 16

SITE 26A

SEE INSET A

SITE 26B

SEE INSET B

SITE 26C

SITE 27A

SEE INSET C

SITE 27B

REMOVE 18" CMP & RECONNECT TO LINE WITH 19 TONS EMBEDDED CL B RIPRAP W/54 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL G

LATERAL V DITCH SEE DETAIL B

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

4 TONS CL B RIPRAP W/11 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL A1

8 TONS CL B RIPRAP W/21 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL A1

RETAIN

POSSIBLE JB

JB w/MH

24" CSP 2 ELBOWS

24" RCP-III

60" RCP-III (BURIED 1.0')

15" RCP-III

30" RCP-III

2GI-A

V10=9.0 f/s

V10=9.3 f/s

PROP. NOISE WALL

N 75°12'42.2" E

TOWN OF JEFFERSON

ASHE COUNTY BOARD OF EDUCATION

THE BOARD OFEDUCATION OF ASHE COUNTY

HAROLD H. HUGHES AND WIFE, DIANNE B. HUGHES

JERRY W. ABSHER AND WIFE, SUSAN R. ABSHER

ABSHER ENTERPRISES, LLC

MILLER PROPERTIES OS ASHE, LLC

TRICK O'ROURKE

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ROBERT L. ELLIOTT AND WIFE, REBA S. ELLIOTT

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JAMES M. MCCLURE HUSBAND AND WIFE, DEBORAH L. MCCLURE

JAMES EARL PENNINGTON, JR. HUSBAND AND WIFE, CHRISTINA MOORE PENNINGTON

JOE RAY BLEVINS AND WIFE, MARGARET S. BLEVINS

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LARRY E. NEAVES AND WIFE, JUDY B. NEAVES

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CHARLES ANDREW CAUDILL

BRENT H. KEITH AND WIFE, MICHELLE C. KEITH

NAKED CREEK

SOUTH ST

24 ST

LONG ST

SR 1254

A–A: 4.0′ / 0.2′ / 1.5′ / 1.5′ INFALL

B–B: 18.0′ / 0.5′ / 5.0′ / 10.0′ OUTFALL

C–C: 5.0′ / 0.1′ / 1.5′ / 3.0′ OUTFALL

D–D: 16.0′ / 0.1′ / 7.0′ / 3.0′ INFALL

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 24

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bburke

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

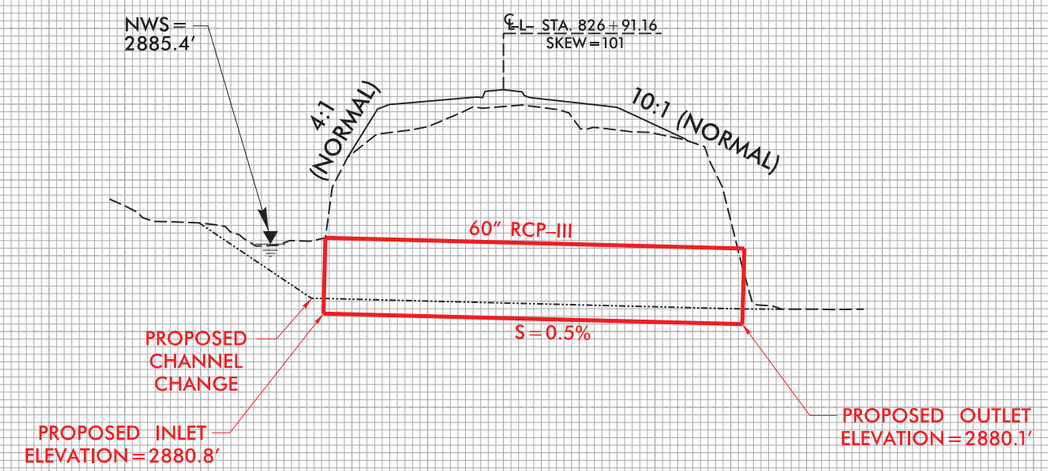
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 39 OF 46

SITE 26
–L– 826+91



PROPOSED 60" RCP–III (BURIED 1.0')
(length = 139')

2,900 2,895 2,890 2,885 2,880 2,875 2,870 2,865 2,860 2,855 2,850 2,845

300 250 200 150 100 50 0 50 100 150 200 250

3/14/2019
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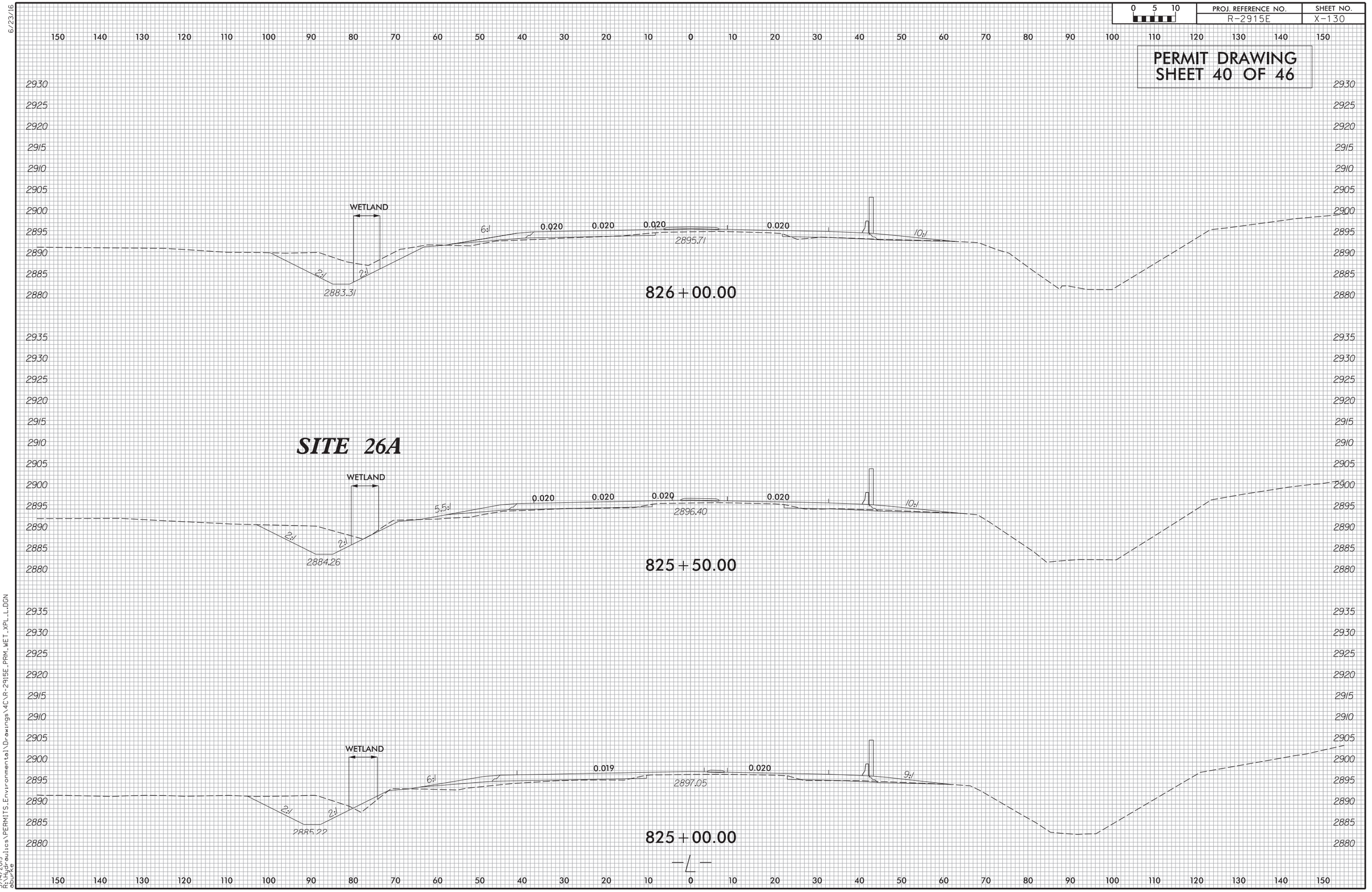
dlucas

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2915E	X-130

PERMIT DRAWING
SHEET 40 OF 46



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aburke

8/17/99

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

A–A: 12.0' / 0.1' / 5.0' / 5.0' INFALL

B–B: 12.5' / 0.5' / 2.5' / 7.5' ROADSIDE

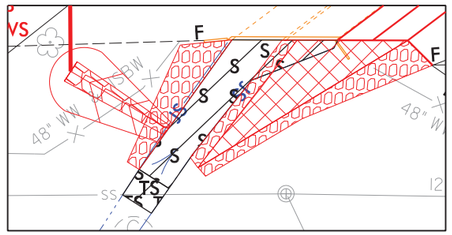
25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

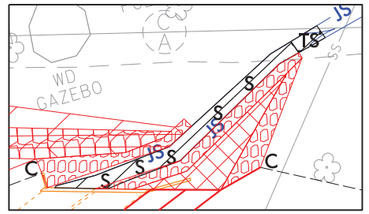
S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

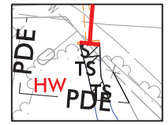
PERMIT DRAWING SHEET 41 OF 46



INSET A



INSET B



INSET C

MATCHLINE –L– STA. 835+00 SEE SHEET 15

MATCHLINE –L– STA. 848+00 SEE SHEET 17

SITE 28A

SEE INSET B

SEE INSET A
SEE CULVERT INLET DETAIL –L– STA. 838+56

SITE 28B

SEE INSET C

SITE 29

LATERAL BASE DITCH W/38 TONS CL B RIPRAP 150 SY GEOTEXTILE SEE DETAIL L

SEE CULVERT OUTLET DETAIL –L– STA. 838+56

20 TONS CL I RIPRAP W/39 SY GEOTEXTILE

REMOVE

REMOVE 163' OF EX. 24" CMP

RETAIN 30' OF EXISTING 24" CMP

STD. BASE DITCH W/46 TONS CL B RIPRAP, 117 SY GEOTEXTILE SEE DETAIL T

SP. CUT BASE DITCH W/159 TONS CL B RIPRAP, 409 SY GEOTEXTILE SEE DETAIL K

SP. CUT BASE DITCH W/17 TONS CL B RIPRAP, 44 SY GEOTEXTILE SEE DETAIL E

SP. CUT DITCH SEE DETAIL W

10' WIDE BERM TOP ELEV. 2870.5' SEE DETAIL AC

REMOVE DI & EX. 24" CMP

STANDARD V DITCH W/24 TONS CL B RIPRAP, 52 SY GEOTEXTILE SEE DETAIL H

END NOISE WALL AND BARRIER Sta. 836+85.05

PROP. NOISE WALL

PROP. 2' CONCRETE SILL INSET 1' INTO EXISTING EASTERN BARREL (INLET & OUTLET)

BEGIN FENCE

END FENCE

PROP. 47" WW

24" RCP–III

15" RCP–III

15" CSP 2 ELBOWS

42" RCP–IV (NOT BURIED)

42" RCP–IV

42" RCP–III

2GI

2GI-A

DI

JB wMH

HW

TB

FS

–L– N 75°12'42.2" E

NC 88 / US 221 BUS

NAKED CREEK

CHERRY DR

NORTHVIEW DR

WD RAIL

TELEPHONE

ISBKD

EXISTING R/W

19

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR –L– PROFILE SEE SHT. 25

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abuie

8/17/99

ENGLISH

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

A–A
12.0'
0.1'
5.0' 5.0'
INFALL

B–B
12.5'
0.5'
2.5' 7.5'
ROADSIDE

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 42 OF 46

INSET A

INSET B

INSET C

NAD 83 NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE –L– STA. 835+00 SEE SHEET 15

MATCHLINE –L– STA. 848+00 SEE SHEET 17

SITE 28A

SEE INSET B

SEE INSET A
SEE CULVERT INLET DETAIL –L– STA. 838+56

SITE 28B

SEE INSET C

SITE 29

SEE CULVERT OUTLET DETAIL –L– STA. 838+56

LATERAL BASE DITCH W/38 TONS CL B RIPRAP, 150 SY GEOTEXTILE SEE DETAIL L

STANDARD V DITCH W/24 TONS CL B RIPRAP, 52 SY GEOTEXTILE SEE DETAIL T

SP. CUT BASE DITCH W/159 TONS CL B RIPRAP, 409 SY GEOTEXTILE SEE DETAIL S

SP. CUT BASE DITCH W/17 TONS CL B RIPRAP, 44 SY GEOTEXTILE SEE DETAIL E

20' TONS CL I RIPRAP W/39 SY GEOTEXTILE

STD. BASE DITCH W/46 TONS CL B RIPRAP, 117 SY GEOTEXTILE SEE DETAIL T

10' WIDE BERM TOP ELEV. 2870.5 SEE DETAIL AC

SP. CUT DITCH SEE DETAIL W

RETAIN 30' OF EXISTING 24" CMP

REMOVE 163' OF EX. 24" CMP

REMOVE DI & EX. 24" CMP

END NOISE WALL AND BARRIER Sta. 836+85.05

PROP. NOISE WALL

PROP. 2' CONCRETE SILL INSET 1' INTO EXISTING EASTERN BARREL (INLET & OUTLET)

BEGIN FENCE

END FENCE

PROP. 47' WW

24" RCP-III

15" RCP-III

15" CSP 2 ELBOWS

42" RCP-IV (NOT BURIED)

42" WW (NOT BURIED)

N 75°12'42.2" E

NAKED CREEK

CHERRY DR

NORTHVIEW DR

NC 88 // US 221 BUS

TELEPHONE

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR –L– PROFILE SEE SHT. 25

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

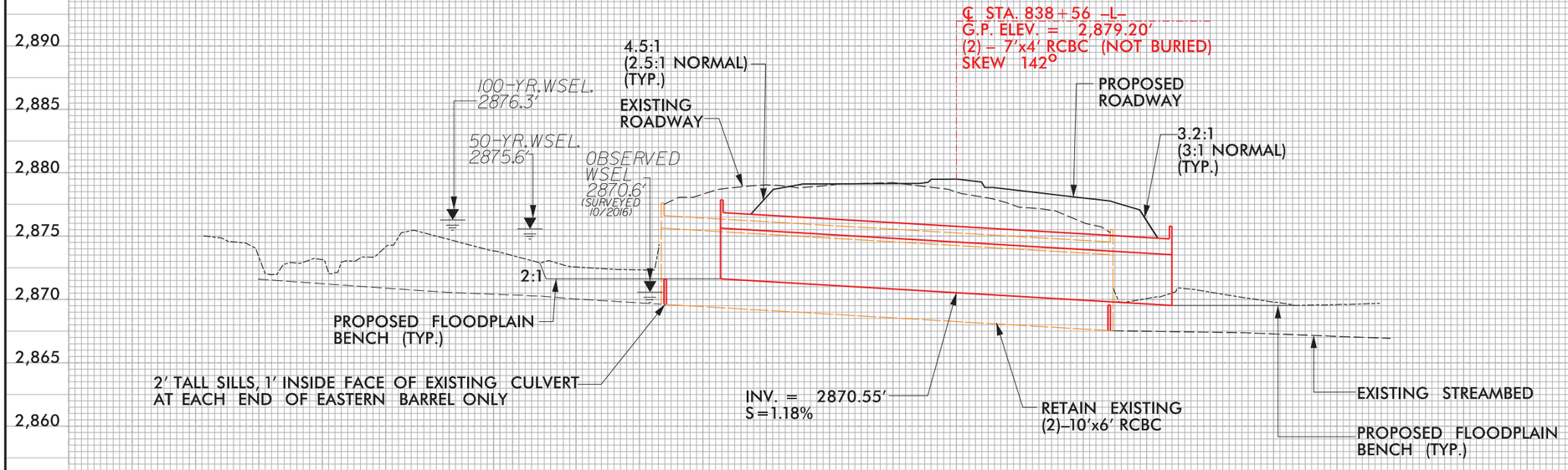
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 43 OF 46

SITE 28
–L– 838+56



PROPOSED (2) 7'x4' RCBC
(length=178')

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ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 44 OF 46

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

NAD 83/NSRS 2007

ASHE COUNTY MEMORIAL HOSPITAL, INC.

YADKIN VALLY BANK AND TRUST COMPANY

JOHNSTON PROPERTIES, INC.

KAJAN, L.L.C.

STARWOOD INVESTMENTS, L.P.

THE COUNTY OF ASHE

COUNTY OF ASHE

SEE SHEET 16

MATCHLINE -L- STA. 848+00

850+00

855+00

-L- CS Sta. 852+58.55

V10=7.4 ft/s

SITE 30
ISLAND REMOVAL BY OTHERS
SEE INSET A

SITE 31

PDE

JB w/MH

RIP RAP AT EMBANKMENT SEE DETAIL AB

GRADE TO DRAIN

GRADE TO DRAIN TO EXISTING CB

CONV. EX CB TO 2GI

REMOVE SYSTEM

PLUG & FILL W/ FLOWABLE FILL

SP. CUT DITCH SEE DETAIL W

RETAIN SYSTEM

REMOVE EXISTING CB, COLLAR & EXTEND 18" CSP (2 ELBOWS) TO TIE TO NEW PROPOSED CB 1705

COLLAR

TIE TO EXISTING CURB & GUTTER

18" CSP 2 ELBOWS

POSSIBLE UTILITY CONFLICT

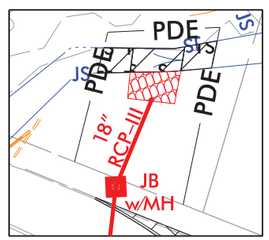
GOVERNMENT DR STREET

NORTHVIEW DR

US 221

CONC. MONO ISLAND

EXISTING R/W



INSET A

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ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 45 OF 46

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

NAD 83/NSRS 2007

ASHE COUNTY MEMORIAL HOSPITAL, INC.

YADKIN VALLY BANK AND TRUST COMPANY

JOHNSTON PROPERTIES, INC.

ISM BUS

ISBK BUS

KAJAN, L.L.C.

STARWOOD INVESTMENTS, L.P.

THE COUNTY OF ASHE

COUNTY OF ASHE

SEE SHEET 16

MATCHLINE -L- STA. 848+00 SEE SHEET 18

-L- CS Sta. 852+58.55

850+00

855+00

V10=7.4 ft/s

SITE 30
ISLAND REMOVAL BY OTHERS
SEE INSET A

SITE 31

PDE

JS

RIP RAP AT EMBANKMENT SEE DETAIL AB

GRADE TO DRAIN

GRADE TO DRAIN TO EXISTING CB

CONV. EX CB TO 2GI

REMOVE EXISTING CB, COLLAR & EXTEND 18" CSP (2 ELBOWS) TO TIE TO NEW PROPOSED CB 1705

TIE TO EXISTING CURB & GUTTER

COLLAR

18" CSP 2 ELBOWS

PLUG & FILL W/ FLOWABLE FILL

REMOVE SYSTEM

RETAIN SYSTEM

18" RCP-III

15" RCP-III

18" RCP-IV

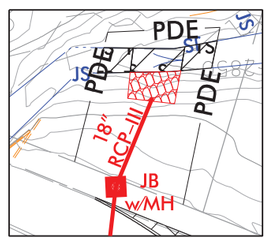
SP. CUT DITCH SEE DETAIL W

JB w/MH

CONC. MONO ISLAND

US 221

EXISTING R/W



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WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 670+03 to 670+45 RT	DITCH				< 0.01						
2A	-L- 675+33 to 675+66 LT	BANK STABILIZATION						< 0.01	< 0.01	14	17	
2B	-L- 676+43 to 677+27 RT	42" RCP-III	0.02			< 0.01		0.01	< 0.01	57	21	
3	-L- 701+14 to 702+66 RT	DITCH				0.01						
		30" RCP-III	< 0.01			0.02						
4A	-L- 705+04 to 705+37 LT	FILL	< 0.01									
4B	-L- 704+66 to 704+84 RT	30" RCP-III	< 0.01			0.03						
		BANK STABILIZATION						< 0.01	< 0.01	11	10	
5	-L- 706+60 to 707+07 RT	DITCH & EXIST. 18" CMP	< 0.01			0.01						
6A	-L- 711+85 to 713+30 LT	42" RCP-III	0.04			0.02		< 0.01	< 0.01	52	10	
6B	-L- 711+15 to 711+42 RT	BANK STABILIZATION						< 0.01	< 0.01	27	10	
7	-L- 735+40 to 735+61 RT	DITCH							< 0.01		24	
8A	-L- 740+22 to 740+56 RT	DITCH							< 0.01		32	
8B	-L- 747+64 to 747+86 RT	PLUG/FILL & HEADCUT		< 0.01					< 0.01		20	
9A	-L- 742+35 to 743+21 LT	24" CSP, 30" RCP-III	0.09					< 0.01		33		
	-L- 742+06 to 742+11 RT	BANK STABILIZATION-TRIB						< 0.01	< 0.01	10	7	
9B	-L- 741+98 to 742+15 RT	BANK STABILIZATION- LITTLE BUFFALO CREEK							< 0.01		19	
10	-L- 754+26 to 754+54 RT	15" RCP-III	< 0.01			< 0.01						
11A	-L- 750+89 to 751+24 RT	Existing 66" CMP							< 0.01		22	
11B									< 0.01		10	
11C									< 0.01		11	
11D								< 0.01	< 0.01	27	10	
12	-Y35- 9+25 to 9+50 LT	BANK STABILIZATION						< 0.01	< 0.01	17	10	
13A	-L- 762+53 to 762+76 LT	30" RCP-III						< 0.01		31		
		BANK STABILIZATION						< 0.01	< 0.01	11	10	
13B	-L- 763+07 to 763+40 RT	30" RCP-III	0.01					< 0.01		60		
13C	-L- 762+53 to 762+38 LT	SPRING BOX						< 0.01	< 0.01	25	23	
14A	-L- 763+31 to 763+73 LT	60" RCP-III						< 0.01		23		
		BANK STABILIZATION						< 0.01	< 0.01	23	10	
14B	-L- 765+28 to 765+72 RT	60" RCP-III						< 0.01		63		
15A	-L- 768+02 to 768+66 LT	36" RCP-III	0.01			< 0.01		< 0.01		31		
		BANK STABILIZATION						< 0.01	< 0.01	15	10	
15B	-L- 770+68 to 770+93 RT	EXIST. 36" CMP				0.01			< 0.01		23	
16	-L- 769+54 to 770+29 RT	EXIST. 36" CMP	0.03									
17A	-L- 776+79 to 777+26 LT	42" RCP-III						0.01		115		
17B	-L- 775+45 to 776+91 RT	DITCH						< 0.01		146		
18	-L- 780+80 to 781+00 LT	24" RCP-III & DITCH						< 0.01	< 0.01	39	12	
19	-L- 788+03 to 788+42 RT	24" RCP-III						< 0.01		22		
		BANK STABILIZATION						< 0.01	< 0.01	8	10	
20	-L- 793+05 to 793+30 RT	DITCH							< 0.01		25	
21	-L- 797+03 to 799+22 LT	FILL & DITCH	0.03		0.01	< 0.01						
22A	-L- 802+05 to 802+32 RT	EXIST. 48" CMP							< 0.01		22	
22B	-L- 804+49 to 805+11 LT	66" RCP-III						< 0.01		61		
		BANK STABILIZATION						< 0.01	< 0.01	31	10	
23	-L- 810+70 to 811+24 RT	FILL						< 0.01		55		
24A	-L- 815+76 to 815+87 RT	60" RCP-III						< 0.01	< 0.01	30	22	
24B	-L- 816+22 to 816+61 LT	BANK STABILIZATION- TRIB						< 0.01		18		
24C		BANK STABILIZATION- NAKED CREEK						< 0.01	< 0.01	20	20	
25A	-Y36- 16+29 to 16+46 RT	EXIST. 24" CMP						< 0.01	< 0.01	13	12	
25B	-Y36- 16+72 to 17+17 LT	BANK STABILIZATION						< 0.01	< 0.01	17	20	
26A	-L- 823+43 to 826+83 LT	DITCH & 60" RCP-III	0.01		0.04			< 0.01	< 0.01	19	8	
26B	-L- 826+80 to 827+32 RT	BANK STABILIZATION-TRIB						< 0.01		8		
26C		BANK STABILIZATION- NAKED CREEK						< 0.01	< 0.01	32	20	
27A	-L- 832+48 to 832+87 RT	BANK STABILIZATION-TRIB						< 0.01		15		
27B		BANK STABILIZATION- NAKED CREEK						< 0.01	< 0.01	18	30	
28A	-L- 838+81 to 839+70 LT	BANK STABILIZATION						0.01	< 0.01	88	10	
28B	-L- 837+00 to 837+71 RT	BANK STABILIZATION						0.02	< 0.01	59	10	
29	-L- 844+25 to 844+38 RT	42" RCP-IV						< 0.01	< 0.01	5	15	
30	-L- 849+47 to 849+82 LT	BANK STABILIZATION						< 0.01	< 0.01	17	21	
31	-L- 848+81 to 848+99 LT	PLUG/FILL	0.02									
TOTALS*:			0.28	< 0.01	0.05	0.13		0.14	0.07	1366	576	0

*Rounded totals are sum of actual impacts

NOTES:
1. Temporary Surface Water Impacts are expected during installation of the existing pipes that require a smooth liner

Revised 2019 03 11

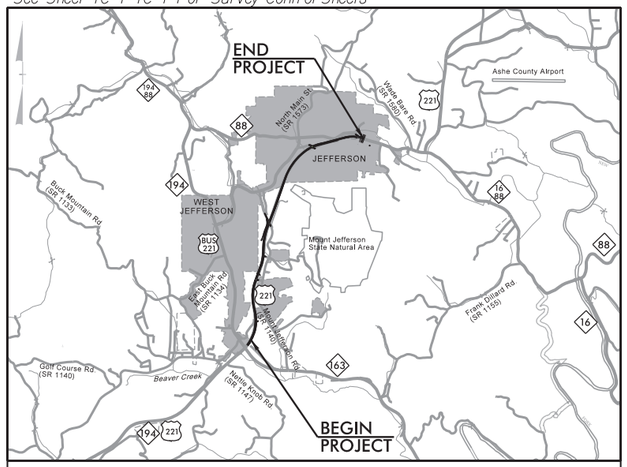
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MARCH 2019
ASHE
R-2915E

09/08/99

TIP PROJECT: R-2915E

CONTRACT: C204356

See Sheet 1-A For Index of Sheets, General Notes, and List of Standards
See Sheet 1-B For Conventional Symbols
See Sheet 1C-1-1C-4 For Survey Control Sheets



VICINITY MAP (NTS)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ASHE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2915E	1	

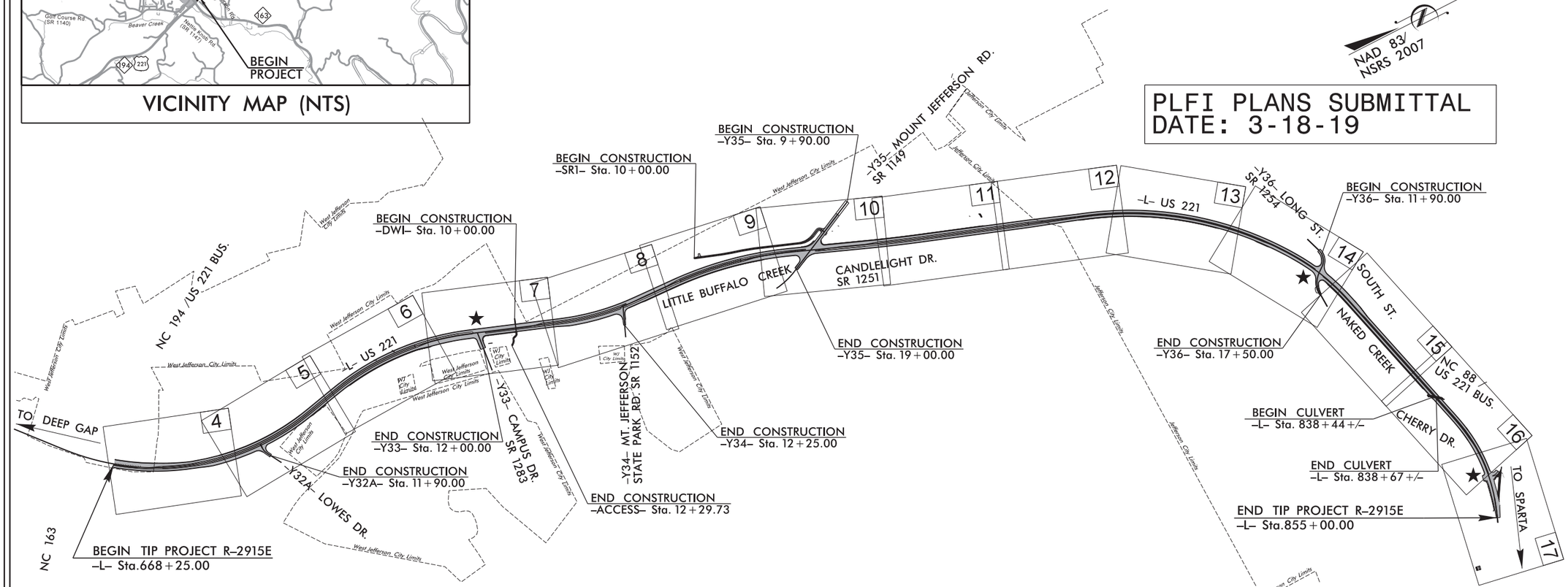
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34518.1.FR6	STP-0221(45)	PE
34518.2.6	STP-0221(45)	R/W
34518.2.7	STP-0221(45)	UTIL.
34518.3.8	STP-0221(45)	CONST.

LOCATION: US 221 FROM US 221 BYPASS TO US 221 BUSINESS/NC 88 IN JEFFERSON

TYPE OF WORK: GRADING, DRAINAGE, PAVING, WIDENING, RESURFACING, CULVERTS, AND SIGNALS

NAD 83/ NSRS 2007

PLFI PLANS SUBMITTAL
DATE: 3-18-19



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

★ PROPOSED TRAFFIC SIGNAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2019 = 15,900
ADT 2039 = 19,400
K = 8%
D = 55%
T = 6%*
V = 60 MPH
FUNC. CLASSIFICATION = RURAL ARTERIAL
* TTST = 3% + DUALS = 3%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R–2915E..... 3.533 mi
LENGTH CULVERT TIP PROJECT R–2915E..... 0.004 mi
TOTAL LENGTH TIP PROJECT R–2915E..... 3.537 mi

NCDOT CONTACT

Joe Laws, P.E.
PROJECT ENGINEER – DIVISION 11

PLANS PREPARED BY:

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. F-0112

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MAY 8, 2018

LETTING DATE: SEPTEMBER 17, 2019

Scott D. Blevins, P.E.
PROJECT ENGINEER RK&K, LLP

Cathy S. Houser, P.E.
PROJECT DESIGN ENGINEER RK&K, LLP

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

3/18/2019
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04/06/15

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

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

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

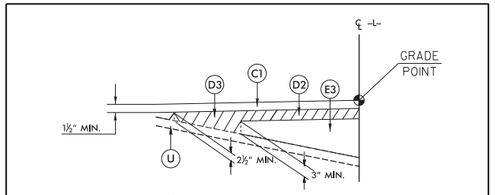
$DATE$
$FILE$
Fkeys

PAVEMENT SCHEDULE

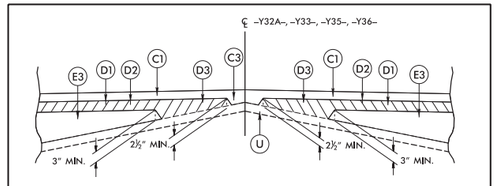
PRELIMINARY PAVEMENT DESIGN

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	J1	PROP. 8" AGGREGATE BASE COURSE
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.	J2	PROP. 10'' AGGREGATE BASE COURSE
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 LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.	N	GEOTEXTILE FOR PAVEMENT STABILIZATION (SEE DETAIL FOR LOCATIONS-INSET B).
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R1	2'-9" CURB & GUTTER
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R2	2'-6" CURB & GUTTER
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 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	R3	SINGLE FACED CONCRETE BARRIER
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL
E2	PROP. APPROX. 5½". DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
E3	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 5½" IN DEPTH.	W	WEDGING

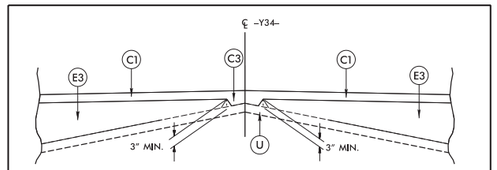
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
SEE PLANS FOR LOCATION OF CONCRETE ISLANDS.



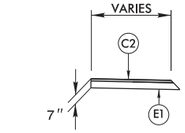
Detail Showing Method of Wedging



Detail Showing Method of Wedging



Detail Showing Method of Wedging

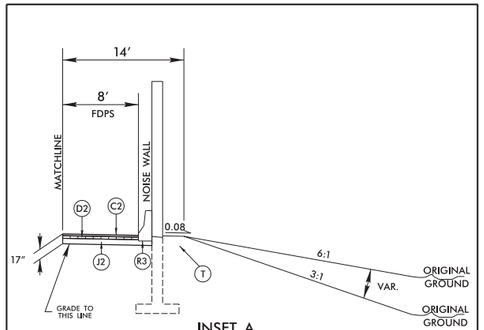


TEMPORARY PAVEMENT

–L– STA. 710+60.00 TO STA. 714+87.00
–L– STA. 727+42.00 TO STA. 732+53.00
–L– STA. 733+41.00 TO STA. 739+00.00
–L– STA. 759+00.00 TO STA. 762+87.00
–L– STA. 788+43.00 TO STA. 796+85.00
–L– STA. 806+35.00 TO STA. 810+65.00
–L– STA. 822+81.00 TO STA. 846+06.00

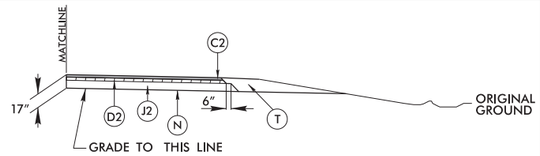
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



INSET A

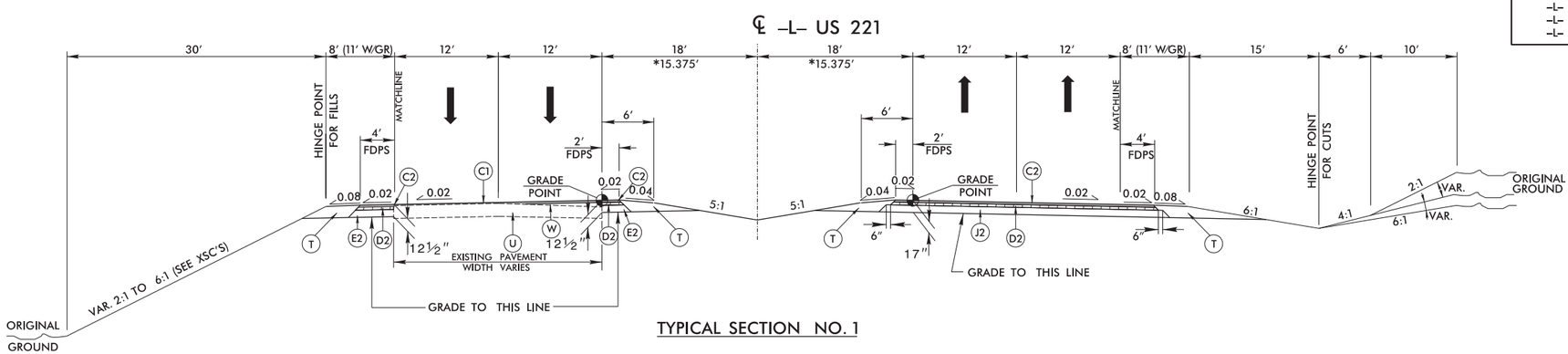
–L– STA. 820+00.00 TO 836+85.05 RT



INSET B

USE GEOTEXTILE FOR PAVEMENT STABILIZATION
DETAIL WITH GRADED SHOULDER SECTION (INSET B) AS FOLLOWS:
(THESE LOCATIONS TO BE INVESTIGATED DURING CONSTRUCTION)

–L– STA. 668+25.00 TO STA. 669+25.00 RT (SEE TYP. SECT. NO.1)
–L– STA. 676+25.00 TO STA. 677+25.00 RT (SEE TYP. SECT. NO.1)
–L– STA. 692+75.00 TO STA. 694+75.00 RT (SEE TYP. SECT. NO.1)
–L– STA. 694+75.00 TO STA. 695+75.00 LT/RT (SEE TYP. SECT. NO.1)
–L– STA. 695+75.00 TO STA. 696+25.00 LT (SEE TYP. SECT. NO.1)
–L– STA. 699+50.00 TO STA. 713+50.00 LT (SEE TYP. SECT. NO.1)
–L– STA. 742+25.00 TO STA. 742+75.00 LT (SEE TYP. SECT. NO.1)
–L– STA. 752+75.00 TO STA. 756+10.00 LT (SEE TYP. SECT. NO.1)
–L– STA. 758+00.00 TO STA. 764+50.00 LT (SEE TYP. SECT. NO.1)
–L– STA. 788+50.00 TO STA. 790+00.00 RT (SEE TYP. SECT. NO.2)
–L– STA. 791+75.00 TO STA. 804+00.00 LT (SEE TYP. SECT. NO.2)
–L– STA. 804+00.00 TO STA. 809+00.00 LT (SEE TYP. SECT. NO.3)
–L– STA. 809+75.00 TO STA. 811+25.00 RT (SEE TYP. SECT. NO.3)
–L– STA. 811+25.00 TO STA. 813+25.00 LT/RT (SEE TYP. SECT. NO.3)
–L– STA. 813+25.00 TO STA. 815+50.00 LT (SEE TYP. SECT. NO.3)
–L– STA. 820+25.00 TO STA. 824+00.00 LT (SEE TYP. SECT. NO.3)



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

*–L– STA. 668+25.00 TO STA. 677+50.00
–L– STA. 677+50.00 TO STA. 678+50.00– TRANSITION MEDIAN
–L– STA 678+50.00 TO STA 695+00.00
–L– STA. 695+00.00 TO STA. 758+00.00– REVERSE TYPICAL
–L– STA. 758+00.00 TO STA. 782+47.63

TIE TO R-2915D PAVEMENT AND ISLAND AT STATION 668+25.00

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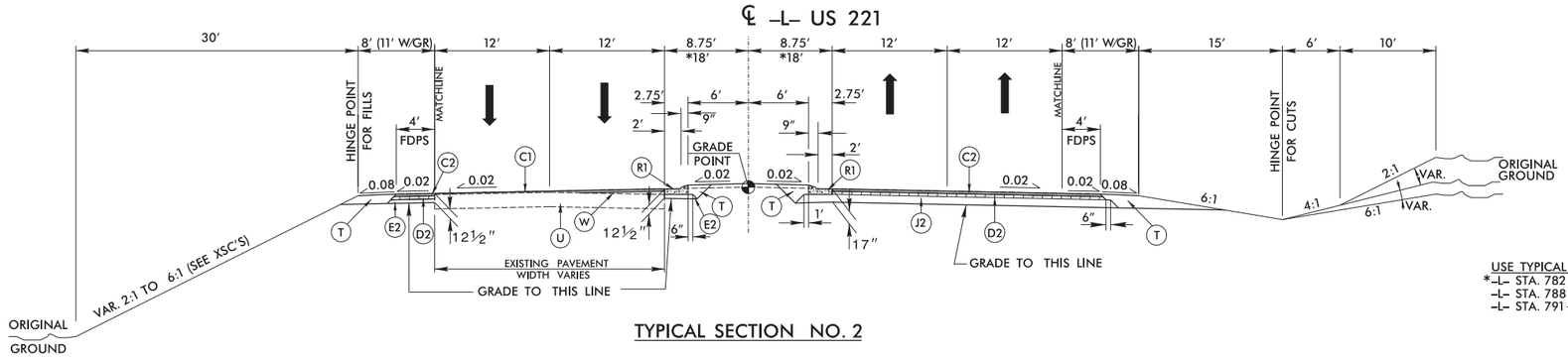
PAVEMENT SCHEDULE PREL. PAVEMENT DESIGN	
C1	1½" TYPE S9.5C
C2	3" TYPE S9.5C
D2	4" TYPE I19.5C
E2	5½" TYPE B25.0C
J2	10" ABC
R1	2'-9" CURB & GUTTER
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

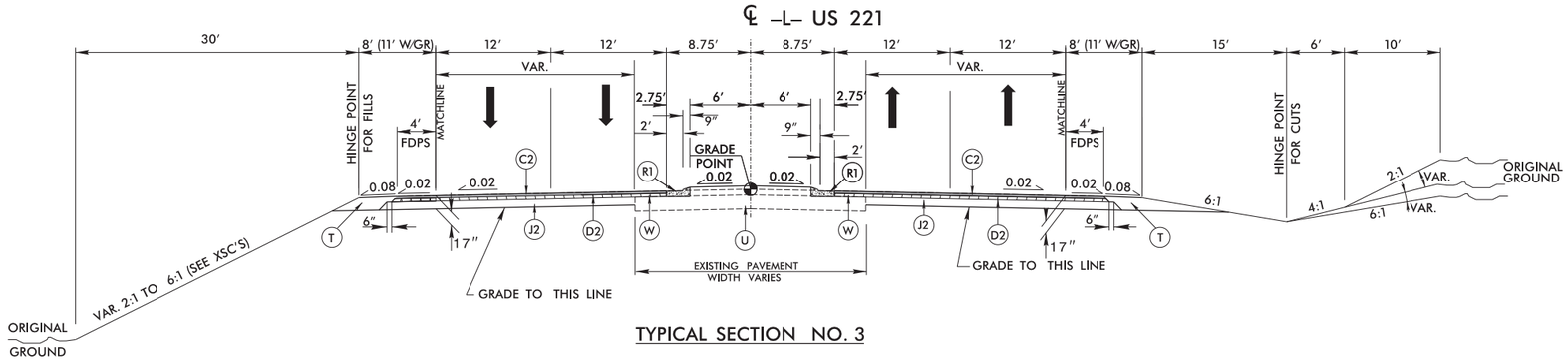
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



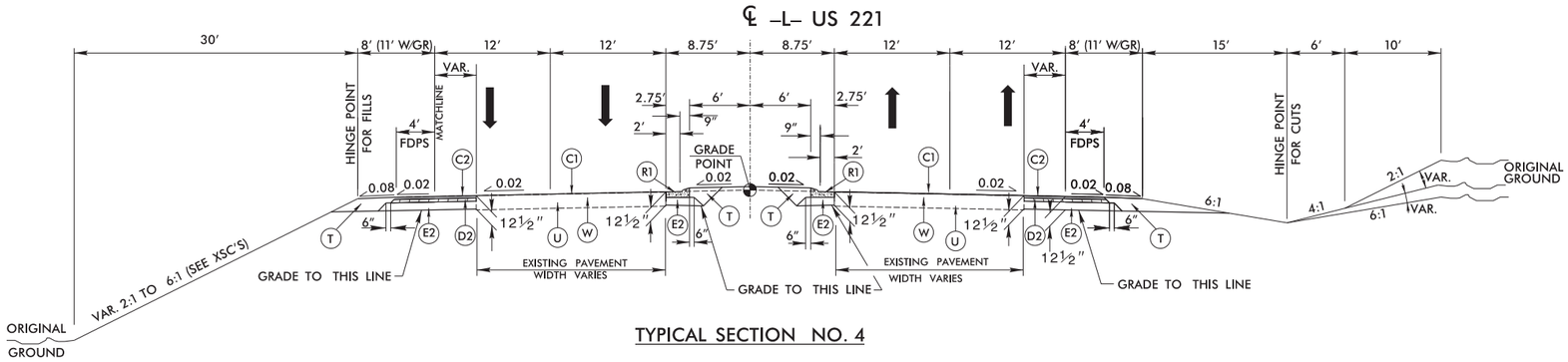
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
*–L– STA. 782+47.63 TO STA. 788+07.63– TRANSITION MEDIAN
–L– STA. 788+07.63 TO STA. 791+00.00
–L– STA. 791+00.00 TO STA. 804+00.00– REVERSE TYPICAL



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
–L– STA. 804+00.00 TO STA. 843+50.00



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
–L– STA. 843+50.00 TO STA. 849+36.00

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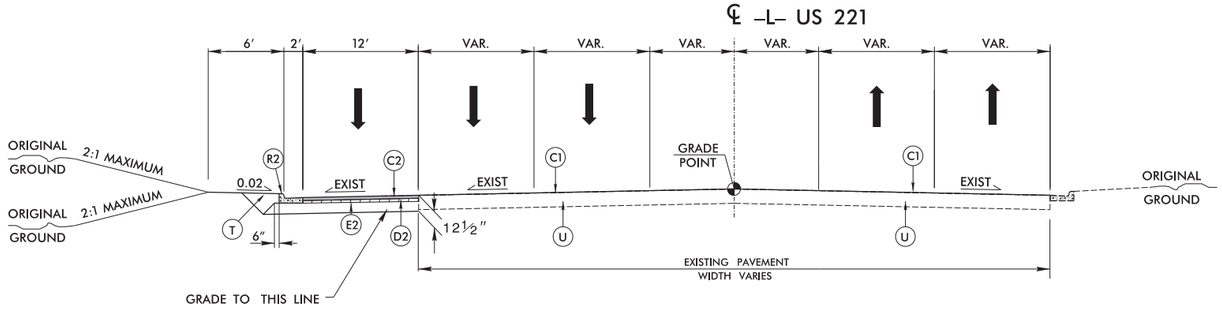
PAVEMENT SCHEDULE PREL. PAVEMENT DESIGN	
C1	1½" TYPE S9.5C
C2	3" TYPE S9.5C
D1	2½" TYPE I19.5C
D2	4" TYPE I19.5C
E1	4" TYPE B25.0C
E2	5½" TYPE B25.0C
R2	2'-6" CURB & GUTTER
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

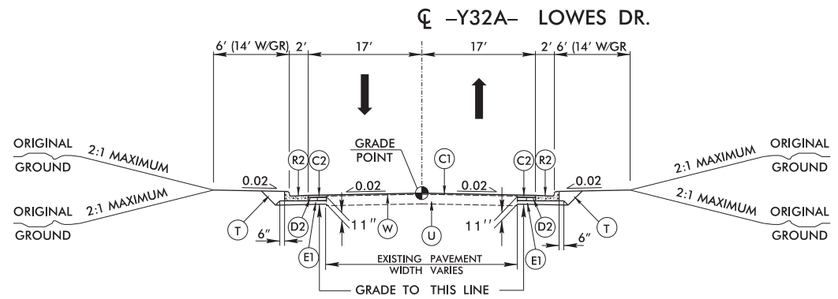
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2A-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



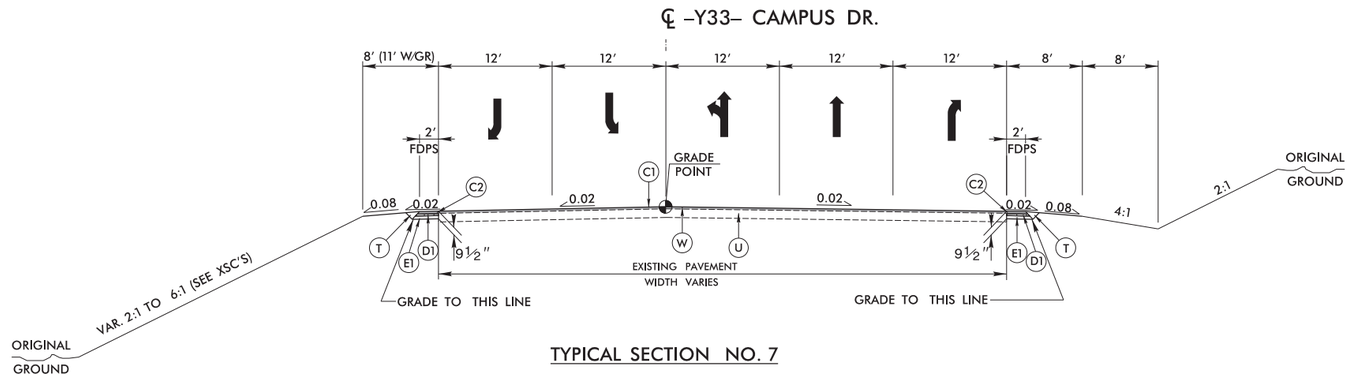
TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
–L– STA. 849+36.00 TO STA. 855+00.00



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
–Y32A– STA. 10+54.01 TO STA. 11+90.00



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7
–Y33– STA. 10+55.74 TO STA. 12+00.00

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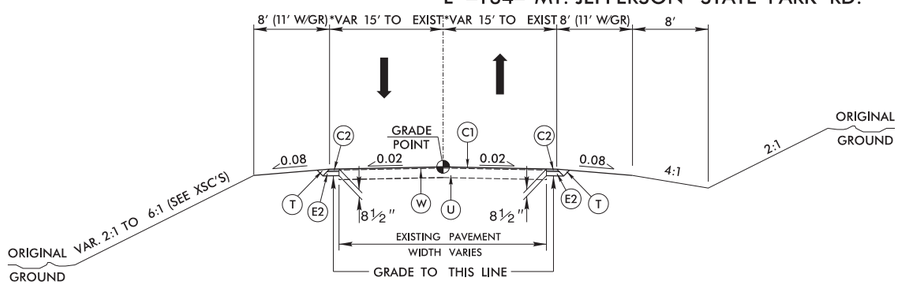
C2	3" TYPE S9.5C
D1	2½" TYPE I19.5C
E1	4" TYPE B25.0C
E2	5½" TYPE B25.0C
R2	2'-6" CURB & GUTTER
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2A-4
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

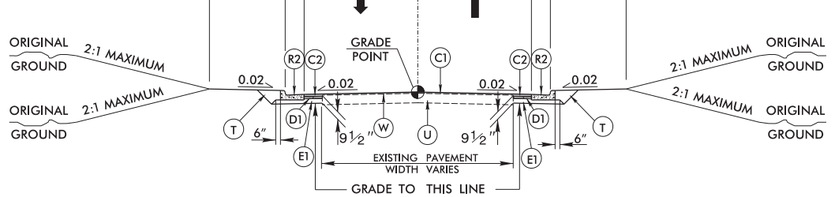
℄ –Y34– MT. JEFFERSON STATE PARK RD.



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8
–Y34– STA. 10+56.30 TO STA. 12+25.00

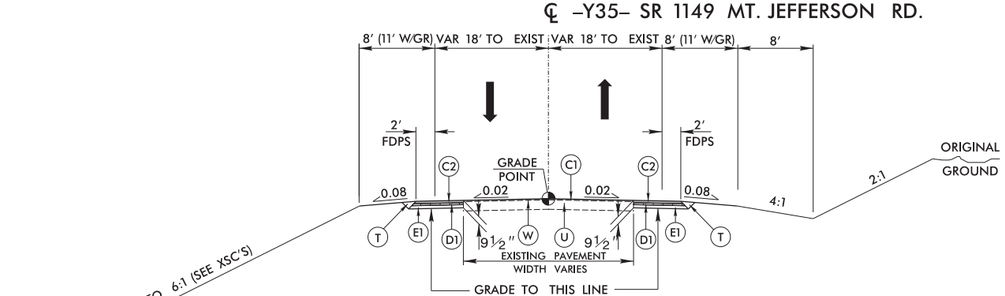
℄ –Y35– SR 1149 MT. JEFFERSON RD.



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9
–Y35– OVERLAY STA. 9+00.00 TO STA. 10+90.00
–Y35– STA. 10+90.00 TO STA. 15+62.82

℄ –Y35– SR 1149 MT. JEFFERSON RD.



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10
–Y35– STA. 16+77.18 TO STA. 19+00.00

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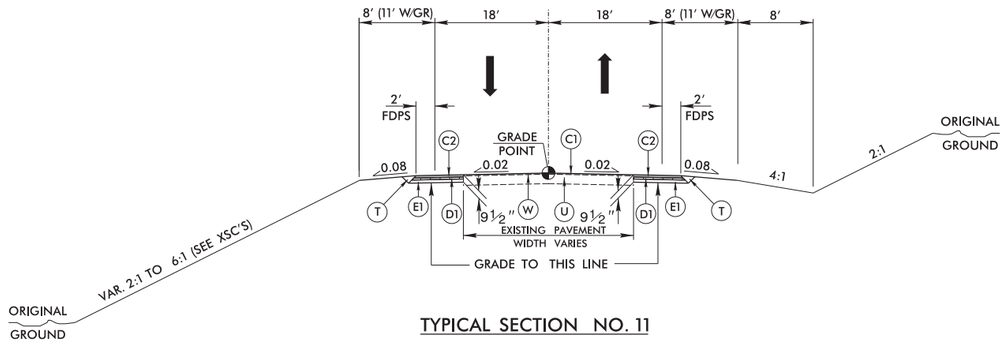
PAVEMENT SCHEDULE PREL. PAVEMENT DESIGN	
C1	1½" TYPE S9.5C
C2	3" TYPE S9.5C
D1	2½" TYPE I19.5C
E1	4" TYPE B25.0C
J1	8" ABC
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2A-5
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

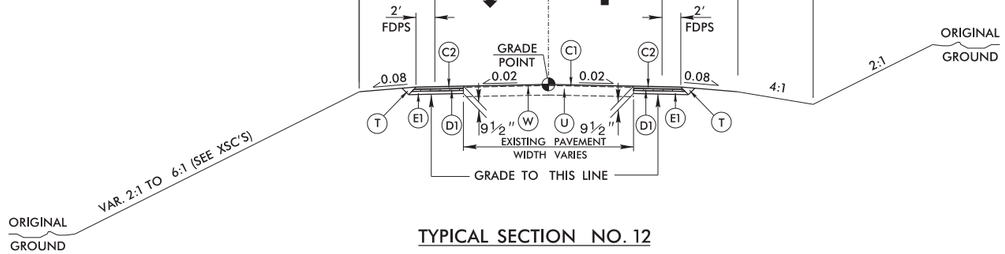
℄ –Y36– SR 1254 LONG STREET



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11
–Y36– STA. 11+90.00 TO STA. 14+34.96

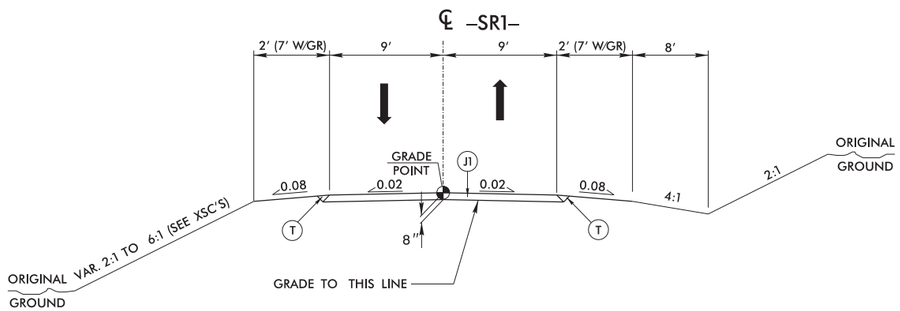
℄ –Y36– SR 1254 LONG STREET



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12
–Y36– STA. 15+14.93 TO STA. 17+50.00

℄ –SR1–



TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13
–SR1– STA. 10+00.00 TO STA. 26+03.61

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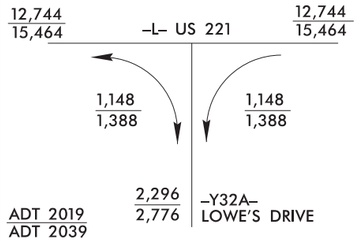
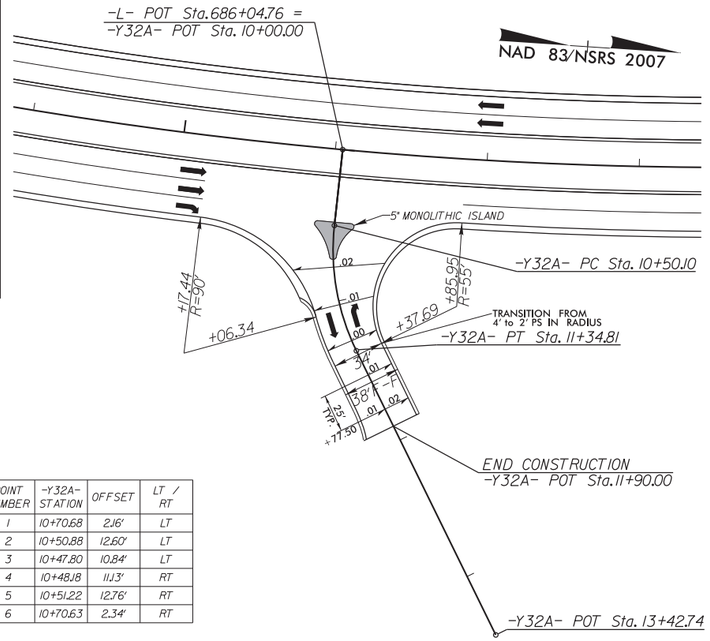
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2B-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

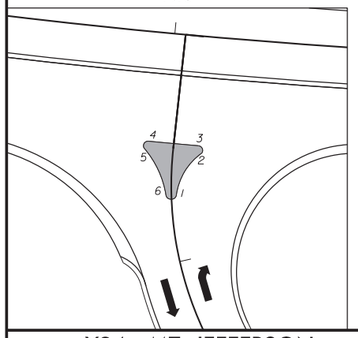
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–Y32A– LOWE'S DRIVE



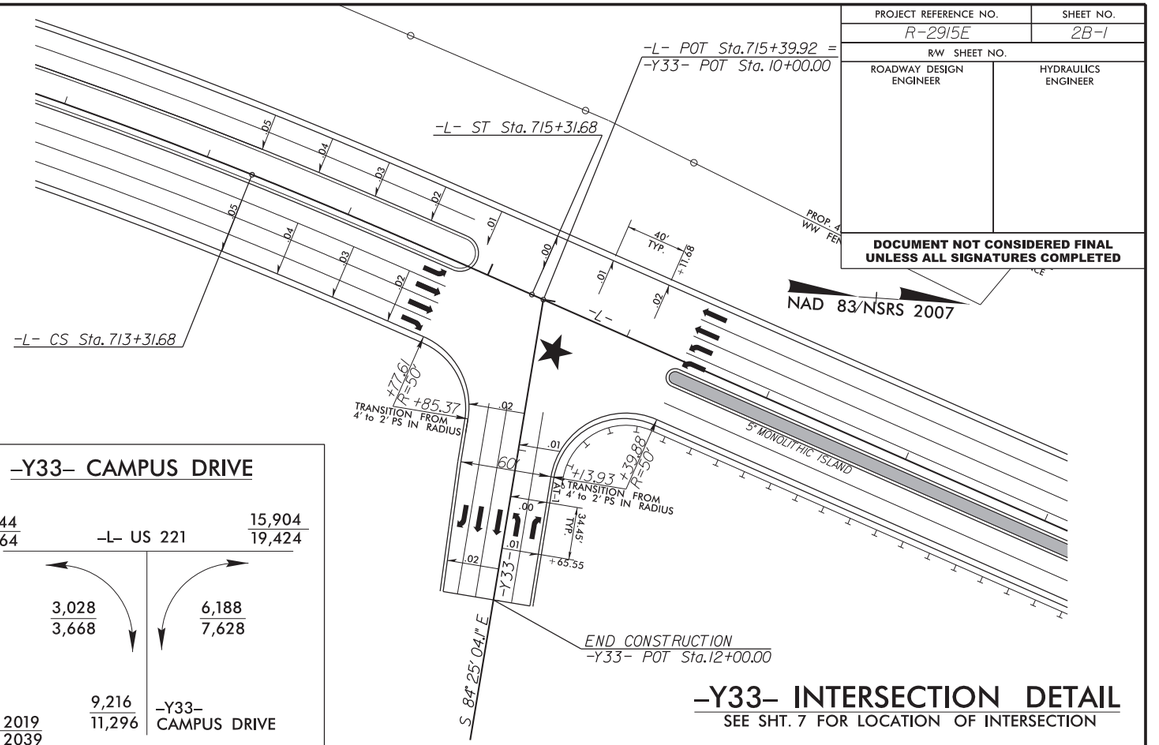


INSET A
NTS

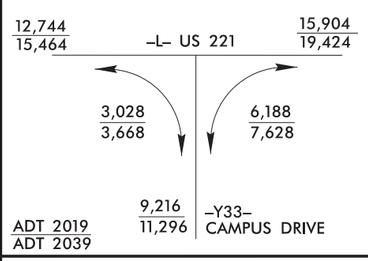


POINT NUMBER	–Y32A– STATION	OFFSET	LT / RT
1	10+70.68	2.16'	LT
2	10+50.88	12.60'	LT
3	10+47.80	10.84'	LT
4	10+48.18	11.13'	RT
5	10+51.22	12.76'	RT
6	10+70.63	2.34'	RT

–Y32A– INTERSECTION DETAIL
SEE SHT. 5 FOR LOCATION OF INTERSECTION

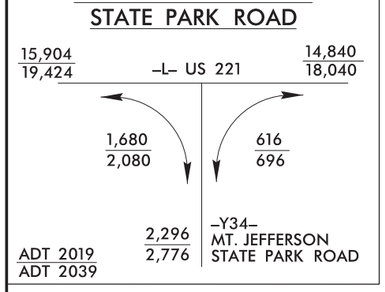


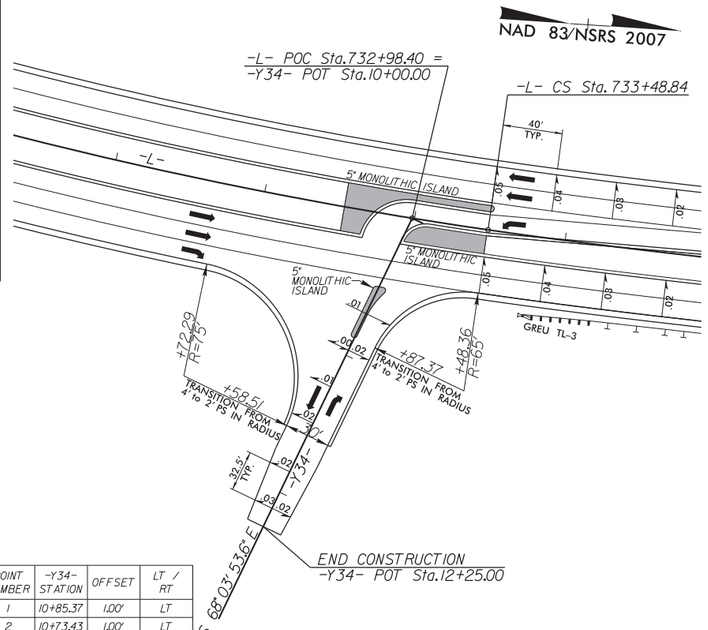
–Y33– CAMPUS DRIVE



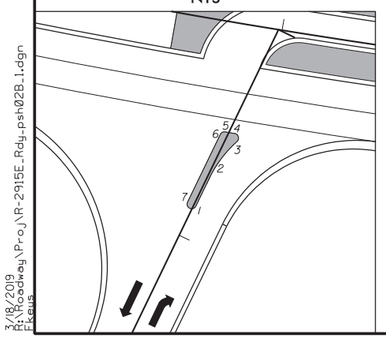
–Y33– INTERSECTION DETAIL
SEE SHT. 7 FOR LOCATION OF INTERSECTION

–Y34– MT. JEFFERSON STATE PARK ROAD



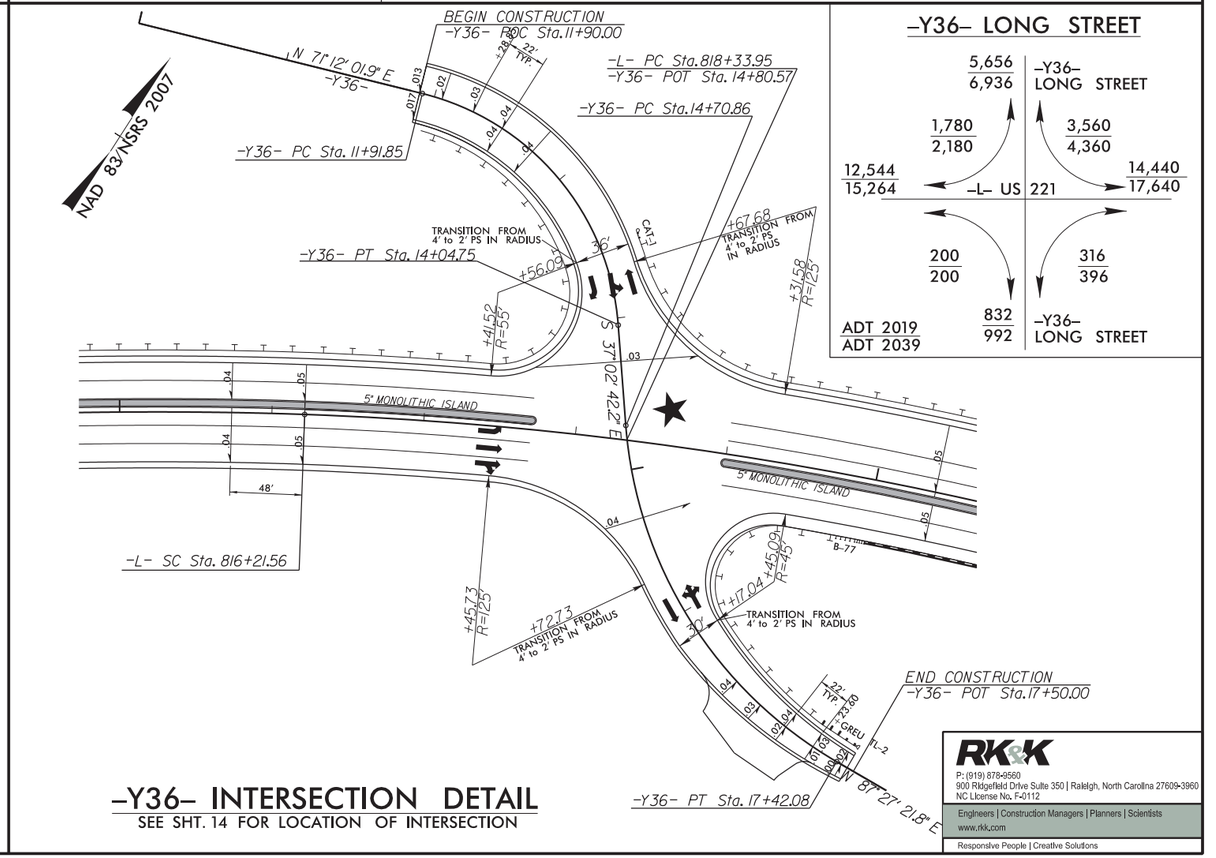


INSET B
NTS



POINT NUMBER	–Y34– STATION	OFFSET	LT / RT
1	10+85.37	1.00'	LT
2	10+73.43	1.00'	LT
3	10+52.08	4.87'	LT
4	10+49.31	2.50'	LT
5	10+50.50	1.56'	RT
6	10+52.42	3.00'	RT
7	10+85.37	3.00'	RT

–Y34– INTERSECTION DETAIL
SEE SHT. 8 FOR LOCATION OF INTERSECTION



–Y36– LONG STREET

–Y36– INTERSECTION DETAIL
SEE SHT. 14 FOR LOCATION OF INTERSECTION

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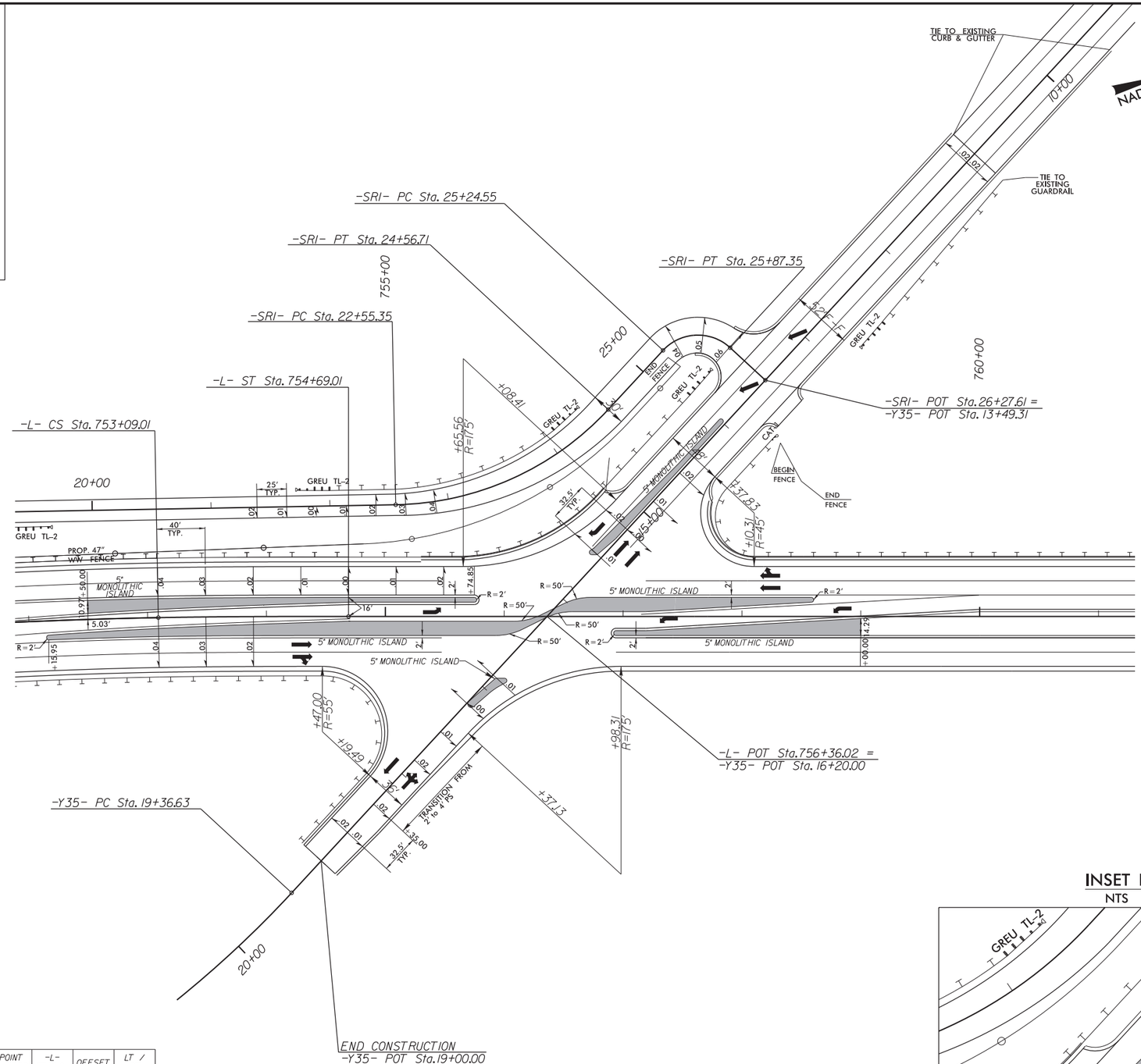
–Y35– MT. JEFFERSON ROAD

	5,656 / 6,936 –Y35– MT. JEFFERSON RD.	
14,840 / 18,040 –L– US 221	4,492 / 5,452	316 / 396 12,544 / 15,264
	–100 / –100	1,880 / 2,280
ADT 2019 / ADT 2039	2,728 / 3,368 –Y35– MT. JEFFERSON RD.	

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2B-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

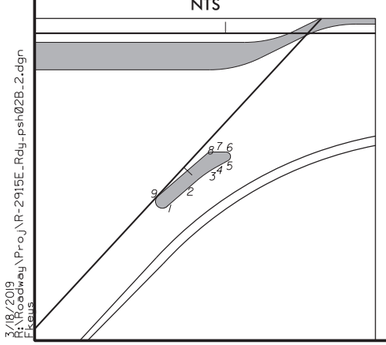
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007



INSET A

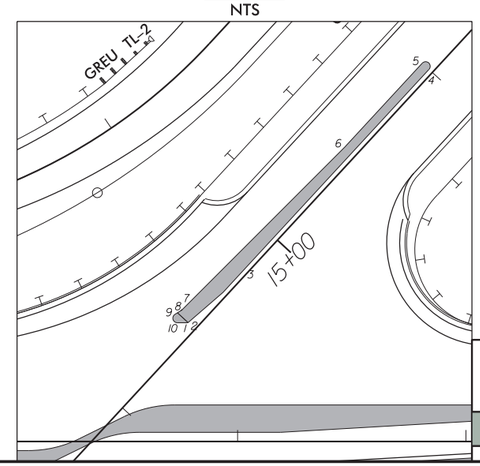
NTS



POINT NUMBER	–L– STATION	OFFSET	LT / RT
1	17+17.65	6.17'	LT
2	17+00.45	8.10'	LT
3	16+90.10	10.39'	LT
4	16+86.93	11.46'	LT
5	16+84.59	12.24'	LT
6	16+82.49	8.99'	LT
7	16+84.97	6.30'	LT
8	16+86.93	5.59'	LT
9	17+17.21	2.19'	LT

INSET B

NTS



POINT NUMBER	–L– STATION	OFFSET	LT / RT
1	15+53.42	4.56'	RT
2	15+53.07	4.26'	RT
3	15+32.89	2.00'	RT
4	14+00.00	2.00'	RT
5	14+00.00	6.00'	RT
6	14+50.00	6.00'	RT
7	15+50.49	9.99'	RT
8	15+51.41	10.13'	RT
9	15+54.27	10.94'	RT
10	15+56.28	7.67'	RT

–Y35– INTERSECTION DETAIL

SEE SHT. 10 FOR LOCATION OF INTERSECTION

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NOISE WALL –NW7B–

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2B-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

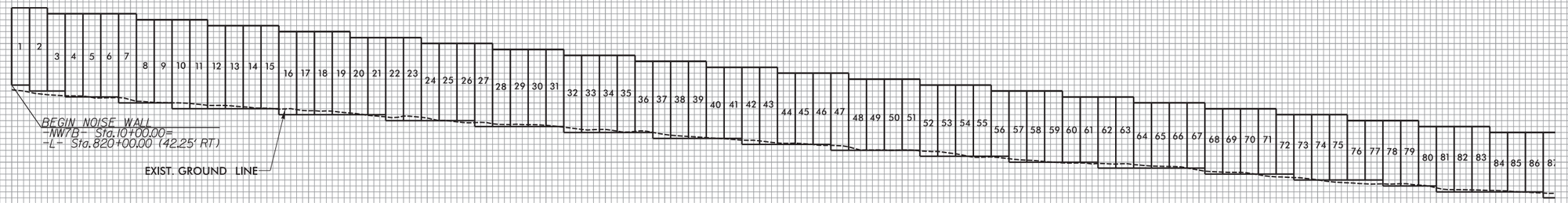
NAD 83/NSRS 2007

MATCHLINE –NW7B– STA. 23+00 SEE SHEET 2B-4

820+00 825+00 830+00 –L–

BEGIN NOISE WALL
–NW7B– Sta.10+00.00=
–L– Sta.820+00.00 (42.25' RT)

ASHE COUNTY BOARD OF EDUCATION DB 435 PG 1445
TOWN OF JEFFERSON DB 447 PG 1348
THE BOARD OFEDUCATION OF ASHE COUNTY DB Y4 PG 227
ABSHER ENTERPRISES, LLC DB 380 PG 1321
HAROLD DEAN MILLER AND WIFE, CAROL L. MILLER DB 75 PG 054
LOUIS A. ELDRETH, SR. HUSBAND AND WIFE SANDRA MC ELDRETH DB 194 PG 1753
KENNETH A. MAUER AND WIFE, BRENDA JOYCE MAUER DB 428 PG 1328
BEULAH M. DARNELL AND LINDA K. DARNELL DB 133 PG 688
GEORGE EUGENE BLACK AND WIFE, THELMA GREEN BLACK DB 84 PG 31
WILLARD CHURCH AND WIFE, CONNIE CHURCH DB N3 PG 592
ROBERT L. ELLIOT AND WIFE, REDA S. ELLIOTT DB 455 PG 105
JIMMY DARRELL GAMBILL DB 456 PG 2102
GEORGE SANTUCCI, JR. AND WIFE, ANNETTE BEDNOSKY DB 317 PG 607
JAMES M. MCCLURE HUSBAND, AND WIFE DEBORAH L. MCCLURE DB 205 PG 2278
JAMES EARL PENNINGTON, JR. HUSBAND, AND WIFE CHRISTINA MOORE PENNINGTON DB 262 PG 2105
JOE RAY BLEVINS AND WIFE, MARGARET S. BLEVINS
GLADYS S. KESTER DB 188 PG 2177
NAKED CREEK



-NW- DESIGN DATA														
PANEL NO.	1-2	3-7	8-11	12-15	16-19	20-23	24-27	28-31	32-35	36-39	40-43	44-47	48-51	52-55
TOP ELEV.	2916.00'	2915.00'	2914.00'	2913.00'	2912.00'	2911.00'	2910.00'	2909.00'	2908.00'	2907.00'	2906.00'	2905.00'	2904.00'	2903.00'
LENGTH	30.00'	75.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'
PANEL NO.	56-59	60-63	64-67	68-71	72-75	76-79	80-83	84-87	88-91	92-99	100-103	104-107	108-110	111-112
TOP ELEV.	2902.00'	2901.00'	2900.00'	2899.00'	2898.00'	2897.00'	2896.00'	2895.00'	2894.00'	2893.00'	2892.00'	2891.00'	2890.00'	2889.00'
LENGTH	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	120.00'	60.00'	60.00'	45.00'	30.00'

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8/17/99

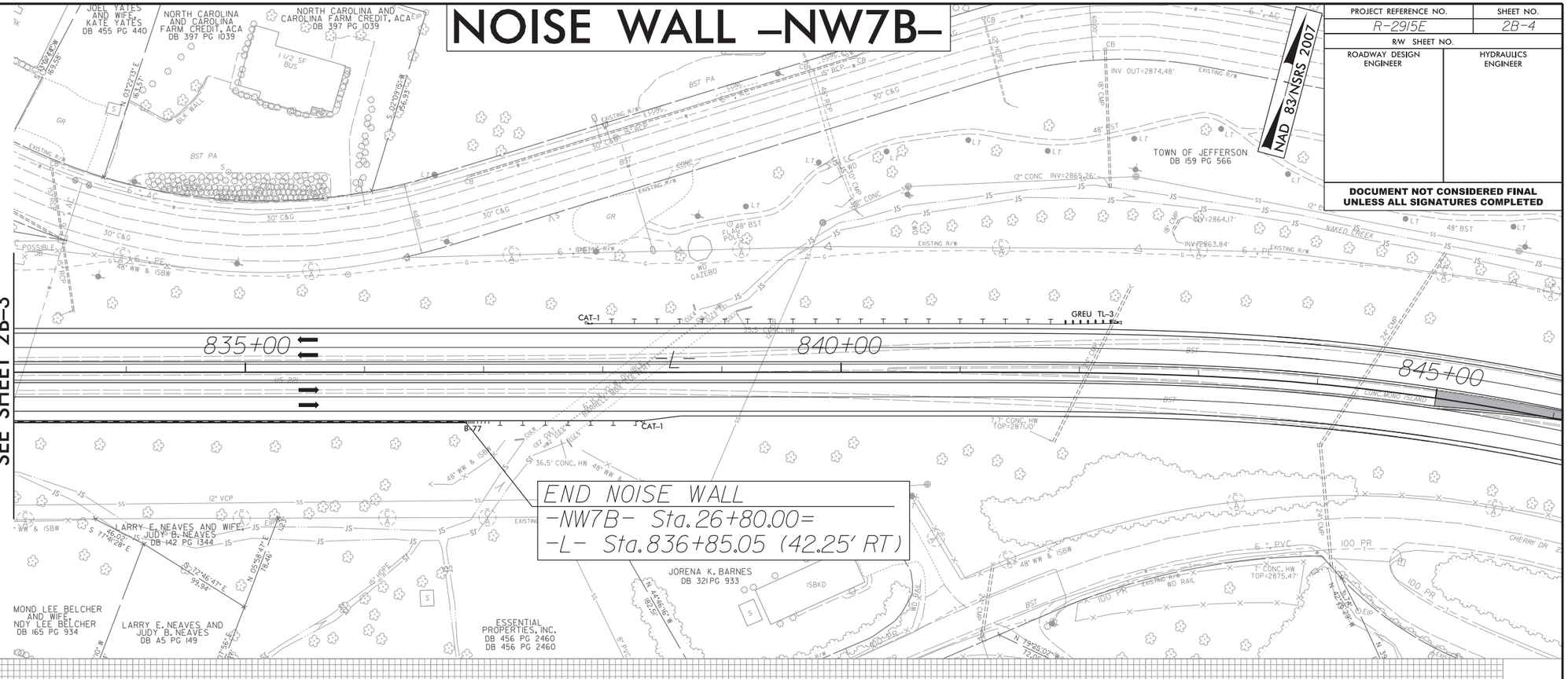
NOISE WALL –NW7B–

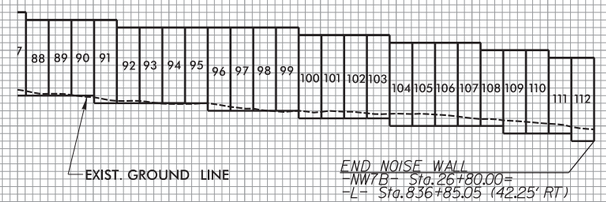
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2B-4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/NSRS 2007

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE –NW7B– STA. 23+00 SEE SHEET 2B-3





–NW– DESIGN DATA														
PANEL NO.	1-2	3-7	8-11	12-15	16-19	20-23	24-27	28-31	32-35	36-39	40-43	44-47	48-51	52-55
TOP ELEV.	2916.00'	2915.00'	2914.00'	2913.00'	2912.00'	2911.00'	2910.00'	2909.00'	2908.00'	2907.00'	2906.00'	2905.00'	2904.00'	2903.00'
LENGTH	30.00'	75.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'
PANEL NO.	56-59	60-63	64-67	68-71	72-75	76-79	80-83	84-87	88-91	92-99	100-103	104-107	108-110	111-112
TOP ELEV.	2902.00'	2901.00'	2900.00'	2899.00'	2898.00'	2897.00'	2896.00'	2895.00'	2894.00'	2893.00'	2892.00'	2891.00'	2890.00'	2889.00'
LENGTH	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	60.00'	120.00'	60.00'	60.00'	45.00'	30.00'

2,920 2,910 2,900 2,890 2,880 2,870 2,860 2,850 2,840

23+00 24+00 25+00 26+00 27+00

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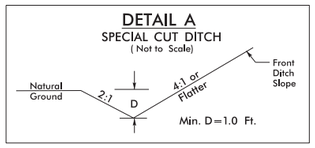
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2D-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

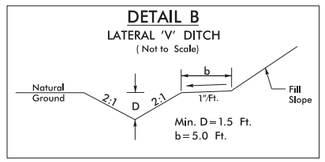
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



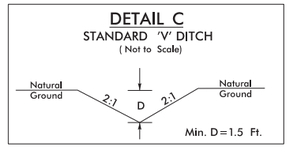
–L– STA. 669+50 TO STA. 670+00 LT
–L– STA. 675+25 TO STA. 676+00 RT
–L– STA. 677+00 TO STA. 691+50 LT
–L– STA. 767+50 TO STA. 772+00 RT

DETAIL B
LATERAL 'V' DITCH
(Not to Scale)



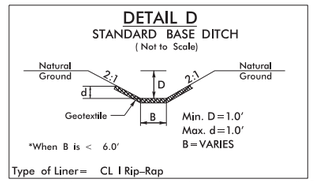
–L– STA. 670+25 TO STA. 670+50 RT
–L– STA. 676+00 TO STA. 677+03 RT
–L– STA. 677+21 TO STA. 677+50 RT
–L– STA. 693+00 TO STA. 694+50 LT
–L– STA. 707+50 TO STA. 708+25 LT
–L– STA. 805+05 TO STA. 805+19 LT
–L– STA. 816+50 TO STA. 817+75 RT
–L– STA. 826+80 TO STA. 827+50 LT
–Y36– STA. 15+24 TO STA. 16+43 RT

DETAIL C
STANDARD 'V' DITCH
(Not to Scale)



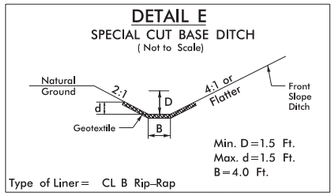
–L– STA. 734+90 RT, L=55', BEG. ELEV=3116.00, END ELEV=3114.99, S=1.84%

DETAIL D
STANDARD BASE DITCH
(Not to Scale)



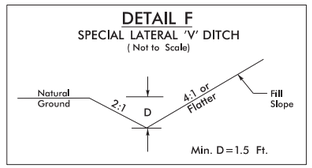
–L– STA. 771+06 LT, B=1.5', L=44', BEG. ELEV=3080.32, END ELEV=3085.00, S=10.8%
–L– STA. 780+92 LT, B=4', L=34', BEG. ELEV=3087.26, END ELEV=3090.0, S=8.1%
–L– STA. 793+00 RT, B=4', L=48', BEG. ELEV=3035.50, END ELEV=3025.26, S=21.3%
–L– STA. 812+65 LT, B=4', L=24', BEG. ELEV=2907.0, END ELEV=2904.96, S=8.5%

DETAIL E
SPECIAL CUT BASE DITCH
(Not to Scale)



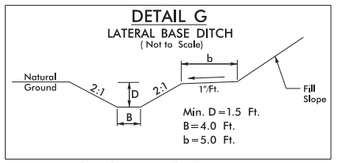
–L– STA. 839+00 TO STA. 841+77 RT

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



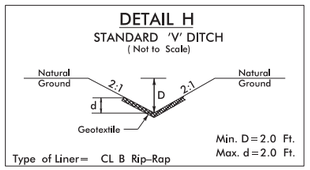
–L– STA. 729+50 TO STA. 732+15 RT
–L– STA. 741+50 TO STA. 743+00 LT
–L– STA. 757+00 TO STA. 758+00 RT
–Y34– STA. 11+00 TO STA. 12+30 RT

DETAIL G
LATERAL BASE DITCH
(Not to Scale)



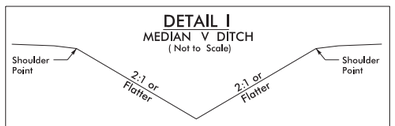
–L– STA. 694+50 TO STA. 704+50 LT
–L– STA. 705+32 TO STA. 707+50 LT
–L– STA. 708+25 TO STA. 711+00 LT
–L– STA. 796+00 TO STA. 797+50 LT
–L– STA. 810+50 TO STA. 816+50 RT
–L– STA. 820+00 TO STA. 826+80 LT

DETAIL H
STANDARD 'V' DITCH
(Not to Scale)



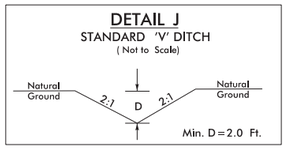
–L– STA. 740+00 TO STA. 740+37 RT, L=37' BEG. ELEV=3101.0, END ELEV=3100.0, S=2.7%
–L– STA. 836+82 TO STA. 837+14 RT, L=43' BEG. ELEV=2872.0, END ELEV=2870.28, S=4.0%

DETAIL I
MEDIAN V DITCH
(Not to Scale)



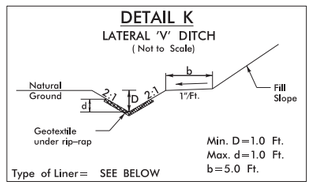
–L– STA. 754+50 TO STA. 756+72 LT

DETAIL J
STANDARD 'V' DITCH
(Not to Scale)



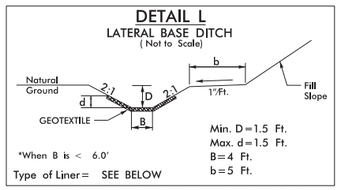
–L– STA. 700+00 TO STA. 701+29 RT
BEG. ELEV=3068.15, END ELEV=3067.75, S=0.3%

DETAIL K
LATERAL 'V' DITCH
(Not to Scale)



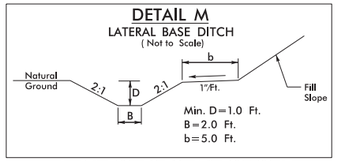
–L– STA. 670+50 TO STA. 671+50 RT, PSRM
–L– STA. 802+00 TO STA. 805+05 LT, CL I
–L– STA. 804+00 TO STA. 806+00 RT, CL B

DETAIL L
LATERAL BASE DITCH
(Not to Scale)



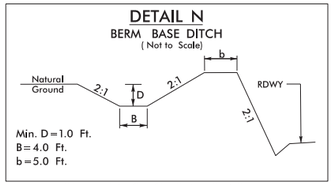
–L– STA. 704+50 TO STA. 705+32 LT, CL B
–L– STA. 797+50 TO STA. 799+13 LT, CL B
–L– STA. 809+73 TO STA. 810+50 RT, CL I
–L– STA. 838+00 TO STA. 838+92 LT, CL B

DETAIL M
LATERAL BASE DITCH
(Not to Scale)



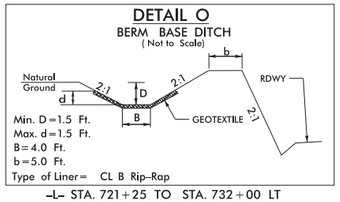
–L– STA. 788+50 TO STA. 793+00 LT

DETAIL N
BERM BASE DITCH
(Not to Scale)



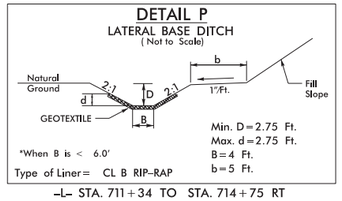
–L– STA. 714+50 TO STA. 721+25 LT
–L– STA. 738+50 TO STA. 741+00 LT
–SR1– STA. 15+16 TO STA. 17+38 LT

DETAIL O
BERM BASE DITCH
(Not to Scale)



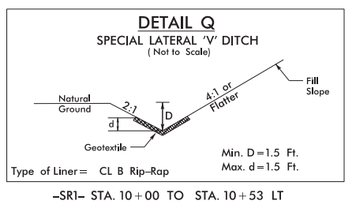
–L– STA. 721+25 TO STA. 732+00 LT

DETAIL P
LATERAL BASE DITCH
(Not to Scale)



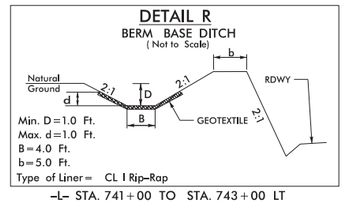
–L– STA. 711+34 TO STA. 714+75 RT

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



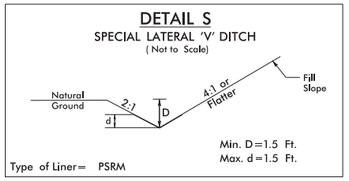
–SR1– STA. 10+00 TO STA. 10+53 LT

DETAIL R
BERM BASE DITCH
(Not to Scale)



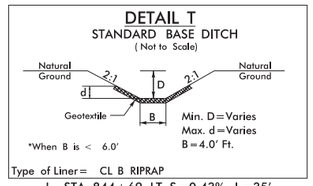
–L– STA. 741+00 TO STA. 743+00 LT

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



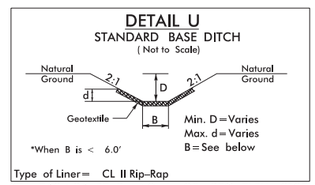
–SR1– STA. 11+70 TO STA. 15+16 LT

DETAIL T
STANDARD BASE DITCH
(Not to Scale)



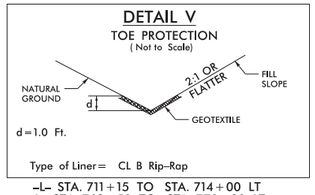
–L– STA. 844+69 LT, S=0.43% L=35'
BEG. ELEV=2862.50, END ELEV=2862.35, D & d=2.0'

DETAIL U
STANDARD BASE DITCH
(Not to Scale)



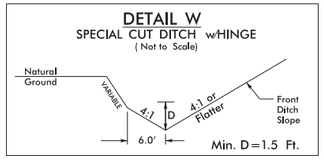
–L– STA. 763+26 RT, B=4.0', L=25', BEG. ELEV=3107.59, END ELEV.=3104.72, S=11.5%, D=1.0', d=1.0'
–L– STA. 765+60 RT, B=5', L=15', BEG. ELEV=3109.0, END ELEV=3108.5, S=3.3%, D=2.5', d=2.5'

DETAIL V
TOE PROTECTION
(Not to Scale)



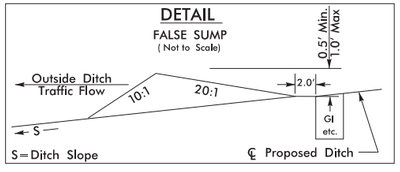
–L– STA. 711+15 TO STA. 714+00 LT
–L– STA. 768+50 TO STA. 770+30 LT
–L– STA. 793+50 TO STA. 795+42 LT

DETAIL W
SPECIAL CUT DITCH wHINGE
(Not to Scale)

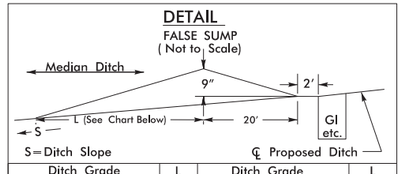


–L– STA. 720+15 TO STA. 723+50 RT
–L– STA. 726+00 TO STA. 727+50 RT
–L– STA. 761+50 TO STA. 767+50 RT
–L– STA. 774+00 TO STA. 783+50 RT
–L– STA. 841+77 TO STA. 849+50 RT

DETAIL
FALSE SUMP
(Not to Scale)

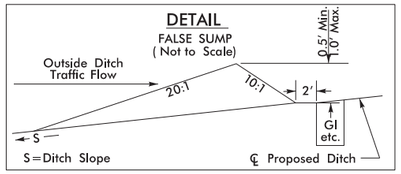


DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL
FALSE SUMP
(Not to Scale)



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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	2D-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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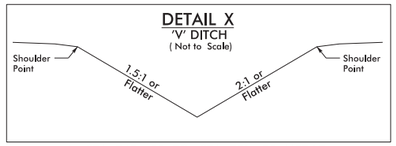
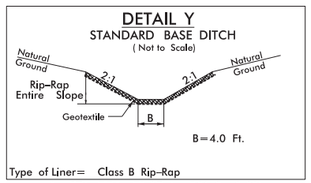
DETAIL X
'V' DITCH
(Not to Scale)



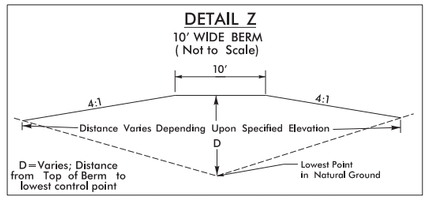
–L– STA. 743+00 TO STA. 751+50 MED/LT

DETAIL Y
STANDARD BASE DITCH
(Not to Scale)



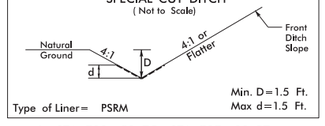
–L– STA. 776+71 LT, L=50', S=0.3%
BEG. ELEV=3093.65, END ELEV=3093.50

DETAIL Z
10' WIDE BERM
(Not to Scale)



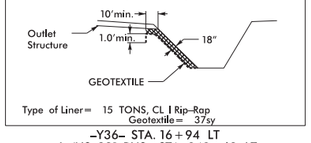
–L– STA. 693+00 LT, TOP ELEV=3079.5, D=2.5'
–L– STA. 697+87 LT, TOP ELEV=3088.0', D=2.0'
–L– STA. 704+50 LT, TOP ELEV=3087.0', D=2.0'
–L– STA. 711+00 LT, TOP ELEV=3102.5', D=3.1'
–L– STA. 802+90 RT, TOP ELEV=2964.0', D=8.3'
–L– STA. 812+30 RT, TOP ELEV=2928.0', D=2.5'
–L– STA. 816+50 RT, TOP ELEV=2914.0', D=3.1'
–L– STA. 827+50 LT, TOP ELEV=2887.0', D=1.6'

DETAIL AA
SPECIAL CUT DITCH
(Not to Scale)



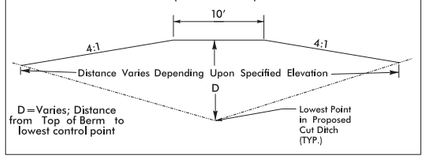
–L– STA. 783+50 TO STA. 787+00 RT

DETAIL AB
RIP RAP AT EMBANKMENT
(Not to Scale)



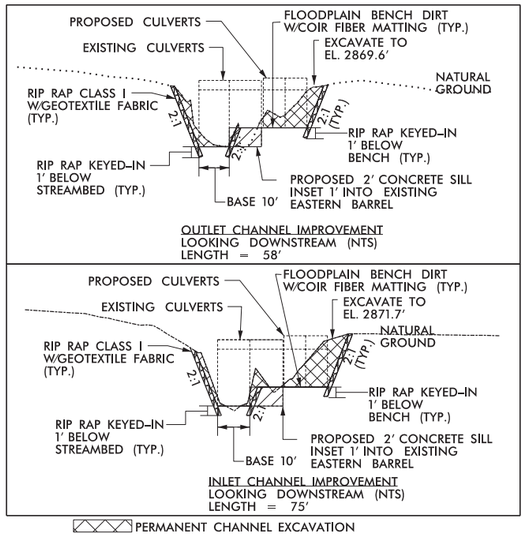
–Y36– STA. 16+94 LT
–L/US 221 BUS– STA. 849+62 LT

DETAIL AC
10' WIDE BERM
(Not to Scale)



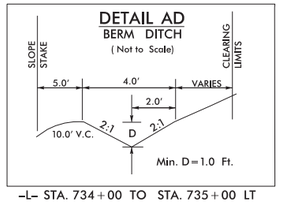
–L– STA. 675+25 RT, TOP ELEV=3031.0', D=2.1'
–L– STA. 767+00 RT, TOP ELEV=3117.0', D=1.8'
–L– STA. 761+50 RT, TOP ELEV=3108.0', D=2.5'
–L– STA. 765+00 RT, TOP ELEV=3114.5', D=2.4'
–L– STA. 844+00 RT, TOP ELEV=2870.5', D=2.5'

CULVERT @ –L– STA. 838+56



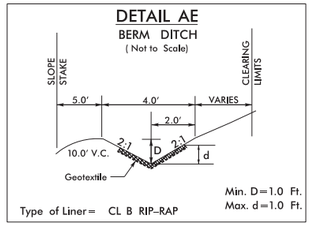
TOTAL CHANNEL EXCAVATION = 485 CY
TOTAL CL II RIP RAP = 255 TONS
TOTAL GEOTEXTILE FAB. = 270 SY

DETAIL AD
BERM DITCH
(Not to Scale)



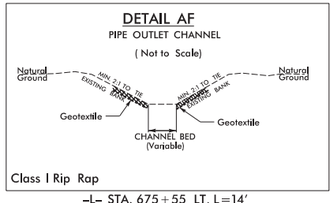
–L– STA. 734+00 TO STA. 735+00 LT

DETAIL AE
BERM DITCH
(Not to Scale)



–L– STA. 732+00 TO STA. 734+00 LT
–L– STA. 735+00 TO STA. 736+00 LT

DETAIL AF
PIPE OUTLET CHANNEL
(Not to Scale)



–L– STA. 675+55 LT, L=14'
–L– STA. 702+52 RT, L=11'
–L– STA. 704+71 RT, L=10'
–L– STA. 711+37 RT, L=20'
–L– STA. 742+12 RT, L=10'
–Y35– STA. 9+49 LT, L=22'
–L– STA. 762+56 LT, L=10'
–L– STA. 763+56 LT, L=20'
–L– STA. 768+48 LT, L=14'
–L– STA. 788+24 RT, L=8'
–L– STA. 804+92 LT, L=30'
–L– STA. 816+26 RT, L=18'
–L– STA. 827+06 RT, L=10'
–L– STA. 832+60 RT, L=10'

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R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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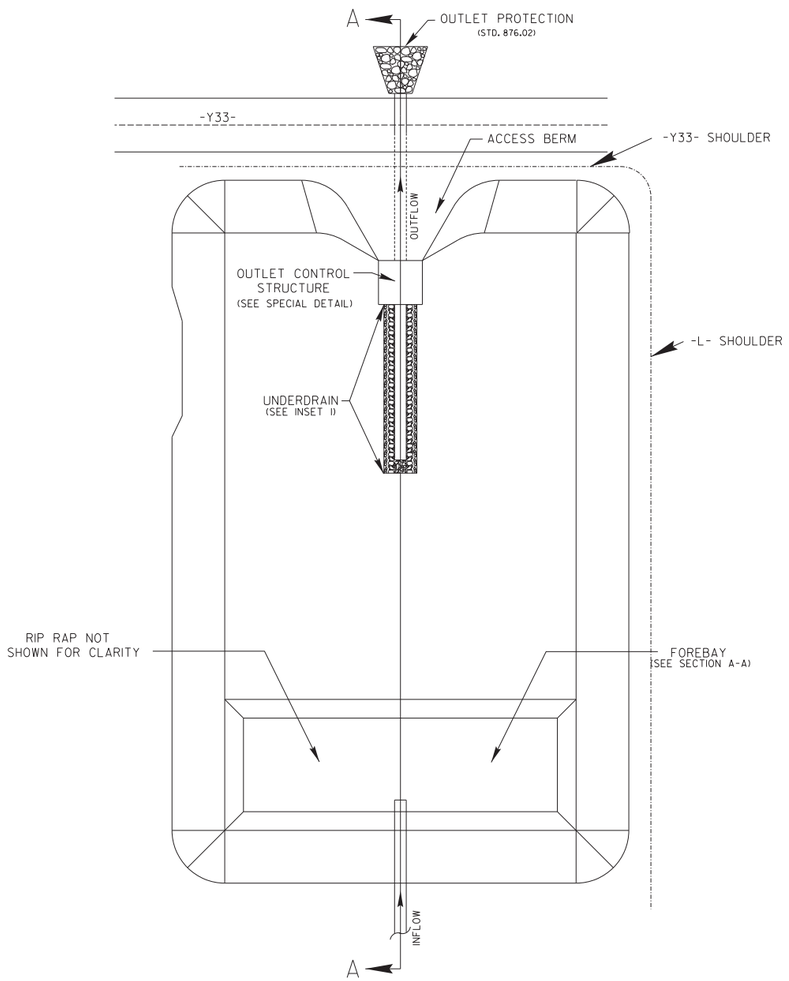
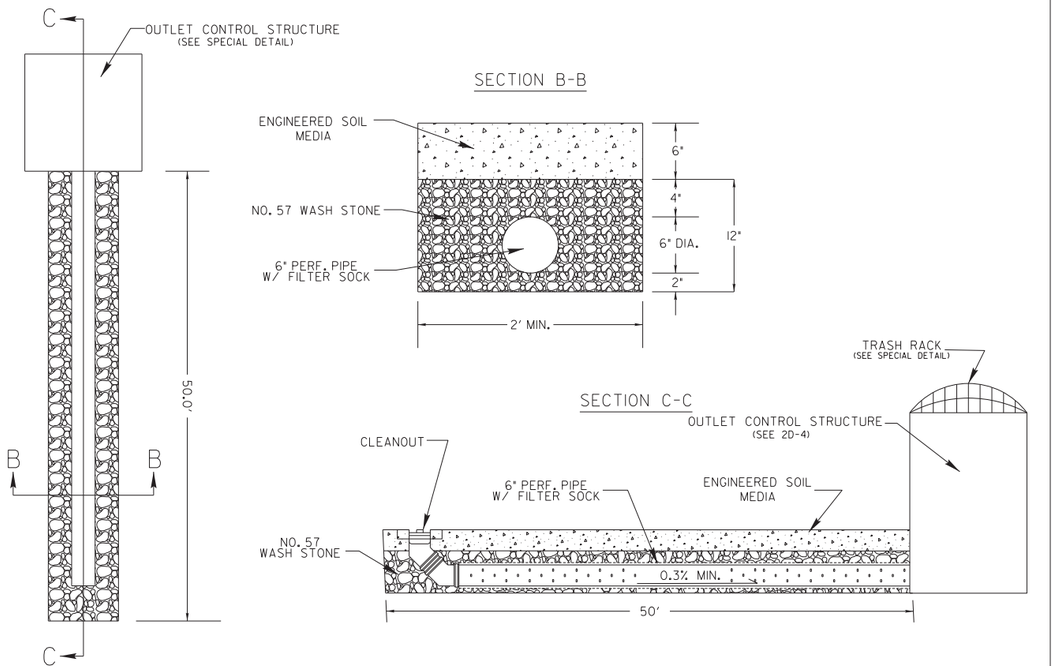
PLAN



INSET I

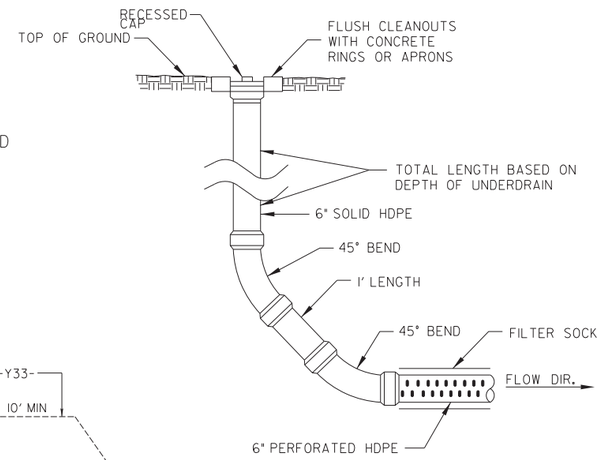


NOTES

1. SHAPE OF BASIN MAY VARY DEPENDING ON SITE CONSTRAINTS. (RECOMMEND LENGTH TO WIDTH RATIO - 3:1)
2. 6" UNDERDRAIN IS A SECONDARY DRAWDOWN DEVICE AND IS NOT INTENDED TO BE PRIMARY DRAWDOWN DEVICE.
5. ACCESS BERM SHOULD BE PROVIDED FOR MAINTENANCE.
6. LENGTH OF UNDERDRAIN TO BE 50.0', ENDING WITH A CAPPED CLEAN OUT.
7. ONLY UNDERDRAIN PIPE (LOCATED BENEATH ENGINEERED SOIL MEDIA) SHOULD BE PERFORATED.
8. PROVIDE THREADED SCREW CAP, RECESSED BELOW TOP OF CONCRETE RING OR APRON.

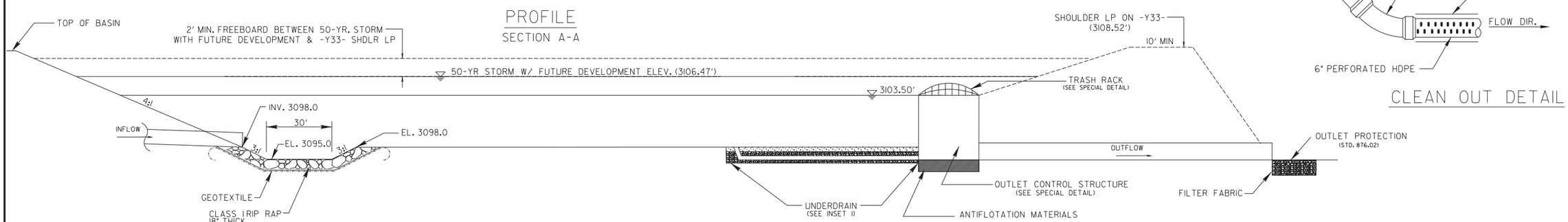
REFERENCED SPECIAL DETAILS

DRY DETENTION BASIN "OUTLET CONTROL STRUCTURE"
DRY DETENTION BASIN "TRASH RACKS"



CLEAN OUT DETAIL

PROFILE
SECTION A-A



NOT TO SCALE

DRY DETENTION BASIN DETAILS WITH UNDERDRAIN

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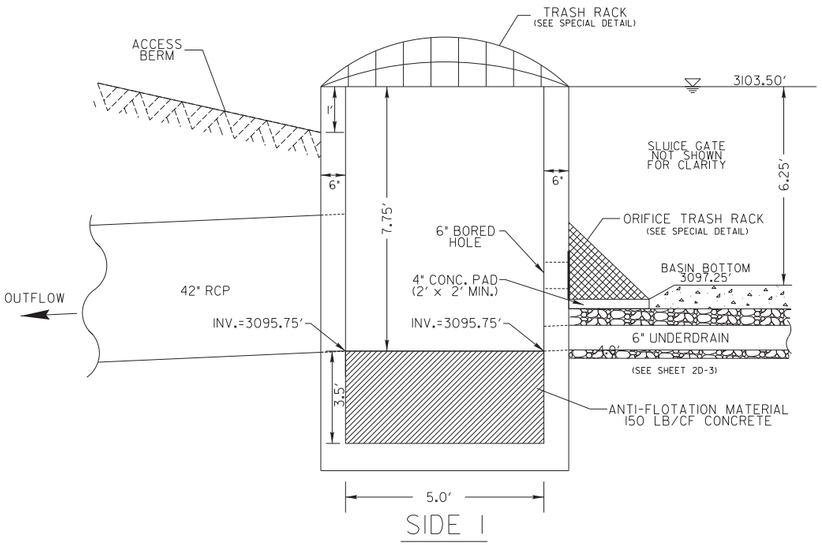
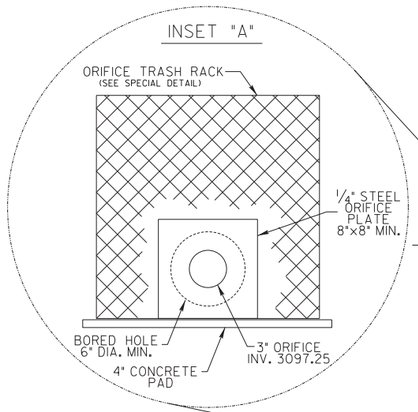
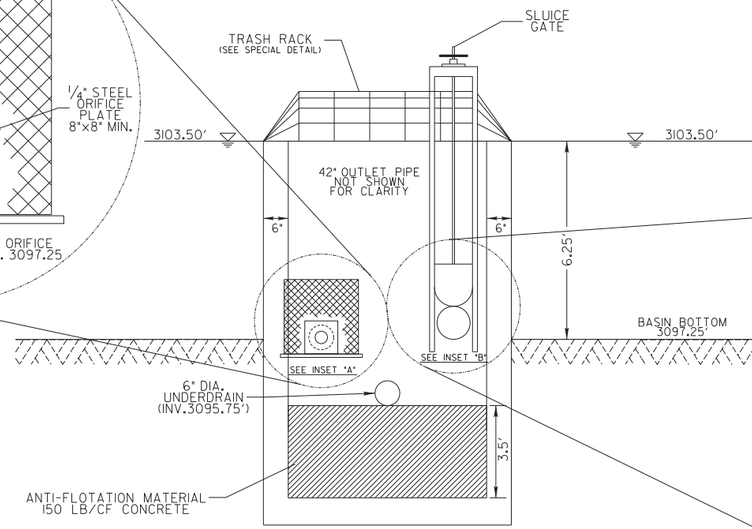
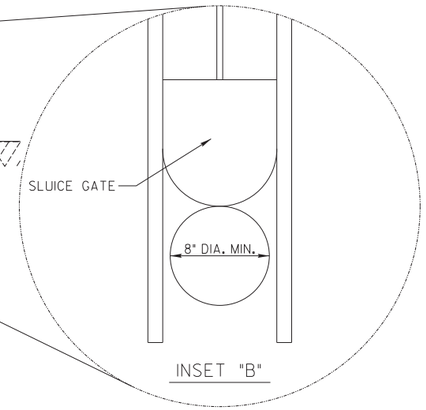


SIDE 1

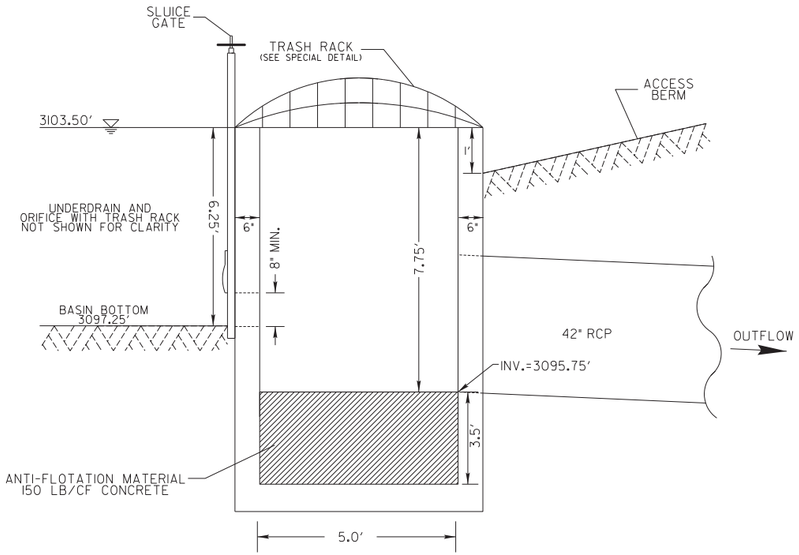




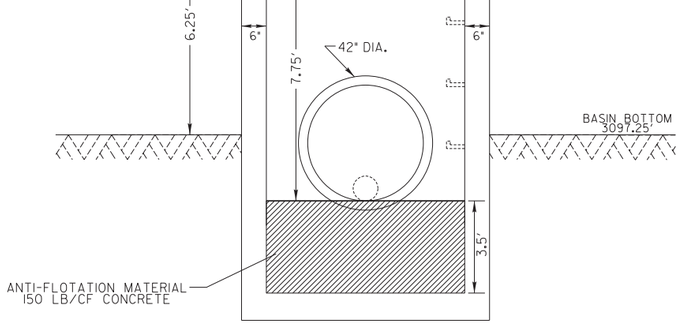
SIDE 2



INSET "B"



SIDE 3



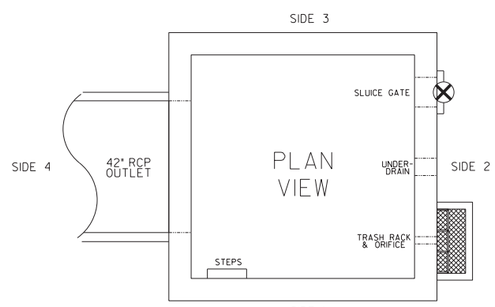
SIDE 4

NOTES

1. ORIFICE, SLUICE GATE AND UNDERDRAIN SHOWN ON DIFFERENT SIDES FOR CLARITY PURPOSES. LOCATIONS TO BE SPECIFIED BY ENGINEER.
2. 42" MINIMUM DIAMETER FOR OUTLET PIPE.
3. 3" DIAMETER ORIFICE
4. 6" UNDERDRAIN IS A SECONDARY DRAWDOWN DEVICE AND IS NOT INTENDED TO BE PRIMARY DRAWDOWN DEVICE.
5. 8" MIN. SLUICE GATE IS FOR MAINTENANCE AND SHOULD REMAIN CLOSED DURING NORMAL OPERATION.
6. 12" O.C. STEPS MUST BE PROVIDED INSIDE THE OUTLET CONTROL STRUCTURE, SEE STD. DRAWING 840.66

REFERENCED SPECIAL DETAILS

DRY DETENTION BASIN "BASIN DETAILS"
DRY DETENTION BASIN "TRASH RACKS"



NOT TO SCALE

DRY DETENTION BASIN OUTLET CONTROL STRUCTURE

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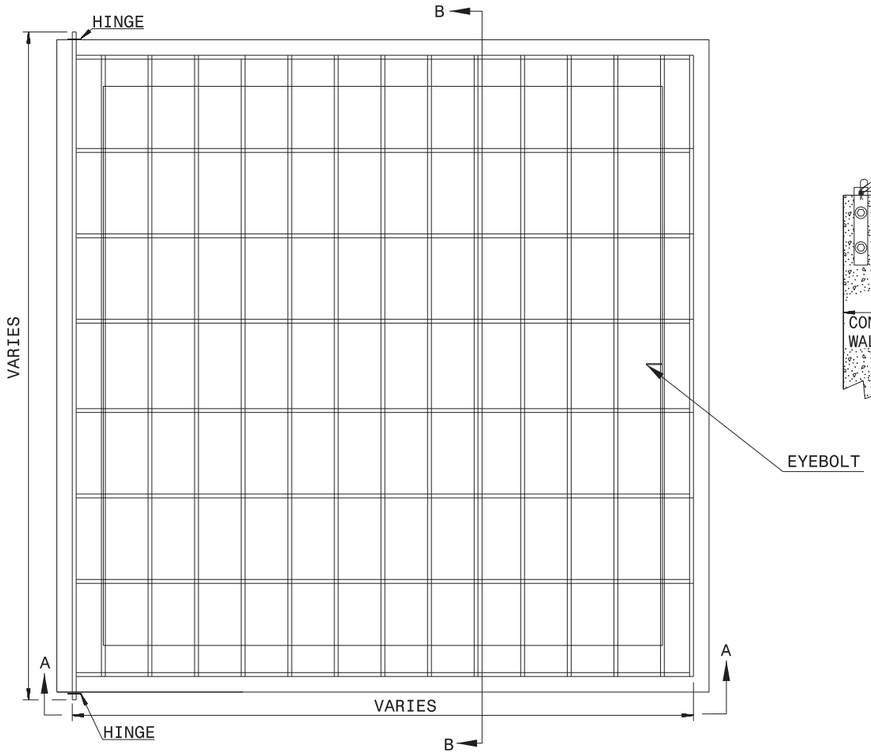
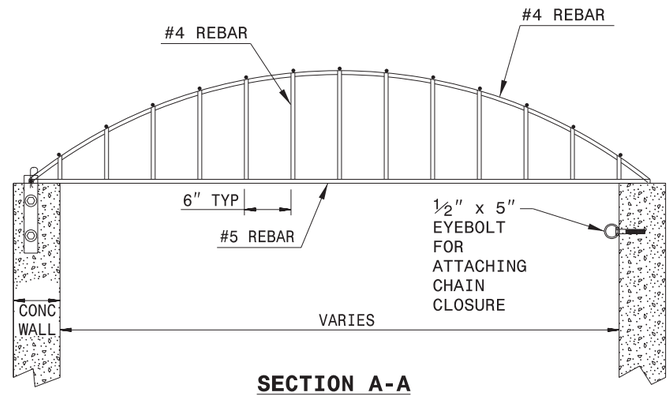
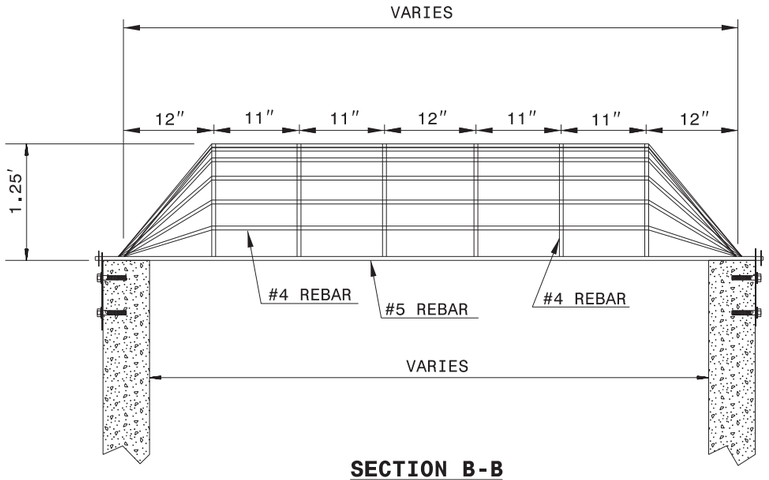


PLAN

RISER TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A ¼" BEAD.
2. IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3. EYEBOLT FOR CHAIN CLOSURE SHALL BE INSTALLED BY THE SAME METHOD AS THE HINGE PLATE BOLTS.
4. RACK AND HARDWARE SHALL BE REBAR AND GALVANIZED IN ACCORDANCE WITH ASTM A-153.

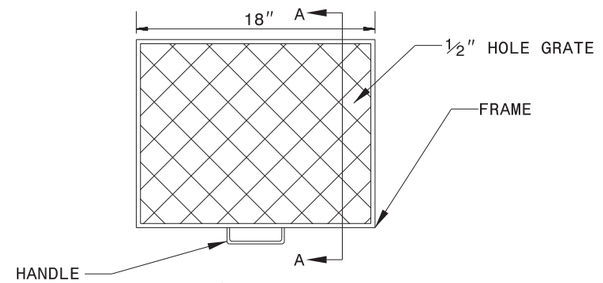


SECTION A-A

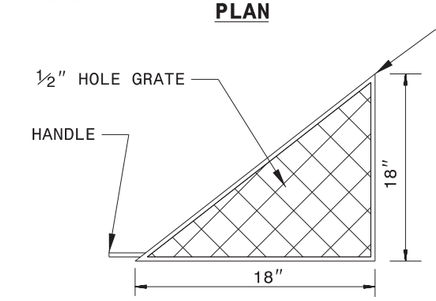


SECTION B-B

REBAR TRASH RACK



PLAN



SECTION A-A

ORIFICE TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A ¼" BEAD.
2. IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3. REMOVEABLE ORIFICE TRASH RACK SHALL BE ATTACHED TO CONCRETE BOX BY HINGE OR SLIDE RAIL SYSTEM.
4. RACK AND HARDWARE SHALL BE ALUMINUM OR GALVANIZED IN ACCORDANCE WITH ASTM A-153.

REMOVEABLE ORIFICE TRASH RACK

DRY DETENTION BASIN TRASH RACK

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DB 174 PG 2360

ILIT REAL ESTATE HOLDINGS, LLC
DB 292 PG 109

AMELIA PROPERTIES, LLC
DB 394 PG 14

WEST JEFFERSON II, LLC
DB 429 PG 113

FIRST COMMUNITY BANK
DB 440 PG 110

BRADLEY W. JORDAN
DB 403 PG 2289

KENNETH TIMOTHY PARSONS
HUSBAND, AND WIFE
BETTY WADDELL PARSONS
DB 232 PG 1915
DB 427 PG 2452

WILEY AUSTIN BAKER
AND KAY M. BAKER
DB 215 PG 1510

LARRY D. BOOTH
DB 354 PG 733

K. DICKSON
PG 1744

LOWE'S HOME CENTERS, INC.
DB 358 PG 403

SR 1150 CRESCENT DR

670+00

675+00

680+00

R-2915D TO BE
CONST. BY OTHERS

SEE OUTFALL
ANALYSIS PACKAGE

RETAIN PROPOSED SYSTEM
IN R-2915D AND TIE
PROPOSED DITCH
TO BOX AT
-L- STA. 669+50 LT

SPECIAL CUT DITCH
SEE DETAIL A

BEGIN 2'-9" C&G
-L- Sta. 671+50.00

400' TAPER

100' MEDIAN
TRANSITION

END TIP PROJECT R-2915D
-L- POT Sta. 679+90.00

SEE SHEET 5

MATCHLINE -L- STA. 682+00

5' MONOLITHIC ISLAND

RETAIN
REMAINDER
OF PROPOSED
SYSTEM
IN R-2915D

REMOVE DI & PIPE
IN R-2915D

LATERAL V DITCH
W/94 SY PSRM
SEE DETAIL K

LATERAL V DITCH
SEE DETAIL B

2 TONS CL B RIPRAP
W/7 SY GEOTEXTILE

REMOVE 2GI
AND PIPE FROM
PROPOSED DRAINAGE
IN R-2915D

END 2'-9" C&G
-L- Sta. 674+00.00

10' WIDE BERM
TOP ELEV. 3031.0'
SEE DETAIL AC

SP. CUT DITCH
SEE DETAIL A

20 TONS CL I RIPRAP
W/39 SY GEOTEXTILE
ON BANKS ONLY
SEE DETAIL AE

REMOVE JB
AND PIPE

REMOVE EX.
24" CMP

2GI-A REMOVE
SYSTEM

REMOVE

PLUG &
FILL W/FF

BLD-54

42" RCP-III
(BURIED 0.7')

30" RCP-III

24" RCP-III

18" RCP-III

15" RCP-III

TB 2GI (0406)

2GI-A (0407)

2GI (0408)

(0409)

(0410)

(0411)

(0412)

(0413)

(0414)

(0415)

(0418)

(0440)

(0402)

(0405)

-L-
PI Sta 679+01.03
△ = 57° 00' 37.6" (LT)
D = 2° 00' 37.4"
L = 2,835.81'
T = 1,547.76'
R = 2,850.00'
SE = 0.05

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR -L- PROFILE SEE SHT. 18

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

DONNA HOWELL OSBORNE
DB P4 PG 487

WILEY AUSTIN BAKER
DB 163 PG 1500

WADE SHEPHERD
FRED SHEPHERD (LIFE ESTATE)
MARTHA SHEPHERD (LIFE ESTATE)
DB 362 PG 1096

ARCHIE H. SHAW AND HUSBAND, WILLARD D. SHAW
DB Y4 PG 492

CARSON PARSONS
DB 132 PG 317

CHARLES E. LAIL AND WIFE, JOSSIE CHARLES LAIL
DB 105 PG 105

PAMELA B. BARKER
DB 180 PG 198

RICHARD F. ROE, JR. AND WIFE, DAMA D. ROE
DB 145 PG 1515

WILEY AUSTIN BAKER AND KAY M. BAKER
DB 215 PG 1510

C.H. HOWELL AND WIFE
BLANCHE V. HOWELL
DB 84 PG 191

JAMES E. DUVALL AND WIFE, THELMA W. DUVAL
DB D6 PG 156
DB D4 PG 0569

MICHAEL J. OSBORNE
DB 203 PG 57

WOODS

-L- POC Sta.686+04.76 =
-Y32A- POT Sta. 10+00.00

-L- ST Sta. 693+89.08

-L- CS Sta. 691+89.08

-L- TS Sta. 695+97.27

MATCHLINE -L- STA. 682+00 SEE SHEET 4

MATCHLINE -L- STA. 696+00 SEE SHEET 6

685+00

690+00

695+00

REMOVE 4' PS

SPECIAL CUT DITCH SEE DETAIL A

18" RCP-III

PLUG & FILL W/FLOWABLE FILL

PLUG & FILL W/FF

S 87° 37' 42.9" E

5' MONOLITHIC ISLAND

-Y32A- PC Sta. 10+50.10

-Y32A- PT Sta. 11+34.81

TIE TO EXISTING CURB & GUTTER

END CONSTRUCTION
-Y32A- POT Sta.11+90.00

N 60° 00' 53.5" E
-Y32A-

-Y32A- POT Sta. 13+42.74

LOWE'S HOME CENTERS, INC.
DB 358 PG 403

JGS NORTH CAROLINA VENTURES, LLC
DB 408 PG 1413

MIDWAY BAPTIST CHURCH
DB 319 PG 2089
DB 168 PG 711
DB E6 PG 272

LATERAL V DITCH SEE DETAIL B

LATERAL BASE DITCH SEE DETAIL G

10' WIDE BERM TOP ELEV. 3079.5' SEE DETAIL Z

40' TYP.

-BLD-56

GREU TL-3

BEGIN SBG -L- +00 RT

END SBG -L- +00 RT

11 TONS CL I RIPRAP W/22 SY GEOTEXTILE

N 12° 24' 58.5" W

S 13° 10' 13.6" W 346.47'

-Y32A- LOWE'S DRIVE

12,744 / 15,464	-L- US 221	12,744 / 15,464
1,148 / 1,388		1,148 / 1,388
2,296 / 2,776	-Y32A- LOWE'S DRIVE	

ADT 2019
ADT 2039

-Y32A-	-L-		
PI Sta 10+93.62	PI Sta 679+01.03	PIs Sta 692+55.75	PIs Sta 697+30.61
Δ = 32° 21' 23.6" (LT)	Δ = 57° 00' 37.6" (LT)	θs = 2° 00' 37.4"	θs = 1° 51' 58.7"
D = 38° 11' 49.9"	D = 2° 00' 37.4"	Ls = 200.00'	Ls = 200.00'
L = 84.71'	L = 2,835.81'	LT = 133.34'	LT = 133.34'
T = 43.52'	T = 1,547.76'	ST = 66.67'	ST = 66.67'
R = 150.00'	R = 2,850.00'		
SE = SEE PLANS	SE = 0.05		

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR INTERSECTION DETAIL SEE SHT. 2B-1
FOR -L- PROFILE SEE SHT. 18
FOR -Y32A- PROFILE SEE SHT. 26

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

MATCHLINE –L– STA. 696+00 SEE SHEET 5

MATCHLINE –L– STA. 710+00 SEE SHEET 7

1

JAMES E. DUVALL AND WIFE, THELMA W. DUVALL
DB D6 PG 156
DB D4 PG 0569

2

GARY AND JUDY BARE
DB G3 PG 306

KIM PHUONG THI MAI, UNMARRIED
DB 423 PG 1361

700+00

705+00

697+00.00 125.00

697+97.26

EX. R/W

10' WIDE BERM TOP ELEV. 3088.0' SEE DETAIL Z

BEGIN FENCE

LATERAL BASE DITCH SEE DETAIL G

PROP. 47" WW FENCE

706+00.00 125.00

707+00.00 135.00

707+50.00 125.00

PDE

LATERAL V DITCH SEE DETAIL B

LATERAL BASE DITCH W52 TONS CL B RIPRAP, 134 SY GEOTEXTILE SEE DETAIL L

10' WIDE BERM TOP ELEV. 3087.0' SEE DETAIL Z

JB W/ SLAB LID CAT-1

SPRING BOX

24" CSP 2 ELBOWS

12" CSP 2 ELBOWS

GREU TL-3

BEGIN 2'-9" C&G –L– Sta.707+95.00

2'-9" C&G

PLUG & FILL W/ FLOWABLE FILL

24" RCP-III

15" RCP-III

GREU TL-3 BEGIN SBG –L– +75 RT

40' TYP.

–L– SC Sta. 697+97.27

WOODS

STANDARD V DITCH SEE DETAIL J

15" CSP 2 ELBOWS

REMOVE 16' EXISTING 24" CMP

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

DROP STRUCT. (DROP DEPTH=1.1')

DROP STR. (DROP=0.6')

JB w/MH

30" RCP-III

11 TONS CL I RIPRAP W/22 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

RETAIN & INSTALL SMOOTH LINING

US 221

150' TAPER

LATERAL V DITCH W/46 TONS CL B RIPRAP, 118 SY GEOTEXTILE SEE DETAIL AA

5 TONS CL B RIPRAP W/14 SY GEOTEXTILE

DROP STRUCT. (DROP DEPTH=5.8')

END SBG –L– +50 RT

MIDWAY BAPTIST CHURCH
DB 319 PG 2089
DB 168 PG 711
DB E6 PG 272

JAMES E. DUVALL AND WIFE, THELMA W. DUVALL
DB 155 PG 69
DB 04 PG 0569

WILKES NATIONAL BANK
DB 256 PG 1040

R. E. WOODIE AND WIFE, NANCY LANE D. WOODIE
DB 04 PG 34

HIGH COUNTRY BANK
DB 252 PG 1245

2 WEST JEFFERSON, LLC
DB 455 PG

WD RAMP

W/SF BUS

ISBLK&F BUS

WD RAIL

WOVEN WIRE W/2 IS BW

EXISTING R/W

48" WW & ISBW

8" DIP

6" PE

8" VCP

6" DIP

48" CMP

100 PR 200 ST 24 ST

48 ST

–L–

PIs Sta 697+30.61	PI Sta 705+80.85
Θs = 1° 51' 58.7"	Δ = 28° 38' 13.1" (RT)
Ls = 200.00'	D = 1° 51' 58.7"
LT = 133.34'	L = 1,534.42'
ST = 66.67'	T = 783.59'
	R = 3,070.00'
	SE = 0.05

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR –L– PROFILE SEE SHT. 19

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–Y33– CAMPUS DRIVE

12,744 / 15,464 –L– US 221 15,904 / 19,424

3,028 / 3,668 — 6,188 / 7,628

ADT 2019 / ADT 2039: 9,216 / 11,296 –Y33– CAMPUS DRIVE

–L–

PI Sta 705+80.85
△ = 28° 38' 13.1" (RT)
D = 1° 51' 58.7"
L = 1,534.42'
T = 783.59'
R = 3,070.00'
SE = 0.05

PIs Sta 713+98.35
Θs = 1° 51' 58.7"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

–ACCESS–

PI Sta 10+84.35
△ = 52° 22' 06.7" (RT)
D = 190° 59' 09.4"
L = 27.42'
T = 14.75'
R = 30.00'
SE = 0.02

PI Sta 11+37.39
△ = 52° 22' 06.7" (LT)
D = 458° 21' 58.4"
L = 11.43'
T = 6.15'
R = 12.50'
SE = 0.02

PI Sta 11+79.37
△ = 32° 37' 37.3" (RT)
D = 81° 16' 14.2"
L = 40.15'
T = 20.63'
R = 70.50'
SE = 0.02

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

1 S 70° 02' 47.9" E
2 S 17° 40' 41.2" E
3 S 70° 02' 47.9" E
4 S 37° 25' 10.6" E

NAD 83/NSRS 2007

JAMES CLIFF JENKINS
DB 134 PG 180

DIANA LYNN HAMM
DB 414 PG 584

JAY TODD RICHIY AND WIFE RENEE RICHEY
DB 330 PG 409

JAMES R. POWERS AND WIFE SHIRLEY POWERS
DB 358 PG 47

2 GARY AND JUDY BARE
DB 63 PG 306

3 JEMSITE DEVELOPMENT, LLC (40%), CHARLES R. COPE (20%), JIMMY MILLER (20%), AND PHIL G. STEVENS (20%)
DB 325 PG 1227

THE TOWN OF WEST JEFFERSON
DB 249 PG 990

FFC LIMITED PARTNERSHIP
DB 274 PG 2370

2 WEST JEFFERSON, LLC
DB 455 PG 826

AUTOZONE, INC.
DB 265 PG 983

TREVOR D. WITHERSPOON
DB 263 PG 1194

SKYLINE TELEPHONE MEMBERSHIP CORPORATION
DB 430 PG 2127

MATCHLINE –L– STA. 710+00 SEE SHEET 6

MATCHLINE –L– STA. 724+00 SEE SHEET 8

BEGIN CONSTRUCTION –DW1– Sta. 10+00.00

END CONSTRUCTION –Y33– POT Sta.12+00.00

END CONSTRUCTION –ACCESS– POT Sta.12+29.73

–L– POT Sta.715+39.92 = –Y33– POT Sta. 10+00.00

–L– ST Sta. 715+31.68

–L– CS Sta. 713+31.68

–L– POT Sta.719+99.16 = –DW1– POT Sta. 11+12.73 = –ACCESS– POT Sta.10+00.00

–Y33– POT Sta. 14+80.00

PC Sta. 10+69.60
PT Sta. 10+97.02
PC Sta. 11+31.25
PT Sta. 11+42.67
PC Sta. 11+58.74
PT Sta. 11+98.88

S 70° 02' 47.9" E
N 19° 57' 12.1" E
S 84° 25' 04.1" E

150' TAPER

DRY DETENTION BASIN SEE 2D-3 THRU 2D-5

PROPOSED TRAFFIC SIGNAL

FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR INTERSECTION DETAIL SEE SHT. 2B–1
FOR –L– PROFILE SEE SHT. 19
FOR –Y33– PROFILE SEE SHT. 26
FOR –ACCESS– PROFILE SEE SHT. 28
FOR –DW1– PROFILE SEE SHT. 28

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–Y34– MT. JEFFERSON STATE PARK ROAD

15,904 / 19,424 — 14,840 / 18,040

–L– US 221

1,680 / 2,080 — 616 / 696

2,296 / 2,776 — –Y34– MT. JEFFERSON STATE PARK ROAD

ADT 2019 / ADT 2039

–L–

PIs Sta 725+67.25	PI Sta 729+93.07	PIs Sta 734+15.51
Θs = 1° 54' 35.5"	Δ = 13° 39' 15.3" (LT)	Θs = 1° 54' 35.5"
Ls = 200.00'	D = 1° 54' 35.5"	Ls = 200.00'
LT = 133.34'	L = 714.94'	LT = 133.34'
ST = 66.67'	T = 359.17'	ST = 66.67'
	R = 3,000.00'	
	SE = 0.05	

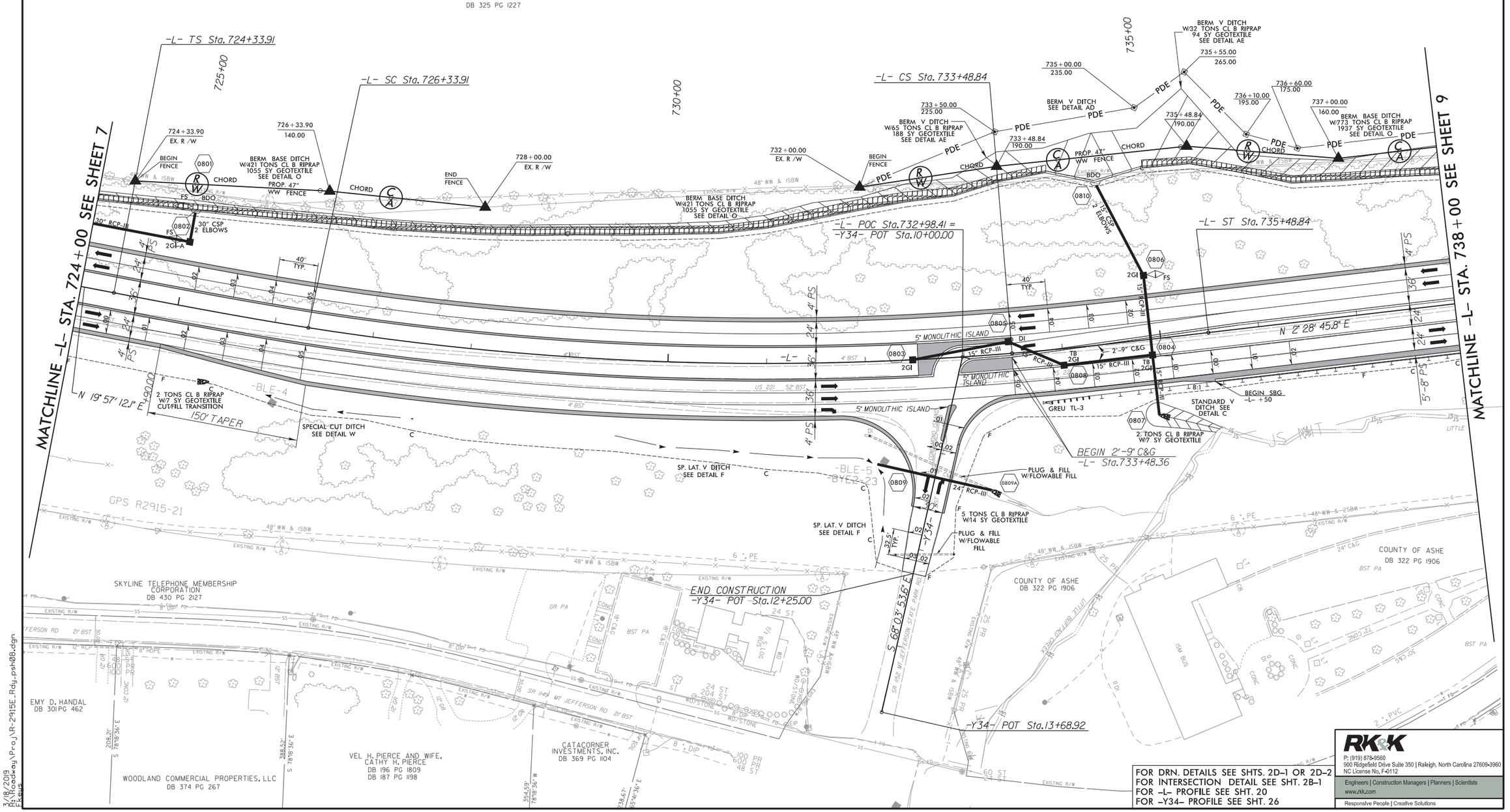
NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

3

JEMSITE DEVELOPMENT, LLC (40%),
CHARLES R. COPE (20%),
JIMMY MILLER (20%),
AND PHIL G. STEVENS (20%)
DB 325 PG 1227



FOR DRN. DETAILS SEE SHTS. 2D–1 OR 2D–2
FOR INTERSECTION DETAIL SEE SHT. 2B–1
FOR –L– PROFILE SEE SHT. 20
FOR –Y34– PROFILE SEE SHT. 26

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-L-		-SR1-	
PIs Sta 739+88.17	PI Sta 746+79.89	PI Sta 13+89.56	PI Sta 16+44.40
Θs = 1° 03' 57.5"	Δ = 16° 53' 20.8" (RT)	Δ = 4° 17' 36.8" (LT)	Δ = 5° 26' 18.4" (RT)
Ls = 160.00'	D = 1° 19' 56.9"	D = 1° 54' 35.5"	D = 1° 54' 35.5"
LT = 106.67'	L = 1,267.51'	L = 224.81'	L = 284.76'
ST = 53.34'	T = 638.39'	T = 112.46'	T = 142.48'
	R = 4,300.00'	R = 3,000.00'	R = 3,000.00'
	SE = 0.04	SE = NC	SE = NC

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

3

JEMSITE DEVELOPMENT, LLC (40%),
CHARLES R. COPE (20%),
JIMMY MILLER (20%),
AND PHIL G. STEVENS (20%)
DB 325 PG 1227

4

JOHNNY J. SULLIVAN
DB 145 PG 1689

BEGIN CONSTRUCTION
-SR1- POT Sta. 10+00.00

-SR1- PC Sta. 12+77.10

-SR1- PRC Sta. 15+01.92

-SR1- PT Sta. 17+86.67

-L- STA. 738+00 SEE SHEET 8

-L- STA. 751+00 SEE SHEET 10

MATCHLINE -L- STA. 738+00

MATCHLINE -L- STA. 751+00

-L- TS Sta. 738+81.50

-L- SC Sta. 740+41.50

END 2'-9" C&G
-L- Sta. 740+30.00

BEGIN 2'-9" C&G
-L- Sta. 748+15.00

150' TAPER

BERM BASE DITCH W/73 TONS CL B RIPRAP 1937 SY GEOTEXTILE SEE DETAIL O

BERM BASE DITCH SEE DETAIL N

BERM BASE DITCH W/181 TONS CL I RIPRAP, 371 SY GEOTEXTILE SEE DETAIL R

SP. LAT. V DITCH W/85 TONS CL B RIPRAP, 237 SY GEOTEXTILE SEE DETAIL Q

SP. LAT. V DITCH W/595 SY PSRM SEE DETAIL S

SP. LAT. V DITCH SEE DETAIL F

'V' DITCH SEE DETAIL X

BDO

BDO REMOVE RISER & 9" EX. 24" CMP

PROP. 47" WW FENCE

PLUG & FILL SYSTEM W/ FLOWABLE FILL

PLUG & FILL W/FLOWABLE FILL

SPRING BOX

REMOVE 20' EX. 30" CMP

DROP STRUCTURE (DROP DEPTH=1.4')

7 TONS CL I RIPRAP W/15 SY GEOTEXTILE

F STD. V DITCH W/20 TONS CL B RIPRAP, 53 SY GEOTEXTILE SEE DETAIL H

11 TONS CL I RIPRAP W/22 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

CORNER OF BUILDING AT CONTROL ELEV.= 3090.62 (SURVEYED 10/06/16)

COUNTY OF ASHE
DB 322 PG 1906

CS PROPERTIES OF ASHE, INC.
DB 448 PG 2067

CS PROPERTIES OF ASHE, INC.
DB 448 PG 2067

WILLIAM AVERY BRITT
DB 413 PG 2254

ML PHILLIPS FAMILY LIMITED PARTNERSHIP
DB 437 PG 1350

PHILLIPS FAMILY LIMITED PARTNERSHIP
DB 256 PG 371

HAZEL D. BLEVINS
DB 260 PG 1900

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR -L- PROFILE SEE SHT. 20
FOR -SR1- PROFILE SEE SHT. 27

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-L-	-Y35-	-SR1-
PI Sta 746+79.88 △ = 16° 53' 20.8" (RT) D = 1° 19' 56.9" L = 1,267.51' T = 638.39' R = 4,300.00' SE = 0.04	PIs Sta 753+62.35 Θs = 1° 03' 57.5" Ls = 160.00' LT = 106.67' ST = 53.34'	PI Sta 766+25.13 △ = 2° 08' 50.5" (LT) D = 0° 19' 05.9" L = 674.61' T = 337.35' R = 18,000.00' SE = NC	PI Sta 20+85.20 △ = 18° 44' 49.7" (RT) D = 6° 21' 58.3" L = 294.48' T = 148.57' R = 900.00' SE = SEE PLANS	PI Sta 23+61.86 △ = 46° 08' 54.1" (LT) D = 22° 55' 05.9" L = 201.36' T = 106.50' R = 250.00' SE = 0.04	PI Sta 25+64.52 △ = 89° 56' 43.4" (RT) D = 143° 14' 22.0" L = 62.79' T = 39.96' R = 40.00' SE = SEE PLANS
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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

MATCHLINE -L- STA. 751+00 SEE SHEET 9

MATCHLINE -L- STA. 765+00 SEE SHEET 11

BEGIN CONSTRUCTION
-Y35- POT Sta.9+00.00

BEGIN GRADE
-Y35- POT Sta.10+90.00

BEGIN OVERLAY

-SR1- PT Sta. 25+87.35

-SR1- PC Sta. 25+24.55

-SR1- PT Sta. 24+56.71

-SR1- PC Sta. 22+55.35

-L- CS Sta. 753+09.01

END CONSTRUCTION
-Y35- POT Sta.19+00.00

-Y35- PT Sta. 22+31.11

-Y35- PC Sta. 19+36.63

END 2'-9" C&G
-L- Sta.752+50.00

-L- ST Sta. 754+69.01

BEGIN 2'-9" C&G
-L- Sta.759+00.00

-L- POT Sta.756+36.02 =
-Y35- POT Sta. 16+20.00

-L- PC Sta. 762+87.79

END 2'-9" C&G
-L- Sta.764+50.00

-SR1- POT Sta.26+27.61 =
-Y35- POT Sta. 13+49.31

TRI COUNTY PAVING, INC.
DB 143 PG 1035
DB 142 PG 849
DB 302 PG 1555

JOHNNY J. SULLIVAN
DB 145 PG 1689

JOHNNY J. SULLIVAN AND WIFE,
PHYLLIS C. SULLIVAN
DB 164 PG 1363

ROBERT CLAYTON LONG AND
WIFE, SARAH DEAN LONG
DB G4 PG 143

ROBERT CLAYTON LONG AND
WIFE, SARAH DEAN LONG
DB G4 PG 143

JOHNNY SULLIVAN
AND WIFE,
PHYLLIS SULLIVAN
DB 164 PG 699

REED REAL ESTATE
DB 257 PG 2112
DB 257 PG 214
DB 239 PG 557
DB 389 PG 677

RUBY R. ABSHER LIVING TRUST
DB 342 PG 1304

CS PROPERTIES
OF ASHE, INC.
DB 448 PG 2067

KATHY H. HOWELL AND
LINDA H. BELGER
DB 413 PG 381

JAMES P.G. MURRAY,
A 99% UNDIVIDED INTEREST AND
STANLY DWAYNE ELLIOTT
A 1% UNDIVIDED INTEREST
DB 437 PG 1868

NORMA DEAN WALKER
DB 165 PG 1803

LARRY DALE CALHOUN AND WIFE,
CAROLYN ISAAC CALHOUN
DB 228 PG 1337

MICHAEL ALOIA AND WIFE,
CINDEE L. ALOIA
DB 377 PG 1165
DB 165 PG 1803
DB 200 PG 2070
DB 239 PG 557
DB 302 PG 1807

-Y35- MT. JEFFERSON ROAD

	5,656 / 6,936	-Y35- MT. JEFFERSON RD.
14,840 / 18,040	4,492 / 5,452	-L- US 221
	316 / 396	12,544 / 15,264
	-100 / -100	1,880 / 2,280
ADT 2019 / ADT 2039	2,728 / 3,368	-Y35- MT. JEFFERSON RD.

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR INTERSECTION DETAIL SEE SHT. 2B-2
FOR -L- PROFILE SEE SHT. 21
FOR -Y35- PROFILE SEE SHT. 26
FOR -SR1- PROFILE SEE SHTS. 27-28

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3/18/2019
R-2915E_Roadway_Proj\R-2915E_Rdy_psh10.dgn
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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

REVISIONS

8/17/99 RIGHT OF WAY REVISION: 3/15/2019 - ADDED TCE ON PARCEL 23 FOR PIPE LINING.

3/18/2019
R:\Roadway\Proj\R-2915E_Rdy_psh11.dgn
kfelts

MATCHLINE -L- STA. 765+00 SEE SHEET 10

MATCHLINE -L- STA. 779+00 SEE SHEET 12

11 JOHN S. TRESKI AND WIFE, JENNIFER VANNOY TRESKI DB 287 PG 2347

W.R. WOOD AND WIFE, CAROLYN C. WOOD DB R4 PG 94

MILLARD B. DANCY AND WIFE, GEORGIA L. DANCY DB X4 PG 57

BOBBY LEE WADDELL, WIDOWER DB 367 PG 810

BRIAN BORELLE AND MARY CORDELLA MILLER DB 242 PG 754

12 JERRY L. BROWN DB 180 PG 2494

13 "RODNEY TERRELL MORGAN, HUSBAND, AND WIFE, CAMILLE MORGAN DB 295 PG 1166

JERRY AND ROBIN BROWN DB 454 PG 2172

NCDOT DB 05 PG 52

CHARITY B. CHRISTOFERSON DB 363 PG 1009

23 MICHAEL ALOIA AND WIFE, CINDEE ALOIA DB 308 PG 377 DB 337 PG 1354

THOMAS JARMEN AND WIFE, LINDA JARMEN DB 355 PG 251

WILLIAM H. WILKINSON HUSBAND, AND WIFE KAREN WILKINSON DB 231PG 1547

D. NEWTON CAVINESS DB 385 PG 1798

CHRIS A. PELEZO AND WIFE, DORIS F. PELEZO DB 215 PG 1561 DB 215 PG 1563 DB 215 PG 1565

767+55.00 220.00' E
767+63.00 EX. R /W
768+05.00 240.00'
768+12.00 EX. R /W
770+00
770+40.00 EX. R /W
770+64.00 EX. R /W
770+68.00 242.00'
770+86.00 242.00'
770+94.00 233.00'
775+00
776+55.00 210.00'
776+65.00 EX. R /W
776+70.00 EX. R /W, 170.00'
777+15.00 225.00'
777+55.00 EX. R /W
777+40.00 EX. R /W, 170.00'

1103 2GI
1104 10' WIDE BERM TOP ELEV. 3117.0' SEE DETAIL AC
1105 15 TONS CL I RIPRAP W/30 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AE
1107 STD. BASE DITCH W/23 TONS CL II RIPRAP, 46 SY GEOTEXTILE SEE DETAIL U
1109 JB w/MH
1110 60" RCP-III
1112 COLLAR
1113 CONV. DI TO JB W/MH
1114 JB w/MH
1115 2GI
1116 4 TONS CL I RIPRAP W/10 SY GEOTEXTILE
1117 ES
1118 FS 2GI-A
1119 42" CSP 2 ELBOWS 2GI 15" RCP-III
1120 MTL
1121 STD. BASE DITCH W/71 TONS CL B RIPRAP, 169 SY GEOTEXTILE SEE DETAIL Y
1122 42" RCP-III JB w/MH

36" RCP-III
36" CSP 2 ELBOWS
TOE PROTECTION W/58 TONS CL B RIPRAP, 169 SY GEOTEXTILE SEE DETAIL V
STD. BASE DITCH W/31 TONS CL I RIPRAP, 69 SY GEOTEXTILE SEE DETAIL D
18" CSP 2 ELBOWS
PLUG & FILL W/FLOWABLE FILL
-L- PT Sta. 769+62.40
N 19° 21' 11.1" E -L-
REMOVE 35' EX. 42" CMP
60" RCP-III (NOT SURVEYED)
REMOVE 30" EX. 18" CMP
REMOVE 25' EX. 42" CMP
SP. CUT DITCH SEE DETAIL W
SPECIAL CUT DITCH SEE DETAIL W
SPECIAL CUT DITCH SEE DETAIL A
SPECIAL CUT DITCH SEE DETAIL W
10' WIDE BERM TOP ELEV. 3114.5' SEE DETAIL AC
EXISTING 36" CMP UNDER CANDLELIGHT DR. IS UNDERSIZED & PERCHED, INSTALL A JB WITH A DROP IN THE BOX TO TIE THE EXISTING 36" TO A NEW PROPOSED 60" RCP OUTLET
RETAIN & INSTALL SMOOTH LINING
RETAIN SYSTEM
RETAIN
SEE OUTFALL ANALYSIS PACKAGE
DO NOT DISTURB SHED
DO NOT DISTURB
-BYE5-31
-BYE5-32
SR 1251 CANDLELIGHT DR
US 221
END SBG -L- +95
GREU TL-3
N 17°47'32" E 103.35'
S 04°09'06" W 185.22'
N 82°56'48" W 56.33'
S 3°45'39.61" E 24.65'
N 82°56'48" W 80.00'
S 16°16'14" W 197.30'
S 27°10'57" E 9.25'
134.99' N 04°47'46" W
S 81°18'46" E 160.85'
S 02°50'15" W 175.00'
S 3°45'39.61" E 24.65'

-L-
PI Sta 766+25.13
Δ = 2°08' 50.5" (LT)
D = 0°19' 05.9"
L = 674.61'
T = 337.35'
R = 18,000.00'
SE = NC

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR -L- PROFILE SEE SHT. 21

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

MATCHLINE -L- STA. 779+00 SEE SHEET 11

MATCHLINE -L- STA. 793+00 SEE SHEET 13

GHANSHYAN D. PATEL AND WIFE, VASANTIBEN C. PATEL
DB 273 PG 1154
DB 335 PG 1931

13

RODNEY TERREL MORGAN HUSBAND, AND WIFE CAMILLE MORGAN
DB 295 PG 1166

T. V. ADAMS
DB 98 PG 20

DEREK MCCLURE
DB 392 PG 1402

ANTHONY GLEN GOODMAN HUSBAND, AND WIFE SARAH FARMER GOODMAN
DB 209 PG 216

RODNEY TERREL MORGAN HUSBAND, AND WIFE CAMILLE MORGAN
DB 295 PG 1166

TRICOUNTY PAVING, INC
DB 229 PG 1753

JERRY WILLARD AND WIFE, ADELE M. WILLARD
DB 313 PG 981

PACK FAN INVESTMENTS, LLC
DB 340 PG 1078

CINJO, INC
DB 339 PG 1468

LEOBARDO REYES CRESCENCIO
DB 286 PG 1148

JOHN C. JONES
DB 371PG 1251

WALTER OLSEN AND WIFE, DONNA RUTH OLSEN
DB 371PG 1967

780+00

785+00

790+00

N 14°30'06" E 174.25'

N 31°19'06" E 271.65'

N 31°19'06" E 238.69'

S 47°55'07" W 72.05'

S 32°29'25" W 71.75'

N 62°54'53" W 70.00'

N 32°27'24" E 150.01'

N 10°58'06" E 144.55'

N 26°38'10" E 67.74'

N 25°04'31" E 50.15'

N 25°04'31" E 200.00'

N 27°46'41" E 49.29'

N 18°02'02" E 158.20'

S 58°24'54" E 175.21'

S 59°53'47" E 260.80'

N 32°04'48" W 103.87'

N 32°04'48" W 21.72'

N 32°04'48" W 21.28'

N 32°04'48" W 19.56'

N 18°24'54" W 133.64'

S 60°08'54" E 100.39'

N 32°04'48" W 54.17'

N 32°04'48" W 52.47'

S 60°08'54" E 52.47'

N 32°04'48" W 52.65'

S 60°08'54" E 52.65'

N 32°04'48" W 20.16'

S 60°08'54" E 42.36'

N 29°54'54" W 49.35'

DO NOT DISTURB DRIVEWAY

EXISTING R/W

48" WW & ISBW

STD. BASE DITCH W/31 TONS CL I RIPRAP, 63 SY GEOTEXTILE SEE DETAIL D

1205

24" RCP-III

JB w/MH

15" RCP-III

2GI

FS

1204

1203

1206

560' MEDIAN TRANSITION

+47.63

60" CONC

4' BST

RETAINING SYSTEM

LATERAL BASE DITCH SEE DETAIL M

1210

4' PS

24"

02

01

00

03

04

PLUG & FILL W/FLOWABLE FILL

-L- 60" CONC

N 19°21'11" E

15" RCP-III

1202

1214

2'-9" C&G

US GPI

REMOVE 25' EX. 24" CMP

1201

SPECIAL CUT DITCH SEE DETAIL W

C COLLAR AND EXTEND 24" CSP (2 ELBOWS)

C SPECIAL CUT DITCH SEE DETAIL W

BEGIN 2'-9" C&G -L- Sta.782+47.63

REMOVE SYSTEM

GREU TL-3

1207

1215

1208

BEGIN SBG -L- +50

47.5' TYP.

SPECIAL CUT DITCH W/602 SY PSRM SEE DETAIL AA

JB w/MH

7 TONS CL I RIPRAP W/15 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

CAT-1

1212

TB 2GI

1211

1209

1213

-L- TS Sta. 788+15.06

-L- SC Sta. 790+05.06

5S BW

M/S ONLY

JS

SPRING

TREE FARM

JAMES C. LITTLEFIELD AND WIFE, ANN B. LITTLEFIELD
DB 251PG 1376

DONNA J H WEAVER
DB 428 PG 1183

STEPHEN J. BLEVINS & SANDRA E. BLEVINS
DB 229 PG 1730

JERRY F. WHITLEY AND WIFE, IMOJEAN M. WHITLEY
DB 206 PG 157

-L-	
PIs Sta 789+41.73	PI Sta 802+74.28
Θs = 1° 22' 28.3"	Δ = 35° 32' 32.1" (RT)
Ls = 190.00'	D = 1° 26' 48.7"
LT = 126.67'	L = 2,456.50'
ST = 63.34'	T = 1,269.22'
	R = 3,960.00'
	SE = 0.04

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR -L- PROFILE SEE SHT. 22

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

MATCHLINE –L– STA. 793+00 SEE SHEET 12

MATCHLINE –L– STA. 807+00 SEE SHEET 14

14 SAMUEL B. CHURCH AND WIFE, SHIRLEY CHURCH DB 187 PG 2406 DB 188 PG 837

SAMUEL FLORES, HUSBAND AND WIFE, MARIA FLORES DB 350 PG 70

JOHN C. JONES DB 371PG 1251

LEOBARDO REYES CRESCENCIO DB 286 PG 148

15 TRACIE JORDAN DB 319 PG 1685

ANDREW C. JACKSON, JR. DB 437 PG 205

ROBERT STEVEN FREEMAN, GREGORY DENNIS FREEMAN, AND ROY LOGAN FREEMAN DB 145 PG 1001

WAYNE F. STANLEY DB 217 PG 1702

16 DWIGHT C. RASH DB 400 PG 523

JOHN F. BARE DB 63 PG 462

17 BERTHA MCCLURE WOOD DB 286 PG 252

BENNY B. HURLEY AND VICKEY S. HURLEY DB 228 PG 292 DB 423 PG 1047

MATTHEW FRAMPTON AND CHRISTOPHER FRAMPTON DB 438 PG 1510

JERRY F. WHITLEY AND WIFE, IMOJEAN M. WHITLEY DB 206 PG 157

795+00

800+00

805+00

795+80.00 225.00 — LATERAL BASE DITCH SEE DETAIL G

797+71.15 204.10

797+72.47 220.23

799+06.72 210.62 — LATERAL BASE DITCH W/85 TONS CL B RIPRAP, 226 SY GEOTEXTILE, SEE DETAIL L

TOE PROTECTION W/62 TONS CL B RIPRAP, 181 SY GEOTEXTILE SEE DETAIL V

794+25.00 EX. R /W

800+22.85 EX. R /W

801+67.19 EX. R /W

801+70.00 EX. R /W

PROP. 47" WW FENCE

BEGIN FENCE

LATERAL V DITCH W/179 TONS CL I RIPRAP, 431 SY GEOTEXTILE SEE DETAIL K

LATERAL V DITCH SEE DETAIL B

804+95.00 202.00

40 TONS CL I RIPRAP W/75 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

804+85.00 165.00

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

805+35.00 185.00

805+30.00 165.00

SEE OUTFALL ANALYSIS PACKAGE

PLUG & FILL W/FLOWABLE FILL

4 TONS CL I RIPRAP W/10 SY GEOTEXTILE

STD. BASE DITCH W/43 TONS CL I RIPRAP, 89 SY GEOTEXTILE SEE DETAIL D

10' WIDE BERM TOP ELEV. 2964.0' SEE DETAIL Z

LATERAL V DITCH W/118 TONS CL B RIPRAP, 282 SY GEOTEXTILE SEE DETAIL K

RETAIN & INSTALL SMOOTH LINING

END SBG –L– +00

66" RCP-III

15" RCP-III

30" RCP-IV

Sp. Det. JB w/Slab Lid

JB w/MH

45° CMP ELBOW

18" RCP-III

2'-9" C&G

2GI

TB 2GI

CAT-1

8:1

–L–

PI Sta 802+74.27
Δ = 35° 32' 32.1" (RT)
D = 1° 26' 48.7"
L = 2,456.50'
T = 1,269.22'
R = 3,960.00'
SE = 0.04

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR –L– PROFILE SEE SHT. 23

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-L-		
PI Sta 802+74.28	PIs Sta 815+48.13	PI Sta 818+95.22
Δ = 35° 32' 32.1" (RT)	Θs = 1° 09' 26.9"	Δ = 13° 00' 35.0" (RT)
D = 1° 26' 48.7"	Θs = 1° 54' 35.6"	D = 2° 23' 14.4"
L = 2,456.50'	Ls = 160.00'	L = 544.95'
T = 1,269.22'	LT = 86.56'	T = 273.65'
R = 3,960.00'	ST = 73.48'	R = 2,400.00'
SE = 0.04		SE = 0.05

-Y36-	
PI Sta 13+14.81	PI Sta 16+18.17
Δ = 71° 45' 15.9" (RT)	Δ = 55° 29' 56.0" (LT)
D = 33° 42' 12.2"	D = 20° 27' 46.0"
L = 212.90'	L = 271.22'
T = 122.96'	T = 147.31'
R = 170.00'	R = 280.00'
SE = SEE PLANS	SE = SEE PLANS
V = 25 MPH	V = 30 MPH

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

REVISIONS

8/17/99 RIGHT OF WAY REVISION: 10/10/2018 - REVISED TCE ON PARCEL 18 TO AVOID GARAGE.
RIGHT OF WAY REVISION: 1/21/2019 - REMOVED TCE ON PARCEL 18.

MATCHLINE -L- STA. 807+00 SEE SHEET 13

MATCHLINE -L- STA. 821+00 SEE SHEET 15

-Y36- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y36- POC Sta.11+90.00

N 71°12'01.9" E
-Y36-

-Y36- PC Sta. 11+91.85

-Y36- PT Sta. 14+04.75

-Y36- PC Sta.14+70.86

-L- POC Sta.818+34.25

-Y36- POT Sta.14+80.64

-Y36- PT Sta. 17+42.08

END CONSTRUCTION
-Y36- POT Sta.17+50.00

-L- CS Sta. 814+61.57

-L- SC Sta. 816+21.57

BEGIN NOISE WALL AND BARRIER
Sta.820+00

ASHE COUNTY FARM BUREAU, INC.
DB 150 PG 603

DONALD JOSEPH WILLEY AND WIFE, CHARLOTTE GAIL BLAKE
DB 396 PG 365

TONY C. WOODIE
DB 449 PG 1955

BERTHA MCCLURE WOOD
DB 286 PG 252

JOSEPH RONALD GRAYBEAL, HUSBAND AND WIFE, PATRICIA BARKER GRAYBEAL
DB 442 PG 2195

18

WANDA WALKER AND HUSBAND, RONALD GIRTMAN, JR
DB 157 PG 155

L. F. ANDERSON, JR. AND WIFE INA C. ANDERSON
DB 242 PG 2171

UNCLE JOE'S LLC
DB 414 PG 1963

DOUGLAS TAYLOR
DB 170 PG 1238

BENNY B. HURLEY AND VICKEY S. HURLEY
DB 228 PG 292
DB 423 PG 1047

GURNEY G. MYERS AND WIFE JOANNE S. MYERS
DB 402 PG 1214

EDWARD VICTOR ARRIOLA AND WIFE EMILY JOHNSON ARRIOLA
DB 381 PG 1941

DONALD PROUDFOOT AND WIFE, GLORIA PROUDFOOT
DB 125 PG 1077

CALLOWAY PROPERTIES, LLC
DB 395 PG 1246

NCDOT
DB 86 PG 46

8 TONS CL B RIPRAP W/21 SY GEOTEXTILE

STD. BASE DITCH, W/22 TONS CL I RIPRAP, 45 SY GEOTEXTILE SEE DETAIL D

PLACE SPRING BOX AND 12" CSP OUTLET PIPE AT -L- 812+00 +/- LT. IF SPRING IS IMPACTED BY GRADING OPERATIONS

40 TONS CL I RIPRAP W/75 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

TIE TO EXISTING GUARDRAIL

RETAIN -Y36- PT Sta. 14+04.75

30" RCP-III

60" RCP-III (NOT BURIED)

JB w/MH

PLUG & FILL W/FLOWABLE FILL

150' TAPER

5' MONOLITHIC ISLAND

15" RCP-III

24" RCP-III

10' WIDE BERM TOP ELEV. 2928.0' SEE DETAIL Z F

10' WIDE BERM TOP ELEV. 2914.0' SEE DETAIL Z

PLUG & FILL 48" W/FLOWABLE FILL

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

LATERAL V. DITCH SEE DETAIL B

LATERAL BASE DITCH SEE DETAIL G

LATERAL BASE DITCH W/83 TONS CL I RIPRAP, 172 SY GEOTEXTILE SEE DETAIL L

15" CSP 2 ELBOWS

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

RIP RAP AT EMBANKMENT SEE DETAIL AB

RETAIN & INSTALL SMOOTH LINER

END SBG

BEGIN SBG

END FENCE

807+47.33 EX. R/W

-Y36- LONG STREET

	5,656 / 6,936 -Y36- LONG STREET	
1,780 / 2,180		3,560 / 4,360
12,544 / 15,264	-L- US 221	14,440 / 17,640
200 / 200		316 / 396
ADT 2019 / ADT 2039	832 / 992 -Y36- LONG STREET	

★ PROPOSED TRAFFIC SIGNAL

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR INTERSECTION DETAIL SEE SHT. 2B-1
FOR -L- PROFILE SEE SHT. 24
FOR -Y36- PROFILE SEE SHT. 27

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

MATCHLINE -L- STA. 821+00 SEE SHEET 14

MATCHLINE -L- STA. 835+00 SEE SHEET 16

-L- CS Sta. 821+66.52

-L- ST Sta. 824+06.52

-Y36- POT Sta. 19+14.44

THE TOWN OF JEFFERSON
DB X5 PG 41

KEVIN COX DENNY, SUSAN DENNY HATLEY, GERALD KEITH HATLEY, JOSEPH GREG LEWIS AND KERRY OWEN LEWIS
DB 328 PG 684

ASHE COUNTY BOARD OF EDUCATION
DB 183 PG 906

ST FRANCIS CATHOLIC CHURCH
DB 170 PG 2263

HAROLD H. HUGHES AND WIFE, DIANNE B. HUGHES
DB 156 PG 601

GREGORY K. BOWER AND WIFE, NANCY A. BOWER
DB 247 PG 843

JERRY W. ABSHER AND WIFE, SUSAN R. ABSHER
DB 216 PG 1740
DB 246 PG 1090

ROXANNE D. ELDER
DB 208 PG 608

ABSHER ENTERPRISES, LLC
DB 380 PG 1321

HAROLD DEAN MILLER AND WIFE, CAROL L. MILLER
DB 75 PG 054

LOUIS A. ELDRETH, SR. HUSBAND, AND WIFE SANDRA ANN ELDRETH
DB 194 PG 1753

KENNETH A. MAUER AND WIFE, BRENDA JOYCE MAUER
DB 428 PG 1328

BEULAH M. DARNELL AND LINDA K. DARNELL
DB 133 PG 688

RUSSELL F. VANNOY
DB 402 PG 725

PATRICK O'ROURKE
DB 440 PG 389

MILLER PROPERTIES OS ASHE, LLC
DB 416 PG 1974

JOEL W. YATES, JR.
DB 396 PG 218

JOEL YATES AND WIFE, KATE YATES
DB 455 PG 440

NORTH CAROLINA AND CAROLINA FARM CREDIT, ACA
DB 397 PG 1039

GEORGE EUGENE BLACK AND WIFE, THELMA GREEN BLACK
DB 84 PG 31

ASHE COUNTY BOARD OF EDUCATION
DB 435 PG 1445

TOWN OF JEFFERSON
DB 447 PG 1348

THE BOARD OFEDUCATION OF ASHE COUNTY
DB Y4 PG 227

WILLARD CHURCH AND WIFE, CONNIE CHURCH
DB N3 PG 592

REMOVE 18" CMP & RECONNECT JS, LINE WITH 19 TONS EMBEDDED CL B RIPRAP W/54 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL G

LATERAL V DITCH SEE DETAIL B

10' WIDE BERM TOP ELEV. 2887.0 SEE DETAIL Z

2 TONS CL B RIPRAP W/7 SY GEOTEXTILE

40 TONS CL I RIPRAP W/75 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

8 TONS CL B RIPRAP W/21 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF

150' TAPER

5' MONOLITHIC ISLAND

PROP. NOISE WALL

REMOVE 32" PIPE 24" RCP-III

REMOVE 24" CSP 2 ELBOWS

JB w/MH

825+00

830+00

835+00

-L-

PI Sta 818+95.22	PIs Sta 822+46.54
Δ = 13° 00' 35.0" (RT)	Θs = 2° 51' 53.2"
D = 2° 23' 14.4"	Ls = 240.00'
L = 544.95'	LT = 160.02'
T = 273.65'	ST = 80.02'
R = 2,400.00'	
SE = 0.05	

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR -L- PROFILE SEE SHT. 24

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/NSRS 2007

MATCHLINE –L– STA. 835+00 SEE SHEET 15

MATCHLINE –L– STA. 848+00 SEE SHEET 17

JENNIE W. HIGHTOWER, EMILY H. JOHNSTON AND JOESPH E. HIGHTOWER
DB 343 PG 1044

JOHN N. BOWER AND WIFE, KATHY B. BOWER; JUDY B. MILLER AND HUSBAND, HOWARD MILLER; THOMAS D. BOWER AND WIFE, SANDY H. BOWER; BENNETT B. DARNELL AND HUSBAND, PHIL DARNELL; AND JENNY B. JOHNSON AND HUSBAND, GREG JOHNSON
DB 217 PG 1212

NORTH CAROLINA AND CAROLINA FARM CREDIT, ACA
DB 397 PG 1039

TOWN OF JEFFERSON
DB 159 PG 566

JORENA K. BARNES
DB 321 PG 933

ESSENTIAL PROPERTIES, INC.
DB 456 PG 2460
DB 456 PG 2460

ESSENTIAL PROPERTIES, INC.
DB 456 PG 2460
TRACT 1

TABER M. BELL
DB 194 PG 406

GENEVA D. JONES
DB 223 PG 102

THE COUNTY OF ASHE
DB 342 PG 1485

BEGIN CULVERT
–L– STA. 838+44 +/–

END CULVERT
–L– STA. 838+67 +/–

END NOISE WALL AND BARRIER
Sta. 836+85.05

840+00

845+00

NC 88 / US 221 BUS

NAKED CREEK

CHERRY DR

NORTHVIEW DR

-BLE-18

-BLE-19

-BYE9-43

-BYE9-44

-BYE9-45

-BYE1-39

-L- N 75°12'42.2" E

-L- TS Sta. 840+83.01

-L- SC Sta. 843+63.01

844+37.84
EX. R /W

844+05.00
EX. R /W, 170.00

844+45.00
EX PL

SEE CULVERT OUTLET DETAIL –L– STA. 838+56

SEE CULVERT INLET DETAIL –L– STA. 838+56

20 TONS CL I RIPRAP W/39 SY GEOTEXTILE

REMOVE

GREU TL-3

RETAIN 30' OF EXISTING 24" CMP

REMOVE 163' OF EX. 24" CMP

REMOVE DI & EX. 24" CMP

LATERAL BASE DITCH W/58 TONS CL B RIPRAP, 150 SY GEOTEXTILE SEE DETAIL L

STD. BASE DITCH W/46 TONS CL B RIPRAP, 117 SY GEOTEXTILE SEE DETAIL T

SP. CUT BASE DITCH W/159 TONS CL B RIPRAP, 409 SY GEOTEXTILE SEE DETAIL E

SP. CUT BASE DITCH W/17 TONS CL B RIPRAP, 44 SY GEOTEXTILE SEE DETAIL E

SP. CUT DITCH SEE DETAIL W

10' WIDE BERM TOP ELEV. 2870.5' SEE DETAIL AC

STANDARD V DITCH W/24 TONS CL B RIPRAP, 62 SY GEOTEXTILE SEE DETAIL H

150' TAPER

5' MONOLITHIC ISLAND

24" RCP-III

42" RCP-IV (NOT BURIED)

15" RCP-III

15" CSP 2 ELBOWS

PROP. NOISE WALL

PROP. 47" WW

BEGIN FENCE

END FENCE

CAT-1

2GI-A

2GI

TB 2GI

DI

JB w/MH

HW

FS

1601 1602 1603 1603A 1605 1606 1607 1608 1610 1612 1613 1614

-L-

Pls Sta 842+69.73
Θs = 4° 12' 00.0"
Ls = 280.00'
LT = 186.72'
ST = 93.38'

Pl Sta 848+19.17
Δ = 26° 51' 57.8" (RT)
D = 3° 00' 00.0"
L = 895.54'
T = 456.16'
R = 1,909.86'
SE = SEE PLANS

FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR –L– PROFILE SEE SHT. 25

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/NSRS 2007

ASHE COUNTY MEMORIAL HOSPITAL, INC.
DB 0-4 PG 43
20

YADKIN VALLY BANK AND TRUST COMPANY
DB 154 PG 1356
21

JOHNSTON PROPERTIES, INC.
DB 376 PG 2155
22

KAJAN, L.L.C.
DB 222 PG 764

STARWOOD INVESTMENTS, L.P.
DB 196 PG 1983

THE COUNTY OF ASHE
DB 342 PG 1485

COUNTY OF ASHE
DB 200 PG 1745

COUNTY OF ASHE
DB 200 PG 1745

MATCHLINE –L– STA. 848+00 SEE SHEET 16

-BYE8-41
-BYE8-40
-BYE8-42
-BYE7-47
-BYE9-46
-GPS R2915-24

S 83°21'37" E 200.15'
S 83°48'20" E 29.36'
S 83°56'53" E 756.46'
N 26°28'09" E 98.18'
N 26°28'09" E 184.12'
N 06°03'37" E 313.28'
N 63°23'56" W 37.26'
N 06°03'05" E 106.97'
S 87°57'03" W 131.94'
S 08°18'25" W 164.95'
N 02°05'03" E 205.04'
S 02°17'22" W 641.65'
S 00°04'08" E 260.52'
S 00°35'32" W 149.31'
S 00°04'41" W 55.00'
N 86°30'03" W 200.00'
S 89°55'59" E 185.00'
N 84°43'50" E 224.23'

849+50.00
235.00
849+83.00
235.00
849+38.00
EX. R/W
849+75.00
EX. R/W
850+00
852+75.00
62.96, 70.30
855+00
855+20.00
EX. R/W, 65.02

PDE
RIP RAP AT EMBANKMENT SEE DETAIL AB
ISLAND REMOVAL BY OTHERS
GRADE TO DRAIN
PAVEMENT REMOVAL BY OTHERS
GRADE TO DRAIN TO EXISTING CB
CONV. EX CB TO 2GI
TIE TO EXISTING CURB & GUTTER
REMOVE EXISTING CB, COLLAR & EXTEND 18" CSP (2 ELBOWS) TO TIE TO NEW PROPOSED CB 1705
150' TAPER
REMOVE SYSTEM
PLUG & FILL W/ FLOWABLE FILL
BEGIN OVERLAY
SP. CUT DITCH SEE DETAIL W
RETAIN SYSTEM
18" CSP 2 ELBOWS
COLLAR
TIE TO EXISTING CURB & GUTTER
-L- CS Sta. 852+58.55
REVISED TRAFFIC SIGNAL

END TIP PROJECT R-2915E
–L– POS Sta. 855+00.00

CHERRY DRIVE–NC88

	8,584 / 10,504 NC88	
1,564 / 1,884		6804 / 8324
14,440 / 17,640	–L– US 221	19,464 / 23,784
416 / 496		200 / 200
ADT 2019 / ADT 2039	832 / 992 CHERRY DRIVE	

–L–
PI Sta 848+19.17 PIs Sta 853+58.60
Δ = 26° 51' 57.8" (RT) Θs = 4° 29' 58.92"
D = 3° 00' 00.0" Ls = 299.98'
L = 895.54' LT = 200.05'
T = 456.16' ST = 100.05'
R = 1,909.86'
SE = SEE PLANS

SIDEWALK
CONCRETE REMOVAL
PAVEMENT REMOVAL

FOR DRN. DETAILS SEE SHT. 2D-2
FOR –L– PROFILE SEE SHT. 25

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-L-

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PIPE HYDRAULIC DATA

-L- STA.676+34

DRAINAGE AREA	= 10.57	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 37.3	CFS
DESIGN HW ELEVATION	= 3030.87	FT
100 YEAR DISCHARGE	= 40.9	CFS
100 YEAR HW ELEVATION	= 3031.17	FT
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING DISCHARGE	= 38.0	CFS
OVERTOPPING ELEVATION	= 3031.00	FT

BEGIN GRADE R-2915E
-L_RT- STA.668+25.00
EL = 3,004.65'

-L_LT-
PI = 669+60.00
EL = 3,006.64'
VC = 260'
K = 141

-L_RT-
PI = 669+25.00
EL = 3,007.27'
VC = 200'
K = 165

BEGIN GRADE R-2915E
-L_LT- STA.668+25.00
EL = 3,003.11'

BEGIN SP.CUT DITCH LT.
-L- STA.669+50.00
EL = 3002.43

(+)12.6200%
(+)3.8309%
(+)14.4613%
(+) 0.4000%
(+) 2.9400%
(+) 5.7900%

PROPOSED GRADE
EXISTING GROUND

PI = 670+50.00
EL = 3005.21

BEGIN LATERAL V DITCH RT.
-L- STA.670+25.00
EL = 3005.11

END SP.CUT DITCH LT.
-L- STA.670+00.00
EL = 3003.90

-L_RT-
PI = 672+50.00
EL = 3,019.72'
VC = 200'
K = 1078

END LATERAL V DITCH RT.
-L- STA.671+50.00
EL = 3011.00

(+)4.0165%
(+)4.0800%

-L_LT-
PI = 672+10.00
EL = 3,017.80'
VC = 180'
K = 472

BEGIN SPECIAL CUT DITCH RT.
-L- STA.675+25.00
EL = 3029.51

END SPECIAL CUT DITCH RT.
BEGIN LATERAL V DITCH RT.

-L_RT-
PI = 677+00.00
EL = 3,037.79'
VC = 200'
K = 3150

BEGIN SP.CUT DITCH LT.
-L- STA.677+00.00
EL = 3030.62

(-) 0.8539%

42" RCP

END LATERAL V DITCH RT.
-L- STA.677+03.00
EL=3027.99

BEGIN LATERAL V DITCH RT.
-L- STA.677+20.68
EL = 3030.10

END LATERAL V DITCH RT.
-L- STA.677+50.00
EL = 3030.20

(+)4.0800%
(+)4.1267%
(+) 0.3411%

-L_RT- STA.678+50.00 =
-L_LT- STA.678+50.00 =
-L- STA.678+50.00
EL = 3,043.91'

(+) 4.1267%
(+) 4.2667%

PI=680+00.00
EL=3043.00

PI=681+50.00
EL=3049.40

668+00 669+00 670+00 671+00 672+00 673+00 674+00 675+00 676+00 677+00 678+00 679+00 680+00 681+00 682+00

3,080 3,070 3,060 3,050 3,040 3,030 3,020 3,010 3,000 2,990

-L-

BM 1
ELEV=3086.70'
-BL- STA. 31+37.00
161' LT
-L- STA 692+77.42
163.55' LT
PK NAIL IN CONC.
FOOTER OF BILLBOARD

0 SUPER
-L- STA. 693+89.08 RT

0 SUPER
-L- STA. 695+97.26 LT

PI = 686+00.00
EL = 3,074.51'
VC = 1,300'
K = 454

(+)4.0800%
(+)1.2169%
(+) 2.7473%

PROPOSED GRADE
EXISTING GROUND

END SP.CUT DITCH LT.
-L- STA.691+500.00
EL = 3076.87

BEGIN LATERAL V DITCH LT.
-L- STA.693+00.00
EL = 3077.00

(-)1.3333%
(+) 2.6667%
(+) 3.4351%

PI=695+25.00
EL=3077.00

END LATERAL V DITCH LT.
BEGIN LATERAL BASE DITCH LT.
-L- STA.694+50.00
EL = 3075.00

(+)1.2169%

3,110 3,100 3,090 3,080 3,070 3,060 3,050 3,040 3,030 3,020

682+00 683+00 684+00 685+00 686+00 687+00 688+00 689+00 690+00 691+00 692+00 693+00 694+00 695+00 696+00

FOR -L- PLAN SEE SHTS. 4–5

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-L-

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PIPE HYDRAULIC DATA
-L- STA.702+77

DRAINAGE AREA	= 8.66	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 24.8	CFS
DESIGN HW ELEVATION	= 3086.23	FT
100 YEAR DISCHARGE	= 27.1	CFS
100 YEAR HW ELEVATION	= 3087.44	FT
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING DISCHARGE	= 26.3	CFS
OVERTOPPING ELEVATION	= 3087.00	FT

PIPE HYDRAULIC DATA
-L- STA.705+05

DRAINAGE AREA	= 5.54	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 16.4	CFS
DESIGN HW ELEVATION	= 3081.74	FT
100 YEAR DISCHARGE	= 18.0	CFS
100 YEAR HW ELEVATION	= 3082.28	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 24.3	CFS
OVERTOPPING ELEVATION	= 3085.00	FT

PIPE HYDRAULIC DATA
-L- STA.708+25

DRAINAGE AREA	= 4.28	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 12.3	CFS
DESIGN HW ELEVATION	= 3091.88	FT
100 YEAR DISCHARGE	= 13.4	CFS
100 YEAR HW ELEVATION	= 3091.96	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 14.0	CFS
OVERTOPPING ELEVATION	= 3092.00	FT

PI = 710+25.00
EL = 3,104.02'
VC = 200'
K = 1183

PROPOSED GRADE
EXISTING GROUND

(+)11.2169%
(+) 3.4351%
PI=697+87.00
EL=3086.00
(-) 1.3752%
BEGIN STANDARD V DITCH RT.
-L- STA.700+00.00
EL = 3068.15
(-) 0.3051%
END STANDARD V DITCH RT.
-L- STA.701+29.48
EL = 3067.75
24" CMP
PI=702+96.00
EL=3079.00
(+) 3.8961%
PI=704+50.00
EL=3085.00
24" CMP
(-) 8.5366%
PI=705+32.00
EL=3078.00
(+) 6.4220%
PI=707+50.00
EL=3092.00
(-) 2.6667%
24" RCP
PI=708+25.00
EL=3090.00
(+) 3.0182%
(+) 0.3117%
BEGIN LATERAL V DITCH RT.
-L- STA.707+04.62
EL = 3076.30
END LATERAL V DITCH RT.
-L- STA.707+75.00
EL = 3076.52
(+)11.2169%

696+00 697+00 698+00 699+00 700+00 701+00 702+00 703+00 704+00 705+00 706+00 707+00 708+00 709+00 710+00

3,140 3,130 3,120 3,110 3,100 3,090 3,080 3,070 3,060 3,050

-L-

BM 2
ELEV=3113.00'
-BYEI- STA. 7+76.00
3' LT
-L- STA 716+65.39
240.23' RT
PK IN CONC. BASE
OF LIGHT AT CARWASH

PI = 710+25.00
EL = 3,104.02'
VC = 200'
K = 1183

(+)1.2169%
(+)1.0478%
(+) 3.0182%
BEGIN BERM BASE DITCH LT.
-L- STA.714+50.00
EL = 3106.30
END LATERAL BASE DITCH LT.
-L- STA.711+00.00
EL = 3098.30
(+) 1.6716%
BEGIN LATERAL BASE DITCH RT.
-L- STA.711+34.00
EL = 3089.30
END LATERAL BASE DITCH RT.
-L- STA.714+75.00
EL = 3095.00
O SUPER
-L- STA. 715+31.68 LT
PI = 715+90.00
EL = 3,109.94'
VC = 200'
K = 168
(+)1.0478%
(+)2.2377%
PROPOSED GRADE
EXISTING GROUND
(+) 2.1800%
BEGIN SP.CUT DITCH W/ HINGE RT.
-L- STA.720+15.00
EL = 3112.58
PI = 721+25.00
EL = 3121.00
(+) 1.0840%
(+) 4.1280%
PI = 721+00.00
EL = 3113.50
(+) 3.8700%
(+)2.2377%
(+)0.9230%
END SP.CUT DITCH W/ HINGE RT.
-L- STA.723+50.00
EL = 3123.82
PI = 723+60.00
EL = 3,127.17'
VC = 200'
K = 152

710+00 711+00 712+00 713+00 714+00 715+00 716+00 717+00 718+00 719+00 720+00 721+00 722+00 723+00 724+00

3,150 3,140 3,130 3,120 3,110 3,100 3,090 3,080 3,070 3,060

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FOR -L- PLAN SEE SHTS. 6-7

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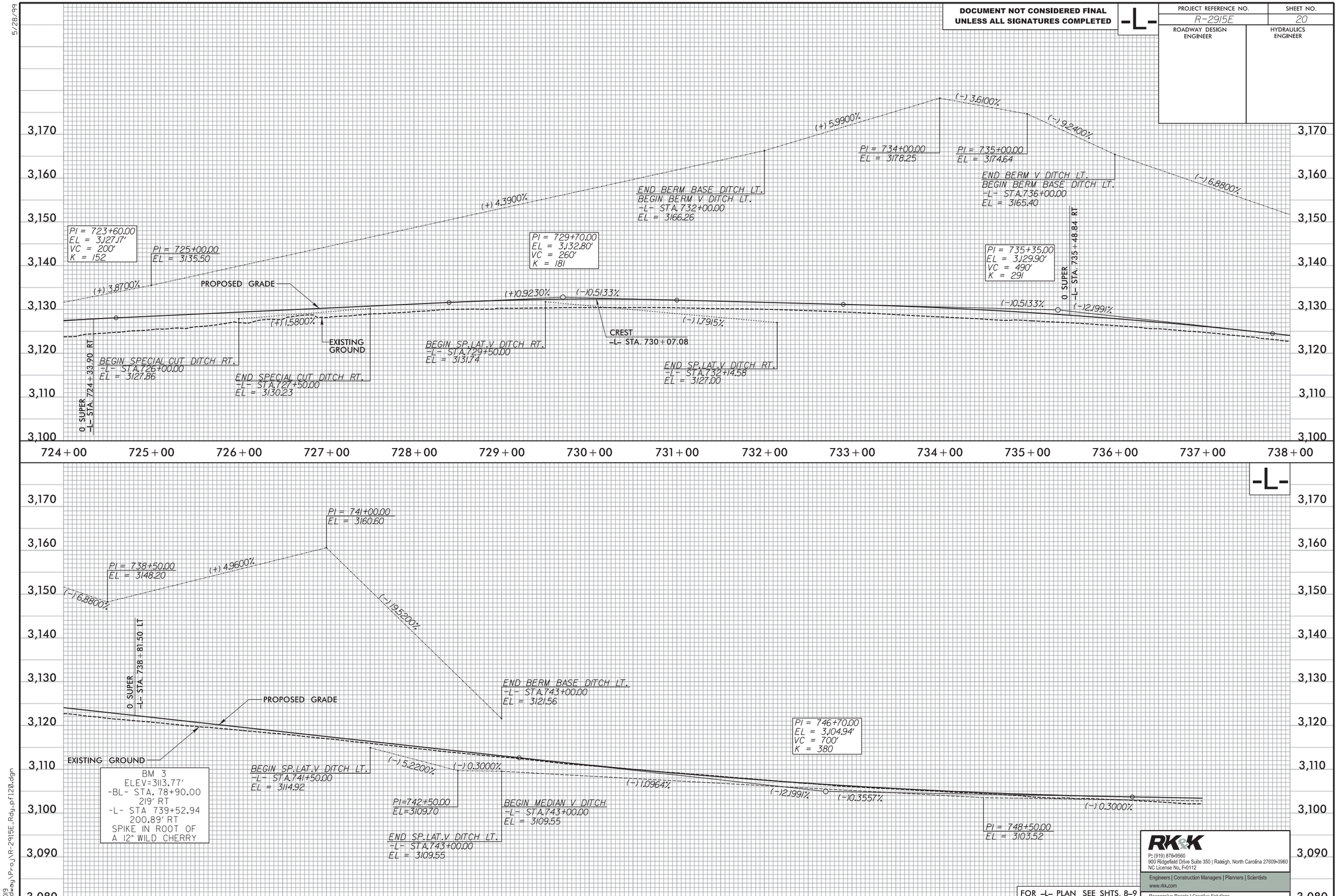
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



FOR -L- PLAN SEE SHTS. 8-9

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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-L-

PIPE HYDRAULIC DATA
-L- STA.752+76

DRAINAGE AREA	= 286.6	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 400.0	CFS
DESIGN HW ELEVATION	= 3100.44	FT
100 YEAR DISCHARGE	= 470.0	CFS
100 YEAR HW ELEVATION	= 3114.76	FT
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING DISCHARGE	= 404.3	CFS
OVERTOPPING ELEVATION	= 3100.97	FT

PI = 753+70.00
EL = 3102.45'
VC = 200'
K = 189

SAG
-L- STA. 753+37.27

(-)0.3557%

(+)0.7019%

(-) 0.3000%

0. SUPER
-L- STA. 754+69.01 LT

PROPOSED GRADE

EXISTING GROUND

END MEDIAN V DITCH
-L- STA.751+50.00
EL = 3102.62

BEGIN MEDIAN V DITCH LT.
-L- STA.754+50.00
EL = 3091.30

66" CMP

(-) 0.6467%

PI = 756+00.00
EL = 3090.33

(-) 2.1000%

(-) 0.5000%

24" CMP

PI = 756+50.00
EL = 3089.28

BEGIN SP.LAT.V DITCH RT.
-L- STA.757+00.00
EL = 3097.99

END MEDIAN V DITCH LT.
-L- STA.756+72.00
EL = 3089.17

PIPE HYDRAULIC DATA
-L- STA.755+95

DRAINAGE AREA	= 8.06	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 22.2	CFS
DESIGN HW ELEVATION	= 3100.20	FT
100 YEAR DISCHARGE	= 24.3	CFS
100 YEAR HW ELEVATION	= 3101.19	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 27.1	CFS
OVERTOPPING ELEVATION	= 3102.65	FT

PI = 758+90.00
EL = 3,106.10'
VC = 200'
K = 237

(+) 4.0959%

(+)0.7019%

(+)1.5463%

END SP.LAT.V DITCH RT.
-L- STA.758+00.00
EL = 3102.09

BEGIN SP.CUT DITCH RT.
-L- STA.761+50.00
EL = 3105.25

(-) 0.4479%

(-) 0.4479%

30" RCP

(+) 4.2250%

60" RCP

PI =763+24.140
EL = 3104.72

PI =765+00.000
EL = 3112.15

PIPE HYDRAULIC DATA
-L- STA.762+89

DRAINAGE AREA	= 10.38	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 28.6	CFS
DESIGN HW ELEVATION	= 3107.47	FT
100 YEAR DISCHARGE	= 31.3	CFS
100 YEAR HW ELEVATION	= 3107.59	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 36.0	CFS
OVERTOPPING ELEVATION	= 3108.00	FT

PIPE HYDRAULIC DATA
-L- STA.764+81

DRAINAGE AREA	= 77.21	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 160.0	CFS
DESIGN HW ELEVATION	= 3114.20	FT
100 YEAR DISCHARGE	= 200.0	CFS
100 YEAR HW ELEVATION	= 3114.97	FT
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING DISCHARGE	= 182.0	CFS
OVERTOPPING ELEVATION	= 3114.50	FT

751+00 752+00 753+00 754+00 755+00 756+00 757+00 758+00 759+00 760+00 761+00 762+00 763+00 764+00 765+00

3,150 3,140 3,130 3,120 3,110 3,100 3,090 3,080 3,070 3,060

-L-

BM 4
ELEV=3137.33'
-BYE5- STA. 19+16.00
32' LT
-L- STA 766+54.07
137.90' RT
SPIKE IN ROOT OF
A 12" WHITE PINE

PI = 769+70.00
EL = 3,122.80'
VC = 570'
K = 309

(+)1.5463%

(-)0.3000%

PROPOSED GRADE

(-)6.0833%

(+) 4.8143%

PI =765+60.000
EL = 3108.50

PI =765+00.000
EL = 3112.15

(-) 4.0000%

18" CMP

PI =767+00.000
EL = 3115.24

PI =767+50.000
EL = 3113.24

(+) 0.3000%

(+) 2.3450%

PI =770+00.000
EL = 3113.99

18" RCP

EXISTING GROUND

CREST
-L- STA. 771+62.38

END SP.CUT DITCH RT.
-L- STA.772+00.00
EL = 3118.68

(-)1.8333%

BEGIN SP.CUT DITCH RT.
-L- STA.774+00.00
EL = 3117.97

(-)0.3000%

(-)3.2273%

(-)1.8333%

(-)1.4850%

PI = 777+00.00
EL = 3112.47

PI = 777+50.00
EL = 3,120.46'
VC = 900'
K = 307

PIPE HYDRAULIC DATA
-L- STA.767+77

DRAINAGE AREA	= 1.60	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 6.8	CFS
DESIGN HW ELEVATION	= 3114.94	FT
100 YEAR DISCHARGE	= 7.4	CFS
100 YEAR HW ELEVATION	= 3115.18	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 12.0	CFS
OVERTOPPING ELEVATION	= 3117.00	FT

36" CMP

PIPE HYDRAULIC DATA
-L- STA.769+54

DRAINAGE AREA	= 9.31	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 27.6	CFS
DESIGN HW ELEVATION	= 3109.50	FT
100 YEAR DISCHARGE	= 30.2	CFS
100 YEAR HW ELEVATION	= 3109.65	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 146.4	CFS
OVERTOPPING ELEVATION	= 3136.58	FT

PIPE HYDRAULIC DATA
-L- STA.772+01

DRAINAGE AREA	= 1.37	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 5.6	CFS
DESIGN HW ELEVATION	= 3133.47	FT
100 YEAR DISCHARGE	= 6.2	CFS
100 YEAR HW ELEVATION	= 3133.60	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 13.4	CFS
OVERTOPPING ELEVATION	= 3136.33	FT

765+00 766+00 767+00 768+00 769+00 770+00 771+00 772+00 773+00 774+00 775+00 776+00 777+00 778+00 779+00

3,130 3,120 3,110 3,100 3,090 3,080 3,070 3,060 3,050 3,040

FOR -L- PLAN SEE SHTS. 10-11

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Kelly

5/14/99

-L-

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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3,170 3,160 3,150 3,140 3,130 3,120 3,110 3,100 3,090 3,080 3,070 3,060 3,050 3,040 3,030 3,020 3,010 3,000 2,990 2,980 2,970

779+00 780+00 781+00 782+00 783+00 784+00 785+00 786+00 787+00 788+00 789+00 790+00 791+00 792+00 793+00

(-)3.2273%

(-)2.1920%

-L- STA.782+47.63 (OFFSET = 18')
EL = 3,104.40'

-L- STA.782+47.63 (OFFSET = 0')
EL = 3,104.76'

EXISTING GROUND

PROPOSED GRADE

(-)3.2273%

(-)3.2273%

(-)3.7600%

PI = 779+00.00
EL = 3109.50

PI = 781+50.00
EL = 3104.02

PI = 783+50.00
EL = 3096.50

(-)4.5000%

(-)13.2273%

(-)15.8758%

PI = 786+25.00
EL = 3,092.58'
VC = 700'
K = 264

BM 5
ELEV=3085.25'
-BL- STA. 128+81.00
157' LT
-L- STA 789+57.77
135.64' LT
SPIKE IN ROOT OF
A 12" WILD CHERRY

0. SUPER
-L- STA. 788+15.06 LT

END SP.CUT DITCH RT.
-L- STA.787+00.00
EL = 3080.75

BEGIN LATERAL BASE DITCH LT.
-L- STA.788+50.00
EL = 3076.62

(-)8.7200%

(-)8.7200%

(-)6.1700%

PI = 792+00.00
EL = 3046.10

18" RCP

END LATERAL BASE DITCH LT.
-L- STA.793+00.00
EL = 3039.93

PIPE HYDRAULIC DATA

-L- STA.793+00

DRAINAGE AREA	= 1.63	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 5.7	CFS
DESIGN HW ELEVATION	= 3041.30	FT
100 YEAR DISCHARGE	= 6.2	CFS
100 YEAR HW ELEVATION	= 3041.39	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 20.4	CFS
OVERTOPPING ELEVATION	= 3045.17	FT

FOR -L- PLAN SEE SHT. 12

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Elements

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-L-	PROJECT REFERENCE NO.	SHEET NO.
	R-2915E	23
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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3,060 3,050 3,040 3,030 3,020 3,010 3,000 2,990 3,080 3,070 2,960 2,950 2,940 2,930 2,920 2,910 2,900

18" RCP

PROPOSED GRADE

EXISTING GROUND

PI = 798+40.00
EL = 3,021.19'
VC = 500'
K = 4023

(-)5.8758%

(-)16.0000%

PIPE HYDRAULIC DATA
-L- STA.793+00

DRAINAGE AREA	= 1.63	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 5.7	CFS
DESIGN HW ELEVATION	= 3041.30	FT
100 YEAR DISCHARGE	= 6.2	CFS
100 YEAR HW ELEVATION	= 3041.39	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 20.4	CFS
OVERTOPPING ELEVATION	= 3045.17	FT

PIPE HYDRAULIC DATA
-L- STA.803+56

DRAINAGE AREA	= 64.75	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 148.0	CFS
DESIGN HW ELEVATION	= 2961.53	FT
100 YEAR DISCHARGE	= 172.0	CFS
100 YEAR HW ELEVATION	= 2963.95	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 172.4	CFS
OVERTOPPING ELEVATION	= 2964.00	FT

BEGIN LATERAL BASE DITCH LT.
-L- STA.796+00.00
EL = 2957.50

(-)1.0143%

PI = 797+50.00
EL = 2955.98

(-)1.7669%

END LATERAL BASE DITCH LT.
-L- STA.799+13.00
EL = 2953.10

BEGIN LATERAL V DITCH LT.
-L- STA.802+00.00
EL = 2958.20

(-)9.2800%

48" CMP

(-)9.2800%

(-)6.5703%

30" CMP

END LATERAL V DITCH LT.
-L- STA.805+19.38
EL = 2932.06

(+)4.4098%

PI = 805+04.64
EL = 2931.41

PI = 804+50.00
EL = 2935.00

(-)16.0000%

END LATERAL V DITCH RT.
-L- STA.806+00.00
EL = 2963.40

BEGIN LATERAL V DITCH RT.
-L- STA.804+00.00
EL = 2957.02

(-)6.8769%

(+)8.0385%

PI = 804+65.00
EL = 2952.55

PIPE HYDRAULIC DATA
-L- STA.804+70

DRAINAGE AREA	= 20.09	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 55.5	CFS
DESIGN HW ELEVATION	= 2963.74	FT
100 YEAR DISCHARGE	= 64.5	CFS
100 YEAR HW ELEVATION	= 2967.21	FT
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING DISCHARGE	= 56.2	CFS
OVERTOPPING ELEVATION	= 2964.00	FT

FOR -L- PLAN SEE SHT. 13

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793+00 794+00 795+00 796+00 797+00 798+00 799+00 800+00 801+00 802+00 803+00 804+00 805+00 806+00 807+00

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Elizabeth

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-L-

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PI = 807+95.00
EL = 2,963.89'
VC = 300'
K = 2703

(-)6.0000%

(-)5.8890%

PROPOSED GRADE

EXISTING GROUND

(-)11.6883%

BEGIN LATERAL BASE DITCH RT.
-L- STA.809+73.00
EL = 2940.00

PI = 810+50.00
EL = 2931.00

(-) 3.6667%

PI = 812+00.00
EL = 2925.50

30" RCP

(-) 4.4330%

PI = 815+88.00
EL = 2908.30

(+) 1.9355%

60" RCP

END LATERAL BASE DITCH RT.
BEGIN LATERAL V DITCH RT.
-L- STA.816+50.00
EL = 2909.50

(-)2.8000%

END LATERAL V DITCH RT.
-L- STA.817+75.00
EL = 2906.00

PI = 817+50.00
EL = 2,907.65'
VC = 1,250'
K = 273

(-)5.8890%

(-)11.3176%

BEGIN LATERAL BASE DITCH LT.

(-) 2.7733%

BM 6
ELEV=2907.23'
-BYE6- STA. 7+66.00
111' LT
-L- STA 817+92.17
246.63' LT
IP IN A CONC.
PROPERTY MON

PIPE HYDRAULIC DATA
-L- STA.812+25

DRAINAGE AREA	= 7.53	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 20.4	CFS
DESIGN HW ELEVATION	= 2927.75	FT
100 YEAR DISCHARGE	= 22.4	CFS
100 YEAR HW ELEVATION	= 2927.85	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 25.0	CFS
OVERTOPPING ELEVATION	= 2928.00	FT

PIPE HYDRAULIC DATA
-L- STA.815+98

DRAINAGE AREA	= 72.1	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 150.0	CFS
DESIGN HW ELEVATION	= 2913.74	FT
100 YEAR DISCHARGE	= 190.0	CFS
100 YEAR HW ELEVATION	= 2914.59	FT
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING DISCHARGE	= 162.0	CFS
OVERTOPPING ELEVATION	= 2914.00	FT

2,980 2,970 2,960 2,950 2,940 2,930 2,920 2,910 2,900 2,890

807+00 808+00 809+00 810+00 811+00 812+00 813+00 814+00 815+00 816+00 817+00 818+00 819+00 820+00 821+00

-L-

PIPE HYDRAULIC DATA
-L- STA.826+91

DRAINAGE AREA	= 45.62	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 111.0	CFS
DESIGN HW ELEVATION	= 2886.52	FT
100 YEAR DISCHARGE	= 129.0	CFS
100 YEAR HW ELEVATION	= 2887.10	FT
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING DISCHARGE	= 127.5	CFS
OVERTOPPING ELEVATION	= 2887.00	FT

0' SUPER -L- STA. 824+06.51 LT

(-)11.3176%

PROPOSED GRADE

(-) 2.7733%

(-) 1.9038%

EXISTING GROUND

PI = 821+50.00
EL = 2891.88

60" RCP

(+) 4.9714%

END LATERAL BASE DITCH LT.
BEGIN LATERAL V DITCH LT.
-L- STA.826+80.00
EL = 2881.79

END LATERAL V DITCH LT.
-L- STA.827+50.00
EL = 2885.27

PI = 830+00.00
EL = 2,891.18'
VC = 300'
K = 3641

(-)11.3176%

(-)11.4000%

30" RCP

PIPE HYDRAULIC DATA
-L- STA.832+48

DRAINAGE AREA	= 5.31	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 20.9	CFS
DESIGN HW ELEVATION	= 2882.50	FT
100 YEAR DISCHARGE	= 22.8	CFS
100 YEAR HW ELEVATION	= 2882.65	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 34.0	CFS
OVERTOPPING ELEVATION	= 2883.43	FT

2,940 2,930 2,920 2,910 2,900 2,890 2,880 2,870 2,860 2,850

821+00 822+00 823+00 824+00 825+00 826+00 827+00 828+00 829+00 830+00 831+00 832+00 833+00 834+00 835+00

FOR -L- PLAN SEE SHTS. 14-15

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-L-

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PIPE HYDRAULIC DATA
-L- STA.842+07

DRAINAGE AREA	= 14.93	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 47.0	CFS
DESIGN HW ELEVATION	= 2870.12	FT
100 YEAR DISCHARGE	= 51.6	CFS
100 YEAR HW ELEVATION	= 2870.33	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 57.0	CFS
OVERTOPPING ELEVATION	= 2870.50	FT

CULVERT HYDRAULIC DATA
-L- STA.838+56

DESIGN DISCHARGE	= 1000	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 2875.6	FT
BASE DISCHARGE	= 1200	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2876.2	FT
OVERTOPPING DISCHARGE	= 1275	CFS
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING ELEVATION	= 2876.6	FT

BM 7
ELEV=2869.27'
-BL- STA. 181+94.00
70' LT
-L- STA 842+47.11
105.09' LT
PK NAIL IN TOP
OF CONC. R/W MON

PI = 842+00.00
EL = 2,874.38'
VC = 200'
K = 373

PI = 844+60.00
EL = 2,872.13'
VC = 200'
K = 1029

PI = 847+10.00
EL = 2,869.49'
VC = 150'
K = 104

0' SUPER -L- STA. 840+83.01 LT

PROPOSED GRADE

(-)1.4000%

EXISTING GROUND

(2)-10'X6' RCBC (2)-7'X4' RCBC

2' SILL

(-) 4.8913%

(-) 2.8953%

(-)1.4000%

(-)10.8644%

(-)10.8644%

(-)11.0588%

(-)11.0588%

(-)12.5030%

(+) 0.4484%

(-)1.8219%

42" RCP

42" RCP

BEGIN LATERAL BASE DITCH LT.
-L- STA.838+00.00
EL = 2872.00

END LATERAL BASE DITCH LT.
-L- STA.838+92.00
EL = 2867.50

BEGIN SP.CUT BASE DITCH RT.
-L- STA.839+00.00
EL = 2875.02

END SP.CUT BASE DITCH RT.
BEGIN SP.CUT DITCH RT.
-L- STA.841+77.00
EL = 2867.00

PI = 844+00.00
EL = 2868.00

PIPE HYDRAULIC DATA
-L- STA.844+22

DRAINAGE AREA	= 14.77	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 58.0	CFS
DESIGN HW ELEVATION	= 2876.54	FT
100 YEAR DISCHARGE	= 63.5	CFS
100 YEAR HW ELEVATION	= 2876.78	FT
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING DISCHARGE	= 60.0	CFS
OVERTOPPING ELEVATION	= 2876.60	FT

2,920 2,910 2,900 2,890 2,880 2,870 2,860 2,850 2,840 2,830

835+00 836+00 837+00 838+00 839+00 840+00 841+00 842+00 843+00 844+00 845+00 846+00 847+00 848+00

-L-

PIPE HYDRAULIC DATA
-L- STA.848+90

DRAINAGE AREA	= 2.21	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 8.7	CFS
DESIGN HW ELEVATION	= 2860.79	FT
100 YEAR DISCHARGE	= 9.5	CFS
100 YEAR HW ELEVATION	= 2860.94	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 13.8	CFS
OVERTOPPING ELEVATION	= 2862.68	FT

END GRADE
-L- STA.849+36.00
EL = 2,864.72'

PI = 848+60.00
EL = 2,865.73'
VC = 150'
K = 128

BEGIN OVERLAY
-L- STA.849+36.00
EL = 2,864.72'

END OVERLAY
-L- STA.855+00.00
EL = 2,859.81'

PROPOSED GRADE

(-)12.5030%

(-)11.3283%

(-)1.8219%

(+) 4.7857%

EXISTING GROUND

18" RCP

18" CMP

PI = 848+94.00
EL = 2859.00

END SP.CUT DITCH RT.
-L- STA.849+50.00
EL = 2861.68

2,920 2,910 2,900 2,890 2,880 2,870 2,860 2,850 2,840 2,830

848+00 849+00 850+00 851+00 852+00 853+00 854+00 855+00 856+00

FOR -L- PLAN SEE SHTS. 16-17

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PROJECT REFERENCE NO.	SHEET NO.
R-2915E	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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-Y32A-

BEGIN GRADE
-Y32A- STA.10+54.01=
-L- STA.686+03.86 54'RT
EL = 3,071.76'

END GRADE
-Y32A- STA.11+90.00
EL = 3,074.00'

PROPOSED GRADE
PI = 11+10.00
EL = 3,072.01'
VC = 85'
K = 42

(+)0.4465%
(+)2.4900%
EXISTING GROUND

-Y33-

BEGIN GRADE
-Y33- STA.10+55.74 =
-L- STA.715+53.76 54'RT
EL = 3,108.96'

SAG
-Y33- STA. 11+02.60

PROPOSED GRADE

PI = 11+10.00
EL = 3,108.79'
VC = 90'
K = 120

END GRADE
-Y33- STA.12+00.00
EL = 3,109.18'

(−)0.3133%
(+)0.4367%
EXISTING GROUND

-Y34-

PIPE HYDRAULIC DATA
-Y34- STA.11+25

DRAINAGE AREA	= 2.41	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 9.5	CFS
DESIGN HW ELEVATION	= 3127.60	FT
100 YEAR DISCHARGE	= 10.4	CFS
100 YEAR HW ELEVATION	= 3127.70	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 42.4	CFS
OVERTOPPING ELEVATION	= 3133.13	FT

BEGIN GRADE
-Y34- STA.10+56.30 =
-L- STA.732+82.62 54' RT
EL = 3,133.00'

PI = 11+85.00
EL = 3,133.39'
VC = 70'
K = 166

(+)0.3030%
(+)0.7250%
EXISTING GROUND

PROPOSED GRADE
(−) 4.0000%
(+) 3.3429%
24" RCP

END GRADE
-Y34- STA.12+25.00
EL = 3,133.68'

PI=11+25.00
EL=3126.00

END LATERAL V DITCH RT.
-Y34- STA.12+30.00
EL = 3129.51

BEGIN LATERAL V DITCH RT.
-Y34- STA.11+00.00
EL = 3127.00

-Y35-

BEGIN OVERLAY
-Y35- STA.9+00.00
EL = 3,060.54'

BEGIN GRADE
-Y35- STA.10+90.00
EL = 3,072.54'

END GRADE
-Y35- STA.15+62.82 =
-L- STA.756+74.81 42' LT
EL = 3,104.11'

PROPOSED GRADE
(+)6.6770%

BEGIN GRADE
-Y35- STA.16+77.18 =
-L- STA.755+97.22 42' RT
EL = 3,103.56'

PI = 17+80.00
EL = 3,102.91'
VC = 100'
K = 107

END GRADE
-Y35- STA.19+00.00
EL = 3,103.27'

PROPOSED GRADE
(−)0.6322%
(+)0.3000%
EXISTING GROUND

SAG
-Y35- STA. 17+97.82

FOR -Y32A- PLAN SEE SHT. 5
FOR -Y33- PLAN SEE SHT. 7
FOR -Y34- PLAN SEE SHT. 8
FOR -Y35- PLAN SEE SHT. 10

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Eleanor

5/28/99

-Y36-

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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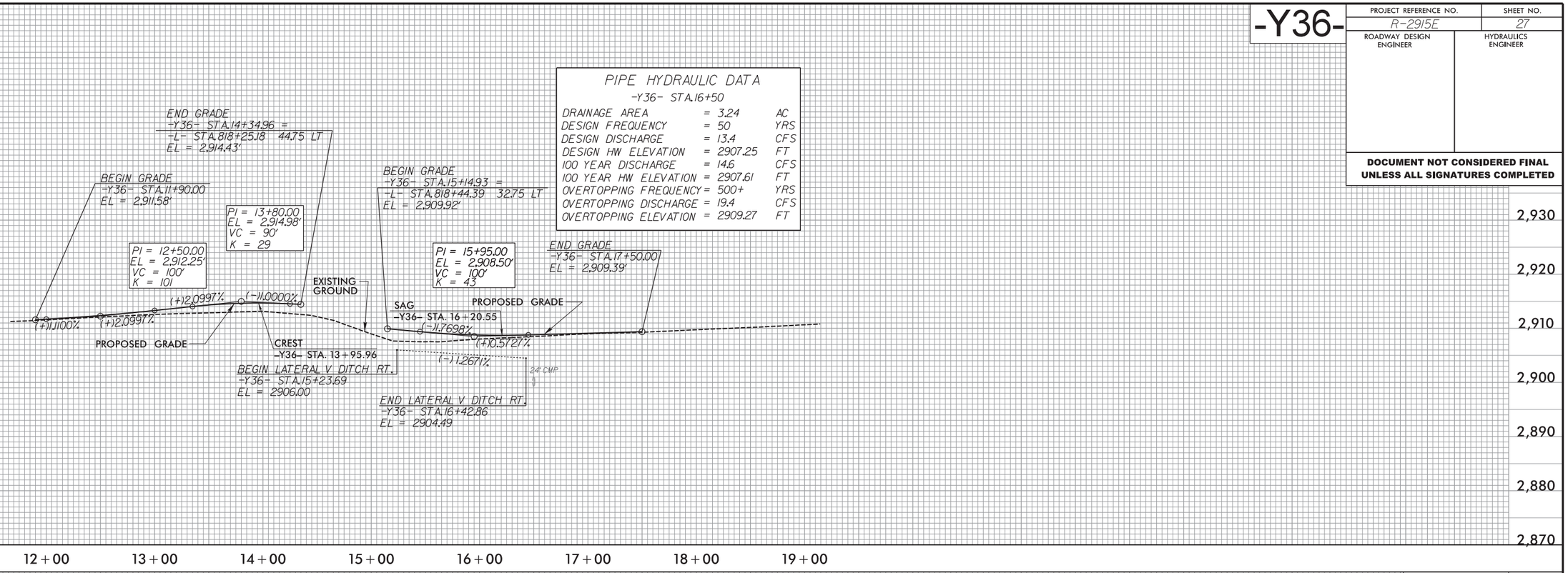

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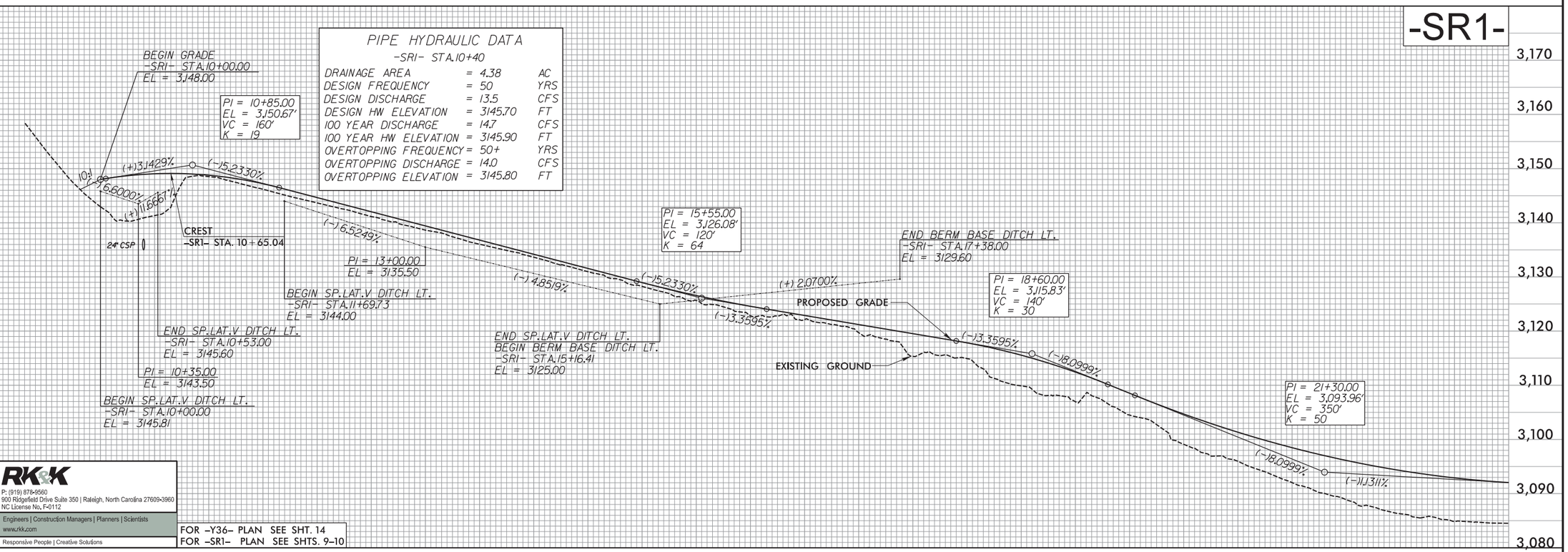

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FOR -Y36- PLAN SEE SHT. 14
FOR -SR1- PLAN SEE SHTS. 9-10

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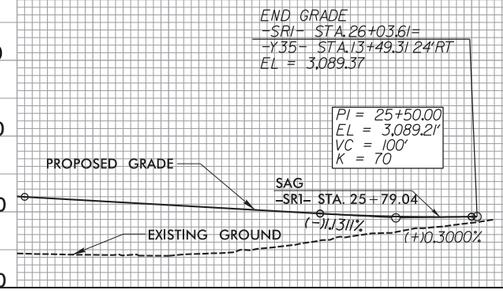
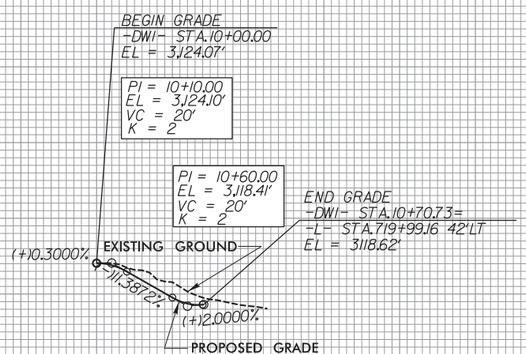
-SR1-

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

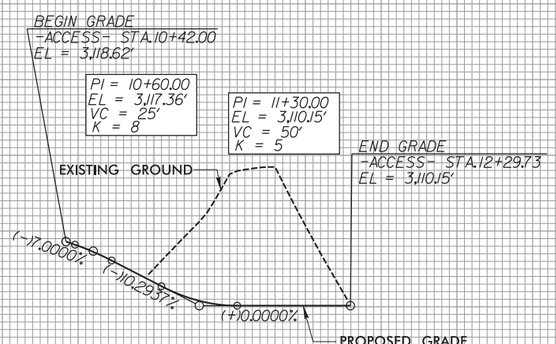
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-DW1-



-ACCESS-



FOR –SR1– PLAN SEE SHT. 10
FOR –DW1– PLAN SEE SHT. 7
FOR –ACCESS– PLAN SEE SHT. 7

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