US Army Corps
Of Engineers
Wilmington District

PUBLIC NOTICE

Issue Date: June 28, 2016
Comment Deadline: July 28, 2016
Corps Action ID Number: SAW-2012-00417

The Wilmington District, Corps of Engineers (Corps) received an application from North Carolina Department of Transportation, Mr. Philip Harris, P.E., Project Development and Environmental Analysis Unit, 1548 Mail Service Center, Raleigh, North Carolina 27699-1548 seeking Department of the Army authorization for the permanent impact to 2,209 linear feet of stream channel (of which 255 linear feet is bank stabilization) and the permanent impact to 0.05 acres of wetland. The proposed impacts are associated with the NC 3 (Mooresville Road) Improvement Project (TIP# U-3440) which starts at Kannapolis Parkway and extends 2.6 miles to terminate at Dale Earnhardt Boulevard/Loop Road in Kannapolis, Cabarrus County, North Carolina.

Specific plans and location information are described below and shown on the attached plans. This Public Notice and all attached plans are also available on the Wilmington District Web Site at: http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/PublicNotices.aspx

Applicant:
North Carolina Department of Transportation,
Project Development and Environmental Analysis Unit
Attn: Mr. Philip Harris, P.E.
1548 Mail Service Center
Raleigh, North Carolina 27699-1598

Authority

The Corps evaluates this application and decides whether to issue, conditionally issue, or deny the proposed work pursuant to applicable procedures of the following Statutory Authorities:

☒ Section 404 of the Clean Water Act (33 U.S.C. 1344)

☐ Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)

☐ Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413)

Location

Directions to Site: The proposed project is located along existing NC 3 (Mooresville Road) and begins at Kannapolis Parkway and extends 2.6 miles to terminate at Dale Earnhardt Boulevard/Loop Road in Kannapolis, Cabarrus County, North Carolina.

Project Area: Approximately 2.6 miles
Nearest Town: Kannapolis
Nearest Waterway: Irish Buffalo Creek
River Basin: Yadkin/Pee Dee River Basin (HUC 03040105)
Latitude and Longitude: Project start point: 35.4899 N, -80.67154 W; Project end point: 35.449901 N, -80.63023 W

Existing Site Conditions

The study area lies in the piedmont physiographic region of North Carolina. Topography in the project vicinity is comprised of gently rolling hills with narrow, level floodplains along streams. Elevations in the project study area range from 660 to 830 feet above sea level.

General development along the NC 3 (Mooresville Road) Improvement corridor consist of mostly residential and vacant (wooded and agricultural land) with some commercial properties as well. The project corridor lies fully within the Yadkin/Pee Dee River Basin, USGS Hydrologic Units Code HUC 03040105. The only named stream in the project area is Irish Buffalo Creek. Aquatic communities in the project study area consist of both perennial and intermittent piedmont streams and wetlands. There are no Outstanding Resource Waters, High Quality Waters, nor are there any waters designated as WS-I or WS-II Water Supply waters within 1.0 mile of any portion of the project study area. There are nine stream channels (to include Irish Buffalo Creek) that cross through the project's study area. Irish Buffalo Creek had previously been listed in the 2012 303(d) for turbidity but is not listed in the North Carolina 2014 Final 303(d) list of impaired waters for turbidity or sedimentation, nor is it listed on the draft 2016 303(d) list for turbidity or sedimentation. As such, the applicant does not propose to use *Design Standards in Sensitive Watersheds*.

Applicant's Stated Purpose

The applicant's stated purpose is as follows:

"The primary purpose of the proposed project is to reduce delays along NC 3 (Mooresville Road), which is experiencing congestion and is expected to reach Level of Service (LOS) F in the immediate future. The proposed improvements will be of benefit providing an increased ease of travel between the Kannapolis Parkway and downtown Kannapolis."

Project Description

The applicant's preferred alternative for the NC 3 (Mooresville Road) Improvement Project proposes to widen Mooresville Road to a four lane divided facility with typical sections that would consist of two 11-foot travel lanes, a 5-foot bicycle lane in each direction, a 23.5-foot wide grass median and sidewalks on both sides of the proposed facility. The project would result in the permanent impact to 2,209 linear feet of stream channel (of which 255 linear feet is bank stabilization) and the permanent impact to 0.05 acres of wetland.

Avoidance and Minimization

The applicant provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment:

"Existing drainage patterns and outfalls have been maintained where possible. Specific examples of avoidance and minimization measures for the project include:

- Best Management Practices (BMPs) will be utilized during construction to attempt to reduce the stormwater impacts to receiving streams and wetlands due to erosion and runoff.
- Site S1: includes channel relocation rather than piping.
- Site MB: RCBC includes baffles with low flow channel and sills to retain native bed material.
- Site IBC: Dual bridges will span Irish Buffalo Creek, with bents located on top of banks to avoid permanent stream impacts.
- Site S2: includes stream channel relocation (open channel flow) rather than piping.
- Site S6: the use of sills in the 2 @ 8'X10' RCBC, with alternating sills and baffles in the low flow barrel, and sills in the main barrel to maintain native bed material.
- Burying of each new structure appropriately to ensure that the bed material will be retained as much as possible.
- The unregistered landfill in the southwest quadrant of the NC3 / Mooresville Road and Bethpage Road intersection will be avoided with an alignment shift to the north of the existing NC 3 facility."

"Historic District: During project development, NCDOT explored reduced median widths, use of curb and gutter, and retaining walls as part of its minimization effort, particularly within the Juniper-Pine-Mooresville-Chestnut and Frog Hollow Mill Village historic district. Minimization planning for the typical section of the proposed facility within the historic district proposed to reduce the width of the inside and outside travels lanes to 11 feet and 13 feet, respectively. The existing pavement will be replaced, but the existing grade and placement for curb and gutter will be maintained with the proposed construction where feasible."

Compensatory Mitigation

The applicant offered the following compensatory mitigation plan to offset unavoidable functional loss to the aquatic environment:

The applicant proposes to request mitigation credit from NC Division of Mitigation Services (DMS) to off-set the impacts to 1,954 linear feet of warm water stream channel and 0.5 acre riparian wetlands in Yadkin/Pee Dee River Basin (HUC 03040105) at a 2:1 ratio of mitigation to impacts.

Essential Fish Habitat

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, this Public Notice initiates the Essential Fish Habitat (EFH) consultation requirements. The Corps' initial determination is that the proposed project would not effect EFH or associated fisheries managed by the South Atlantic or Mid Atlantic Fishery Management Councils or the National Marine Fisheries Service.

Cultural Resources

There are two historic districts which are eligible for listing in the NRHP along the project corridor. A Memorandum of Agreement (MOA) has been completed between NCDOT, the USACE, and the North Carolina Historic Preservation Office (NC-HPO). The MOA covers terms for the proposed project construction, impacts and mitigation for any impacts to the historic resources. In the MOA, there is a stipulation that states that the USACE shall ensure that measures (included in the MOA) are made part of any permit issued to NCDOT for the undertaking.

Endangered Species

Pursuant to the Endangered Species Act of 1973, the Corps reviewed the project area, examined all information provided by the applicant and consulted the latest North Carolina Natural Heritage Database. Based on available information:

☐ The Corps determines that the proposed project would not affect federally listed endangered or threatened species or their formally designated critical habitat.

☒ The Corps determines that the proposed project may affect federally listed endangered or threatened species or their formally designated critical habitat. The Corps initiates consultation under Section 7 of the ESA and will not make a permit decision until the consultation process is complete.

☐ The Corps is not aware of the presence of species listed as threatened or endangered or their critical habitat formally designated pursuant to the Endangered Species Act of 1973 (ESA) within the project area. The Corps will make a final determination on the effects of the proposed project upon additional review of the project and completion of any necessary biological assessment and/or consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service.

Other Required Authorizations

The Corps forwards this notice and all applicable application materials to the appropriate State agencies for review.

North Carolina Division of Water Resources (NCDWR): The Corps will generally not make a final permit decision until the NCDWR issues, denies, or waives the state Certification as required by Section 401 of the Clean Water Act (PL 92-500). The receipt of the application and this public notice, combined with the appropriate application fee, at the NCDWR Central Office in Raleigh constitutes initial receipt of an application for a 401 Certification. A waiver will be deemed to occur if the NCDWR fails to act on this request for certification within sixty days of receipt of a complete application. Additional information regarding the 401 Certification may be reviewed at the NCDWR Central Office, Transportation Permitting Unit, 512 North Salisbury Street, Raleigh, North Carolina 27604-2260. All persons desiring to make comments regarding the application for a 401 Certification should do so, in writing, by July 28, 2016 to:

NCDWR Central Office
Attention: Ms. Amy Chapman, Transportation Permitting Unit
(USPS mailing address): 1617 Mail Service Center, Raleigh, NC 27699-1617

Or,

(physical address): 512 North Salisbury Street, Raleigh, North Carolina 27604

North Carolina Division of Coastal Management (NCDCM):

☐ The application did not include a certification that the proposed work complies with and would be conducted in a manner that is consistent with the approved North Carolina Coastal Zone Management Program. Pursuant to 33 CFR 325.2(b)(2) the Corps cannot issue a Department of Army (DA) permit for the proposed work until the applicant submits such a certification to the Corps and the NCDCM, and the NCDCM notifies the Corps that it concurs with the applicant's consistency certification. As the application did not include the consistency certification, the Corps will request, upon receipt,, concurrence or objection from the NCDCM.

☒ Based upon all available information, the Corps determines that this application for a Department of Army (DA) permit does not involve an activity which would affect the coastal zone, which is defined by the Coastal Zone Management (CZM) Act (16 U.S.C. § 1453).

Evaluation

The decision whether to issue a permit will be based on an evaluation of the probable impacts including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values (in accordance with Executive Order 11988), land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of

property ownership, and, in general, the needs and welfare of the people. For activities involving the discharge of dredged or fill materials in waters of the United States, the evaluation of the impact of the activity on the public interest will include application of the Environmental Protection Agency's 404(b)(1) guidelines.

Commenting Information

The Corps of Engineers is soliciting comments from the public; Federal, State and local agencies and officials, including any consolidated State Viewpoint or written position of the Governor; Indian Tribes and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

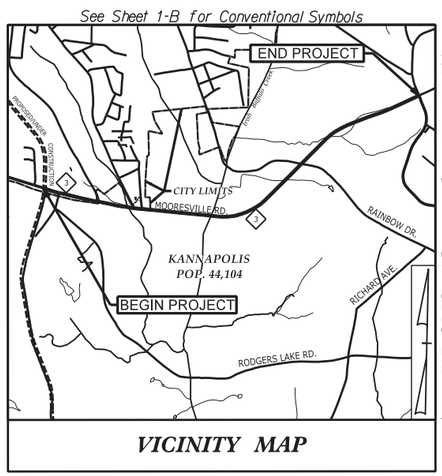
Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing shall be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

The Corps of Engineers, Wilmington District will receive written comments pertinent to the proposed work, as outlined above, until 5pm, October 26, 2015. Comments should be submitted to Ms. Crystal Amschler, Asheville Regulatory Field Office, 151 Patton Avenue, Room 208, Asheville, North Carolina 28801-5006, at (828) 271-7980, ext 231.

09/08/99

TIP PROJECT: U-3440

CONTRACT:



VICINITY MAP

25% PLANS (September 20, 2013)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CABARRUS COUNTY

PERMIT DRAWING
SHEET 1 OF 23

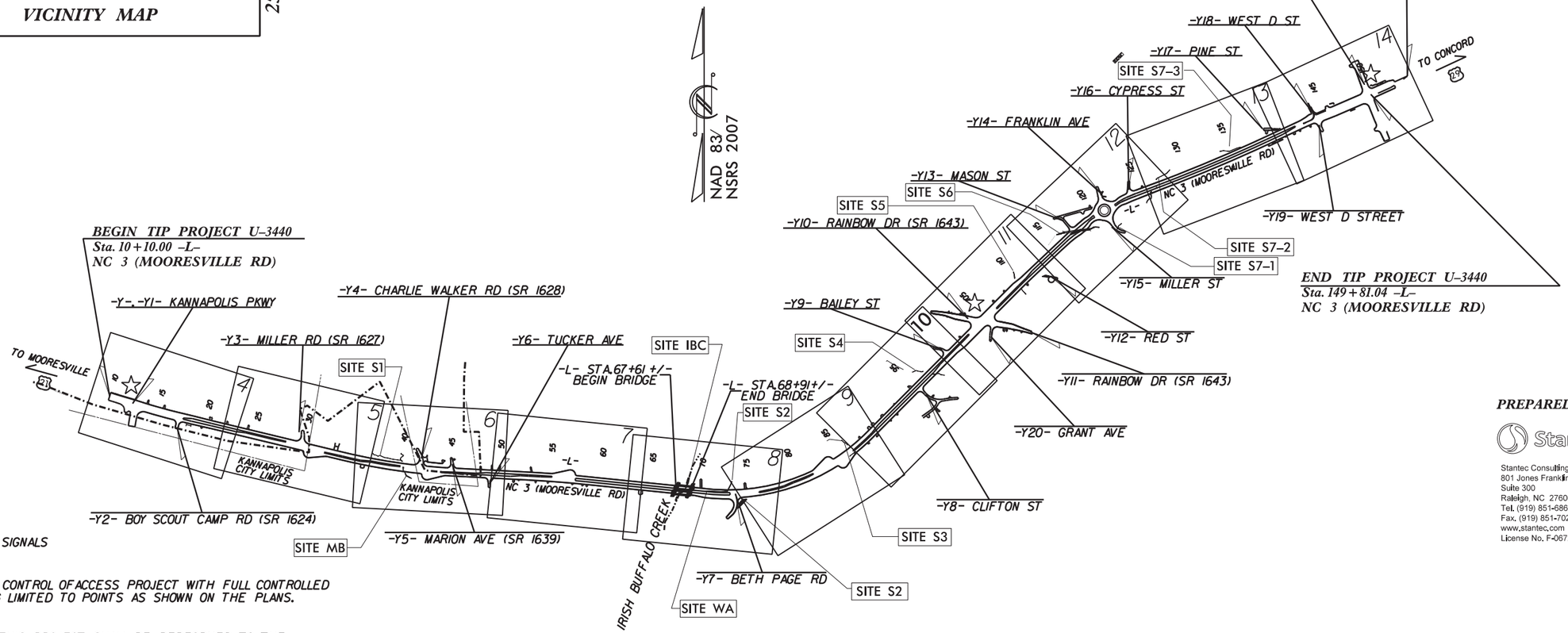
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3440	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
39010.1.1	STP-0003(6)	PE	

LOCATION: NC 3, PROPOSED WEST SIDE BYPASS TO SR 1691 (LOOP ROAD) IN KANNAPOLIS

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

WETLAND AND SURFACE WATER IMPACTS PERMIT

NAD 83/ NSRS 2007



☆ REVISED SIGNALS

THIS IS A NO CONTROL OF ACCESS PROJECT WITH FULL CONTROLLED ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

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

PREPARED BY:

Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

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 2015	=	16,800
ADT 2035	=	23,900
DHV	=	12 %
D	=	60 %
T	=	9 % *
V	=	50 MPH
HIST. AREA V	=	40 MPH

*(TTST 7% + DUALS 2%)

FUNC CLASS = MINOR ARTERIAL

REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3440	=	2.621 MILES
LENGTH STRUCTURE TIP PROJECT U-3440	=	0.025 MILE
TOTAL LENGTH TIP PROJECT U-3440	=	2.646 MILES

Prepared for the Office of:

DIVISION OF HIGHWAYS

1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MAY 29, 2015

LETTING DATE: OCTOBER 18, 2016

MICHAEL LINDGREN, P.E.
PROJECT ENGINEER

MICHAEL LITTLEFIELD, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACT: BRENDA MOORE, PE
ROADWAY DESIGN ENGINEERING COORDINATION SECTION ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

20150407
STANTEC
U-3440_Permit Drawings_20150407.pdf

U-3440_Rdy_tsh.dgn 5/18/2016 1:50:29 PM

8/17/99

NOTE: SEE SHEET 15 THRU 16 FOR -L- PROFILE
SEE SHEET 21 FOR -Y4-, -Y5-, & -Y6- PROFILE
SEE SHEET 2-G FOR -Y4- INTERSECTION DETAIL

2015 ADT / 2035 ADT	-Y4- (CHARLIE WALKER ROAD)	3600 / 2900	
	1500 / 1100		2100 / 1800
-L- (NC 3)	14200 / 22900		14800 / 23600

NAD 83/NSRS 2007

50 25 0 50 100

Stantec

Stantec Consulting
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
U-3440	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 2 OF 23

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

KANNAPOLIS CITY LIMITS

SITE S1

SITE MB

MATCHLINE -L- STA 36+00.00 SEE SHEET 5

MATCHLINE -L- STA 50+00.00 SEE SHEET 7

HERBERT, BARBARA L.

4 LITTLE, BRANDON

5 BEAVER, KERRY D.

6 VSP BUSINESS, LLC

7 BARR, PAUL K.

8 CRAINSHAW, WAYNE M.

9 MARBURGER, KENNETH O.

10

11

12 WILKINSON, JIMMY R.

CRAINSHAW, RANDY C.

LATERAL 3' BASE DITCH LINE WITH CL 1 RIP RAP EST. 101 TONS EST. 136.0 CY DDE EST. 183 SY GEOTEXTILE SEE DETAIL 6A

LATERAL 3' BASE DITCH EST. 1183.9 CY DDE LINE WITH PSRM EST. 337 SY SEE DETAIL 6A

CHANNEL CLEANOUT CL. 1 RIP RAP EST. 90 TONS EST. 44.0 CY DDE

TEMPORARY SURFACE WATER IMPACTS

LATERAL 3' BASE DITCH LINE WITH CL 1 RIP RAP EST. 79 TONS EST. 399.0 CY DDE EST. 143 SY GEOTEXTILE SEE DETAIL 6B

CL. 1 RIP RAP EST. 24 TONS EST. 13.0 CY DDE

CHANNEL CLEANOUT

TEMPORARY SURFACE WATER IMPACTS

CL. B RIP RAP 2 TONS GEOTEXTILE 7 SY

TIE TO EXISTING DITCH

BERM DITCH SEE DETAIL 6C

2015 ADT / 2035 ADT	-Y5- (MARION AVE.)	300 / 400	
	100 / 100		200 / 300
-L- (NC 3)	14800 / 23600		14900 / 23800

-L- (NC 3)	14900 / 23800		15100 / 23900
	100 / 100		200 / 200
		200 / 300	
	-Y6- (TUCKER AVE.)		2015 ADT / 2035 ADT

DETAIL 6A
LATERAL BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 3.0 Ft.
b= 5.0 Ft.

Type of Liner= PSRM

FROM -L- STA. 37+00 TO 40+15 LT

DETAIL 6B
LATERAL BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 3.0 Ft.
b= 5.0 Ft.

*When B is < 6.0'

Type of Liner= CL 1 Rip-Rap

FROM -L- STA. 40+35 TO 41+31 LT
FROM -L- STA. 40+30 TO 41+05 RT

DETAIL 6C
BERM 'V' DITCH
(Not to Scale)

Min. D=1.0 Ft.
b=5.0 Ft.

FROM -L- ST.A 45+82 TO 47+57 LT

20150407
2015HEC
13340 Permit Drawings 20150407.pdf

8/17/99

NOTE: SEE SHEET 15 THRU 16 FOR -L- PROFILE
SEE SHEET 21 FOR -Y4-, -Y5-, & -Y6- PROFILE
SEE SHEET 2-G FOR -Y4- INTERSECTION DETAIL

2015 ADT / 2035 ADT (CHARLIE WALKER ROAD) -Y4-
3600 / 2900
1500 / 1100 | 2100 / 1800
-L- (NC 3) 14200 / 22900 | 14800 / 23600

NAD 83/NSRS 2007

50 25 0 50 100

Stantec

Stantec Consulting
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
U-3440	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 3 OF 23

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

KANNAPOLIS CITY LIMITS

SITE S1

SITE MB

MATCHLINE -L- STA 36+00.00 SEE SHEET 5

MATCHLINE -L- STA 50+00.00 SEE SHEET 7

4 LITTLE, BRANDON

5 BEAVER, KERRY D.

HERBERT, BARBARA L.

6 VSP BUSINESS, LLC

7 BARR, PAUL K.

8 CRAINSHAW, WAYNE M.

9 MARBURGER, KENNETH D.

CRAINSHAW, RANDY C.

12 WILKINSON, JIMMY R.

10 11

LATERAL 3' BASE DITCH
LINE WITH CL 1 RIP RAP
EST. 101 TONS
EST. 136.0 CY DDE
EST. 183 SY GEOTEXTILE
SEE DETAIL 6B

LATERAL 3' BASE DITCH
EST. 1183.9 CY DDE
LINE WITH PSRM
EST. 337 SY
SEE DETAIL 6A

CHANNEL CLEANOUT
CL. 1 RIP RAP
EST. 90 TONS
EST. 44.0 CY DDE

TEMPORARY SURFACE WATER IMPACTS

LATERAL 3' BASE DITCH
LINE WITH CL 1 RIP RAP
EST. 79 TONS
EST. 399.0 CY DDE
EST. 143 SY GEOTEXTILE
SEE DETAIL 6B

CL. 1 RIP RAP
EST. 24 TONS
EST. 13.0 CY DDE

CHANNEL CLEANOUT

TEMPORARY SURFACE WATER IMPACTS

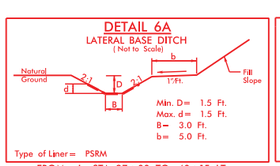
CL. B RIP RAP
2 TONS
GEOTEXTILE-7 SY
TIE TO EXISTING DITCH

BERM DITCH
SEE DETAIL 6C

2015 ADT / 2035 ADT (MARION AVE.) -Y5-
300 / 400
100 / 100 | 200 / 300
-L- (NC 3) 14800 / 23600 | 14900 / 23800

-L- (NC 3) 14900 / 23800 | 15100 / 23900
100 / 100 | 200 / 200
200 / 300
2015 ADT / 2035 ADT
-Y6- (TUCKER AVE.)

DETAIL 6A
LATERAL BASE DITCH
(Not to Scale)

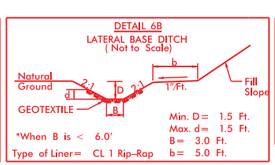


Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 3.0 Ft.
b= 5.0 Ft.

Type of Liner= PSRM

FROM -L- STA. 37+00 TO 40+15 LT

DETAIL 6B
LATERAL BASE DITCH
(Not to Scale)



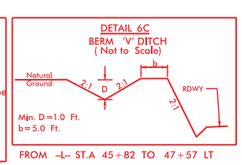
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 3.0 Ft.
b= 5.0 Ft.

*When B is < 6.0'

Type of Liner= CL 1 Rip-Rap

FROM -L- STA. 40+35 TO 41+31 LT
FROM -L- STA. 40+30 TO 41+05 RT

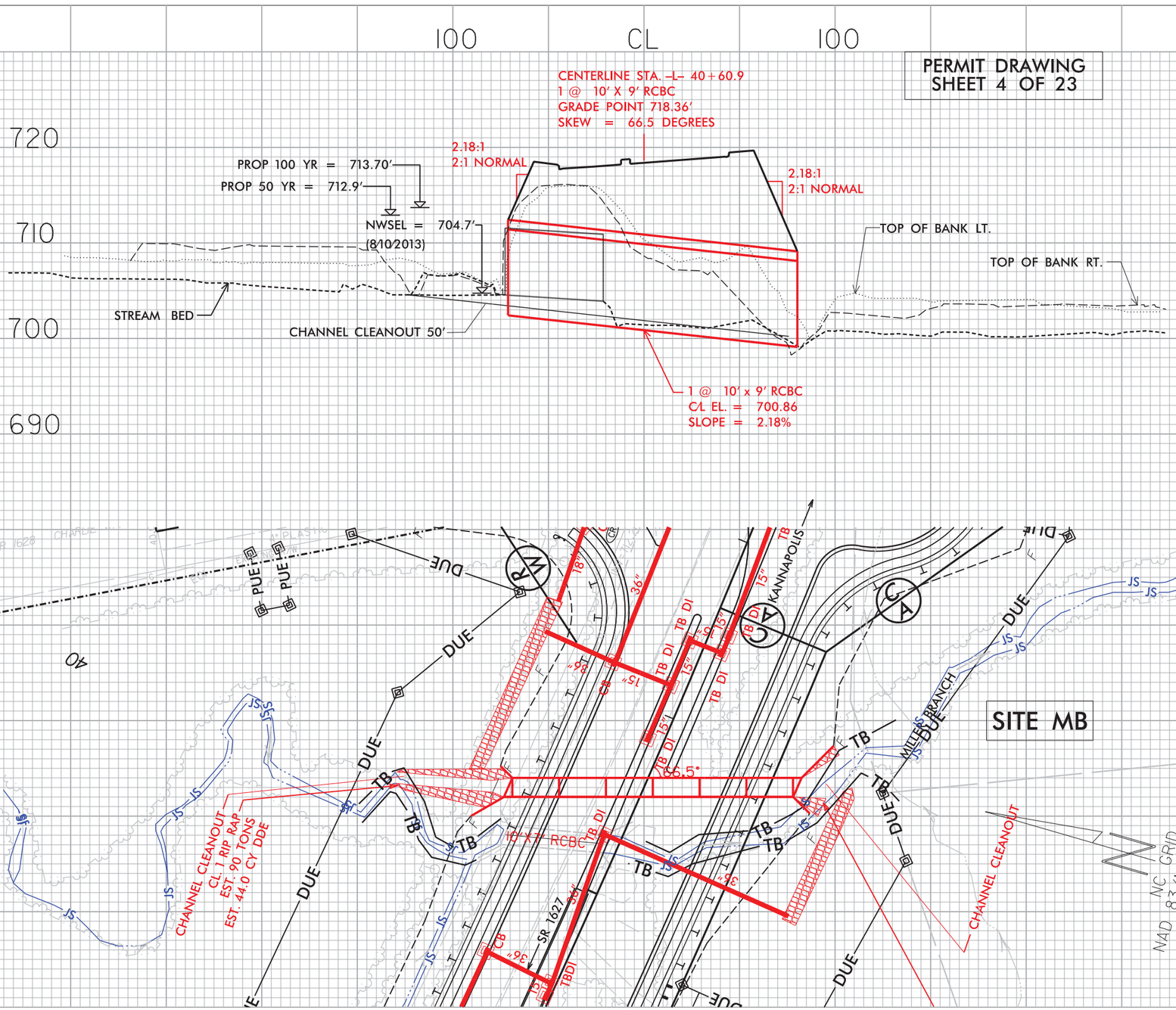
DETAIL 6C
BERM 'V' DITCH
(Not to Scale)



Min. D=1.0 Ft.
b=5.0 Ft.

FROM -L- ST.A 45+82 TO 47+57 LT

20150407
2015HEC
13340 Permit Drawings 20150407.pdf



PERMIT DRAWING
SHEET 4 OF 23

NCDOT
PERFORMANCE TABLE

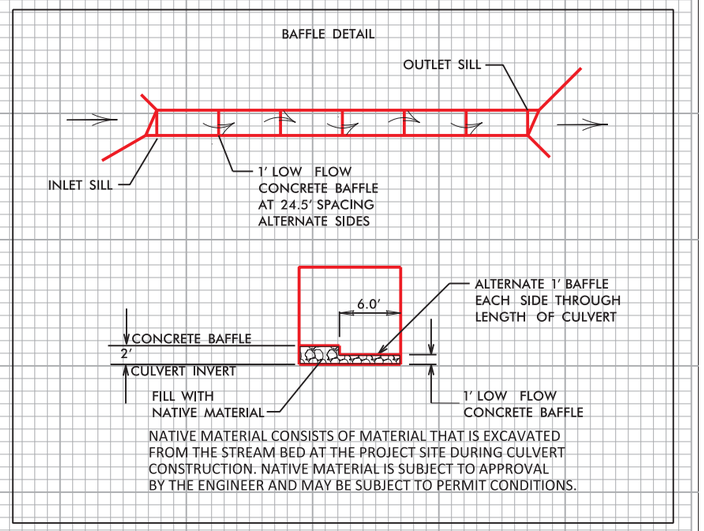
FREQUENCY	10yr.	25yr.	50yr.	100yr.	500yr.
NATURAL	708.4	709.1	709.4	709.52	709.6
EXISTING	711.2	713.3	714.8	715.82	716.5
REVISED	710.1	712.1	712.9	713.70	716.5

@SECTION REV. 6773; CE 6800
38' (REV) 18' (CE) U/S FROM C/L OF CULVERT

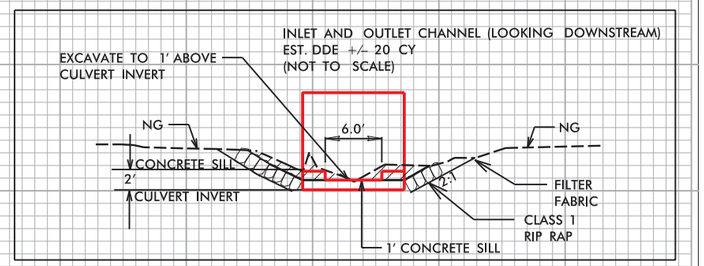
FEMA
PERFORMANCE TABLE

	100yr.
DUPLICATE EFFECTIVE	N/A
CORRECTED EFFECTIVE	712.87
REVISED	711.63

@SECTION REV. 6773; CE 6800
38' (REV) 18' (CE) U/S FROM C/L OF CULVERT



NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.



NOTES:
1. THE EDGE OF THE LOW FLOW CHANNEL SHALL BE ARMORED WITH BOULDERS. THE DEPTH OF ARMOR PROTECTION SHOULD EXTEND 1.5' BELOW THE STREAM BED LINED WITH COIR FIBER MATTING.

2. EDGE ARMOR CAN BE NATURAL STREAM BOULDERS OR EXTRACTED FROM CLASS I RIP RAP OR SHOT ROCK MATERIAL AND CAN BE CUBICAL OR RECTANGULAR IN NATURE.

3. ACCEPTABLE BOULDERS FOR THE EDGE ARMOR SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS; 3'X2'X1'. UNSUITABLE EDGE ARMOR MATERIAL THAT REMAINS FROM CLASS I RIP RAP OR SHOT ROCK STORES, MAY BE USED IN BACK FILL OF THE OVER BANK AREA OR DISCARDED.

PERMIT DRAWING SHEET 5 OF 23

PROJECT REFERENCE NO.	SHEET NO.
U-3440	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

F — DENOTES FILL IN WETLAND

S — DENOTES IMPACTS IN SURFACE WATER

TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

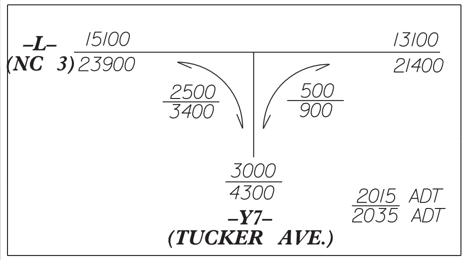
NAD 83/NSRS 2007

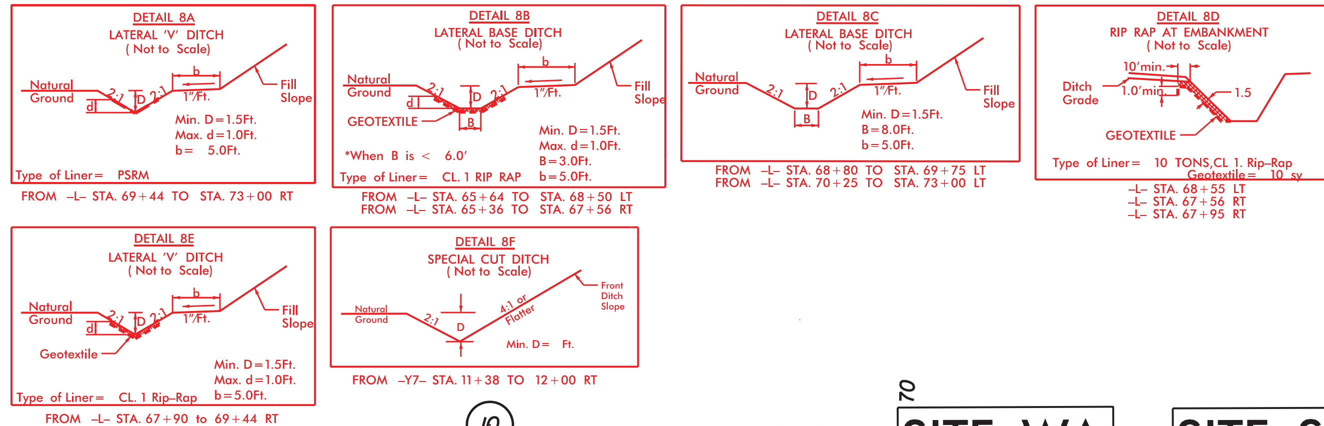
REVISIONS

12/16 ROW REV: ADDED PUE ON PARCEL 20; CHANGED PDE TO DUE FROM -L- 70+35 THRU 73+20, ADDED PUE, AND REVISED TCE ON PARCEL 21; ADDED PUE AND REVISED TCE ON PARCEL 22.-ML

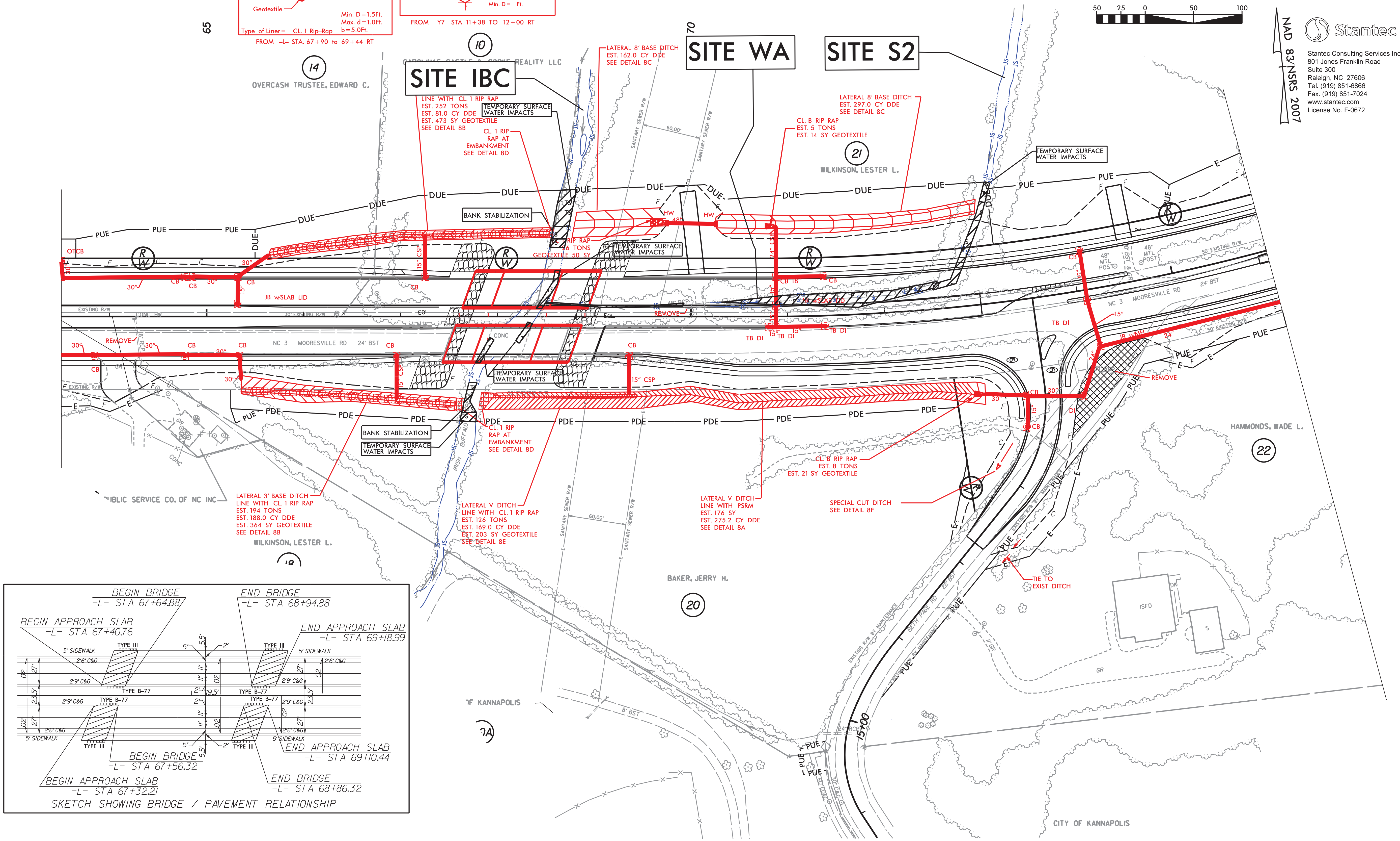
5/1016 ROW REV: ADJUSTED EX RW OFFSETS BASED ON THE FIELD STAKING ON PARCELS 19, 20, 20A, & 22. - CM

8/17/99





DETAIL 8A
LATERAL 'V' DITCH
(Not to Scale)
Type of Liner= PSRM
FROM -L- STA. 69+44 TO STA. 73+00 RT
DETAIL 8B
LATERAL BASE DITCH
(Not to Scale)
Type of Liner= CL. 1 RIP RAP
FROM -L- STA. 65+64 TO STA. 68+50 LT
FROM -L- STA. 65+36 TO STA. 67+56 RT
DETAIL 8C
LATERAL BASE DITCH
(Not to Scale)
FROM -L- STA. 68+80 TO STA. 69+75 LT
FROM -L- STA. 70+25 TO STA. 73+00 LT
DETAIL 8D
RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner= 10 TONS,CL 1. Rip-Rap
-L- STA. 68+55 LT
-L- STA. 67+56 RT
-L- STA. 67+95 RT
DETAIL 8E
LATERAL 'V' DITCH
(Not to Scale)
Type of Liner= CL. 1 Rip-Rap
FROM -L- STA. 67+90 to 69+44 RT
DETAIL 8F
SPECIAL CUT DITCH
(Not to Scale)
FROM -Y7- STA. 11+38 TO 12+00 RT



SITE IBC
SITE WA
SITE S2
LINE WITH CL. 1 RIP RAP
EST. 252 TONS
EST. 81.0 CY DDE
EST. 473 SY GEOTEXTILE
SEE DETAIL 8B
TEMPORARY SURFACE WATER IMPACTS
CL. 1 RIP RAP AT EMBANKMENT SEE DETAIL 8D
LATERAL 8' BASE DITCH
EST. 162.0 CY DDE
SEE DETAIL 8C
LATERAL 8' BASE DITCH
EST. 297.0 CY DDE
SEE DETAIL 8C
CL. B RIP RAP
EST. 5 TONS
EST. 14 SY GEOTEXTILE
BANK STABILIZATION
OVERCASH TRUSTEE, EDWARD C.
WILKINSON, LESTER L.
NC 3 MOORESVILLE RD 24' BST
LATERAL 3' BASE DITCH
LINE WITH CL. 1 RIP RAP
EST. 194 TONS
EST. 188.0 CY DDE
EST. 364 SY GEOTEXTILE
SEE DETAIL 8B
LATERAL V DITCH
LINE WITH CL. 1 RIP RAP
EST. 126 TONS
EST. 169.0 CY DDE
EST. 203 SY GEOTEXTILE
SEE DETAIL 8E
LATERAL V DITCH
LINE WITH PSRM
EST. 176 SY
EST. 275.2 CY DDE
SEE DETAIL 8A
CL. B RIP RAP
EST. 8 TONS
EST. 21 SY GEOTEXTILE
SPECIAL CUT DITCH
SEE DETAIL 8F
TIE TO EXIST. DITCH
HAMMONDS, WADE L.
BAKER, JERRY H.
CITY OF KANNAPOLIS
BEGIN BRIDGE -L- STA 67+64.88
END BRIDGE -L- STA 68+94.88
BEGIN APPROACH SLAB -L- STA 67+40.76
END APPROACH SLAB -L- STA 69+18.99
BEGIN BRIDGE -L- STA 67+56.32
END APPROACH SLAB -L- STA 69+10.44
BEGIN APPROACH SLAB -L- STA 67+32.21
END BRIDGE -L- STA 68+86.32

SKETCH SHOWING BRIDGE / PAVEMENT RELATIONSHIP

20150407 STANTEC U3440_Permit Drawings_20150407.pdf

8/17/99

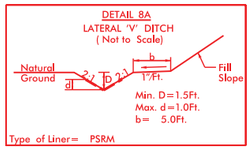
REVISIONS

12/6/16 ROW REV: ADDED PUE ON PARCEL 20; CHANGED PDE TO DUE FROM –L– 70+35 THRU 73+20, ADDED PUE, AND REVISED TCE ON PARCEL 21; ADDED PUE AND REVISED TCE ON PARCEL 22. –ML

5/10/16 ROW REV: ADJUSTED EX RW OFFSETS BASED ON THE FIELD STAKING ON PARCELS 19, 20, 20A, & 22. – CM

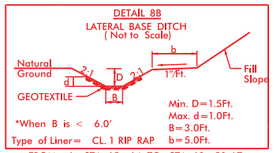
–L– 15100 13100
(NC 3) 23900 21400
2500 / 3400 — 500 / 900
3000 / 4300
2015 ADT / 2035 ADT
–Y7– (TUCKER AVE.)

DETAIL 8A
LATERAL 'V' DITCH
(Not to Scale)



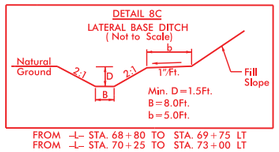
Type of Liner= PSRM
FROM –L– STA. 69+44 TO STA. 73+00 RT

DETAIL 8B
LATERAL BASE DITCH
(Not to Scale)



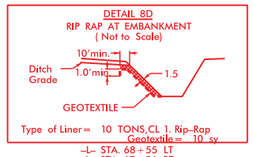
*When B is < 6.0'
Type of Liner= CL. 1 RIP RAP
FROM –L– STA. 65+64 TO STA. 68+50 LT
FROM –L– STA. 65+36 TO STA. 67+56 RT

DETAIL 8C
LATERAL BASE DITCH
(Not to Scale)



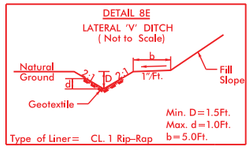
FROM –L– STA. 68+80 TO STA. 69+75 LT
FROM –L– STA. 70+25 TO STA. 73+00 LT

DETAIL 8D
RIP RAP AT EMBANKMENT
(Not to Scale)



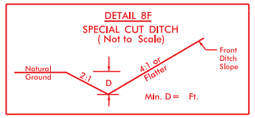
Type of Liner= 10 TONS,CL 1. Rip-Rap
Geotextile = 10 sy
–L– STA. 68+55 LT
–L– STA. 67+56 RT
–L– STA. 67+95 RT

DETAIL 8E
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= CL. 1 Rip-Rap
FROM –L– STA. 67+90 to 69+44 RT

DETAIL 8F
SPECIAL CUT DITCH
(Not to Scale)



FROM –Y7– STA. 11+38 TO 12+00 RT

PERMIT DRAWING SHEET 6 OF 23

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
U-3440	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

50 25 0 50 100

NAD 83/NSRS 2007

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

SITE IBC

SITE WA

SITE S2

LINE WITH CL 1 RIP RAP
EST. 252 TONS
EST. 81.0 CY DDE
EST. 473 SY GEOTEXTILE
SEE DETAIL 8B

CL. 1 RIP RAP AT EMBANKMENT
SEE DETAIL 8D

LATERAL 8' BASE DITCH
EST. 162.0 CY DDE
SEE DETAIL 8C

LATERAL 8' BASE DITCH
EST. 297.0 CY DDE
SEE DETAIL 8C

CL. B RIP RAP
EST. 5 TONS
EST. 14 SY GEOTEXTILE

RIP RAP
6 TONS
GEOTEXTILE 50 SY

TEMPORARY SURFACE WATER IMPACTS

BANK STABILIZATION

LATERAL 3' BASE DITCH
LINE WITH CL 1 RIP RAP
EST. 194 TONS
EST. 188.0 CY DDE
EST. 364 SY GEOTEXTILE
SEE DETAIL 8B

LATERAL V DITCH
LINE WITH CL 1 RIP RAP
EST. 126 TONS
EST. 169.0 CY DDE
EST. 203 SY GEOTEXTILE
SEE DETAIL 8E

LATERAL V DITCH
LINE WITH PSRM
EST. 176 SY
EST. 275.2 CY DDE
SEE DETAIL 8A

SPECIAL CUT DITCH
SEE DETAIL 8F

CL. B RIP RAP
EST. 8 TONS
EST. 21 SY GEOTEXTILE

TIE TO EXIST. DITCH

OVERCASH TRUSTEE, EDWARD C. (14)

CAROLINAS CASTLE & COOKE REALTY LLC (10)

WILKINSON, LESTER L. (21)

HAMMONDS, WADE L. (22)

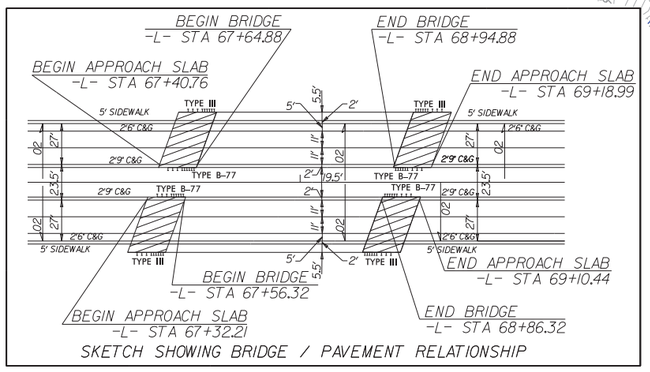
BAKER, JERRY H. (20)

PUBLIC SERVICE CO. OF NC INC (18)

CITY OF KANNAPOLIS (19A)

NC 3 MOORESVILLE RD 24' BST

SANITARY SEWER R/W 60.00'



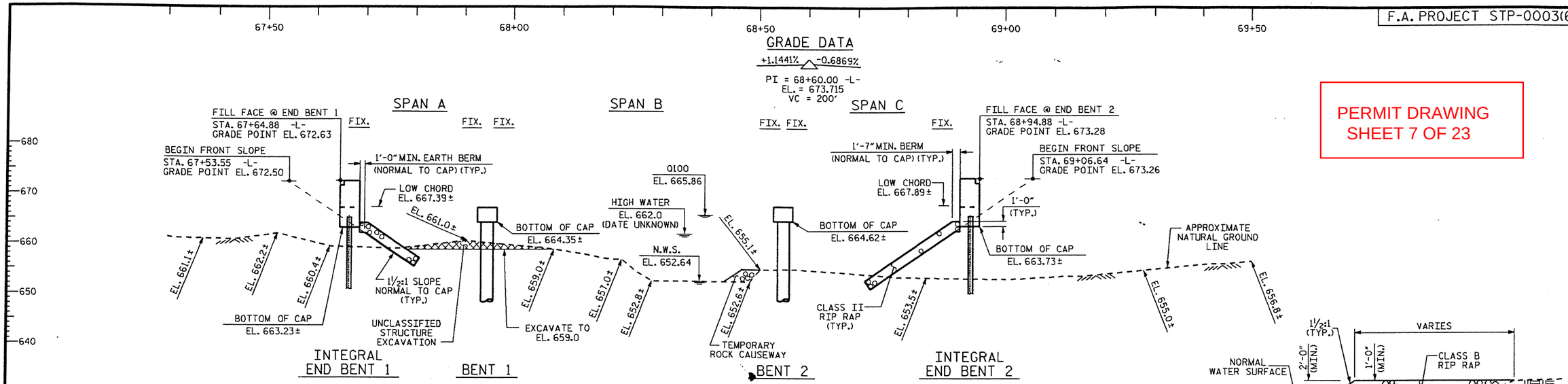
SKETCH SHOWING BRIDGE / PAVEMENT RELATIONSHIP

20150407
STANTEC
U3440_Permit Drawings_20150407.pdf

U-3440_rdy_psh8.dgn 5/13/2016 4:16:17 PM

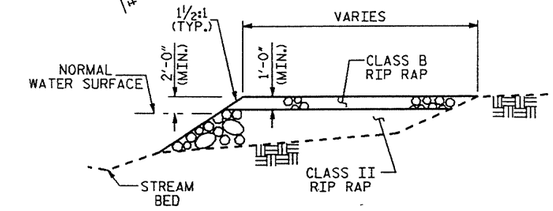
F.A. PROJECT STP-0003(6)

PERMIT DRAWING
SHEET 7 OF 23

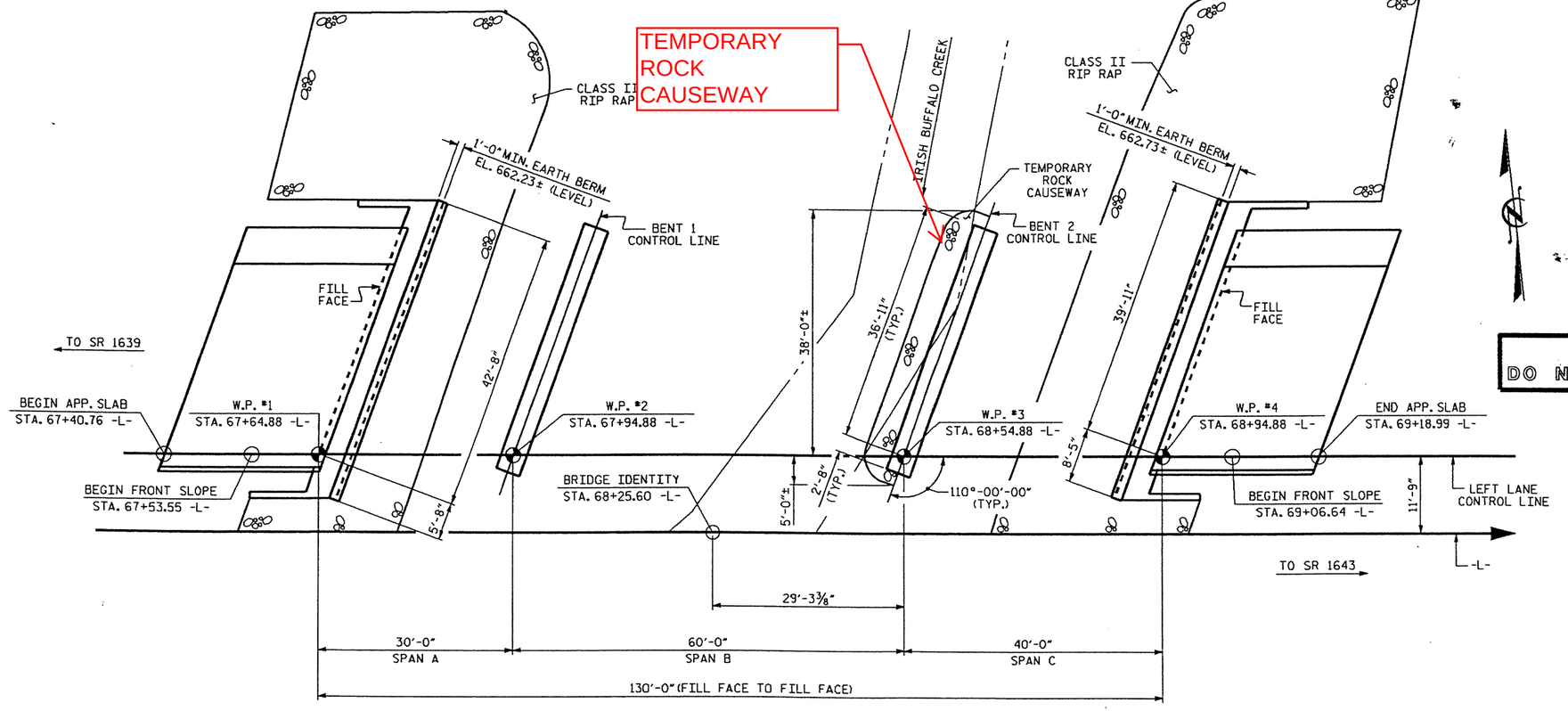


SECTION ALONG LEFT LANE CONTROL LINE

(SECTION TAKEN AT RIGHT ANGLE TO END BENTS & BENTS)



DETAIL OF TEMPORARY
ROCK CAUSEWAY



PLAN

(PILES & COLUMNS NOT SHOWN FOR CLARITY)

I HEREBY CERTIFY THESE PLANS
ARE THE AS-BUILT PLANS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PROJECT NO. U-3440
CABARRUS COUNTY
STATION: 68+25.60 -L-

SHEET 1 OF 2 BRIDGE No. 402

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRELIMINARY
GENERAL DRAWING
FOR BRIDGE OVER IRISH
BUFFALO CREEK ON NC 3
BETWEEN SR 1639 AND SR 1643
(LEFT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

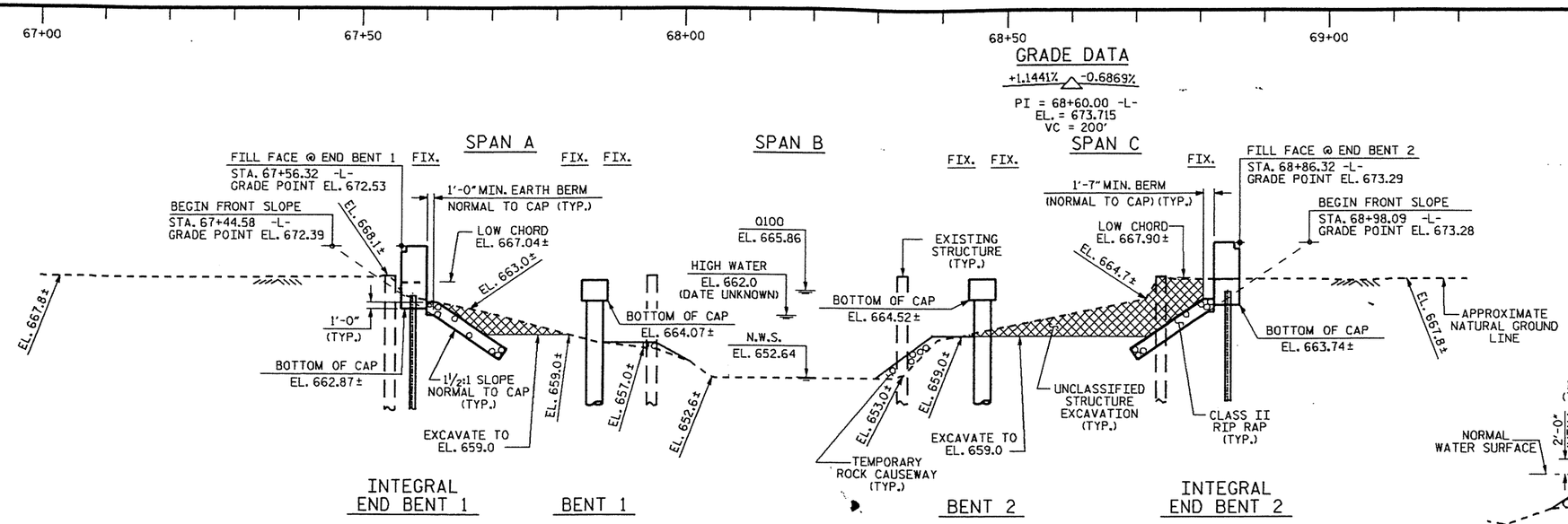
STR. #1

DRAWN BY : T. H. CARROLL DATE : 6/3/14
CHECKED BY : R. P. PATEL DATE : 6/9/14
DESIGN ENGINEER OF RECORD: T. H. CARROLL DATE : 6/19/14

29-OCT-2015 12:24
R:\Structures\Plans\Str02\U3440_SD_PGD_02.dgn

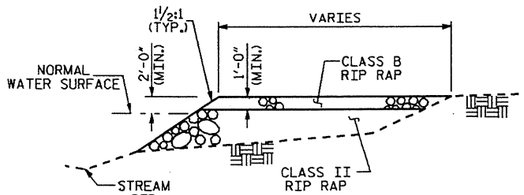
F.A. PROJECT STP-0003(6)

PERMIT DRAWING
SHEET 8 OF 23

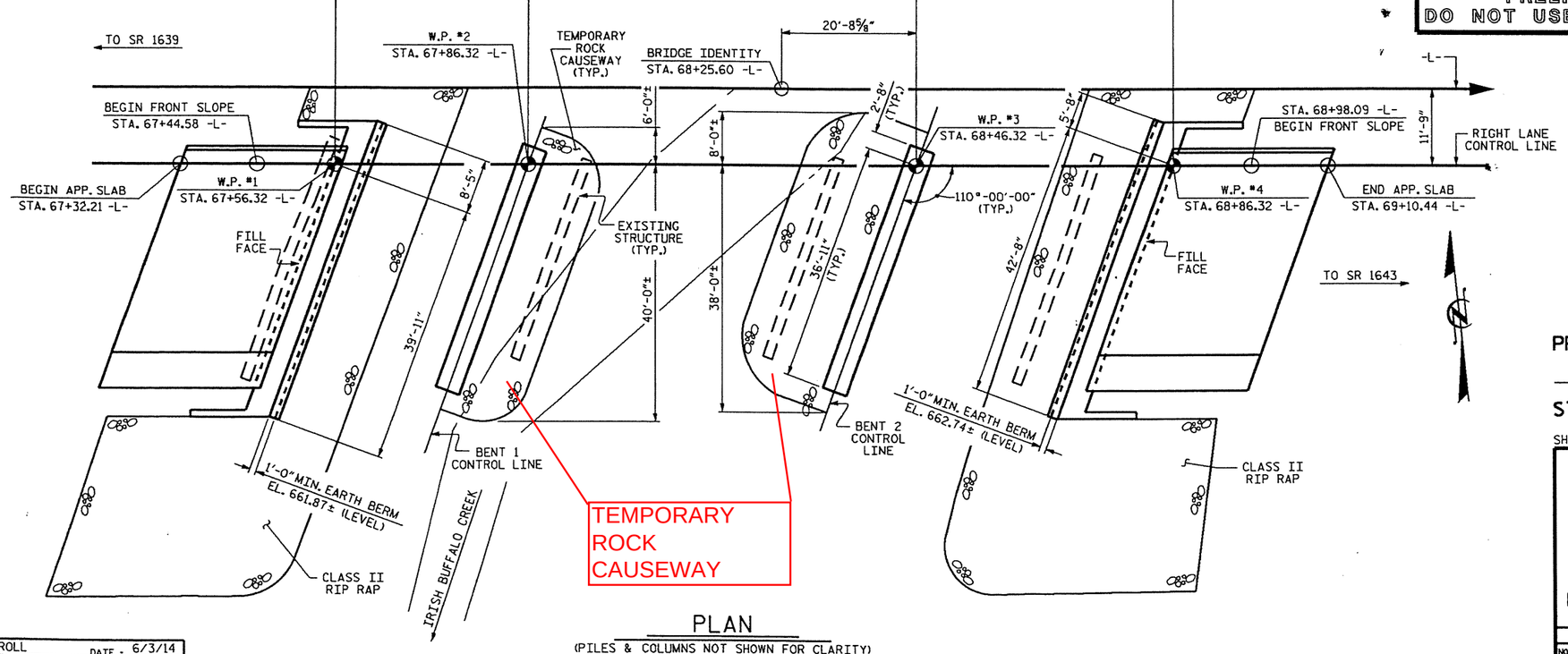


SECTION ALONG RIGHT LANE CONTROL LINE

(SECTION TAKEN AT RIGHT ANGLE TO END BENTS & BENTS)



DETAIL OF TEMPORARY ROCK CAUSEWAY



PLAN

(PILES & COLUMNS NOT SHOWN FOR CLARITY)

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. U-3440

CABARRUS COUNTY

STATION: 68+25.60 -L-

SHEET 1 OF 2 REPLACES BRIDGE No. 36

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRELIMINARY

GENERAL DRAWING

FOR BRIDGE OVER IRISH BUFFALO CREEK ON NC 3 BETWEEN SR 1639 AND SR 1643 (RIGHT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

STR. #2

DRAWN BY : T. H. CARROLL DATE : 6/3/14
CHECKED BY : R. P. PATEL DATE : 6/9/14
DESIGN ENGINEER OF RECORD: T. H. CARROLL DATE : 6/19/14

29-OCT-2015 12:22
R:\Structures\Plans\Str02\U3440_SD_PG0_02.dgn
drsmith

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3440	17

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PERMIT DRAWING
SHEET 9 OF 23

-L-

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 4700	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 664.7	FT
BASE DISCHARGE	= 5200	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 665.31	FT
OVERTOPPING DISCHARGE	= 13200	CFS
OVERTOPPING FREQUENCY	= 500 ++	YRS
OVERTOPPING ELEVATION	= 670.5	FT
DATE OF SURVEY	= 8/10/2013	
W.S.ELEVATION AT DATE OF SURVEY	= 652.64	FT

-L-

PIPE HYDRAULIC DATA

-L- Sta.86+12 (Str.0909)

DRAINAGE AREA	= 27	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 70	CFS
DESIGN HW ELEVATION	= 706.1	FT
100 YEAR DISCHARGE	= 82	CFS
100 YEAR HW ELEVATION	= 706.6	FT
OVERTOPPING FREQUENCY	= 500 ++	YRS
OVERTOPPING DISCHARGE	= 210	CFS
OVERTOPPING ELEVATION	= 718.5	FT

$$$$$$SYSTIME$$$$$$
$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$
$$$$$$USERNAME$$$$$

U-3440_rdy_pfl.dgn 12/21/2015 1:08:55 PM

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3440	X-42

PERMIT DRAWING
SHEET 10 OF 23

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

690 680 670 660 650

WETLAND LIMIT

671.50 672.29 672.72 673.22

0.025 0.015 0.010

2:1 12:1 2:1 2:1 2:1 12:1 2:1 2:1

656.55 663.60 S.S. 668.59 666.00

71+00.00

SITE WA

WETLAND LIMIT

671.77 672.42 672.69 672.71

0.020 0.004 0.004

2:1 12:1 2:1 2:1 2:1 12:1 2:1 2:1

656.40 663.54 S.S. 667.68 665.00

70+50.00

DRIVEWAY

672.13 672.74 672.89 672.55

0.020 0.006 0.017

8.00 % DWY 25.00 % DWY

113.50 LT 661.02

80.94 LT 666.35

2:1 12:1 2:1 2:1

664.92 664.50

70+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

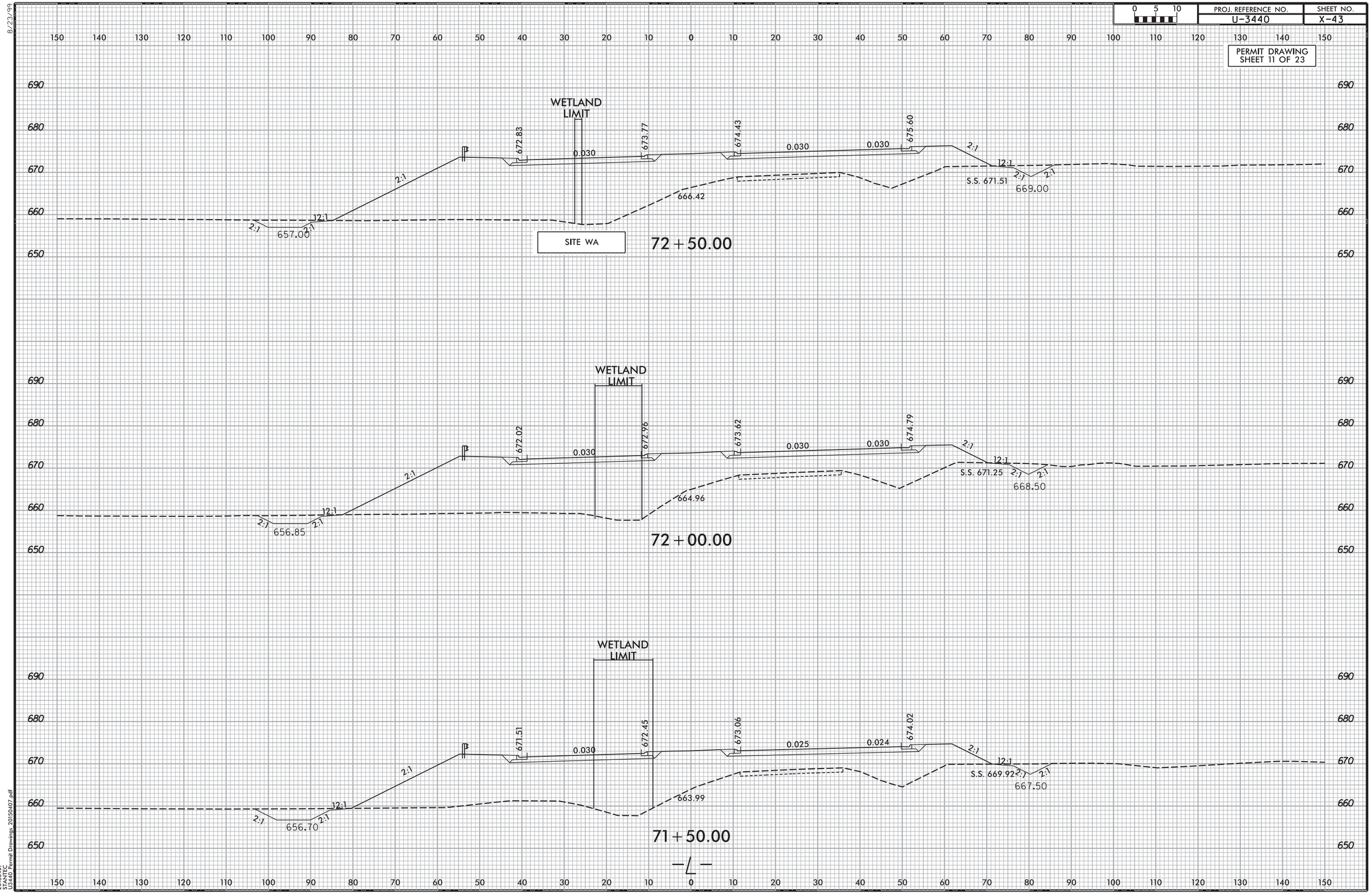
20150407
SHEET
U3440_Permit Drawings_20150407.pdf

U-3440_rdy_xpl_L.dgn 12/21/2015 1:10:31 PM

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-3440	X-43

PERMIT DRAWING
SHEET 11 OF 23



20150407
S24407
U3440 Permit Drawings 20150407.pdf

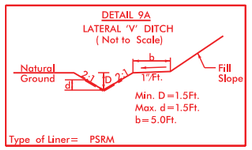
U-3440_rdy_xpl_L.dgn 12/21/2015 1:11:20 PM

PERMIT DRAWING
SHEET 12 OF 23

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

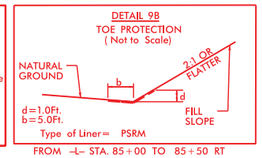
S S DENOTES IMPACTS IN SURFACE WATER

DETAIL 9A
LATERAL 'V' DITCH
(Not to Scale)



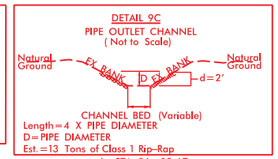
Type of Liner= PSRM
FROM -L- STA. 77+58 TO 78+51 RT

DETAIL 9B
TOE PROTECTION
(Not to Scale)



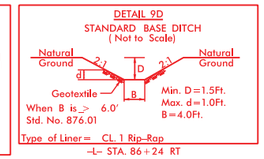
Type of Liner= PSRM
FROM -L- STA. 85+00 TO 85+50 RT

DETAIL 9C
PIPE OUTLET CHANNEL
(Not to Scale)



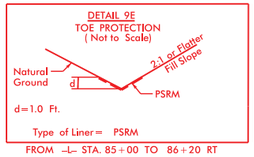
-L- STA. 86+05 LT

DETAIL 9D
STANDARD BASE DITCH
(Not to Scale)



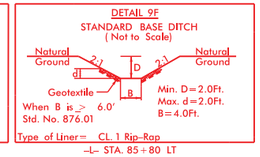
Type of Liner= CL 1 Rip-Rap
-L- STA. 86+24 RT

DETAIL 9E
TOE PROTECTION
(Not to Scale)



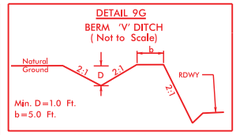
Type of Liner= PSRM
FROM -L- STA. 85+00 TO 86+20 RT

DETAIL 9F
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CL 1 Rip-Rap
-L- STA. 85+80 LT

DETAIL 9G
BERM 'V' DITCH
(Not to Scale)



FROM -L- STA. 78+49 TO 79+04 RT
FROM -L- STA. 79+04 TO 79+50 RT
FROM -L- STA. 79+50 TO 82+00 RT
FROM -L- STA. 82+00 TO 84+00 RT

-L-
PI Sta 80+28.76
Δ = 50° 54' 39.2" (LT)
D = 2° 51' 53.2"
L = 1,777.13'
T = 952.04'
R = 2,000.00'
RO = 1.44°
e = .03

50 25 0 50 100

PROJECT REFERENCE NO.	SHEET NO.
U-3440	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

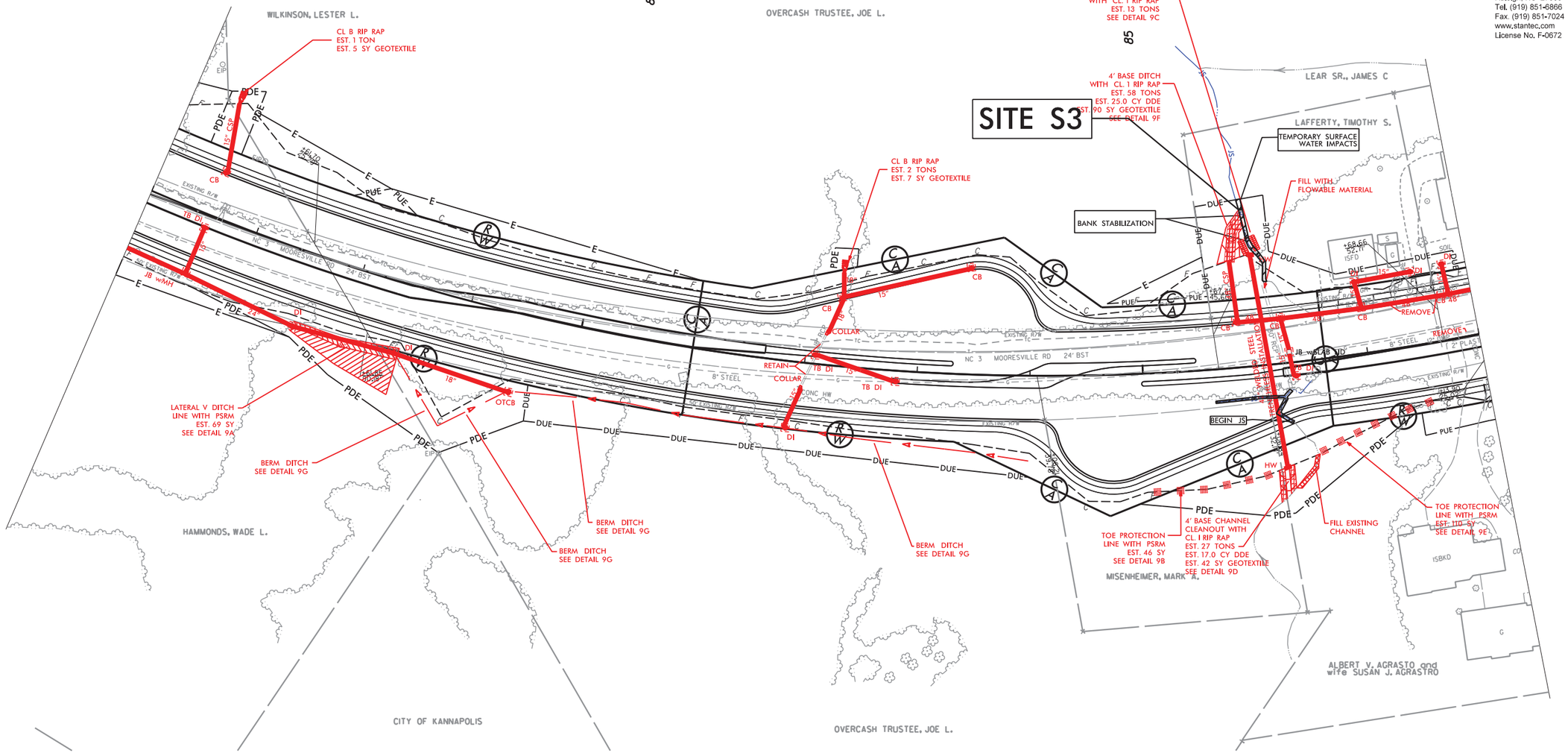
Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

REVISIONS

12/16/15 ROW REV: CHANGED PROPERTY LINES, PROPERTY OWNER NAME, AND DEED REFERENCE ON PARCELS 26 & 28. - ML
1/26/16 ROW REV: ADDED PUE AND REVISED TCE ON PARCELS 22 & 23; ADDED PUE ON PARCEL 24; CHANGED PDE TO DUE FROM -L- 85+62 THRU 87+91 ON PARCELS 24 & 25; CHANGED PDE TO DUE FROM -L- 79+65 THRU 84+00 ON PARCEL 26; REVISED PUE ON PARCEL 28. - ML
5/10/16 ROW REV: ADJUSTED EX RW & P/L STATIONS AND/OR OFFSETS BASED ON THE FIELD STAKING ON PARCEL 22; REVISED PROPERTY LINE BETWEEN PARCELS 24 & 25. - CM

8/17/99



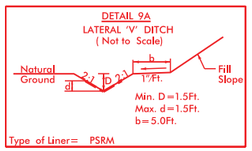
20150407
SCS WFC
U3440_Permit Drawings_20150407.pdf

PERMIT DRAWING
SHEET 13 OF 23

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

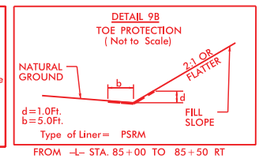
S S DENOTES IMPACTS IN SURFACE WATER

DETAIL 9A
LATERAL 'V' DITCH
(Not to Scale)



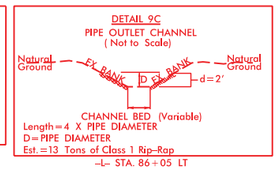
Type of Liner= PSRM
FROM -L- STA. 77+58 TO 78+51 RT

DETAIL 9B
TOE PROTECTION
(Not to Scale)



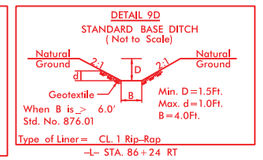
Type of Liner= PSRM
FROM -L- STA. 85+00 TO 85+50 RT

DETAIL 9C
PIPE OUTLET CHANNEL
(Not to Scale)



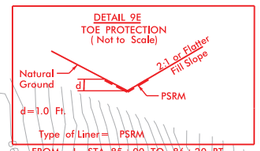
-L- STA. 86+05 LT

DETAIL 9D
STANDARD BASE DITCH
(Not to Scale)



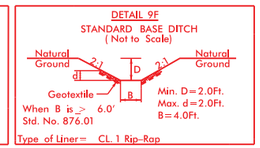
Type of Liner= CL 1 Rip-Rap
-L- STA. 86+24 RT

DETAIL 9E
TOE PROTECTION
(Not to Scale)



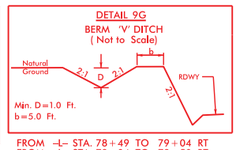
Type of Liner= PSRM
FROM -L- STA. 85+00 TO 86+20 RT

DETAIL 9F
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= CL 1 Rip-Rap
-L- STA. 85+80 LT

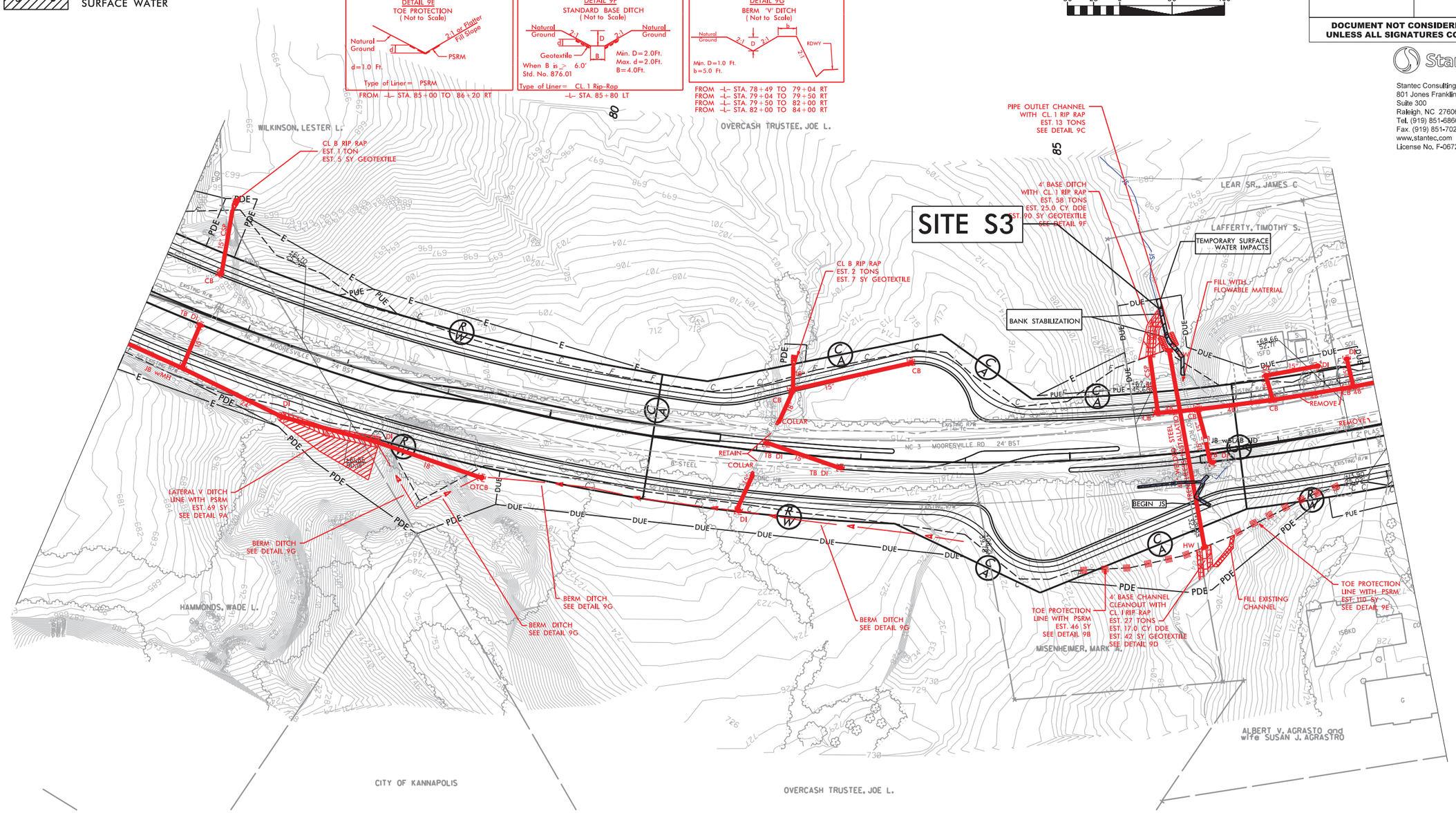
DETAIL 9G
BERM 'V' DITCH
(Not to Scale)



FROM -L- STA. 78+49 TO 79+04 RT
FROM -L- STA. 79+04 TO 79+50 RT
FROM -L- STA. 79+50 TO 82+00 RT
FROM -L- STA. 82+00 TO 84+00 RT

-L-
PI Sta 80+28.76
Δ = 50° 54' 39.2" (LT)
D = 2° 51' 53.2"
L = 1,777.13'
T = 952.04'
R = 2,000.00'
RO = 1.44°
e = .03

50 25 0 50 100



PROJECT REFERENCE NO.	SHEET NO.
U-3440	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

REVISIONS

12/16/15 ROW REV: CHANGED PROPERTY LINES, PROPERTY OWNER NAME, AND DEED REFERENCE ON PARCELS 26 & 28. - ML
12/6/16 ROW REV: ADDED PUE AND REVISED TCE ON PARCELS 22 & 23; ADDED PUE ON PARCEL 24; CHANGED PDE TO DUE FROM -L- 85+62 THRU 87+91 ON PARCELS 24 & 25; CHANGED PDE TO DUE FROM -L- 79+65 THRU 84+00 ON PARCEL 26; REVISED PUE ON PARCEL 28. -ML
5/10/16 ROW REV: ADJUSTED EX R/W & P/L STATIONS AND/OR OFFSETS BASED ON THE FIELD STAKING ON PARCEL 22; REVISED PROPERTY LINE BETWEEN PARCELS 24 & 25. - CM

8/17/99

20150407
STANTEC
U3440_Permit Drawings_20150407.pdf

U-3440_rdy_psh9.dgn 5/13/2016 3:02:56 PM

8/17/99

REVISIONS

12/16/15 ROW REV: REVISED DUE ON PARCEL 32 AND ELIMINATED DUE AND CLAIM ON PARCEL 31A.– ML
1/26/16 ROW REV. REVISED PUE ON PARCELS 34, 35, 40, & 42; REVISED PUE, CHANGED PDE TO DUE FROM –L– 91+84 THRU 92+32 ON PARCELS 39 & 40. –ML
3/21/16 ROW REV. REVISED TCE ON PARCELS 23 & 29 – KH
5/5/16 ROW REV. REVISED EX. R/W SHEETS BASED ON THE FIELD STAKING ON PARCELS 30 THRU 35, 40, 41, 43, 44, & 46 CHANGED PROPERTY OWNER NAME AND DEED REFERENCE ON PARCEL 37, COMBINED PARCELS 36 & 37 INTO PARCEL 37 AND ELIMINATED PARCEL NO. 36; ADDED TCE ON PARCEL 42; REVISED TCE ON PARCEL 45.– CM

PROJECT REFERENCE NO.	SHEET NO.
U-3440	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 14 OF 23

SITE S4

50 25 0 50 100 NAD 83/NSRS 2007

18 18 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

DETAIL 10A
STANDARD BASE DITCH
(Not to Scale)
When B is > 6.0' Std. No. 876.01
Min. D=1.5Ft. Max. d=1.0Ft. B=5.0Ft.
Type of Liner= C. II Rip-Rap
–L– STA. 96+65 LT

DETAIL 10B
TOE PROTECTION
(Not to Scale)
d=1.0Ft.
Type of Liner= CL. B Rip-Rap
FROM –L– STA. 96+50 TO 99+00 LT
FROM –L– STA. 97+00 TO 97+86 RT

DETAIL 10C
STANDARD BASE DITCH
(Not to Scale)
*When B is < 6.0'
Min. D=1.5Ft. Max. d=1.0Ft. B=3.0Ft.
Type of Liner= CL. 1 Rip-Rap
–L– STA. 96+15 LT

DETAIL 10D
RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner= 12 TONS,CL B Rip-Rap Geotextile= 16sy
STA. 98+05 RT

DETAIL 10E
BERM 'V' DITCH
(Not to Scale)
Min. D=1.0 Ft. b=5.0 Ft.
FROM –L– STA. 92+35 TO 94+10 RT
FROM –L– STA. 94+10 TO 95+15 RT
FROM –L– STA. 96+00 TO 97+00 LT

DETAIL 10F
CUT DITCH
(Not to Scale)
Min. D=1.0 Ft. Max. d=1.0 Ft.
Type of Liner= CL B Rip-Rap
FROM Y8 STA. 10+50 TO STA. 13+00 LT
FROM Y8 STA. 10+50 TO STA. 12+00 RT
FROM Y8A STA. 10+80 TO STA. 12+00 RT
FROM Y8A STA. 11+50 TO STA. 12+00 LT

NOTE: DRIVEWAY RADII ARE 5FT UNLESS OTHERWISE NOTED

3' BASE DITCH CHANNEL CLEANOUT WITH CL. II RIP RAP EST. 41 TONS EST. 120 CY DDE EST. 55 SY GEOTEXTILE SEE DETAIL 10A

3' BASE DITCH LINE WITH CL. 1 RIPRAP EST. 25 TONS EST. 9.0 CY DDE EST. 50 SY GEOTEXTILE SEE DETAIL 10C

CL. II RIP RAP

TOE PROTECTION LINE CL B RIP RAP EST. 87 TONS EST. 262 SY GEOTEXTILE SEE DETAIL 10B

TEMPORARY SURFACE WATER IMPACTS

SPRAGUE, RHONDA W. BANK STABILIZATION

BANK STABILIZATION

FILL AND PLUG

BERM DITCH SEE DETAIL 10E

LINE DITCH WITH CL B RIP RAP EST. ? TONS EST. ? SY GEOTEXTILE, SEE DETAIL 10F

CL B RIPRAP BANK PROTECTION SEE DETAIL 10D

CL B RIP RAP EST. 1 TON EST. 5 SY GEOTEXTILE

BURY PIPE 1' BELOW

TOE PROTECTION LINE CL B RIP RAP EST. 30 TONS EST. 90 SY GEOTEXTILE SEE DETAIL 10B

LINE DITCH WITH CL B RIP RAP EST. ? TONS EST. ? SY GEOTEXTILE, SEE DETAIL 10F

LINE DITCH WITH CL B RIP RAP EST. ? TONS EST. ? SY GEOTEXTILE RIPRAP SEE DETAIL 10F

TEMPORARY SURFACE WATER IMPACTS

TEMPORARY SURFACE WATER IMPACTS

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

–L– (NC 3)	2015 ADT 13100	13300	
	2035 ADT 21400	21600	
–Y8– (CLIFTON ST.)	50/50	200/200	
–Y9– (BAILEY ST.)	100/100	50/50	100/100
–L– (NC 3)	2015 ADT 13300	13400	
	2035 ADT 21600	21700	

20150407
STANTEC
U3440_Permit Drawings_20150407.pdf

U-3440_rdy_psh10.dgn 5/18/2016 1:53:06 PM

PROJECT REFERENCE NO.	SHEET NO.
U-3440	10

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

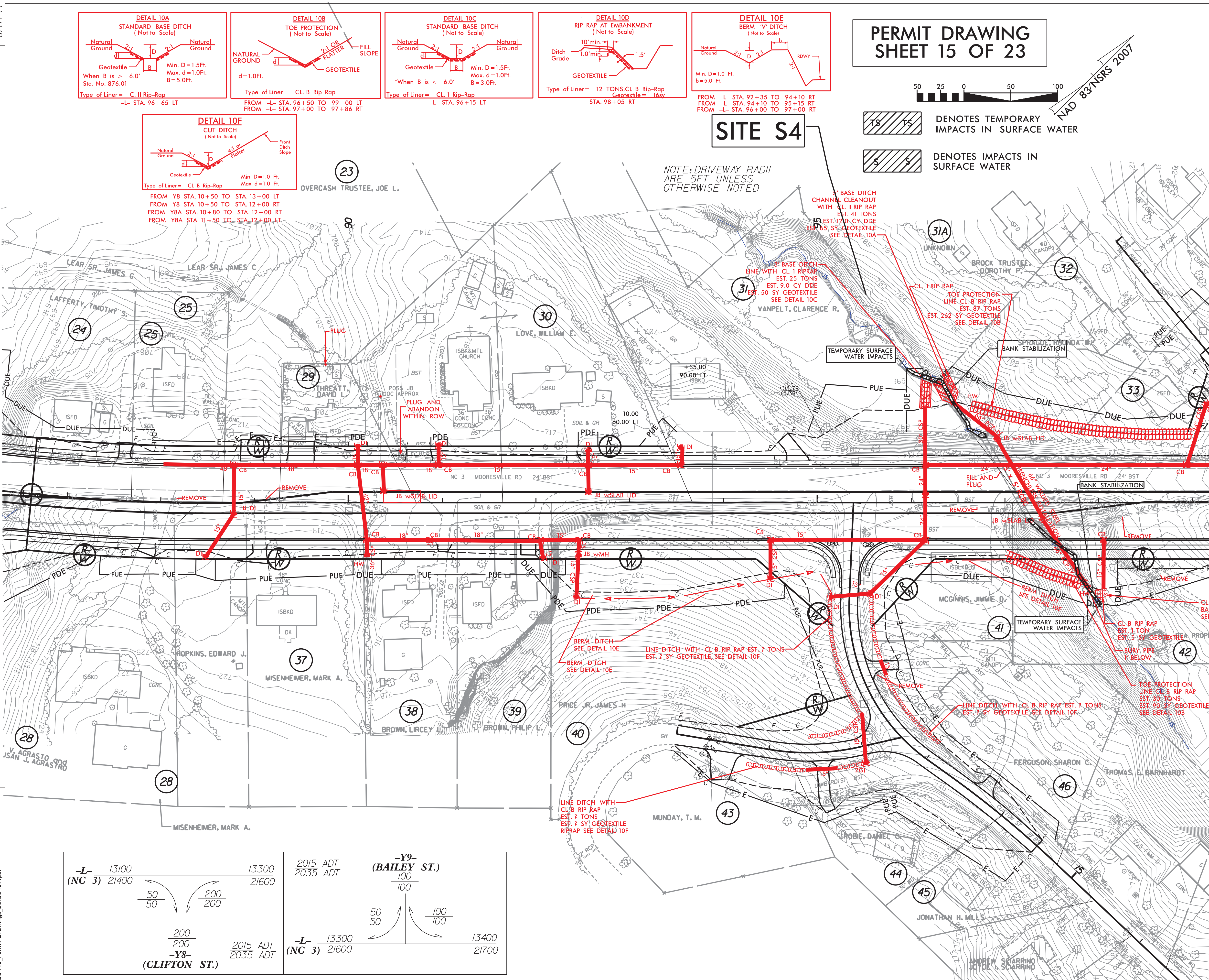
Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

8/17/99

REVISIONS

12/16/15 ROW REV: REVISED DUE ON PARCELS 32 AND ELIMINATED DUE AND CLAIM ON PARCEL 31A.-ML
12/6/16 ROW REV: REVISED PUE ON PARCELS 34, 35, 40, & 42; REVISED PUE, CHANGED PDE TO DUE FROM -L- 91+84 THRU 92+32 ON PARCELS 39 & 40.-ML
3/21/16 ROW REV: REVISED TCE ON PARCELS 23 & 29 - KH
5/10/16 ROW REV: ADJUSTED EX RW STATIONS AND/OR OFFSETS BASED ON THE FIELD STAKING ON PARCELS 30 THRU 35, 40, 41, 43, 44, & 46; CHANGED PROPERTY OWNER NAME AND DEED
REFERENCE ON PARCEL 37; COMBINED PARCELS 36 & 37 INTO PARCEL 37 AND ELIMINATED PARCEL NO. 36; ADDED TCE ON PARCEL 42; REVISED TCE ON PARCEL 45. - CM



PERMIT DRAWING
SHEET 15 OF 23
SITE S4
NAD 83/NSRS 2007
50 25 0 50 100
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
DETAIL 10A STANDARD BASE DITCH (Not to Scale)
Min. D=1.5Ft. Max. d=1.0Ft. B=5.0Ft.
When B is > 6.0' Std. No. 876.01
Type of Liner= C. II Rip-Rap
-L- STA. 96+65 LT
DETAIL 10B TOE PROTECTION (Not to Scale)
d=1.0Ft.
Type of Liner= CL. B Rip-Rap
FROM -L- STA. 96+50 TO 99+00 LT
FROM -L- STA. 97+00 TO 97+86 RT
DETAIL 10C STANDARD BASE DITCH (Not to Scale)
Min. D=1.5Ft. Max. d=1.0Ft. B=3.0Ft.
*When B is < 6.0'
Type of Liner= CL. 1 Rip-Rap
-L- STA. 96+15 LT
DETAIL 10D RIP RAP AT EMBANKMENT (Not to Scale)
Type of Liner= 12 TONS,CL B Rip-Rap Geotextile= 16sy
STA. 98+05 RT
DETAIL 10E BERM 'V' DITCH (Not to Scale)
Min. D=1.0 Ft. b=5.0 Ft.
FROM -L- STA. 92+35 TO 94+10 RT
FROM -L- STA. 94+10 TO 95+15 RT
FROM -L- STA. 96+00 TO 97+00 RT
DETAIL 10F CUT DITCH (Not to Scale)
Min. D=1.0 Ft. Max. d=1.0 Ft.
Type of Liner= CL B Rip-Rap
FROM Y8 STA. 10+50 TO STA. 13+00 LT
FROM Y8 STA. 10+50 TO STA. 12+00 RT
FROM Y8A STA. 10+80 TO STA. 12+00 RT
FROM Y8A STA. 11+50 TO STA. 12+00 LT
NOTE: DRIVEWAY RADII ARE 5FT UNLESS OTHERWISE NOTED
3' BASE DITCH CHANNEL CLEANOUT WITH CL. II RIP RAP EST. 41 TONS EST. 12.0 CY DDE EST. 65 SY GEOTEXTILE SEE DETAIL 10A
3' BASE DITCH LINE WITH CL. 1 RIPRAP EST. 35 TONS EST. 9.0 CY DDE EST. 50 SY GEOTEXTILE SEE DETAIL 10C
TOE PROTECTION LINE CL B RIP RAP EST. 87 TONS EST. 262 SY GEOTEXTILE SEE DETAIL 10B
TEMPORARY SURFACE WATER IMPACTS
BANK STABILIZATION
PLUG AND ABANDON WITHIN ROW
FILL AND PLUG
NC 3 MOORESVILLE RD 24' BST
BERM DITCH SEE DETAIL 10E
LINE DITCH WITH CL B RIP RAP EST. ? TONS EST. ? SY GEOTEXTILE, SEE DETAIL 10F
CL B RIP RAP BANK PROTECTION SEE DETAIL 10D
CL B RIP RAP EST. 1 TON EST. 5 SY GEOTEXTILE
BURY PIPE 1' BELOW
TOE PROTECTION LINE CL B RIP RAP EST. 30 TONS EST. 90 SY GEOTEXTILE SEE DETAIL 10B
LINE DITCH WITH CL B RIP RAP EST. ? TONS EST. ? SY' GEOTEXTILE RIPRAP SEE DETAIL 10F
OVERCASH TRUSTEE, JOE L.
LEAR SR., JAMES C
LAFFERTY, TIMOTHY S.
THREATT, DAVID L.
LOVE, WILLIAM E.
VANPELT, CLARENCE R.
BROCK TRUSTEE, DOROTHY P.
SPRAGUE, RHONDA W.
BREWER, WAYNE C.
MCGINNIS, JIMMIE D.
BCA PROPERTY MGMT, LLC
HOPKINS, EDWARD J.
MISENHEIMER, MARK A.
BROWN, LIRCEY
BROWN, PHILIP L.
PRICE JR, JAMES H
FERGUSON, SHARON C.
THOMAS E. BARNHARDT
MUNDAY, T. M.
ROBIE, DANIEL C.
JONATHAN H. MILLS
ANDREW SCIARRINO JOYCE I. SCIARRINO
BARRY S. HALE
V. AGRASTO and SAN J. AGRASTRO
-L- (NC 3) 13100 21400 13300 21600 50 50 200 200 200 200 -Y8- (CLIFTON ST.) 2015 ADT 2035 ADT
-Y9- (BAILEY ST.) 100 100 50 50 100 100 -L- (NC 3) 13300 21600 13400 21700 2015 ADT 2035 ADT

8/17/99

REVISIONS

1201605 ROW REV: AMENDED PROPERTY LINES ON PARCEL 60 AND CREATED PARCELS 60A & 60B; REVISED ROW AND PDE ON PARCEL 63; CHANGED PROPERTY OWNER NAME, DEED REFERENCE, AND REVISED PDE ON PARCEL 64 – ML
12/616 ROW REV: REMOVED PUE AND REVISED TCE ON PARCELS 42, 56, & 57; ADDED PUE AND REVISED TCE ON PARCEL 48; ADDED PUE WHICH CREATED PARCEL NO. 49A; REVISED PUE AND TCE ON PARCELS 58 & 59; ADDED PUE ON PARCELS 60A & 60B; ADDED PUE, REVISED DUE, AND CHANGED DUE TO PDE FROM –Y11– 11+62 THRU –L– 108+45 ON PARCEL 61 –ML
32116 ROW REV: AMENDED EXIST ROW LINES, REVISED ROW, PUE, AND TCE ON PARCELS 60 & 60A –KH
51016 ROW REV: ADJUSTED EX RW STATIONS AND/OR OFFSETS BASED ON THE FIELD STAKING ON PARCELS 48, 49, 49A, 54, 55, 57, 60A, 60B, & 61 THRU 63 – CM

20150407
STANTEC
U3440_Permit Drawings_20150407.pdf

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 16 OF 23

50 25 0 50 100

NOTE: DRIVEWAY RADII ARE 5FT UNLESS OTHERWISE NOTED

NAD 83/NSRS 2007

SITE S5

DETAIL 11A
LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 2:1, d, 2:1, b, 1'/Ft., Fill Slope, Geotextile
Min. D=1.5Ft.
Max. d=1.0Ft.
Type of Liner= CL. B Rip-Rap b=5.0Ft.
FROM –Y10– STA. 13+50 TO 15+35 RT

DETAIL 11B
PIPE OUTLET CHANNEL
(Not to Scale)

Natural Ground, EXIST. BANK, D, CONST. BANK, Natural Ground, d=1.5Ft.
CHANNEL BED (Variable)
Length=4 X PIPE DIAMETER
D=PIPE DIAMETER
Est.=6 Tons of Class 1 Rip-Rap
–L– STA. 109+49 RT
–L– STA. 110+05 LT

DETAIL 11C
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 2:1, D, 4:1 or Flatter, Front Ditch Slope
Min. D=1.0 Ft.
FROM –Y10– STA. 13+00 TO 13+50 RT
FROM –Y10– STA. 13+00 TO 14+00 LT

DETAIL 11D
BERM 'V' DITCH
(Not to Scale)

Natural Ground, 2:1, D, 2:1, b, RDWY, 2:1
Min. D=1.0 Ft.
b=5.0 Ft.
–L– STA. 106+00 TO 107+74 RT
–L– STA. 107+74 TO 108+47 RT
–L– STA. 110+38 TO 113+00 RT

PROJECT REFERENCE NO.	SHEET NO.
U-3440	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

MATCHLINE –L– STA 100+00.00 SEE SHEET 10

MATCHLINE –L– STA 113+25.00 SEE SHEET 12

TIE TO EXISTING DITCHES LT & RT

SPECIAL CUT DITCH SEE DETAIL 11C

LATERAL V-DITCH LINE WITH CL B RIP RAP EST. 64 TONS, 59.0 CY DDE EST. 194 SY GEOTEXTILE SEE DETAIL 11A

PIPE OUTLET CHANNEL WITH CL I RIP RAP SEE DETAIL 11B

CL B RIP RAP EST. 3 TONS EST. 11 SY GEOTEXTILE

BANK STABILIZATION

TEMPORARY SURFACE WATER IMPACTS

FILL WITH FLOWABLE MATERIAL

BERM DITCH SEE DETAIL 11D

LINE DITCH WITH CL B RIP RAP EST. 211 TONS EST. 720 SY GEOTEXTILE SEE DETAIL 11E

RETAIN

LINE DITCH WITH CL B RIP RAP EST. ? TONS EST. ? SY GEOTEXTILE SEE DETAIL 11E

DETAIL 11E
CUT DITCH
(Not to Scale)

Natural Ground, 2:1, T, 2:1 or Flatter, Front Ditch Slope, Geotextile
Min. D=1.0 Ft.
Max. d=1.0 Ft.
Type of Liner= CL B Rip-Rap
FROM Y11 STA. 11+70 TO STA. 14+50 LT
FROM Y11 STA. 11+35 TO STA. 14+50 RT

TRITT, HARLEY D.
SMULLEN, MARK A.
SYLVIA F. McMULLEN
MCCOLLUM, TERRY M.
BREWER, WAYNE C.
DEAL, VIVIAN M.
DANNY BOST, LLC
SELLERS JR, EDWARD H.
SELLERS, JEFFERY L.
DAVID C. MATTHEWS
WILLIAMSON, JOSEPH E.
CRAINSHAW, RANDY C.
BCA PROPERTY MGMT LLC
McGINNIS, CARL D.
TOMAS M. BAZA
EDWARD V. NELSON and wife KASHEA BALLIET NELSON
MATTHEWS, JAMES E.
BETTY S. COXEY
CHRISTINE H. LITAKER
JON R. FINGER, SR.
DAVID G. MATTHEWS

NC 3 MOORESVILLE RD

8/17/99

REVISIONS

12/16/05 ROW REV: AMENDED PROPERTY LINES ON PARCEL 60 AND CREATED PARCELS 60A & 60B; REVISED ROW AND PDE ON PARCEL 63; CHANGED PROPERTY OWNER NAME, DEED REFERENCE, AND REVISED PDE ON PARCEL 64 – ML
12/6/16 ROW REV: REMOVED PUE AND REVISED TCE ON PARCELS 34, 49, & 50; REVISED PUE ON PARCELS 42, 56, & 57; ADDED PUE AND REVISED TCE ON PARCEL 48; ADDED PUE WHICH CREATED PARCEL NO. 49A; REVISED PUE AND TCE ON PARCELS 54, 55, & 60; REVISED ROW, PUE, AND ADDED TCE ON PARCELS 58 & 59; ADDED PUE, REVISED DUE, AND CHANGED DUE TO PDE FROM –Y11– 11+61 THRU –L– 108+45 ON PARCEL 61 –ML
3/21/16 ROW REV: AMENDED EXIST ROW LINES, REVISED ROW, PUE, AND TCE ON PARCELS 60 & 60A –KH
5/10/16 ROW REV: ADJUSTED EX R/W STATIONS AND/OR OFFSETS BASED ON THE FIELD STAKING ON PARCELS 48, 49, 49A, 54, 55, 57, 60A, 60B, & 61 THRU 63 – CM

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

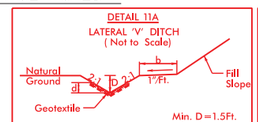
S S DENOTES IMPACTS IN SURFACE WATER

PERMIT DRAWING SHEET 17 OF 23

50 25 0 50 100

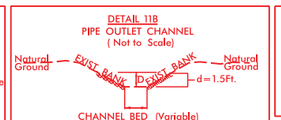
NOTE: DRIVEWAY RADII ARE 5FT UNLESS OTHERWISE NOTED

DETAIL 11A
LATERAL 'V' DITCH
(Not to Scale)



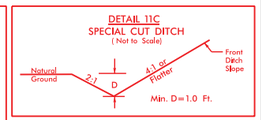
Type of Liner= CL. B Rip-Rap b=5.0Ft.
FROM –Y10– STA. 13+50 TO 15+35 RT

DETAIL 11B
PIPE OUTLET CHANNEL
(Not to Scale)



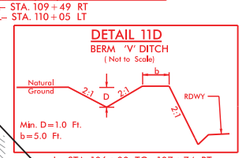
CHANNEL BED (Variable)
Length=4 X PIPE DIAMETER
D=PIPE DIAMETER
Est.=6 Tons of Class 1 Rip-Rap
–L– STA. 109+49 RT
–L– STA. 110+05 LT

DETAIL 11C
SPECIAL CUT DITCH
(Not to Scale)



FROM –Y10– STA. 13+00 TO 13+50 RT
FROM –Y10– STA. 13+00 TO 14+00 LT

DETAIL 11D
BERM 'V' DITCH
(Not to Scale)



–L– STA. 106+00 TO 107+74 RT
–L– STA. 107+74 TO 108+47 RT
–L– STA. 110+38 TO 113+00 RT

PROJECT REFERENCE NO.	SHEET NO.
U-3440	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

SITE S5

NAD 83/NSRS 2007

MATCHLINE –L– STA 100+00.00 SEE SHEET 10

MATCHLINE –L– STA 113+25.00 SEE SHEET 12

TIE TO EXISTING DITCHES LT & RT

SPECIAL CUT DITCH SEE DETAIL 11C

LATERAL V-DITCH LINE WITH CL B RIP RAP EST. 64 TONS, 59.0 CY DDE EST. 194 SY GEOTEXTILE SEE DETAIL 11A

PIPE OUTLET CHANNEL WITH CL I RIP RAP SEE DETAIL 11B

CL B RIP RAP EST. 3 TONS EST. 11 SY GEOTEXTILE

BANK STABILIZATION

TEMPORARY SURFACE WATER IMPACTS

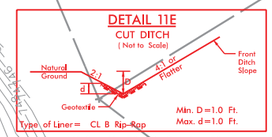
FILL WITH FLOWABLE MATERIAL

BERM DITCH SEE DETAIL 11D

LINE DITCH WITH CL B RIP RAP EST. 211 TONS EST. 720 SY GEOTEXTILE SEE DETAIL 11E

LINE DITCH WITH CL B RIP RAP EST. ? TONS EST. ? SY GEOTEXTILE SEE DETAIL 11E

DETAIL 11E
CUT DITCH
(Not to Scale)



Type of Liner= CL B Rip-Rap
FROM Y11 STA. 11+70 TO STA. 14+50 LT
FROM Y11 STA. 11+35 TO STA. 14+50 RT

20150407
STANTEC
U3440_Permit Drawings_20150407.pdf

U-3440_rdy_psh11.dgn 5/13/2016 4:09:56 PM

REVISIONS

12/16/15 ROW REV: REVISED ROW AND PDE ON PARCEL 63; CHANGED PROPERTY OWNER NAME, DEED REFERENCE, AND REVISED PDE ON PARCEL 64; REVISED PDE ON PARCEL 65; AMENDED PROPERTY LINES AND DEED REFERENCE ON PARCEL 65 AND CREATED PARCEL 65A; REVISED PDE AND TCE ON PARCEL 65A; CREATED PARCEL 81A. – ML
01/14/16 ROW REV: REVISED ROW ON PARCEL 81; REVISED PUE AND ROW ON PARCELS 81A & 82; REMOVED THE PARKING PAD ON PARCEL 82. – ML
1/26/16 ROW REV: REVISED PUE AND TCE ON PARCEL 70; REVISED PUE ON PARCELS 81, 81A, 83, & 84; REMOVED DUE AND ADDED TCE ON PARCEL 84. –ML
~~3/21/16 ROW REV: ADDED PUE ON PARCEL 83. –KH~~
~~5/10/16 ROW REV: CHANGED PDE TO DUE FROM –L– 116+80.00 THRU 120+07.01 ON PARCELS 66 THRU 68; REVISED TCE ON PARCEL 68; ADJUSTED EX R/W STATIONS AND/OR OFFSETS BASED~~ ON THE FIELD STAKING ON PARCELS 68 THRU 71, 77, 81, 81A, 83, & 84; ADJUSTED EX P/L STATIONS AND/OR OFFSETS BASED ON FIELD STAKING ON PARCELS 81 & 83. – CM

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-3440	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

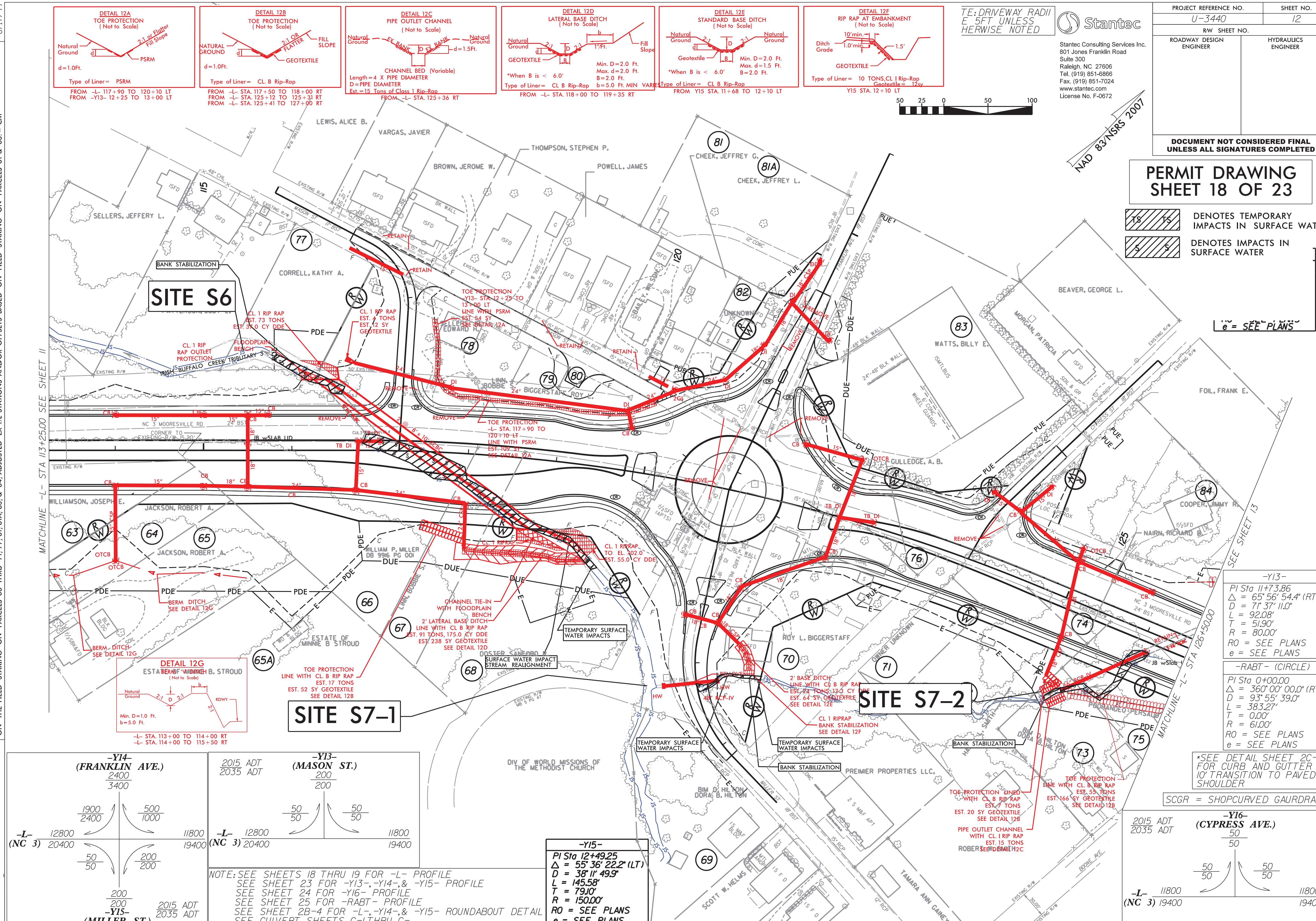
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PERMIT DRAWING SHEET 18 OF 23

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER



–Y13–	
PI Sta 11+73.86	
Δ = 65° 56' 54.4" (RT)	
D = 71° 37' 11.0"	
L = 92.08'	
T = 51.90'	
R = 80.00'	
RO = SEE PLANS	
e = SEE PLANS	

–RABT– (CIRCLE)
PI Sta 0+00.00
Δ = 360° 00' 00.0" (RT)
D = 93° 55' 39.0"
L = 383.27'
T = 0.00'
R = 61.00'
RO = SEE PLANS
e = SEE PLANS

–Y15–
PI Sta 12+49.25
Δ = 55° 36' 22.2" (LT)
D = 38° 11' 49.9"
L = 145.58'
T = 79.10'
R = 150.00'
RO = SEE PLANS
e = SEE PLANS

*SEE DETAIL SHEET 2C-2 FOR CURB AND GUTTER 10' TRANSITION TO PAVED SHOULDER

SCGR = SHOPCURVED GAURDRAIL

–Y14– (FRANKLIN AVE.) 2400 / 3400; 1900 / 2400; 500 / 1000; –L– (NC 3) 12800 / 20400; 11800 / 19400; 50 / 50; 200 / 200; 200 / 200 –Y15– (MILLER ST.); 2015 ADT / 2035 ADT

2015 ADT / 2035 ADT; –Y13– (MASON ST.) 200 / 200; 50 / 50; 50 / 50; –L– (NC 3) 12800 / 20400; 11800 / 19400

2015 ADT / 2035 ADT; –Y16– (CYPRESS AVE.) 50 / 50; 50 / 50; 50 / 50; –L– (NC 3) 11800 / 19400; 11800 / 19400

NOTE: SEE SHEETS 18 THRU 19 FOR –L– PROFILE
SEE SHEET 23 FOR –Y13–, –Y14–, & –Y15– PROFILE
SEE SHEET 24 FOR –Y16– PROFILE
SEE SHEET 25 FOR –RABT– PROFILE
SEE SHEET 2B-4 FOR –L–, –Y14–, & –Y15– ROUNDABOUT DETAIL
SEE CULVERT SHEETS C-1 THRU C-

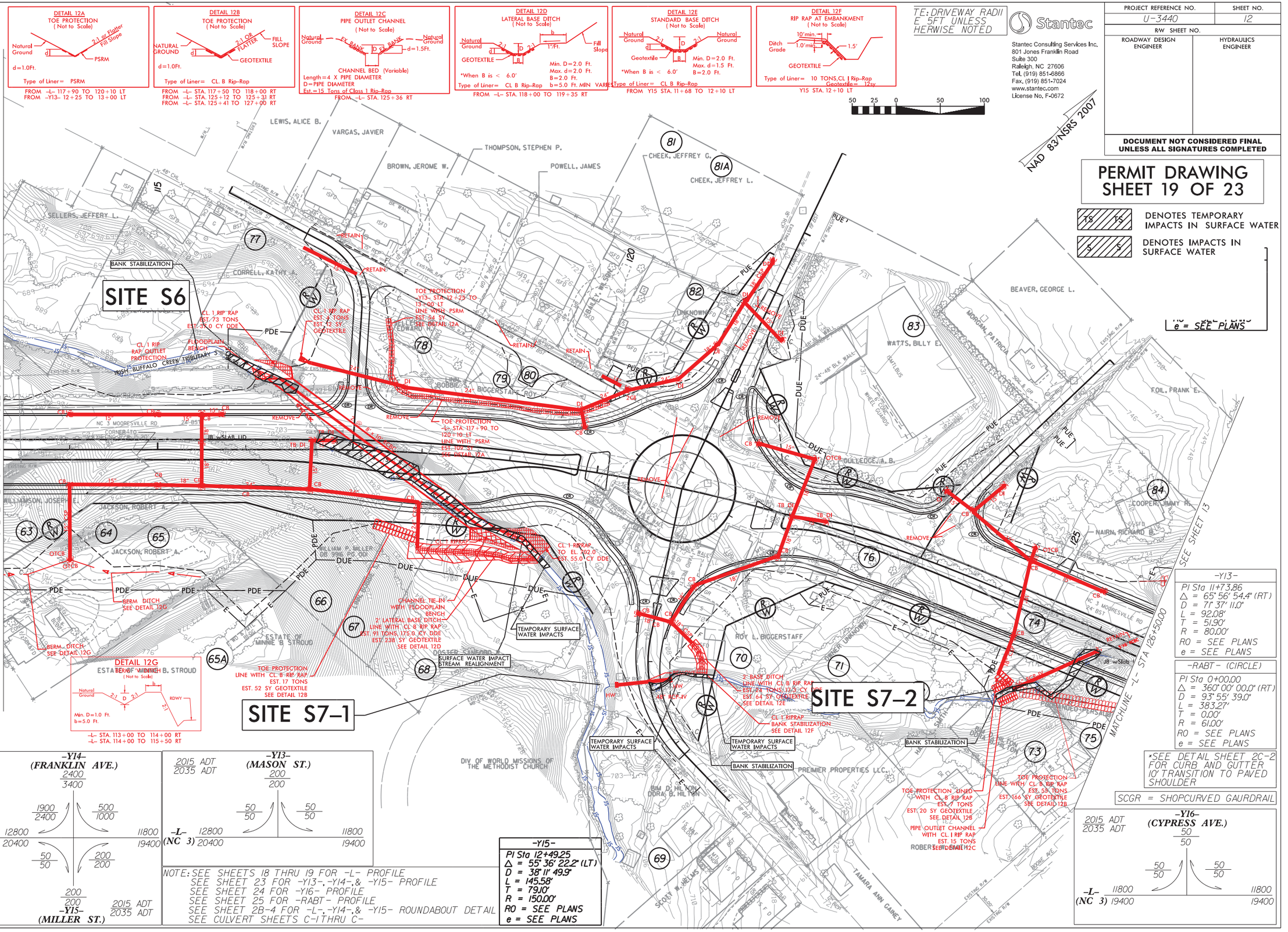
20150407
STANTEC
U3440_Permit Drawings_20150407.pdf

U-3440_rdy_psh12.dgn 5/13/2016 4:04:54 PM

8/17/99

REVISIONS

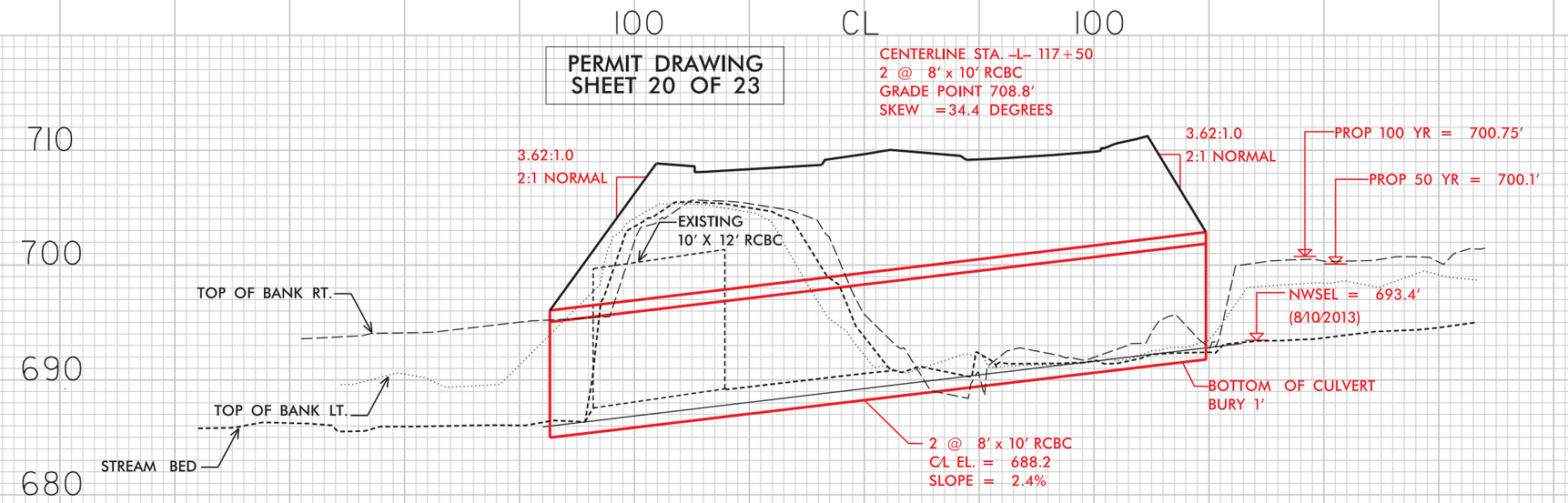
12/16/15 ROW REV: REVISED ROW AND PDE ON PARCEL 63; CHANGED PROPERTY OWNER NAME, DEED REFERENCE AND REVISED PDE ON PARCEL 64; REVISED PDE ON PARCEL 65A; AMENDED PROPERTY LINES AND DEED REFERENCE ON PARCEL 65 AND CREATED PARCEL 65A; REVISED PDE AND TCE ON PARCEL 65A; CREATED PARCEL 81A. – ML
01/14/16 ROW REV: REVISED ROW ON PARCEL 81; REVISED PUE AND ROW ON PARCELS 81, 81A & 82; REMOVED THE PARKING PAD ON PARCEL 82. – ML
3/22/16 ROW REV: ADDED PUE ON PARCEL 83; REVISED PUE ON PARCELS 81, 81A, 83, & 84; REMOVED DUE AND ADDED TCE ON PARCEL 84. –ML
5/10/16 ROW REV: CHANGED PDE TO DUE FROM –L– 116+80.00 THRU 120+07.01 ON PARCEL 66 THRU 68; REVISED TCE ON PARCEL 66 THRU 68; ADJUSTED EX R/W STATIONS AND/OR OFFSETS BASED ON THE FIELD STAKING ON PARCELS 68 THRU 71, 77, 81, 81A, 83, & 84; ADJUSTED EX PI STATIONS AND/OR OFFSETS BASED ON FIELD STAKING ON PARCELS 81 & 83. – CM



20150407
STANTEC
U3440_Permit Drawings_20150407.pdf

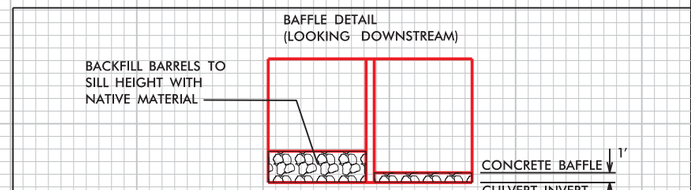
U-3440_rdy_psh12.dgn 5/13/2016 4:03:55 PM

PERMIT DRAWING
SHEET 20 OF 23

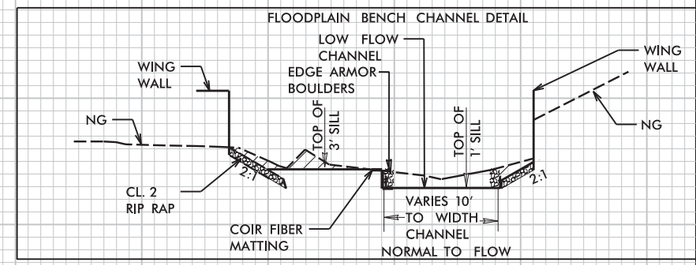


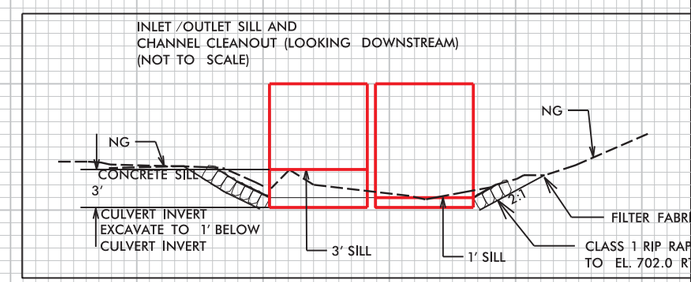
NCDOT PERFORMANCE TABLE					
	FREQUENCY				
	10yr.	25yr.	50yr.	100yr.	500yr.
NATURAL	697.8	698.9	699.6	699.87	700.4
EXISTING	697.8	699.2	699.6	700.28	702.2
PROPOSED	697.6	699.4	700.1	700.75	702.2
@SECTION 3757;CE 3770 204 FT. US FROM C/L OF REVISED CULVERT					

FEMA PERFORMANCE TAB	
	100y
DUPLICATE EFFECTIVE	NA
CORRECTED EFFECTIVE	700.0
REVISED	700.4
@SECTION 3757; CE 377 204 FT.US FROM C/L OF REV. C	



NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

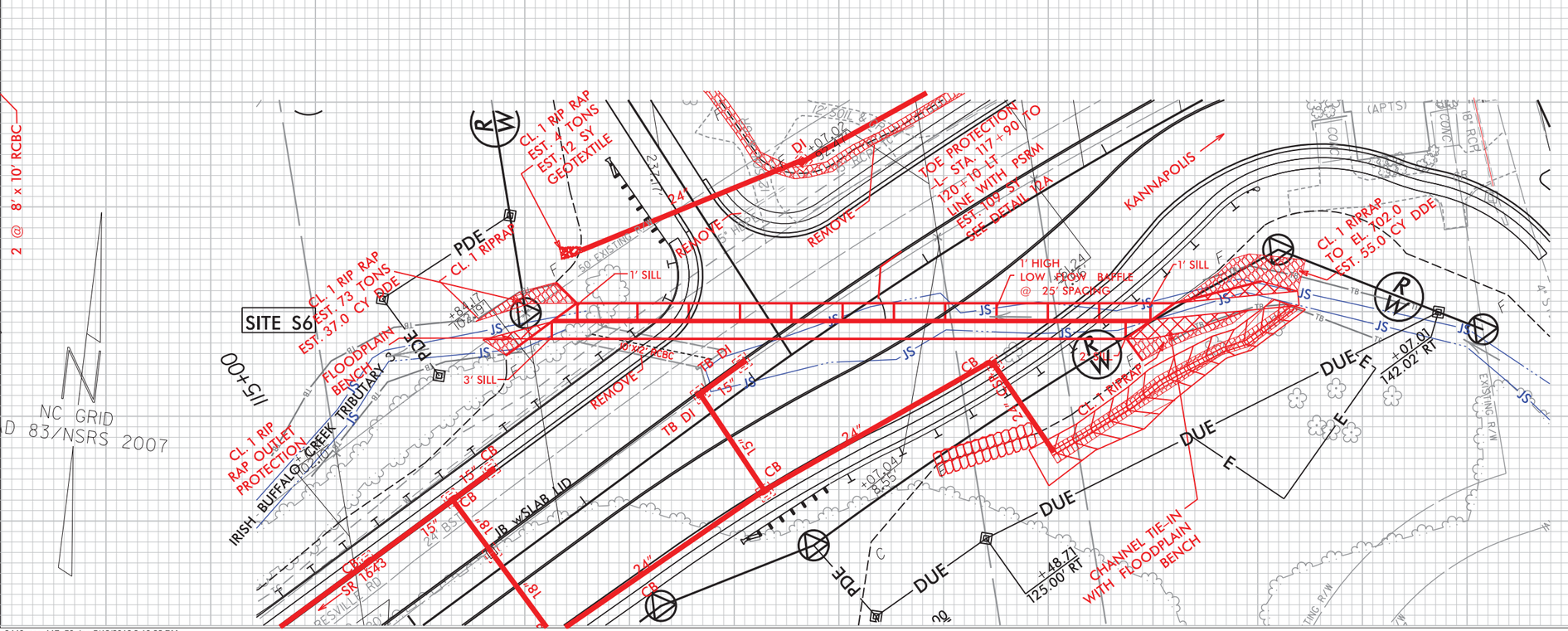




NOTES:
1. THE EDGE OF THE LOW FLOW CHANNEL SHALL BE ARMORED WITH BOULDERS. THE DEPTH OF ARMOR PROTECTION SHOULD EXTEND 1.5' BELOW THE STREAM BED LINED WITH COIR FIBER MATTING.

2. EDGE ARMOR CAN BE NATURAL STREAM BOULDERS OR EXTRACTED FROM CLASS I RIP RAP OR SHOT ROCK MATERIAL AND CAN BE CUBICAL OR RECTANGULAR IN NATURE.

3. ACCEPTABLE BOULDERS FOR THE EDGE ARMOR SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS; 3'X2'X1'. UNSUITABLE EDGE ARMOR MATERIAL THAT REMAINS FROM CLASS I RIP RAP OR SHOT ROCK STORES, MAY BE USED IN BACK FILL OF THE OVER BANK AREA OR DISCARDED.



8/17/99

REVISIONS

12/16/15 ROW REV: COMBINED PARCELS 92 & 106 INTO PARCEL 92 AND ELIMINATED PARCEL NO. 106.- ML
12/6/16 ROW REV: REMOVED DUE, ADDED PDE, AND REVISED TCE ON PARCELS 84 & 85; CHANGED DUE TO PDE FROM -L- 133+90 THRU 134+66 ON PARCELS 89 & 90; REVISED DUE AND PDE ON PARCEL 90; REMOVED DUE AND ADDED PDE ON PARCELS 92, 93, 104, 105, & 107; ADDED PUE ON PARCEL 95; REMOVED PDE ON PARCEL 91 & 92; REVISED TCE ON PARCEL 92; REVISED PUE ON PARCELS 92, 93, 104, 105, & 107; ADDED PUE ON PARCEL 95; REMOVED PDE ON PARCEL 90; REVISED DUE
3/21/16 ROW REV: AMENDED PROPERTY LINES AND CREATED PARCELS 105A & 105B - KH
5/10/16 ROW REV: ELIMINATED PUE ON PARCEL 86; ADJUSTED -EX RW- STATIONS AND/OR OFFSETS BASED ON THE FIELD STAKING ON PARCELS 87, 90, 92, 94, 95, 99, 100, 105B, & 107.- CM

20150407
STANTEC
U3440_Permit Drawings_20150407.pdf

PERMIT DRAWING SHEET 21 OF 23

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

50 25 0 50 100

NOTE: SEE SHEET 19 FOR -L- PROFILE
SEE SHEET 24 FOR -Y17- PROFILE
SEE WALL PLAN SHEET W-?

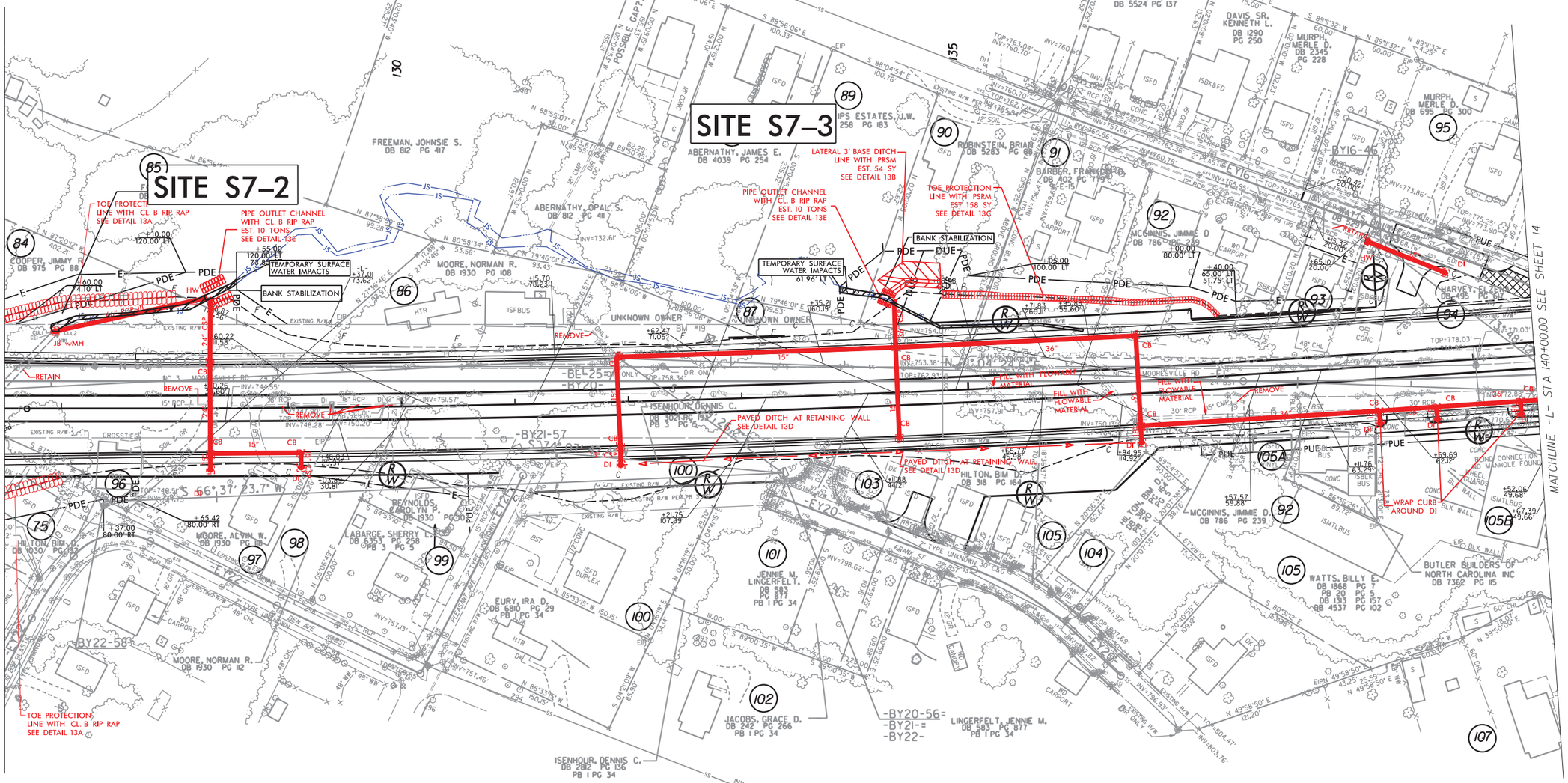
PROJECT REFERENCE NO.	SHEET NO.
U-3440	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

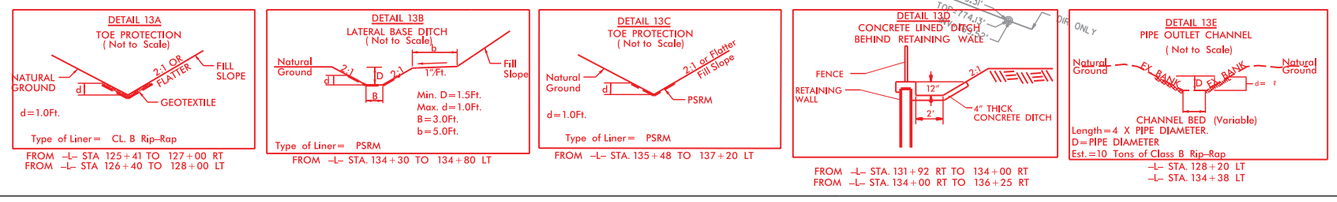
Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-
PI Sta 133+14.77
Δ = 3° 55' 58.4" (LT)
D = 0° 21' 29.2"
L = 1,098.27'
T = 549.35'
R = 16,000.00'
e = NC (.02)

NAD 83/NSRS 2007





PERMIT DRAWING
SHEET 22 OF 23

PROJECT REFERENCE NO.	SHEET NO.
U-3440	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec

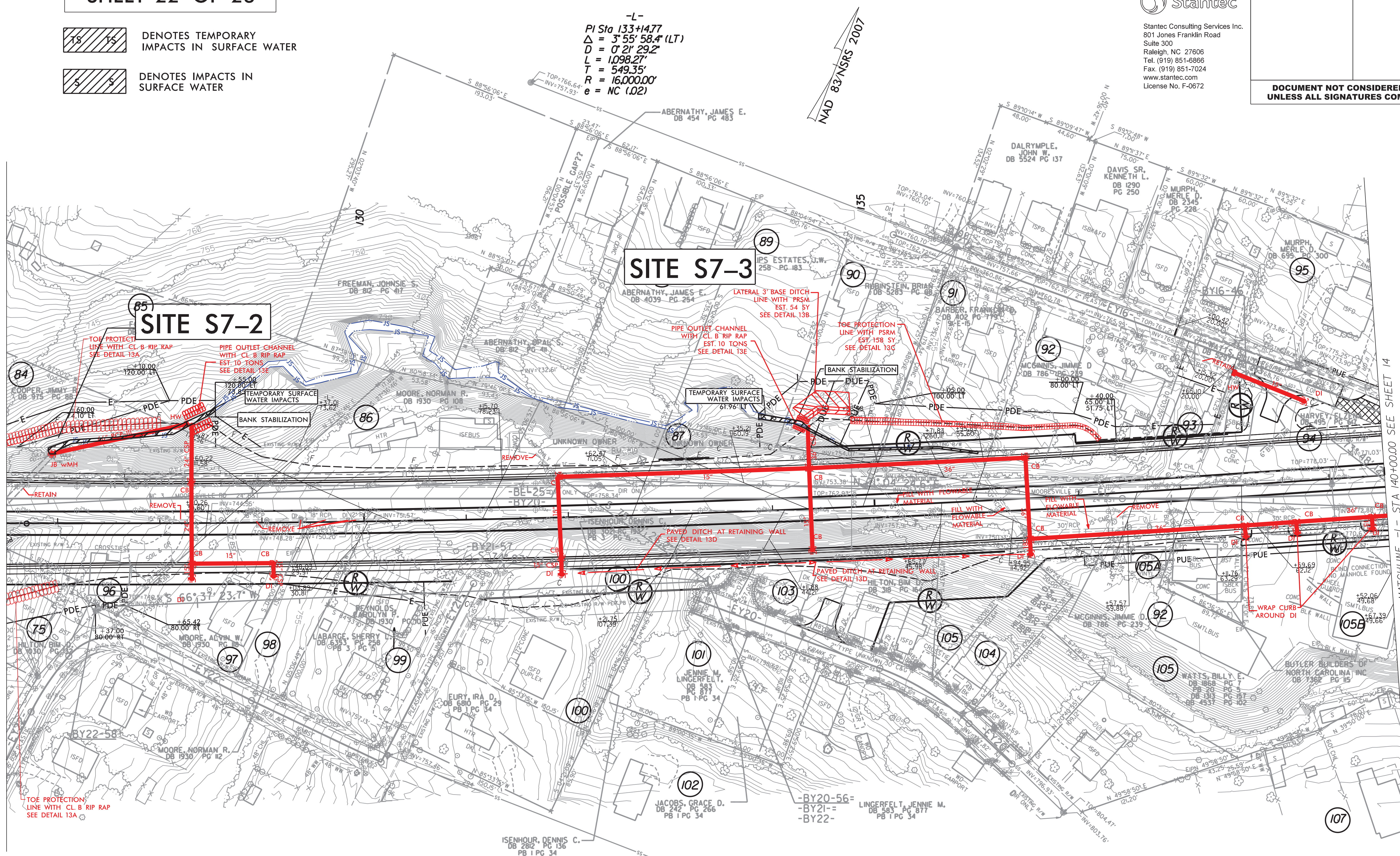
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

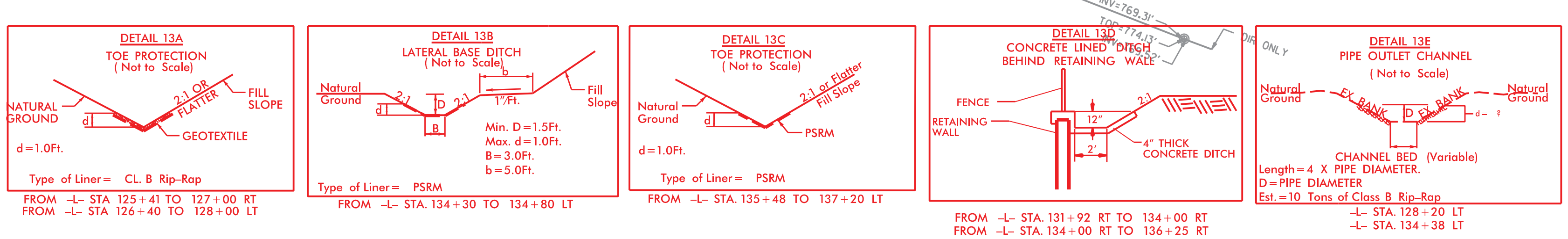
NOTE: SEE SHEET 19 FOR -L- PROFILE
SEE SHEET 24 FOR -Y17- PROFILE
SEE WALL PLAN SHEET W-?

TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S — DENOTES IMPACTS IN SURFACE WATER

-L-
PI Sta 133+14.77
Δ = 3° 55' 58.4" (LT)
D = 0° 21' 29.2"
L = 1,098.27'
T = 549.35'
R = 16,000.00'
e = NC (.02)


NAD 83/NSRS 2007
SITE S7-2
SITE S7-3
TOE PROTECTION LINE WITH CL B RIP RAP SEE DETAIL 13A
PIPE OUTLET CHANNEL WITH CL B RIP RAP EST. 10 TONS SEE DETAIL 13E
TEMPORARY SURFACE WATER IMPACTS
BANK STABILIZATION
LATERAL 3' BASE DITCH LINE WITH PRSM EST. 54 SY SEE DETAIL 13B
PIPE OUTLET CHANNEL WITH CL B RIP RAP EST. 10 TONS SEE DETAIL 13E
TOE PROTECTION LINE WITH PSRM EST. 158 SY SEE DETAIL 13C
PAVED DITCH AT RETAINING WALL SEE DETAIL 13D
FILL WITH FLOWABLE MATERIAL
WRAP CURB AROUND DI
MATCHLINE -L- STA 126+50.00 SEE SHEET 12
MATCHLINE -L- STA 140+00.00 SEE SHEET 14
ABERNATHY, JAMES E. DB 454 PG 483
FREEMAN, JOHNSIE S. DB 812 PG 417
ABERNATHY, OPAL S. DB 812 PG 411
MOORE, NORMAN R. DB 1930 PG 108
COOPER, JIMMY R. DB 975 PG 88
ABERNATHY, JAMES E. DB 4039 PG 254
PHILLIPS ESTATES, U.W. 258 PG 183
ROBINSTEIN, BRIAN DB 5283 PG 88
BARBER, FRANK DB 402 PG 1195
MCGINNIS, JIMMIE D DB 786 PG 239
DALRYMPLE, JOHN W. DB 5524 PG 137
DAVIS SR. KENNETH L. DB 1290 PG 250
MURPH, MERLE D. DB 2345 PG 228
MURPH, MERLE D. DB 695 PG 300
UNKNOWN OWNER
ISENHOUR, DENNIS C.
MOORE, ALVIN W. DB 1930 PG 88
REYNOLDS, CAROLYN P. DB 1930
LABARGE, SHERRY
MOORE, NORMAN R. DB 1930 PG 82
EURY, IRA D. DB 6810 PG 29 PB 1 PG 34
JENNIE M. LINGERFELT, PB 1 PG 34
JACOBS, GRACE D. DB 242 PG 266 PB 1 PG 34
LINGERFELT, JENNIE M. DB 583 PG 877 PB 1 PG 34
ISENHOUR, DENNIS C. DB 2812 PG 136 PB 1 PG 34
MCGINNIS, JIMMIE D. DB 786 PG 239
WATTS, BILLY E. DB 1868 PG 7 PB 20 PG 9 DB 1313 PG 187 DB 4537 PG 102
BUTLER BUILDERS OF NORTH CAROLINA INC DB 7362 PG 115
HARVEY, ELZER
-BL25-
-BY20-
-BY21-
-BY22-
-BY20-56-
-BY21-
-BY22-
84
85
86
87
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
105A
105B
107
75


DETAIL 13A
TOE PROTECTION
(Not to Scale)
NATURAL GROUND
2:1 OR FLATTER
FILL SLOPE
GEOTEXTILE
d=1.0Ft.
Type of Liner= CL. B Rip-Rap
FROM -L- STA 125+41 TO 127+00 RT
FROM -L- STA 126+40 TO 128+00 LT
DETAIL 13B
LATERAL BASE DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D=1.5Ft.
Max. d=1.0Ft.
B=3.0Ft.
b=5.0Ft.
Type of Liner= PSRM
FROM -L- STA. 134+30 TO 134+80 LT
DETAIL 13C
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 or Flatter Fill Slope
PSRM
d=1.0Ft.
Type of Liner= PSRM
FROM -L- STA. 135+48 TO 137+20 LT
DETAIL 13D
CONCRETE LINED DITCH
BEHIND RETAINING WALL
FENCE
RETAINING WALL
4" THICK CONCRETE DITCH
FROM -L- STA. 131+92 RT TO 134+00 RT
FROM -L- STA. 134+00 RT TO 136+25 RT
DETAIL 13E
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
CHANNEL BED (Variable)
Length=4 X PIPE DIAMETER.
D=PIPE DIAMETER
Est.=10 Tons of Class B Rip-Rap
-L- STA. 128+20 LT
-L- STA. 134+38 LT

REVISIONS

12/16/15 ROW REV: COMBINED PARCELS 92 & 106 INTO PARCEL 92 AND ELIMINATED PARCEL NO. 106. – ML
1/26/16 ROW REV: REMOVED DUE, ADDED PDE, AND REVISED TCE ON PARCELS 84 & 85; CHANGED DUE TO PDE FROM -L- 133+90 THRU 134+66 ON PARCELS 89 & 90; REVISED DUE AND PDE ON PARCEL 90; REMOVED DUE AND ADDED PDE ON PARCELS 91 & 92; REVISED TCE ON PARCEL 92; REVISED PUE ON PARCELS 92, 93, 104, 105, & 107; ADDED PUE ON PARCEL 95; REMOVED PUE ON PARCELS 100, 101, & 102 – ML
3/21/16 ROW REV: AMENDED PROPERTY LINES AND CREATED PARCELS 105A & 105B. – KH
5/10/16 ROW REV: ELIMINATED PUE ON PARCEL 86; ADJUSTED EX R/W STATIONS AND/OR OFFSETS BASED ON THE FIELD STAKING ON PARCELS 87, 90, 92, 94, 95, 99, 100, 105B, & 107. – CM

8/17/99

20150407
STANTEC
U3440_Permit Drawings_20150407.pdf

U-3440_rdy_psh13.dgn 5/13/2016 3:56:20 PM

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS						SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill in Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Temp 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)
S1	L 37+00 TO 40+15 LT	ROAD FILL							0.02		300		
MB	L 40+61	10' X 9' RCBC							0.03	< 0.01	214	51	
IBC	L 68+25	BRIDGE								0.01		96	
IBC	L 68+55 LT	BANK STABILIZATION							< 0.01	0.02	13	47	
IBC	L 67+61 RT	BANK STABILIZATION							< 0.01	< 0.01	24	16	
WA	L 70+30 TO 72+56 LT	ROAD FILL	0.05										
S2	L68+50 TO 69+93 LT	ROAD FILL							< 0.01		142		
S2	L72+70 TO 73+16 LT	ROAD FILL							0.02	< 0.01	109	22	
S3	L 86+12	42" WELDED STEEL							< 0.01		126	0	
S3	L 86+12 LT	BANK STABILIZATION							< 0.01	< 0.01	54	9	
S4	L 97+30	66" WELDED STEEL							0.01		181		
S4	L 96+43 LT	BANK STABILIZATION							< 0.01	< 0.01	47	18	
S4	L 97+92 RT	BANK STABILIZATION							< 0.01	< 0.01	12	9	
S5	L 109+75	36" WELDED STEEL							0.01		105		
S5	L 110+07 LT	BANK STABILIZATION							< 0.01	< 0.01	12	12	
S5	L 109+46 RT	BANK STABILIZATION							< 0.01	< 0.01	12	6	
S6	L 117+50	2-8' X 10' RCBC							0.08		246		
S6	L115+79 LT	BANK STABILIZATION							< 0.01	< 0.01	15	17	
S6	L119+23 RT	STREAM REALIGNMENT							0.01	< 0.01	72	10	
S7-1	Y15 12+25	48" RCP							< 0.01	< 0.01	24	31	
S7-1	Y15 12+25	BANK STABILIZATION							< 0.01	< 0.01	12	8	
S7-2	L 126+30	66" RCP							0.03		265		
S7-2	L 125+15 RT	BANK STABILIZATION							< 0.01		20		
S7-2	L 128+55 LT	BANK STABILIZATION							< 0.01	< 0.01	22	10	
S7-3	L 134+38	ROAD FILL							< 0.01		170		
S7-3	L 134+38	BANK STABILIZATION							< 0.01	< 0.01	12	36	
TOTALS*:			0.05						0.26	0.06	2209	399	

*Rounded totals are sum of actual impacts

NOTES:

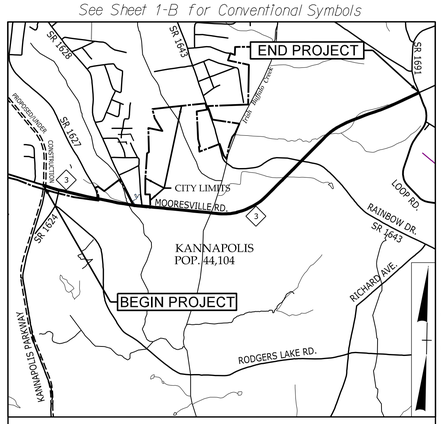
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
U-3440 05/13/2016
CABARRUS COUNTY
WBS - 39010.1.1 (U-3440)

09/08/09

TIP PROJECT: U-3440

CONTRACT: C203803

See Sheet 1-B for Conventional Symbols



VICINITY MAP

PLFI PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CABARRUS COUNTY

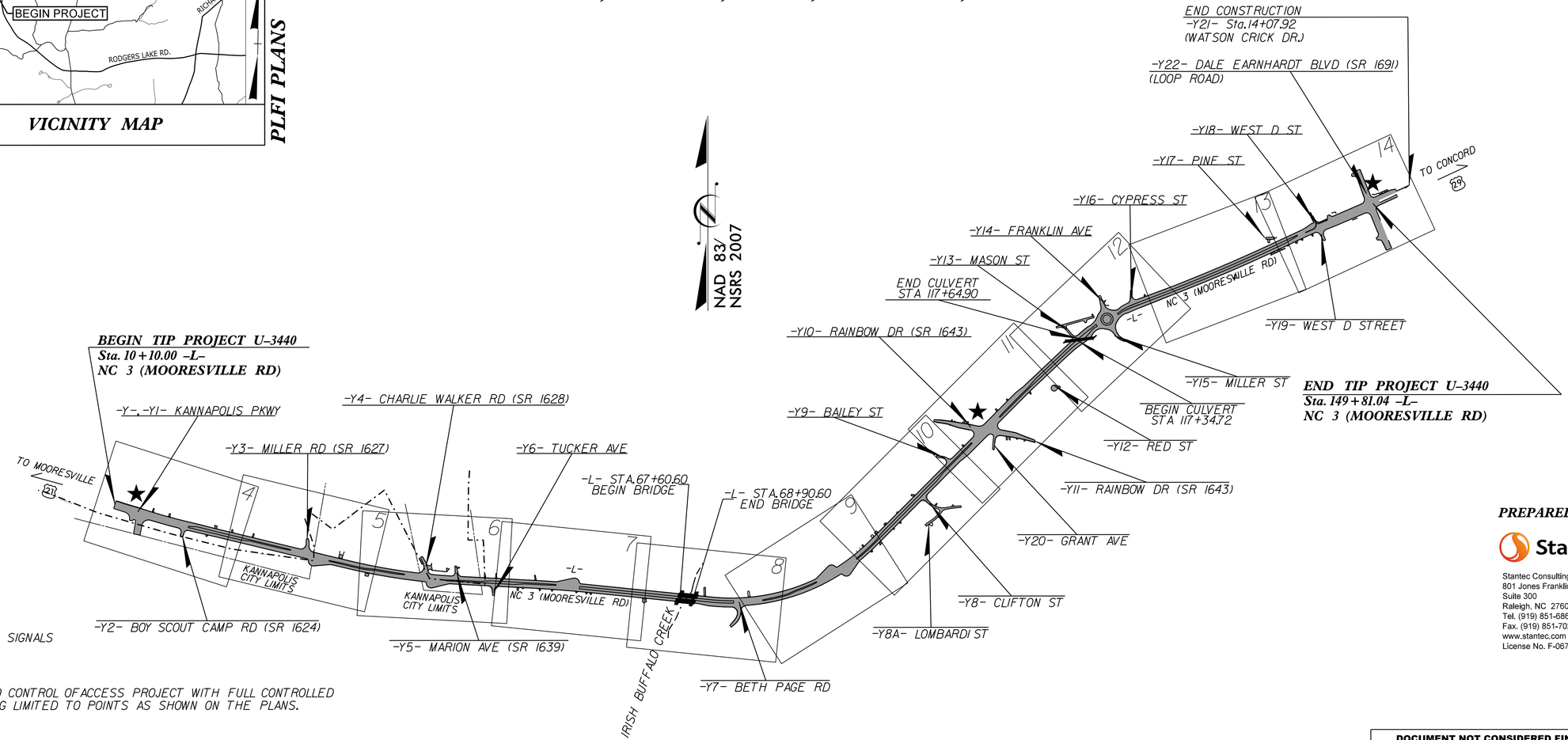
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3440	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
39010.1.1	STP-0003(6)	PE
39010.2.2		R /W
39010.2.RU1		UTIL
39010.3.2		CONSTR.

LOCATION: NC 3, FROM PROPOSED WEST SIDE BYPASS (U-2009) TO SR 1691 (LOOP ROAD) IN KANNAPOLIS

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

NAD 83/
NSRS 2007



★ REVISED SIGNALS

THIS IS A NO CONTROL OF ACCESS PROJECT WITH FULL CONTROLLED ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

SEE SHEET 1-A FOR INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS.
SEE SHEETS 1-C1 THROUGH 1-C7 FOR CONTROL SURVEY SHEETS NOTES.

PREPARED BY:

Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

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 2016	=	17,155
ADT 2036	=	23,900
K	=	12 %
D	=	60 %
T	=	9 % *
V	=	50 MPH
HIST. AREA V	=	40 MPH

*(TTST 7% + DUALS 2%)

FUNC CLASS = MINOR ARTERIAL

REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3440	=	2.621 MILES
LENGTH STRUCTURE TIP PROJECT U-3440	=	0.025 MILE
TOTAL LENGTH TIP PROJECT U-3440	=	2.646 MILES

Prepared in the Office of Stantec:

FOR DIVISION OF HIGHWAYS

801 Jones Franklin Rd., Suite 300, Raleigh NC, 27606

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MAY 29, 2015

LETTING DATE: OCTOBER 18, 2016

MICHAEL LINDGREN, P.E.
PROJECT ENGINEER

MICHAEL LITTLEFIELD, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACT: REKHA PATEL, PE
ROADWAY DESIGN ENGINEERING COORDINATION SECTION ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

4/15/2016
U:\Roadway\Proj\U-3440_Rdy_tsh.dgn
tujarvis

04/06/15

PROJECT REFERENCE NO.	SHEET NO.
U-3440	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.

NOTE: SEE SHEET 19 FOR -L- PROFILE
SEE SHEET 24 FOR -Y17-, -Y18- & -Y19- PROFILE
SEE SHEET 25 FOR -Y21-, -Y22- & -DR2- PROFILE
SEE SHEET 2B-2 FOR -L-, -Y18-, -Y19-, -Y21- & -DR2- INTERSECTION DETAIL
SEE WALL PLAN SHEET W-?

★ REVISED SIGNAL

NOTE: CHAIN LINK FENCE TO BE BLACK COATED

-L-
PI Sta 142+98.62
Δ = 1° 30′ 00.0″ (RT)
D = 1° 00′ 00.0″
L = 150.00′
T = 75.00′
R = 5,729.58′
e = NC (.02)

-Y19-
PI Sta 11+24.06
Δ = 2° 09′ 44.8″ (LT)
D = 28° 38′ 52.4″
L = 7.55′
T = 3.77′
R = 200.00′
RO = SEE PLANS
e = SEE PLANS

STAGGERED CROSSWALK DETAIL

ALL RADII = 3.0′

ALL MATERIALS TO BE APPROVED BY THE ENGINEER

END TIP PROJECT U-3440
-L- STA. 149+81.04

PROJECT REFERENCE NO.	SHEET NO.
U-3440	14

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

8/17/99

6/13/2016
U:\Roadway\Proj\U-3440_rdy_psh14.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-3440	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTE: SEE SHEET 19 FOR -L- PROFILE
SEE SHEET 24 FOR -Y17- PROFILE
SEE WALL PLAN SHEET W-?

NOTE: CHAIN LINK FENCE TO BE BLACK COATED

Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

-L-
PI Sta 133+14.77
△ = 3° 55' 58.4" (LT)
D = 0° 21' 29.2"
L = 1,098.27'
T = 549.35'
R = 16,000.00'
e = NC (.02)

-Y17- PC Sta. 11+72.03=
-L- Sta.139+61.38 (80.60' LT)
-Y17- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y17- STA.10+86.19

NAD 83/NSRS 2007

HISTORICAL BOUNDARY (APPROX.)

POSSIBLE GAP??

ABERNATHY, JAMES E. DB 454 PG 483

DALRYMPLE, JOHN W. DB 5524 PG 137

DAVIS SR. KENNETH L. DB 1290 PG 250

MURPH, MERLE D. DB 2345 PG 228

MURPH, MERLE D. DB 695 PG 300

WATTS, BILLY E. DB 5297 PG 265 RETAIN

HARVEY, ELZENA DB 495 PG 617

FREEMAN, JOHNSIE S. DB 812 PG 417

ABERNATHY, JAMES E. DB 4039 PG 254

ABERNATHY, OPAL S. DB 812 PG 411

PHILLIPS ESTATES, J.W. DB 258 PG 183

RUBINSTEIN, BRIAN DB 5283 PG 68

BARBER, FRANKLIN D. DB 402 PG 779 91-E-15

MCGINNIS, JIMMIE DB 786 PG 239

FOIL, FRANK E. DB 549 PG 544
TOE PROTECTION LINE WITH CL B RIP RAP SEE DETAIL 13A

COOPER, JIMMY R. DB 975 PG 88

PIPE OUTLET CHANNEL WITH CL B RIP RAP EST. 10 TONS EST. 42 SY GEOTEXTILE SEE DETAIL 13E

MOORE, NORMAN R. DB 1930 PG 108

LATERAL 3' BASE DITCH LINE WITH PRSM EST. 54 SY SEE DETAIL 13B

PIPE OUTLET CHANNEL WITH CL B RIP RAP EST. 10 TONS EST. 42 SY GEOTEXTILE SEE DETAIL 13E

TOE PROTECTION LINE WITH PRSM EST. 158 SY SEE DETAIL 13C

BEGIN RET.WALL 5 & CL FENCE -L- STA.132+90.00 53.75 LT

END RET.WALL 5 & CL FENCE -L- STA.133+40.00 53.75 LT

BEGIN RET.WALL 2 & CL FENCE STA.137+09.00 50.75 LT

END RET.WALL 2 & CL FENCE STA.138+50.00 50.75 LT

BEGIN RET.WALL 3 & CL FENCE -L- STA.136+00.00 50.75' RT

END RET.WALL 3 & CL FENCE -L- STA.136+25.00 50.75' RT

BEGIN RET.WALL 1 & CL FENCE -L- STA.132+00.00 50.75' RT

END RET.WALL 1 & CL FENCE -L- STA.132+40.00 50.75' RT

UNKNOWN OWNER

ISENHOUR, DENNIS C. DB 3021 PG 193 PB 3 PG 5

PAVED DITCH AT RETAINING WALL SEE DETAIL 13D

HILTON, BIM D. DB 318 PG 164

HILTON, BIM D. DB 1030 PG 132

REYNOLDS, CAROLYN P. DB 1930 PG 110

LABARGE, SHERRY DB 6353 PG 258 PB 3 PG 5

MOORE, ALVIN W. DB 1930 PG 118

MOORE, NORMAN R. DB 1930 PG 112

EURY, IRA D. DB 6810 PG 29 PB 1 PG 34

ISENHOUR, DENNIS C. DB 2812 PG 136 PB 1 PG 34

JENNIE M. LINGERFELT, DB 583 PG 877 PB 1 PG 34

JACOBS, GRACE D. DB 242 PG 266 PB 1 PG 34

LINGERFELT, JENNIE M. DB 583 PG 877 PB 1 PG 34

BUTLER BUILDERS OF NORTH CAROLINA INC DB 7362 PG 115

WATTS, BILLY E. DB 1313 PG 157 DB 1017 PG 304

WATTS, BILLY E. DB 1868 PG 7 PB 20 PG 5

MCGINNIS, JIMMIE D. +65.00 DB 786 PG 239 60.00' RT

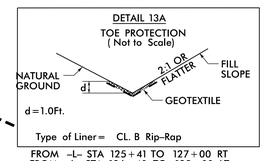
-L- PT Sta.138+63.69
BRG N 65° 06' 08.9" E

-L- PC Sta. 127+65.42

TOE PROTECTION LINE WITH CL B RIP RAP EST. 55 TONS EST. 167 SY GEOTEXTILE SEE DETAIL 13A

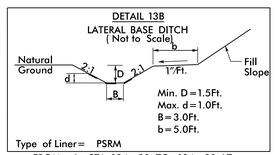
MATCHLINE -L- STA 126+50.00 SEE SHEET 12

MATCHLINE -L- STA 140+00.00 SEE SHEET 14



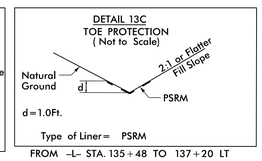
Type of Liner = CL. B Rip-Rap

FROM -L- STA 125+41 TO 127+00 RT
FROM -L- STA 126+40 TO 128+00 LT



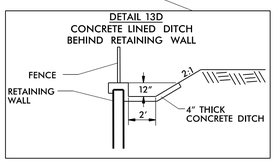
Type of Liner = PSRM

FROM -L- STA. 134+30 TO 134+80 LT

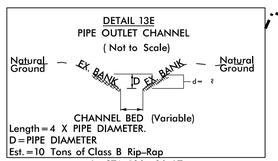


Type of Liner = PSRM

FROM -L- STA. 135+48 TO 137+20 LT



FROM -L- STA. 131+92 RT TO 134+00 RT
FROM -L- STA 134+00 RT TO 136+25 RT

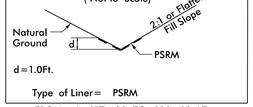


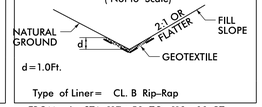
-L- STA. 128+20 LT
-L- STA. 134+38 LT

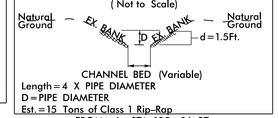
REVISIONS

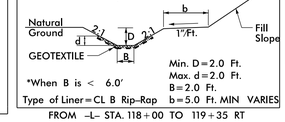
8/17/99

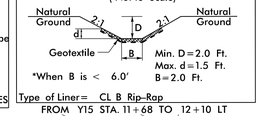
6/13/2016
U:\Roadway\Proj\U-3440_rdy_psh13.dgn
smpatton

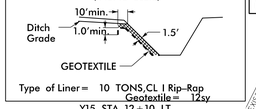












PROJECT REFERENCE NO.	SHEET NO.
U-3440	12

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

NOTE: DRIVEWAY RADII ARE 5FT UNLESS OTHERWISE NOTED

-L-
PI Sta 120+71.54
△ = 22° 22' 58.0" (RT)
D = 2° 51' 53.2"
L = 781.31'
T = 395.70'
R = 2,000.00'
RO = 104'
e = .025

-Y16-
PI Sta 12+61.36
△ = 16° 52' 51.3" (LT)
D = 38° 11' 49.9"
L = 44.19'
T = 22.26'
R = 150.00'
RO = SEE PLANS
e = SEE PLANS

-Y13-
PI Sta 11+73.86
△ = 65° 56' 54.4" (RT)
D = 71° 37' 11.0"
L = 92.08'
T = 51.90'
R = 80.00'
RO = SEE PLANS
e = SEE PLANS

-RABT- (CIRCLE)
PI Sta 0+00.00
△ = 360° 00' 00.0" (RT)
D = 93° 55' 39.0"
L = 383.27'
T = 0.00'
R = 61.00'
RO = SEE PLANS
e = SEE PLANS

-Y15-
PI Sta 12+49.25
△ = 55° 36' 22.2" (LT)
D = 38° 11' 49.9"
L = 145.58'
T = 79.10'
R = 150.00'
RO = SEE PLANS
e = SEE PLANS

*SEE DETAIL SHEET 2C-2 FOR CURB AND GUTTER 10' TRANSITION TO PAVED SHOULDER

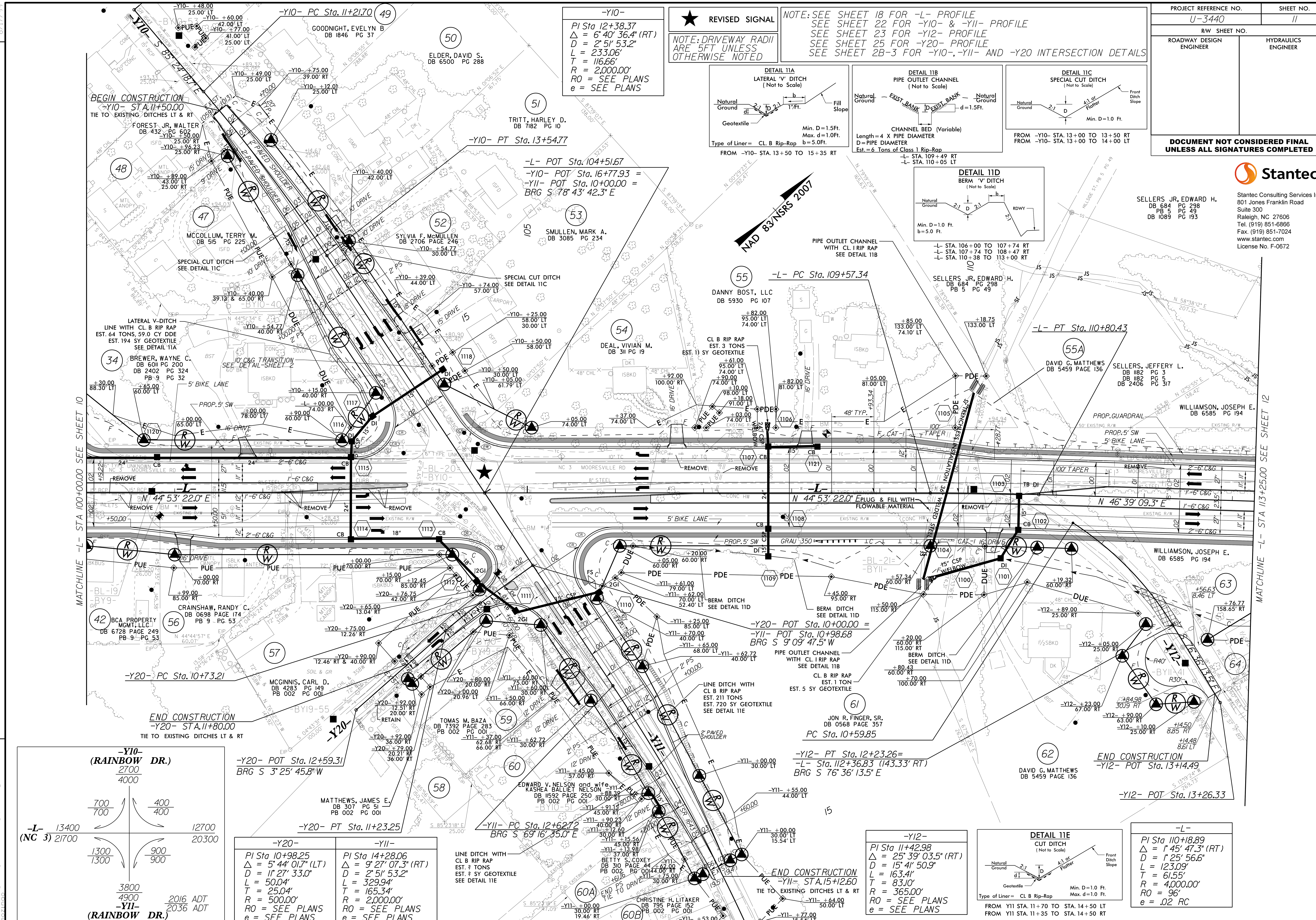
SCGR = SHOPCURVED GAURDRAIL

NOTE: SEE SHEETS 18 THRU 19 FOR -L- PROFILE
SEE SHEET 23 FOR -Y13-, -Y14-, & -Y15- PROFILE
SEE SHEET 24 FOR -Y16- PROFILE
SEE SHEET 25 FOR -RABT- PROFILE
SEE SHEET 2B-4 FOR -L-, -Y14-, & -Y15- ROUNDABOUT DETAIL
SEE CULVERT SHEETS C-1 THRU C-

REVISIONS

8/17/99

6/13/2016
U:\Roadway\Proj\U-3440_rdy_psh12.dgn

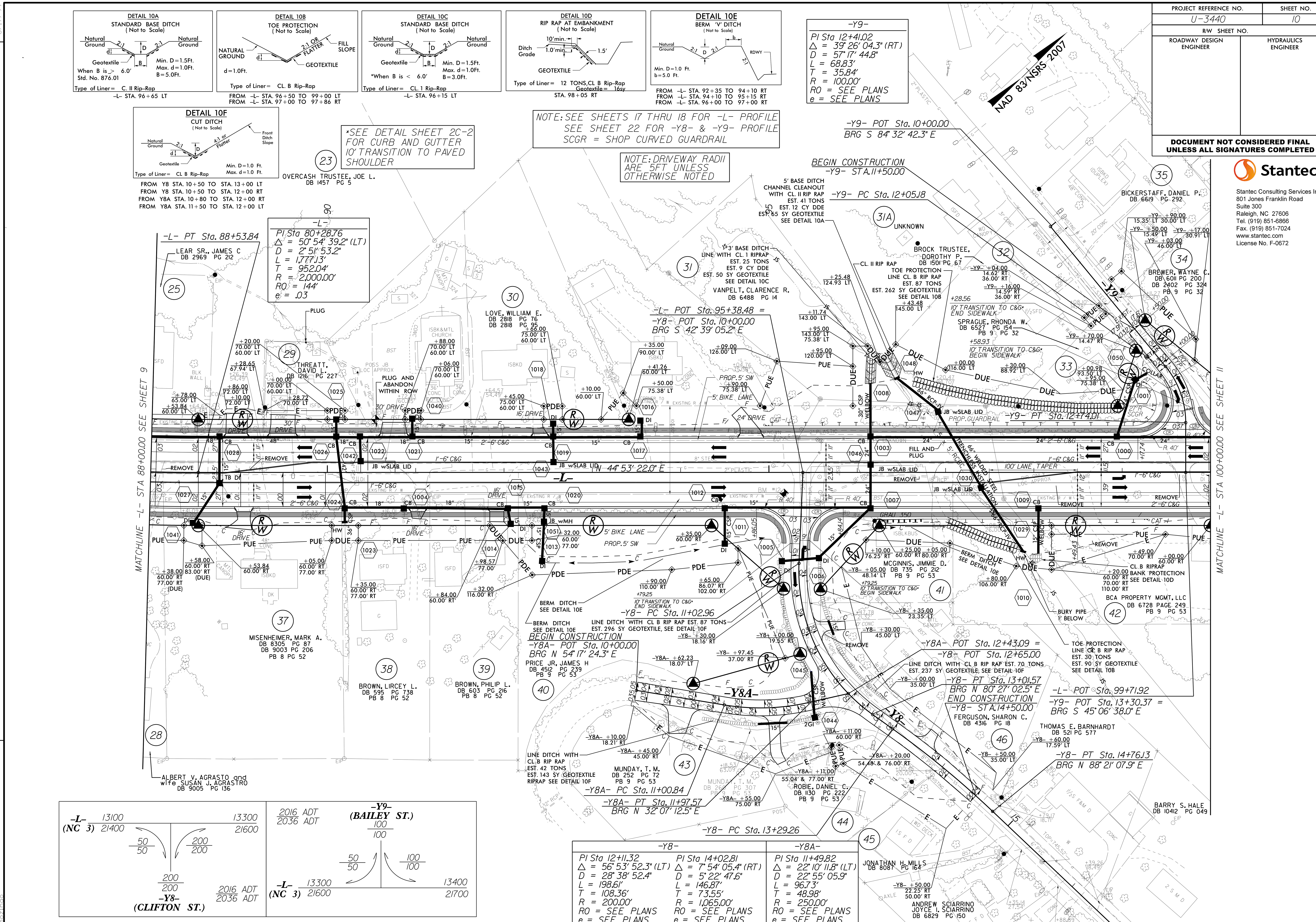

PROJECT REFERENCE NO. U-3440
SHEET NO. 11
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672
REVISED SIGNAL
NOTE: SEE SHEET 18 FOR -L- PROFILE
SEE SHEET 22 FOR -Y10- & -Y11- PROFILE
SEE SHEET 23 FOR -Y12- PROFILE
SEE SHEET 25 FOR -Y20- PROFILE
SEE SHEET 2B-3 FOR -Y10-, -Y11- AND -Y20 INTERSECTION DETAILS
NOTE: DRIVEWAY RADII ARE 5FT UNLESS OTHERWISE NOTED
-Y10-
PI Sta 12+38.37
△ = 6° 40' 36.4" (RT)
D = 2° 51' 53.2"
L = 233.06'
T = 116.66'
R = 2,000.00'
RO = SEE PLANS
e = SEE PLANS
DETAIL 11A
LATERAL 'V' DITCH
(Not to Scale)
Type of Liner= CL. B Rip-Rap
Min. D=1.5Ft. Max. d=1.0Ft. b=5.0Ft.
FROM -Y10- STA. 13+50 TO 15+35 RT
DETAIL 11B
PIPE OUTLET CHANNEL
(Not to Scale)
CHANNEL BED (Variable)
Length=4 X PIPE DIAMETER
D=PIPE DIAMETER
Est.=6 Tons of Class 1 Rip-Rap
-L- STA. 109+49 RT
-L- STA. 110+05 LT
DETAIL 11C
SPECIAL CUT DITCH
(Not to Scale)
Min. D=1.0 Ft.
FROM -Y10- STA. 13+00 TO 13+50 RT
FROM -Y10- STA. 13+00 TO 14+00 LT
DETAIL 11D
BERM 'V' DITCH
(Not to Scale)
Min. D=1.0 Ft.
b=5.0 Ft.
-L- STA. 106+00 TO 107+74 RT
-L- STA. 107+74 TO 108+47 RT
-L- STA. 110+38 TO 113+00 RT
NAD 83/NSRS 2007
-Y10- PC Sta. 11+21.70
-Y10- PT Sta. 13+54.77
BEGIN CONSTRUCTION
-Y10- STA. 11+50.00
TIE TO EXISTING DITCHES LT & RT
-L- POT Sta. 104+51.67
-Y10- POT Sta. 16+77.93 =
-Y11- POT Sta. 10+00.00 =
BRG S 78° 43' 42.3" E
-L- PC Sta. 109+57.34
-L- PT Sta. 110+80.43
N 44° 53' 22.0" E
N 46° 39' 09.3" E
MATCHLINE -L- STA 100+00.00 SEE SHEET 10
MATCHLINE -L- STA 113+25.00 SEE SHEET 12
-Y20- POT Sta. 10+00.00 =
-Y11- POT Sta. 10+98.68
BRG S 9° 09' 47.5" W
-Y20- PC Sta. 10+73.21
END CONSTRUCTION
-Y20- STA. 11+80.00
TIE TO EXISTING DITCHES LT & RT
-Y20- POT Sta. 12+59.31
BRG S 3° 25' 45.8" W
-Y20- PT Sta. 11+23.25
-Y11- PC Sta. 12+62.72
BRG S 69° 16' 35.0" E
END CONSTRUCTION
-Y11- STA. 15+12.60
TIE TO EXISTING DITCHES LT & RT
-Y12- PT Sta. 12+23.26=
-L- Sta. 112+36.83 (143.33' RT)
BRG S 76° 36' 13.5" E
PC Sta. 10+59.85
END CONSTRUCTION
-Y12- POT Sta. 13+14.49
-Y12- POT Sta. 13+26.33
-Y10- (RAINBOW DR.)
-L- (NC 3)
-Y11- (RAINBOW DR.)
2016 ADT
2036 ADT
-Y20-
PI Sta 10+98.25
△ = 5° 44' 01.7" (LT)
D = 11° 27' 33.0"
L = 50.04'
T = 25.04'
R = 500.00'
RO = SEE PLANS
e = SEE PLANS
-Y11-
PI Sta 14+28.06
△ = 9° 27' 07.3" (RT)
D = 2° 51' 53.2"
L = 329.94'
T = 165.34'
R = 2,000.00'
RO = SEE PLANS
e = SEE PLANS
-Y12-
PI Sta 11+42.98
△ = 25° 39' 03.5" (RT)
D = 15° 41' 50.9"
L = 163.41'
T = 83.10'
R = 365.00'
RO = SEE PLANS
e = SEE PLANS
DETAIL 11E
CUT DITCH
(Not to Scale)
Type of Liner= CL B Rip-Rap
Min. D=1.0 Ft. Max. d=1.0 Ft.
FROM Y11 STA. 11+70 TO STA. 14+50 LT
FROM Y11 STA. 11+35 TO STA. 14+50 RT
-L-
PI Sta 110+18.89
△ = 1° 45' 47.3" (RT)
D = 1° 25' 56.6"
L = 123.09'
T = 61.55'
R = 4,000.00'
RO = 96'
e = .02 RC
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-3440	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

REVISIONS



DETAIL 10A
STANDARD BASE DITCH
(Not to Scale)
Natural Ground
Geotextile
When B is > 6.0'
Std. No. 876.01
Min. D=1.5Ft.
Max. d=1.0Ft.
B=5.0Ft.
Type of Liner= C. II Rip-Rap
-L- STA. 96+65 LT
DETAIL 10B
TOE PROTECTION
(Not to Scale)
NATURAL GROUND
2:1 OR FLATTER
FILL SLOPE
GEOTEXTILE
d=1.0Ft.
Type of Liner= CL. B Rip-Rap
FROM -L- STA. 96+50 TO 99+00 LT
FROM -L- STA. 97+00 TO 97+86 RT
DETAIL 10C
STANDARD BASE DITCH
(Not to Scale)
*When B is < 6.0'
Min. D=1.5Ft.
Max. d=1.0Ft.
B=3.0Ft.
Type of Liner= CL. 1 Rip-Rap
-L- STA. 96+15 LT
DETAIL 10D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
GEOTEXTILE
Type of Liner= 12 TONS,CL B Rip-Rap
Geotextile= 16sy
STA. 98+05 RT
DETAIL 10E
BERM 'V' DITCH
(Not to Scale)
Min. D=1.0 Ft.
b=5.0 Ft.
FROM -L- STA. 92+35 TO 94+10 RT
FROM -L- STA. 94+10 TO 95+15 RT
FROM -L- STA. 96+00 TO 97+00 RT
DETAIL 10F
CUT DITCH
(Not to Scale)
Front Ditch Slope
Min. D=1.0 Ft.
Max. d=1.0 Ft.
Type of Liner= CL B Rip-Rap
FROM Y8 STA. 10+50 TO STA. 13+00 LT
FROM Y8 STA. 10+50 TO STA. 12+00 RT
FROM Y8A STA. 10+80 TO STA. 12+00 RT
FROM Y8A STA. 11+50 TO STA. 12+00 LT
*SEE DETAIL SHEET 2C-2 FOR CURB AND GUTTER 10' TRANSITION TO PAVED SHOULDER
NOTE: SEE SHEETS 17 THRU 18 FOR -L- PROFILE
SEE SHEET 22 FOR -Y8- & -Y9- PROFILE
SCGR = SHOP CURVED GUARDRAIL
NOTE: DRIVEWAY RADII ARE 5FT UNLESS OTHERWISE NOTED
NAD 83/NSRS 2007
-Y9-
PI Sta 12+41.02
Δ = 39° 26' 04.3" (RT)
D = 57° 17' 44.8"
L = 68.83'
T = 35.84'
R = 100.00'
RO = SEE PLANS
e = SEE PLANS
-L-
PI Sta 80+28.76
Δ = 50° 54' 39.2" (LT)
D = 2° 51' 53.2"
L = 1,777.13'
T = 952.04'
R = 2,000.00'
RO = 144'
e = .03
-L- PT Sta. 88+53.84
-Y9- POT Sta. 10+00.00
BRG S 84° 32' 42.3" E
BEGIN CONSTRUCTION -Y9- STA. 11+50.00
-Y9- PC Sta. 12+05.18
-L- POT Sta. 95+38.48 = -Y8- POT Sta. 10+00.00
BRG S 42° 39' 05.2" E
-Y9- PT Sta. 12+74.01
N 44° 53' 22.0" E
-L-
-Y8- PC Sta. 11+02.96
BEGIN CONSTRUCTION -Y8A- POT Sta. 10+00.00
BRG N 54° 17' 24.3" E
-Y8A- POT Sta. 12+43.09 = -Y8- POT Sta. 12+65.00
-Y8- PT Sta. 13+01.57
BRG N 80° 27' 02.5" E
END CONSTRUCTION -Y8- STA. 14+50.00
-L- POT Sta. 99+71.92 = -Y9- POT Sta. 13+30.37
BRG S 45° 06' 38.0" E
-Y8- PT Sta. 14+76.13
BRG N 88° 21' 07.9" E
-Y8A- PC Sta. 11+00.84
-Y8A- PT Sta. 11+97.57
BRG N 32° 07' 12.5" E
-Y8- PC Sta. 13+29.26
-Y8A-
MATCHLINE -L- STA 88+00.00 SEE SHEET 9
MATCHLINE -L- STA 100+00.00 SEE SHEET 11
LEAR SR., JAMES C DB 2969 PG 212
OVERCASH TRUSTEE, JOE L. DB 1457 PG 5
THREATT, DAVID L. DB 1216 PG 227
LOVE, WILLIAM E. DB 2818 PG 76 DB 2818 PG 95
VANPELT, CLARENCE R. DB 6488 PG 14
BROCK TRUSTEE, DOROTHY P. DB 1501 PG 67
SPRAGUE, RHONDA W. DB 6527 PG 154 PB 9 PG 32
BICKERSTAFF, DANIEL P. DB 6619 PG 292
BREWER, WAYNE C. DB 6011 PG 200 DB 2402 PG 324 PB 9 PG 32
MISENHEIMER, MARK A. DB 8305 PG 87 DB 9003 PG 206 PB 8 PG 52
BROWN, LIRCEY L. DB 595 PG 738 PB 8 PG 52
BROWN, PHILIP L. DB 603 PG 216 PB 8 PG 52
PRICE JR, JAMES H DB 4512 PG 239 PB 9 PG 53
MCGINNIS, JIMMIE D. DB 735 PG 212 PB 9 PG 53
BCA PROPERTY MGMT, LLC DB 6728 PAGE 249 PB 9 PG 53
FERGUSON, SHARON C. DB 4316 PG 18
THOMAS E. BARNHARDT DB 521 PG 577
MUNDAY, T. M. DB 252 PG 72 PB 9 PG 53
ROBIE, DANIEL C. DB 1130 PG 222 PB 9 PG 53
ALBERT V. AGRASTO and wife SUSAN J. AGRASTRO DB 9005 PG 136
JONATHAN H. MILLS DB 8087 PG 164
ANDREW SCIARRINO JOYCE I. SCIARRINO DB 6829 PG 150
BARRY S. HALE DB 10412 PG 049
UNKNOWN

-L- (NC 3) 13100 / 21400	13300 / 21600	2016 ADT / 2036 ADT
50 / 50	200 / 200	
200 / 200 -Y8- (CLIFTON ST.)		2016 ADT / 2036 ADT

-Y9- (BAILEY ST.) 100 / 100		
50 / 50	100 / 100	
-L- (NC 3) 13300 / 21600		13400 / 21700

-Y8-		-Y8A-
PI Sta 12+11.32	PI Sta 14+02.81	PI Sta 11+49.82
Δ = 56° 53' 52.3" (RT)	Δ = 7° 54' 05.4" (RT)	Δ = 22° 10' 11.8" (LT)
D = 28° 38' 52.4"	D = 5° 22' 47.6"	D = 22° 55' 05.9"
L = 198.61'	L = 146.87'	L = 96.73'
T = 108.36'	T = 73.55'	T = 48.98'
R = 200.00'	R = 1,065.00'	R = 250.00'
RO = SEE PLANS	RO = SEE PLANS	RO = SEE PLANS
e = SEE PLANS	e = SEE PLANS	e = SEE PLANS

8/17/99

6/13/2016
U:\Roadway\Proj\U-3440_rdy_psh10.dgn

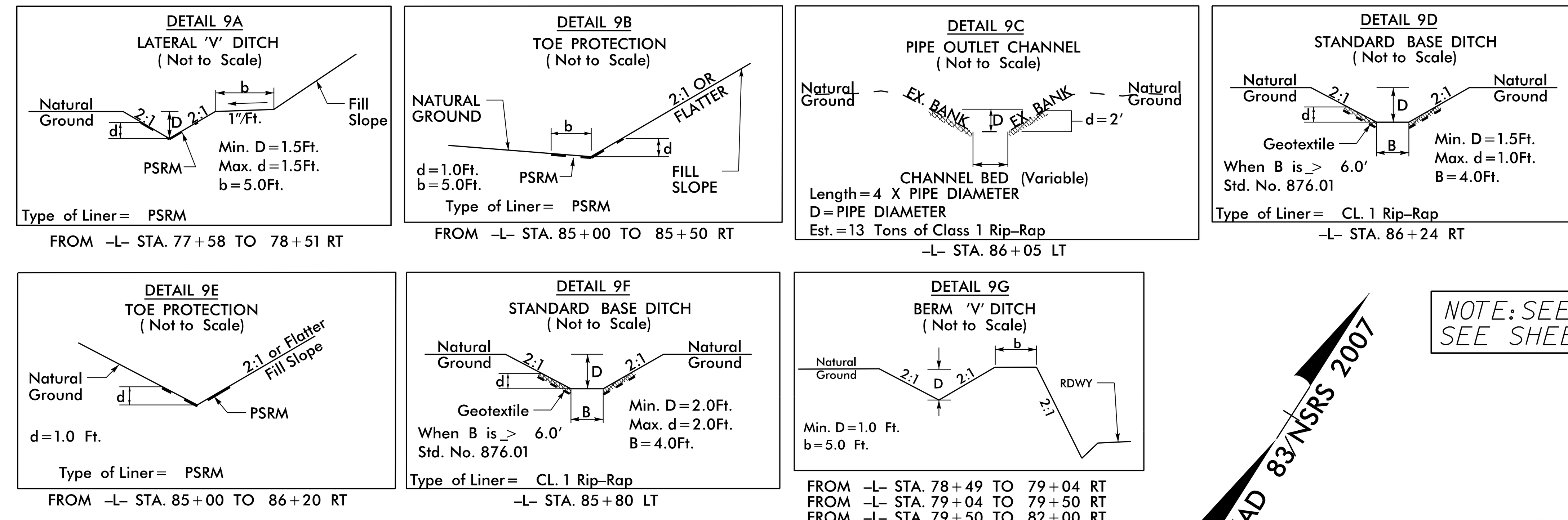
PROJECT REFERENCE NO.	SHEET NO.
U-3440	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

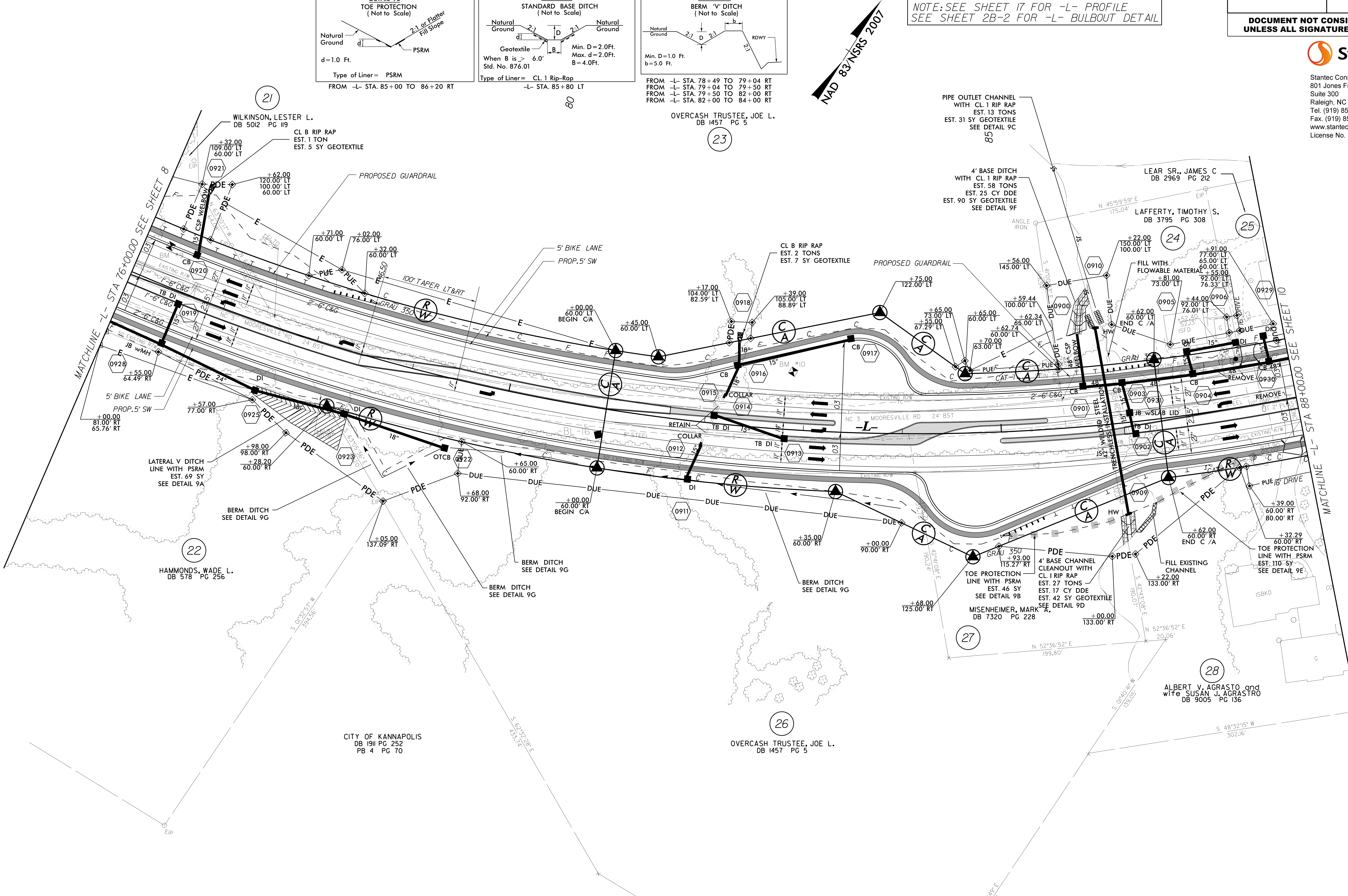
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

-L-
PI Sta 80+28.76
Δ = 50° 54' 39.2" (LT)
D = 2° 51' 53.2"
L = 1,777.13'
T = 952.04'
R = 2,000.00'
RO = 144'
e = .03

NOTE: SEE SHEET 17 FOR -L- PROFILE
SEE SHEET 2B-2 FOR -L- BULBOUT DETAIL


DETAIL 9A
LATERAL 'V' DITCH
(Not to Scale)
Type of Liner= PSRM
FROM -L- STA. 77+58 TO 78+51 RT
DETAIL 9B
TOE PROTECTION
(Not to Scale)
Type of Liner= PSRM
FROM -L- STA. 85+00 TO 85+50 RT
DETAIL 9C
PIPE OUTLET CHANNEL
(Not to Scale)
CHANNEL BED (Variable)
Length=4 X PIPE DIAMETER
D=PIPE DIAMETER
Est.=13 Tons of Class 1 Rip-Rap
-L- STA. 86+05 LT
DETAIL 9D
STANDARD BASE DITCH
(Not to Scale)
Type of Liner= CL. 1 Rip-Rap
-L- STA. 86+24 RT
DETAIL 9E
TOE PROTECTION
(Not to Scale)
Type of Liner= PSRM
FROM -L- STA. 85+00 TO 86+20 RT
DETAIL 9F
STANDARD BASE DITCH
(Not to Scale)
Type of Liner= CL. 1 Rip-Rap
-L- STA. 85+80 LT
DETAIL 9G
BERM 'V' DITCH
(Not to Scale)
FROM -L- STA. 78+49 TO 79+04 RT
FROM -L- STA. 79+04 TO 79+50 RT
FROM -L- STA. 79+50 TO 82+00 RT
FROM -L- STA. 82+00 TO 84+00 RT

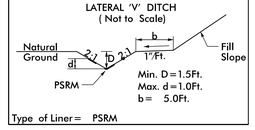

NAD 83/NSRS 2007
MATCHLINE -L- STA 76+00.00 SEE SHEET 8
MATCHLINE -L- STA 88+00.00 SEE SHEET 10
WILKINSON, LESTER L.
DB 5012 PG 119
OVERCASH TRUSTEE, JOE L.
DB 1457 PG 5
LEAR SR., JAMES C
DB 2969 PG 212
LAFFERTY, TIMOTHY S.
DB 3795 PG 308
HAMMONDS, WADE L.
DB 578 PG 256
MISENHEIMER, MARK A.
DB 7320 PG 228
ALBERT V. AGRASTO and wife SUSAN J. AGRASTRO
DB 9005 PG 136
CITY OF KANNAPOLIS
DB 1911 PG 252
PB 4 PG 70
PROPOSED GUARDRAIL
5' BIKE LANE
PROP. 5' SW
CL B RIP RAP
EST. 1 TON
EST. 5 SY GEOTEXTILE
CL B RIP RAP
EST. 2 TONS
EST. 7 SY GEOTEXTILE
PIPE OUTLET CHANNEL
WITH CL. 1 RIP RAP
EST. 13 TONS
EST. 31 SY GEOTEXTILE
SEE DETAIL 9C
4' BASE DITCH
WITH CL. 1 RIP RAP
EST. 58 TONS
EST. 25 CY DDE
EST. 90 SY GEOTEXTILE
SEE DETAIL 9F
FILL WITH FLOWABLE MATERIAL
LATERAL V DITCH
LINE WITH PSRM
EST. 69 SY
SEE DETAIL 9A
BERM DITCH
SEE DETAIL 9G
TOE PROTECTION
LINE WITH PSRM
EST. 46 SY
SEE DETAIL 9B
4' BASE CHANNEL
CLEANOUT WITH
CL. I RIP RAP
EST. 27 TONS
EST. 17 CY DDE
EST. 42 SY GEOTEXTILE
SEE DETAIL 9D
FILL EXISTING CHANNEL
TOE PROTECTION
LINE WITH PSRM
EST. 110 SY
SEE DETAIL 9E
NC 3 MOORESVILLE RD 24' BST
100' TAPER LT&RT

8/17/99

REVISIONS

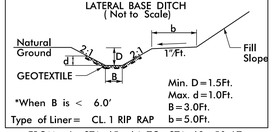
-L- (NC 3) 15100 / 23900 — 13100 / 21400
2500 / 3400 — 500 / 900
3000 / 4300 — 2016 ADT / 2036 ADT
-Y7- (TUCKER AVE.)

DETAIL 8A
LATERAL 'V' DITCH (Not to Scale)



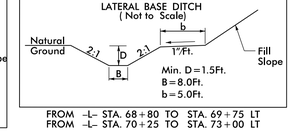
Type of Liner= PSRM
FROM -L- STA. 69+44 TO STA. 73+00 RT

DETAIL 8B
LATERAL BASE DITCH (Not to Scale)



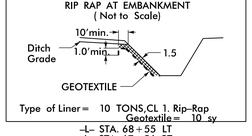
*When B is < 6.0'
Type of Liner= CL. 1 RIP RAP
FROM -L- STA. 65+64 TO STA. 68+50 LT
FROM -L- STA. 65+36 TO STA. 67+56 RT

DETAIL 8C
LATERAL BASE DITCH (Not to Scale)



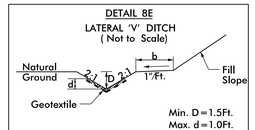
FROM -L- STA. 68+80 TO STA. 69+75 LT
FROM -L- STA. 70+25 TO STA. 73+00 LT

DETAIL 8D
RIP RAP AT EMBANKMENT (Not to Scale)



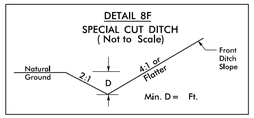
Type of Liner= 10 TONS,CL 1, Rip-Rap
Geotextile= 10 sy
-L- STA. 68+55 LT
-L- STA. 67+56 RT
-L- STA. 67+95 RT

DETAIL 8E
LATERAL 'V' DITCH (Not to Scale)



Type of Liner= CL. 1 Rip-Rap
FROM -L- STA. 67+90 to 69+44 RT

DETAIL 8F
SPECIAL CUT DITCH (Not to Scale)



FROM -Y7- STA. 11+38 TO 12+00 RT

NOTE: SEE SHEET 16 THRU 17 FOR -L- PROFILE
SEE SHEET 21 FOR -Y7- PROFILE
SEE SHEET 2B-1 FOR -Y7- INTERSECTION DETAIL
SEE STRUCTURES SHEET S-1 THRU S-

**TRANSITION 1'-6" C&G TO 2'-9" C&G
-L- STA. 65+29.10 TO STA. 65+79.45 LT & RT
-L- STA. 70+76.71 TO STA. 71+24.71 LT & RT

*SEE DETAIL SHEET 2C-2 FOR CURB AND GUTTER 10' TRANSITION TO PAVED SHOULDER

-L-
PI Sta 80+28.76
Δ = 50° 54' 39.2" (LT)
D = 2° 51' 53.2"
L = 1,777.13'
T = 952.04'
R = 2,000.00'
RO = 144'
e = .03

PROJECT REFERENCE NO.	SHEET NO.
U-3440	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

NAD 83/NSRS 2007

65

14 OVERCASH TRUSTEE, EDWARD C. DB 1768 PG 86

10 CAROLINAS CASTLE & COOKE REALITY LLC DB 7200 PG 55 PB 49 PG 95

21 WILKINSON, LESTER L. DB 5012 PG 119

19 PUBLIC SERVICE CO. OF NC INC DB 309 PG 158

18 WILKINSON, LESTER L. DB 163 PG 129

20 BAKER, JERRY H. DB 6261 PG 261

20A CITY OF KANNAPOLIS DB 1911 PG 252 PB 4 PG 70

22 HAMMONDS, WADE L. DB 578 PG 256

CITY OF KANNAPOLIS DB 1911 PG 252 PB 4 PG 70

MATCHLINE -L- STA 63+50.00 SEE SHEET 7

MATCHLINE -L- STA 76+00.00 SEE SHEET 9

3' LATERAL BASE DITCH LINE WITH CL. 1 RIP RAP EST. 252 TONS EST. 81 CY DDE EST. 473 SY GEOTEXTILE SEE DETAIL 8B

CL. 1 RIP RAP AT EMBANKMENT EST. 10 SY GEOTEXTILE SEE DETAIL 8D

LATERAL 8' BASE DITCH EST. 162 CY DDE SEE DETAIL 8C

LATERAL 8' BASE DITCH EST. 297 CY DDE SEE DETAIL 8C

CL. B RIP RAP EST. 5 TONS EST. 14 SY GEOTEXTILE

CL 1 RIP RAP 26 TONS GEOTEXTILE 50 SY

CL. 1 RIP RAP AT EMBANKMENT EST. 194 TONS EST. 188 CY DDE EST. 364 SY GEOTEXTILE SEE DETAIL 8B

LATERAL V DITCH LINE WITH CL. 1 RIP RAP EST. 126 TONS EST. 169 CY DDE EST. 203 SY GEOTEXTILE SEE DETAIL 8E

LATERAL V DITCH LINE WITH PSRM EST. 176 SY EST. 276 CY DDE SEE DETAIL 8A

CL. B RIP RAP EST. 8 TONS EST. 21 SY GEOTEXTILE

SPECIAL CUT DITCH SEE DETAIL 8F

-L- POC Sta. 73+53.39 = -Y7- POT Sta. 10+00.00
BRG S 2° 11' 12.0" E

-L- PC Sta. 70+76.71

-Y7- PT Sta. 12+11.35
BRG S 44° 40' 04.0" W

-Y7- PC Sta. 10+88.68

-Y7- POT Sta. 14+10.62

-Y7- PCC Sta. 14+93.76

-Y7- PT Sta. 16+03.16

-Y7- POT Sta. 16+30.01

END CONSTRUCTION -Y7- STA. 13+00.00

END PAVING -Y7- STA. 12+75.00

PROP. EMERGENCY ACCESS SEE DETAIL 2C-1

PROP. SHOP CURVED GUARDRAIL

IQ TRANSITION TO C&G BEGIN SIDEWALK

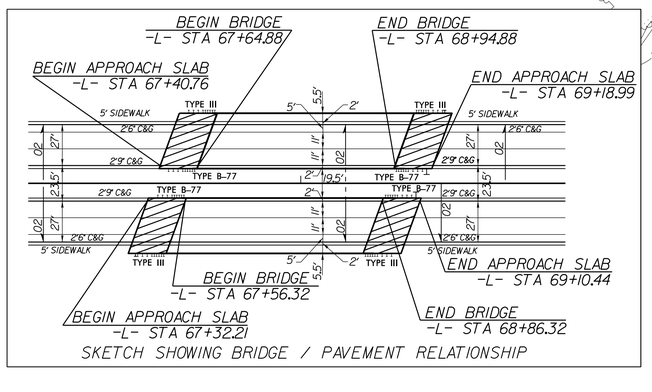
IQ TRANSITION TO C&G END SIDEWALK

TIE TO EXIST. DITCH

-Y7-
PI Sta 11+53.68
Δ = 46° 51' 16.0" (RT)
D = 38° 11' 49.9"
L = 122.66'
T = 65.00'
R = 150.00'
RO = SEE PLANS
e = SEE PLANS

PI Sta 15+52.99
Δ = 54° 30' 21.2" (LT)
D = 49° 49' 20.7"
L = 109.40'
T = 59.24'
R = 115.00'

PI Sta 14+52.52
Δ = 17° 38' 28.9" (LT)
D = 21° 13' 14.4"
L = 83.13'
T = 41.90'
R = 270.00'



SKETCH SHOWING BRIDGE / PAVEMENT RELATIONSHIP

6/3/2016
U:\Roadway\Proj\U-3440_rdy_psh8.dgn
smcclees

PROJECT REFERENCE NO.	SHEET NO.
U-3440	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

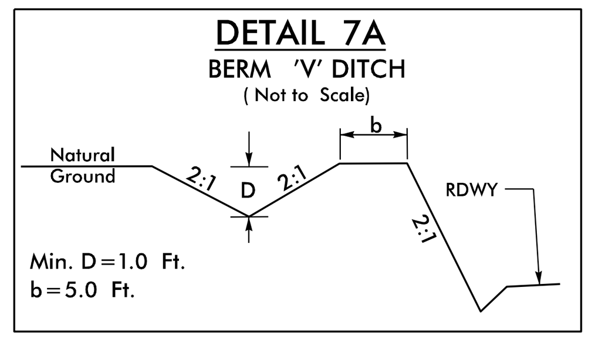
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec

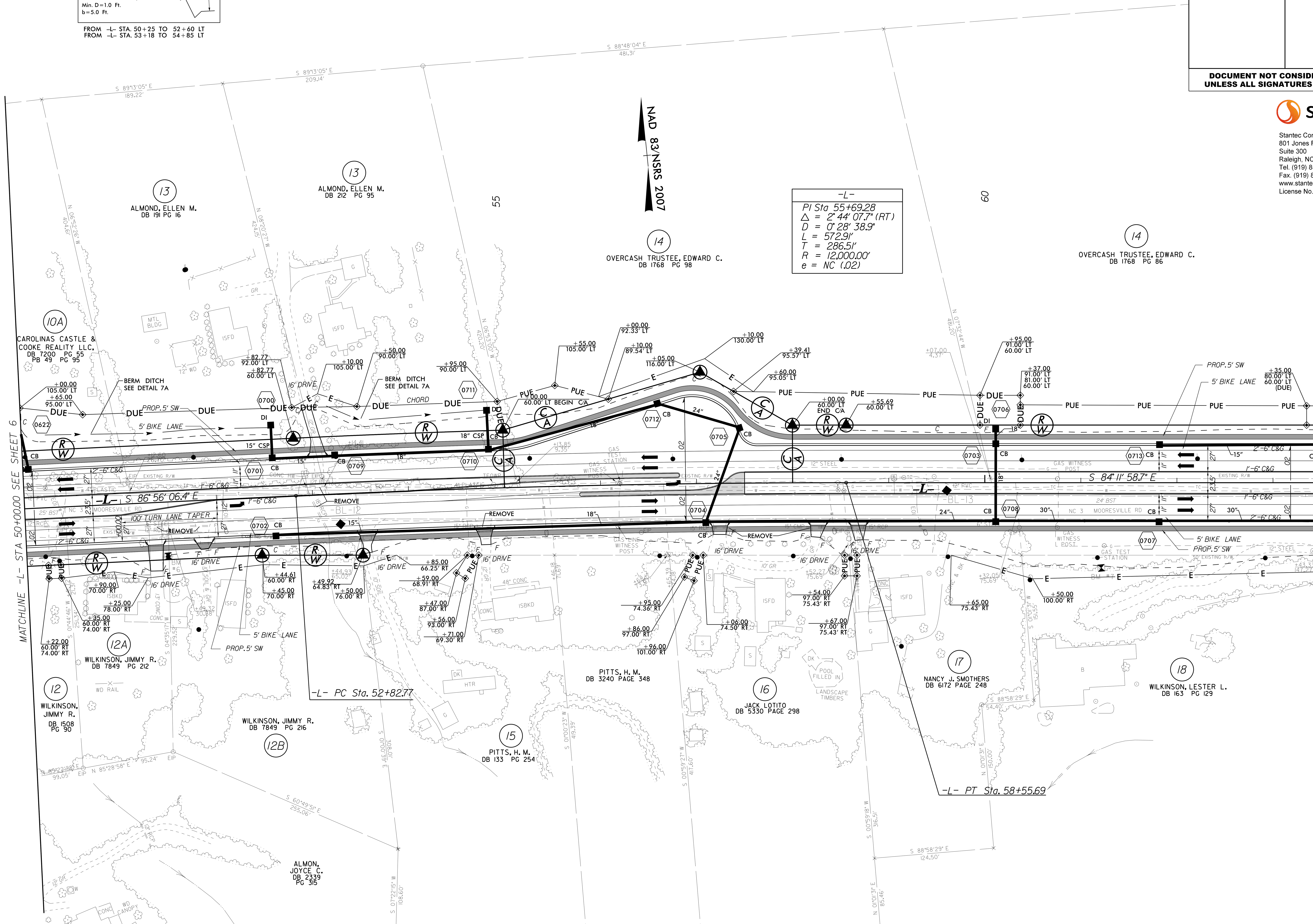
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

NOTE: SEE SHEET 16 FOR -L- PROFILE
SEE SHEET 2B-1 FOR -L- BULBOUT DETAIL

DETAIL 7A
BERM 'V' DITCH
(Not to Scale)



FROM -L- STA. 50+25 TO 52+60 LT
FROM -L- STA. 53+18 TO 54+85 LT


NAD 83/NSRS 2007
-L-
PI Sta 55+69.28
Δ = 2° 44' 07.7" (RT)
D = 0° 28' 38.9"
L = 572.91'
T = 286.51'
R = 12,000.00'
e = NC (.02)
MATCHLINE -L- STA 50+00.00 SEE SHEET 6
MATCHLINE -L- STA 63+50.00 SEE SHEET 8
-L- S 86° 56' 06.4" E
S 84° 11' 58.7" E
-L- PC Sta. 52+82.77
-L- PT Sta. 58+55.69
ALMOND, ELLEN M. DB 191 PG 16
ALMOND, ELLEN M. DB 212 PG 95
OVERCASH TRUSTEE, EDWARD C. DB 1768 PG 98
OVERCASH TRUSTEE, EDWARD C. DB 1768 PG 86
CAROLINAS CASTLE & COOKE REALTY LLC. DB 7200 PG 55 PB 49 PG 95
WILKINSON, JIMMY R. DB 7849 PG 212
WILKINSON, JIMMY R. DB 1508 PG 90
WILKINSON, JIMMY R. DB 7849 PG 216
PITTS, H. M. DB 133 PG 254
PITTS, H. M. DB 3240 PAGE 348
JACK LOTITO DB 5330 PAGE 298
NANCY J. SMOTHERS DB 6172 PAGE 248
WILKINSON, LESTER L. DB 163 PG 129
ALMON, JOYCE C. DB 2339 PG 315
BERM DITCH SEE DETAIL 7A
PROP. 5' SW
5' BIKE LANE
100' TURN LANE TAPER
NC 3 MOORESVILLE RD
16' DRIVE
REMOVE
GAS TEST STATION
GAS WITNESS POST
55
60

NOTE: SEE SHEET 15 THRU 16 FOR -L- PROFILE
SEE SHEET 21 FOR -Y4-, -Y5-, & -Y6- PROFILE
SEE SHEET 2B-1 FOR -Y4- INTERSECTION DETAIL
SEE CULVERT SHEET C-1 THRU C-

*SEE DETAIL SHEET 2C-2 FOR CURB AND GUTTER 10' TRANSITION TO PAVED SHOULDER

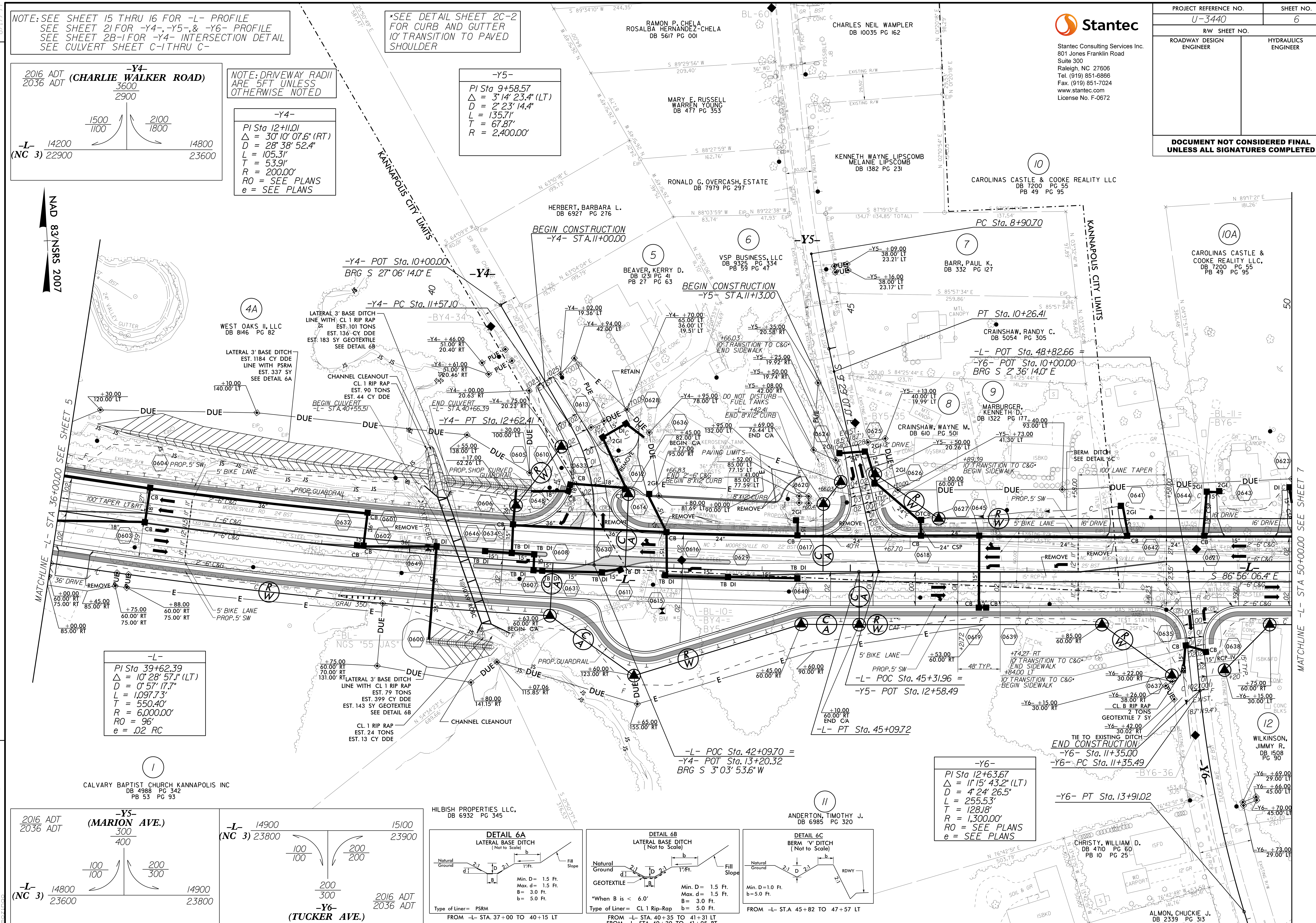
NOTE: DRIVEWAY RADII ARE 5FT UNLESS OTHERWISE NOTED

-Y4- (CHARLIE WALKER ROAD)

2016 ADT / 2036 ADT: 3600 / 2900; 1500 / 1100; 2100 / 1800; -L- (NC 3): 14200 / 22900; 14800 / 23600

-Y5-
PI Sta 9+58.57
△ = 3° 14' 23.4" (LT)
D = 2° 23' 14.4"
L = 135.71'
T = 67.87'
R = 2,400.00'

-Y4-
PI Sta 12+11.01
△ = 30° 10' 07.6" (RT)
D = 28° 38' 52.4"
L = 105.31'
T = 53.91'
R = 200.00'
RO = SEE PLANS
e = SEE PLANS



-L-
PI Sta 39+62.39
△ = 10° 28' 57.1" (LT)
D = 0° 57' 17.7"
L = 1,097.73'
T = 550.40'
R = 6,000.00'
RO = 96'
e = .02 RC

-Y6-
PI Sta 12+63.67
△ = 11° 15' 43.2" (LT)
D = 4° 24' 26.5"
L = 255.53'
T = 128.18'
R = 1,300.00'
RO = SEE PLANS
e = SEE PLANS

-Y5- (MARION AVE.)

2016 ADT / 2036 ADT: 300 / 400; 100 / 100; 200 / 300; -L- (NC 3): 14800 / 23600; 14900 / 23800

-Y6- (TUCKER AVE.)

-L- (NC 3): 14900 / 23800; 15100 / 23900; 100 / 100; 200 / 200; 200 / 300; 2016 ADT / 2036 ADT

DETAIL 6A — LATERAL BASE DITCH (Not to Scale) — Min. D = 1.5 Ft.; Max. d = 1.5 Ft.; B = 3.0 Ft.; b = 5.0 Ft.; Type of Liner = PSRM; FROM -L- STA. 37+00 TO 40+15 LT

DETAIL 6B — LATERAL BASE DITCH (Not to Scale) — GEOTEXTILE; *When B is < 6.0'; Min. D = 1.5 Ft.; Max. d = 1.5 Ft.; B = 3.0 Ft.; b = 5.0 Ft.; Type of Liner = CL 1 Rip-Rap; FROM -L- STA. 40+35 TO 41+31 LT; FROM -L- STA. 40+30 TO 41+05 RT

DETAIL 6C — BERM 'V' DITCH (Not to Scale) — Min. D = 1.0 Ft.; b = 5.0 Ft.; FROM -L- STA. 45+82 TO 47+57 LT

PROJECT REFERENCE NO.	SHEET NO.
U-3440	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

8/17/99

6/13/2016 U:\Roadway\Proj\U-3440_rdy_psh6.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-3440	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

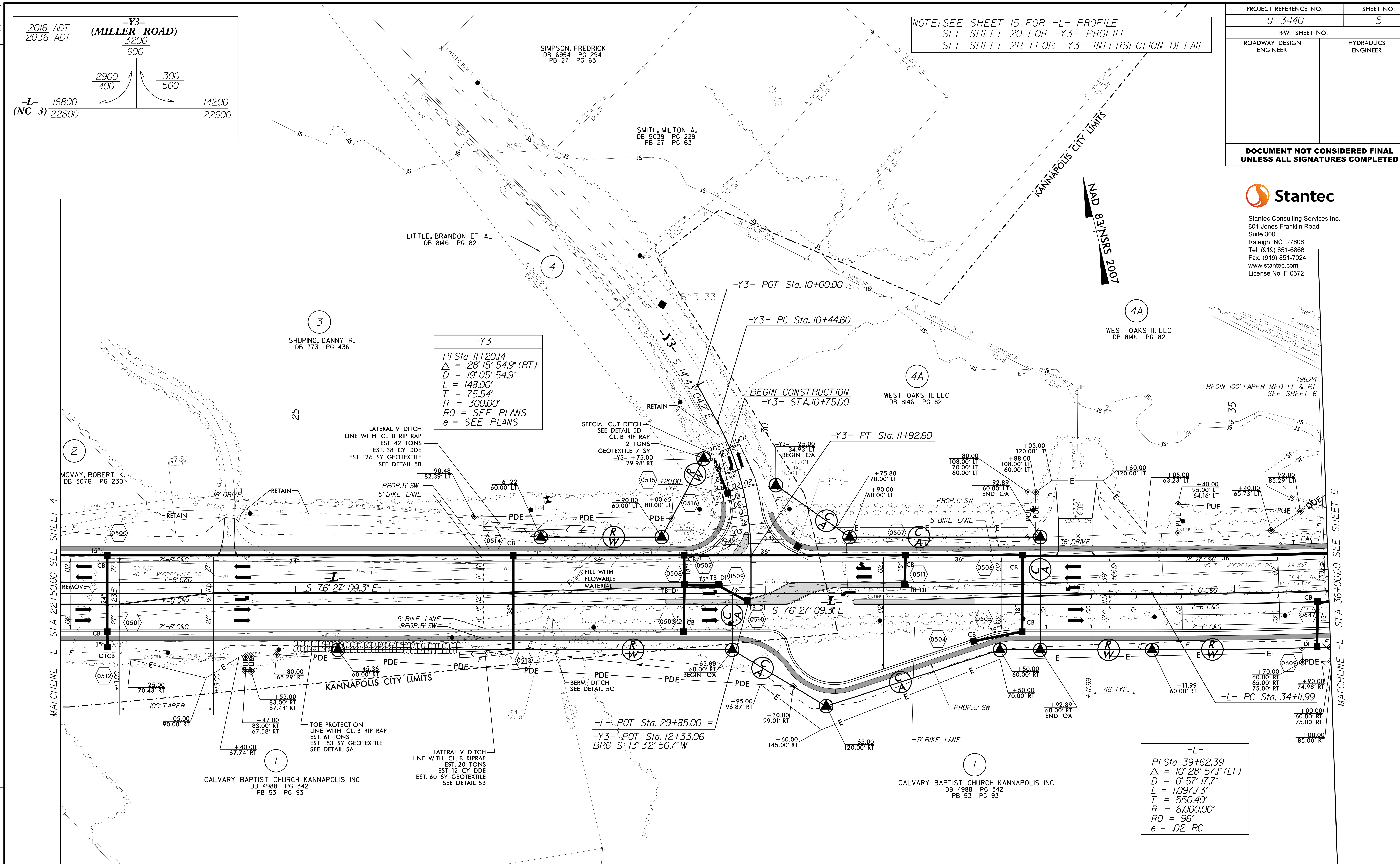
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

NOTE: SEE SHEET 15 FOR -L- PROFILE
SEE SHEET 20 FOR -Y3- PROFILE
SEE SHEET 2B-1 FOR -Y3- INTERSECTION DETAIL

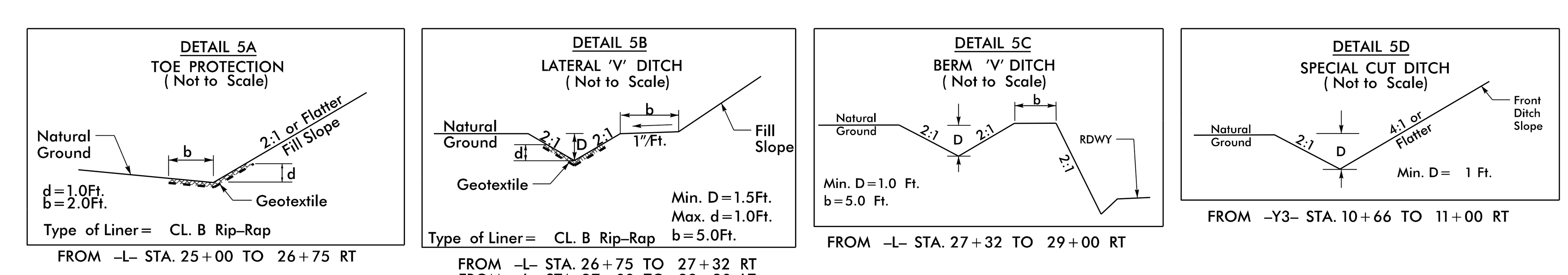
-Y3- (MILLER ROAD)
2016 ADT / 2036 ADT: 3200 / 900; 2900 / 400; 300 / 500
-L- (NC 3): 16800 / 22800; 14200 / 22900



SIMPSON, FREDRICK
DB 6954 PG 294
PB 27 PG 63
SMITH, MILTON A.
DB 5039 PG 229
PB 27 PG 63
LITTLE, BRANDON ET AL
DB 8146 PG 82
SHUPING, DANNY R.
DB 773 PG 436
MCVAY, ROBERT K.
DB 3076 PG 230
WEST OAKS II, LLC
DB 8146 PG 82
CALVARY BAPTIST CHURCH KANNAPOLIS INC
DB 4988 PG 342
PB 53 PG 93
KANNAPOLIS CITY LIMITS
NAD 83/NSRS 2007
-Y3- POT Sta. 10+00.00
-Y3- PC Sta. 10+44.60
-Y3- PT Sta. 11+92.60
BEGIN CONSTRUCTION -Y3- STA.10+75.00
-L- POT Sta. 29+85.00 = -Y3- POT Sta. 12+33.06
BRG S 13° 32' 50.7" W
-L- PC Sta. 34+11.99
-L- S 76° 27' 09.3" E
BEGIN 100' TAPER MED LT & RT SEE SHEET 6
LATERAL V DITCH LINE WITH CL. B RIP RAP EST. 42 TONS EST. 38 CY DDE EST. 126 SY GEOTEXTILE SEE DETAIL 5B
SPECIAL CUT DITCH SEE DETAIL 5D CL. B RIP RAP 2 TONS GEOTEXTILE 7 SY
TOE PROTECTION LINE WITH CL. B RIP RAP EST. 61 TONS EST. 183 SY GEOTEXTILE SEE DETAIL 5A
LATERAL V DITCH LINE WITH CL. B RIPRAP EST. 20 TONS EST. 12 CY DDE EST. 60 SY GEOTEXTILE SEE DETAIL 5B
BERM DITCH SEE DETAIL 5C
FILL WITH FLOWABLE MATERIAL
PROP. 5' SW
5' BIKE LANE
36' DRIVE
100' TAPER
MATCHLINE -L- STA 22+50.00 SEE SHEET 4
MATCHLINE -L- STA 36+00.00 SEE SHEET 6

-Y3-	
PI Sta	11+20.14
Δ	28° 15' 54.9" (RT)
D	19° 05' 54.9"
L	148.00'
T	75.54'
R	300.00'
RO	SEE PLANS
e	SEE PLANS

-L-	
PI Sta	39+62.39
Δ	10° 28' 57.1" (LT)
D	0° 57' 17.7"
L	1,097.73'
T	550.40'
R	6,000.00'
RO	96'
e	.02 RC



DETAIL 5A
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 or Flatter Fill Slope
Geotextile
d=1.0Ft.
b=2.0Ft.
Type of Liner= CL. B Rip-Rap
FROM -L- STA. 25+00 TO 26+75 RT
DETAIL 5B
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Geotextile
Min. D=1.5Ft.
Max. d=1.0Ft.
b=5.0Ft.
Type of Liner= CL. B Rip-Rap
FROM -L- STA. 26+75 TO 27+32 RT
FROM -L- STA. 27+00 TO 28+20 LT
DETAIL 5C
BERM 'V' DITCH
(Not to Scale)
Natural Ground
RDWY
Min. D=1.0 Ft.
b=5.0 Ft.
FROM -L- STA. 27+32 TO 29+00 RT
DETAIL 5D
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
4:1 or Flatter
Front Ditch Slope
Min. D= 1 Ft.
FROM -Y3- STA. 10+66 TO 11+00 RT

8/17/99
6/13/2016
U:\Roadway\Proj\U-3440_rdy_psh5.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-3440	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

REVISIONS

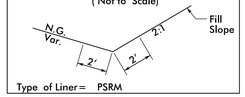
8/17/99

*SEE DETAIL SHEET 2C-2 FOR CURB AND GUTTER 10' TRANSITION TO PAVED SHOULDER

SEE SHEET 20 FOR -Y-, -Y1-, & -Y2- PROFILE
NOTE: SEE SHEET 15 FOR -L- PROFILE

★ REVISED SIGNAL

DETAIL 4A
SPECIAL DITCH
(Not to Scale)



Type of Liner = PSRM
FROM -Y2- STA. 11+20 TO 12+30 RT

BEGIN TIP PROJECT U-3440
-L- STA. 10+10.00

NAD 83/NSRS 2007

-L-
PI Sta 15+20.75
△ = 4° 18' 59.8" (LT)
D = 1° 08' 45.3"
L = 376.69'
T = 188.44'
R = 5,000.00'
RO = 96'
e = .02 RC

-L- PC Sta. 13+32.32

HOOKS, MICHEAL W.
DB 1620 PG 52
PB 20 PG 88

HOOKS, MICHEAL W.
DB 1620 PG 52

(NCDOT EXISTING R/W)

HUIE, LINDA DAY
DB 8096 PG 165
PB 25 PG 37

-L- POT Sta. 10+00.00

10' TRANSITION FROM 4'PS TO C&G
SEE DETAIL - SHEET 2C-2
BEGIN SIDEWALK

COSENTINO, FRANCIS M.
DB 4229 PG 100

-L- POT Sta. 17+34.33 =
-Y2- POT Sta. 10+00.00
BRG S 13° 34' 24.0" W

-L- PT Sta. 17+09.01

MCVAY, ROBERT K.
DB 3076 PG 230

CALVARY BAPTIST CHURCH KANNAPOLIS INC
DB 4988 PG 342
PB 53 PG 93

-Y- POT Sta. 10+00.00 =
-L- POT Sta. 11+93.26
BRG S 5° 31' 35.1" W

-Y- PC Sta. 10+21.42

END CONSTRUCTION
-Y- STA. 11+05.00

ABC PARKWAY LLC
DB 8303 PG 122

KANNAPOLIS CITY LIMITS

-Y1- POT Sta. 10+00.00 =
-L- POT Sta. 12+50.58
BRG S 5° 31' 35.1" W

-Y1- PC Sta. 10+09.17

END CONSTRUCTION
-Y1- STA. 12+25.00

-Y2- POT Sta. 13+06.23

END CONSTRUCTION
-Y2- STA. 12+30

CL. B RIP RAP
2 TONS
GEOTEXTILE 7 SY

SPECIAL GRADE TAIL DITCH
LINE WITH PSRM
EST. 77 SY
SEE DETAIL 4A

-Y1- STA. 10+85.11 (12.33' RT)
MEDIAN PAVING LIMITS
BETWEEN -Y- & -Y1-

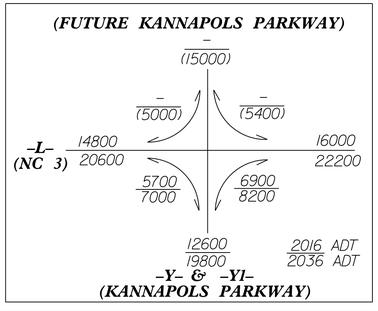
MULLIS, VIC A.
DB 7195 PG 196

THIGPEN, ALTON H.
DB 405 PG 45
DB 5198 PG 114

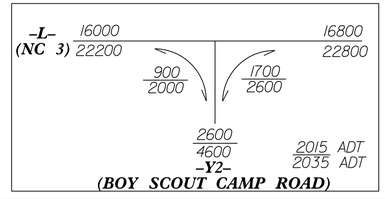
CORNERSTONE BAPTIST CHURCH
DB 3620 PG 297

-Y-	-Y1-
PI Sta 12+39.04	PI Sta 12+31.09
△ = 8° 47' 42.0" (RT)	△ = 8° 47' 42.0" (RT)
D = 2° 01' 29.1"	D = 1° 59' 07.6"
L = 434.38'	L = 442.97'
T = 217.62'	T = 221.92'
R = 2,829.79'	R = 2,885.79'
RO = SEE PLANS	RO = SEE PLANS
e = SEE PLANS	e = SEE PLANS

(FUTURE KANNAPOLS PARKWAY)



-Y- & -YI- (KANNAPOLS PARKWAY)



(BOY SCOUT CAMP ROAD)

6/13/2016
U:\Roadway\Proj\U-3440_rdy_psh4.dgn
smpatrick