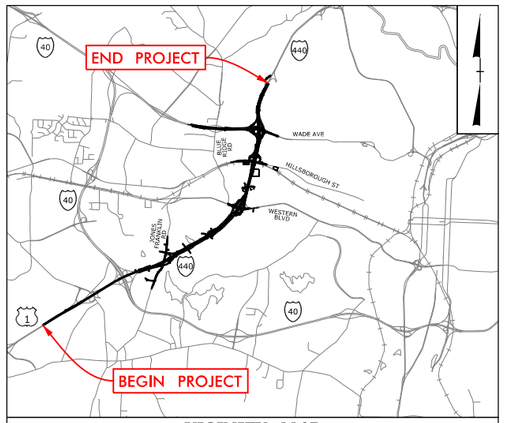
TIP PROJECT: U-2719 /U-4437

CONTRACT: C204157

See Sheet 1A-1 For Sheet Symbology



VICINITY MAP
(NOT TO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2719	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
35869.3.1	IMSNHS-0440(10)	PE, ROW, UTILITIES
35868.3.4	STBG-0054(030)	& CONSTR.

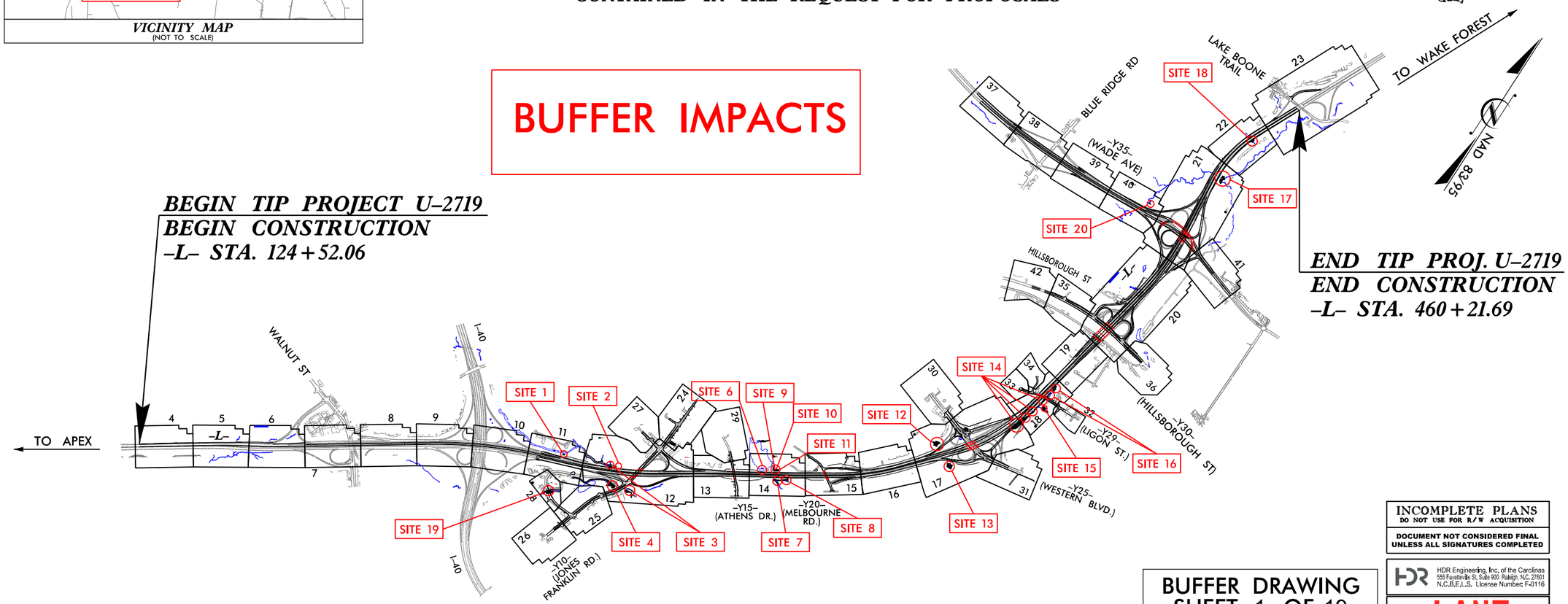
LOCATION: I-440 /US 1 FROM SOUTH OF SR 1313 (WALNUT STREET) TO NORTH OF SR 1728 (WADE AVENUE)

TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK CONTAINED IN THE REQUEST FOR PROPOSALS

BUFFER IMPACTS

BEGIN TIP PROJECT U-2719
BEGIN CONSTRUCTION
-L- STA. 124+52.06

END TIP PROJ. U-2719
END CONSTRUCTION
-L- STA. 460+21.69



BUFFER DRAWING
SHEET 1 OF 19

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

LANE

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2018 = 144,810
ADT 2040 = 183,700
K = 10 %
D = 55 %
T = 9 % *
V = 70 MPH
* TTST = 5% DUAL = 4%
FUNC CLASS =
INTERSTATE
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-2719 /U-4437 = 6.087 MILES
LENGTH STRUCTURES TIP PROJECT U-2719 /U-4437 = 0.162 MILES
TOTAL LENGTH TIP PROJECT U-2719 /U-4437 = 6.249 MILES

NCDOT CONTACT: DAVID HERING, PE
DESIGN-BUILD UNIT - PROJECT ENGINEER

Prepared for the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: OCTOBER 2, 2018

LETTING DATE: OCTOBER 2, 2018

PAUL MEEHAN, PE
PROJECT ENGINEER

ERSKINE BROOKS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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09/08/99

REFERENCE ONLY – NO IMPACTS

LANE

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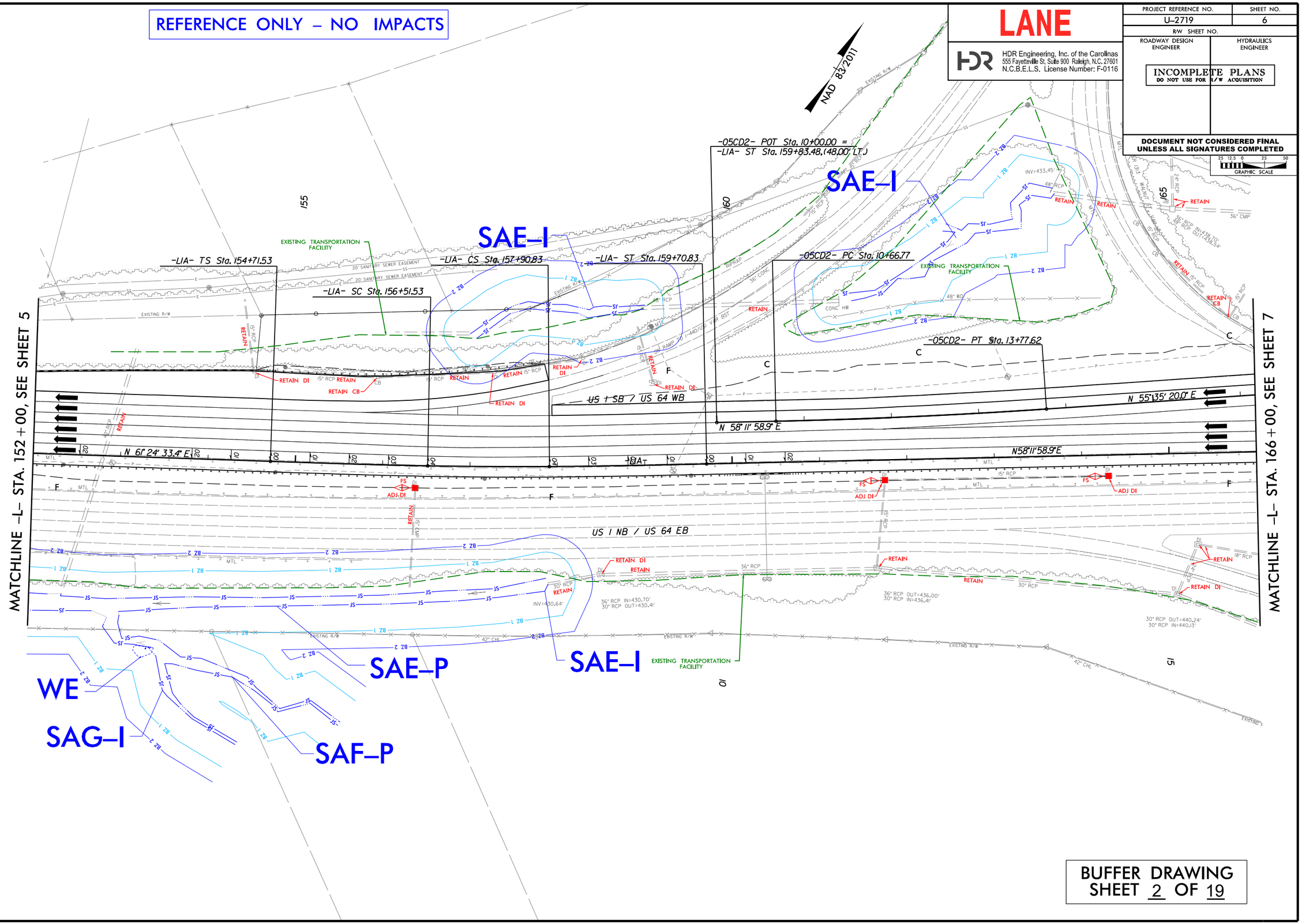
PROJECT REFERENCE NO.	SHEET NO.
U-2719	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALE 25 12.5 0 25 50



BUFFER DRAWING
SHEET 2 OF 19

REVISIONS

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LANE

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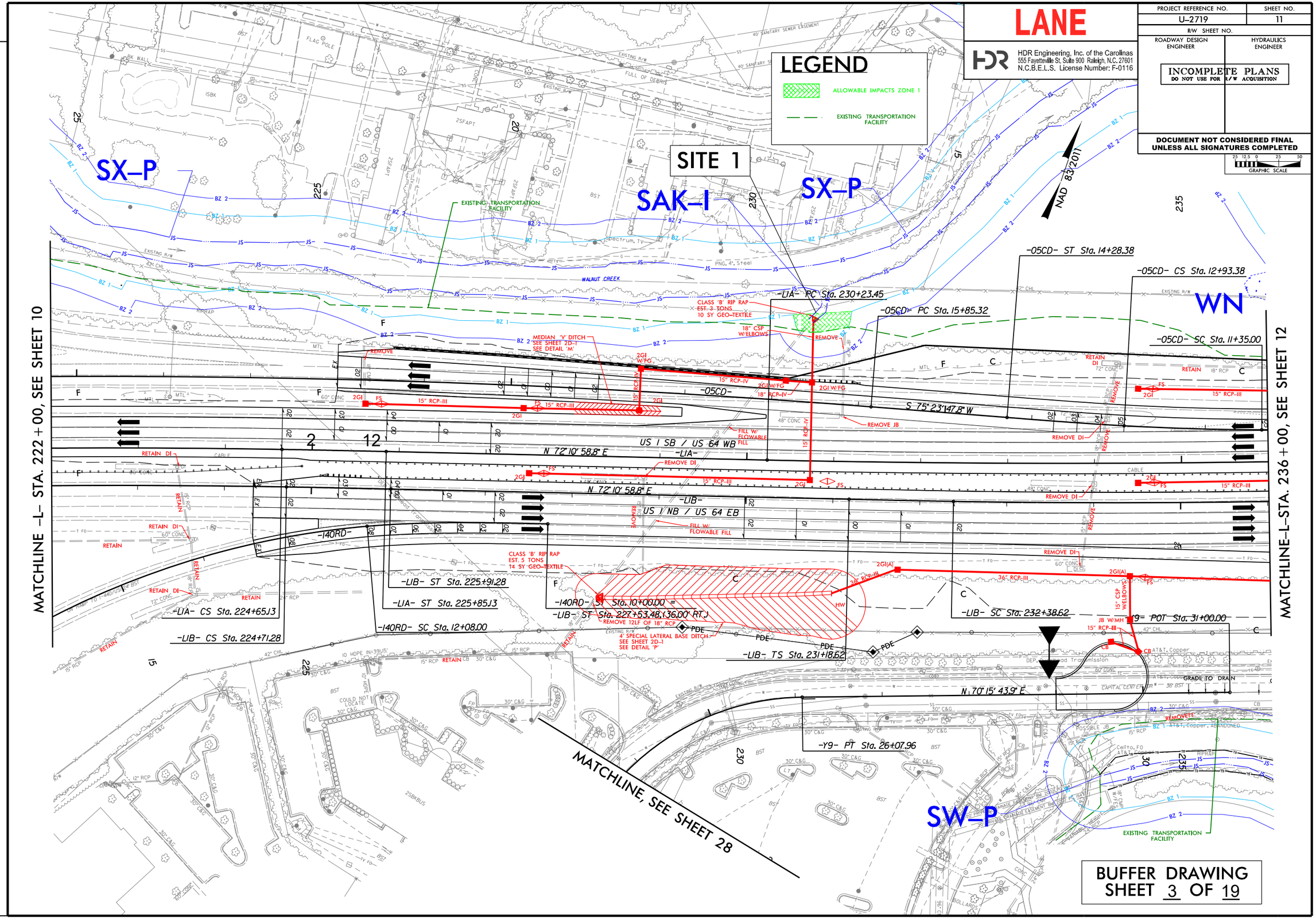
PROJECT REFERENCE NO.	SHEET NO.
U-2719	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALE 25 12.5 0 25 50



BUFFER DRAWING
SHEET 3 OF 19

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REVISIONS

REVISIONS

LEGEND

- MITIGABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2
- EXISTING TRANSPORTATION FACILITY

DETAIL N — LATERAL BASE DITCH

DETAIL AX — CULVERT OUTLET STABILIZATION

DETAIL BE — 2' LATERAL BASE DITCH

DETAIL AY1 — CULVERT OUTLET STABILIZATION

DETAIL AY2 — CULVERT OUTLET STABILIZATION

LANE

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PROJECT REFERENCE NO.	SHEET NO.
U-2719	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Pond OWD is isolated therefore has no buffers

SAA–P

WM

SZ–P

SX–P

SY–I

SX–P

SITE 3

SITE 2

WK

SEE SHEET 12A

SEE SHEET 12B

MATCHLINE–L–STA. 236+00, SEE SHEET 11

MATCHLINE–Y8–STA. 11+89.05, SEE SHEET 27

MATCHLINE–Y10–STA. 24+00, SEE SHEET 24

MATCHLINE–L–STA. 264+00, SEE SHEET 13

MATCHLINE–Y10–STA. 44+00, SEE SHEET 25

OWF

SW–P

SW–P

SITE 4

SITE 3

WL

SX–P

OWD

DRY DETENTION BASIN #1

BUFFER DRAWING SHEET 4 OF 19

GRAPHIC SCALE 50 25 0 50 100 PLANS

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

PLOT DATE: 8/27/2019
USER: JMASSARO
FILE: I:\DPM_Construction\Projects\U-2719\Hydraulics\PERMITS\Environmental\Drawings\Buffers\U2719-HA17_BUF_P04.dgn

PDWTABLE: NCDOT_permits_NCDOW.tbl
DATE: 5/13/2019
TIME: 11:14:03 PM

PROJECT REFERENCE NO.	SHEET NO.
U-2719	12A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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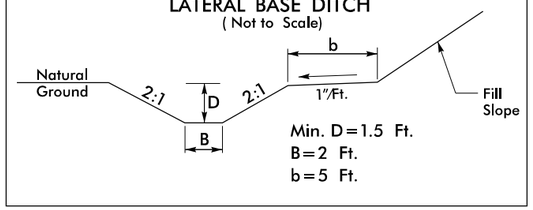
LANE

GRAPHIC SCALE 12.5 0 12.5 25

DETAIL N
LATERAL BASE DITCH
(Not to Scale)



FROM STA. 243+95 TO STA. 245+85 –L1A– LT

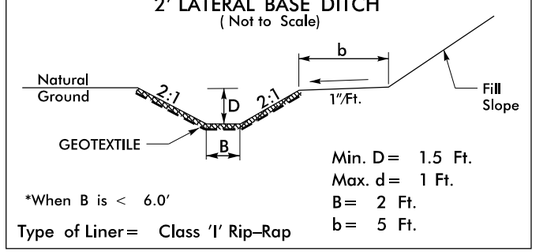
LEGEND

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

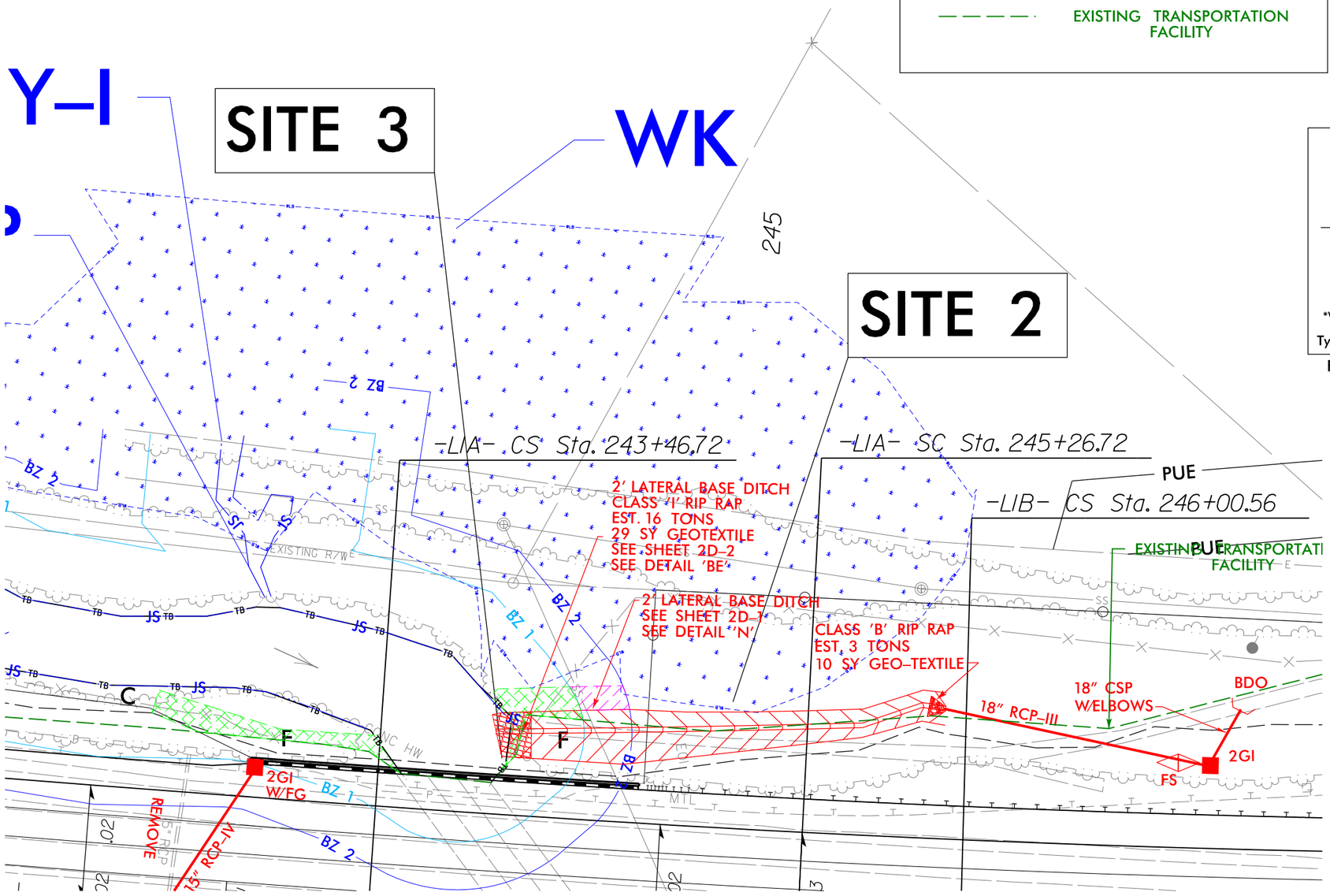
EXISTING TRANSPORTATION FACILITY

DETAIL BE
2' LATERAL BASE DITCH
(Not to Scale)



FROM STA. 243+85 TO STA. 244+00 –L1A– LT

NAD 83/2011



BUFFER DRAWING
SHEET 5 OF 19

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
U-2719	12B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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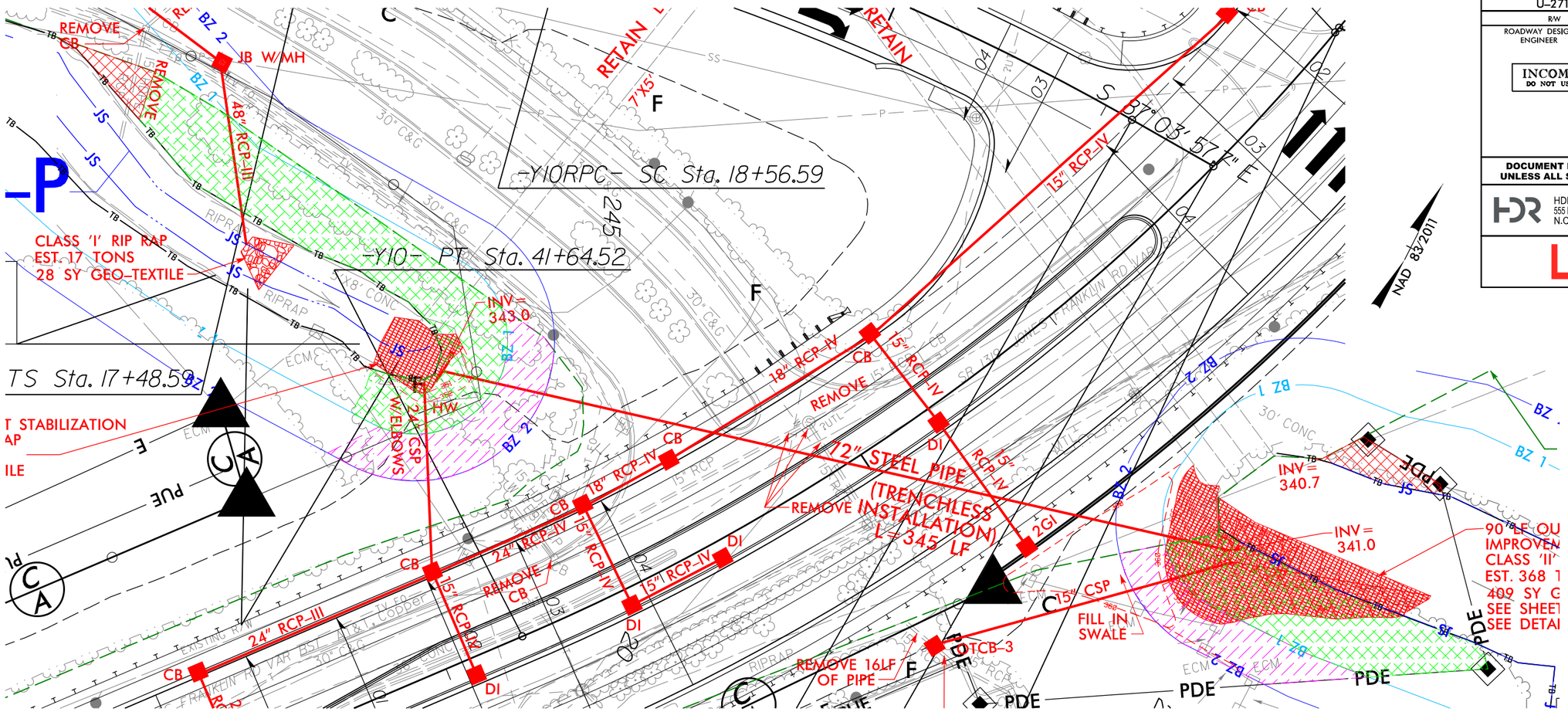
N.C.B.E.L.S. License Number: F-0116

LANE

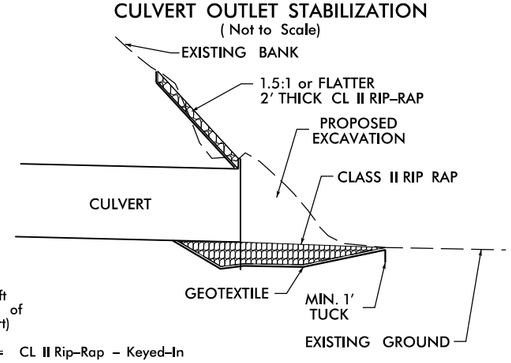
GRAPHIC SCALE 12.5 0 12.5 25



SITE 4

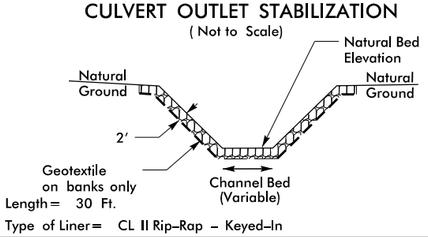
SITE 3

DETAIL AY1
CULVERT OUTLET STABILIZATION
(Not to Scale)



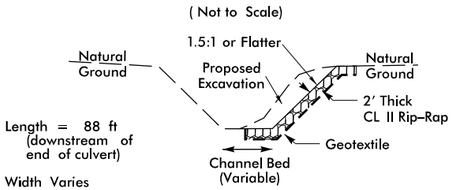
STA. 39+01 -Y10- LT

DETAIL AX
CULVERT OUTLET STABILIZATION
(Not to Scale)



STA. 41+48 -Y10- RT

DETAIL AY2
CULVERT OUTLET STABILIZATION
(Not to Scale)



STA. 39+01 -Y10- LT

LEGEND

- MITIGABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2
- EXISTING TRANSPORTATION FACILITY

BUFFER DRAWING
SHEET 6 OF 19

REVISIONS

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Pond reconstruction being performed under City of Raleigh contract. No buffer impacts anticipated from U-2719 project.

LANE

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PROJECT REFERENCE NO.	SHEET NO.
U-2719	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALE 25 12.5 0 25 50

LEGEND

- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2
- ALLOWABLE IMPACTS ZONE 1
- EXISTING TRANSPORTATION FACILITY

MATCHLINE-L-STA. 278+00, SEE SHEET 13

MATCHLINE-L-STA. 292+00, SEE SHEET 15

NAD 83/2011

-Y19- POT Sta. 100+00.00

-Y19- PT Sta. 103+26.50

-Y19- PC Sta. 102+67.02

S 82°08'06" E

ST-P

SITE 7

SITE 9

SITE 10

SITE 6

SITE 11

OWC

SU-I

WJ

WF

WI

SV-I

WH

ST-P

SITE 7

SITE 8

WG

LAKE CRAMER
WATER ELEVATION=402.19'

GRADE CHANNEL SLOPE TO 2:1 WITH CLASS II RIPRAP SEE SHEET 2D-2 SEE DETAIL 'BJ'

4' LATERAL BASE DITCH SEE SHEET 2D-1 SEE DETAIL 'T'

LATERAL 'V' DITCH SEE SHEET 2D-1 SEE DETAIL 'U'

CLASS 'B' RIP RAP EST. 2 TONS 7 SY GEO-TEXTILE

BERM 'V' DITCH SEE SHEET 2D-1 SEE DETAIL 'V'

DRY DETENTION BASIN #2 SEE DETAIL SHEET 2D-3 AND 2D-4

OUTLET STRUCTURE

OUTLET STABILIZATION CLASS 'II' RIP RAP EST. 115 TONS 115 SY GEO-TEXTILE SEE SHEET 2D-1 DETAIL 'BI'

BANK STABILIZATION CLASS 'I' RIP RAP EST. 130 TONS 180 SY GEO-TEXTILE SEE SHEET 2D-2 DETAIL 'BB'

CLASS 'I' RIP RAP EST. 17 TONS 38 SY GEO-TEXTILE

EXISTING TRANSPORTATION FACILITY

DRY DETENTION BASIN #2

-L1- TS Sta. 287+89.27

-L1- SC Sta. 289+09.27

-L1- CS Sta. 290+63.02

-L1- ST Sta. 291+83.02

DETAIL BJ
CHANNEL BANK STABILIZATION
(Not to Scale)

Length= 160 Ft.
Est.= 150 Tons of Class I Rip-Rap

FROM 284+24 -L1-LT STA. TO STA. 285+84 -L1-LT

DETAIL BB
BANK STABILIZATION
(Not to Scale)

Est.=Class I Rip-Rap

FROM STA. 284+90 TO STA. 287+27 -L1- RT

DETAIL BI
CULVERT OUTLET STABILIZATION
(Not to Scale)

Length= 35 Ft.
Type of Liner= CL II Rip-Rap - Keyed-In

STA. 284+70 -L1- RT

BUFFER DRAWING
SHEET 7 OF 19

REVISIONS

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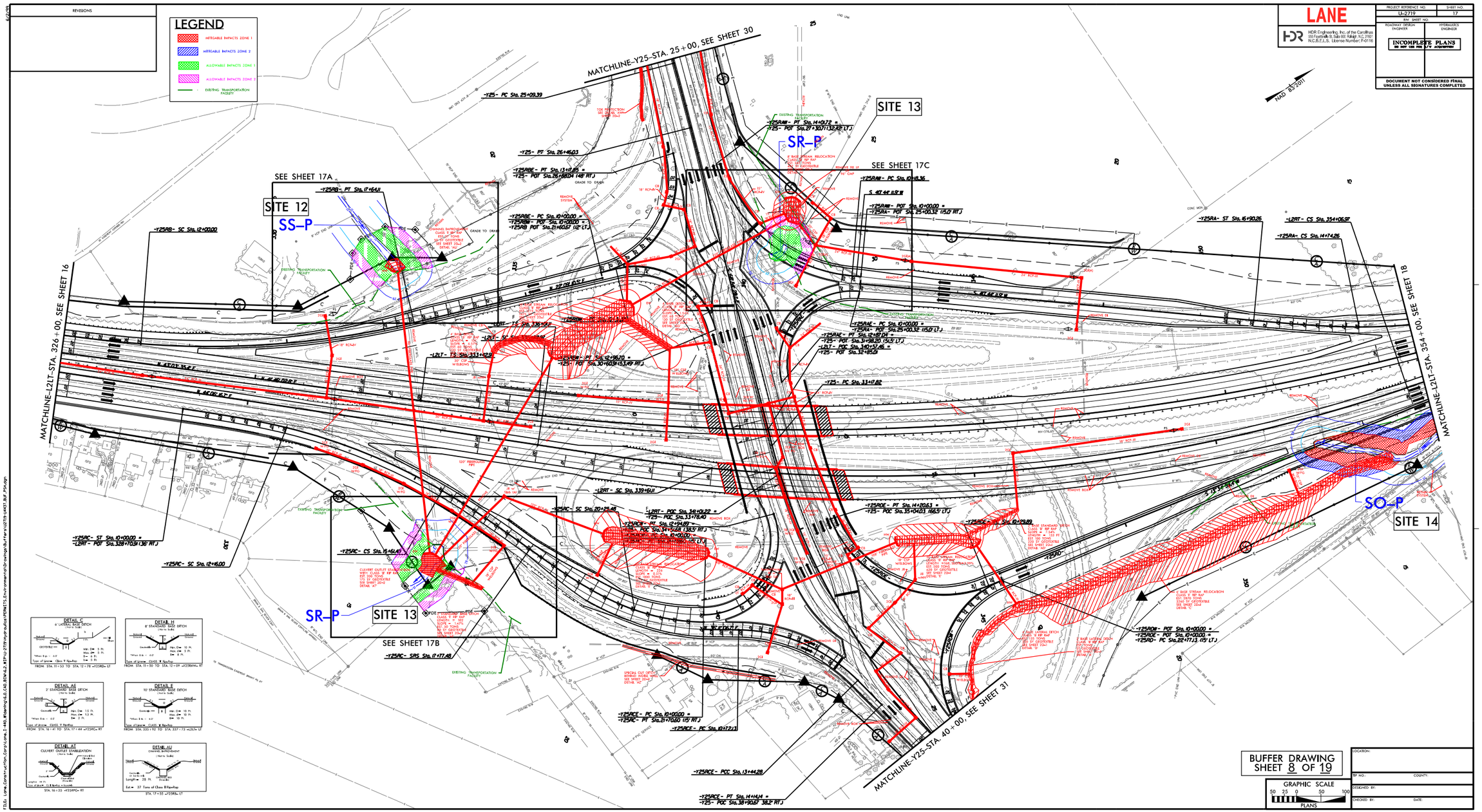
REVISIONS

LEGEND

- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2
- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2
- EXISTING TRANSPORTATION FACILITY



LANE

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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2719	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
NO WORK MAY BE DONE FROM THESE PLANS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BUFFER DRAWING
SHEET 8 OF 19

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

PLOT DRIVER: MODOT.pdf.color*.pmp,100.pdf
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PROJECT REFERENCE NO.	SHEET NO.
U-2719	17A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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N.C.B.E.L.S. License Number: F-0116

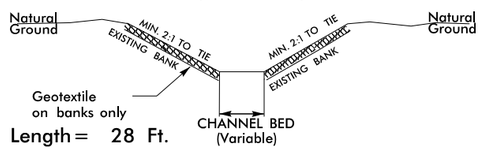
LANE

12.5 0 12.5 25
GRAPHIC SCALE

DETAIL AU

CHANNEL IMPROVEMENT

(Not to Scale)



Length = 28 Ft.

Est. = 37 Tons of Class II Rip-Rap

STA. 17 + 55 –Y25RB– LT

LEGEND

ALLOWABLE IMPACTS ZONE 1

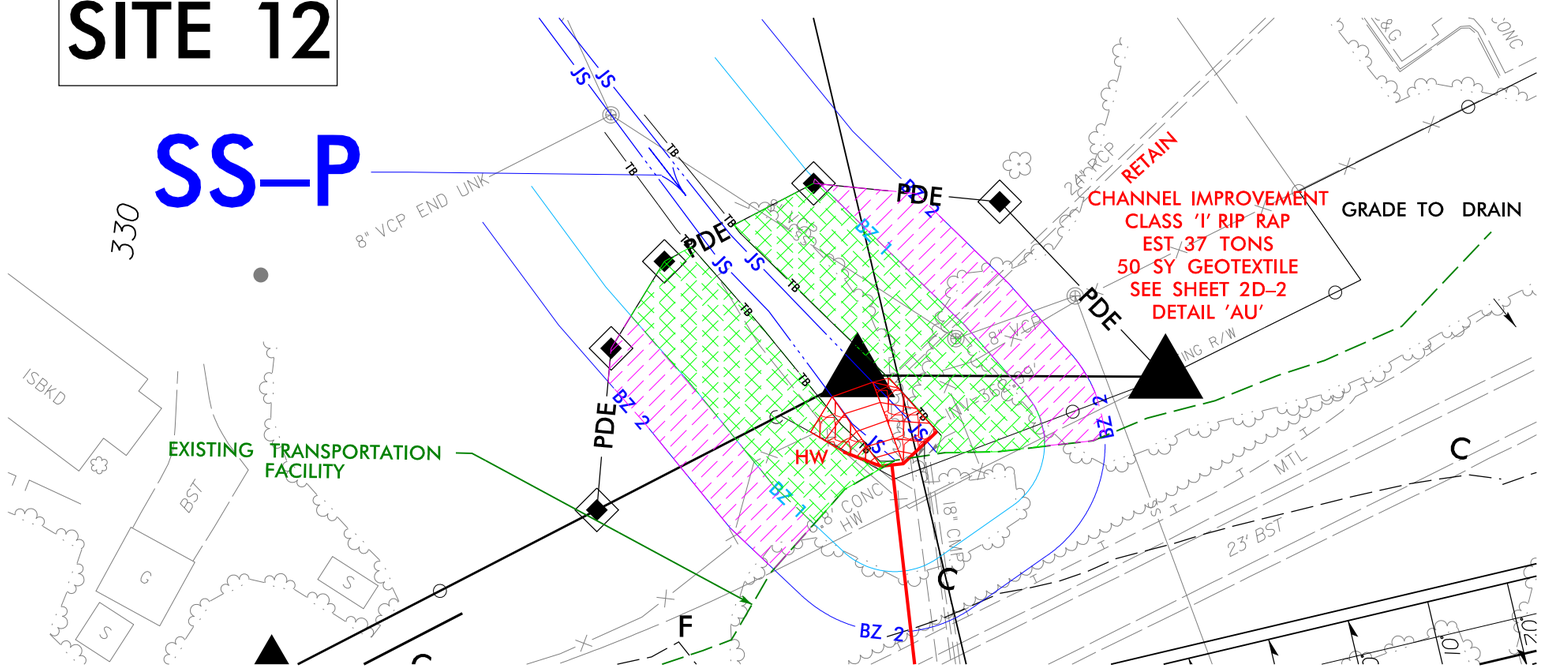
ALLOWABLE IMPACTS ZONE 2

EXISTING TRANSPORTATION FACILITY

NAD 83/2011

SITE 12

SS–P



BUFFER DRAWING
SHEET 9 OF 19

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-2719	17B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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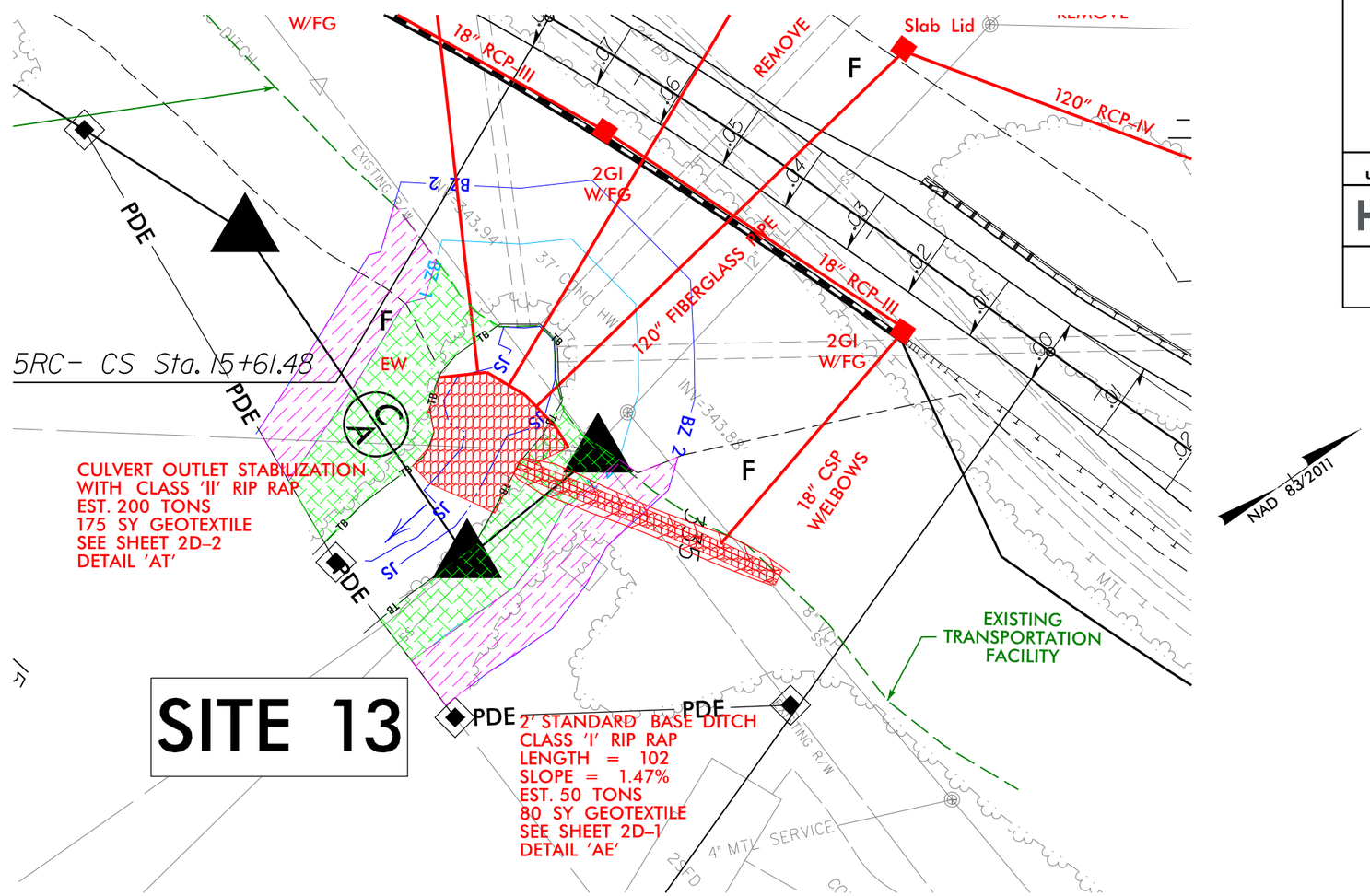
N.C.B.E.L.S. License Number: F-0116

LANE

GRAPHIC SCALE 12.5 0 12.5 25

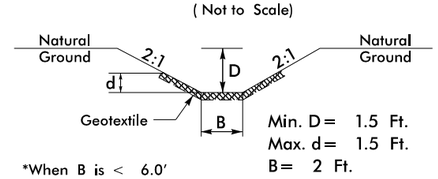


SITE 13

LEGEND

- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2
- EXISTING TRANSPORTATION FACILITY

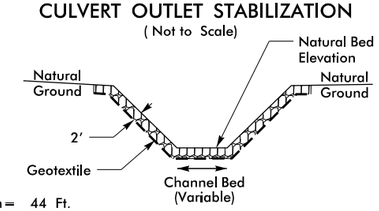
DETAIL AE
2' STANDARD BASE DITCH
(Not to Scale)



Type of Liner = CLASS 'I' Rip-Rap

FROM STA. 16+41 TO STA. 17+44 -Y25RC- RT

DETAIL AT
CULVERT OUTLET STABILIZATION
(Not to Scale)



Length = 44 Ft.
Type of Liner = CL II Rip-Rap - Keyed-In

STA. 16+25 -Y25RPC- RT

BUFFER DRAWING
SHEET 10 OF 19

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
U-2719	17C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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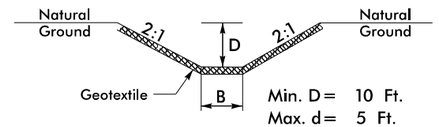
N.C.B.E.L.S. License Number: F-0116

LANE

GRAPHIC SCALE 12.5 0 12.5 25

DETAIL H
8' STANDARD BASE DITCH
(Not to Scale)



Min. D = 10 Ft.
Max. d = 5 Ft.
B = 8 Ft.

*When B is < 6.0'

Type of Liner = CLASS 'II' Rip-Rap

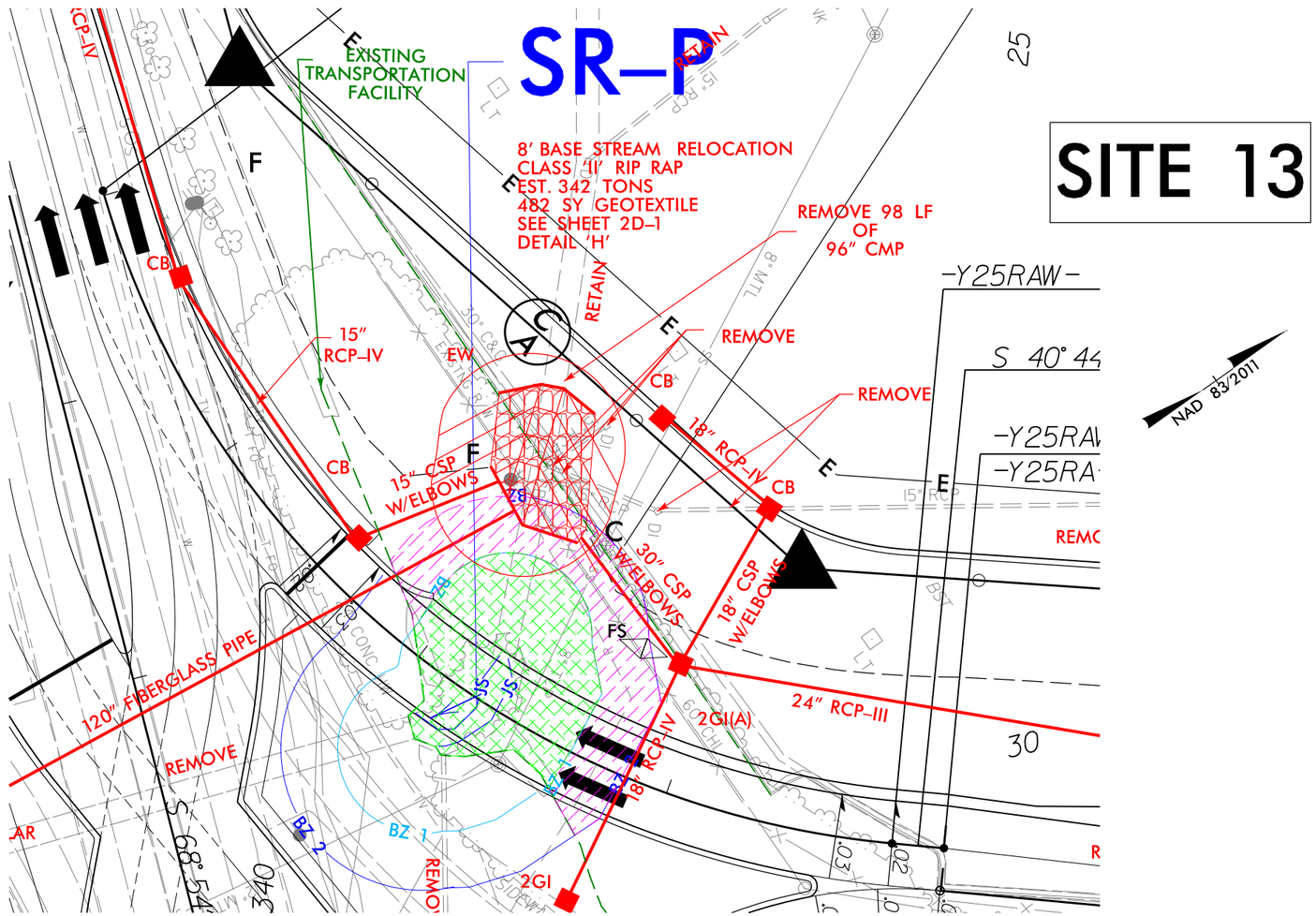
FROM STA. 11+50 TO STA. 12+09 -Y25RAW- RT

LEGEND

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

EXISTING TRANSPORTATION FACILITY



BUFFER DRAWING
SHEET 11 OF 19

REVISIONS

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LANE

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2719	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

25 12.5 0 25 50
GRAPHIC SCALE

DETAIL C
6' LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2:1, d, D, b, 1'/Ft., Fill Slope, GEOTEXTILE, B

Min. D = 5 Ft.
Max. d = 5 Ft.
B = 6 Ft.
b = 5 Ft.

*When B is < 6.0'

Type of Liner = Class 'I' Rip-Rap

FROM STA. 11+53 TO STA. 12+78 -Y25RD- LT
FROM STA. 14+38 TO STA. 22+58 -Y25RD- LT

DETAIL BB
BANK STABILIZATION
(Not to Scale)

Natural Ground, EXISTING BANK, MIN 2:1 TO THE EXISTING BANK, Geotextile on banks only, CHANNEL BED (Variable)

Est. = Class I Rip-Rap

STA. 358+31 -L2RT- RT
STA. 361+65 -L2RT- RT
STA. 362+43 -L2RT- RT

DETAIL BC
RIP RAP AT JS STREAM
(Not to Scale)

Natural Ground, Natural Bed Elevation, 2', Geotextile on banks only, Channel Bed (Variable)

Length = 45 Ft.
Type of Liner = CL I Rip-Rap - Keyed-In

STA. 365+75 -L3- RT

DETAIL BF
OUTLET STABILIZATION
(Not to Scale)

Natural Ground, Natural Bed Elevation, 1.5', Geotextile, Channel Bed (Variable)

Length = 12 Ft.
Type of Liner = CL I Rip-Rap - Keyed-In

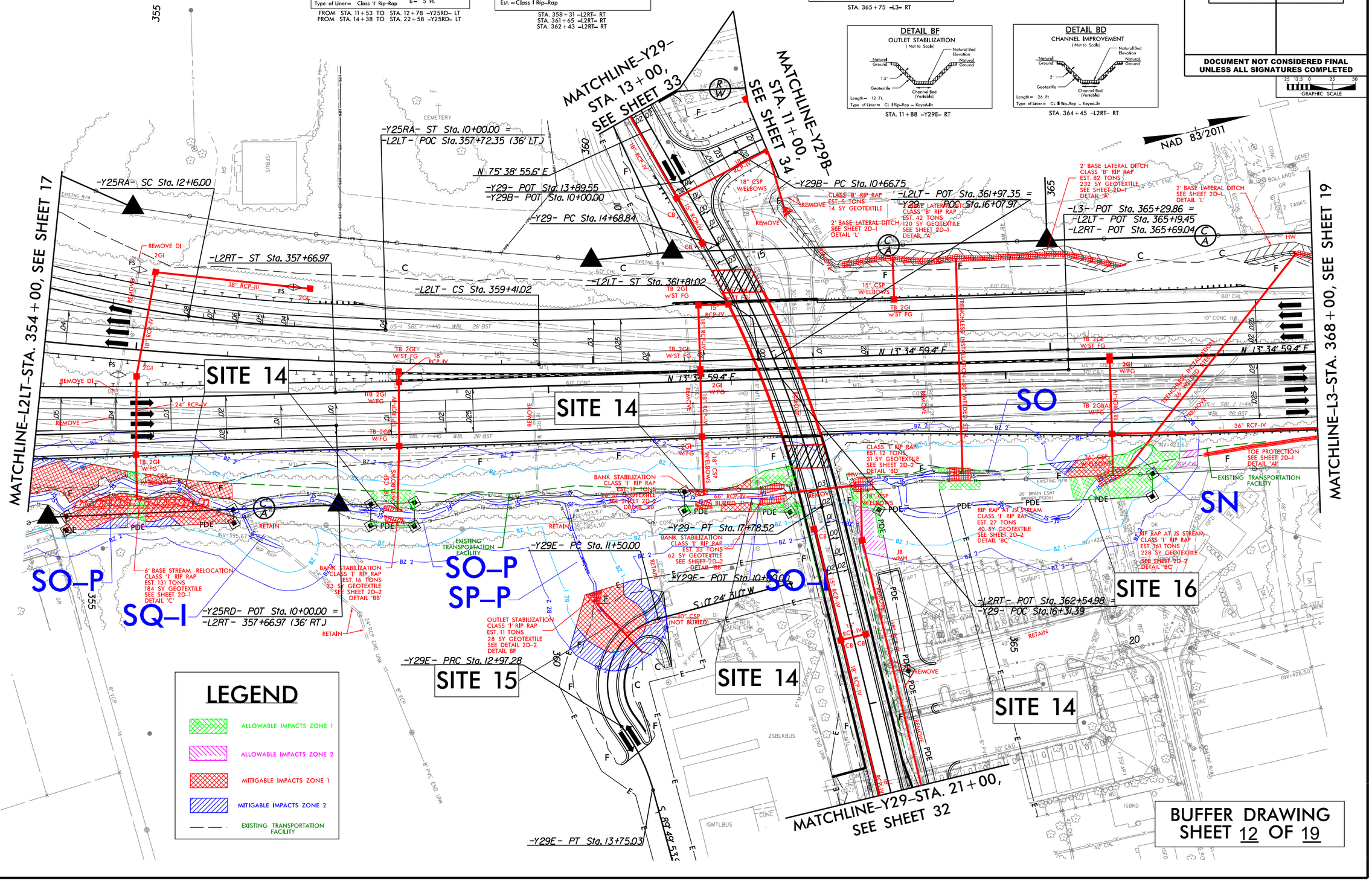
STA. 11+88 -Y29E- RT

DETAIL BD
CHANNEL IMPROVEMENT
(Not to Scale)

Natural Ground, Natural Bed Elevation, 2', Geotextile, Channel Bed (Variable)

Length = 26 Ft.
Type of Liner = CL II Rip-Rap - Keyed-In

STA. 364+45 -L2RT- RT



BUFFER DRAWING SHEET 12 OF 19

REVISIONS

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REVISIONS

REFERENCE ONLY – NO IMPACTS

LANE

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St. Suite 800 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2719	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR C.P.V. ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

MATCHLINE –Y30– STA. 30+00, SEE SHEET 35

MATCHLINE –L– STA. 381+00, SEE SHEET 19

MATCHLINE –Y35RB– STA. 25+50, SEE SHEET 21

MATCHLINE –L– STA. 409+00, SEE SHEET 21

MATCHLINE –Y35RC– STA. 12+00, SEE SHEET 21

MATCHLINE –Y30– STA. 43+00, SEE SHEET 36

OWA

DRY DETENTION BASIN #3

BUFFER DRAWING
SHEET 13 OF 19

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

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USER: RLELLY
TIME: 4:04:26 PM
DATE: 5/31/2019
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REVISIONS

LANE

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St. Suite 800 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2719	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

50 25 0 50 100
GRAPHIC SCALE

DETAIL A5
CULVERT OUTLET STABILIZATION
(Not to Scale)
STA. 433+34 =L= RT

DETAIL B
2' LATERAL BASE DITCH
(Not to Scale)
FROM STA. 433+00 TO STA. 433+25 =L= RT

NAD 83/2011

DRY DETENTION BASIN #4

DRY DETENTION BASIN #5

SITE 17 SC-P

SITE 18 SAN-P

SC-P

SF-P

WA

SC-P

MATCHLINE -Y35RB- STA. 17+00, SEE SHEET 40

MATCHLINE -Y35EB- STA. 93+00, SEE SHEET 40

MATCHLINE -Y35WB2-, STA. 92+60, -Y35RA- STA. 36+15, SEE SHEET 40

MATCHLINE -Y35RB- STA. 25+50, SEE SHEET 20

MATCHLINE -L- STA. 409+00, SEE SHEET 20

MATCHLINE -Y35RC- STA. 12+00, SEE SHEET 20

MATCHLINE -Y35- STA. 106+00, SEE SHEET 41

MATCHLINE -Y35CDEBE- STA. 15+50, SEE SHEET 41

MATCHLINE -Y35WBE- STA. 11+82.13 SEE SHEET 41

MATCHLINE -Y35WB2-, STA. 106+56.16, SEE SHEET 41

MATCHLINE -L- STA. 437+00 SEE SHEET 22

LEGEND

- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2
- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2
- EXISTING TRANSPORTATION FACILITY

BUFFER DRAWING SHEET 14 OF 19

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

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LANE

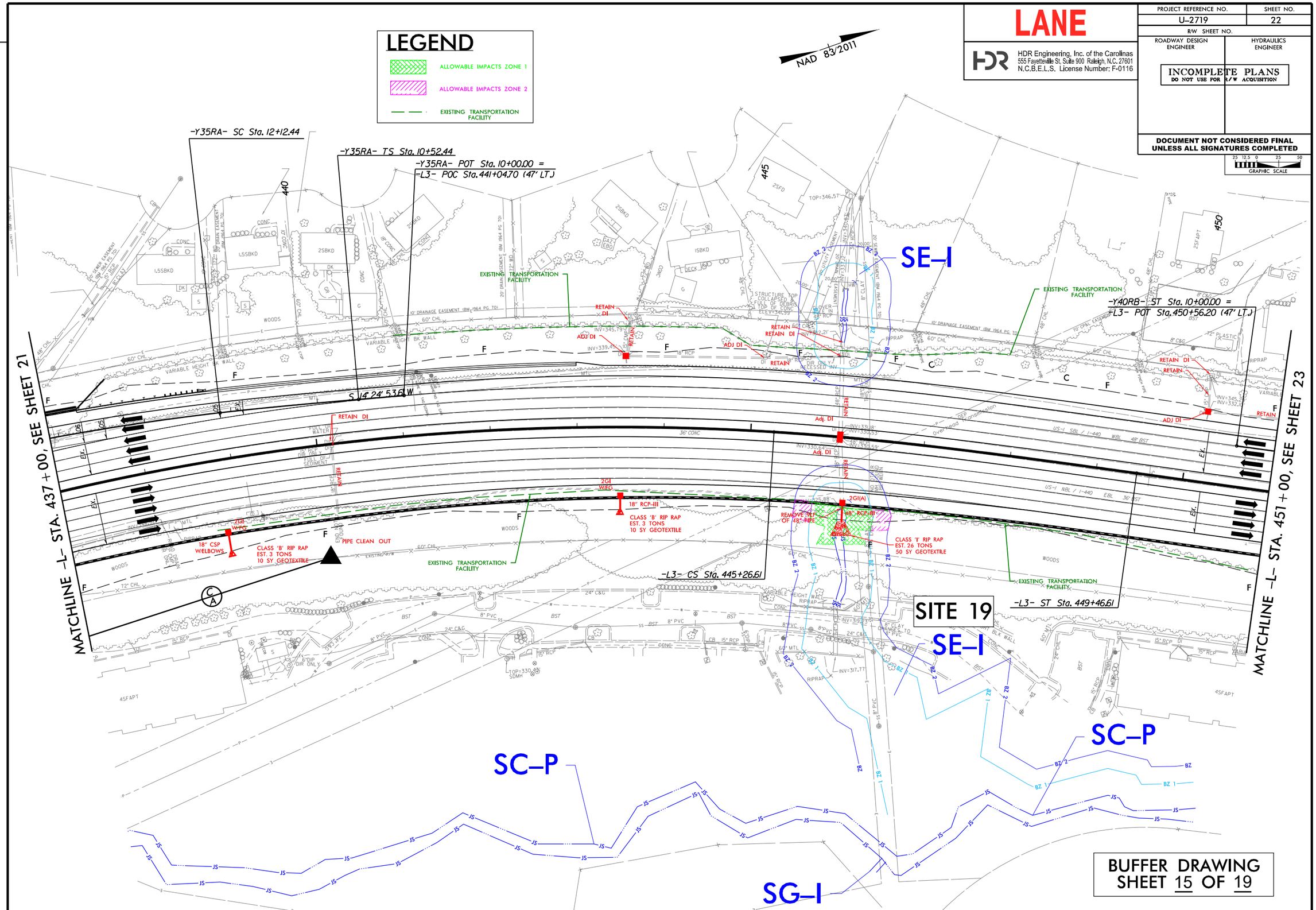
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2719	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALE 25 12.5 0 25 50



BUFFER DRAWING
SHEET 15 OF 19

REVISIONS

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LANE

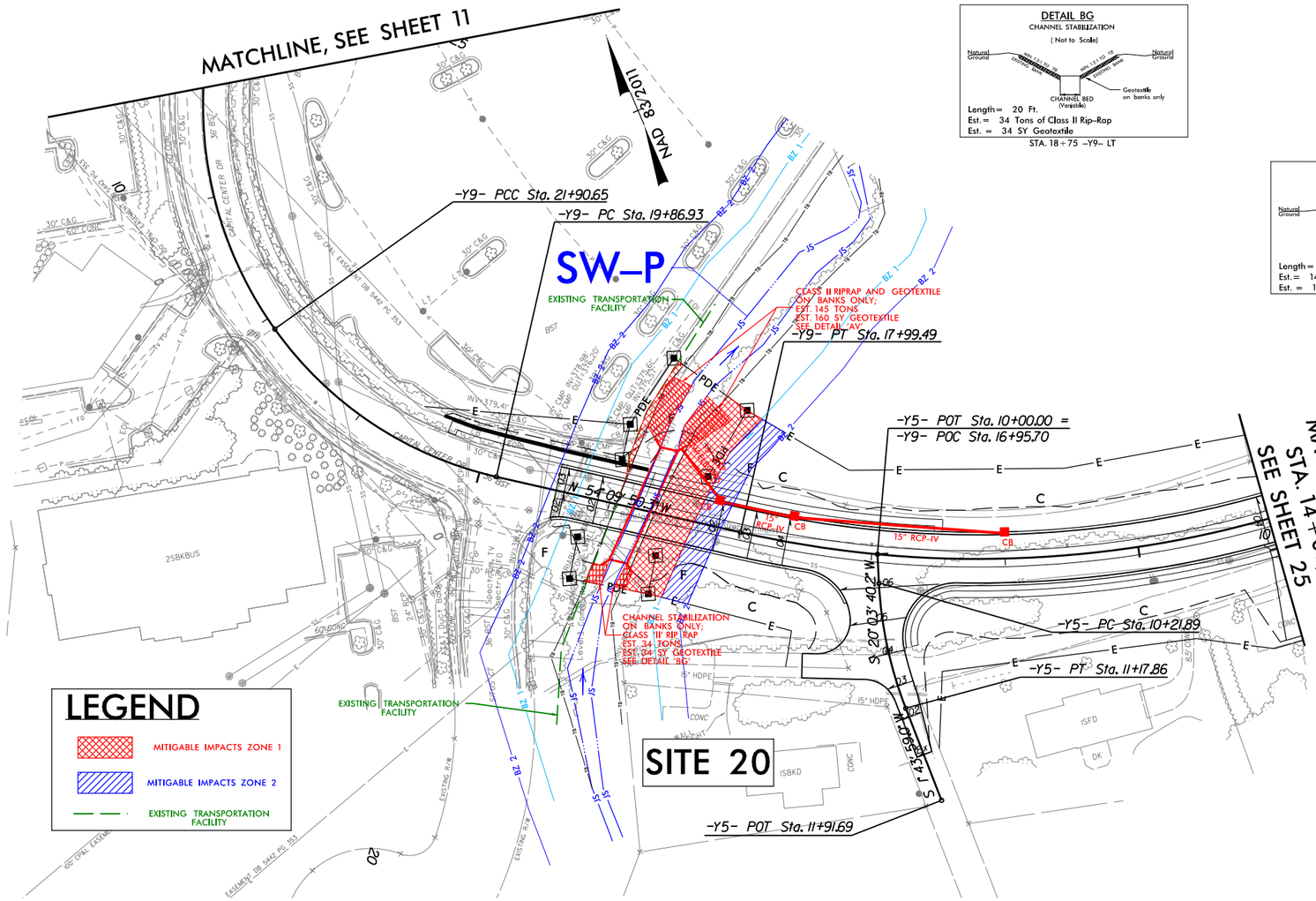
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2719	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

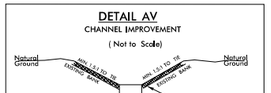
25 12.5 0 25 50
GRAPHIC SCALE



DETAIL BG
CHANNEL STABILIZATION
(Not to Scale)

Length = 20 Ft.
Est. = 34 Tons of Class II Rip-Rap
Est. = 34 SY Geotextile
STA. 18+75 -Y9- LT

DETAIL AV
CHANNEL IMPROVEMENT
(Not to Scale)



Length = 50 Ft.
Est. = 145 Tons of Class II Rip-Rap
Est. = 160 SY Geotextile
STA. 18+75 -Y9- RT

BUFFER DRAWING SHEET 16 OF 19

REVISIONS

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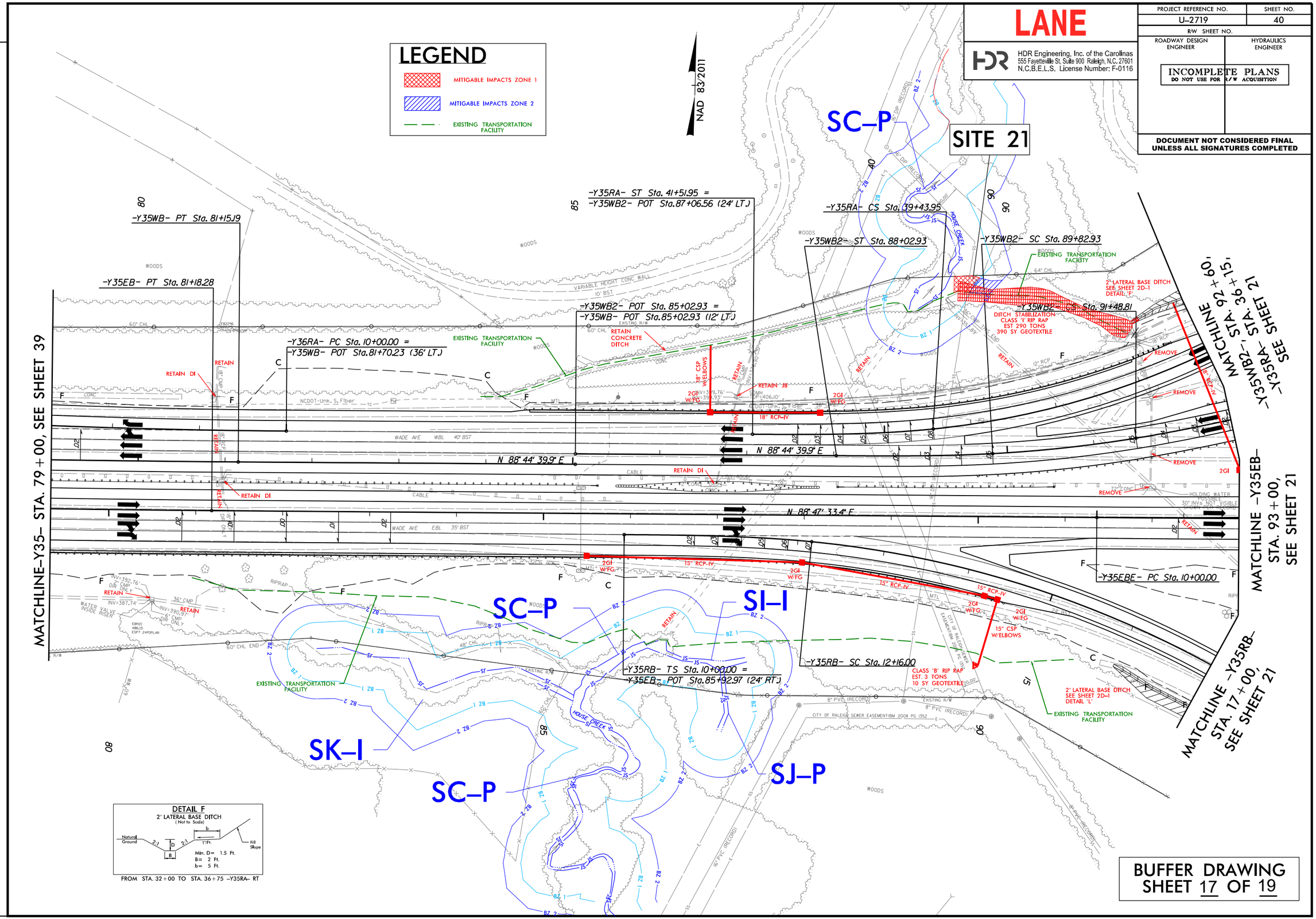
LANE

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2719	40
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



BUFFER DRAWING
SHEET 17 OF 19

REVISIONS

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DATE: 6/4/2019
TIME: 3:19:56 PM
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RIPARIAN BUFFER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	IMPACTS									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
			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	SAK	18" CSP				1272		1272					
3	SX	Culvert Clean Out				1227	212	1439	526		526		
		Bank Stabilization				3612	1923	5535					
4	SW	Roadway Fill				6283	2221	8504	412		412		
6	OWC	Roadway Fill											
7	ST	Outlet Stabilizaton				408		408	1052	871	1923		
8	SV	Bank Stabilization							5927	990	6917		
9	SU	Bank Stabilization							3931	1346	5277		
10													
11													
12	SS	90" Culvert				6199	3968	10167					
13	SR	120" Culverts				8902	7738	16640					
14	SO	Roadway Fill				4581	1384	5965	17092	7423	24515		
15	SP	30" Culvert						0	3767	3730	7497		
16	SN	36" Welded Steel Pipe				3379	367	3746	775	206	981		
17	SC	8' x 8' RCBC Extension				3660	1592	5252					
18	SAN	2' Base Lateral Ditch							3035	2070	5105		
19	SE	48" RCP				2179	926	3105					
20	SW	14' x 7' RCBC							5146	3035	8181		
21	SC	Bank Stabilization							433	406	839		
TOTALS*:						**41702**	**20331**	**62033**	**42096**	**20077**	**62173**	**0**	**0**

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
06/03/2019
WAKE COUNTY
U-2719
35869.3.1

Revised 2018 Feb

WETLANDS IN BUFFER IMPACTS SUMMARY

SITE NO.	STATION (FROM/TO)		WETLANDS IN BUFFERS	
			ZONE 1 (ft^2)	ZONE 2 (ft^2)
10	SU/WJ		36	
11	SU/WI		14	25
TOTAL:			**50**	**25**

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
06/03/2019
WAKE COUNTY
U-2719
35869.3.1

Revised 2018 Feb