STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

July 13, 2018

US Army Corps of Engineers
Regulatory Field Office
2407 West 5th Street
Washington, NC 27889

NC Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

Attention: Mr. Tom Steffens
NCDOT Coordinator

Mr. Stephen Lane
NCDOT Coordinator

Subject: Modification Request for USACE Individual Permit, Section 401 Water Quality Certification, Neuse Riparian Buffer Authorization and CAMA Major Development Permit for the proposed improvement of US 17 from south of Belgrade at SR 1330/SR 1439 to the New Bern Bypass, in Onslow, Jones and Craven Counties. TIP No. R-2514 B, C & D, COE Action ID: SAW-2008-00528. WBS 34442.1.3.

Reference: Individual 404 permit dated May 22, 2015

Dear Sirs:

As you are aware, the North Carolina Department of Transportation (NCDOT) is constructing the US 17 project in Onslow, Jones and Craven Counties. Since roadway fill was placed, drainage problems have occurred at a specific location on the northern section of the project (R-2514D). NCDOT has received complaints from adjacent landowners about ponding at this location, which is immediately south of US 58. This problem area is located in uplands, and is not therefore depicted in the permit drawings. The attachments include a map showing the area of ponding.

To resolve the issue and drain the standing water caused by the roadway fill, we are proposing ditches to drain from the problem area toward the jurisdictional stream approximately 1200' south, which is Site 1 in the permit drawings for R-2514D. The proposed ditch on the left side of the –L- line will be at 0.26% grade from 303+75 to 316+20 Lt. The proposed ditch on the right side of –L- will be at 0.3% grade from 302+50 to 314+00 Rt. The ditches are proposed to be 4' base swales with 3:1 side slopes to maximize stormwater storage. Downstream of the 48" RCP crossline at 303+00, an existing 24" RCP driveway pipe is proposed to be replaced with a 54" RCP to further resolve the drainage issues.

These modifications will require additional impacts to the stream and riparian buffers at this site, but no additional impacts to wetlands. Excavation through the riparian buffers is necessary in order to achieve an elevation low enough to drain the ponding that is occurring on the private properties. Permanent channel impacts increase by 127 feet. Streambank stabilization increases by 16 feet. Temporary channel impacts increases by 9 feet. Permanent surface water impacts increase by 0.01 acre. There are an additional 5,306 sq. ft. of buffer impacts in Zone 1, and 3479 sq. ft. in Zone 2, for a total increase of 8,785 sq. ft. Revised permit drawings are attached depicting these changes.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENT ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Fax: (919) 212-5785
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Since these changes require a modification to the Section 401 Water Quality Certification from NCDWR, authorization to debit the $570 Permit Application Fee from WBS element 34442.1.3 is hereby given.

As this project is under construction, and the drainage problem is now an ongoing one, we ask that you give this modification request your urgent attention.

Sincerely,

Mal C. Rich III

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

cc:

NCDOT Permit Application Standard Distribution List.

Environmental Quality

ROY COOPER
Governor

July 11, 2018

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

Dear Mr. Harris:

Subject: DMS Mitigation Acceptance Letter:

R-2514 B / C / D, US 17 Widening from South of Belgrade in Onslow County to the New Bern Bypass, Onslow, Jones and Craven Counties

References: USACE 404 Individual Permit issued May 22, 2015 and Modifications issued on September 29, 2016 and October 23, 2017 (USACE Action ID 2008-00528)

NCDWR 401 Water Quality Certification issued March 2, 2015 and modified on April 8, 2015 and October 16, 2017 (NCDWR ID 22014-00169)

NCDCM Major Development Permit issued on March 24, 2015 (Permit No 43-15)

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the additional compensatory stream and buffer mitigation for Section D of TIP project R-2514. Based on the information supplied by you on July 10, 2018, the impacts associated with this project are located in CU 03020204 of the Neuse River basin and CU 03020106 of the White Oak River basin in the Southern Outer Coastal Plain (SOCP) Eco-Region, and are as follows:

Table 1 – Additional Impacts (feet / acres)

Neuse 03020204 SOCP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	127.0	0	0	0	5,306.0	3,479.0

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

The additional stream and buffer impacts are located in Section D of this project. This additional impact and associated mitigation needs were not projected by the NCDOT in the 2018 impact data. DMS is currently providing stream, wetland and buffer mitigation for the impacts associated with this project located in cataloging unit 03020204 of the Neuse River basin as required by the 404 Individual permit, 404 Individual permit modification 401 and CAMA Major permits issued in March 2015, September 2016, April and May 2015, and subsequent modifications respectively, as show in the below table (in mitigation credits):

Table 2 – Current Permitted Impacts and Associated Mitigation Requirements provided by DMS (based on 2015 and 2016 permits) and Revised Anticipated Impacts (based on mitigation request)

Impact Type	Total Permitted Impacts (feet / acre / sq ft)	Mitigation Provided by DMS per Issued Permits (Credits)	Additional Impact (for approval)	Revised Total Impacts*
Stream (warm)	4,027.0	8,054.0	127.0	4,154.0
Buffer (Zone1)	86,156.0	258,468.0	5,306.0	91,462.0
Buffer (Zone 2)	62,050.0	93,075.0	3,479.0	65,529.0

*Some of the additional stream impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details. DMS will provide the amount of mitigation as determined by the regulatory agencies.

All buffer mitigation requests and approvals are administrated through the Riparian Restoration Buffer Fund. The NCDOT will be responsible to ensure that appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWR's Buffer Authorization Certification, DMS will transfer funds from the NCDOT 2984 Fund into the Riparian Restoration Buffer Fund. Upon completion of transfer payment, NCDOT will have completed its riparian buffer mitigation responsibility for TIP Number R-2514B / C / D. Subsequently, DMS will conduct a review of current NCDOT ILF Program mitigation projects in the river basin to determine if available buffer mitigation credits exist. If there are buffer mitigation credits available, then the Riparian Restoration Buffer Fund will purchase the appropriate amount of buffer mitigation credits from NCDOT ILF Program.

This mitigation acceptance letter replaces the mitigation acceptance letters issued on November 14, 2014, February 25, 2015, September 15, 2016. And August 30, 2017. DMS commits to implementing additional sufficient compensatory stream and buffer mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the In-Lieu Fee Instrument dated July 28, 2010. At the request of the NCDOT and USACE, the additional non-riparian wetland mitigation requirements will be debited from the Croatan Mitigation site located in Neuse 03020204. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

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

Sincerely,

James B. Stanfill
Credit Management Supervisor

cc: Mr. Tom Steffens, USACE – Washington Regulatory Field Office
Ms. Amy Chapman, Division of Water Resources, Wetlands/401 Unit
Ms. Cathy Brittingham, Division of Coastal Management
File: R-2514 B / C / D Additional 3

PROJECT REFERENCE NO.	SHEET NO.
R-2514D	
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

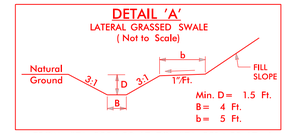
PERMIT DRAWING
SHEET 2 OF 84

REVISED
6/13/18

NAD 83/NSRS 2007

SITE 1

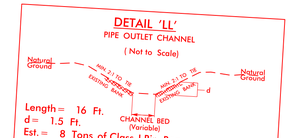
DETAIL 'A'
LATERAL GRASSED SWALE
(Not to Scale)



Min. D = 1.5 Ft.
B = 4 Ft.
b = 5 Ft.

FROM STA. 300+00 LT. TO STA. 301+50 LT. –L–

DETAIL 'LL'
PIPE OUTLET CHANNEL
(Not to Scale)



Length = 16 Ft.
d = 1.5 Ft.
Est. = 8 Tons of Class I Rip-Rap
Est. = 16 SY Geotextile

FROM STA. 303+16 TO STA. 303+34 –L–

1
BELL BROTHERS FARM, INC
DB 310 PG 711
DB 180 PG 631
DB 188 PG 256
DB 197 PG 819
DB 282 PG 55
DB 278 PG 898
MB 12 PG 8

1
BELL BROTHERS FARM, INC
DB 310 PG 711
DB 180 PG 631
DB 188 PG 256
DB 197 PG 819
DB 282 PG 55
DB 278 PG 898
MB 12 PG 8

4' BASE LATERAL GRASSED SWALE
SEE DETAIL 'A'
APPROX. 160 CY DDE

CL 'I' RIP RAP
EST. 33 TON
EST. 62 SY GEOTEXTILE

REMOVE

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

BURIED 20%

PIPE OUTLET CHANNEL
SEE DETAIL 'LL'

48" RCP-IV
15" RCP-IV

CL 'B' RIP
EST. 2 TO
EST. 7 SY

CHORD

LATERAL BASE D
SEE DETAIL
4000 CY +/-
0.3% GRAD
314+00 DITCH EL
302+50 DITCH EL

ADDITIONAL 20'+/- ROW NEEDED (ASSUMED ADDTL. 30' FOR PERMITTING PURPOSES)

BELL B
DB
DB
DB
DB
DB
DB
MB

N 11° 39' 27.2" E

300

305

–L– STA. 308+00

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

GRAPHIC SCALE

100 50 0 100 200

SEE SHEET 32 FOR –L– PROFILE

REVISIONS

8/17/99

6/13/2018
jlmoore6
R:\Hydraulics\CADD\Bell Property Revision\Permit Drawings\Welland\R2514D_Hyd_prm_site_1.dgn
$$$$USERNAME$$$$
$$$$DGN$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2514D	
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

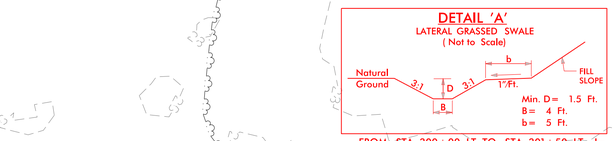
PERMIT DRAWING
SHEET 3 OF 84

REVISED
6/13/18

NAD 83/NSRS 2007

SITE 1

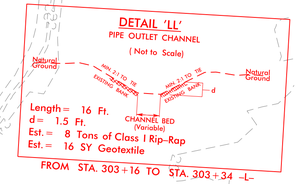
DETAIL 'A'
LATERAL GRASSED SWALE
(Not to Scale)



Min. D = 1.5 Ft.
B = 4 Ft.
b = 5 Ft.

FROM STA. 300+00 LT. TO STA. 301+50 LT. –L–

DETAIL 'LL'
PIPE OUTLET CHANNEL
(Not to Scale)



Length = 16 Ft.
d = 1.5 Ft.
Est. = 8 Tons of Class I Rip-Rap
Est. = 16 SY Geotextile

FROM STA. 303+16 TO STA. 303+34 –L–

1
IERS FARM, INC
0 PG 711
0 PG 631
3 PG 256
7 PG 819
12 PG 55
8 PG 898
2 PG 8

10' SOIL

CL 'I' RIP RAP
EST. 33 TON
EST. 62 SY GEOTEXTILE

REMOVE

4' BASE LATERAL GRASSED SWALE
SEE DETAIL 'A'
APPROX. 160 CY DDE

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

PIPE OUTLET CHANNEL
SEE DETAIL 'LL'

48" RCP-IV
15" RCP-IV
18" RCP-IV

HW BURIED 20%

N 11° 39' 27.2" E

1
BELL BROTHERS FARM, INC
DB 310 PG 711
DB 180 PG 631
DB 188 PG 256
DB 197 PG 819
DB 282 PG 55
DB 278 PG 898
MB 12 PG 8

ADDITIONAL 20'+/- ROW NEEDED (ASSUMED ADDTL. 30' FOR PERMITTING PURPOSES)

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

GRAPHIC SCALE

100 50 0 100 200

–L– STA. 308+00.00

SEE SHEET 32 FOR –L– PROFILE

REVISIONS

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6/13/2018
jlmoore6
R:\Hydraulics\CADD\Bell Property Revision\Permit Drawings\Wetland\R2514D_Hyd_prm_site_1_con.dgn
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$$$$PLOTSCALE$$$$
$$$$PLOTDATE$$$$

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)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	302+50 to 303+50 -L-	48" RCP-IV						0.02	<0.01	345	40	
		Bank Stabilization								32		
2	329+50 to 331+50 -L-	36" RCP-IV	2.49			0.05						
	17+00 to 18+48.13											
	-Y3RPA-											
	17+00 to 19+00											
	-Y3RPD-											
3	372+50 to 374+50 -L-	Dual Bridges	<0.01	<0.01		0.07	0.66					
	17+51 to 22+00	2@ 8'X8' RCBC	0.08			0.02		<0.01	0.01	5	50	
	-DRV3-											
	11+50 to 12+50											
	-DRV4-											
4	389+02 to 399+75 -L-	Dual Bridges	0.76	0.06	0.06	0.12	1.19					
		48" RCP-IV										
5	432+00 to 434+00 -L-	36" RCP-IV	0.86			0.05						
6	437+00 to 446+00 -L-		1.60			0.13		0.03				
TOTALS:			5.79	0.06	0.06	0.44	1.84	0.04	0.01	382.00	90.00	0.00

Site 2 is a total take, and all of the wetland has been accounted for, including the wetland that is outside of the ROW.

There is permanent fill in wetlands at sites 3 and 4 due to the piles for the proposed bridges. Also, there is temporary fill in wetlands at sites 3 and 4 due to the piles for the work bridges. The pile areas are too small to show in the permit drawings, but they have been accounted for in the wetland summary.

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JONES COUNTY
WBS - 34442.1.1 (R-2514D)

PROJECT REFERENCE NO.	SHEET NO.
R-2514D	
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BUFFER DRAWING SHEET 2 OF 20

REVISED 6/13/18

NAD 83/NSRS 2007

SITE 1

1
IERS FARM, INC
0 PG 711
0 PG 631
3 PG 256
7 PG 819
12 PG 55
8 PG 898
2 PG 8

DETAIL 'A'
LATERAL GRASSED SWALE
(Not to Scale)

Natural Ground, 2:1, D, 3:1, b, 1':Ft., FILL SLOPE, B
Min. D = 1.5 Ft.
B = 4 Ft.
b = 5 Ft.

FROM STA. 300+00 LT. TO STA. 301+50 LT. –L–

DETAIL 'LL'
PIPE OUTLET CHANNEL
(Not to Scale)

Natural Ground, MIN. 2:1 SS EXISTING BANK, PROPOSED CHANNEL WORK, d, CHANNEL BED (Variable)

Length = 16 Ft.
d = 1.5 Ft.
Est. = 8 Tons of Class I Rip-Rap
Est. = 16 SY Geotextile

FROM STA. 303+16 TO STA. 303+34 –L–

GRASS SWALE DATA
DA = 0.72 AC PAV.
0.67 AC GRASS
5.4 AC OFFSITE
SLOPE = 0.003 FT/FT
L REQ. = 612 FT
L PRO. = 150 FT
Q2 = 11 CFS
V2 = 1.6 FT/S
Q10 = 14.0 CFS
V10 = 1.7 FT/S

STA. 300+00 TO 301+50 LT –L–
4' BASE LATERAL GRASSED SWALE
SEE DETAIL 'A'
APPROX. 160 CY DDE

GRASS SWALE DATA
DA = 1.25 AC PAV.
8.09 AC GRASS
SLOPE = 0.0026 FT/FT
L REQ. = 125 FT
L PRO. = 1245 FT
Q2 = 12.3 CFS
V2 = 1.5 FT/S
Q10 = 16.2 CFS
V10 = 1.7 FT/S

STA. 303+75 TO 316+20 LT. –L–

CL 'I' RIP RAP
EST. 33 TON
EST. 622 SY GEOTEXTILE

REMOVE

CHORD

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

300' TAPER

BURIED 20%

PIPE OUTLET CHANNEL
SEE DETAIL 'LL'

15" RCP

2GI

FS

0501, 0502, 0503, 0504

+ 56.61

N 11° 39' 27.2" E

300

305

12' PS

8:1

GRASS SWALE DATA
DA = 0.08 AC PAV.
0.39 AC GRASS
SLOPE = 0.003 FT/FT
L REQ. = 47 FT
L PRO. = 426 FT
Q2 = 1.2 CFS
V2 = 0.8 FT/S
Q10 = 1.6 CFS
V10 = 0.9 FT/S

STA. 300+15 TO 304+41 MEDIAN –L–

GRASS SWALE DATA
DA = 2.55 AC PAV.
31.6 AC GRASS
SLOPE = 0.003 FT/FT
L REQ. = 255 FT
L PRO. = 1150 FT
Q2 = 39 CFS
V2 = 1.9 FT/S
Q10 = 51 CFS
V10 = 2.1 FT/S

STA. 302+50 TO 314+00 RT. –L–

ADDITIONAL 20'+/- ROW NEEDED (ASSUMED ADDTL. 30' FOR PERMITTING PURPOSES)

LATERAL BASE D
SEE DETAIL
4000 CY +/-
0.3% GRAD
314+00 DITCH EL
302+50 DITCH EL

+21.32
385.87

BELL B
DB
DB
DB
DB
DB
M

1
BELL BROTHERS FARM, INC
DB 310 PG 711
DB 180 PG 631
DB 188 PG 256
DB 197 PG 819
DB 282 PG 55
DB 278 PG 898
MB 12 PG 8

END PROJECT R–2514C
BEGIN PROJECT R–2514D
–L– STA. 300+00.00

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

GRAPHIC SCALE

100 50 0 100 200

–L– STA. 308+00.00

SEE SHEET 32 FOR –L– PROFILE

REVISIONS

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6/13/2018
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$$$$USERNAME$$$$
$$$$DESIGN$$$$
$$$$PLOTSCALE$$$$
$$$$PLOTDATE$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2514D	
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

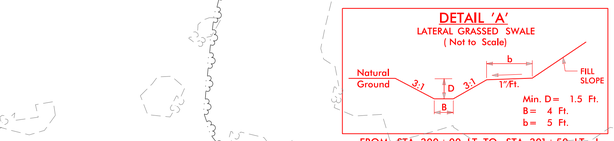
BUFFER DRAWING SHEET 3 OF 20

REVISED 6/13/18

NAD 83/NSRS 2007

SITE 1

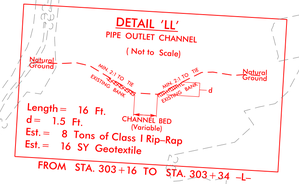
DETAIL 'A'
LATERAL GRASSED SWALE
(Not to Scale)



Min. D = 1.5 Ft.
B = 4 Ft.
b = 5 Ft.

FROM STA. 300+00 LT. TO STA. 301+50 LT. –L–

DETAIL 'LL'
PIPE OUTLET CHANNEL
(Not to Scale)



Length = 16 Ft.
d = 1.5 Ft.
Est. = 8 Tons of Class I Rip-Rap
Est. = 16 SY Geotextile

FROM STA. 303+16 TO STA. 303+34 –L–

GRASS SWALE DATA
DA = 0.72 AC PAV.
0.67 AC GRASS
5.4 AC OFFSITE
SLOPE = 0.003 FT/FT
L REQ. = 612 FT
L PRO. = 150 FT
Q2 = 11 CFS
V2 = 1.6 FT/S
Q10 = 14.0 CFS
V10 = 1.7 FT/S

STA. 300+00 TO 301+50 LT –L–
4' BASE LATERAL GRASSED SWALE
SEE DETAIL 'A'
APPROX. 160 CY DDE

GRASS SWALE DATA
DA = 1.25 AC PAV.
8.09 AC GRASS
SLOPE = 0.0026 FT/FT
L REQ. = 125 FT
L PRO. = 1245 FT
Q2 = 12.3 CFS
V2 = 1.5 FT/S
Q10 = 16.2 CFS
V10 = 1.7 FT/S

STA. 303+75 TO 316+20 LT. –L–

CL 'I' RIP RAP
EST. 33 TON
EST. 62 SY GEOTEXTILE

24" RCP CL IV
REMOVE

CHORD

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

300' TAPER

(0501) BURIED 20%
(0503)
(0502)
(0504)
(0401) BURIED 20%

15" RCP CL IV

PIPE OUTLET CHANNEL
SEE DETAIL 'LL'

+56.61

N 11° 39' 27.2" E

300 305

12' PS 8:1

GRASS SWALE DATA
DA = 0.08 AC PAV.
0.39 AC GRASS
SLOPE = 0.003 FT/FT
L REQ. = 47 FT
L PRO. = 426 FT
Q2 = 1.2 CFS
V2 = 0.8 FT/S
Q10 = 1.6 CFS
V10 = 0.9 FT/S

STA. 300+15 TO 304+41 MEDIAN –L–

GRASS SWALE DATA
DA = 2.55 AC PAV.
31.6 AC GRASS
SLOPE = 0.003 FT/FT
L REQ. = 255 FT
L PRO. = 1150 FT
Q2 = 39 CFS
V2 = 1.9 FT/S
Q10 = 51 CFS
V10 = 2.1 FT/S

STA. 302+50 TO 314+00 RT. –L–

ADDITIONAL 20'+/- ROW NEEDED (ASSUMED ADDTL. 30' FOR PERMITTING PURPOSES)

LATERAL BASE D
SEE DETAIL
4000 CY +/-
0.3% GRAD
314+00 DITCH EL
302+50 DITCH EL

385.87

1 BELL BROTHERS FARM, INC
DB 310 PG 711
DB 180 PG 631
DB 188 PG 256
DB 197 PG 819
DB 282 PG 55
DB 278 PG 898
MB 12 PG 8

1 BELL BROTHERS FARM, INC
DB 310 PG 711
DB 180 PG 631
DB 188 PG 256
DB 197 PG 819
DB 282 PG 55
DB 278 PG 898
MB 12 PG 8

BELL B
DB
DB
DB
DB
DB
ME

END PROJECT R-2514C
BEGIN PROJECT R-2514D
–L– STA. 300+00.00

–L– STA. 308+00.00

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

GRAPHIC SCALE

100 50 0 100 200

SEE SHEET 32 FOR –L– PROFILE

REVISIONS

8/17/99

6/13/2018
jlmoore6
R:\Hydraulics\CADD\Bell Property Revision\Permit Drawings\Buffer\R2514D_Hyd_Buffer_site_1_con.dgn
$$$$USERNAME$$$$
$$$$DESIGN$$$$
$$$$FILENAME$$$$

BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	48" RCP-IV	301+70 TO 303+89 -L-	X						23430	15091	38521		
2	DUAL BRIDGES	371+98 TO 374+73 -L-		X		11778	6975	18753					
	2@8'X8' RCBC	18+28 TO 22+07 -DRV3-	X			2143	2083	4226					
		10+65 TO 10+78 -DRV4-			X		26	26					
3	DUAL BRIDGES	388+28 TO 395+18 -L-		X		31209	12501	43710					
4	54"RCP-IV	473+16 TO 474+13 -L-	X						14017	9383	23400		
5	36" RCP-IV	519+60 TO 520+66 -L-	X						15142	9677	24819		
6	78" RCP-IV	529+50 TO 532+45 -L-	X						20266	12665	32931		
7	60" RCP-IV	507+43 TO 513+23 -L-	X						38167	25504	63671		
8	BRIDGE	18+45 TO 20+27 -Y10RPA-		X		7707	6694	14401					
TOTAL:						52837	28279	81116	111022	72320	183342		

REVISED
6/13/18

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

JONES COUNTY
PROJECT: 34442.1.1 (R-2514D)

5/29/2014
SHEET 1 OF 1

Rev. May 2006


PONDING LOCATION
PONDING LOCATION
NAD 83/NSRS 2007
BELL BROTHERS FARM, INC
DB 310 PG 711
DB 180 PG 631
DB 188 PG 256
DB 197 PG 819
DB 282 PG 55
DB 278 PG 898
MB 12 PG 8
N 20° 40' 52.6" E
N 20° 24' 49.6" E
N 20° 51' 34.2" E
N 20° 38' 18.5" E
CHORD
300' TAPER
1350' FULL LANE
520' FULL LANE
BEGIN SBG -L- 317+37
BEGIN SBG -L- 311+54
END SBG AT APPROACH SLAB
NOTE: NO DECK DRAINS REQUIRED FOR THIS STRUCTURE
TYPE M-350
-L-
PIs Sta 304+88.75
θs = 0° 33' 43.5"
Ls = 150.00'
LT = 100.00'
ST = 50.00'
PI Sta 310+63.74
Δ = 7° 51' 24.5" (RT)
D = 0° 44' 58.0"
L = 1,048.34'
T = 524.99'
R = 7,645.00'
SE = .03
R0 = 150'