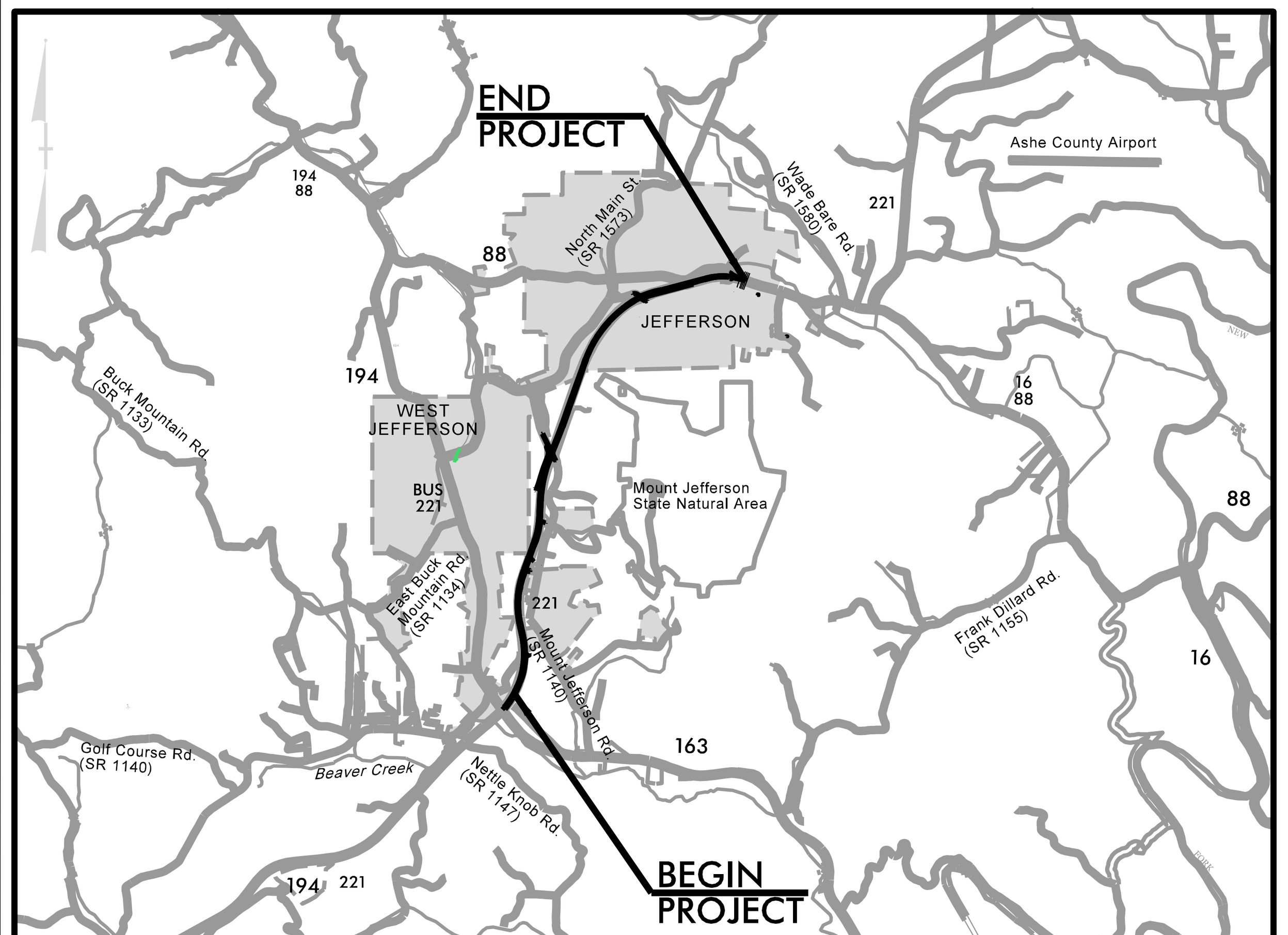
CONTRACT: C204356 TIP PROJECT: R-2915E

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
ASHE COUNTY

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

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



VICINITY MAP (NTS)

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

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

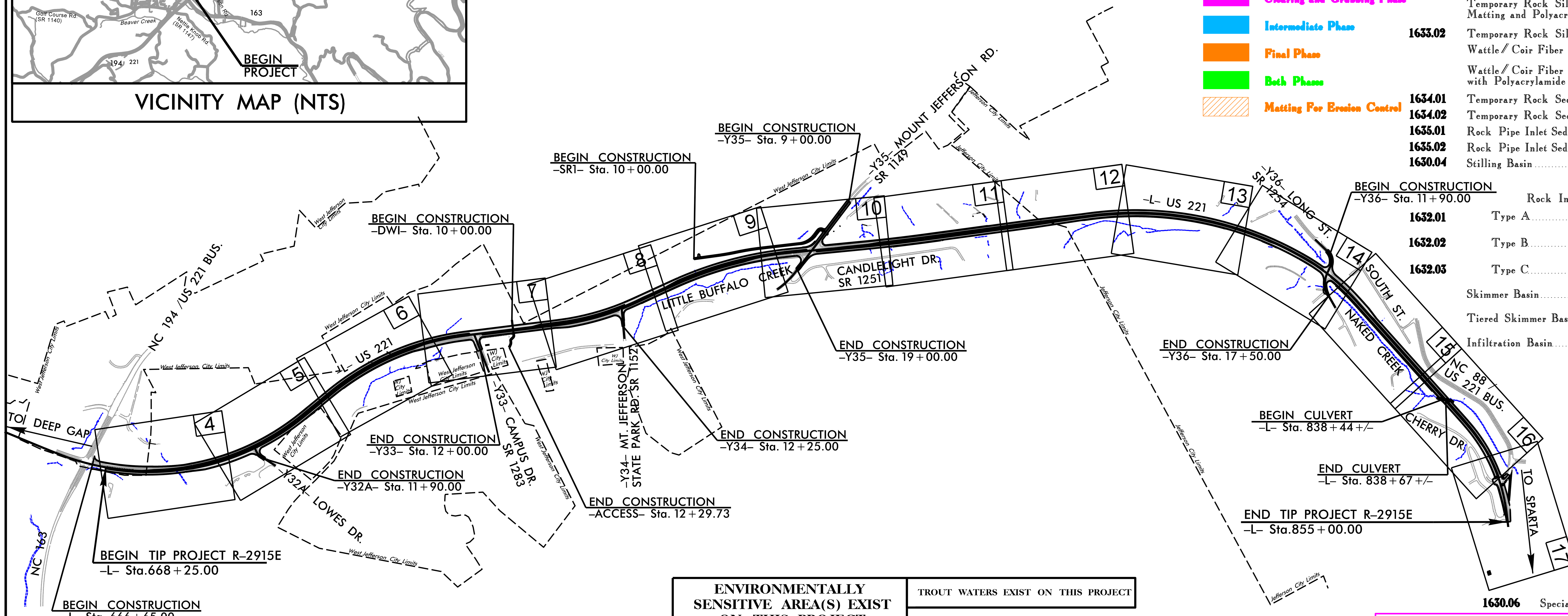
Clearing and Grubbing Phase

Intermediate Phase

Final Phase

Both Phases

Matting For Erosion Control



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	EW / CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	
1630.06	Special Stilling Basin	

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

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

TROUT WATERS EXIST ON THIS PROJECT

ENVIRONMENTALLY SENSITIVE AREA SEE PROJECT SPECIAL PROVISIONS

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

GRAPHIC SCALE

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

PROJECT LENGTH

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

Reviewed In the Office of:

ROADSIDE ENVIRONMENTAL UNIT

1 South Wilmington St. Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

PROJECT ENGINEER - DIVISION 11

Reviewed by:

NAME Wes Chandler, PE

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: OCTOBER 24, 2017

LETTING DATE: MARCH 17, 2020

PLANS PREPARED BY:

RK&K
RUMMEL, KLEPPER & KAHL, LLP
8601 SIX FORKS ROAD, FORUM 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615-3960
NC LICENSE NO. F-0112

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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

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

Audrey B. Burnette, P.E.
EROSION CONTROL DESIGN ENGINEER LEVEL III CERTIFICATION NO. 3081

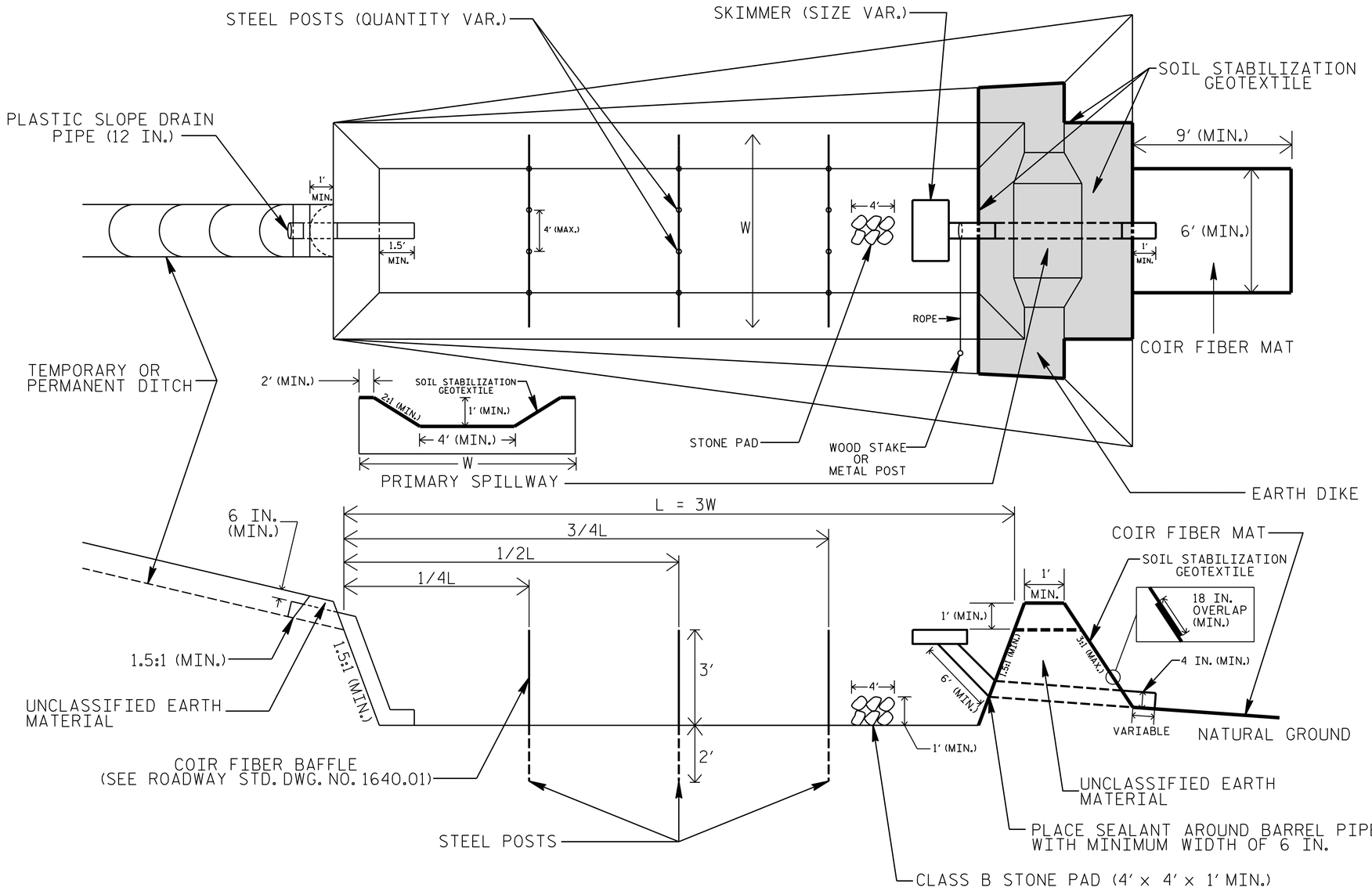
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

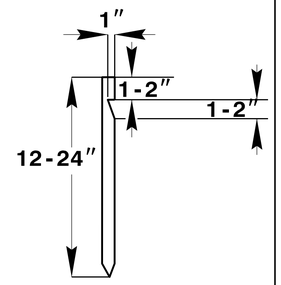
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type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

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

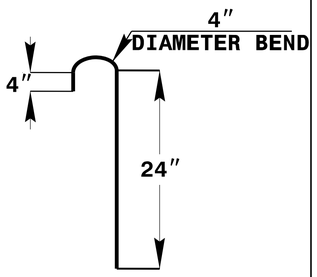
SKIMMER BASIN WITH BAFFLES DETAIL



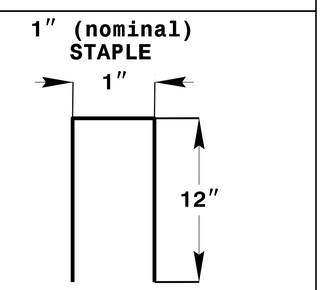
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

NOTES

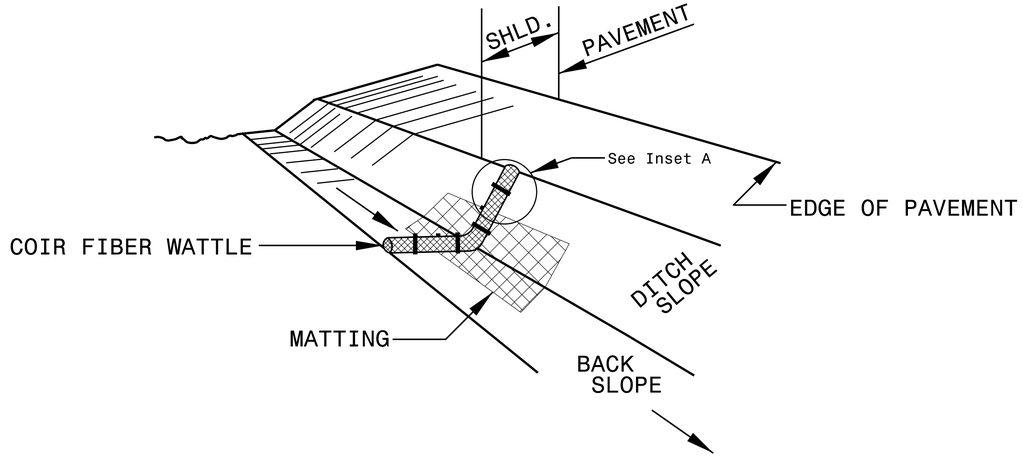
1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE PRIMARY SPILLWAY WEIR LENGTH (FT.) USING Q/0.4, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

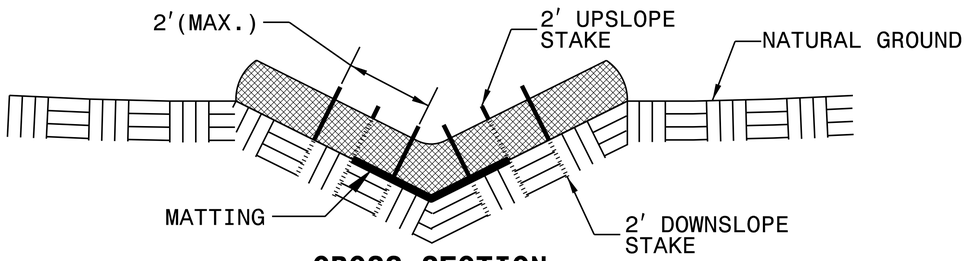
12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_Hyd_EC_psh02.dgn
default

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

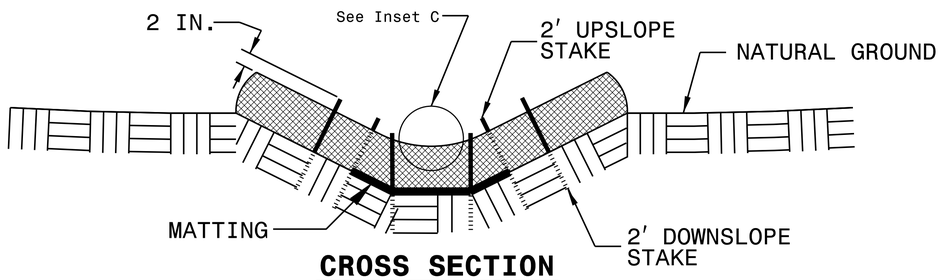
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

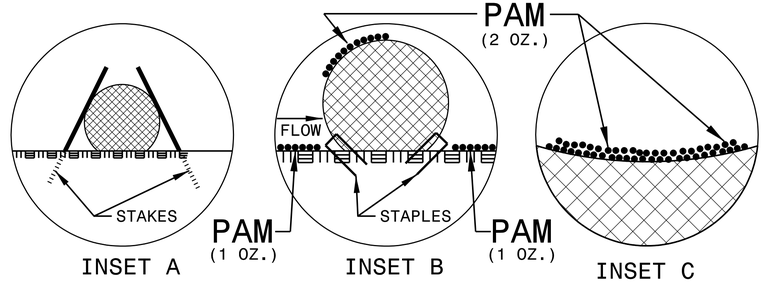
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

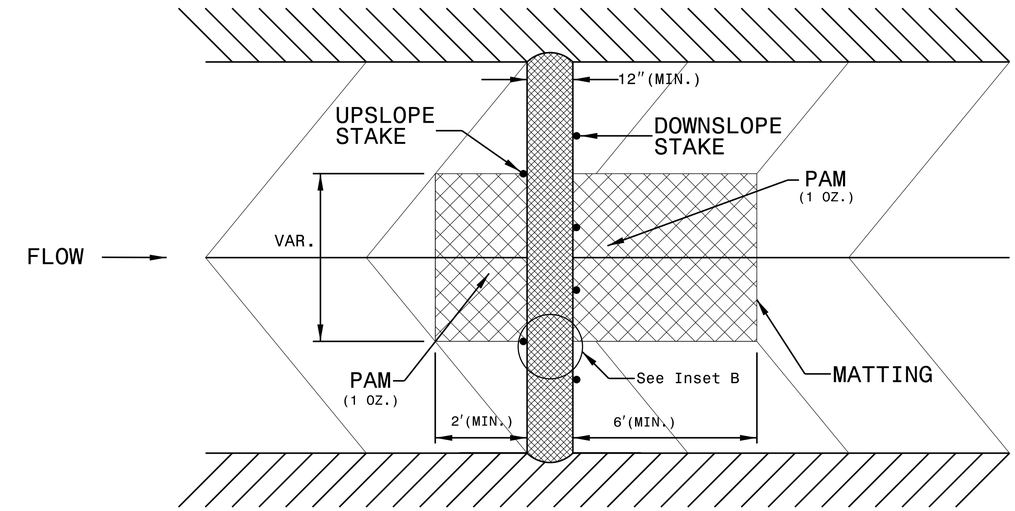
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



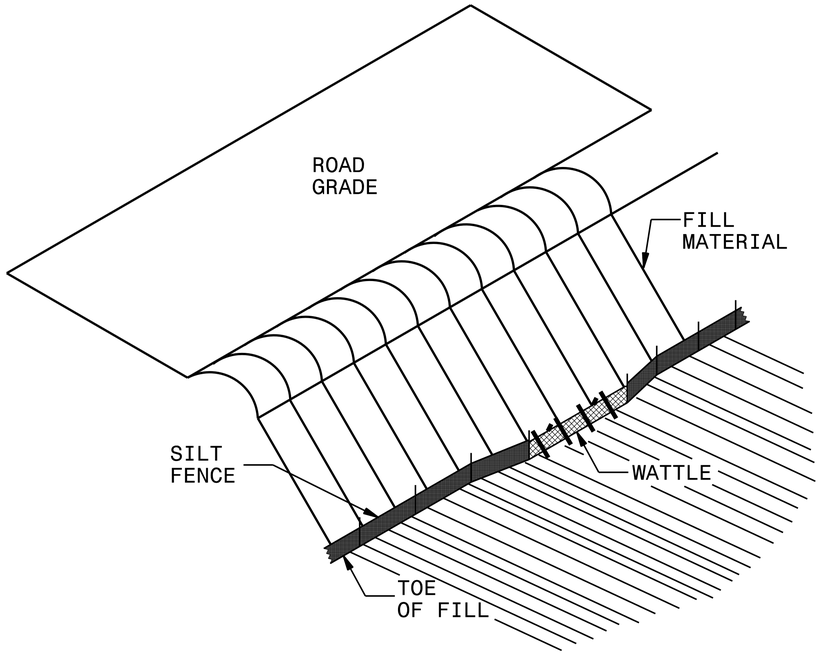


TOP VIEW

12/9/2019
R:\Hydraulics\CADD\PSHVErosion Control\R-2915E_Hyd_EC_psh02A.dgn
default

SILT FENCE COIR FIBER WATTLE BREAK DETAIL

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



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

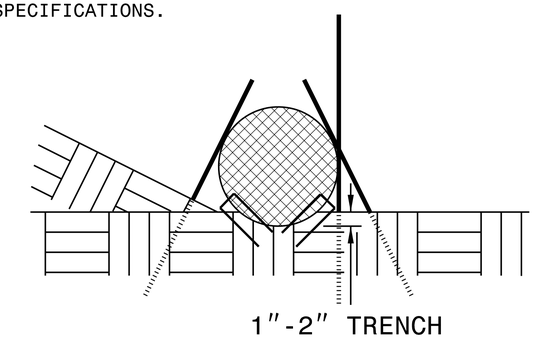
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

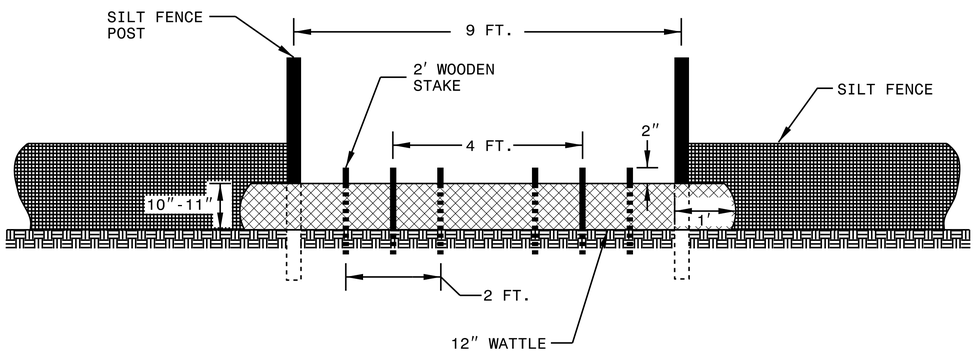
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

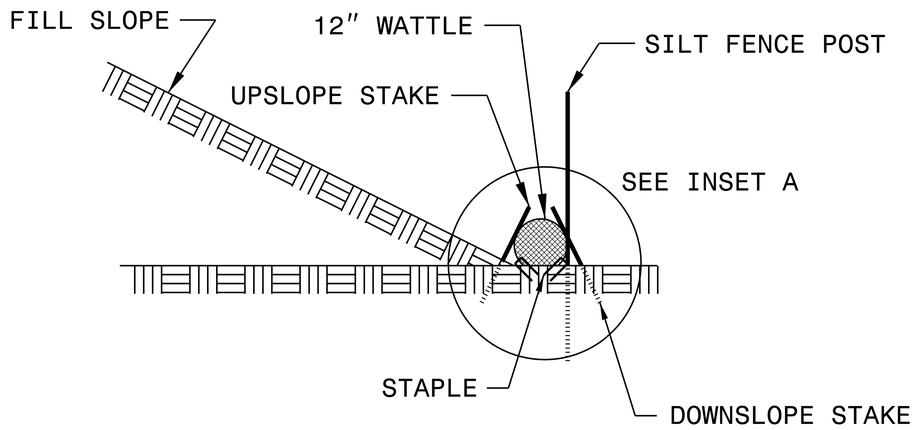
INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A





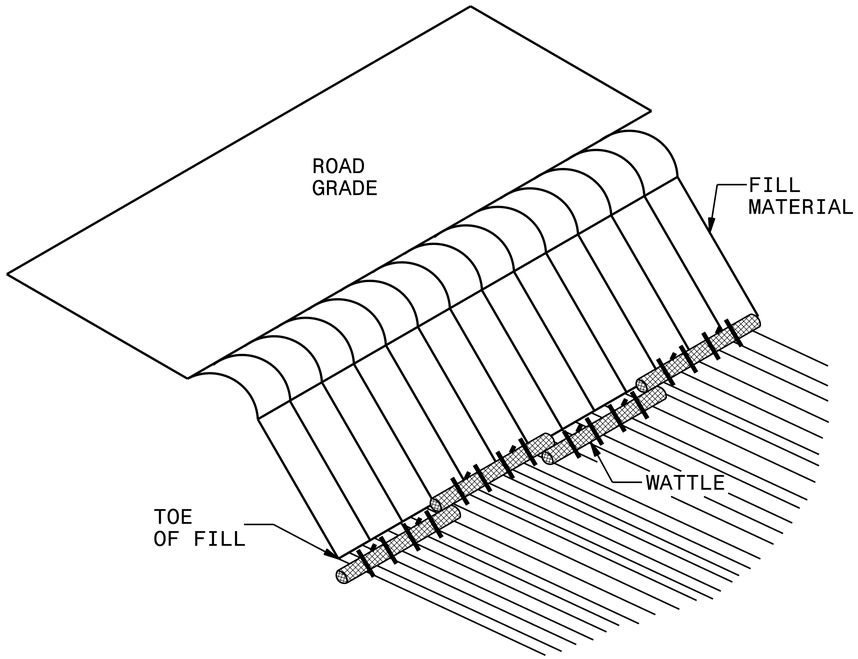
VIEW FROM SLOPE



SIDE VIEW

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

WATTLE BARRIER DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 18 IN. NOMINAL DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLES ON TOE OF SLOPE.

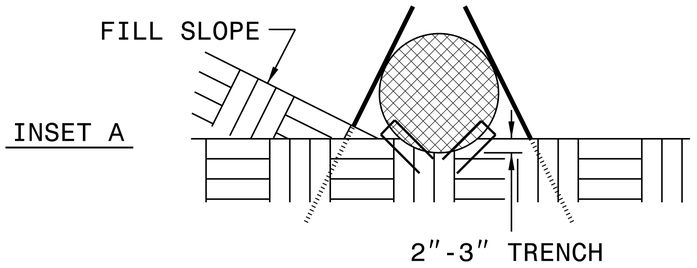
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

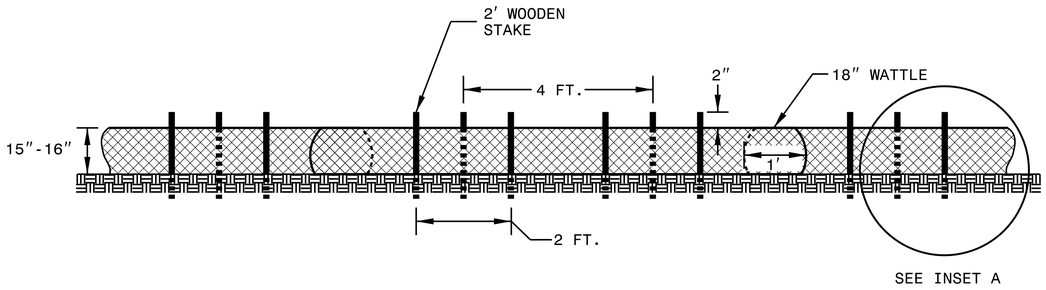
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

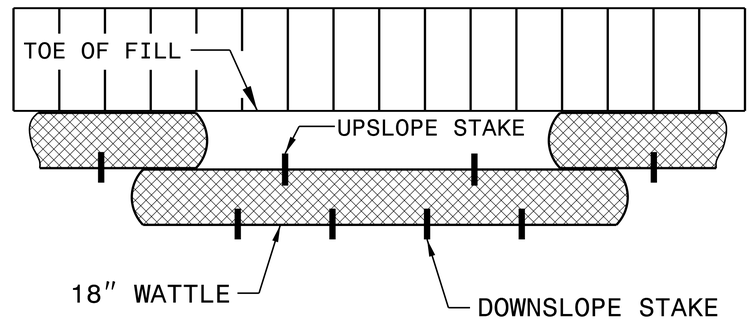
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 20 FT.





FRONT VIEW

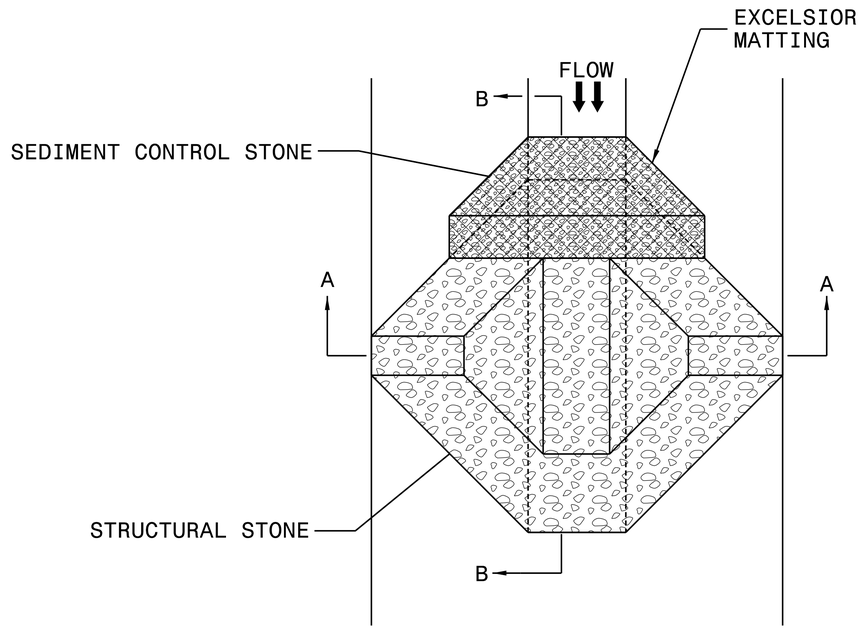


TOP VIEW

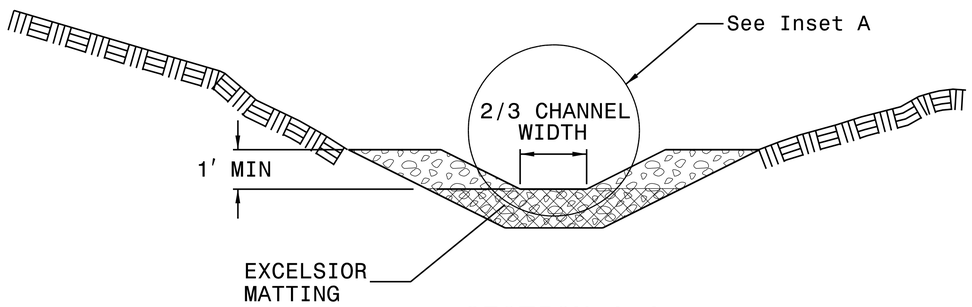
12/9/2019
M:\Hydraulics\CADD\PSHY\Erosion Control\R-2915E_Hyd_EC_psh02C.dgn
default

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

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



SECTION A-A

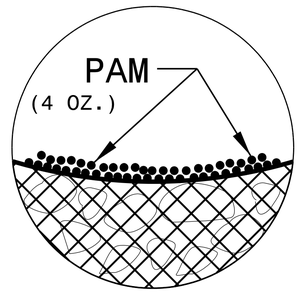
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

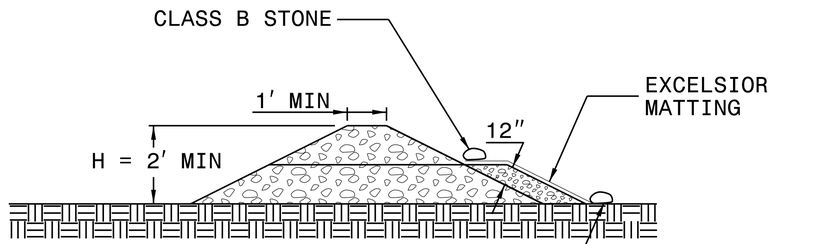
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION B-B

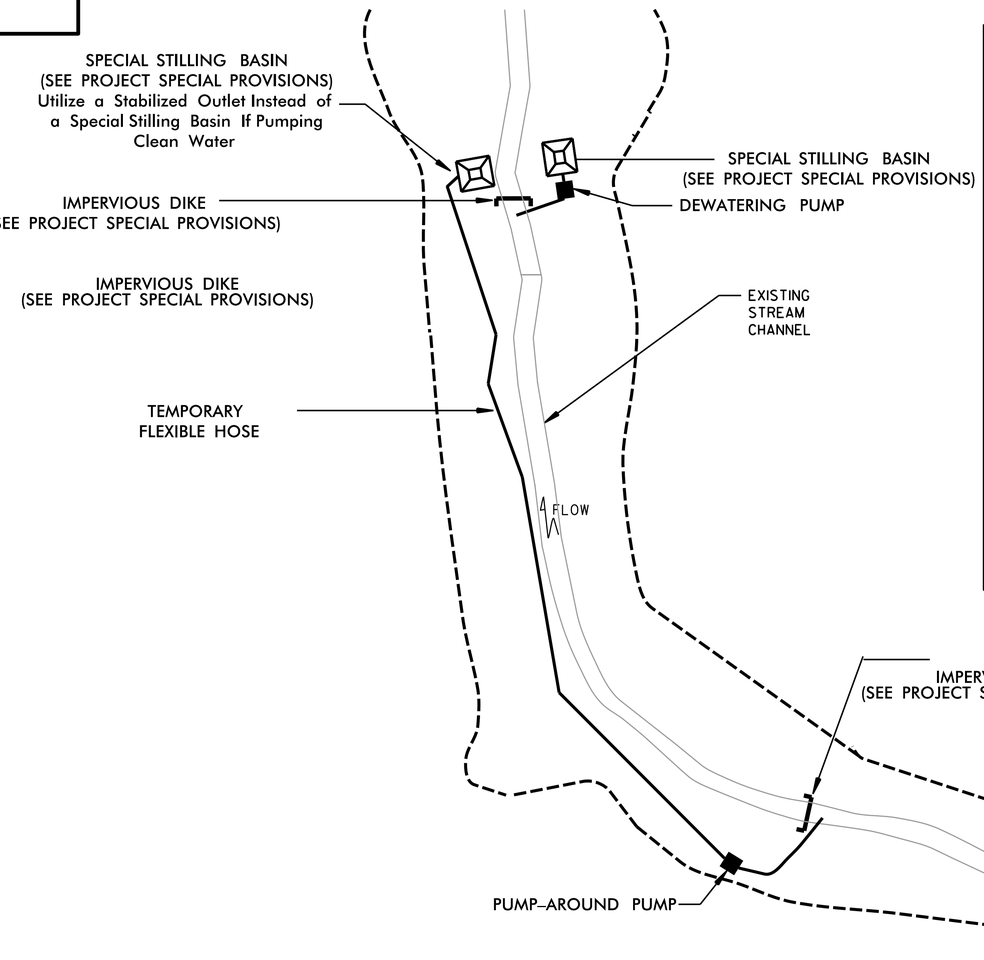
NOT TO SCALE

12/9/2019
H:\Hydraulics\CADD\PSHV\Erosion Control\R-2915E_Hyd_EC_pshV2D.dgn
default

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

EXAMPLE OF PUMP–AROUND OPERATION

NOTES:
1) All excavation shall be performed in only dry or isolated sections of channel.
2) Impervious dikes are to be used to isolate work from stream flow when necessary.
3) All graded areas shall be stabilized within 24 hours.
4) Maintenance of stream flow operations shall be incidental to the work. This includes polyethylene sheeting, diversion pipes, pumps and hoses.
5) Pumps and hoses shall be of sufficicient size to dewater the work area.



SEQUENCE OF CONSTRUCTION FOR TYPICAL WORK AREA

1. INSTALL SPECIAL STILLING BASIN(S).
2. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
5. PERFORM STREAM RESTORATION WORK IN ACCORDANCE WITH THE PLANS.
6. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. (DOWNSTREAM IMPERVIOUS DIKES FIRST).
7. ALL GRADING AND STABILIZATION MUST BE COMPLETED IN ONE DAY WITHIN THE PUMP AROUND AREAS BETWEEN THE IMPERVIOUS DIKES. THE IMPERVIOUS DIKE LOCATIONS AS SHOWN ON THIS SHEET ONLY SHOW THE UPPER AND LOWER EXTENT OF WORK FOR EACH STREAM SEGMENT. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE IMPERVIOUS DIKE(S) FOR EACH DAY'S WORK.
8. REMOVE SPECIAL STILLING BASIN(S) AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH.

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

EROSION CONTROL MATTING IN DITCHES

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	669+50	670+00	LT	55
4	-L-	670+25	670+50	RT	20
4	-L-	670+50	671+50	RT	50
4	-L-	672+00	675+25	RT	365
4	-L-	675+25	676+00	RT	40
4	-L-	676+00	677+03	RT	55
4-5	-L-	681+50	684+50	LT	340
5	-L-	681+50	685+50	RT	450
5	-L-	684+50	686+75	LT	255
5	-L-	686+75	691+50	LT	535
5	-L-	693+00	694+50	LT	115
5	-L-	694+50	695+25	LT	70
5-6	-L-	695+25	697+87	LT	245
6	-L-	697+87	702+96	LT	475
6	-L-	702+96	704+50	LT	145
6	-L-	707+50	708+25	LT	40
6-7	-L-	708+25	711+00	LT	260
6	-L-	700+00	701+29	RT	65
6	-L-	707+05	707+75	RT	75
7	-L-	720+15	721+00	RT	100
7	-L-	714+50	721+25	LT-BERM	630
7	-L-	715+00	719+50	LT	510
7	-L-	720+50	725+00	LT	510
8	-L-	725+00	730+00	LT	565
8	-L-	730+00	735+00	LT	565
8	-L-	735+00	738+50	LT	395
8	-L-	726+00	727+50	RT	170
8	-L-	727+50	729+50	RT	225
8	-L-	729+50	732+15	RT	300
8	-Y34-	11+00	11+25	RT	30
			SUBTOTAL		7,655

EROSION CONTROL MATTING IN DITCHES

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
8	-L-	734+00	735+00	LT-BERM	50
9	-L-	738+50	741+50	LT	340
9	-L-	742+50	743+00	LT	50
9	-L-	743+00	748+50	LT	275
10	-L-	751+50	754+50	LT	150
9	-SRI-	15+16	17+38	LT	210
9	-SRI-	11+17	11+70	LT	40
10	-SRI-	23+88	25+14	RT	90
10	-L-	754+50	756+00	LT	75
10	-L-	756+00	756+50	LT	25
10	-L-	758+00	761+50	RT	395
10	-L-	761+50	763+24	RT	200
11	-L-	767+00	767+50	RT	60
11	-L-	767+50	770+00	RT	285
11	-L-	770+00	772+00	RT	225
11	-L-	772+00	774+00	RT	225
11	-L-	774+00	777+00	RT	340
11	-L-	777+00	779+00	RT	225
12	-L-	779+00	780+50	RT	170
12	-L-	780+50	783+50	RT	340
12	-L-	777+50	780+50	LT	340
13	-L-	796+00	797+50	LT	140
13	-L-	797+50	799+13	LT	155
14	-L-	810+50	812+00	RT	140
14	-L-	815+88	816+50	RT	60
14	-L-	816+50	817+75	RT	65
14	-Y36-	15+24	16+43	RT	60
14-15	-L-	820+00	821+50	LT	140
15	-L-	821+50	826+80	LT	495
15	-L-	833+00	837+00	LT	450
			SUBTOTAL		5,815

12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_Hyd_EC_psh03.dgn
fkeys

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

EROSION CONTROL MATTING IN DITCHES

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
17	-L-	841+77	844+00	RT	325
17	-L-	844+00	848+94	RT	540
16	-L-	844+69	00+00	LT	35
4	-L-	674+00	678+50	CL	555
4	-L-	678+50	681+50	CL	370
4	-L-	681+50	686+50	CL	615
5	-L-	686+50	694+50	CL	985
6	-L-	694+50	699+00	CL	555
6	-L-	699+00	704+00	CL	615
6	-L-	704+00	707+50	CL	435
7-8	-L-	722+50	730+00	CL	925
9	-L-	740+50	744+00	CL	435
9	-L-	744+00	748+00	CL	495
10-11	-L-	764+50	771+50	CL	865
11	-L-	771+50	777+00	CL	680
11-12	-L-	777+00	781+00	CL	495
6	-L-	700+76	702+43	TSD-RT	85
6-7	-L-	709+35	711+30	TSD-RT	100
7	-L-	710+42	711+97	TSD-LT	80
13-14	-L-	805+65	807+02	TSD-LT	70
14	-L-	813+18	815+22	TSD-LT	105
15-16	-L-	832+70	836+33	TSD-RT	180
			SUBTOTAL		9,545
			TOTAL		23,015
			SAY		25,300

EROSION CONTROL MATTING IN DITCHES

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

12/9/2019
R:\HydroAulics\CADD\PSH\Erosion Control\R-2915E_Hyd_EC_psh03A.dgn
Fkeys

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-3B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

PERMANENT SOIL REINFORCEMENT MAT IN DITCHES

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	674+00	670+00	LT	450
4	-L-	677+50	677+21	RT	15
4	-L-	681+50	678+00	RT	395
4	-L-	680+00	677+00	LT	340
4	-L-	681+50	680+00	LT	170
6	-L-	707+50	705+32	LT	205
7	-L-	714+75	711+34	RT	590
7	-L-	723+50	721+00	RT	285
7-8	-L-	725+00	721+25	LT-BERM	390
8	-L-	732+00	725+00	LT-BERM	1095
8	-L-	734+00	732+00	LT-BERM	225
8	-Y34-	12+30	11+25	RT	120
8-9	-L-	738+50	736+00	LT-BERM	235
9	-L-	742+50	741+50	LT	95
9	-L-	741+00	738+50	LT-BERM	235
9	-L-	00+00	740+00	RT	35
9	-SRI-	15+16	11+70	LT	245
9	-SRI-	10+35	10+00	LT	25
9-10	-SRI-	21+96	15+33	LT	465
10	-L-	758+00	757+00	RT	115
10	-L-	765+00	763+24	RT	200
10-11	-L-	765+60	765+00	RT	70
11	-L-	767+00	765+60	RT	160
12	-L-	787+00	783+50	RT	395
12	-L-	788+50	781+50	LT	790
12	-L-	793+00	792+00	LT	75
13	-L-	805+19	805+05	LT	10
13	-L-	804+65	804+00	RT	35
14	-L-	815+88	812+00	RT	365
15	-L-	827+50	826+80	LT	35
			SUBTOTAL		7,865

PERMANENT SOIL REINFORCEMENT MAT IN DITCHES

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
16	-L-	838+92	838+00	LT	90
16	-L-	841+50	839+00	RT	375
16	-L-	841+77	841+50	RT	40
4	-L-	676+56	675+56	TSD-RT	50
5-6	-L-	697+10	694+77	TSD-RT	115
6	-L-	700+61	697+10	TSD-RT	175
6	-L-	708+89	708+02	TSD-RT	45
14	-L-	811+47	807+02	TSD-LT	220
9	-SRI-	14+98	12+77	TSD-LT	110
			SUBTOTAL		1,220
			TOTAL		9,085
			SAY		9,100

12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_Hyd_EC_psh03B.dgn
fkeys

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-3C
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

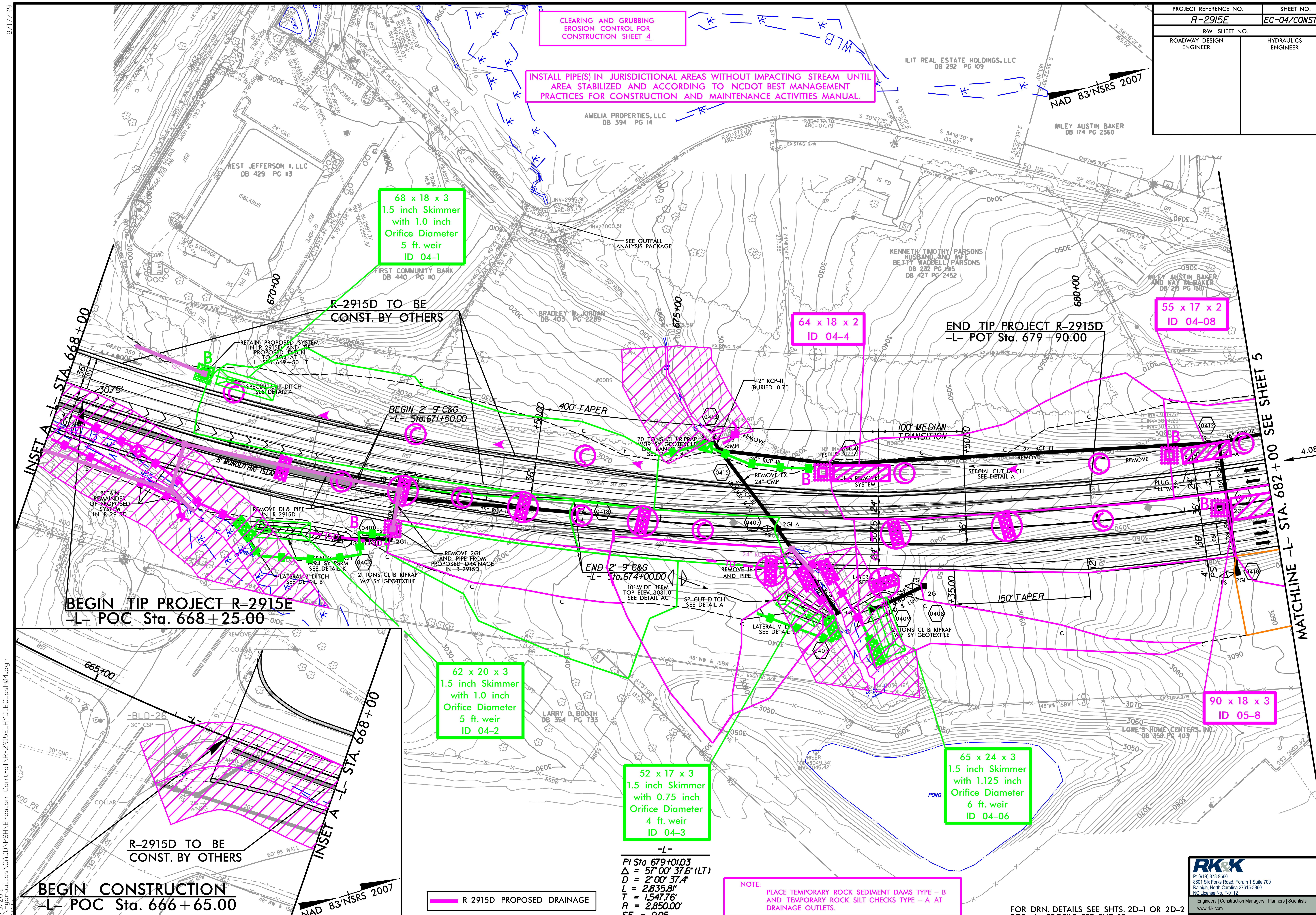
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

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

12/9/2019
H:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_Hyd_EC_psh03C.dgn
T.Keys

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-04/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4
INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.
NAD 83/NSRS 2007
ILIT REAL ESTATE HOLDINGS, LLC
DB 292 PG 109
AMELIA PROPERTIES, LLC
DB 394 PG 14
WILEY AUSTIN BAKER
DB 174 PG 2360
WEST JEFFERSON II, LLC
DB 429 PG 113
68 x 18 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 04-1
FIRST COMMUNITY BANK
DB 440 PG 110
SEE OUTFALL
ANALYSIS PACKAGE
KENNETH TIMOTHY PARSONS
HUSBAND AND WIFE
BETTY WADDELL PARSONS
DB 232 PG 915
DB 427 PG 2452
WILEY AUSTIN BAKER
AND KAY M. BAKER
DB 26 PG 150
BRADLEY W. JORDAN
DB 403 PG 2289
R-2915D TO BE
CONST. BY OTHERS
64 x 18 x 2
ID 04-4
55 x 17 x 2
ID 04-08
END TIP PROJECT R-2915D
-L- POT Sta. 679+90.00
SEE SHEET 5
BEGIN 2'-9" C&G
-L- Sta.671+50.00
400' TAPER
100' MEDIAN TRANSITION
5' MONOLITHIC ISLAND
SPECIAL CUT DITCH
SEE DETAIL A
RETAIN REMAINDER OF PROPOSED SYSTEM IN R-2915D
REMOVE DI & PIPE IN R-2915D
REMOVE 2GI AND PIPE FROM PROPOSED DRAINAGE IN R-2915D
2 TONS CL B RIPRAP W/7 SY GEOTEXTILE
END 2'-9" C&G
-L- Sta.674+00.00
10' WIDE BERM
TOP ELEV. 3031.0'
SEE DETAIL AC
SP. CUT DITCH
SEE DETAIL A
LATERAL V DITCH
SEE DETAIL B
150' TAPER
4.08%
MATCHLINE -L- STA. 682+00
BEGIN TIP PROJECT R-2915E
-L- POC Sta. 668+25.00
INSET A -L- STA. 668+00
62 x 20 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 04-2
LARRY D. BOOTH
DB 354 PG 733
52 x 17 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 04-3
65 x 24 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
6 ft. weir
ID 04-06
90 x 18 x 3
ID 05-8
LOWE'S HOME CENTERS, INC.
DB 358 PG 403
R-2915D TO BE
CONST. BY OTHERS
BEGIN CONSTRUCTION
-L- POC Sta. 666+65.00

R-2915D PROPOSED DRAINAGE

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

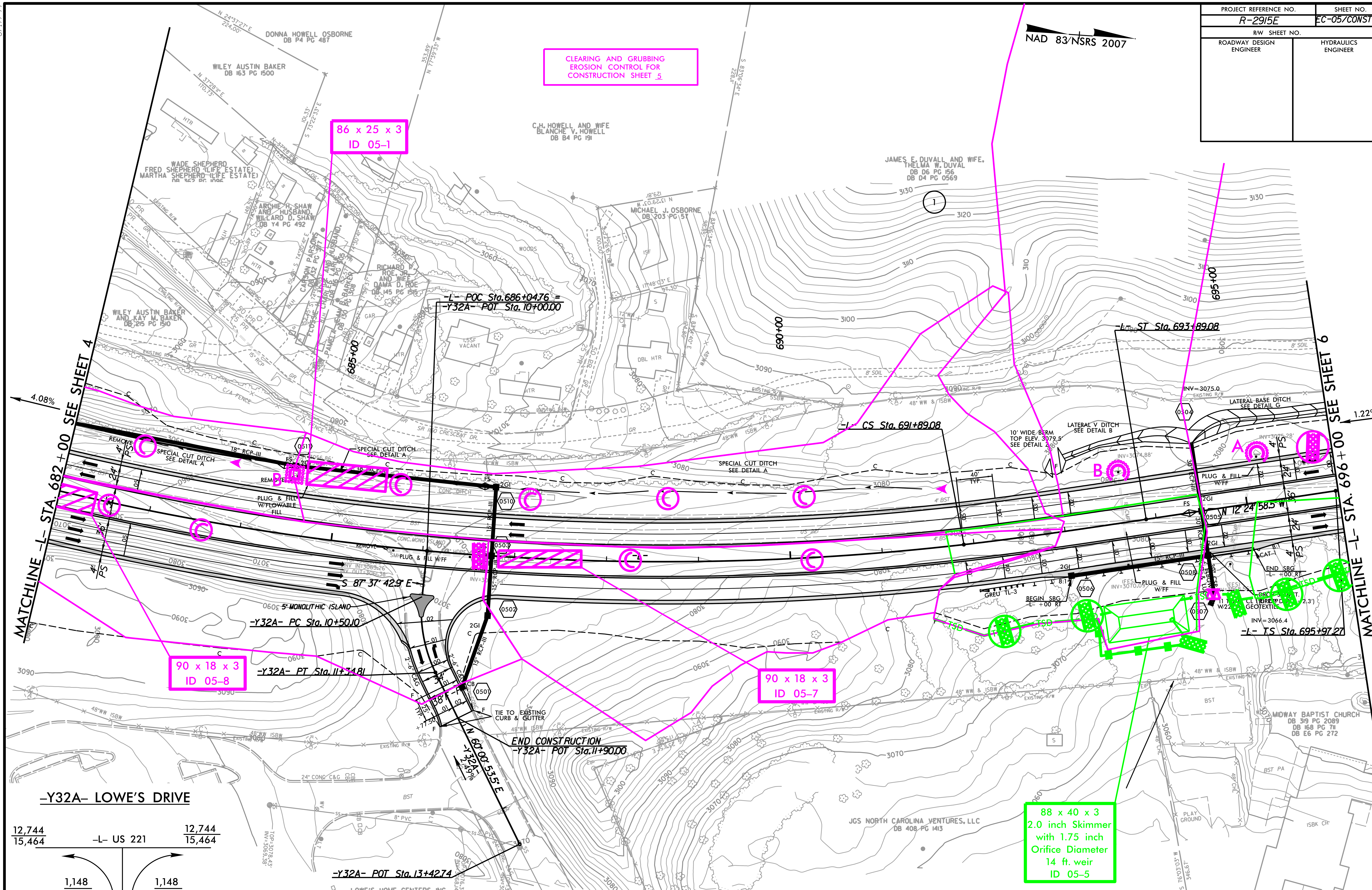
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh04.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-05/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-Y32A- LOWE'S DRIVE

	-L- US 221	
12,744 / 15,464		12,744 / 15,464
1,148 / 1,388		1,148 / 1,388
ADT 2019 / ADT 2039	2,296 / 2,776	-Y32A- LOWE'S DRIVE

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

-Y32A-

PI Sta 10+93.62
Δ = 32° 21' 23.6" (LT)
D = 38° 11' 49.9"
L = 84.71'
T = 43.52'
R = 150.00'
SE = SEE PLANS

-L-

PI Sta 679+01.03	PIs Sta 692+55.75	PIs Sta 697+30.61
Δ = 57° 00' 37.6" (LT)	Θs = 2° 00' 37.4"	Θs = 1° 51' 58.7"
D = 2° 00' 37.4"	Ls = 200.00'	Ls = 200.00'
L = 2,835.81'	LT = 133.34'	LT = 133.34'
T = 1,547.76'	ST = 66.67'	ST = 66.67'
R = 2,850.00'		
SE = 0.05		

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh05.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-06/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

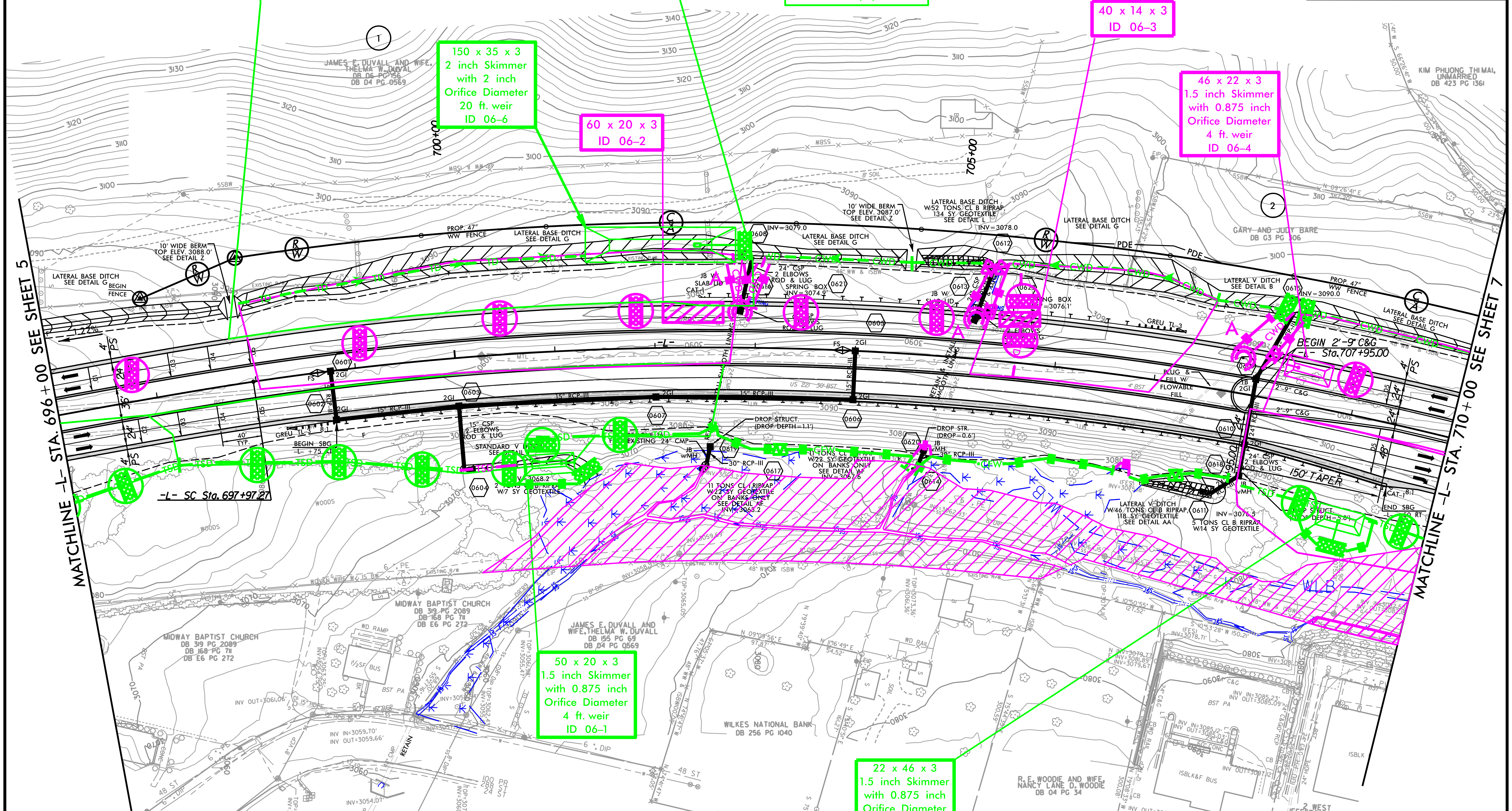
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

CLEAN WATER DIVERSION
(Not to Scale)

NAD 83/NSRS 2007



-L-

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

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh06.dgn

PROJECT REFERENCE NO.
R-2915E
SHEET NO.
EC-07/CONST.7
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
-Y33- CAMPUS DRIVE
-L-
PI Sta 705+80.85
△ = 28° 38' 13.1" (RT)
D = 1° 51' 58.7"
L = 1,534.42'
T = 783.59'
R = 3,070.00'
SE = 0.05
PIs Sta 713+98.35
Θs = 1° 51' 58.7"
Ls = 200.00'
LT = 133.34'
ST = 66.67'
-ACCESS-
PI Sta 10+84.35
△ = 52° 22' 06.7" (RT)
D = 190° 59' 09.4"
L = 27.42'
T = 14.75'
R = 30.00'
SE = 0.02
PI Sta 11+37.39
△ = 52° 22' 06.7" (LT)
D = 458° 21' 58.4"
L = 11.43'
T = 6.15'
R = 12.50'
SE = 0.02
PI Sta 11+79.37
△ = 32° 37' 37.3" (RT)
D = 81° 16' 14.2"
L = 40.15'
T = 20.63'
R = 70.50'
SE = 0.02
98 x 45 x 3
2.0 inch Skimmer
with 1.875 inch
Orifice Diameter
17 ft. weir
ID 07-1
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 7
CLEAN WATER DIVERSION
(Not to Scale)
INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.
12,744
15,464
-L- US 221
15,904
19,424
3,028
3,668
6,188
7,628
9,216
11,296
-Y33-
CAMPUS DRIVE
ADT 2019
ADT 2039
JEMSITE DEVELOPMENT, LLC (40%), CHARLES R. COPE (20%), JIMMY MILLER (20%), AND PHIL G. STEVENS (20%)
S 70° 02' 47.9" E
S 17° 40' 41.2" E
S 70° 02' 47.9" E
S 37° 25' 10.6" E
NAD 83/ CORS
JAMES CLIFF JENKINS
DIANA LYNN HAMM
JAMES R. POWERS AND WIFE, SHIRLEY POWERS
GARY AND JUDY BARE
THE TOWN OF WEST JEFFERSON
EXISTING ACCESS POINT
-L- POT Sta. 715+39.92 = -Y33- POT Sta. 10+00.00
-L- ST Sta. 715+31.68
BEGIN CONSTRUCTION -DWI- Sta. 10+00.00
18 INCH TEMPORARY PIPE
150' TAPER
BERM BASE DITCH W/421 TONS CL B RIPRAP 1055 SY GEOTEXTILE EST. DDE=666 CY SEE DETAIL O
TOE PROTECTION W/92 TONS CL B RIPRAP, 268 SY GEOTEXTILE SEE DETAIL V
LATERAL BASE DITCH EST. DDE=265 CY SEE DETAIL G
10' WIDE BERM TOP ELEV. 3102.5' SEE DETAIL Z
BERM BASE DITCH EST. DDE=520 CY SEE DETAIL N
PLUG & FILL W/FLOWABLE FILL
REMOVE 39' EX. 42" CMP
42" RCP-III (NOT BURIED)
-L- CS Sta. 713+31.68
LATERAL BASE DITCH W/293 TONS CL B RIPRAP, 727 SY GEOTEXTILE EST. DDE=560 CY SEE DETAIL P
8 TONS CL B RIPRAP W/21 SY GEOTEXTILE
20 TONS CL I RIPRAP W/39 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF
15 TONS CL B RIPRAP W/37 SY GEOTEXTILE
W/420 TONS CL I RIPRAP 165 SY GEOTEXTILE DRY DETENTION BASIN SEE 2D-3 THRU 2D-6
-L- POT Sta. 719+99.16 = -DWI- POT Sta. 11+12.73 = -ACCESS- POT Sta. 10+00.00
PC Sta. 10+69.60
PT Sta. 10+97.02
PC Sta. 11+31.25
PT Sta. 11+42.67
PC Sta. 11+58.74
PT Sta. 11+98.88
END CONSTRUCTION -Y33- POT Sta. 12+00.00
END CONSTRUCTION -ACCESS- POT Sta. 12+29.73
98 x 45 x 3
2.0 inch Skimmer
with 1.875 inch
Orifice Diameter
17 ft. weir
ID 07-2
-Y33- POT Sta. 14+80.00
MATCHLINE -L- STA. 710+00 SEE SHEET 6
MATCHLINE -L- STA. 724+00 SEE SHEET 8
2 WEST JEFFERSON, LLC
FFC LIMITED PARTNERSHIP
AUTOZONE, INC.
TREVOR D. WITHERSPOON
SKYLINE TELEPHONE MEMBERSHIP CORPORATION
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.
PROPOSED TRAFFIC SIGNAL
FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR INTERSECTION DETAIL SEE SHT. 2B-1
FOR -L- PROFILE SEE SHT. 19
FOR -Y33- PROFILE SEE SHT. 26
FOR -ACCESS- PROFILE SEE SHT. 28
FOR -DWI- PROFILE SEE SHT. 28
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
8/17/99
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh07.dgn
1/29/2020

-Y34- MT. JEFFERSON
STATE PARK ROAD

15,904 / 19,424	-L- US 221	14,840 / 18,040
1,680 / 2,080		616 / 696
ADT 2019 / ADT 2039	2,296 / 2,776	-Y34- MT. JEFFERSON STATE PARK ROAD

-L-

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 8

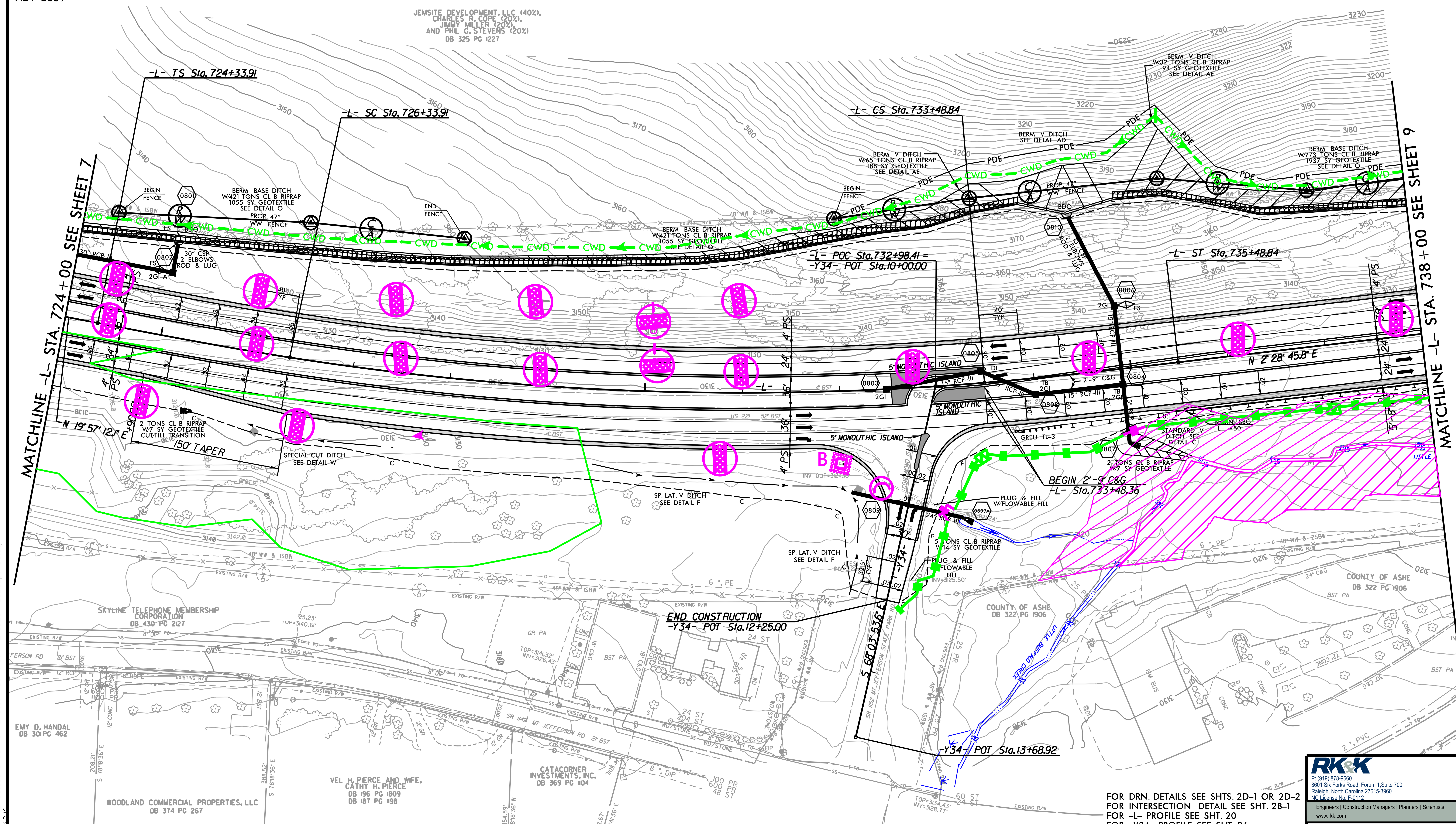
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEAN WATER DIVERSION (Not to Scale)

REMOVE CWD ONCE BERM DITCH IS STABILIZED

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-08/CONST.8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



JEMSITE DEVELOPMENT, LLC (40%), CHARLES R. COPE (20%), JIMMY MILLER (20%), AND PHIL G. STEVENS (20%) DB 325 PG 1227
-L- TS Sta. 724+33.91
-L- SC Sta. 726+33.91
-L- CS Sta. 733+48.84
-L- POC Sta. 732+98.41 = -Y34- POT Sta. 10+00.00
-L- ST Sta. 735+48.84
BERM BASE DITCH W/421 TONS CL B RIPRAP 1055 SY GEOTEXTILE SEE DETAIL O
BERM V DITCH W/65 TONS CL B RIPRAP 188 SY GEOTEXTILE SEE DETAIL AE
BERM V DITCH W/32 TONS CL B RIPRAP 94 SY GEOTEXTILE SEE DETAIL AE
BERM V DITCH SEE DETAIL AD
BERM BASE DITCH W/773 TONS CL B RIPRAP 1937 SY GEOTEXTILE SEE DETAIL O
MATCHLINE -L- STA. 724+00 SEE SHEET 7
MATCHLINE -L- STA. 738+00 SEE SHEET 9
N 19° 57' 12.1" E
N 2° 28' 45.8" E
150' TAPER
SPECIAL CUT DITCH SEE DETAIL W
SP. LAT. V DITCH SEE DETAIL F
2 TONS CL B RIPRAP W/7 SY GEOTEXTILE CUT/FILL TRANSITION
5' MONOLITHIC ISLAND
BEGIN 2'-9" C&G -L- Sta. 733+48.36
STANDARD V DITCH SEE DETAIL C
PLUG & FILL W/FLOWABLE FILL
5 TONS CL B RIPRAP W/14 SY GEOTEXTILE
END CONSTRUCTION -Y34- POT Sta. 12+25.00
-Y34- POT Sta. 13+68.92
S 68° 03' 53.6" E
SKYLINE TELEPHONE MEMBERSHIP CORPORATION DB 430 PG 2127
COUNTY OF ASHE DB 322 PG 1906
EMY D. HANDAL DB 301 PG 462
WOODLAND COMMERCIAL PROPERTIES, LLC DB 374 PG 267
VEL H. PIERCE AND WIFE, CATHY H. PIERCE DB 196 PG 1809 DB 187 PG 1198
CATACORNER INVESTMENTS, INC. DB 369 PG 1104
LITTLE BUFFALO CREEK

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
12/9/2019

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-09/CONST.9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 9

NAD 83/NSRS 2007

-L-

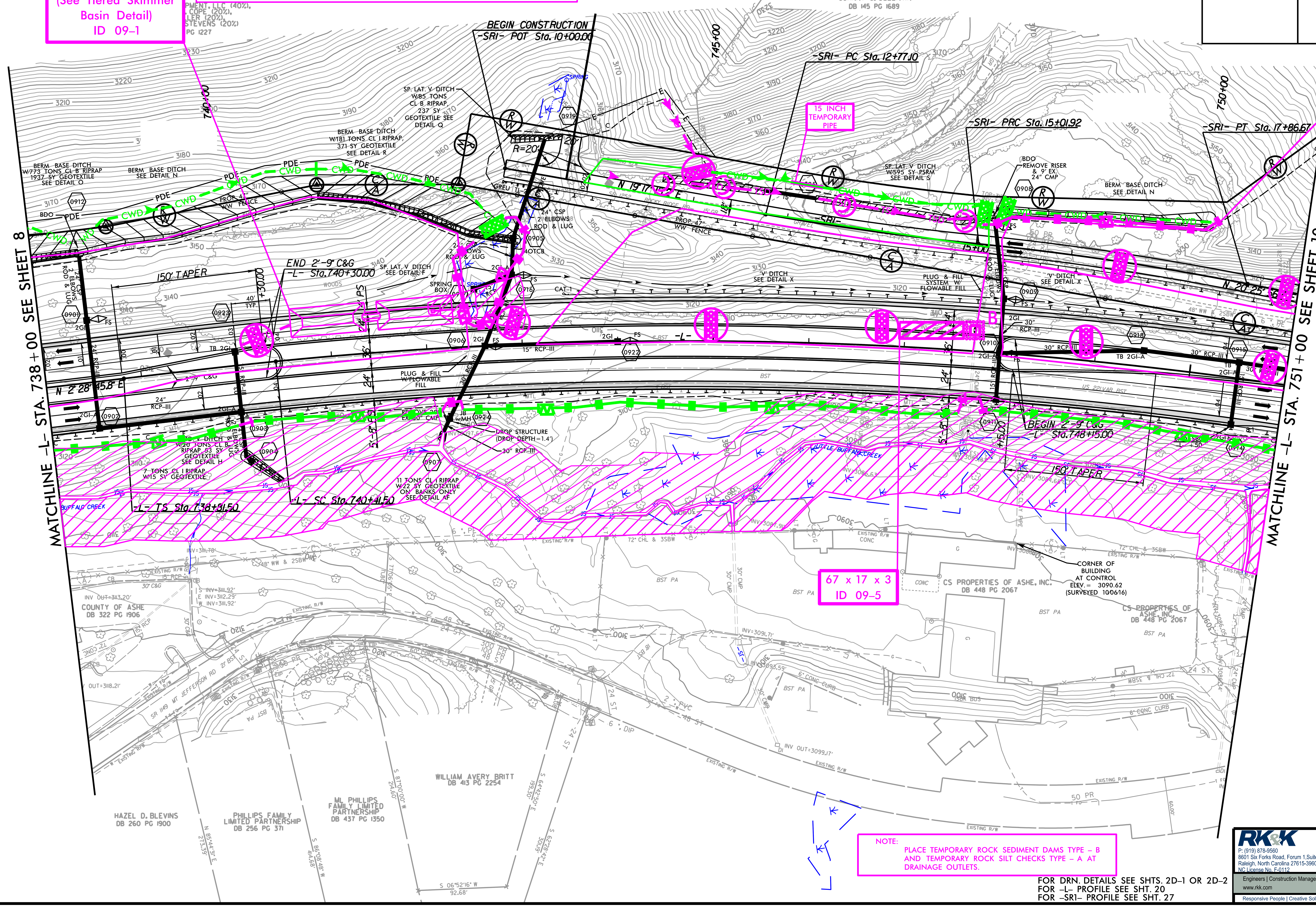
PIs Sta 739+88.17	PI Sta 746+79.89
θs = 1° 03′ 57.5″	Δ = 16° 53′ 20.8″ (RT)
Ls = 160.00′	D = 1° 19′ 56.9″
LT = 106.67′	L = 1,267.51′
ST = 53.34′	T = 638.39′
	R = 4,300.00′
	SE = 0.04

-SRI-

PI Sta 13+89.56	PI Sta 16+44.40
Δ = 4° 17′ 36.8″ (LT)	Δ = 5° 26′ 18.4″ (RT)
D = 1° 54′ 35.5″	D = 1° 54′ 35.5″
L = 224.81′	L = 284.76′
T = 112.46′	T = 142.48′
R = 3,000.00′	R = 3,000.00′
SE = NC	SE = NC

170 x 30 x 3
2 inch Skimmer
with 2 inch
Orifice Diameter
20 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 09-1

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.



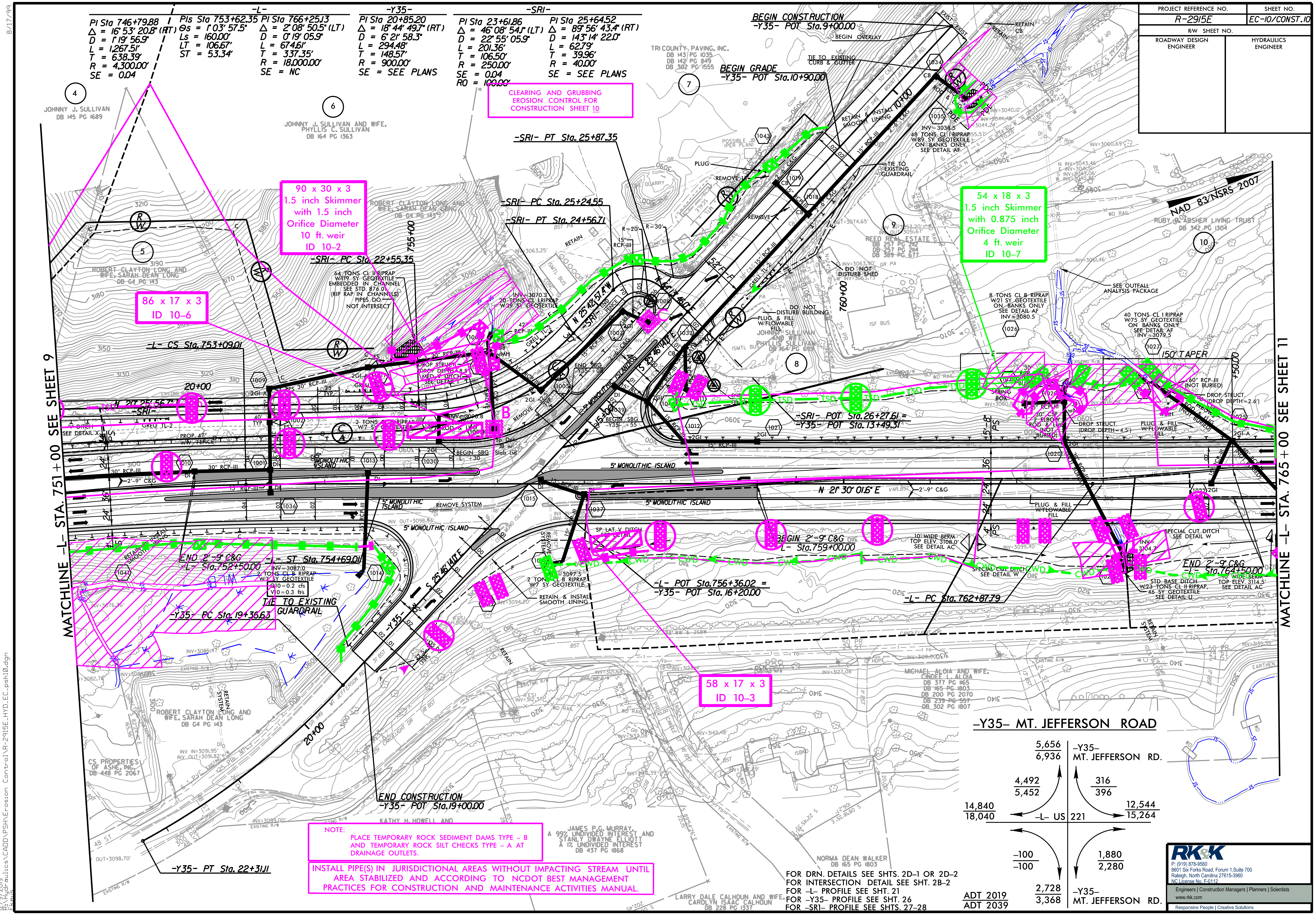
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh09.dgn



PROJECT REFERENCE NO. R-2915E
SHEET NO. EC-10/CONST.10
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
-L-
PI Sta 746+79.88
△ = 16° 53' 20.8" (RT)
D = 1° 19' 56.9"
L = 1,267.51'
T = 638.39'
R = 4,300.00'
SE = 0.04
PIs Sta 753+62.35
Θs = 1° 03' 57.5"
Ls = 160.00'
LT = 106.67'
ST = 53.34'
PI Sta 766+25.13
△ = 2° 08' 50.5" (LT)
D = 0° 19' 05.9"
L = 674.61'
T = 337.35'
R = 18,000.00'
SE = NC
-Y35-
PI Sta 20+85.20
△ = 18° 44' 49.7" (RT)
D = 6° 21' 58.3"
L = 294.48'
T = 148.57'
R = 900.00'
SE = SEE PLANS
-SRI-
PI Sta 23+61.86
△ = 46° 08' 54.1" (LT)
D = 22° 55' 05.9"
L = 201.36'
T = 106.50'
R = 250.00'
SE = 0.04
RO = 100.00'
PI Sta 25+64.52
△ = 89° 56' 43.4" (RT)
D = 143° 14' 22.0"
L = 62.79'
T = 39.96'
R = 40.00'
SE = SEE PLANS
BEGIN CONSTRUCTION -Y35- POT Sta.9+00.00
BEGIN GRADE -Y35- POT Sta.10+90.00
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 10
90 x 30 x 3 1.5 inch Skimmer with 1.5 inch Orifice Diameter 10 ft. weir ID 10-2
54 x 18 x 3 1.5 inch Skimmer with 0.875 inch Orifice Diameter 4 ft. weir ID 10-7
86 x 17 x 3 ID 10-6
58 x 17 x 3 ID 10-3
-SRI- PT Sta. 25+87.35
-SRI- PC Sta. 25+24.55
-SRI- PT Sta. 24+56.71
-SRI- PC Sta. 22+55.35
-L- CS Sta. 753+09.01
-SRI- POT Sta. 26+27.61 = -Y35- POT Sta. 13+49.31
-L- POT Sta. 756+36.02 = -Y35- POT Sta. 16+20.00
-L- PC Sta. 762+87.79
-Y35- PC Sta. 19+36.63
-L- ST Sta. 754+69.01
END 2'-9" C&G -L- Sta. 752+50.00
BEGIN 2'-9" C&G -L- Sta. 759+00.00
END 2'-9" C&G Sta. 764+50.00
TIE TO EXISTING GUARDRAIL
N 21° 30' 01.6" E
NAD 83/NSRS 2007
150' TAPER
MATCHLINE -L- STA. 751+00 SEE SHEET 9
MATCHLINE -L- STA. 765+00 SEE SHEET 11
END CONSTRUCTION -Y35- POT Sta. 19+00.00
-Y35- PT Sta. 22+31.11
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.
INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.
FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR INTERSECTION DETAIL SEE SHT. 2B-2
FOR -L- PROFILE SEE SHT. 21
FOR -Y35- PROFILE SEE SHT. 26
FOR -SRI- PROFILE SEE SHTS. 27-28
-Y35- MT. JEFFERSON ROAD
5,656 / 6,936
-Y35- MT. JEFFERSON RD.
4,492 / 5,452
316 / 396
14,840 / 18,040
-L- US 221
12,544 / 15,264
-100 / -100
1,880 / 2,280
2,728 / 3,368
ADT 2019
ADT 2039
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
JOHNNY J. SULLIVAN
ROBERT CLAYTON LONG AND WIFE, SARAH DEAN LONG
TRI COUNTY PAVING, INC.
REED REAL ESTATE
RUBY G. ABSHER LIVING TRUST
MICHAEL ALOIA AND WIFE, CINDEE L. ALOIA
CS PROPERTIES OF ASHE, INC.
KATHY H. HOWELL AND
JAMES P.G. MURRAY
NORMA DEAN WALKER
LARRY DALE CALHOUN AND WIFE, CAROLYN ISAAC CALHOUN

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

NAD 83/NSRS 2007

PIPE INSTALLATION SEQUENCE STA. 764+92 –L–

1. USING PUMP AROUND OPERATIONS, TO REMOVE 35' OF EXISTING 42" CMP. INSTALL 36" TEMPORARY PIPE WITH COLLAR.
2. SWITCH STREAM TO NEW TEMPORARY PIPES.
3. INSTALL APPROXIMATELY 270' OF 60" RCP PIPE, STRUCTURE NOS. 1025, 1109, 1110, 1032 AND STANDARD BASE DITCHES SHOWN ON PLANS.
4. USING PUMP AROUND OPERATIONS, INSTALL THE REMAINING 24' OF 60" RCP PIPE.
5. SWITCH STREAM TO NEW 60" RCP PIPES.
6. CONSTRUCT EAST AND WEST BOUND LANES AS SHOWN ON TRAFFIC CONTROL PLANS.

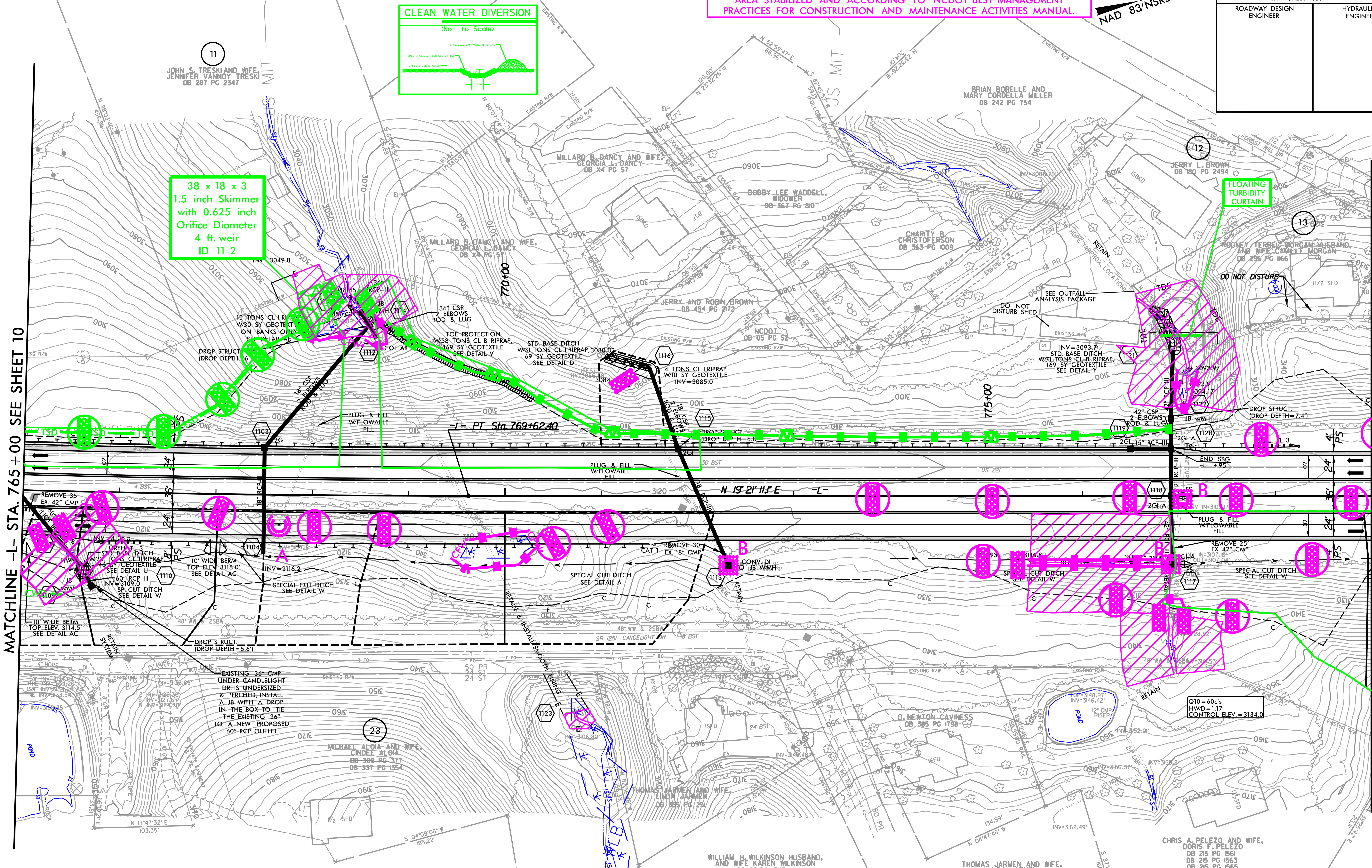
RK&K
P: (919) 878-9560
900 Ridgefield Drive Suite 350 | Raleigh, North Carolina 27609-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
1/31/2020
K:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh10A.dgn

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

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

NAD 83/NSRS 2007



CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 11

NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

-L-

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

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh11.dgn

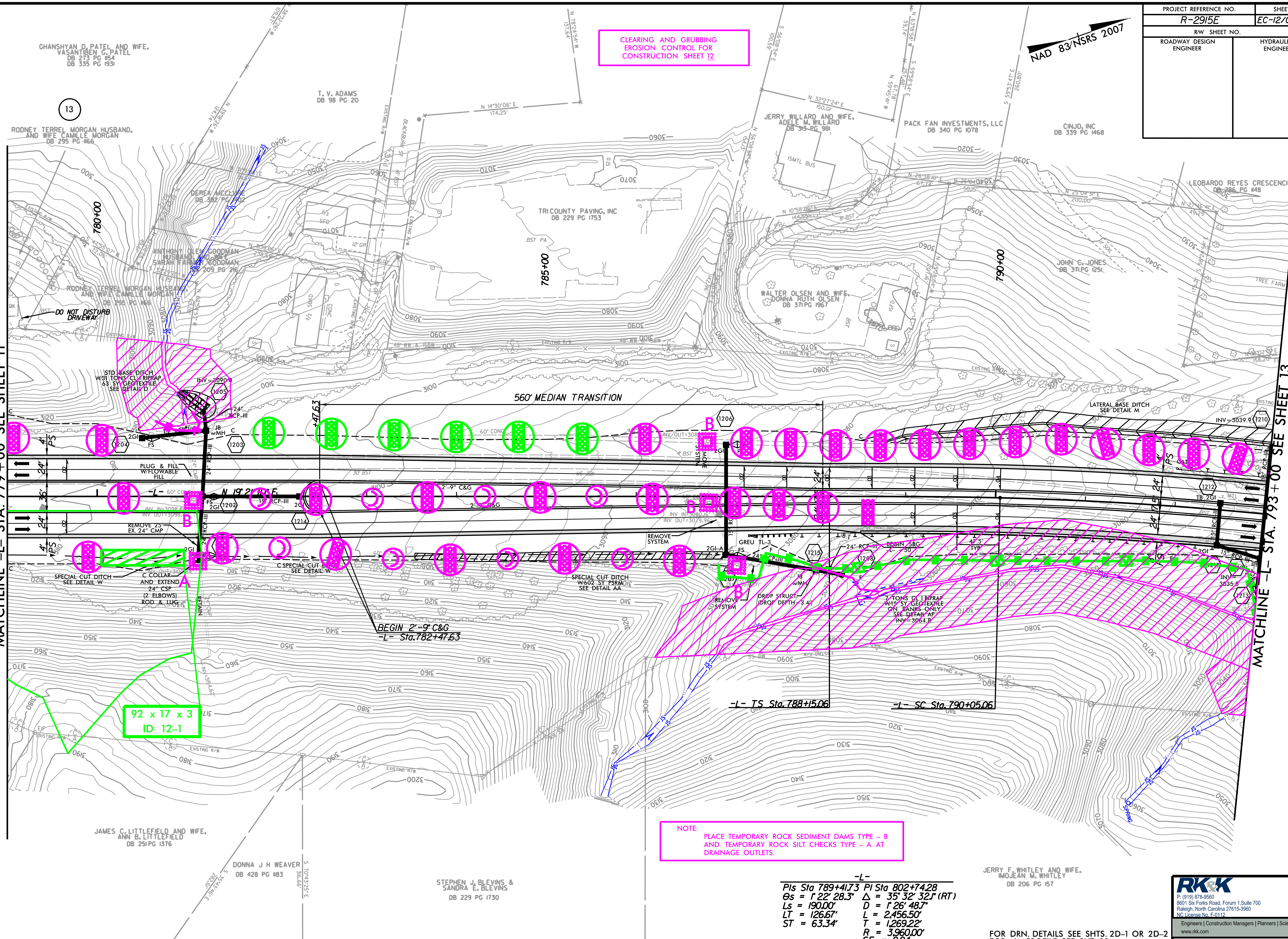
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-12/CONST.12

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 12



NAD 83/NSRS 2007
MATCHLINE -L- STA. 779+00 SEE SHEET 11
MATCHLINE -L- STA. 793+00 SEE SHEET 13
GHANSHYAN D. PATEL AND WIFE, VASANTIBEN G. PATEL DB 273 PG 154 DB 335 PG 1931
RODNEY TERREL MORGAN HUSBAND, AND WIFE CAMILLE MORGAN DB 295 PG 166
T. V. ADAMS DB 98 PG 20
TRI COUNTY PAVING, INC DB 229 PG 1753
JERRY WILLARD AND WIFE, ADELE M. WILLARD DB 313 PG 981
PACK FAN INVESTMENTS, LLC DB 340 PG 1078
CINJO, INC DB 339 PG 1468
LEOBARDO REYES CRESCENCIO DB 286 PG 148
JOHN C. JONES DB 371 PG 1251
WALTER OLSEN AND WIFE, DONNA RUTH OLSEN DB 371 PG 1967
JAMES C. LITTLEFIELD AND WIFE, ANN B. LITTLEFIELD DB 251 PG 1376
DONNA J H WEAVER DB 428 PG 183
STEPHEN J. BLEVINS & SANDRA E. BLEVINS DB 229 PG 1730
JERRY F. WHITLEY AND WIFE, IMOJEAN M. WHITLEY DB 206 PG 157
DO NOT DISTURB DRIVEWAY
560' MEDIAN TRANSITION
STD. BASE DITCH W/31 TONS CL I RIPRAP 63 SY GEOTEXTILE SEE DETAIL D
LATERAL BASE DITCH SEE DETAIL M
PLUG & FILL W/FLOWABLE FILL
REMOVE 25' EX. 24" CMP
SPECIAL CUT DITCH SEE DETAIL W
C COLLAR AND EXTEND 24" CSP (2 ELBOWS) ROD & LUG
SPECIAL CUT DITCH W/602 SY PSRM SEE DETAIL AA
BEGIN 2'-9" C&G -L- Sta. 782+47.63
REMOVE SYSTEM
DROP STRUCT. DROP DEPTH 3.4'
7 TONS CL I RIPRAP W/15 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF INV=3064.8'
-L- TS Sta. 788+15.06
-L- SC Sta. 790+05.06
92 x 17 x 3 ID 12-1
780+00
785+00
790+00

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.

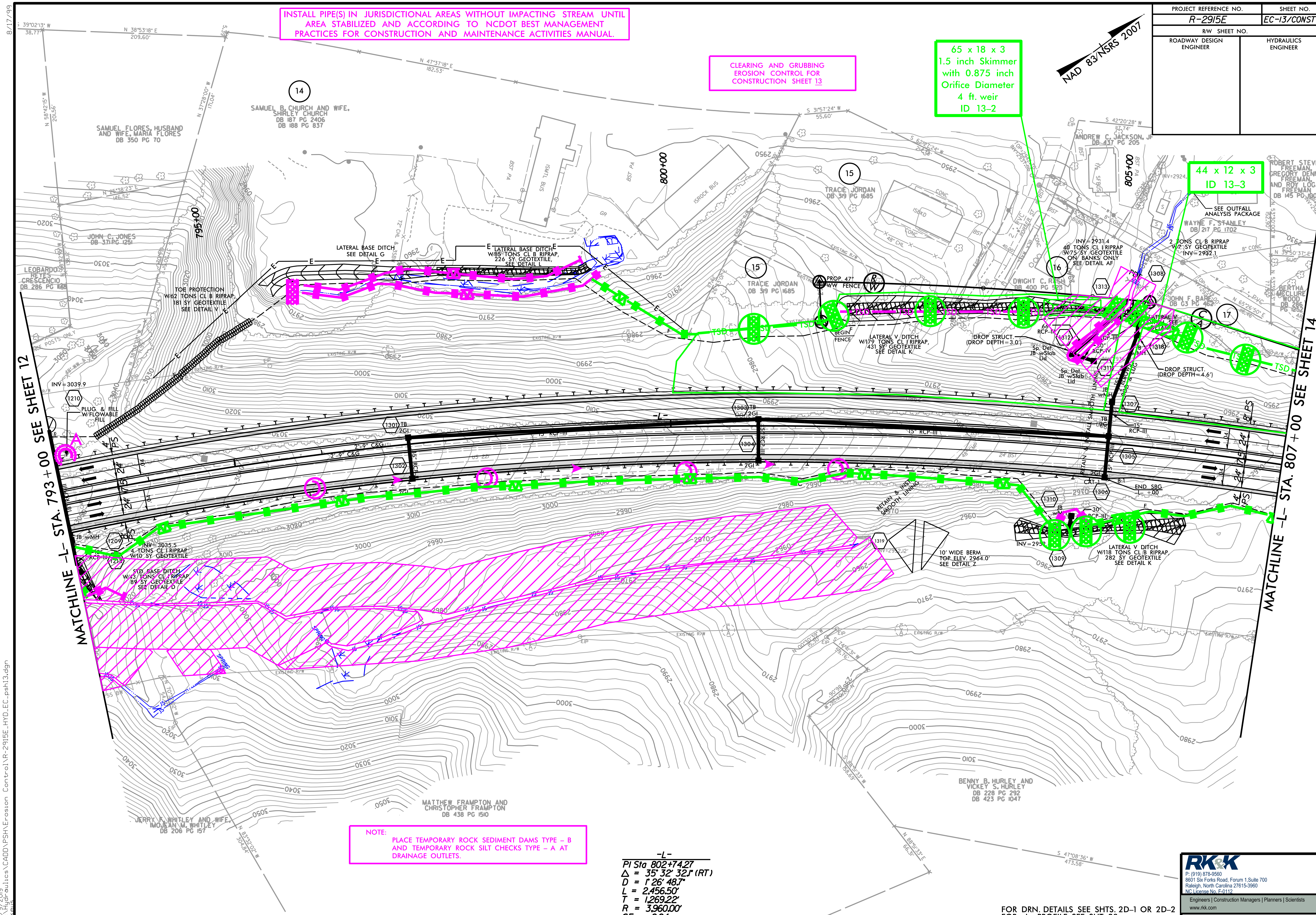
-L-

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

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh12.dgn



PROJECT REFERENCE NO. R-2915E
SHEET NO. EC-13/CONST.13
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 13
65 x 18 x 3 1.5 inch Skimmer with 0.875 inch Orifice Diameter 4 ft. weir ID 13-2
44 x 12 x 3 ID 13-3
NAD 83/NSRS 2007
SAMUEL B. CHURCH AND WIFE, SHIRLEY CHURCH DB 187 PG 2406 DB 188 PG 837
SAMUEL FLORES, HUSBAND AND WIFE, MARIA FLORES DB 350 PG 70
JOHN C. JONES DB 371 PG 1251
LEOBARDO REYES CRESCENCIO DB 286 PG 1488
TRACIE JORDAN DB 319 PG 1685
ANDREW C. JACKSON, JR DB 437 PG 205
DWIGHT C. RASH DB 400 PG 505
ROBERT STEVEN FREEMAN, GREGORY DENNIS FREEMAN, AND ROY LOGAN FREEMAN DB 145 PG 1801
WAYNE F. STANLEY DB 217 PG 1702
BERTHA MCCLURE WOOD DB 286 PG 552
JOHN F. BAKER DB 03 PG
BENNY B. HURLEY AND VICKEY S. HURLEY DB 228 PG 292 DB 423 PG 1047
MATTHEW FRAMPTON AND CHRISTOPHER FRAMPTON DB 438 PG 1510
JERRY F. WHITLEY AND WIFE, IMOJEAN M. WHITLEY DB 206 PG 157
LATERAL BASE DITCH SEE DETAIL G
LATERAL BASE DITCH W/85 TONS CL B RIPRAP, 226 SY GEOTEXTILE, SEE DETAIL L
TOE PROTECTION W/62 TONS CL B RIPRAP, 181 SY GEOTEXTILE SEE DETAIL V
LATERAL V DITCH W/179 TONS CL I RIPRAP, 431 SY GEOTEXTILE SEE DETAIL K
DROP STRUCT. (DROP DEPTH=3.0')
DROP STRUCT. (DROP DEPTH=4.6')
INV=2931.4 40 TONS CL I RIPRAP W/75 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF
2 TONS CL B RIPRAP W/7 SY GEOTEXTILE INV=2932.1
SEE OUTFALL ANALYSIS PACKAGE
PLUG & FILL W/FLOWABLE FILL
INV=3039.9
INV=3035.5 4 TONS CL I RIPRAP W/10 SY GEOTEXTILE
STD. BASE DITCH W/43 TONS CL I RIPRAP 89 SY GEOTEXTILE SEE DETAIL D
10' WIDE BERM TOP ELEV. 2964.0' SEE DETAIL Z
LATERAL V DITCH W/118 TONS CL B RIPRAP, 282 SY GEOTEXTILE SEE DETAIL K
RETAIN & INST. SMOOTH LINING
END SBG
MATCHLINE -L- STA. 793+00 SEE SHEET 12
MATCHLINE -L- STA. 807+00 SEE SHEET 14
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.
-L-
PI Sta 802+74.27
Δ = 35° 32' 32.1" (RT)
D = 1° 26' 48.7"
L = 2,456.50'
T = 1,269.22'
R = 3,960.00'
SE = 0.04
FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR -L- PROFILE SEE SHT. 23
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
8/17/99
12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh13.dgn

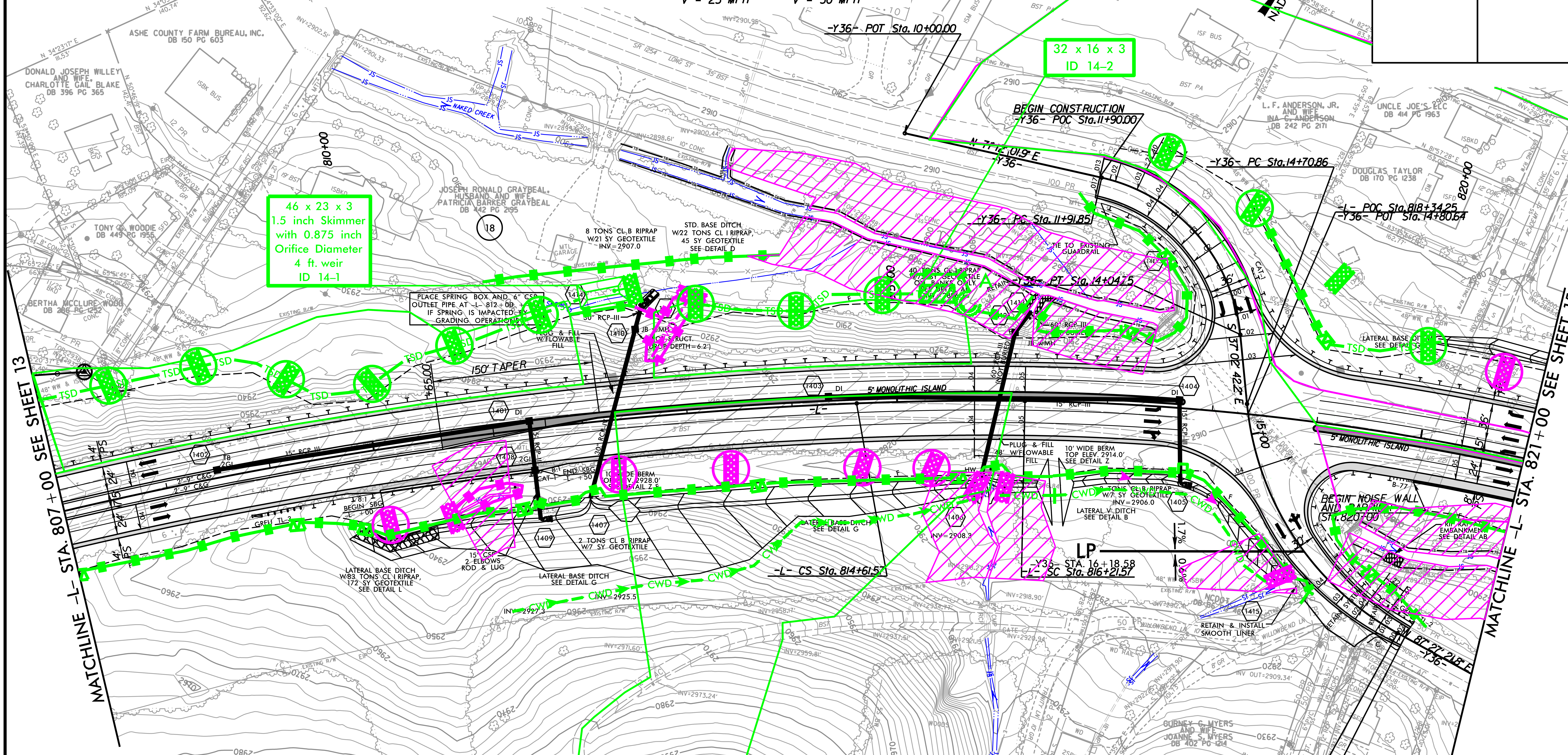
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-14/CONST.14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-

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

-Y36-

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

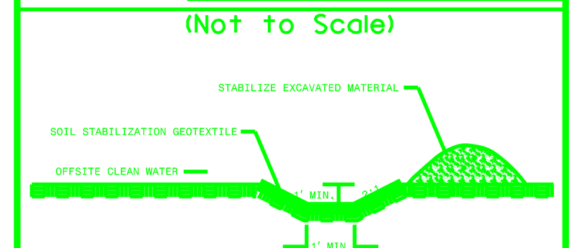


-Y36- LONG STREET

-Y36- LONG STREET (north leg)	5,656 / 6,936
Left turn to -Y36- (north)	1,780 / 2,180
Right turn from -Y36- (north)	3,560 / 4,360
-L- US 221 (west leg)	12,544 / 15,264
-L- US 221 (east leg)	14,440 / 17,640
Turn (southwest quadrant)	200 / 200
Turn (southeast quadrant)	316 / 396
-Y36- LONG STREET (south leg)	832 / 992

ADT 2019
ADT 2039

CLEAN WATER DIVERSION
(Not to Scale)



CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 14

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

PROPOSED TRAFFIC SIGNAL

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh14.dgn
Ekeus

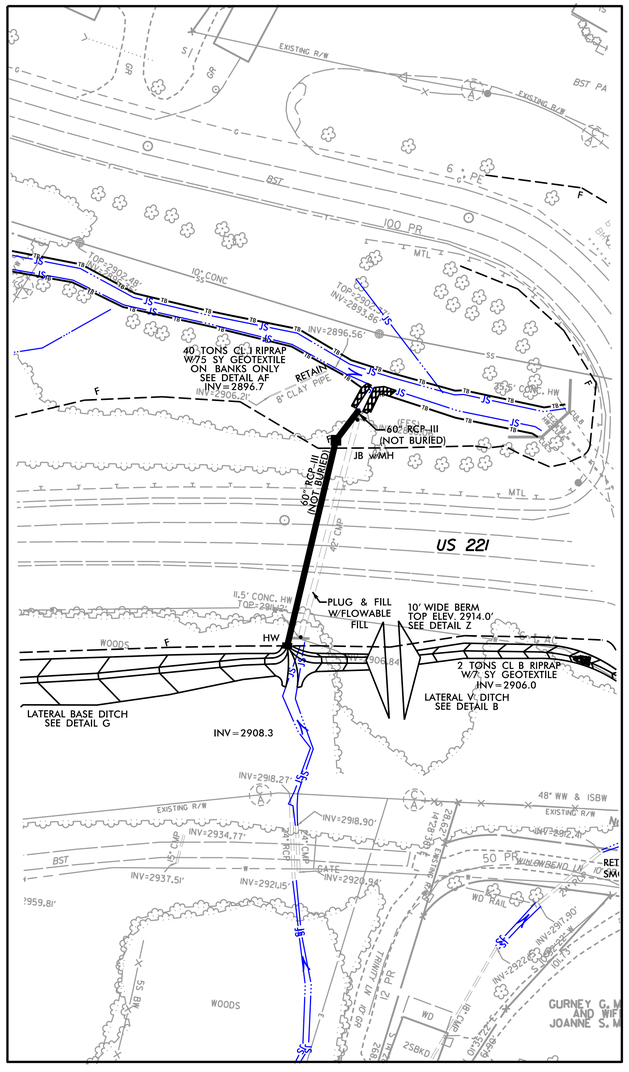
8/17/99

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

NAD 83/NSRS 2007

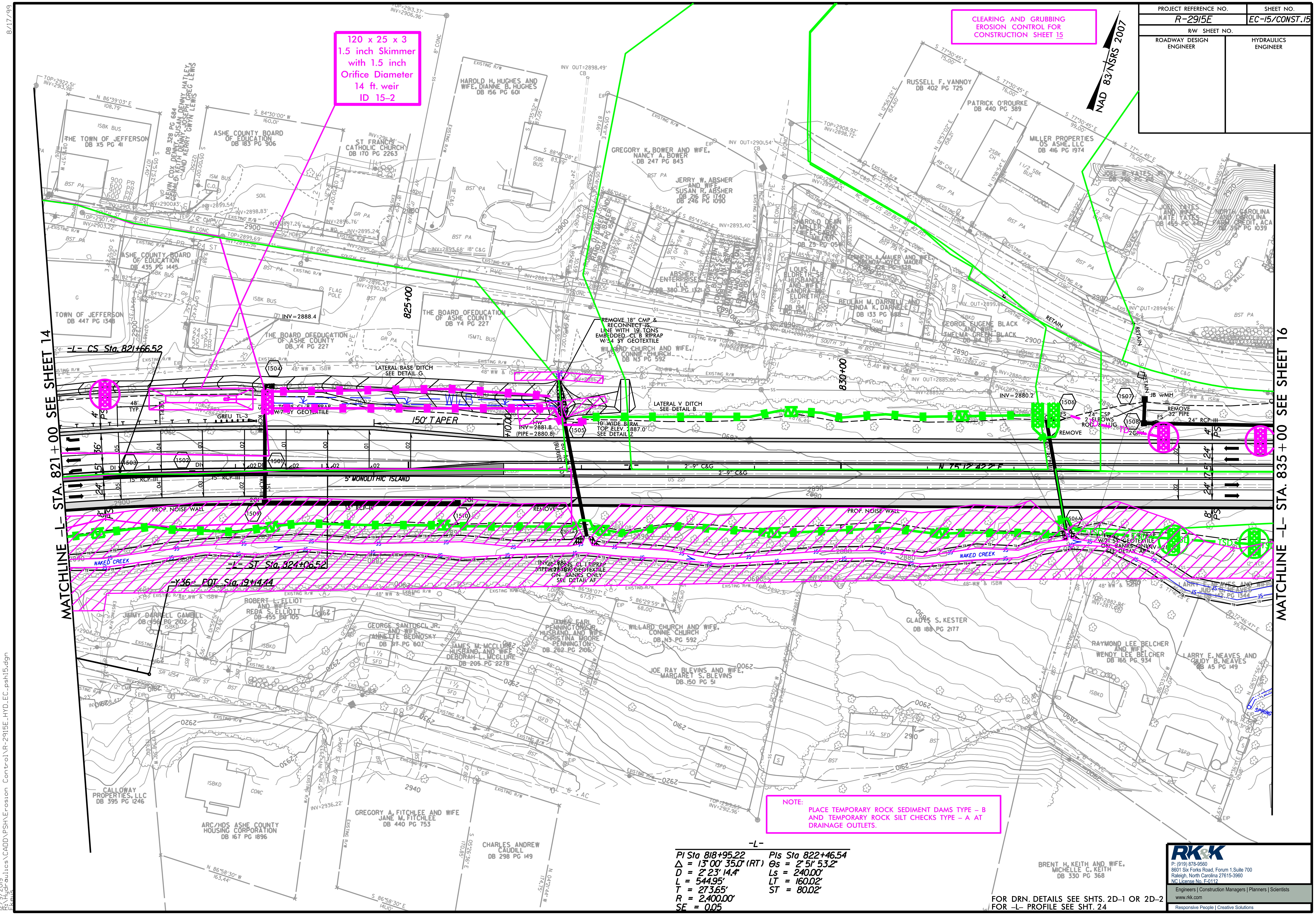
PIPE INSTALLATION SEQUENCE STA. 816+11 –L–

1. MAINTAIN TRAFFIC ON EXISTING US 221.
2. MAINTAIN STREAM FLOW THROUGH EXISTING 42" CMP.
3. INSTALL 60" RCP, WITH HEADWALL, JUNCTION BOX WITH MANHOLE AND RIP RAP AT OUTLET.
4. USING PUMP AROUND OPERATIONS CONSTRUCT DITCH AT INLET END. SWITCH STREAM TO NEW 60" PIPE.
5. REMOVE EXISTING 42" CMP.
6. CONSTRUCT EAST AND WEST BOUND LANES AS SHOWN ON TRAFFIC CONTROL PLANS.



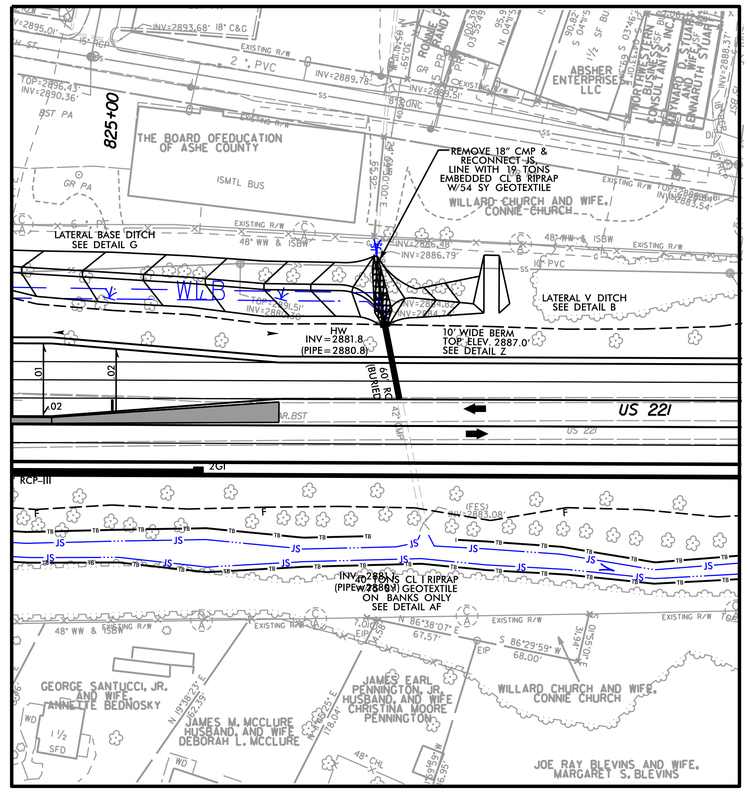
RK&K
P: (919) 878-9560
900 Ridgefield Drive Suite 350 | Raleigh, North Carolina 27609-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

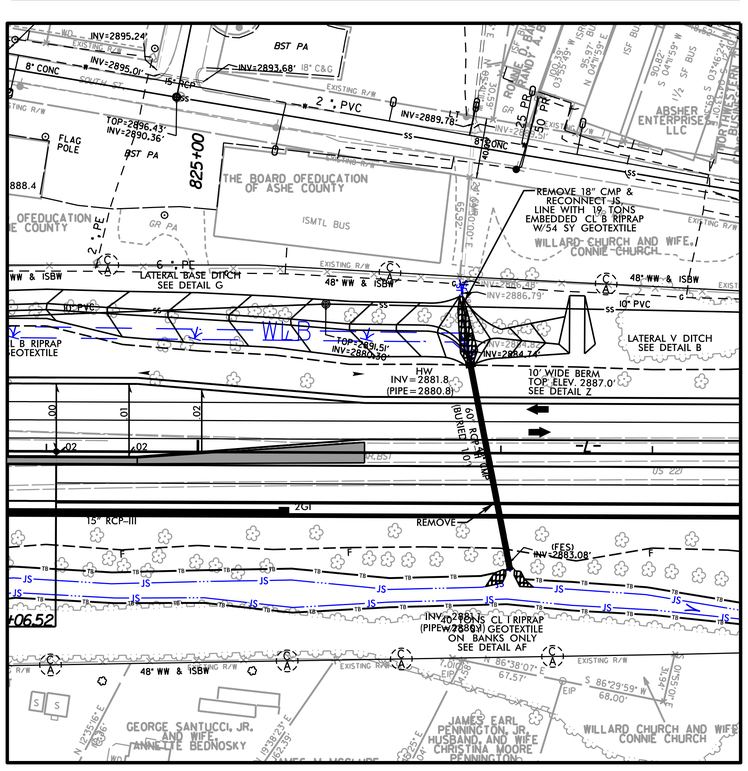
12/9/2019
K:\Raleigh Projects\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh14A.dgn
Kenny



PROJECT REFERENCE NO.
R-2915E
SHEET NO.
EC-15/CONST.15
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 15
NAD 83/NSRS 2007
120 x 25 x 3
1.5 inch Skimmer
with 1.5 inch
Orifice Diameter
14 ft. weir
ID 15-2
MATCHLINE -L- STA. 821+00 SEE SHEET 14
MATCHLINE -L- STA. 835+00 SEE SHEET 16
-L- CS Sta. 821+66.52
-L- ST Sta. 824+06.52
-Y36- POT Sta. 19+14.44
825+00
830+00
150' TAPER
5' MONOLITHIC ISLAND
PROP. NOISE WALL
NAKED CREEK
LATERAL BASE DITCH
SEE DETAIL G
LATERAL V DITCH
SEE DETAIL B
REMOVE 18" CMP &
RECONNECT JS
LINE WITH 19 TONS
EMBEDDED CL B RIPRAP
W/54 SY GEOTEXTILE
10' WIDE BERM
TOP ELEV. 2887.0'
SEE DETAIL Z
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.
-L-
PI Sta 818+95.22
Δ = 13° 00' 35.0" (RT)
D = 2° 23' 14.4"
L = 544.95'
T = 273.65'
R = 2,400.00'
SE = 0.05
PIs Sta 822+46.54
Θs = 2° 51' 53.2"
Ls = 240.00'
LT = 160.02'
ST = 80.02'
FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR -L- PROFILE SEE SHT. 24
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
8/17/99
12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh15.dgn

8/17/99





NAD 83/NSRS 2007

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

PIPE INSTALLATION SEQUENCE STA. 826+90 –L–

PHASE I

1. MAINTAIN TRAFFIC ON EXISTING US 221.
2. USING PUMP AROUND OPERATIONS, REMOVE APPROX. 50' OF EXISTING 42" CMP. INSTALL APPROX. 50' OF 60" RCP PIPE.
3. CONSTRUCT STANDARD DITCH AT INLET END.
4. CONSTRUCT WESTBOUND LANES AS SHOWN ON TRAFFIC CONTROL PLANS.
5. SWITCH TRAFFIC TO NEW WESTBOUND LANES.

PHASE II

1. MAINTAIN TRAFFIC ON NEWLY CONSTRUCTED WETBOUND LANES.
2. USING PUMP AROUND OPERATIONS, REMOVE REMAINING SECTION OF EXISTING 42" CMP. INSTALL APPROX. 88' OF 60" RCP PIPE.
3. SWITCH STREAM TO NEWLY CONSTRUCTED 60" RCP PIPE.
4. CONSTRUCT EASTBOUND LANES AS SHOWN ON TRAFFIC CONTROL PLANS.

RK&K
P: (919) 878-9560
900 Ridgefield Drive Suite 350 | Raleigh, North Carolina 27609-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

12/9/2019
C:\Projects\CADD\PSH\Erosion Control\R-2915E_HYD_EC_pshl5A.dgn

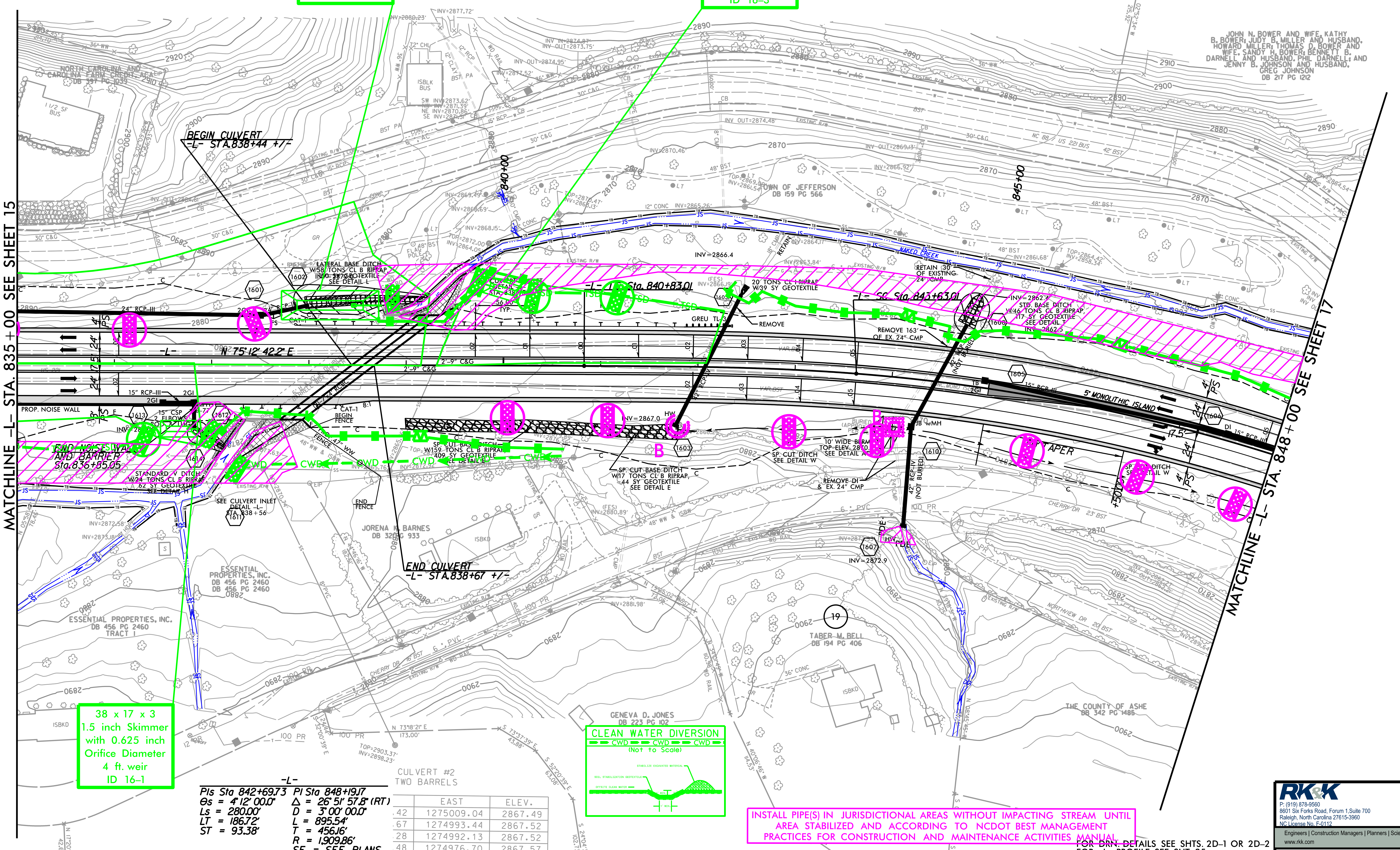
PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-16/CONST.16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 16

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

100 x 30 x 3
1.5 inch Skimmer
with 1.5 inch
Orifice Diameter
20 ft. weir
ID 16–2

38 x 17 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 16–3



NAD 83/NSRS 2007
MATCHLINE -L- STA. 835+00 SEE SHEET 15
MATCHLINE -L- STA. 848+00 SEE SHEET 17
BEGIN CULVERT
-L- STA.838+44 +/-
END CULVERT
-L- STA.838+67 +/-
JENNIE W. HIGHTOWER, EMILY H. JOHNSTON AND JOESPH E. HIGHTOWER
DB 343 PG 1044
JOHN N. BOWER AND WIFE, KATHY B. BOWER; JUDY B. MILLER AND HUSBAND, HOWARD MILLER; THOMAS D. BOWER AND WIFE, SANDY H. BOWER; BENNETT B. DARNELL AND HUSBAND, PHIL DARNELL; AND JENNY B. JOHNSON AND HUSBAND, GREG JOHNSON
DB 217 PG 1212
NORTH CAROLINA FARM CREDIT, ACA
DB 397 PG 1039
TOWN OF JEFFERSON
DB 159 PG 566
JORENA K. BARNES
DB 320 PG 933
ESSENTIAL PROPERTIES, INC.
DB 456 PG 2460
TRACT I
TABER M. BELL
DB 194 PG 406
GENEVA D. JONES
DB 223 PG 102
THE COUNTY OF ASHE
DB 342 PG 1485
NAKED CREEK
-L- Sta. 840+83.01
-SC- Sta. 843+63.01
N 75°12'42.2" E
END NOISE WALL AND BARRIER
Sta.836+85.05
PROP. NOISE WALL
5' MONOLITHIC ISLAND
REMOVE 163' OF EX. 24" CMP
RETAIN 30' OF EXISTING 24" CMP
REMOVE DI & EX. 24" CMP
CLEAN WATER DIVERSION
CWD — CWD — CWD
(Not to Scale)
-L-
PIs Sta 842+69.73
Θs = 4°12'00.0"
Ls = 280.00'
LT = 186.72'
ST = 93.38'
PI Sta 848+19.17
Δ = 26°51'57.8" (RT)
D = 3°00'00.0"
L = 895.54'
T = 456.16'
R = 1,909.86'
SE = SEE PLANS
CULVERT #2
TWO BARRELS

	EAST	ELEV.
.42	1275009.04	2867.49
.67	1274993.44	2867.52
.28	1274992.13	2867.52
.48	1274976.70	2867.57

38 x 17 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
4 ft. weir
ID 16–1

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh16.dgn

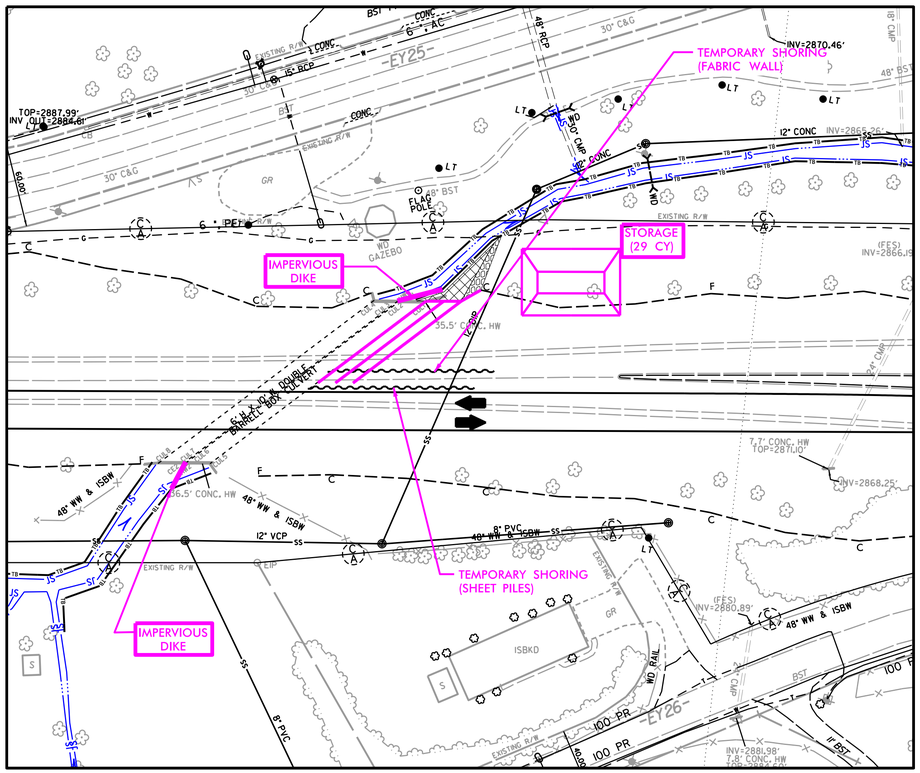
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-16/CONSTJ6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE STA. 838+43 –L–

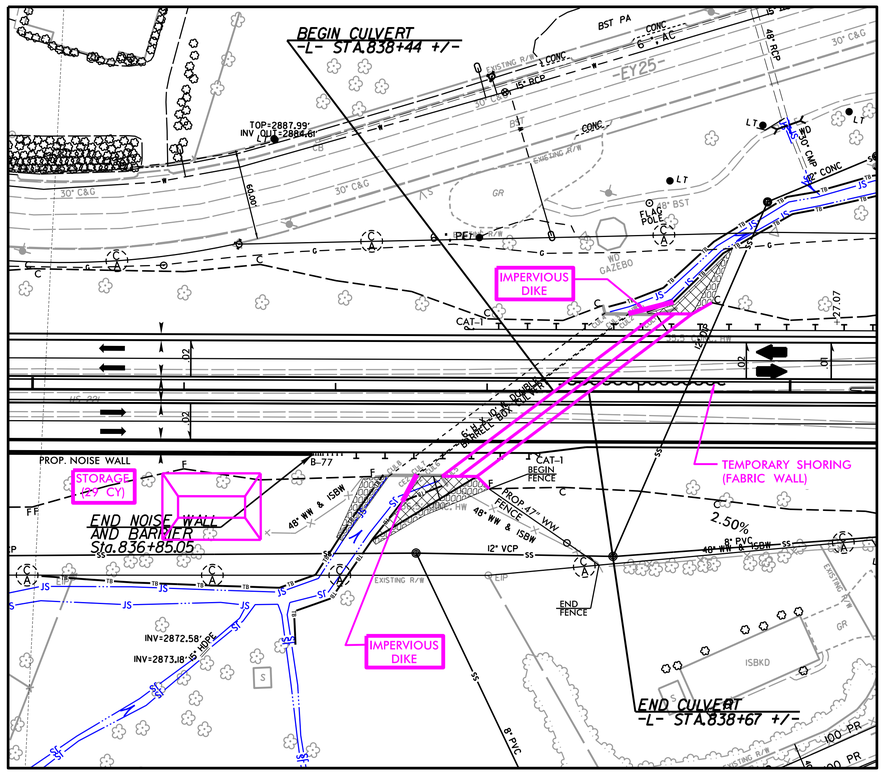
PHASE I

1. INSTALL STILLING BASIN WITH A MINIMUM CAPACITY OF 29 C.Y. AT OUTLET END OF EXISTING CULVERT.
2. INSTALL IMPERVIOUS DIKES AS SHOWN ON PLAN. DIVERT STREAM THROUGH EXISTING 10' x 6' WEST BARRELL.
3. CONSTRUCT TEMPORARY PAVEMENT AND SHEET PILE SHORING AS SHOWN ON TRAFFIC CONTROL PLANS AND SHIFTING TRAFFIC TO EAST BOUND LANES.
4. CONSTRUCT APPROXIMATELY 89 LF OF (2)–7'x4' RCBC. EXISTING SEWER LINE SHALL BE NOT BE DISTURBED.
5. CONSTRUCT OUTLET CHANNEL IMPROVEMENTS IN THE DRY UTILIZING PUMP AROUND OPERATIONS.
6. INSTALL FABRIC WALL SHORING AS SHOWN ON TRAFFIC CONTROL PLANS BEFORE SWITCHING TRAFFIC TO WESTBOUND LANES.



PHASE II

1. INSTALL STILLING BASIN WITH A MINIMUM CAPACITY OF 29 C.Y. AT INLET END OF EXISTING CULVERT.
2. MAINTAIN IMPERVIOUS DIKES AS SHOWN ON PLAN. MAINTAIN STREAM THROUGH EXISTING 10' x 6' WEST BARRELL.
3. SHIFT TRAFFIC TO NEWLY CONSTRUCTED PAVEMENT ON NORTH SIDE OF CULVERT AS SHOWN ON TRAFFIC CONTROL PLANS.
4. CONSTRUCT APPROXIMATELY 88 LF OF (2)–7'x4' RCBC. EXISTING SEWER LINE AT INLET END SHALL BE NOT BE DISTURBED.
5. CONSTRUCT INLET CHANNEL IMPROVEMENTS IN THE DRY UTILIZING PUMP AROUND OPERATIONS.
6. CONSTRUCT PROPOSED ROADWAY PAVEMENT AND ROADWAY EMBANKMENTS.
7. INSTALL HIGH FLOW SILLS AT INLET AND OUTLET ENDS OF EXISTING EASTERN BARREL AS SHOWN ON PLANS.
8. REMOVE STILLING BASIN AND IMPERVIOUS DIKES.

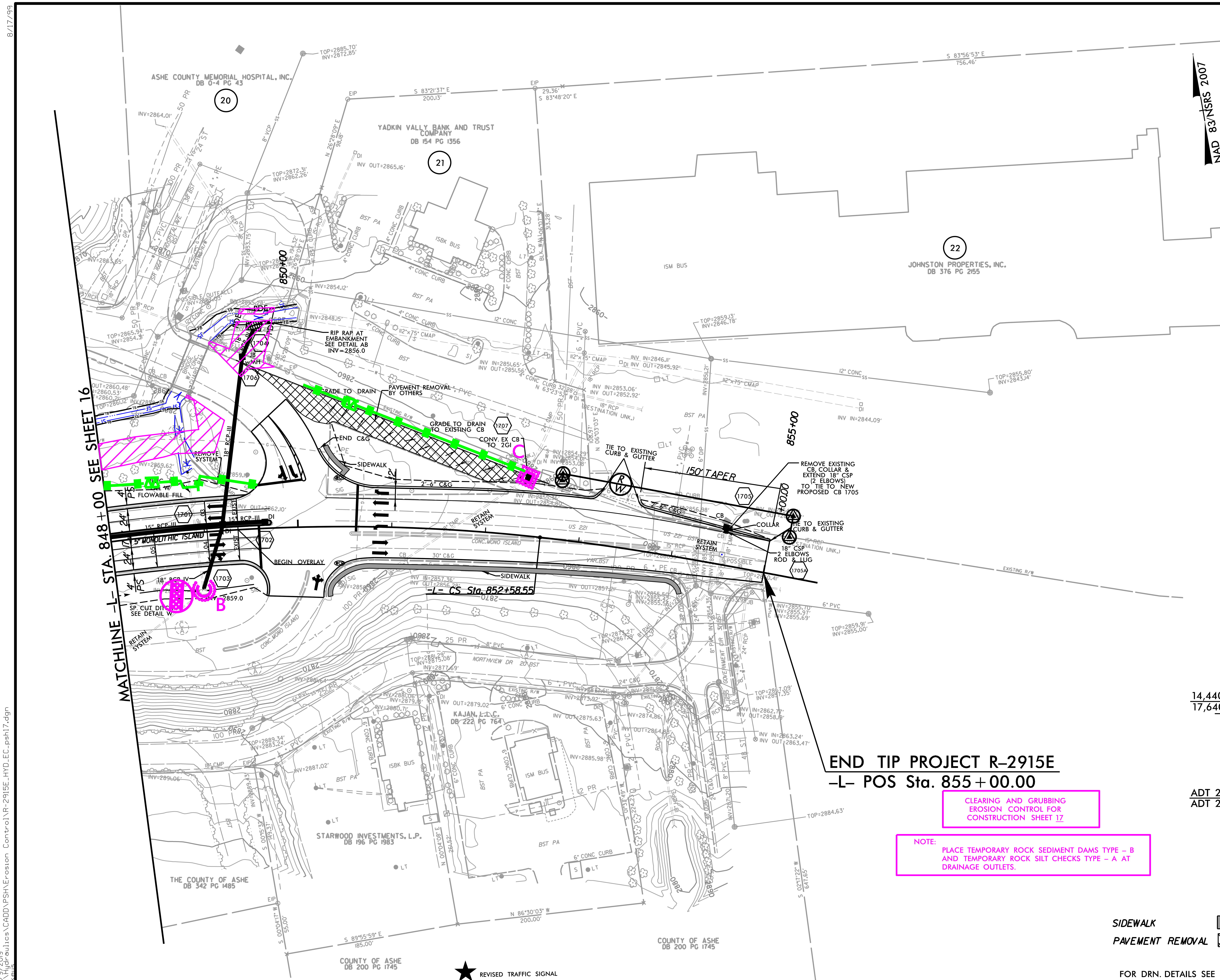


FOR –L– PROFILE SEE SHT. 24

RK&K
P: (919) 878-9560
900 Ridgefield Drive Suite 350 | Raleigh, North Carolina 27609-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

12/9/2019
C:\Highways\projects\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh16A.dgn
FLegg

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



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 17

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CHERRY DRIVE-NC88

Movement	ADT 2019	ADT 2039
NC88	8,584	10,504
	1,564	1,884
	6804	8324
-L- US 221 (west)	14,440	17,640
-L- US 221 (east)	19,464	23,784
	416	496
	200	200
CHERRY DRIVE	832	992

-L-

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

PIs Sta 853+58.60
Θs = 4° 29' 58.92"
Ls = 299.98'
LT = 200.05'
ST = 100.05'

SIDEWALK

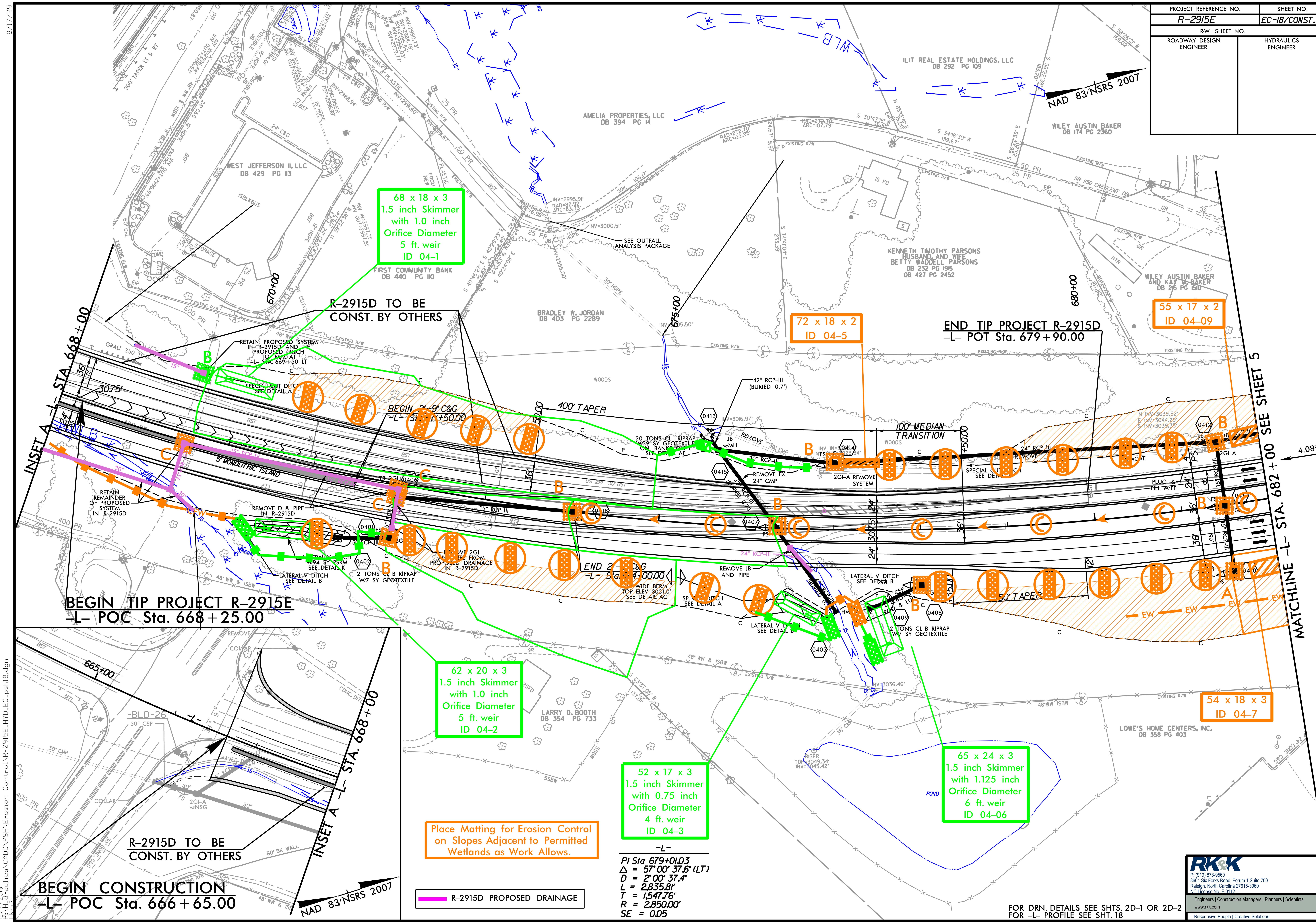
PAVEMENT REMOVAL

FOR DRN. DETAILS SEE SHT. 2D-2
FOR -L- PROFILE SEE SHT. 25

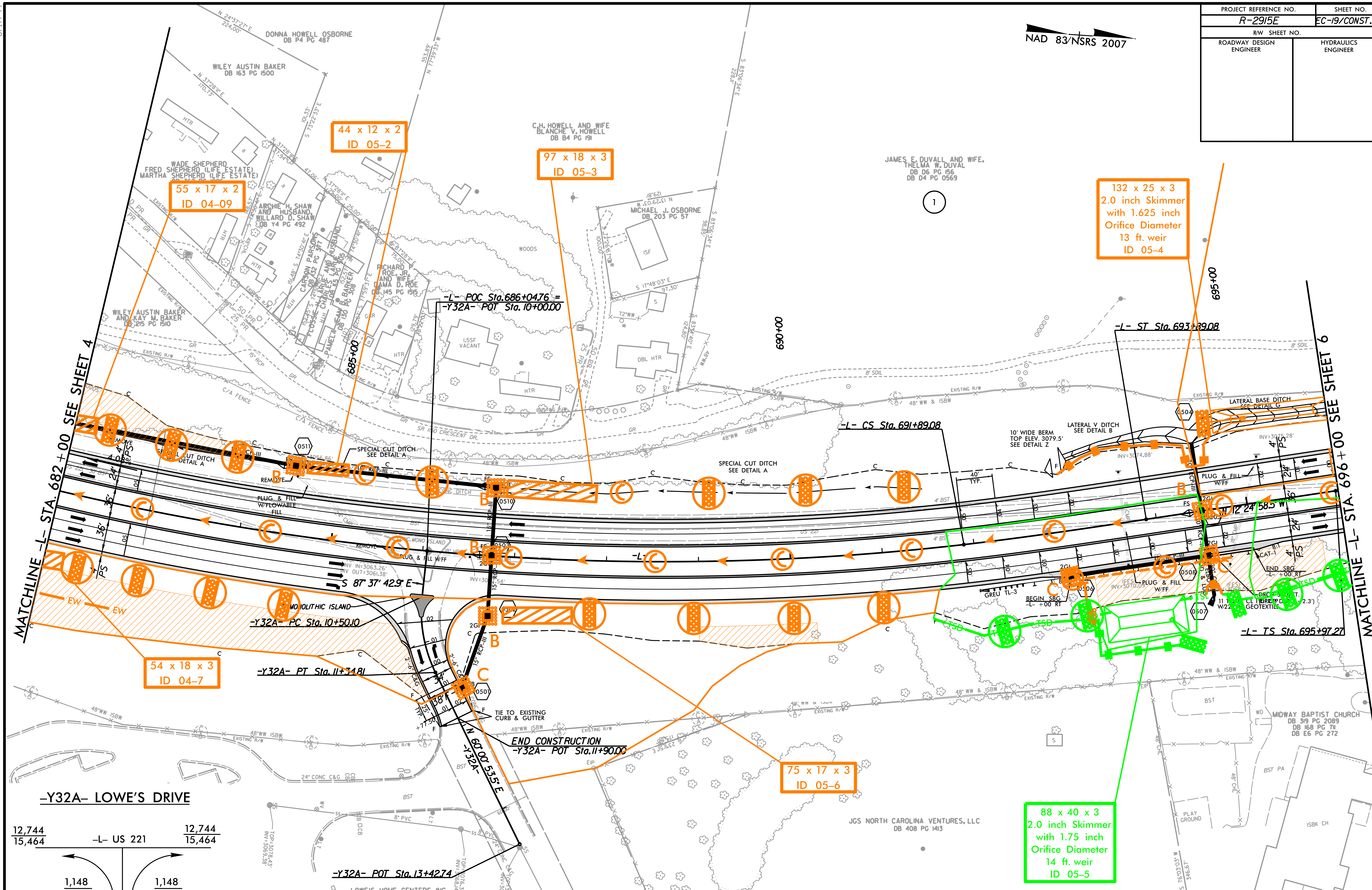
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh17.dgn



PROJECT REFERENCE NO. R-2915E
SHEET NO. EC-18/CONST.4
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83/NSRS 2007
ILIT REAL ESTATE HOLDINGS, LLC DB 292 PG 109
AMELIA PROPERTIES, LLC DB 394 PG 14
WILEY AUSTIN BAKER DB 174 PG 2360
WEST JEFFERSON II, LLC DB 429 PG 113
FIRST COMMUNITY BANK DB 440 PG 110
BRADLEY W. JORDAN DB 403 PG 2289
KENNETH TIMOTHY PARSONS HUSBAND, AND WIFE BETTY WADDELL PARSONS DB 232 PG 1915 DB 427 PG 2452
WILEY AUSTIN BAKER AND KAY M. BAKER DB 215 PG 1510
SEE OUTFALL ANALYSIS PACKAGE
68 x 18 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 04-1
R-2915D TO BE CONST. BY OTHERS
72 x 18 x 2
ID 04-5
END TIP PROJECT R-2915D
-L- POT Sta. 679+90.00
55 x 17 x 2
ID 04-09
RETAIN PROPOSED SYSTEM IN R-2915D AND TIE PROPOSED DITCH TO BOX AT -L- STA. 669+50 LT
SPECIAL CUT DITCH SEE DETAIL A
BEGIN 2'-9" C&G -L- Sta. 671+50.00
400' TAPER
100' MEDIAN TRANSITION
42" RCP-III (BURIED 0.7')
20 TONS CL I RIPRAP W/39 SY GEOTEXTILE ON BANKS
5' MONOLITHIC ISLAND
RETAIN REMAINDER OF PROPOSED SYSTEM IN R-2915D
REMOVE DI & PIPE IN R-2915D
REMOVE EX. 24" CMP
2GI-A REMOVE SYSTEM
PLUG & FILL W/FF
SEE SHEET 5
MATCHLINE -L- STA. 682+00
4.08%
2 TONS CL B RIPRAP W/7 SY GEOTEXTILE
LATERAL V DITCH SEE DETAIL B
END 2'-9" C&G -L- Sta. 674+00.00
REMOVE JB AND PIPE
LATERAL V DITCH SEE DETAIL B
50' TAPER
BEGIN TIP PROJECT R-2915E
-L- POC Sta. 668+25.00
INSET A -L- STA. 668+00
62 x 20 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 04-2
LARRY D. BOOTH DB 354 PG 733
52 x 17 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 04-3
65 x 24 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
6 ft. weir
ID 04-06
54 x 18 x 3
ID 04-7
LOWE'S HOME CENTERS, INC. DB 358 PG 403
Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.
R-2915D PROPOSED DRAINAGE
BEGIN CONSTRUCTION
-L- POC Sta. 666+65.00
-L-
PI Sta 679+01.03
Δ = 57° 00' 37.6" (LT)
D = 2° 00' 37.4"
L = 2,835.81'
T = 1,547.76'
R = 2,850.00'
SE = 0.05
FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR -L- PROFILE SEE SHT. 18
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
8/17/99
12/9/2019


PROJECT REFERENCE NO. R-2915E
SHEET NO. EC-19/CONST.05
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83/NSRS 2007
MATCHLINE -L- STA. 682 +00 SEE SHEET 4
MATCHLINE -L- STA. 696 +00 SEE SHEET 6
44 x 12 x 2 ID 05-2
97 x 18 x 3 ID 05-3
55 x 17 x 2 ID 04-09
132 x 25 x 3 2.0 inch Skimmer with 1.625 inch Orifice Diameter 13 ft. weir ID 05-4
54 x 18 x 3 ID 04-7
75 x 17 x 3 ID 05-6
88 x 40 x 3 2.0 inch Skimmer with 1.75 inch Orifice Diameter 14 ft. weir ID 05-5
-L- POC Sta. 686+04.76 = -Y32A- POT Sta. 10+00.00
-L- ST Sta. 693+89.08
-L- CS Sta. 691+89.08
-L- TS Sta. 695+97.27
-Y32A- PC Sta. 10+50.10
-Y32A- PT Sta. 11+34.81
END CONSTRUCTION -Y32A- POT Sta. 11+90.00
-Y32A- POT Sta. 13+42.74
S 87° 37' 42.9" E
N 60° 00' 53.5" E
N 12° 24' 58.5" W
DONNA HOWELL OSBORNE DB P4 PG 487
WILEY AUSTIN BAKER DB 163 PG 1500
C.H. HOWELL AND WIFE BLANCHE V. HOWELL DB B4 PG 191
JAMES E. DUVALL AND WIFE, THELMA W. DUVAL DB D6 PG 156 DB D4 PG 0569
MICHAEL J. OSBORNE DB 203 PG 57
WADE SHEPHERD FRED SHEPHERD (LIFE ESTATE) MARTHA SHEPHERD (LIFE ESTATE)
ARCHIE H. SHAW AND HUSBAND, WILLARD D. SHAW DB Y4 PG 492
RICHARD P. ROE, JR. AND WIFE DAMA D. ROE DB 145 PG 1515
WILEY AUSTIN BAKER AND KAY M. BAKER DB 215 PG 1510
MIDWAY BAPTIST CHURCH DB 319 PG 2089 DB 168 PG 711 DB E6 PG 272
JGS NORTH CAROLINA VENTURES, LLC DB 408 PG 1413
LOWE'S HOME CENTERS, INC. DB 358 PG 403
SPECIAL CUT DITCH SEE DETAIL A
LATERAL V DITCH SEE DETAIL B
LATERAL BASE DITCH SEE DETAIL G
10' WIDE BERM TOP ELEV. 3079.5' SEE DETAIL Z
PLUG & FILL W/FLOWABLE FILL
PLUG & FILL W/FF
TIE TO EXISTING CURB & GUTTER
MONOLITHIC ISLAND
BEGIN SBG -L- +00 RT
END SBG
685+00
690+00
695+00
-Y32A- LOWE'S DRIVE
ADT 2019
ADT 2039
12,744 15,464
-L- US 221
12,744 15,464
1,148 1,388
1,148 1,388
2,296 2,776
-Y32A- LOWE'S DRIVE
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

-Y32A-

PI Sta 10+93.62
Δ = 32° 21' 23.6" (LT)
D = 38° 11' 49.9"
L = 84.71'
T = 43.52'
R = 150.00'
SE = SEE PLANS

-L-

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

PIs Sta 692+55.75
Θs = 2° 00' 37.4"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PIs Sta 697+30.61
Θs = 1° 51' 58.7"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

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

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-20/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/NSRS 2007

CLEAN WATER DIVERSION
CWD CWD CWD
(Not to Scale)

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

132 x 25 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
13 ft. weir
ID 05–4

150 x 35 x 3
2 inch Skimmer
with 2 inch
Orifice Diameter
20 ft. weir
ID 06–6

50 x 20 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
4 ft. weir
ID 06–1

22 x 46 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
4 ft. weir
ID 06–5

MATCHLINE –L– STA. 696+00 SEE SHEET 5

MATCHLINE –L– STA. 710+00 SEE SHEET 7

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

KIM PHUONG THI MAI, UNMARRIED
DB 423 PG 1361

GARY AND JUDY BARE
DB 63 PG 306

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

WILKES NATIONAL BANK
DB 256 PG 1040

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

HIGH COUNTRY BANK
DB 252 PG 1245

2 WEST JEFFERSON, LLC
DB 455 PG E

–L–
PIs Sta 697+30.61
Θs = 1° 51' 58.7"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

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

–L– SC Sta. 697+97.27

BEGIN 2'-9" C&G
–L– Sta.707+95.00

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

12/9/2019
K:\Highways\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh20.dgn
E. Hall

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-21/CONST.7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

–Y33– CAMPUS DRIVE

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

3,028 / 3,668 — 6,188 / 7,628

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

–L–

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

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

–ACCESS–

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

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

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

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

NAD 83/ CORS

CLEAN WATER DIVERSION
CWD CWD CWD
(Not to Scale)
STABILIZE EXCAVATED MATERIAL
SOIL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER
4H:1V

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

HIY Y 09

JAMES CLIFF JENKIN
DB 134 PG 180

DIANA LYNN HAMM
DB 414 PG 584

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

2 GARY AND JUDY BARE
DB G3 PG 306

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

THE TOWN OF WEST JEFFERSON
DB 249 PG 990

58 x 17 x 3
ID 07–3

34 x 15 x 2
ID 07–4

98 x 45 x 3
2.0 inch Skimmer with 1.875 inch Orifice Diameter
17 ft. weir
ID 07–2

10' WIDE BERM TOP ELEV. 3102.5' SEE DETAIL Z

TOE PROTECTION W/92 TONS CL B RIPRAP, 268 SY GEOTEXTILE SEE DETAIL V

–L– ST Sta. 715+31.68

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

BEGIN CONSTRUCTION –DW1– Sta. 10+00.00

END CONSTRUCTION –Y33– POT Sta.12+00.00

END CONSTRUCTION –ACCESS– POT Sta. 12+29.73

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

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

–L– CS Sta. 713+31.68

MATCHLINE –L– STA. 710+00 SEE SHEET 6

MATCHLINE –L– STA. 724+00 SEE SHEET 8

LATERAL BASE DITCH EST. DDE=265 CY SEE DETAIL G

BERM BASE DITCH EST. DDE=520 CY SEE DETAIL N

BERM BASE DITCH W/421 TONS CL B RIPRAP 1055 SY GEOTEXTILE EST. DDE=666 CY SEE DETAIL O

LATERAL BASE DITCH W/293 TONS CL B RIPRAP, 727 SY GEOTEXTILE EST. DDE=560 CY SEE DETAIL P

W/420 TONS CL I RIPRAP, 165 SY GEOTEXTILE DRY DETENTION BASIN SEE 2D–3 THRU 2D–6

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

8 TONS CL B RIPRAP W/21 SY GEOTEXTILE

15 TONS CL B RIPRAP W/37 SY GEOTEXTILE

150' TAPER

PROP. 47" WW FENCE

REMOVE 39' EX. 42" CMP 42" RCP–III (NOT BURIED)

PLUG & FILL W/FLOWABLE FILL

DROP STRUCT. (DROP DEPTH=2.00')

DROP STRUCT. (DROP DEPTH=2.9')

RISER SEE DETAIL

SPECIAL CUT DITCH W/HINGE SEE DETAIL W

5" MONOLITHIC ISLAND

US 221 VAR BST

REMOVE –L– N 19° 57' 12.1" E

S 70° 02' 47.9" E

S 84° 25' 04.1" E

–Y33– POT Sta. 14+80.00

–ACCESS–

UTILIZE DRY DETENTION BASIN AS SKIMMER BASIN DURING CONSTRUCTION.

FFC LIMITED PARTNERSHIP DB 274 PG 2370

2 WEST JEFFERSON, LLC DB 455 PG 826

AUTOZONE, INC. DB 265 PG 983

TREVOR D. WITHERSPOON DB 263 PG 1194

SKYLINE TELEPHONE MEMBERSHIP CORPORATION DB 430 PG 2127

PROPOSED TRAFFIC SIGNAL

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh21.dgn
aburnette
1/29/2020

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-22/CONST.8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/NSRS 2007

-Y34- MT. JEFFERSON STATE PARK ROAD

ADT 2019	15,904 / 14,840 (-L- US 221); 1,680 / 616; 2,296 (-Y34-)
ADT 2039	19,424 / 18,040 (-L- US 221); 2,080 / 696; 2,776 (-Y34-)

-L- US 221

-Y34- MT. JEFFERSON STATE PARK ROAD

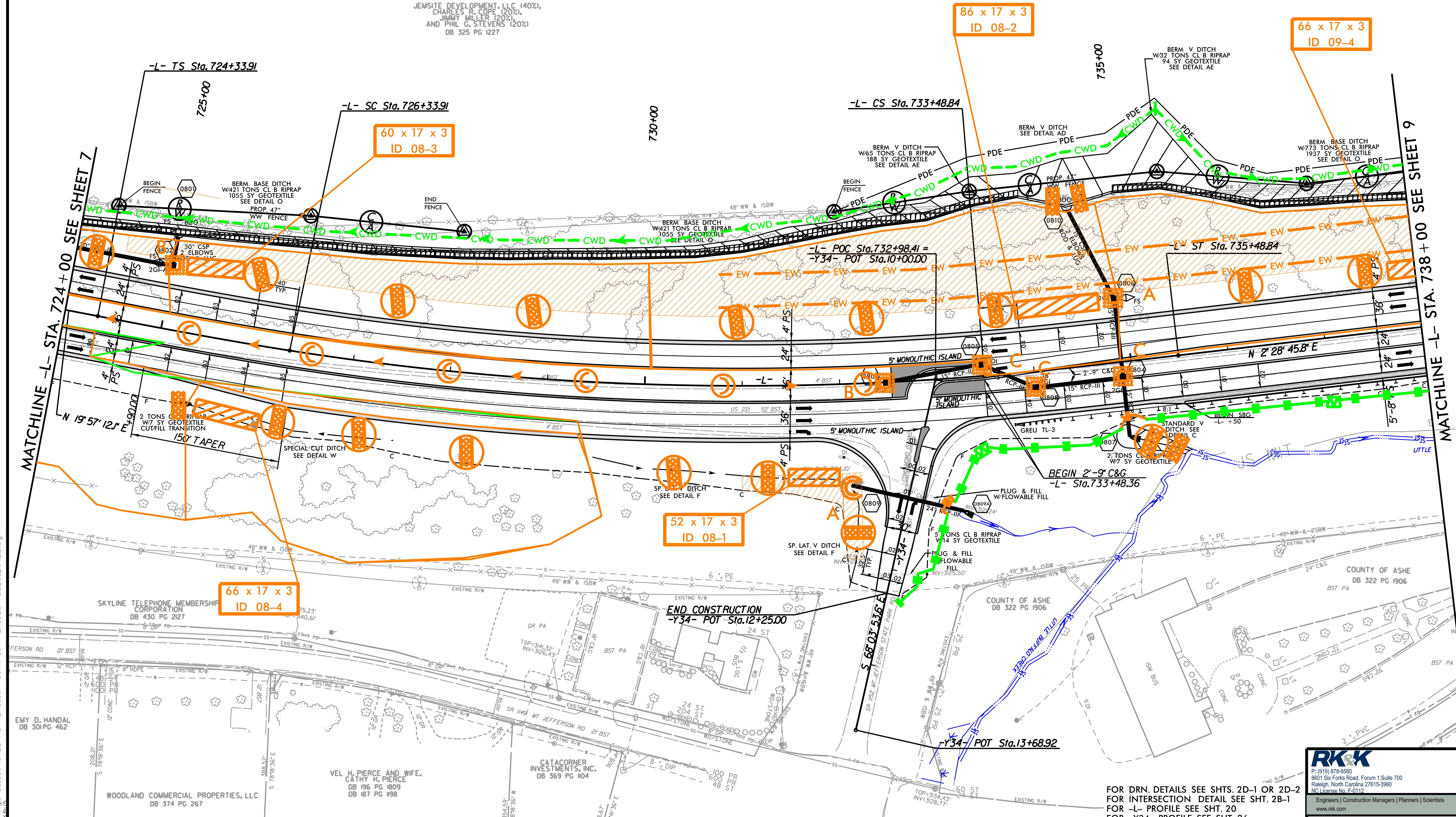
-L-

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

CLEAN WATER DIVERSION
(Not to Scale)

REMOVE CWD ONCE BERM DITCH IS STABILIZED

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.



3
JEMSITE DEVELOPMENT, LLC (40%), CHARLES R. COPE (20%), JIMMY MILLER (20%), AND PHIL G. STEVENS (20%) DB 325 PG 1227
-L- TS Sta. 724+33.91
-L- SC Sta. 726+33.91
-L- CS Sta. 733+48.84
-L- ST Sta. 735+48.84
-L- POC Sta. 732+98.41 = -Y34- POT Sta. 10+00.00
725+00
730+00
735+00
60 x 17 x 3 ID 08-3
86 x 17 x 3 ID 08-2
66 x 17 x 3 ID 09-4
52 x 17 x 3 ID 08-1
66 x 17 x 3 ID 08-4
BERM BASE DITCH W/421 TONS CL B RIPRAP 1055 SY GEOTEXTILE SEE DETAIL O
BERM V DITCH W/65 TONS CL B RIPRAP 188 SY GEOTEXTILE SEE DETAIL AE
BERM V DITCH SEE DETAIL AD
BERM V DITCH W/32 TONS CL B RIPRAP 94 SY GEOTEXTILE SEE DETAIL AE
BERM BASE DITCH W/773 TONS CL B RIPRAP 1937 SY GEOTEXTILE SEE DETAIL O
BEGIN FENCE
END FENCE
PROP. 47" WW FENCE
30" CSP 2 ELBOWS
5' MONOLITHIC ISLAND
SPECIAL CUT DITCH SEE DETAIL W
SP. LAT. V DITCH SEE DETAIL F
150' TAPER
N 19° 57' 12.1" E
N 2° 28' 45.8" E
S 68° 03' 53.6" E
BEGIN 2'-9" C&G -L- Sta. 733+48.36
PLUG & FILL W/FLOWABLE FILL
2 TONS CL B RIPRAP W/7 SY GEOTEXTILE
5 TONS CL B RIPRAP W/14 SY GEOTEXTILE
STANDARD V DITCH SEE DETAIL C
END CONSTRUCTION -Y34- POT Sta. 12+25.00
-Y34- POT Sta. 13+68.92
MATCHLINE -L- STA. 724+00 SEE SHEET 7
MATCHLINE -L- STA. 738+00 SEE SHEET 9
SKYLINE TELEPHONE MEMBERSHIP CORPORATION DB 430 PG 2127
COUNTY OF ASHE DB 322 PG 1906
EMY D. HANDAL DB 301 PG 462
WOODLAND COMMERCIAL PROPERTIES, LLC DB 374 PG 267
VEL H. PIERCE AND WIFE, CATHY H. PIERCE DB 196 PG 1809 DB 187 PG 1198
CATACORNER INVESTMENTS, INC. DB 369 PG 1104
LITTLE BUFFALO CREEK

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

RK&K
P: (919) 878-9560
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh22.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-23/CONST.9

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

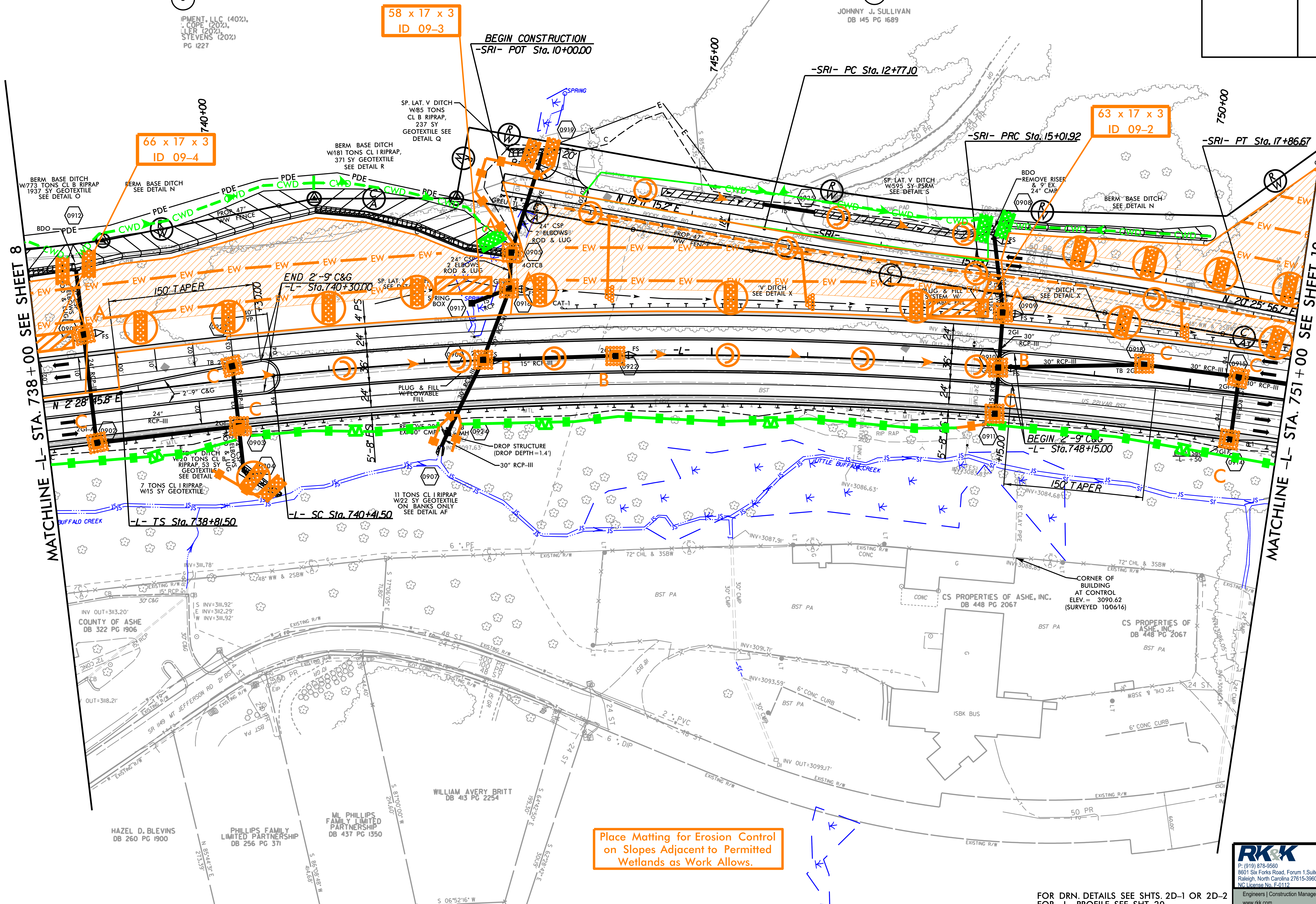
NAD 83/NSRS 2007

-L-

Pls Sta 739+88.17	PI Sta 746+79.89
Θs = 1° 03' 57.5"	Δ = 16° 53' 20.8" (RT)
Ls = 160.00'	D = 1° 19' 56.9"
LT = 106.67'	L = 1,267.51'
ST = 53.34'	T = 638.39'
	R = 4,300.00'
	SE = 0.04

-SRI-

PI Sta 13+89.56	PI Sta 16+44.40
Δ = 4° 17' 36.8" (LT)	Δ = 5° 26' 18.4" (RT)
D = 1° 54' 35.5"	D = 1° 54' 35.5"
L = 224.81'	L = 284.76'
T = 112.46'	T = 142.48'
R = 3,000.00'	R = 3,000.00'
SE = NC	SE = NC



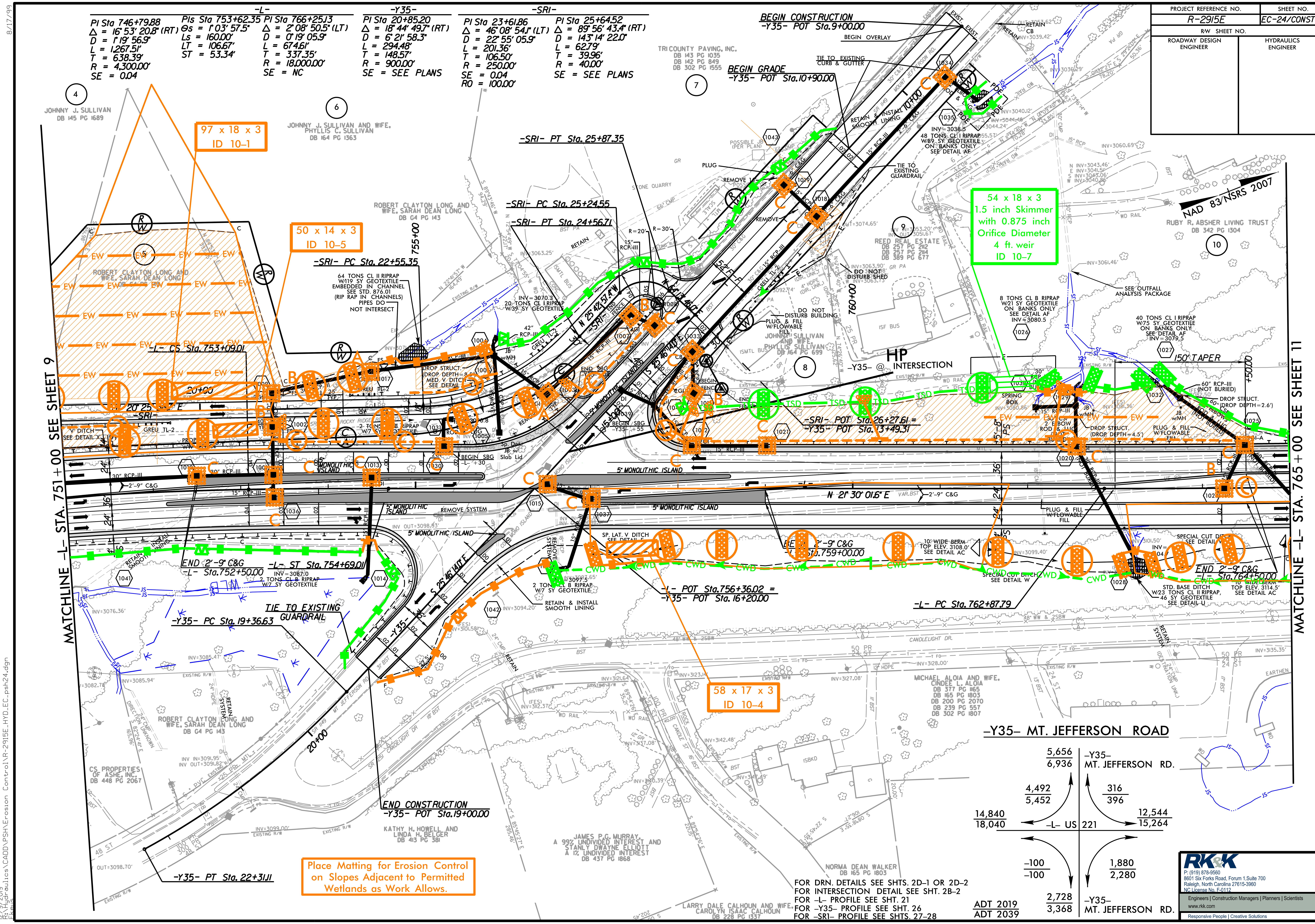
Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

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

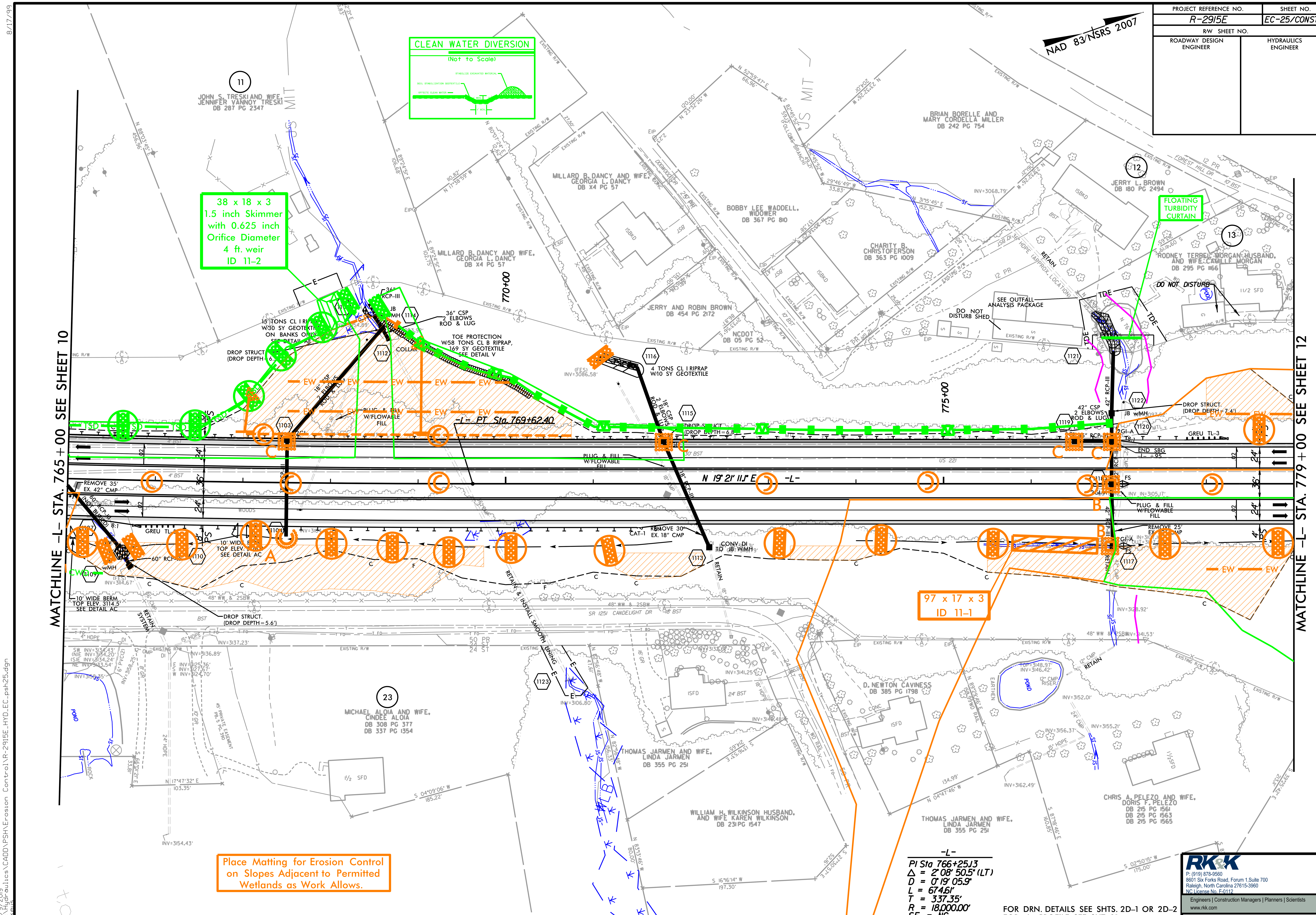
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh23.dgn


PROJECT REFERENCE NO. R-2915E
SHEET NO. EC-24/CONST.10
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
-L-
PI Sta 746+79.88
Δ = 16° 53' 20.8" (RT)
D = 1° 19' 56.9"
L = 1,267.51'
T = 638.39'
R = 4,300.00'
SE = 0.04
PIs Sta 753+62.35
Θs = 1° 03' 57.5"
Ls = 160.00'
LT = 106.67'
ST = 53.34'
PI Sta 766+25.13
Δ = 2° 08' 50.5" (LT)
D = 0° 19' 05.9"
L = 674.61'
T = 337.35'
R = 18,000.00'
SE = NC
-Y35-
PI Sta 20+85.20
Δ = 18° 44' 49.7" (RT)
D = 6° 21' 58.3"
L = 294.48'
T = 148.57'
R = 900.00'
SE = SEE PLANS
-SRI-
PI Sta 23+61.86
Δ = 46° 08' 54.1" (LT)
D = 22° 55' 05.9"
L = 201.36'
T = 106.50'
R = 250.00'
SE = 0.04
RO = 100.00'
PI Sta 25+64.52
Δ = 89° 56' 43.4" (RT)
D = 143° 14' 22.0"
L = 62.79'
T = 39.96'
R = 40.00'
SE = SEE PLANS
BEGIN CONSTRUCTION -Y35- POT Sta.9+00.00
BEGIN GRADE -Y35- POT Sta.10+90.00
END CONSTRUCTION -Y35- POT Sta.19+00.00
-Y35- PT Sta.22+31.11
-Y35- PC Sta.19+36.63
-SRI- PT Sta.25+87.35
-SRI- PC Sta.25+24.55
-SRI- PT Sta.24+56.71
-SRI- PC Sta.22+55.35
-L- CS Sta.753+09.01
-L- ST Sta.754+69.01
-L- POT Sta.756+36.02 = -Y35- POT Sta.16+20.00
-L- PC Sta.762+87.79
-SRI- POT Sta.26+27.61 = -Y35- POT Sta.13+49.31
97 x 18 x 3 ID 10-1
50 x 14 x 3 ID 10-5
54 x 18 x 3 1.5 inch Skimmer with 0.875 inch Orifice Diameter 4 ft. weir ID 10-7
58 x 17 x 3 ID 10-4
HP -Y35- @ INTERSECTION
150' TAPER
NAD 83/NSRS 2007
JOHNNY J. SULLIVAN DB 145 PG 1689
JOHNNY J. SULLIVAN AND WIFE, PHYLLIS C. SULLIVAN DB 164 PG 1363
ROBERT CLAYTON LONG AND WIFE, SARAH DEAN LONG DB G4 PG 143
TRI COUNTY PAVING, INC.
REED REAL ESTATE
RUBY R. ABSHER LIVING TRUST DB 342 PG 1304
MICHAEL ALOIA AND WIFE, CINDEE L. ALOIA
CS PROPERTIES OF ASHE, INC. DB 448 PG 2067
KATHY H. HOWELL AND LINDA H. BELGER DB 413 PG 381
JAMES P.G. MURRAY, A 99% UNDIVIDED INTEREST AND STANLY DWAYNE ELLIOTT A 1% UNDIVIDED INTEREST DB 437 PG 1868
NORMA DEAN WALKER DB 165 PG 1803
LARRY DALE CALHOUN AND WIFE, CAROLYN ISAAC CALHOUN DB 228 PG 1337
MATCHLINE -L- STA. 751+00 SEE SHEET 9
MATCHLINE -L- STA. 765+00 SEE SHEET 11
Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.
-Y35- MT. JEFFERSON ROAD
5,656 / 6,936 -Y35- MT. JEFFERSON RD.
4,492 / 5,452
316 / 396
14,840 / 18,040 -L- US 221
12,544 / 15,264
-100 / -100
1,880 / 2,280
2,728 / 3,368 -Y35- MT. JEFFERSON RD.
ADT 2019
ADT 2039
FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR INTERSECTION DETAIL SEE SHT. 2B-2
FOR -L- PROFILE SEE SHT. 21
FOR -Y35- PROFILE SEE SHT. 26
FOR -SRI- PROFILE SEE SHTS. 27-28
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
8/17/99
12/9/2019

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-25/CONST.11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99
12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh25.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2915E	EC-26/CONST.12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/NSRS 2007

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

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

780+00

785+00

790+00

GHANSHYAM D. PATEL AND WIFE, VASANTIBEN G. PATEL
DB 273 PG 154
DB 335 PG 1931

RODNEY TERREL MORGAN HUSBAND, AND WIFE CAMILLE MORGAN
DB 295 PG 166

T. V. ADAMS
DB 98 PG 20

DEREK MCCLURE
DB 392 PG 1702

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

TRICOUNTY PAVING, INC
DB 229 PG 1753

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

PACK FAN INVESTMENTS, LLC
DB 340 PG 1078

CINJO, INC
DB 339 PG 1468

LEOBARDO REYES CRESCENCIO
DB 286 PG 148

JOHN C. JONES
DB 371PG 1251

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

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

DONNA J H WEAVER
DB 428 PG 1183

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

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

85 x 17 x 3
ID 12–4

92 x 17 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
6 ft. weir
ID 12–5

44 x 17 x 3
ID 12–2

92 x 17 x 3
ID 12–1

85 x 17 x 3
ID 12–3

560' MEDIAN TRANSITION

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

PLUG & FILL W/FLOWABLE FILL

REMOVE 25 EX. 24" CMP

SPECIAL CUT DITCH SEE DETAIL W

C COLLAR AND EXTEND 24" CSP (2 ELBOWS) ROD & LUG

BEGIN 2'-9" C&G
–L– Sta.782+47.63

REMOVE SYSTEM

DROP STRUCT (DROP DEPTH=3.4')

SPECIAL CUT DITCH W/602 SY PSRM SEE DETAIL AA

7 TONS CL I RIPRAP W/15 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF
INV=3064.8

LATERAL BASE DITCH SEE DETAIL M

–L– SC Sta. 790+05.06

788+15.06

–L–
PIs Sta 789+41.73
θs = 1° 22' 28.3"
Ls = 190.00'
LT = 126.67'
ST = 63.34'

PI Sta 802+74.28
Δ = 35° 32' 32.1" (RT)
D = 1° 26' 48.7"
L = 2,456.50'
T = 1,269.22'
R = 3,960.00'
SE = 0.04

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

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

8/17/99

12/3/2019
C:\Projects\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh26.dgn

PROJECT REFERENCE NO.
R-2915E
SHEET NO.
EC-27/CONST.13
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83/NSRS 2007
112 x 20 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
9 ft. weir
ID 13-1
65 x 18 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
4 ft. weir
ID 13-2
44 x 12 x 3
ID 13-3
SAMUEL B. CHURCH AND WIFE, SHIRLEY CHURCH DB 187 PG 2406 DB 188 PG 837
SAMUEL FLORES, HUSBAND AND WIFE, MARIA FLORES DB 350 PG 70
JOHN C. JONES DB 371 PG 1251
LEOBARDO REYES CRESCENCIO DB 286 PG 668
TRACIE JORDAN DB 319 PG 1685
ANDREW C. JACKSON, JR DB 437 PG 205
ROBERT STEVEN FREEMAN, GREGORY DENNIS FREEMAN, AND ROY LOGAN FREEMAN DB 145 PG 801
WAYNE F. STANLEY DB 217 PG 1702
DWIGHT C. RASH DB 400 PG 593
JOHN F. BARE DB 63 PG 462
BERTHA MCCLURE WOOD DB 286 PG 652
SEE OUTFALL ANALYSIS PACKAGE
2 TONS CL B RIPRAP W/7 SY GEOTEXTILE INV=2932.1
INV=2931.4 40 TONS CL I RIPRAP W/75 SY GEOTEXTILE ON BANKS ONLY SEE DETAIL AF
LATERAL BASE DITCH SEE DETAIL G
LATERAL BASE DITCH W/85 TONS CL B RIPRAP, 226 SY GEOTEXTILE SEE DETAIL L
TOE PROTECTION W/62 TONS CL B RIPRAP, 181 SY GEOTEXTILE SEE DETAIL V
LATERAL V DITCH W/179 TONS CL I RIPRAP 431 SY GEOTEXTILE SEE DETAIL K
DROP STRUCT. DROP DEPTH=4.6'
PLUG & FILL W/FLOWABLE FILL
INV=3039.9
INV=3035.5 4 TONS CL I RIPRAP W/10 SY GEOTEXTILE
STD. BASE DITCH W/43 TONS CL I RIPRAP, 89 SY GEOTEXTILE SEE DETAIL D
RETAIN & INST. SMOOTH LINING
10' WIDE BERM TOP ELEV. 2964.0' SEE DETAIL Z
LATERAL V DITCH W/118 TONS CL B RIPRAP, 282 SY GEOTEXTILE SEE DETAIL K
END SBG
795+00
800+00
805+00
MATCHLINE -L- STA. 793+00 SEE SHEET 12
MATCHLINE -L- STA. 807+00 SEE SHEET 14
MATTHEW FRAMPTON AND CHRISTOPHER FRAMPTON DB 438 PG 1510
JERRY F. WHITLEY AND WIFE, IMOJEAN M. WHITLEY DB 206 PG 157
BENNY B. HURLEY AND VICKEY S. HURLEY DB 228 PG 292 DB 423 PG 1047
Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.
-L-
PI Sta 802+74.27
Δ = 35° 32' 32.1" (RT)
D = 1° 26' 48.7"
L = 2,456.50'
T = 1,269.22'
R = 3,960.00'
SE = 0.04
FOR DRN. DETAILS SEE SHTS. 2D-1 OR 2D-2
FOR -L- PROFILE SEE SHT. 23
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
8/17/99
12/9/2019
R:\Hydraulics\CADD\PSH\Erosion Control\R-2915E_HYD_EC_psh27.dgn