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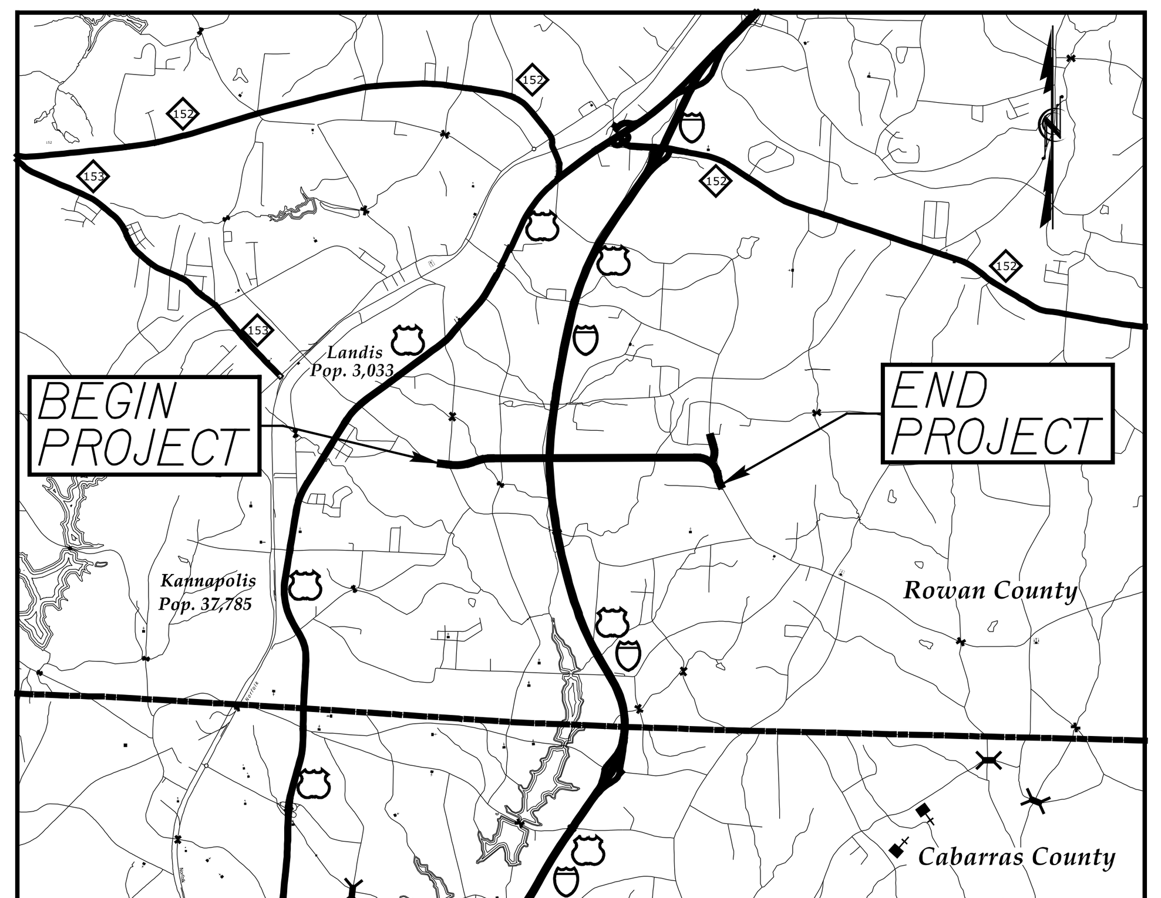
TIP PROJECT: W-5516

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5516	EC-1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
44105.1.FD	HSIP-1221(18)	PE



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

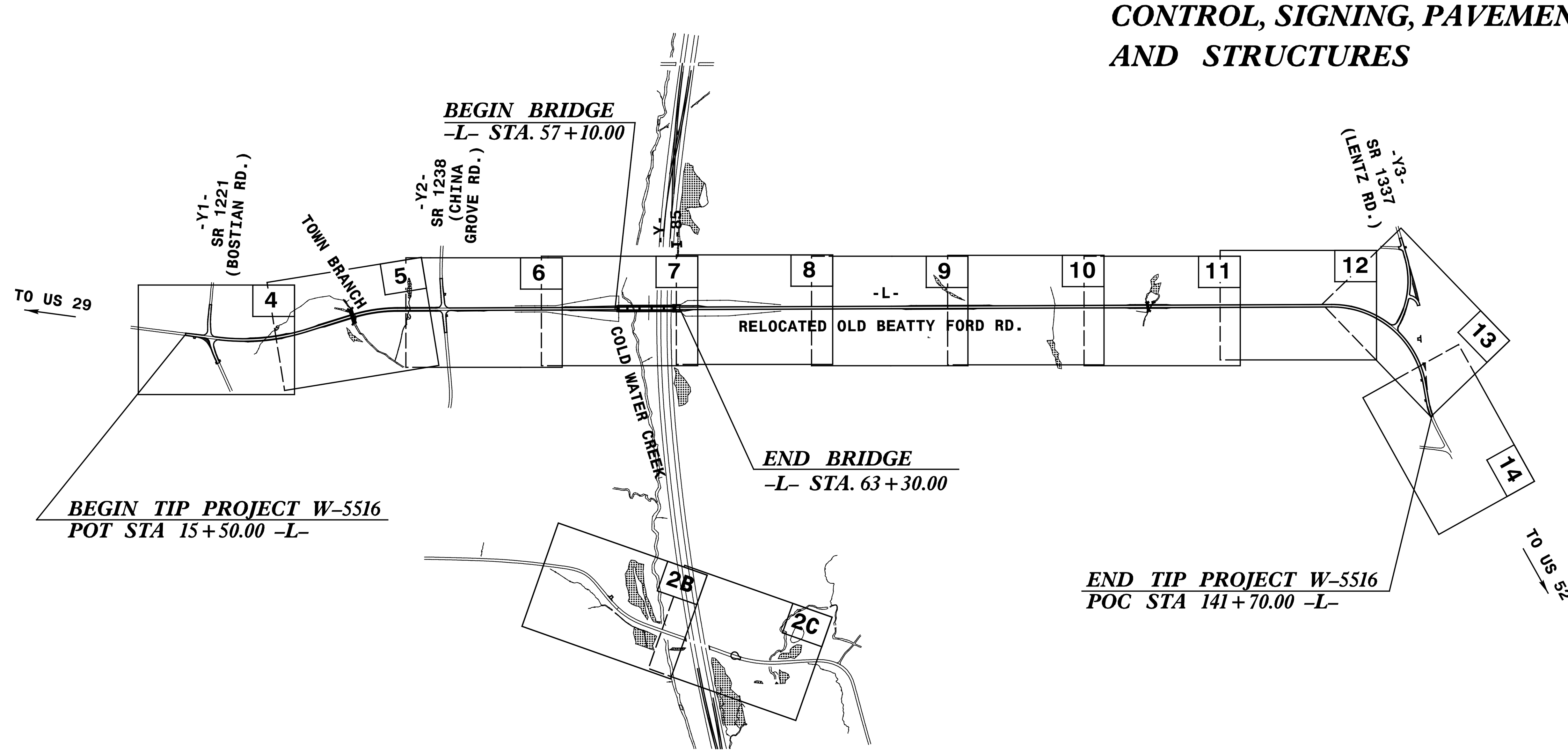
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

ROWAN COUNTY

LOCATION: OLD BEATTY FORD ROAD FROM WEST OF BOSTIAN ROAD INTERSECTION TO LENTZ ROAD

TYPE OF WORK: GRADING, PAVING, DRAINAGE, TRAFFIC CONTROL, SIGNING, PAVEMENT MARKINGS AND STRUCTURES

NAD 83/ NSRS 2007



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	
1630.06	Special 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	

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone(s) Exist From Sta. 135+00 -L- & Sta. 11+15 -Y3- to Sta. 141+70 -L- & Sta. 16+75 -Y3- Refer To E. C. Special Provisions for Special Considerations.

ALEXANDER SNIDER, P.E.
ROADSIDE ENVIRONMENTAL ENGINEER
3064
LEVEL III CERTIFICATION NUMBER

STACEY H BAILEY, P.E.
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER
3074
LEVEL III CERTIFICATION NUMBER

GRAPHIC SCALE

50 25 0 50 100 PLANS
50 25 0 50 100 PROFILE (HORIZONTAL)
10 5 0 10 20 PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MAY 26, 2015

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared In the Office of:

ICA ENGINEERING

5121 KINGDOM WAY
SUITE 100
RALEIGH, NC 27607
919-851-6066
NC LIC. NO. F-0258

2012 STANDARD SPECIFICATIONS

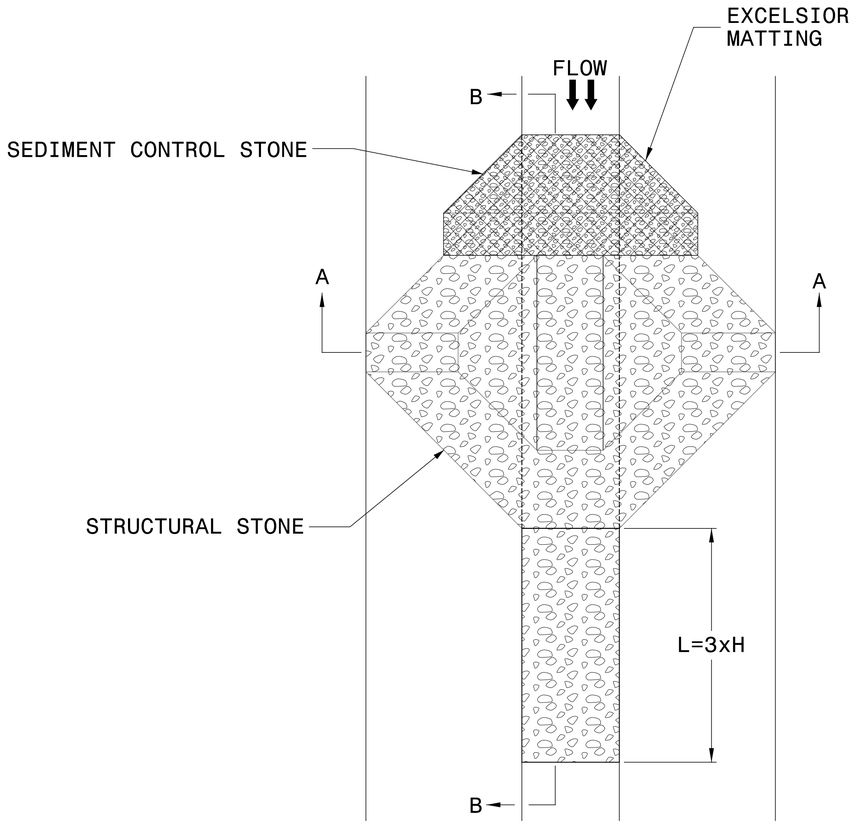
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

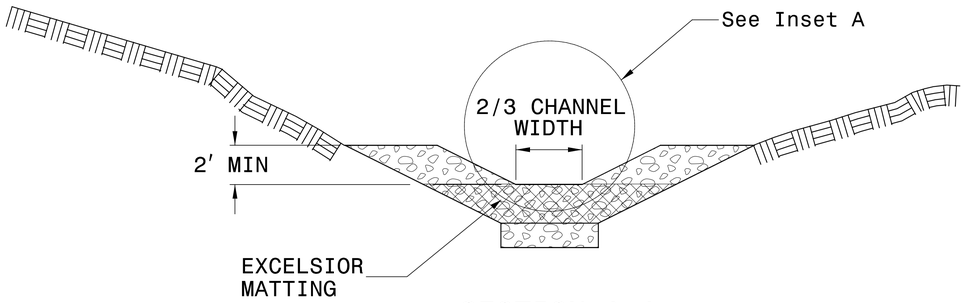
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type 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.
W-5516	EC-2

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



PLAN



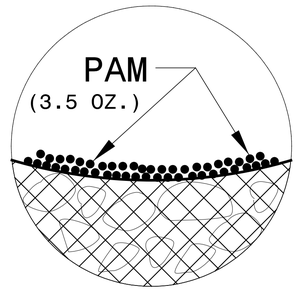
SECTION A-A

NOTES

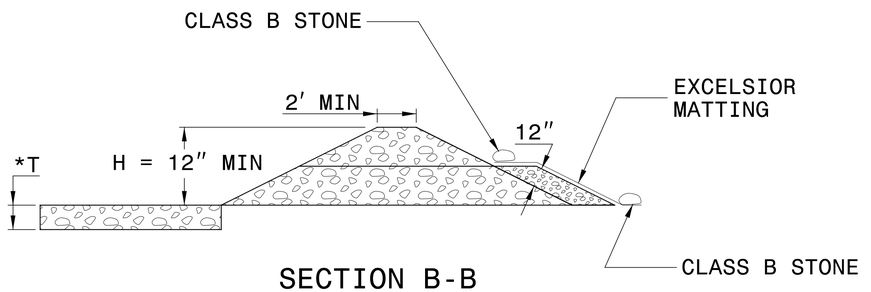
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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



INSET A



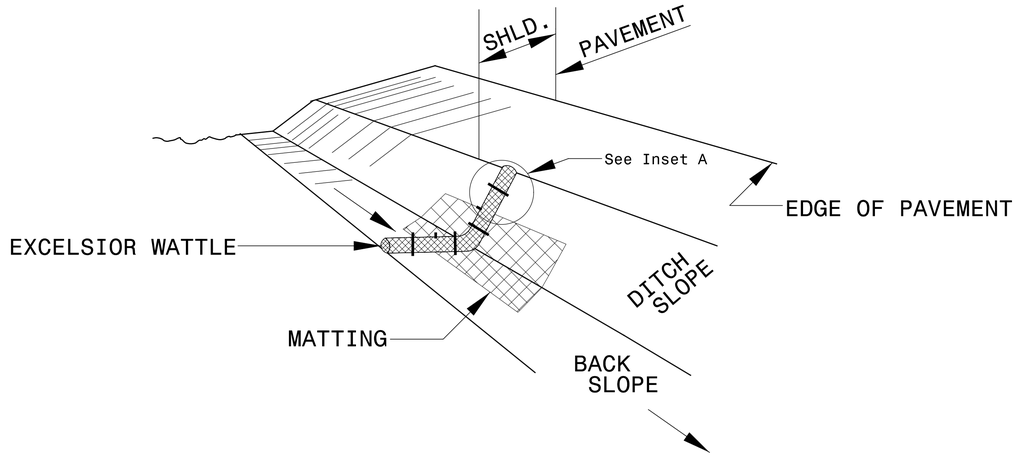
SECTION B-B

*T = 12" MIN., 18" MAX.

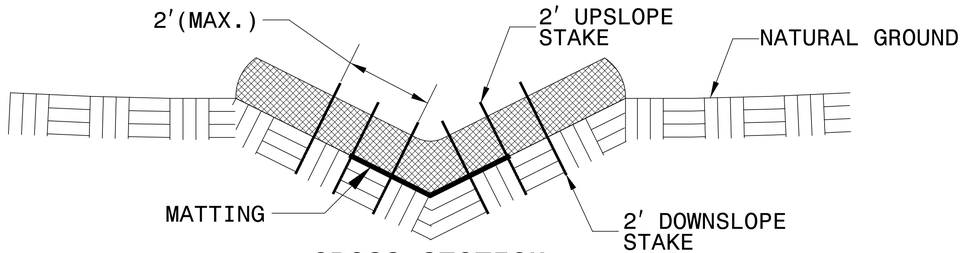
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-2A

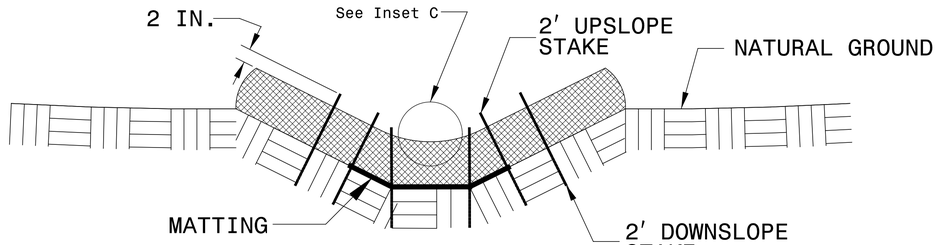
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR 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.

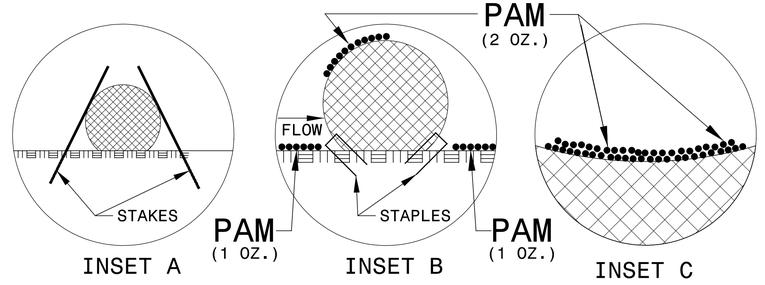
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

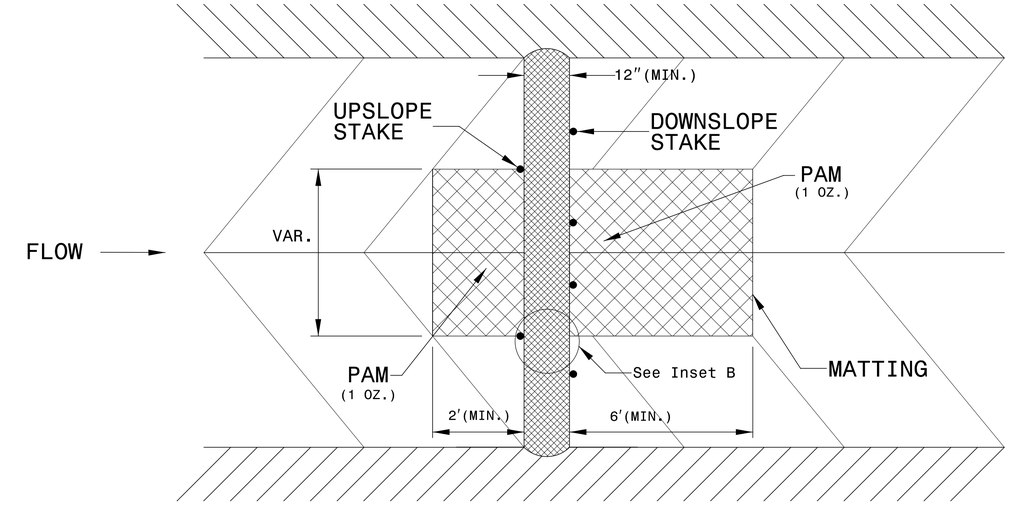
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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.

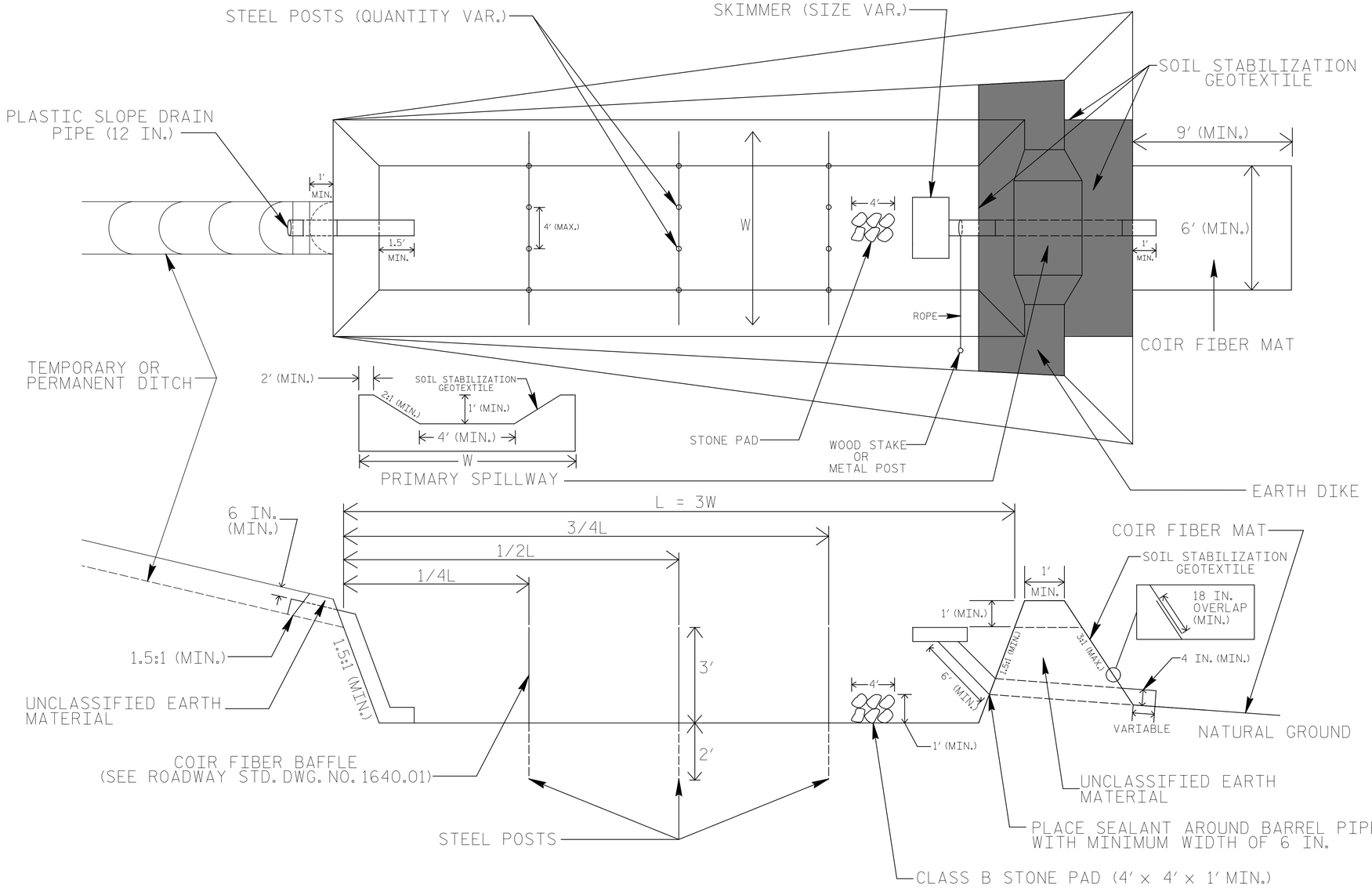




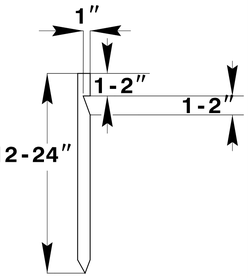
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-2B

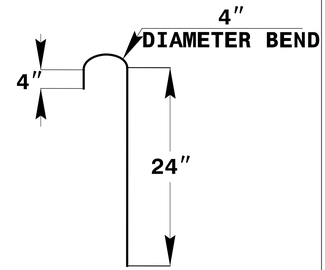
SKIMMER BASIN WITH BAFFLES DETAIL



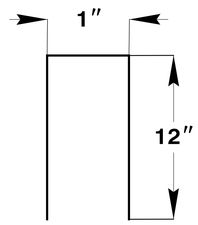
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

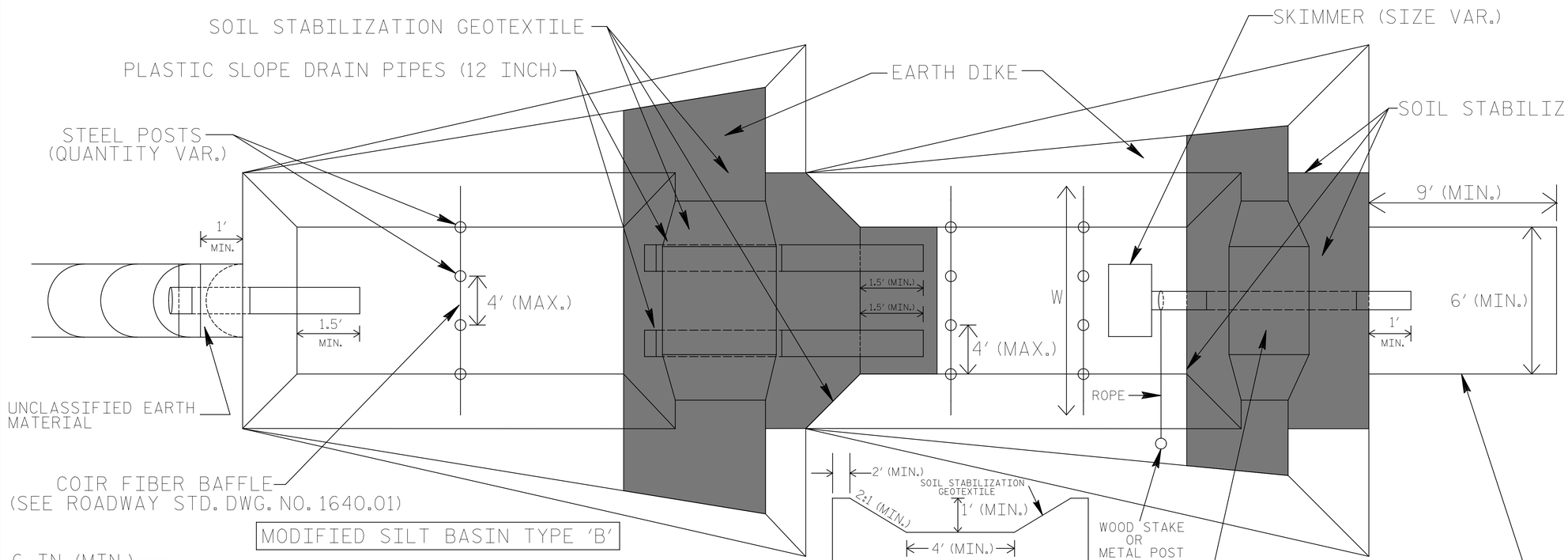
NOTES

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.).

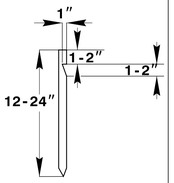
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-2C

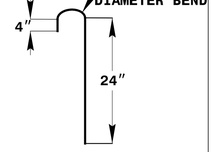
TIERED SKIMMER BASIN DETAIL



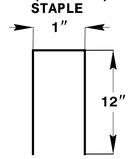
2″ x 2″ (nominal) WOODEN STAKE



#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 OF BASINS.
2. LIMIT HEIGHT OF EARTH DIKES TO 5 FT.
3. ADDITIONAL MODIFIED SILT BASINS TYPE 'B' MAY BE NEEDED DEPENDING ON SLOPE.
4. FOR BASIN DEPTHS OF 3FT., THE MINIMUM BASIN WIDTHS SHALL BE 9 FT.
5. DETERMINE PRIMARY SPILLWAY LENGTHS (FT.) USING Q/0.4, WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAYS SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-3

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.

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-3A

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	18+50	21+50	LT	210
4	-L-	19+00	21+00	RT	140
5	-L-	25+00	25+50	LT	45
5	-L-	31+00	31+80	RT	75
5	-L-	34+50	35+50	LT	70
5	-L-	35+00	35+50	RT	35
6	-Y2-	13+50	15+00	LT	105
6	-L-	42+50	43+60	LT	80
8	-L-	65+00	67+00	RT	140
9	-L-	81+50	83+00	RT	105
9	-L-	81+50	82+50	LT	70
9	-L-	79+34	79+34	LT	25
9	-L-	83+00	83+36	RT	30
9	-L-	83+36	84+50	RT	80
9-10	-L-	89+54	91+00	RT	75
10	-L-	90+25	91+00	LT	40
10	-L-	91+00	92+00	RT	50
10	-L-	94+00	95+50	RT	105
10	-L-	94+50	95+00	LT	35
10	-L-	96+65	97+20	RT	65
10-11	-L-	102+00	106+50	RT	315
10-11	-L-	102+00	106+50	LT	315
11-12	-L-	110+50	122+50	RT	840
12	-L-	117+00	118+00	LT	70
12	-L-	125+50	126+50	RT	70
13	-L-	129+64	131+80	LT	155
13	-L-	129+61	129+64	RT	40
13	-L-	132+80	133+50	LT	50
13	-Y3-	14+00	14+50	RT	35
13	-L-	137+00	137+50	RT	35

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
13	-L-	137+00	137+70	LT	50
14	-L-	138+00	140+00	RT	85
				SUBTOTAL	3640
	MATTING TO BE INSTALLED ON CUT AND FILL		SLOPES AS NECESSARY		238360
				TOTAL	242000
				SAY	242000

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-3B

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

PERMANENT SOIL REINFORCEMNT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
5	-L-	25+50	29+00	LT	245
6	-Y2-	15+00	15+20	LT	15
6	-Y2-	14+10	15+19	RT	80
6	-Y2-	16+65	17+00	LT	25
6	-L-	41+50	42+50	LT	70
6	-L-	45+00	51+00	RT	420
6	-L-	45+50	47+00	LT	105
9	-L-	83+30	84+00	LT	35
9	-L-	84+00	85+00	LT	70
9	-L-	86+25	88+00	RT	125
10	-L-	91+00	92+00	LT	50
10	-L-	92+00	92+50	LT	35
10	-L-	95+00	96+12	LT	80
10	-L-	95+50	96+65	RT	85
10	-L-	98+00	99+23	LT	85
10	-L-	98+00	99+23	RT	85
11-12	-L-	111+50	117+00	LT	385
13	-L-	129+61	130+50	RT	65
13	-Y3-	13+50	14+00	RT	35
13	-Y3-	19+00	20+08	LT	80
13	-L-	137+50	138+00	RT	35
			SUBTOTAL		2220
		ADDITIONAL PSRM TO BE INSTALLED			0
				TOTAL	2220
				SAY	2220

PERMANENT SOIL REINFORCEMENT MAT

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

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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

NOTE:
ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

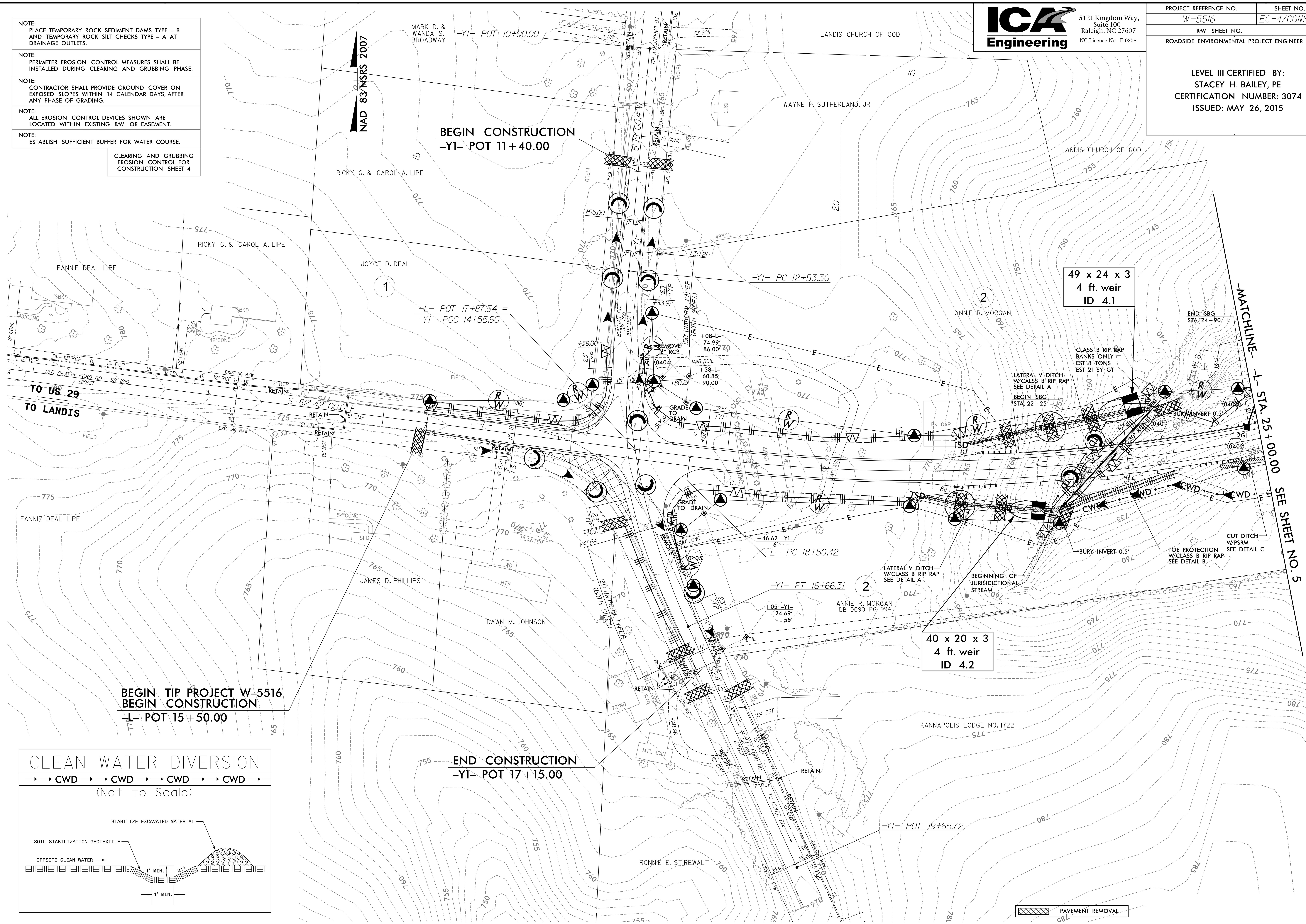
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-4/CONST.4
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MAY 26, 2015

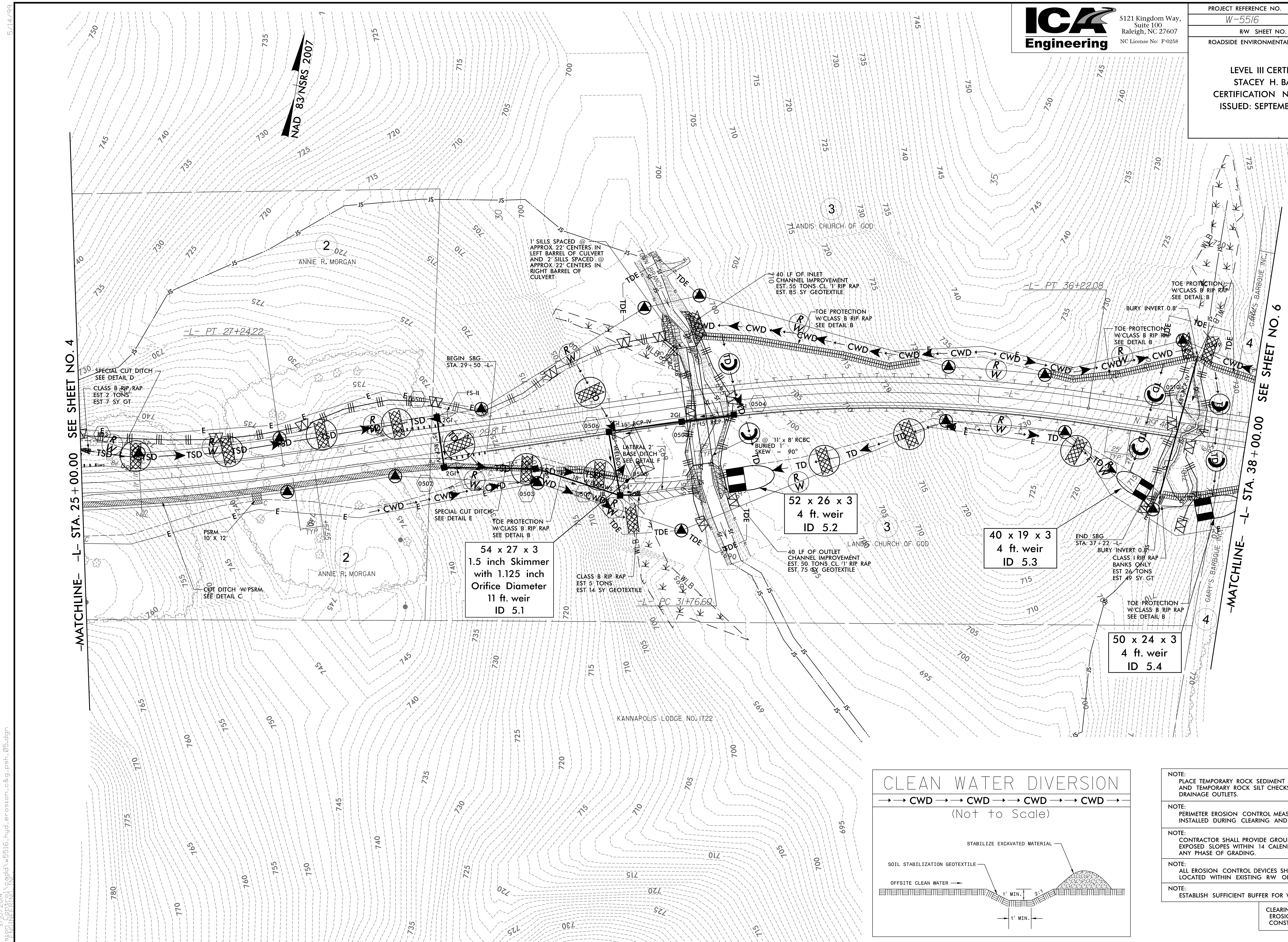
REVISIONS
10-22-14 REVISED STATION/OFFSET CALLOUTS ON PARCELS 1 & 2



PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-5/CONST.5
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

NOTE:
ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

9/10/2014

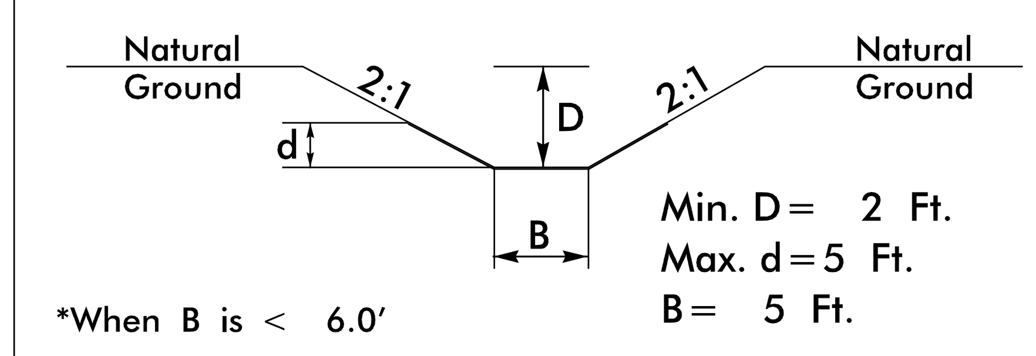
PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-5A/CONST.5
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

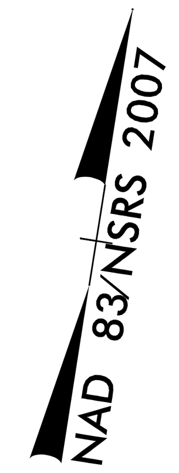
LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014

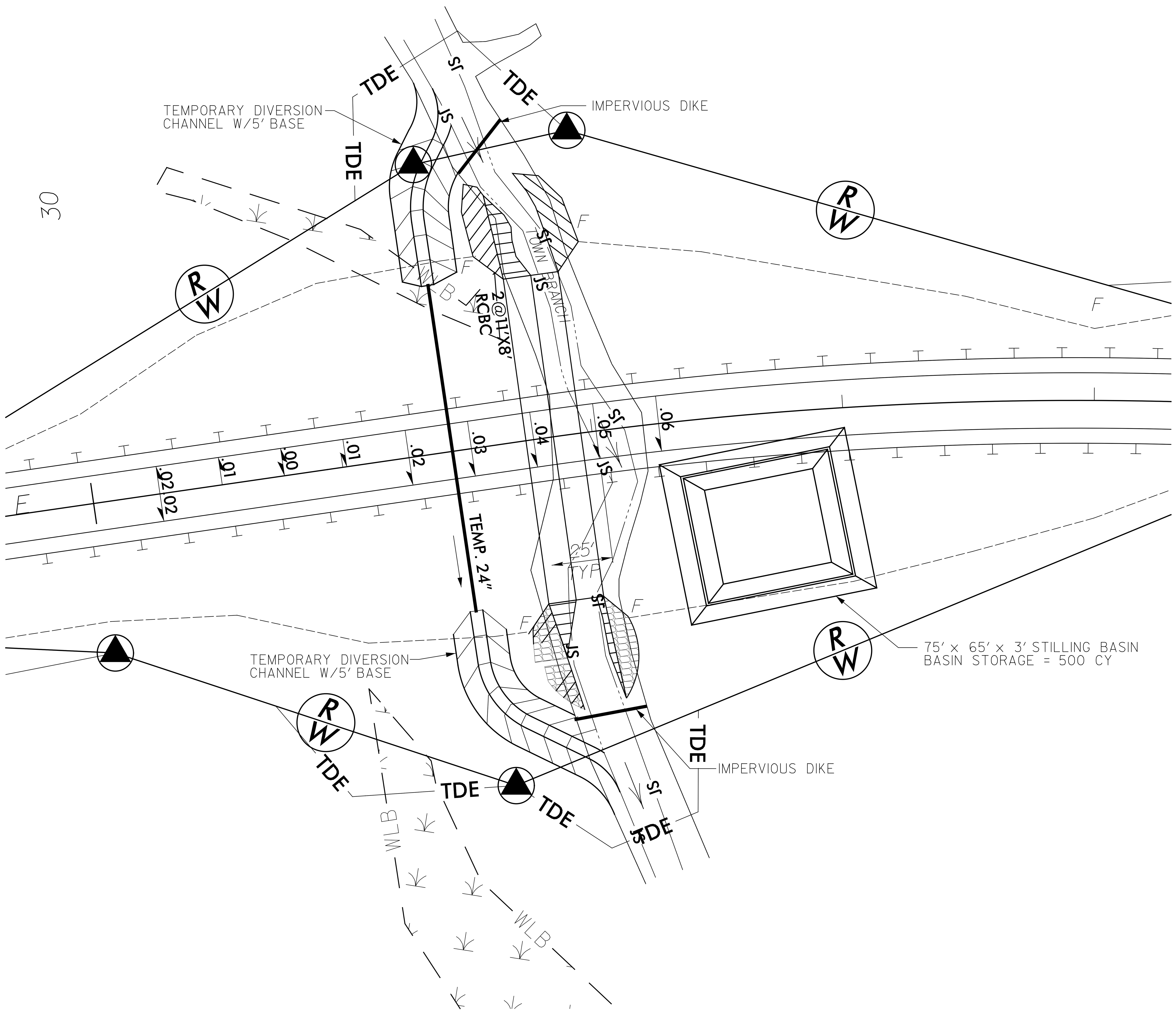
DETAIL

CULVERT DIVERSION CHANNEL
(Not to Scale)



Type of Liner= FILTER FABRIC – TYPE IV





NOTES

1. CULVERT CONSTRUCTION SHALL BE PERFORMED IN ONLY DRY OR ISOLATED SECTIONS OF CHANNEL.
2. IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW AS 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 SUFFICIENT SIZE TO DEWATER THE WORK AREA.
6. THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DEWATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH STILLING BASIN AND/OR SPECIAL STILLING BASIN.

CONSTRUCTION SEQUENCE

1. EXCAVATE TEMPORARY DIVERSION CHANNEL (~160 LF), INSTALL 24" TEMPORARY PIPE (130 LF) AND IMPERVIOUS DIKES (54 LF) AS SHOWN. DIVERT CHANNEL FLOW THROUGH TEMPORARY DIVERSION DITCHES AND TEMPORARY PIPE.
2. CONSTRUCT STILLING BASIN TO SIZE SPECIFIED AT LOCATION SHOWN.
3. CONSTRUCT 2 @ 11' x 8' RCBC w/SILLS AND BEVELED INLET.
4. CONSTRUCT UPSTREAM AND DOWNSTREAM CHANNEL IMPROVEMENTS AND PLACE REQUIRED RIP RAP.
5. REMOVE IMPERVIOUS DIKES, STILLING BASIN, TEMPORARY PIPE, AND TEMPORARY DITCHES.
6. CONSTRUCT PROPOSED ROADWAY.

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-6/CONST.6
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014

5/14/99

NAD 83/NSRS 2007

BEGIN CONSTRUCTION
-Y2- POC 12+90.00

-MATCHLINE- -L- STA. 38+00.00 SEE SHEET NO. 5

-MATCHLINE- -L- STA. 51+00.00 SEE SHEET NO. 7

LINDA SUE TADLOCK

DAVID W. MOOSE

GARY A. & SYLVIA B. RITCHIE

DAVID W. & MARY Q. MOOSE

GARY'S BARBQUE INC.

JOHN H. GREENLAND

EUGENE O. & IRENE MOOSE

PATTI M. BLALOCK

GLADYS B. TATE

RAY N. & SHIRLEY T. WILHITE

-Y2- PCC 11+96.51

-Y2- PT 14+05.90

-Y2- PC 16+91.59

-Y2- PT 17+79.63

-Y2- POT 21+08.01

-L- POT 40+65.26 =
-Y2- POT 15+85.92

BEGIN WOVEN WIRE FENCE
-L- POT STA 47+50.00 LT & RT

END CONSTRUCTION
-Y2- POT 18+10.00

TOE PROTECTION W/CLASS B RIP RAP SEE DETAIL B

SPECIAL CUT DITCH SEE DETAIL G

SPECIAL LATERAL DITCH SEE DETAIL H

SPECIAL LATERAL DITCH SEE DETAIL H
SPECIAL CUT DITCH SEE DETAIL G

150' UNIFORM TAPER (BOTH SIDES)

CLASS B RIP RAP EST 3 TONS EST 10 SY GT

SPECIAL LATERAL DITCH SEE DETAIL H

REMOVE

DO NOT DISTURB GARAGE

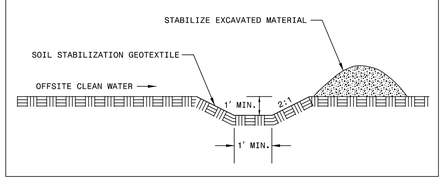
PSRM 10' X 20'

54 x 27 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
11 ft. weir
ID 6.1

CLEAN WATER DIVERSION

→→ CWD →→ CWD →→ CWD →→ CWD →→

(Not to Scale)



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

NOTE:
ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 6

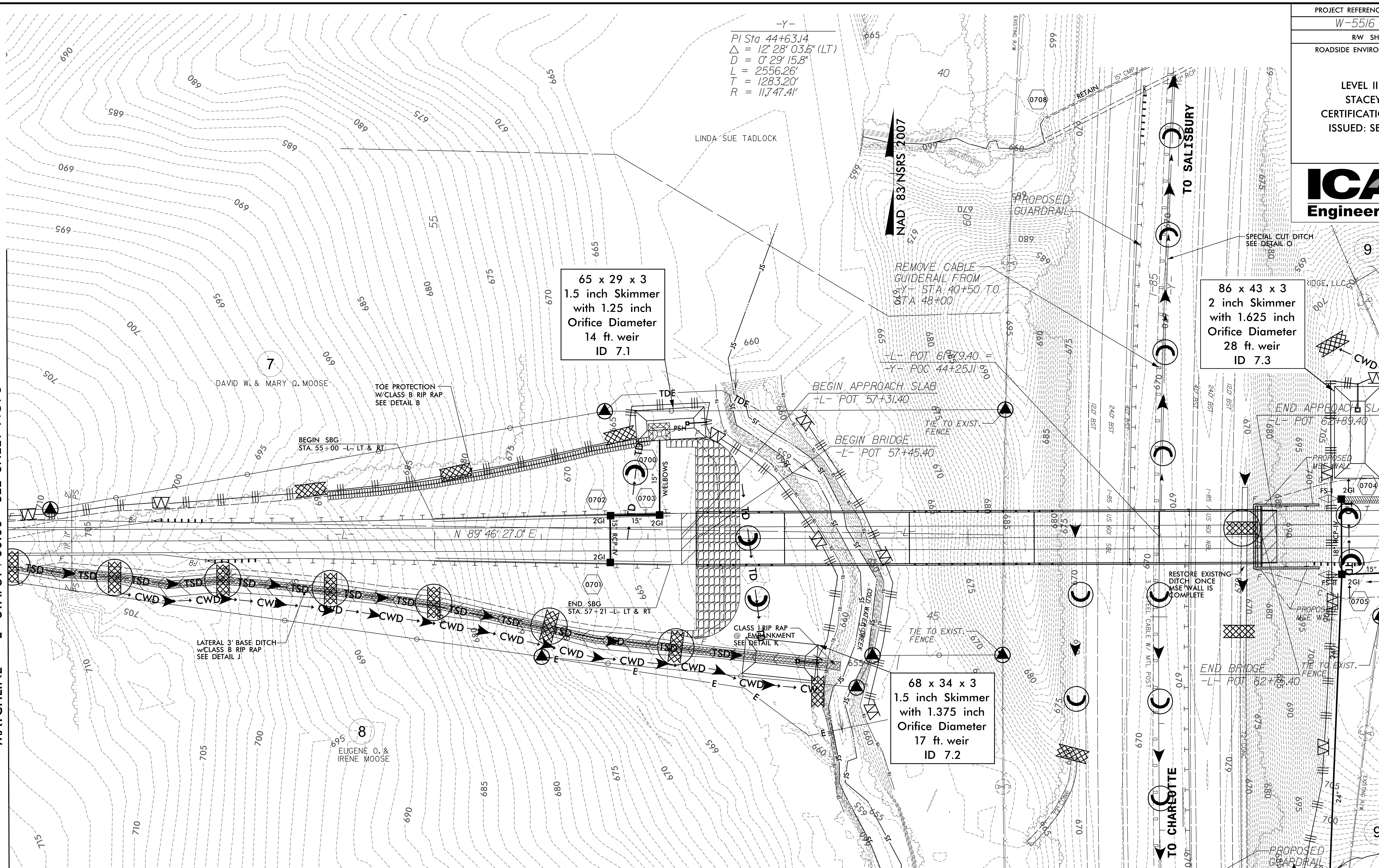
9/10/2014
C:\Projects\Erosion Control\dgn\w5516_hyd_erosion_&g_psh_06.dgn
FOR ENGINEERING USE ONLY

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-7/CONST.7
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258



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

NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

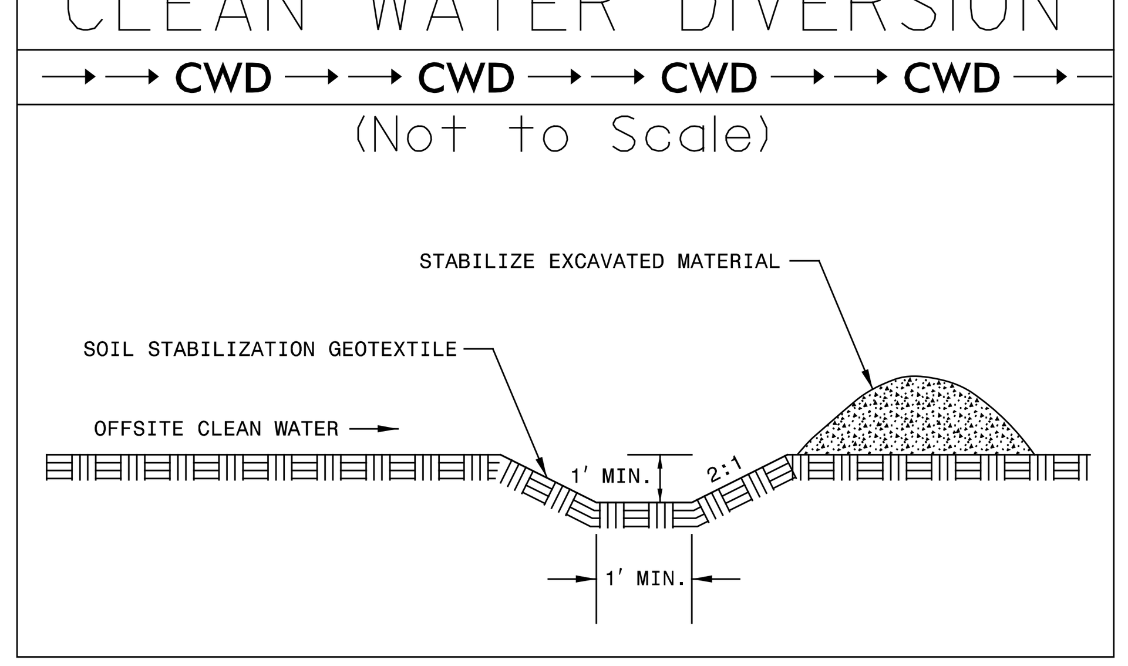
NOTE: CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE: ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

NOTE: ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 7

CLEAN WATER DIVERSION

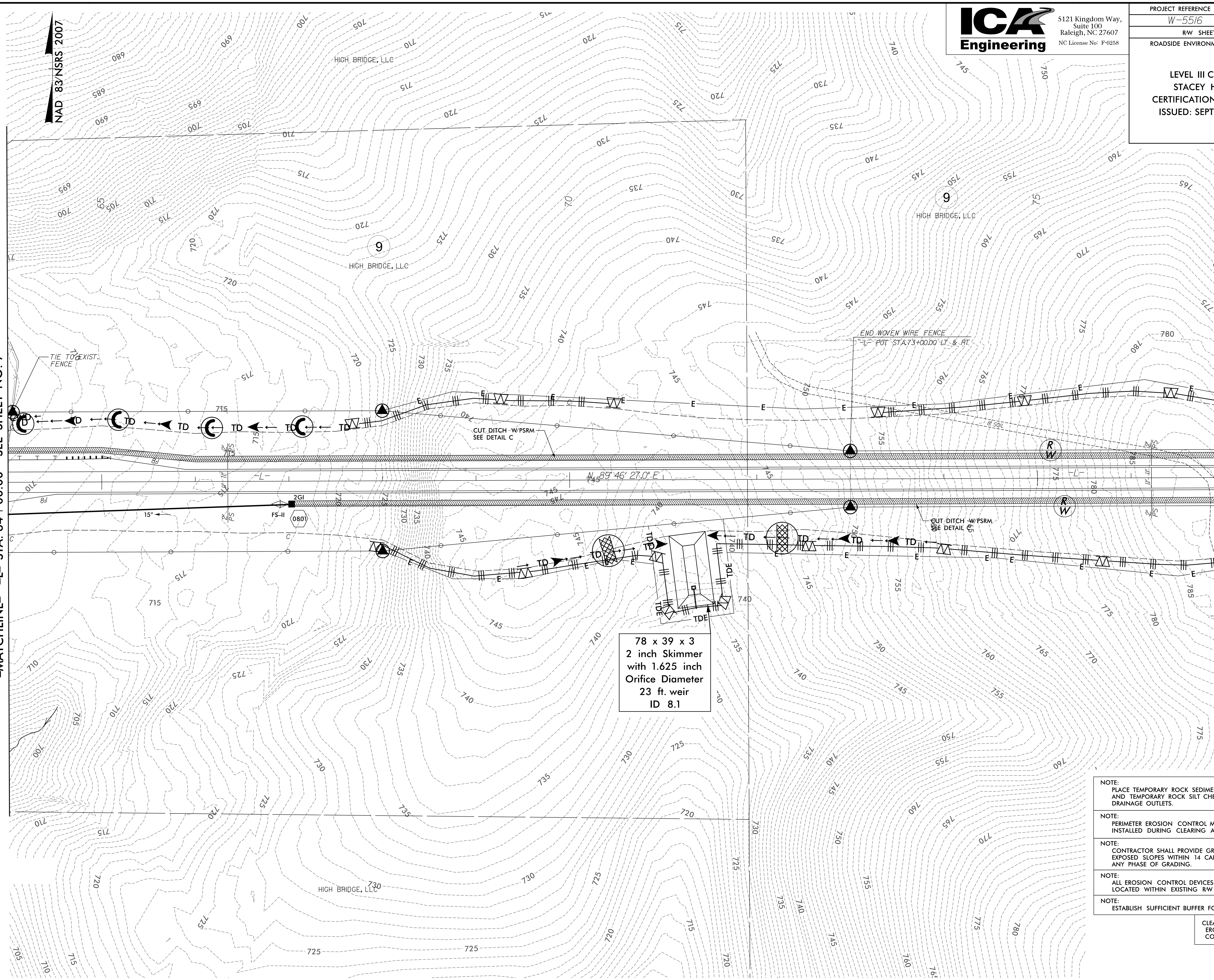


(Not to Scale)

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-8/CONST.8
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

NOTE:
ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 8

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-9/CONST.9
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

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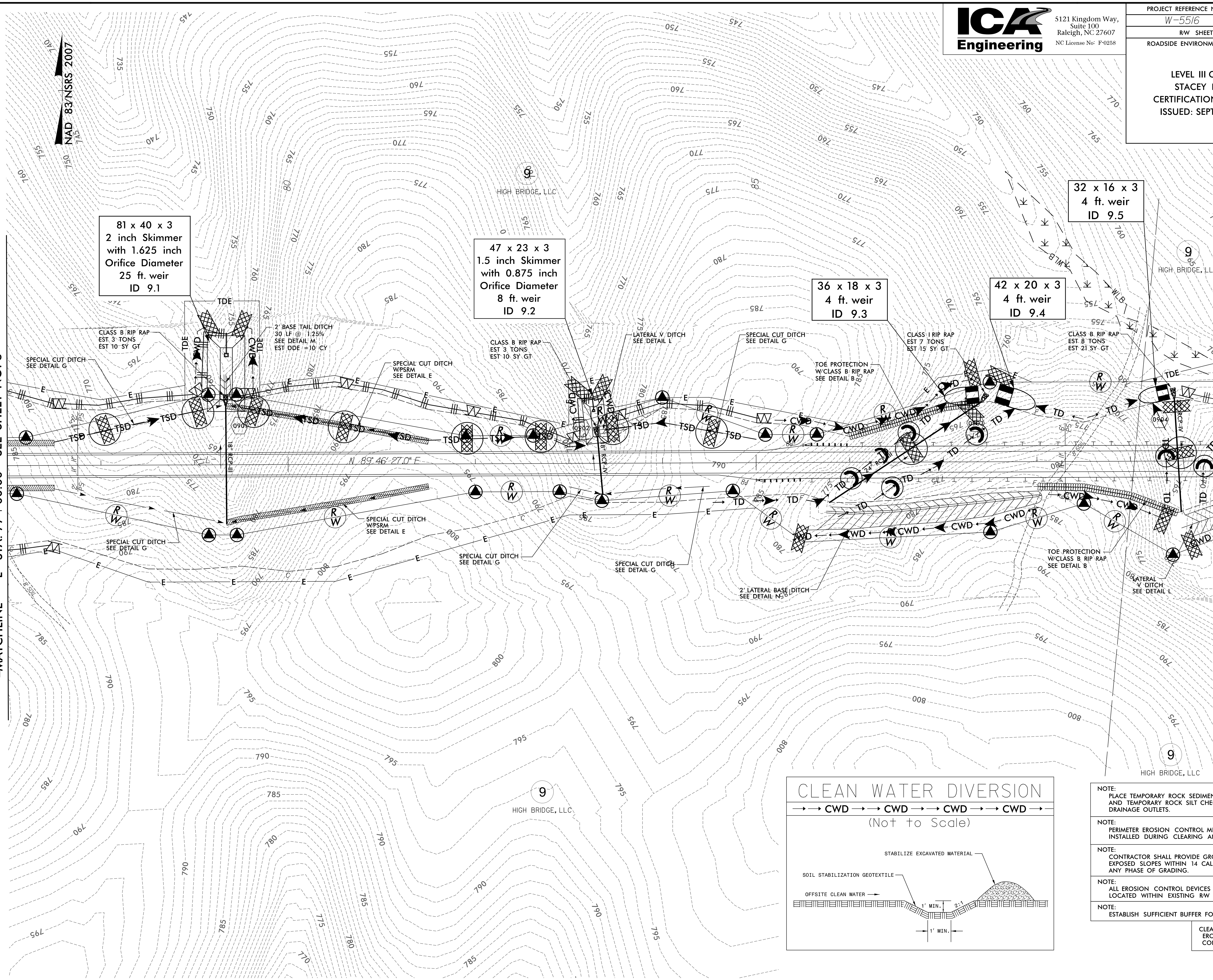
Raleigh, NC 27607
NC License No: F-0258

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.

NOTE:
ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 9

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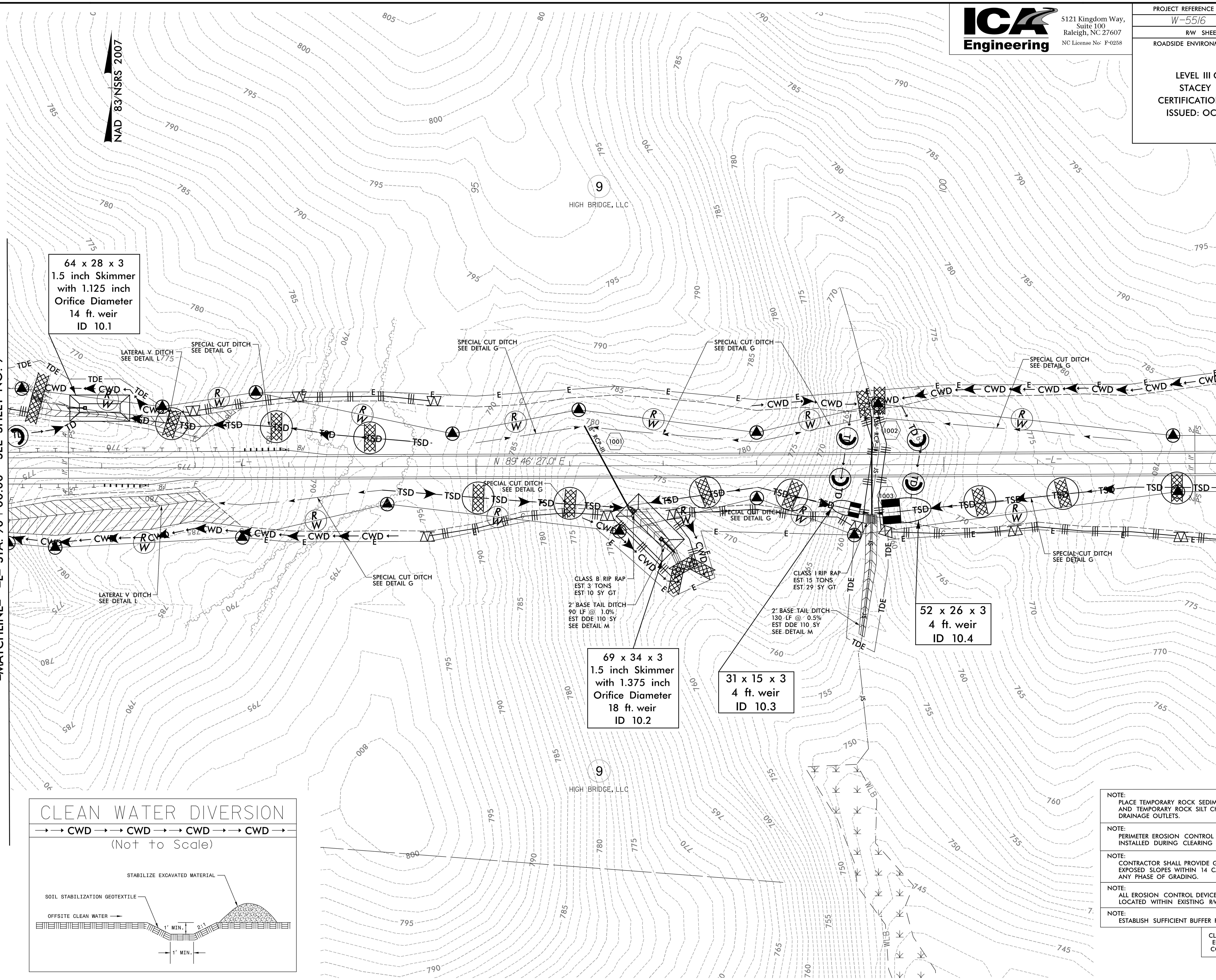
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-10/CONSTJ0
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: OCTOBER 24, 2014

REVISIONS

10-22-14 REVISED STATION/OFFSET CALLOUTS ON PARCEL 9



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.

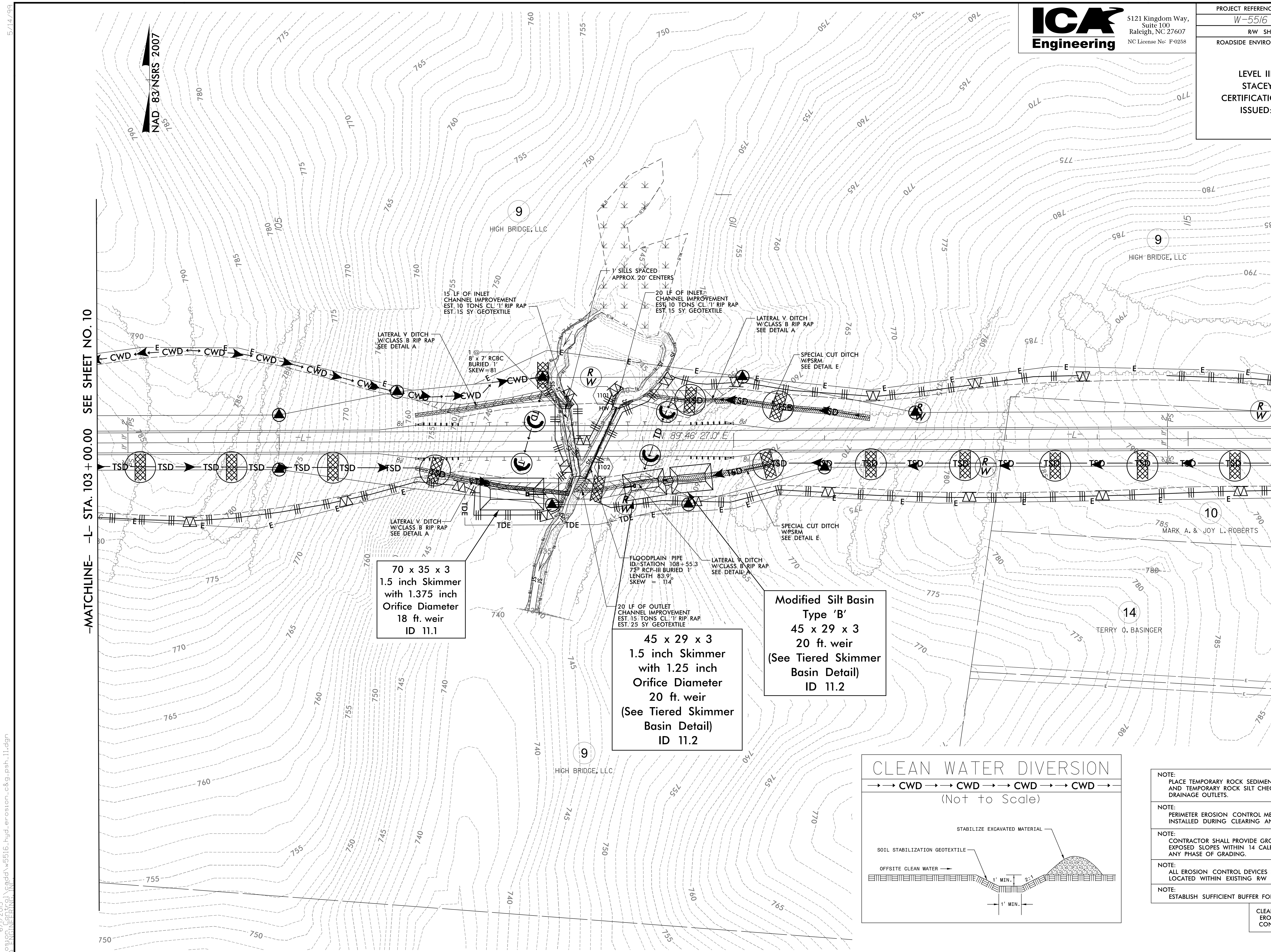
NOTE:
ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 10

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-II/CONST.II
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MAY 26, 2015



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

NOTE:
ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 11

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NC License No: F-0258

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

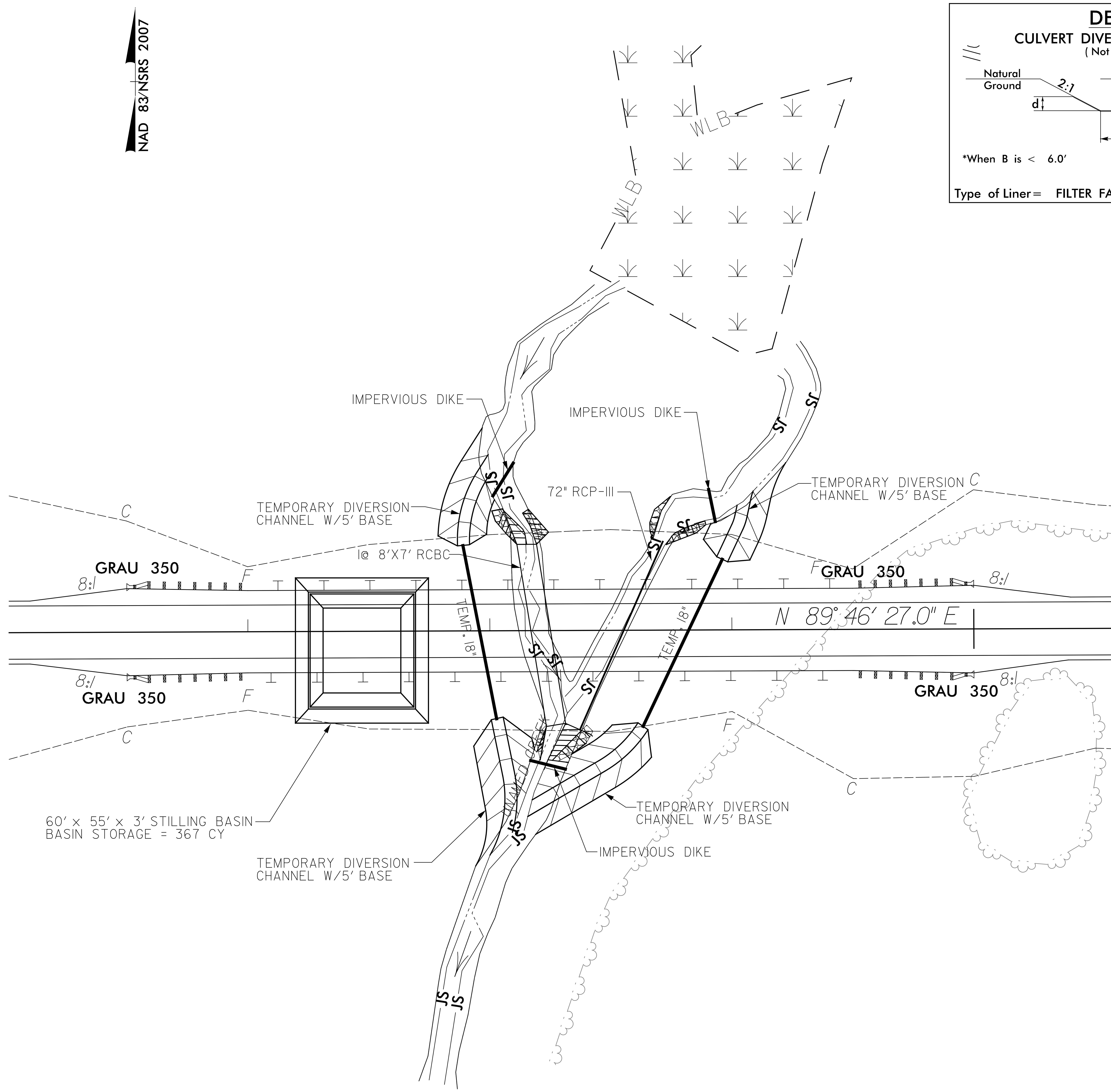
LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MAY 26, 2015

DETAIL
CULVERT DIVERSION CHANNEL
(Not to Scale)

*When B is < 6.0'

Min. D = 4 Ft.
Max. d = 5 Ft.
B = 5 Ft.

Type of Liner = FILTER FABRIC – TYPE IV



NOTES

1. CULVERT CONSTRUCTION SHALL BE PERFORMED IN ONLY DRY OR ISOLATED SECTIONS OF CHANNEL.
2. IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW AS 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 SUFFICIENT SIZE TO DEWATER THE WORK AREA.
6. THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DEWATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH STILLING BASIN AND/OR SPECIAL STILLING BASIN.

CONSTRUCTION SEQUENCE

1. EXCAVATE TEMPORARY DIVERSION CHANNEL (~170 LF), INSTALL 18" TEMPORARY PIPES (152 LF) AND IMPERVIOUS DIKES (45 LF) AS SHOWN. DIVERT CHANNEL FLOW THROUGH TEMPORARY DIVERSION DITCHES AND TEMPORARY PIPES.
2. CONSTRUCT STILLING BASIN TO SIZE SPECIFIED AT LOCATION SHOWN.
3. CONSTRUCT 1@8'X7' RCBC W/SILLS AND BEVELED INLET AND 72" RCP-III..
4. CONSTRUCT UPSTREAM AND DOWNSTREAM CHANNEL IMPROVEMENTS AND PLACE REQUIRED RIP RAP.
5. REMOVE IMPERVIOUS DIKES, STILLING BASIN, TEMPORARY PIPES, AND TEMPORARY DITCHES.
6. CONSTRUCT PROPOSED ROADWAY.

FOR -L- PROFILE, SEE SHEET 18

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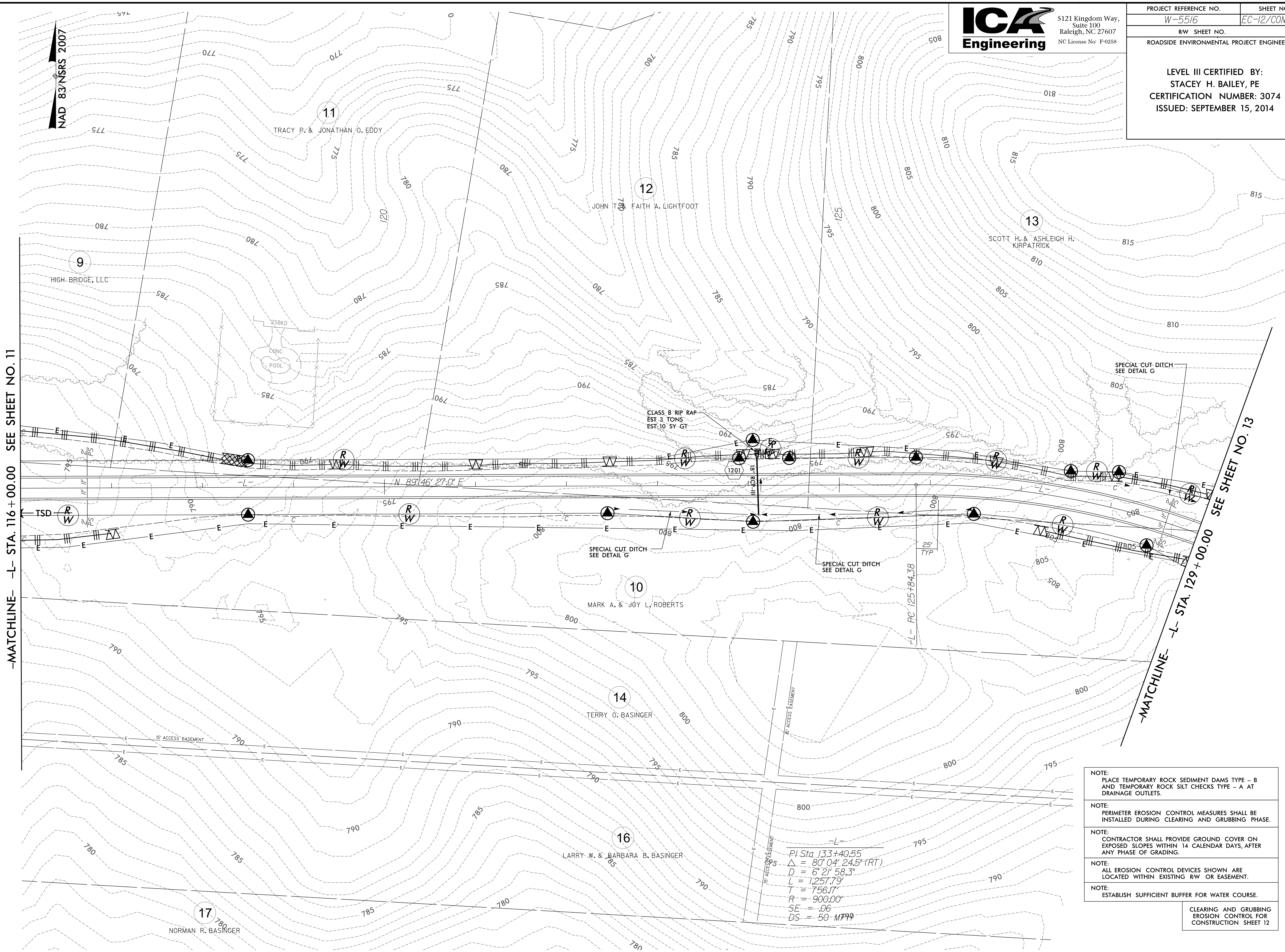
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-12/CONST12
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

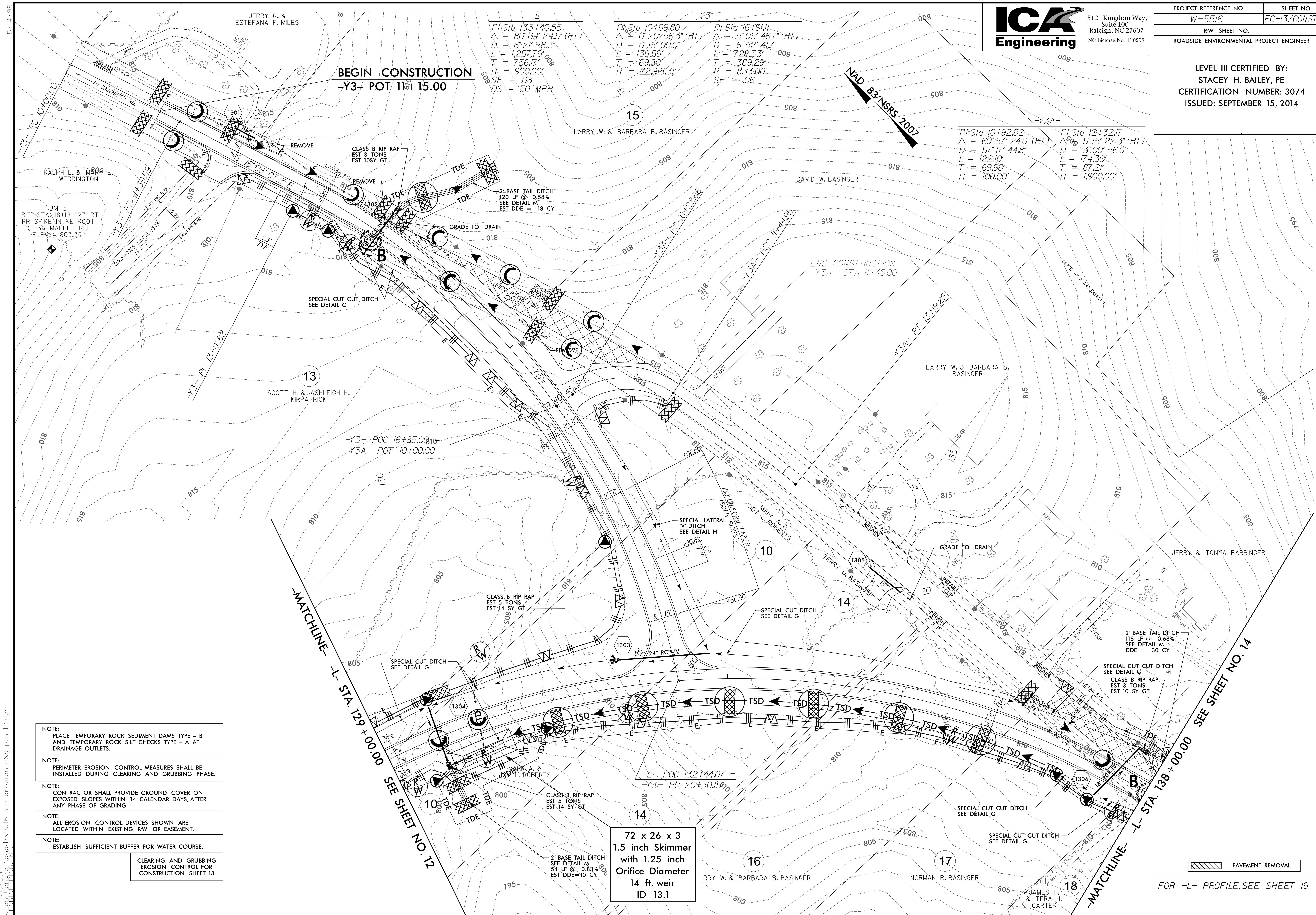
NOTE:
ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 12

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-13/CONST13
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014



BEGIN CONSTRUCTION
-Y3- POT 11+15.00
-L-
PI Sta 133+40.55
Δ = 80° 04' 24.5" (RT)
D = 6° 21' 58.3"
L = 1,257.79'
T = 756.17'
R = 900.00'
SE = .08
DS = 50 MPH
-Y3-
PI Sta 10+69.80
Δ = 0° 20' 56.3" (RT)
D = 0° 15' 00.0"
L = 139.59'
T = 69.80'
R = 22,918.31'
PI Sta 16+91.11
Δ = 5° 05' 46.7" (RT)
D = 6° 52' 41.7"
L = 728.33'
T = 389.29'
R = 833.00'
SE = .06
-Y3A-
PI Sta 10+92.82
Δ = 69° 57' 24.0" (RT)
D = 57° 17' 44.8"
L = 122.10'
T = 69.96'
R = 100.00'
PI Sta 12+32.17
Δ = 5° 15' 22.3" (RT)
D = 3° 00' 56.0"
L = 174.30'
T = 87.21'
R = 1,900.00'
NAD 83/NSRS 2007
JERRY G. & ESTEFANA F. MILES
LARRY W. & BARBARA B. BASINGER
DAVID W. BASINGER
RALPH L. & MARY E. WEDDINGTON
BM 3
-BL- STA. 118+19 927' RT
RR SPIKE IN NE ROOT OF 36" MAPLE TREE
ELEV. = 803.35'
CLASS B RIP RAP
EST 3 TONS
EST 10SY GT
REMOVE
2' BASE TAIL DITCH
120 LF @ 0.58%
SEE DETAIL M
EST DDE = 18 CY
GRADE TO DRAIN
SPECIAL CUT CUT DITCH
SEE DETAIL G
END CONSTRUCTION
-Y3A- STA 11+45.00
SCOTT H. & ASHLEIGH H. KIRKPATRICK
LARRY W. & BARBARA B. BASINGER
-Y3- POC 16+85.00 =
-Y3A- POT 10+00.00
SPECIAL LATERAL 'V' DITCH
SEE DETAIL H
MARK A. & JOY L. ROBERTS
TERRY G. BASINGER
JERRY & TONYA BARRINGER
CLASS B RIP RAP
EST 5 TONS
EST 14 SY GT
SPECIAL CUT DITCH
SEE DETAIL G
2' BASE TAIL DITCH
118 LF @ 0.68%
SEE DETAIL M
DDE = 30 CY
SPECIAL CUT CUT DITCH
SEE DETAIL G
CLASS B RIP RAP
EST 3 TONS
EST 10 SY GT
-L- POC 132+44.07 =
-Y3- PC 20+30.15
CLASS B RIP RAP
EST 5 TONS
EST 14 SY GT
2' BASE TAIL DITCH
SEE DETAIL M
54 LF @ 0.83%
EST DDE=10 CY
72 x 26 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
14 ft. weir
ID 13.1
RRY W. & BARBARA B. BASINGER
NORMAN R. BASINGER
JAMES F. & TERA H. CARTER
-MATCHLINE- -L- STA. 129+00.00 SEE SHEET NO. 12
-MATCHLINE- -L- STA. 138+00.00 SEE SHEET NO. 14
PAVEMENT REMOVAL

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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

NOTE:
ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

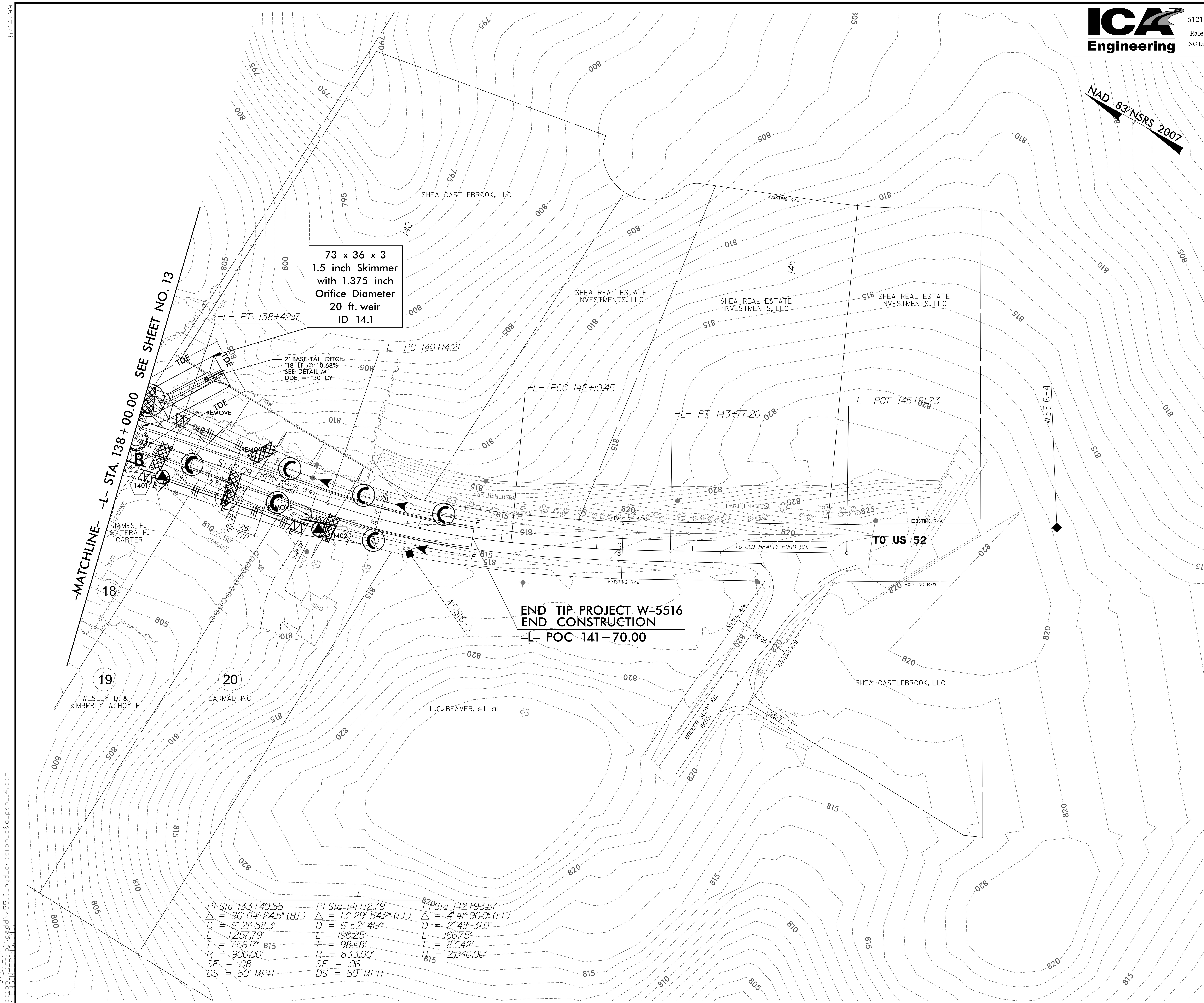
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 13

FOR -L- PROFILE, SEE SHEET 19

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-14/CONSTJ4
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.

NOTE:
ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 14

PAVEMENT REMOVAL

5/14/99
9/10/2014

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-15/CONST.2B
R/W SHEET NO.	

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014

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

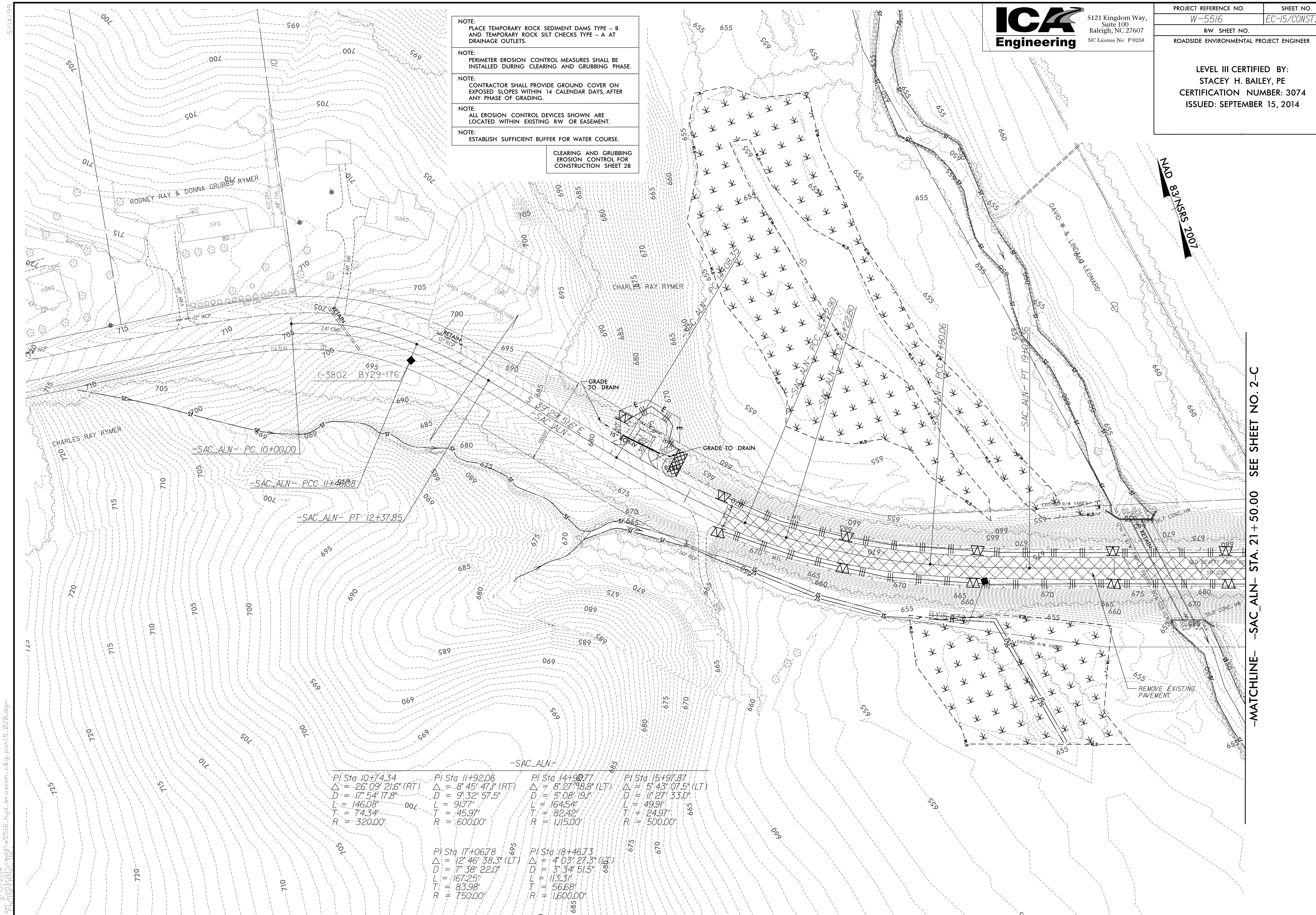
NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

NOTE:
ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2B



-SAC_ALN-

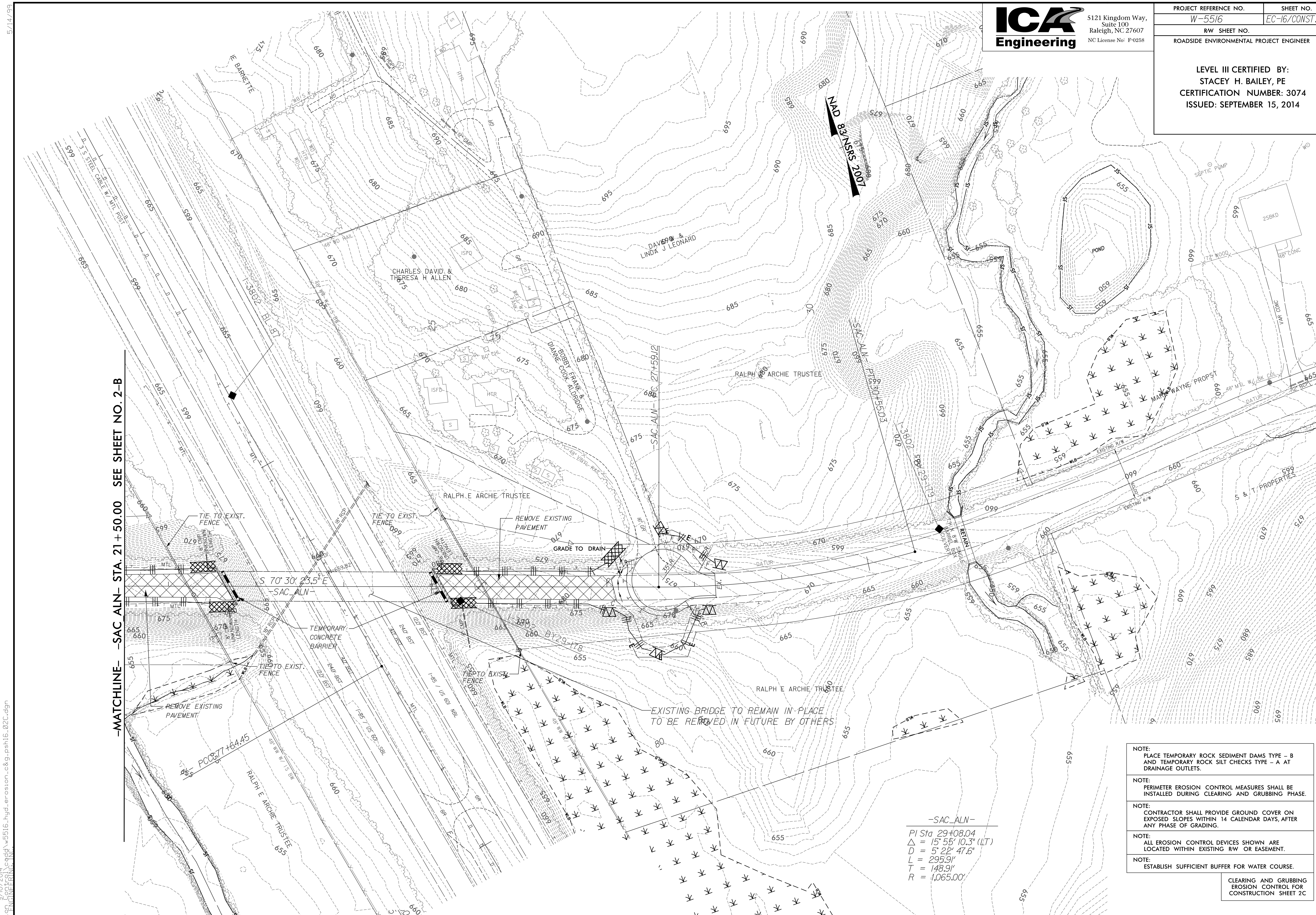
PI Sta 10+74.34	PI Sta 11+92.06	PI Sta 14+90.77	PI Sta 15+97.87
Δ = 26° 09′ 21.6″ (RT)	Δ = 8° 45′ 47.1″ (RT)	Δ = 8° 27′ 18.8″ (LT)	Δ = 5° 43′ 07.5″ (LT)
D = 17° 54′ 17.8″	D = 9° 32′ 57.5″	D = 5° 08′ 19.1″	D = 11° 27′ 33.0″
L = 146.08′	L = 91.77′	L = 164.54′	L = 49.91′
T = 74.34′	T = 45.97′	T = 82.42′	T = 24.97′
R = 320.00′	R = 600.00′	R = 1,115.00′	R = 500.00′

PI Sta 17+06.78	PI Sta 18+46.73
Δ = 12° 46′ 38.3″ (LT)	Δ = 4° 03′ 27.3″ (LT)
D = 7° 38′ 22.0″	D = 3° 34′ 51.5″
L = 167.25′	L = 113.31′
T = 83.98′	T = 56.68′
R = 750.00′	R = 1,600.00′

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-16/CONST.2C
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014



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

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.

NOTE:
ESTABLISH SUFFICIENT BUFFER FOR WATER COURSE.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 2C

PROJECT REFERENCE NO. W-5516 | SHEET NO. EC-17/CONST.4

R/W SHEET NO.

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MAY 26, 2015

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.

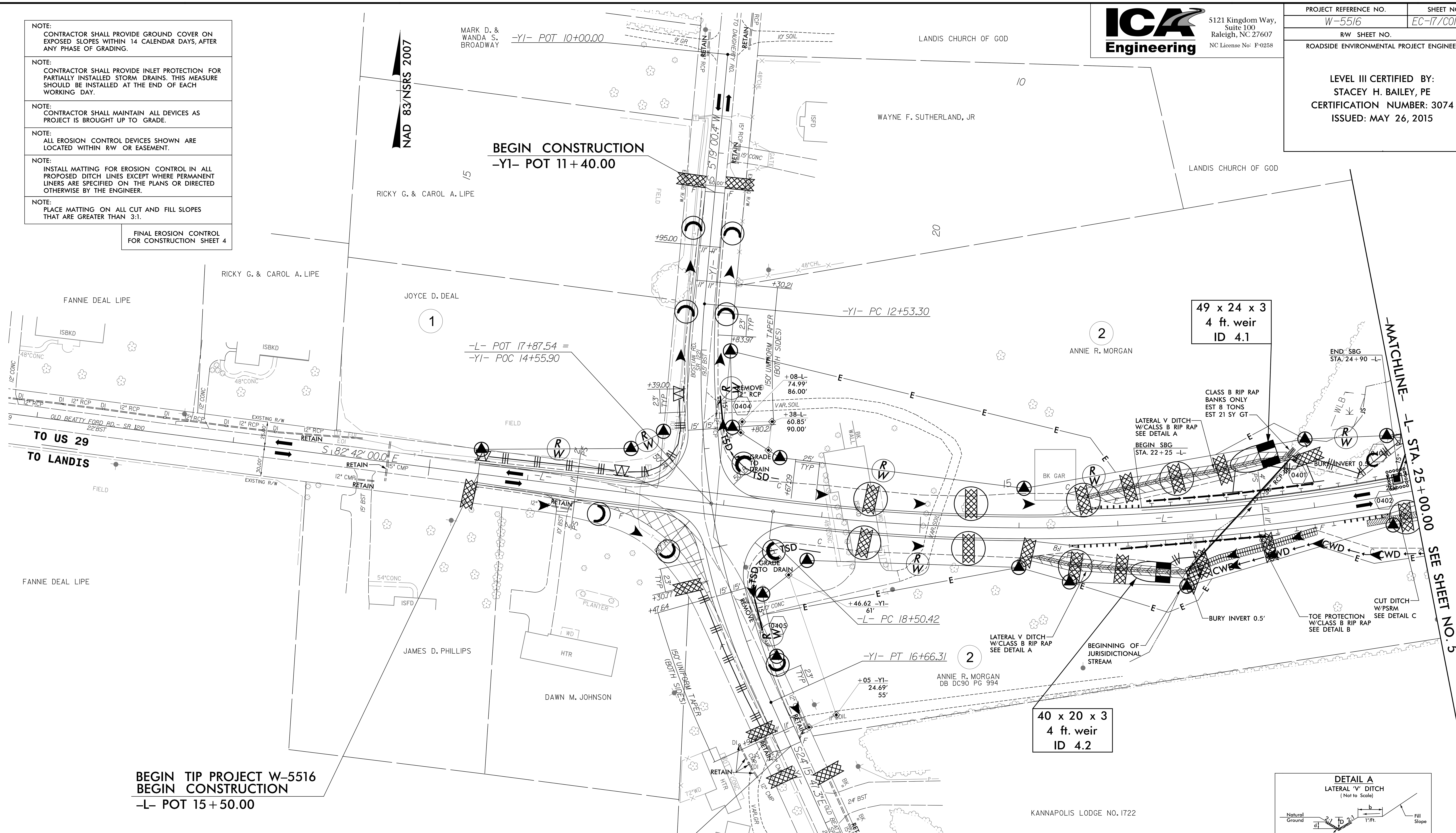
NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN R/W OR EASEMENT.

NOTE:
INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

NOTE:
PLACE MATTING ON ALL CUT AND FILL SLOPES THAT ARE GREATER THAN 3:1.

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 4


NAD 83/NSRS 2007
MARK D. & WANDA S. BROADWAY
-Y1- POT 10+00.00
LANDIS CHURCH OF GOD
WAYNE F. SUTHERLAND, JR
BEGIN CONSTRUCTION
-Y1- POT 11+40.00
RICKY G. & CAROL A. LIPE
FANNIE DEAL LIPE
JOYCE D. DEAL
-Y1- PC 12+53.30
-L- POT 17+87.54 =
-Y1- POC 14+55.90
ANNIE R. MORGAN
49 x 24 x 3
4 ft. weir
ID 4.1
END SBG
STA. 24+90 -L-
CLASS B RIP RAP BANKS ONLY
EST 8 TONS
EST 21 SY GT
LATERAL V DITCH W/CALSS B RIP RAP SEE DETAIL A
BEGIN SBG
STA. 22+25 -L-
-MATCHLINE- -L- STA. 25+00.00 SEE SHEET NO. 5
TO US 29
TO LANDIS
OLD BEATTY FORD RD. - SR 1210
S 82° 42' 00.0" E
JAMES D. PHILLIPS
DAWN M. JOHNSON
-L- PC 18+50.42
-Y1- PT 16+66.31
ANNIE R. MORGAN
DB DC90 PG 994
LATERAL V DITCH W/CLASS B RIP RAP SEE DETAIL A
BEGINNING OF JURISDICTIONAL STREAM
BURY INVERT 0.5'
TOE PROTECTION W/CLASS B RIP RAP SEE DETAIL B
CUT DITCH W/PSRM SEE DETAIL C
40 x 20 x 3
4 ft. weir
ID 4.2
BEGIN TIP PROJECT W-5516
BEGIN CONSTRUCTION
-L- POT 15+50.00
END CONSTRUCTION
-Y1- POT 17+15.00
KANNAPOLIS LODGE NO. 1722
RONNIE E. STIREWALT
-Y1- POT 19+65.72

CLEAN WATER DIVERSION

→ CWD → CWD → CWD → CWD →

(Not to Scale)

STABILIZE EXCAVATED MATERIAL
SOIL STABILIZATION GEOTEXTILE
OFFSITE CLEAN WATER
1' MIN.
2:1
1' MIN.

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

Natural Ground; Geotextile; Fill Slope; b; d; 2:1; 1' Ft.

Min. D = 1 Ft.
Max. d = 1 Ft.
b = 5 Ft.

Type of Liner = Class B Rip-Rap

FROM STA. 21+50 TO STA. 23+78 -L- LT
FROM STA. 21+00 TO STA. 22+68 -L- RT

DETAIL C
CUT DITCH
(Not to Scale)

Natural Ground; 2:1; 4:1 or Flatter; Front Ditch Slope; D; d

Min. D = 1 Ft.
Max. d = 1 Ft.

Type of Liner = PSRM

FROM STA. 24+50 TO STA. 25+00 -L- RT

DETAIL B
TOE PROTECTION
(Not to Scale)

Natural Ground; b; 2:1 or Flatter Fill Slope; d; Geotextile

d = 1 Ft.
b = 5 Ft.

Type of Liner = Class B Rip-Rap

FROM STA. 22+65 TO STA. 24+00 -L- RT

PAVEMENT REMOVAL

REVISIONS

10-22-14 REVISED STATION/OFFSET CALLOUTS ON PARCELS 1 & 2

5/14/99

5/28/2015

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-18/CONST.5
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.

NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN R/W OR EASEMENT.

NOTE:
INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

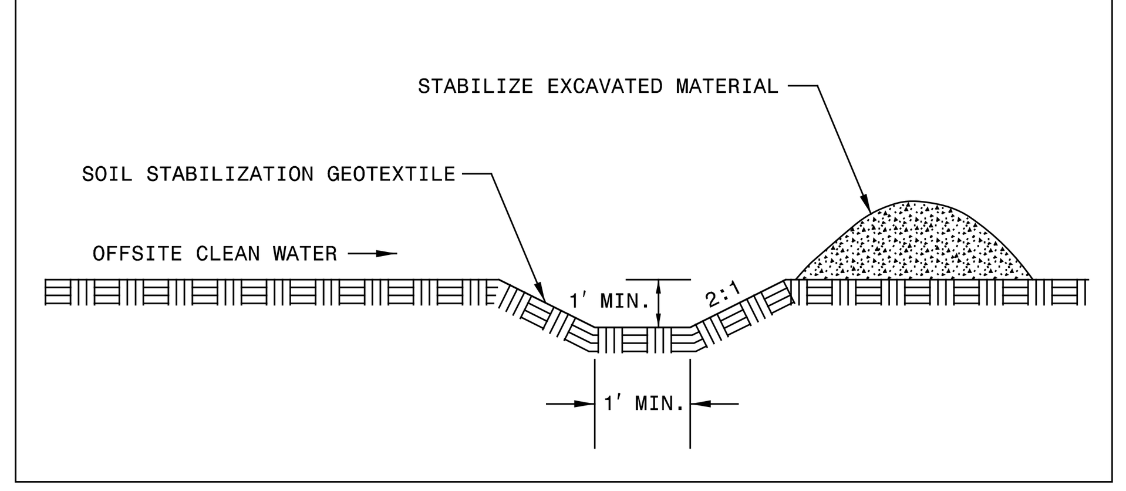
NOTE:
PLACE MATTING ON ALL CUT AND FILL SLOPES THAT ARE GREATER THAN 3:1.

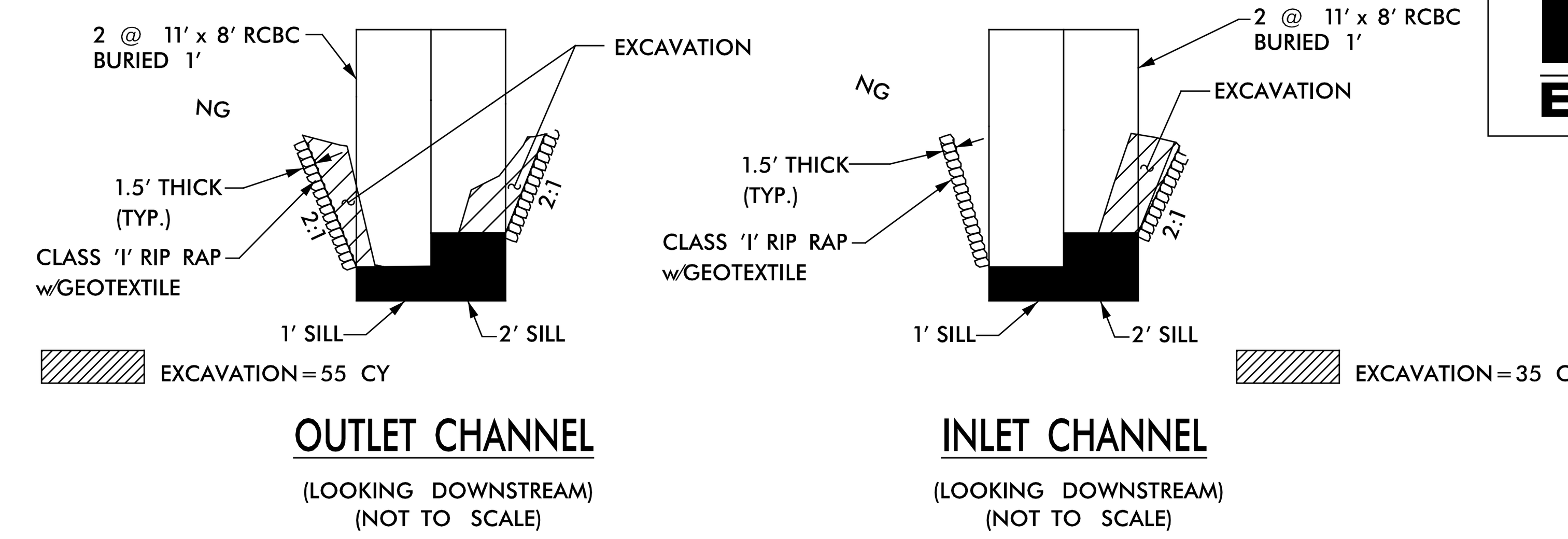
FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 5

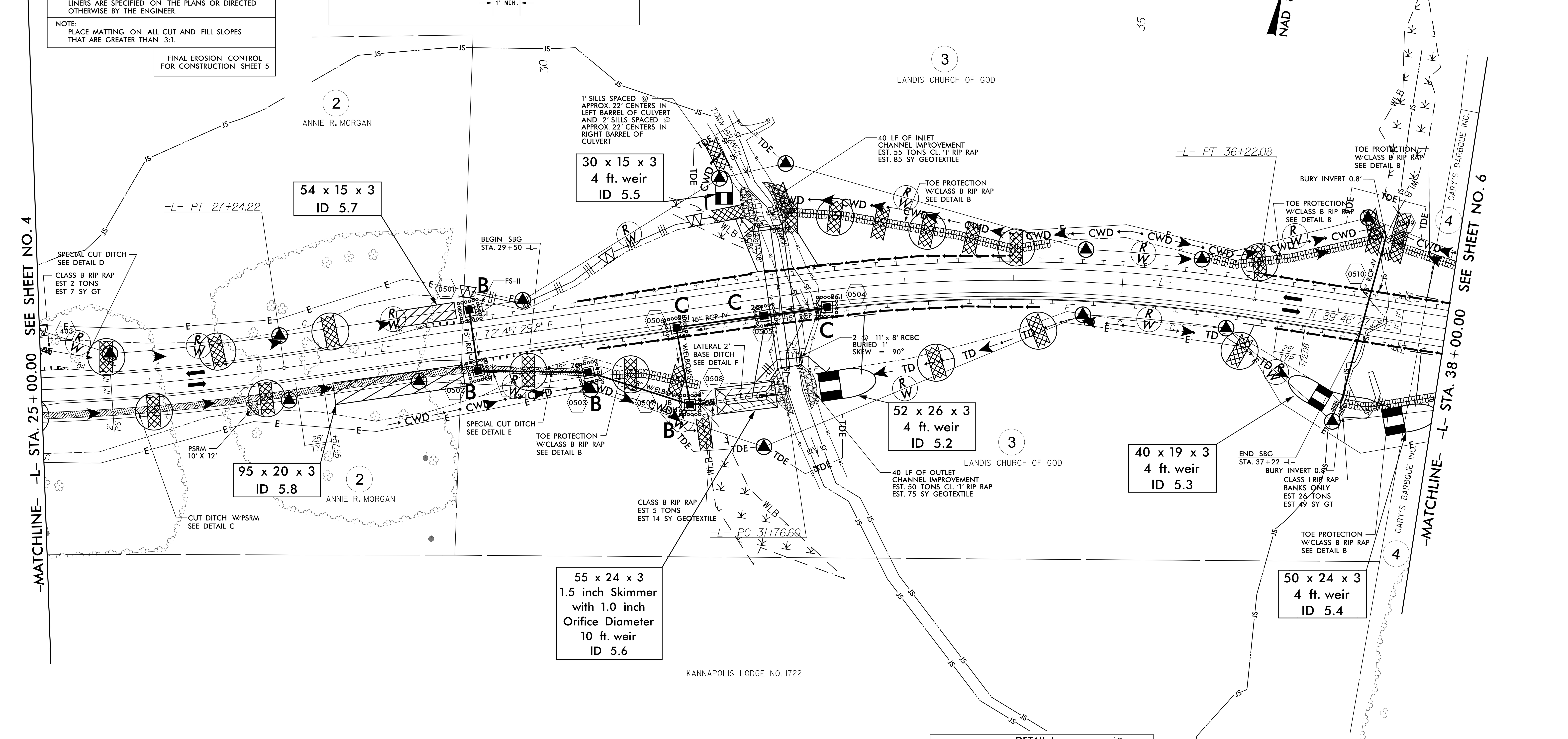
CLEAN WATER DIVERSION

→ CWD → CWD → CWD → CWD →

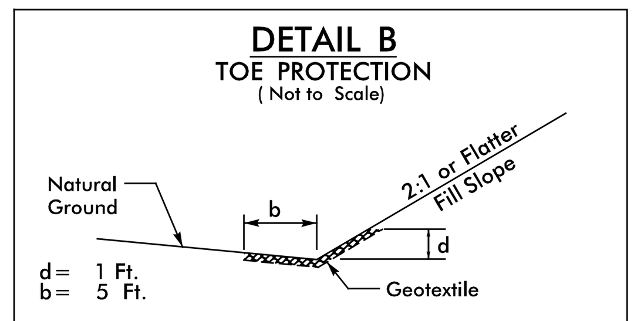
(Not to Scale)




2 @ 11' x 8' RCBC BURIED 1'
NG
EXCAVATION
1.5' THICK (TYP.)
CLASS 'I' RIP RAP w/GEOTEXTILE
1' SILL
2' SILL
EXCAVATION = 55 CY
OUTLET CHANNEL
(LOOKING DOWNSTREAM) (NOT TO SCALE)
2 @ 11' x 8' RCBC BURIED 1'
EXCAVATION
1.5' THICK (TYP.)
CLASS 'I' RIP RAP w/GEOTEXTILE
1' SILL
2' SILL
EXCAVATION = 35 CY
INLET CHANNEL
(LOOKING DOWNSTREAM) (NOT TO SCALE)


NAD 83/NSRS 2007
30
35
2
ANNIE R. MORGAN
3
LANDIS CHURCH OF GOD
-L- PT 27+24.22
54 x 15 x 3
ID 5.7
1' SILLS SPACED @ APPROX. 22' CENTERS IN LEFT BARREL OF CULVERT AND 2' SILLS SPACED @ APPROX. 22' CENTERS IN RIGHT BARREL OF CULVERT
30 x 15 x 3
4 ft. weir
ID 5.5
40 LF OF INLET CHANNEL IMPROVEMENT EST. 55 TONS CL. 'I' RIP RAP EST. 85 SY GEOTEXTILE
TOE PROTECTION W/CLASS B RIP RAP SEE DETAIL B
-L- PT 36+22.08
TOE PROTECTION W/CLASS B RIP RAP SEE DETAIL B
BURY INVERT 0.8'
TOE PROTECTION W/CLASS B RIP RAP SEE DETAIL B
GARY'S BARBQUE INC.
4
SEE SHEET NO. 6
SEE SHEET NO. 4
SPECIAL CUT DITCH SEE DETAIL D
CLASS B RIP RAP EST 2 TONS EST 7 SY GT
BEGIN SBG STA. 29+50 -L-
FS-II
72° 45' 29.8" E
N 89° 46' 27.0" E
15" RCP-IV
LATERAL 2' BASE DITCH SEE DETAIL F
2 @ 11' x 8' RCBC BURIED 1' SKEW = 90°
52 x 26 x 3
4 ft. weir
ID 5.2
SPECIAL CUT DITCH SEE DETAIL E
TOE PROTECTION W/CLASS B RIP RAP SEE DETAIL B
PSRM 10' X 12'
95 x 20 x 3
ID 5.8
2
ANNIE R. MORGAN
CUT DITCH W/PSRM SEE DETAIL C
CLASS B RIP RAP EST 5 TONS EST 14 SY GEOTEXTILE
-L- PC 31+76.60
40 LF OF OUTLET CHANNEL IMPROVEMENT EST. 50 TONS CL. 'I' RIP RAP EST. 75 SY GEOTEXTILE
3
LANDIS CHURCH OF GOD
40 x 19 x 3
4 ft. weir
ID 5.3
END SBG STA. 37+22 -L-
BURY INVERT 0.8'
CLASS I RIP RAP BANKS ONLY EST 26 TONS EST 49 SY GT
TOE PROTECTION W/CLASS B RIP RAP SEE DETAIL B
GARY'S BARBQUE INC.
4
50 x 24 x 3
4 ft. weir
ID 5.4
-MATCHLINE- -L- STA. 25+00.00
-MATCHLINE- -L- STA. 38+00.00
55 x 24 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
10 ft. weir
ID 5.6
KANNAPOLIS LODGE NO. 1722

DETAIL B
TOE PROTECTION
(Not to Scale)



FROM STA. 30+23 TO STA. 31+00 -L- RT
FROM STA. 32+00 TO STA. 34+32 -L- LT
FROM STA. 35+75 TO STA. 37+30 -L- LT
FROM STA. 37+35 TO STA. 38+00 -L- LT
FROM STA. 37+18 TO STA. 38+00 -L- RT

DETAIL C
CUT DITCH
(Not to Scale)

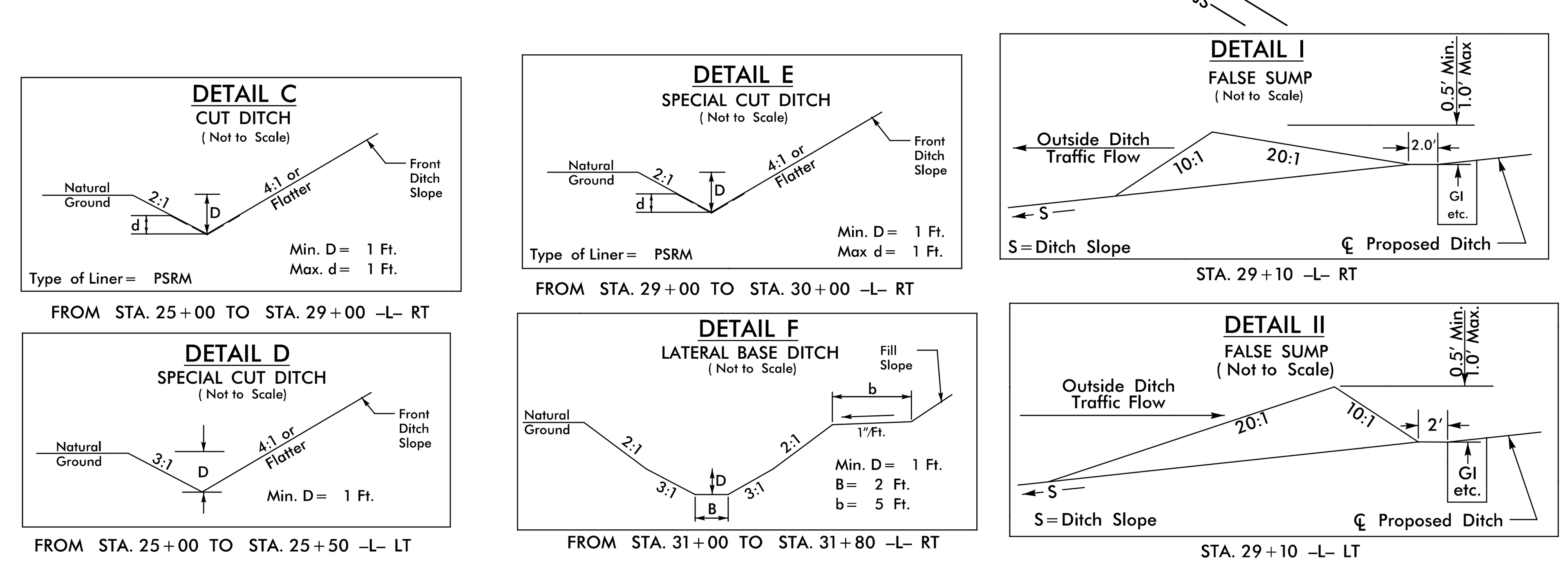
DETAIL D
SPECIAL CUT DITCH
(Not to Scale)

DETAIL E
SPECIAL CUT DITCH
(Not to Scale)

DETAIL F
LATERAL BASE DITCH
(Not to Scale)

DETAIL I
FALSE SUMP
(Not to Scale)

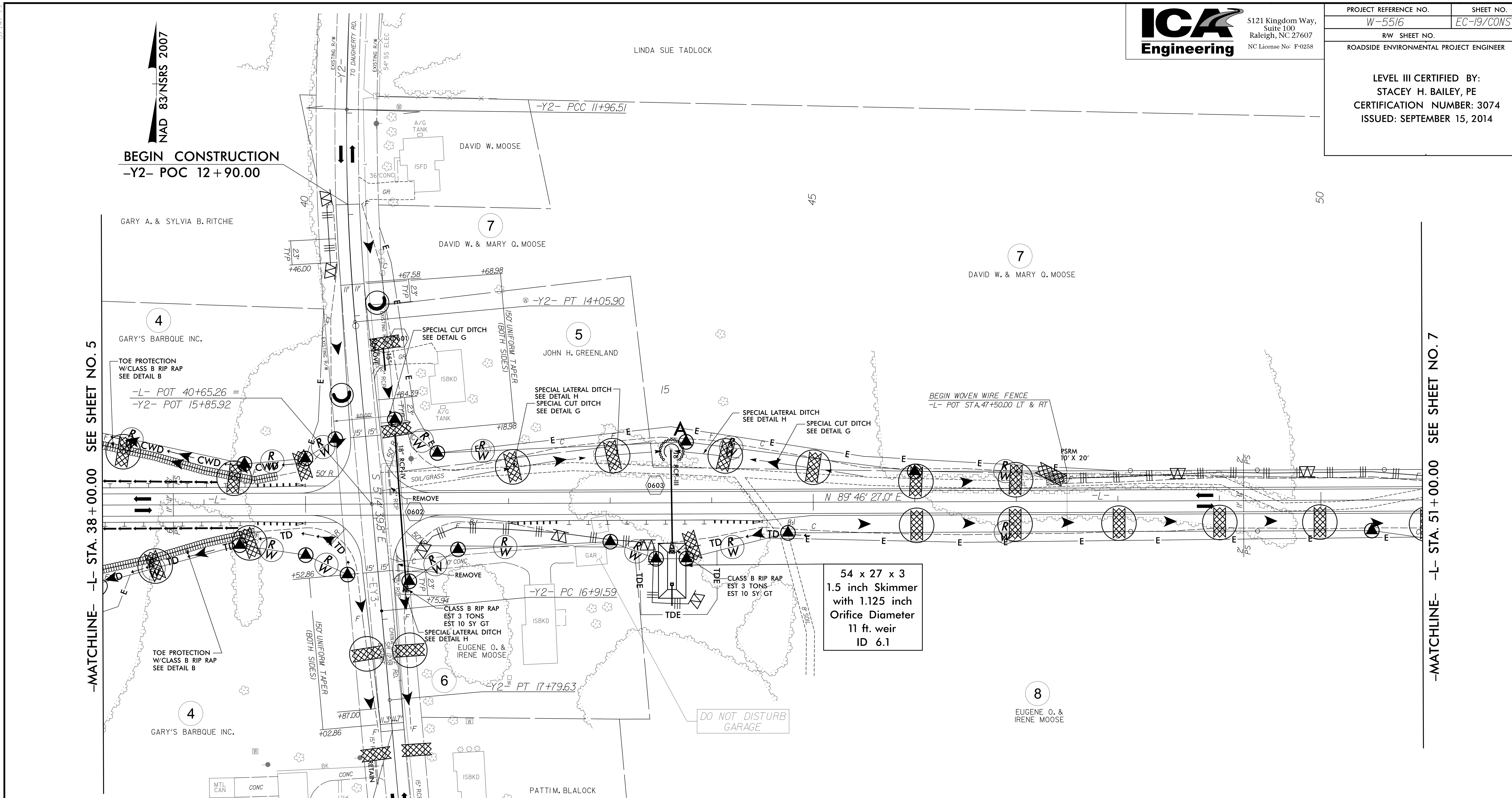
DETAIL II
FALSE SUMP
(Not to Scale)


Natural Ground
2:1
D
d
4:1 or Flatter
Front Ditch Slope
Min. D = 1 Ft.
Max. d = 1 Ft.
Type of Liner = PSRM
FROM STA. 25+00 TO STA. 29+00 -L- RT
Natural Ground
3:1
D
4:1 or Flatter
Front Ditch Slope
Min. D = 1 Ft.
FROM STA. 25+00 TO STA. 25+50 -L- LT
Natural Ground
2:1
D
4:1 or Flatter
Front Ditch Slope
Min. D = 1 Ft.
Max d = 1 Ft.
Type of Liner = PSRM
FROM STA. 29+00 TO STA. 30+00 -L- RT
Fill Slope
b
Natural Ground
2:1
1' Ft.
D
B
3:1
Min. D = 1 Ft.
B = 2 Ft.
b = 5 Ft.
FROM STA. 31+00 TO STA. 31+80 -L- RT
0.5' Min. 1.0' Max.
Outside Ditch Traffic Flow
10:1
20:1
2.0'
GI etc.
S = Ditch Slope
℄ Proposed Ditch
STA. 29+10 -L- RT
0.5' Min. 1.0' Max.
Outside Ditch Traffic Flow
20:1
10:1
2'
GI etc.
S = Ditch Slope
℄ Proposed Ditch
STA. 29+10 -L- LT

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-19/CONST.6
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014



END CONSTRUCTION
-Y2- POT 18+10.00

GLADYS B. TATE

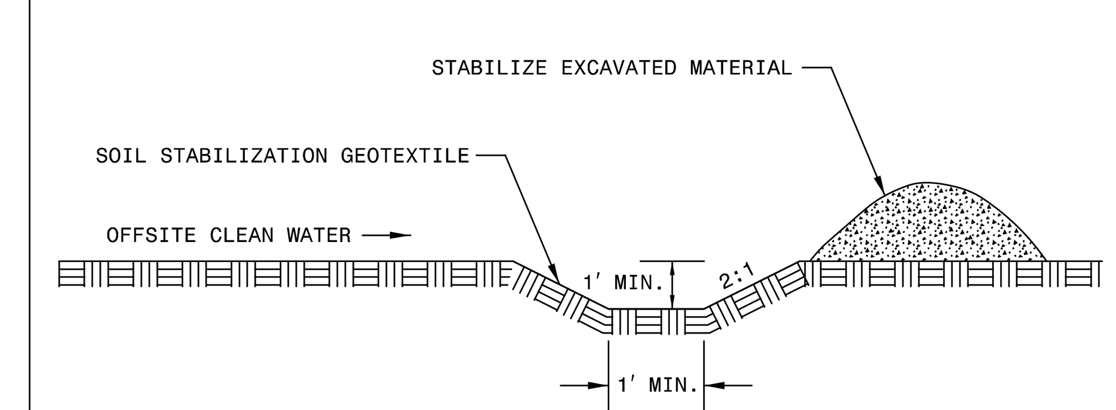
-Y2- POT 21+08.01

RAY N. & SHIRLEY T. WILHITE

CLEAN WATER DIVERSION

→→ CWD →→ CWD →→ CWD →→ CWD →

(Not to Scale)



NOTE:
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NOTE:
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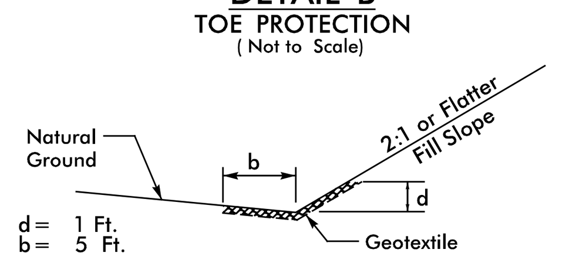
NOTE:
INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

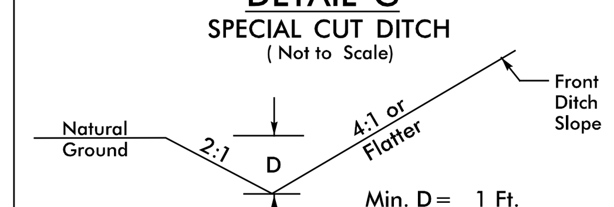
NOTE:
PLACE MATTING ON ALL CUT AND FILL SLOPES THAT ARE GREATER THAN 3:1.

DETAIL B
TOE PROTECTION
(Not to Scale)



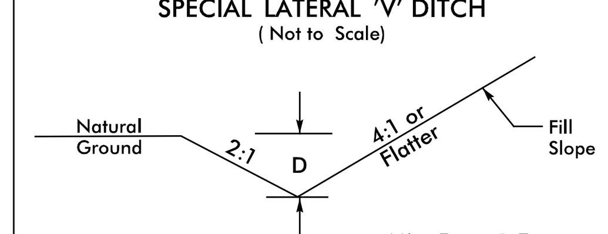
FROM STA. 38+00 TO STA. 39+72 -L- LT
FROM STA. 38+00 TO STA. 39+50 -L- RT

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 41+50 TO STA. 42+50 -L- LT
FROM STA. 44+50 TO STA. 45+50 -L- LT
FROM STA. 15+00 TO STA. 15+20 -Y2- LT

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



FROM STA. 42+50 TO STA. 43+60 -L- LT
FROM STA. 43+60 TO STA. 44+50 -L- LT
FROM STA. 16+65 TO STA. 17+00 -Y2- LT

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 6

5/14/99

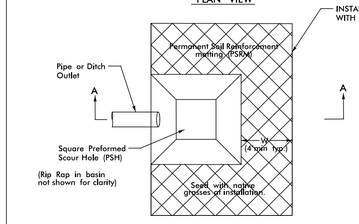
PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-20/CONST.7
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014

ICA Engineering
5121 Kingdom Way,
Suite 100
Raleigh, NC 27607
NC License No: F-0258

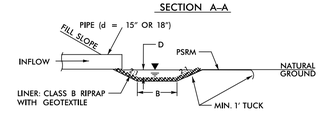
PREFORMED SCOUR HOLE
*NOT TO SCALE

PLAN VIEW



B= 5
D= 2
W= 5

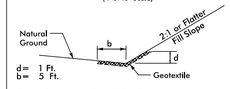
SECTION A-A



308

STA. 57+15 -L- LT

DETAIL B
TOE PROTECTION
(Not to Scale)



d= 1 Ft.
b= 5 Ft.
Type of Liner = Class B Rip-Rap

FROM STA. 54+00 TO STA. 57+00 -L- LT

-Y-
PI Sta 44+63.14
△ = 12° 28' 03.6" (LT)
D = 0° 29' 15.8"
L = 2556.26'
T = 1283.20'
R = 11,747.41'

LINDA SUE TADLOCK

NAD 83/NSRS 2007

DECK DRAINS REQUIRED
6" DIAMETER SCUPPERS ON 12' CENTERS
FROM STA. 57+20 TO STA. 58+16 RT. & LT.
FROM STA. 59+61 TO STA. 60+57 RT. & LT.
FROM STA. 60+67 TO STA. 60+79 RT. & LT.

65 x 29 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
14 ft. weir
ID 7.1

7
DAVID W. & MARY Q. MOOSE

TOE PROTECTION W/CLASS B RIP RAP SEE DETAIL B

BEGIN SBG
STA. 55+00 -L- LT & RT

END SBG
STA. 57+21 -L- LT & RT

LATERAL 3' BASE DITCH w/CLASS B RIP RAP SEE DETAIL J

CLASS I RIP RAP @ EMBANKMENT SEE DETAIL K

-L- POT 61+79.40 =
-Y- POC 44+25.11

BEGIN APPROACH SLAB
-L- POT 57+31.40

BEGIN BRIDGE
-L- POT 57+45.40

TIE TO EXIST. FENCE

REMOVE CABLE GUIDERAIL FROM -Y- STA 40+50 TO STA 48+00

PROPOSED GUARDRAIL

SPECIAL CUT DITCH SEE DETAIL O

TO SALISBURY

HIGH BRIDGE, LLC

9

END APPROACH SLAB
-L- POT 62+89.40

PROPOSED MSE WALL

RESTORE EXISTING DITCH ONCE MSE WALL IS COMPLETE

TIE TO EXIST. FENCE

END BRIDGE
-L- POT 62+75.40

68 x 34 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
17 ft. weir
ID 7.2

TO CHARLOTTE

PROPOSED GUARDRAIL

CLASS B RIP RAP
EST 5 TONS
EST 14 SY GT.

HIGH BRIDGE, LLC

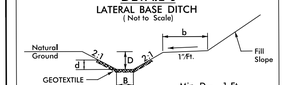
8
EUGENE O. & IRENE MOOSE

DETAIL O
MEDIAN V DITCH
(Not to Scale)

DITCH GRADE = 0.3%

FROM STA. 39+73 (ELEV. = 668.39) TO STA. 44+00 (ELEV. = 669.70) -Y-

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
B = 3 Ft.
b = 5 Ft.

*When B is < 6.0'
Type of Liner = Class B Rip-Rap

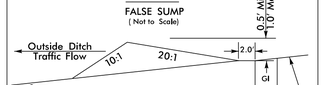
FROM STA. 51+00 TO STA. 58+75 -L- RT

DETAIL K
RIP RAP AT EMBANKMENT
(Not to Scale)

Type of Liner = 8 TONS CL I Rip-Rap
Geotextile = 12 sy

FROM STA. 58+75 TO STA. 58+80 -L- RT

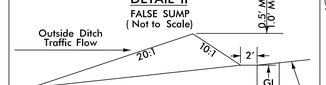
DETAIL I
FALSE SUMP
(Not to Scale)



S = Ditch Slope

STA. 63+40 -L- LT

DETAIL II
FALSE SUMP
(Not to Scale)



S = Ditch Slope

STA. 63+40 -L- RT

NOTE:
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NOTE:
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NOTE:
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NOTE:
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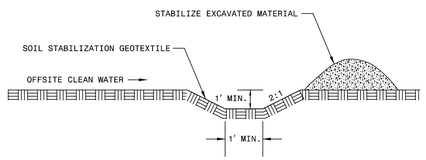
NOTE:
PLACE MATTING ON ALL CUT AND FILL SLOPES THAT ARE GREATER THAN 3:1.

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 7

CLEAN WATER DIVERSION
→ CWD → CWD → CWD → CWD →
(Not to Scale)



-MATCHLINE- -L- STA. 51+00.00 SEE SHEET NO. 6

-MATCHLINE- -L- STA. 64+00.00 SEE SHEET NO. 8

9/10/2014
C:\Projects\Erosion Control\cadd\w5516_hyd_erosion_final_psh_07.dgn
[CA ENGINEERING, INC.]

5/14/99

NAD 83/NSRS 2007

ICA Engineering	5121 Kingdom Way, Suite 100 Raleigh, NC 27607 NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-21/CONST.8
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014

HIGH BRIDGE, LLC

65 70 75

9 HIGH BRIDGE, LLC

9 HIGH BRIDGE, LLC

–MATCHLINE– –L– STA. 64+00.00 SEE SHEET NO. 7

–MATCHLINE– –L– STA. 77+00.00 SEE SHEET NO. 9

TIE TO EXIST. FENCE

120 x 20 x 3
ID 8.2

END WOVEN WIRE FENCE
–L– POT STA.73+00.00 LT & RT

CUT DITCH W/PSRM
SEE DETAIL C

N 89° 46' 27.0" E

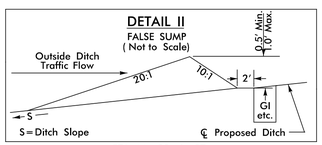
88 x 20 x 3
ID 8.3

115 x 20 x 3
ID 8.4

CUT DITCH W/PSRM
SEE DETAIL C

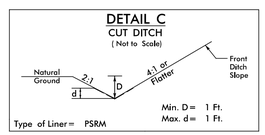
HIGH BRIDGE, LLC

DETAIL II
FALSE SUMP
(Not to Scale)



STA. 66+90 –L– RT

DETAIL C
CUT DITCH
(Not to Scale)



FROM STA. 63+50 TO STA. 77+50 –L– LT
FROM STA. 67+00 TO STA. 77+50 –L– RT

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.

NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN R/W OR EASEMENT.

NOTE:
INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

NOTE:
PLACE MATTING ON ALL CUT AND FILL SLOPES THAT ARE GREATER THAN 3:1.

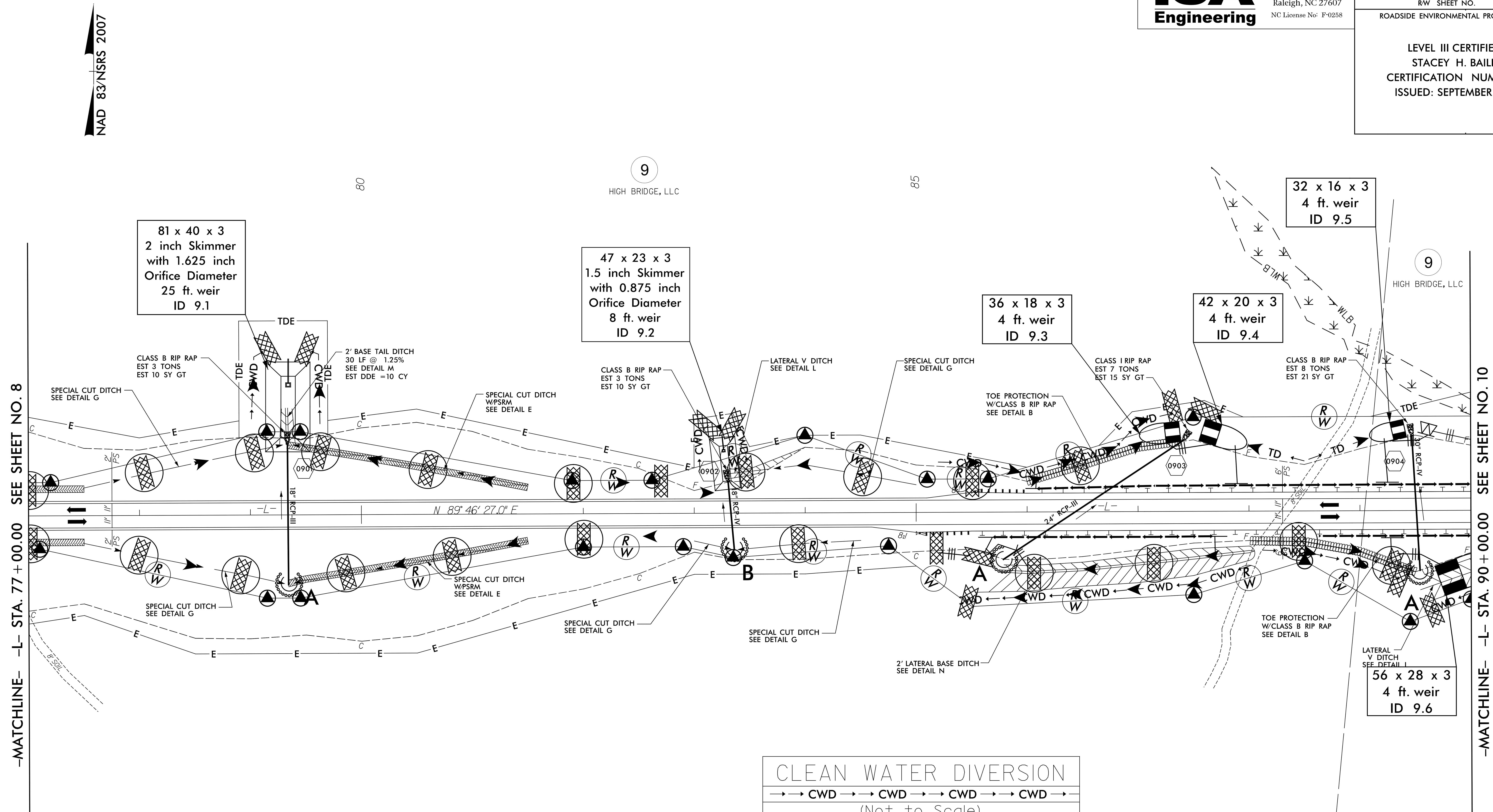
FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 8

9/10/2014
C:\Projects\Erosion_Control\eddy\w5516_hyd_erosion_final_psh_08.dgn
ICA ENGINEERING INC.

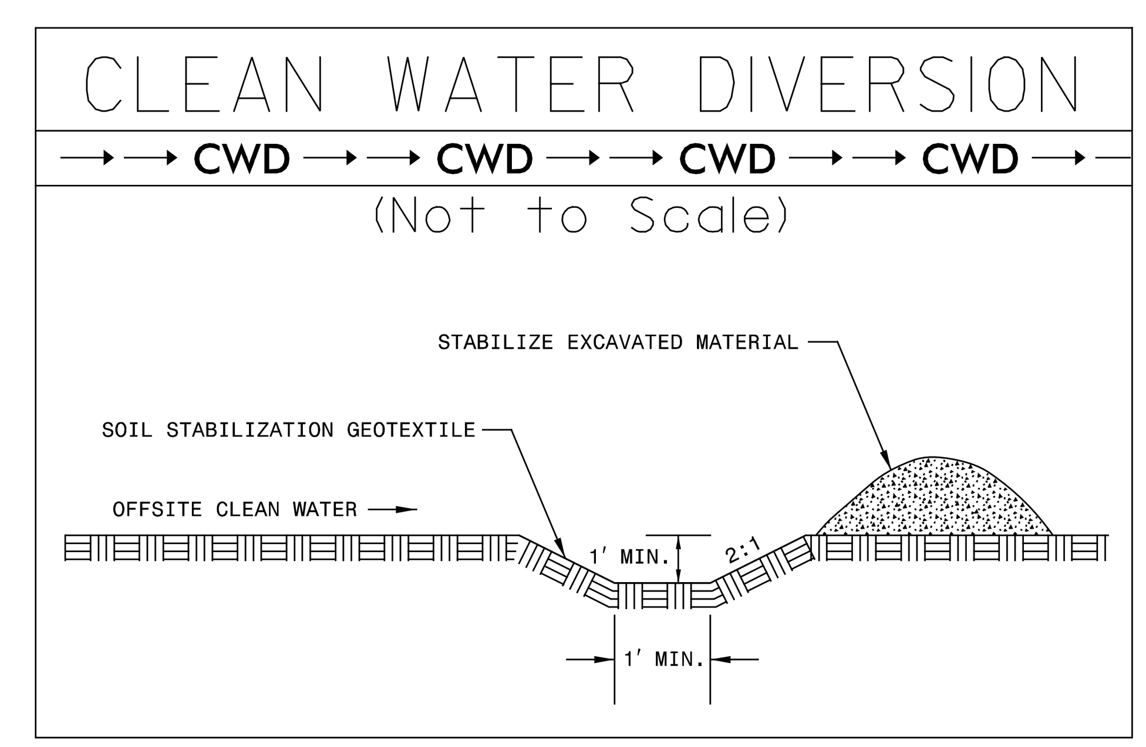
ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

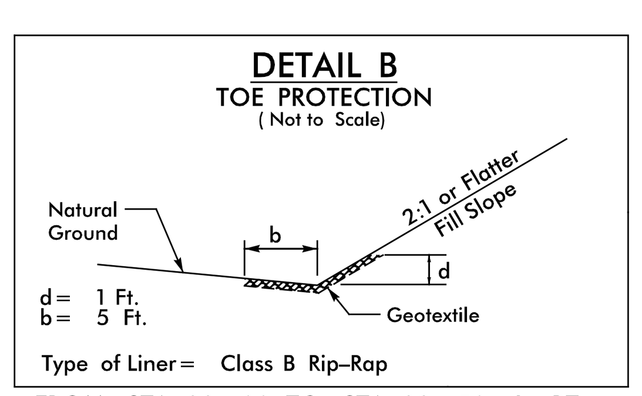
PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-22/CONST.9
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014

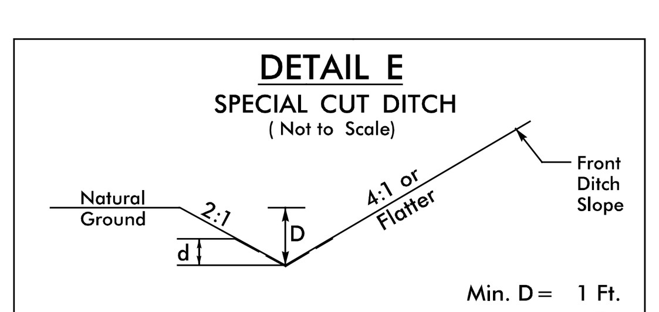


NAD 83/NSRS 2007
9
HIGH BRIDGE, LLC
80
85
81 x 40 x 3
2 inch Skimmer
with 1.625 inch
Orifice Diameter
25 ft. weir
ID 9.1
47 x 23 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
8 ft. weir
ID 9.2
36 x 18 x 3
4 ft. weir
ID 9.3
42 x 20 x 3
4 ft. weir
ID 9.4
32 x 16 x 3
4 ft. weir
ID 9.5
56 x 28 x 3
4 ft. weir
ID 9.6
CLASS B RIP RAP
EST 3 TONS
EST 10 SY GT
2' BASE TAIL DITCH
30 LF @ 1.25%
SEE DETAIL M
EST DDE =10 CY
SPECIAL CUT DITCH
SEE DETAIL G
SPECIAL CUT DITCH
W/PSRM
SEE DETAIL E
LATERAL V DITCH
SEE DETAIL L
TOE PROTECTION
W/CLASS B RIP RAP
SEE DETAIL B
CLASS I RIP RAP
EST 7 TONS
EST 15 SY GT
CLASS B RIP RAP
EST 8 TONS
EST 21 SY GT
2' LATERAL BASE DITCH
SEE DETAIL N
LATERAL
V DITCH
SEE DETAIL L
N 89° 46' 27.0" E
-L-
18" RCP-III
18" RCP-IV
24" RCP-III
30" RCP-IV
0901
0902
0903
0904
TDE
CWD
TD
WLB
A
B
SEE SHEET NO. 8
-MATCHLINE- -L- STA. 77+00.00
SEE SHEET NO. 10
-MATCHLINE- -L- STA. 90+00.00

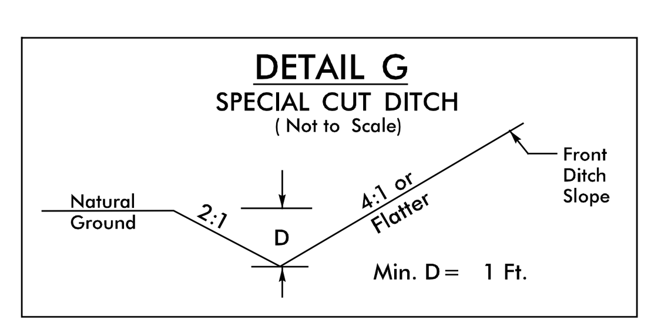




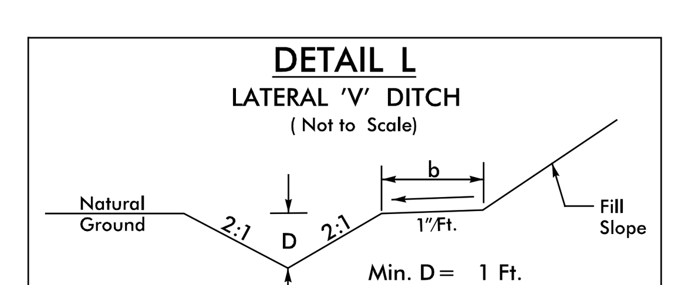
FROM STA. 88+00 TO STA. 89+50 -L- RT
FROM STA. 86+00 TO STA. 87+40 -L- LT



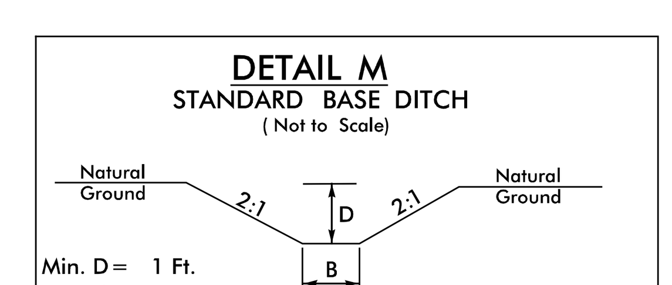
FROM STA. 79+34 TO STA. 81+50 -L- LT
FROM STA. 79+34 TO STA. 81+50 -L- RT



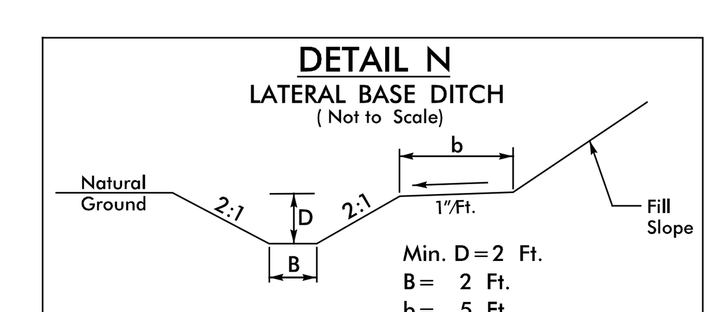
FROM STA. 77+50 TO STA. 79+34 -L- LT
FROM STA. 77+50 TO STA. 79+34 -L- RT
FROM STA. 83+00 TO STA. 83+36 -L- RT
FROM STA. 83+36 TO STA. 84+50 -L- RT
FROM STA. 84+00 TO STA. 85+00 -L- LT



FROM STA. 83+30 TO STA. 84+00 -L- LT
FROM STA. 89+54 TO STA. 90+00 -L- RT



STA. 79+34 -L- LT



FROM STA. 85+75 TO STA. 88+00 -L- RT

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.

NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN R/W OR EASEMENT.

NOTE:
INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

NOTE:
PLACE MATTING ON ALL CUT AND FILL SLOPES THAT ARE GREATER THAN 3:1.

FINAL EROSION CONTROL
FOR CONSTRUCTION SHEET 9

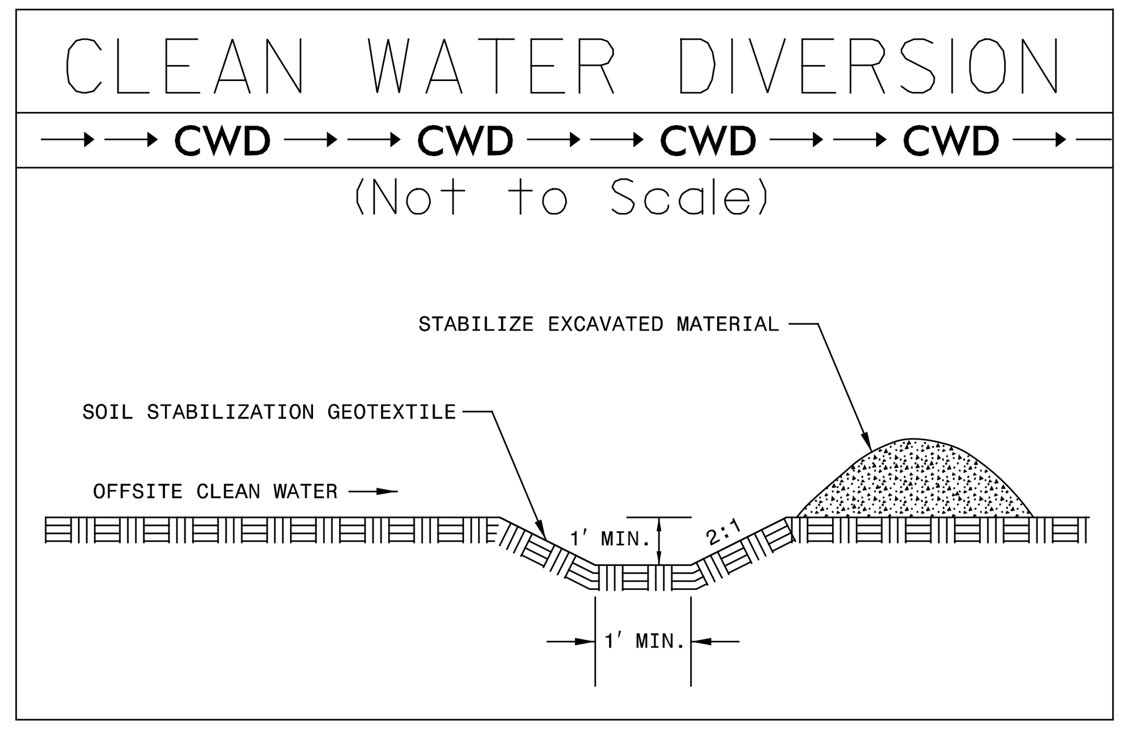
PROJECT REFERENCE NO. W-5516
SHEET NO. EC-23/CONST10
R/W SHEET NO.
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

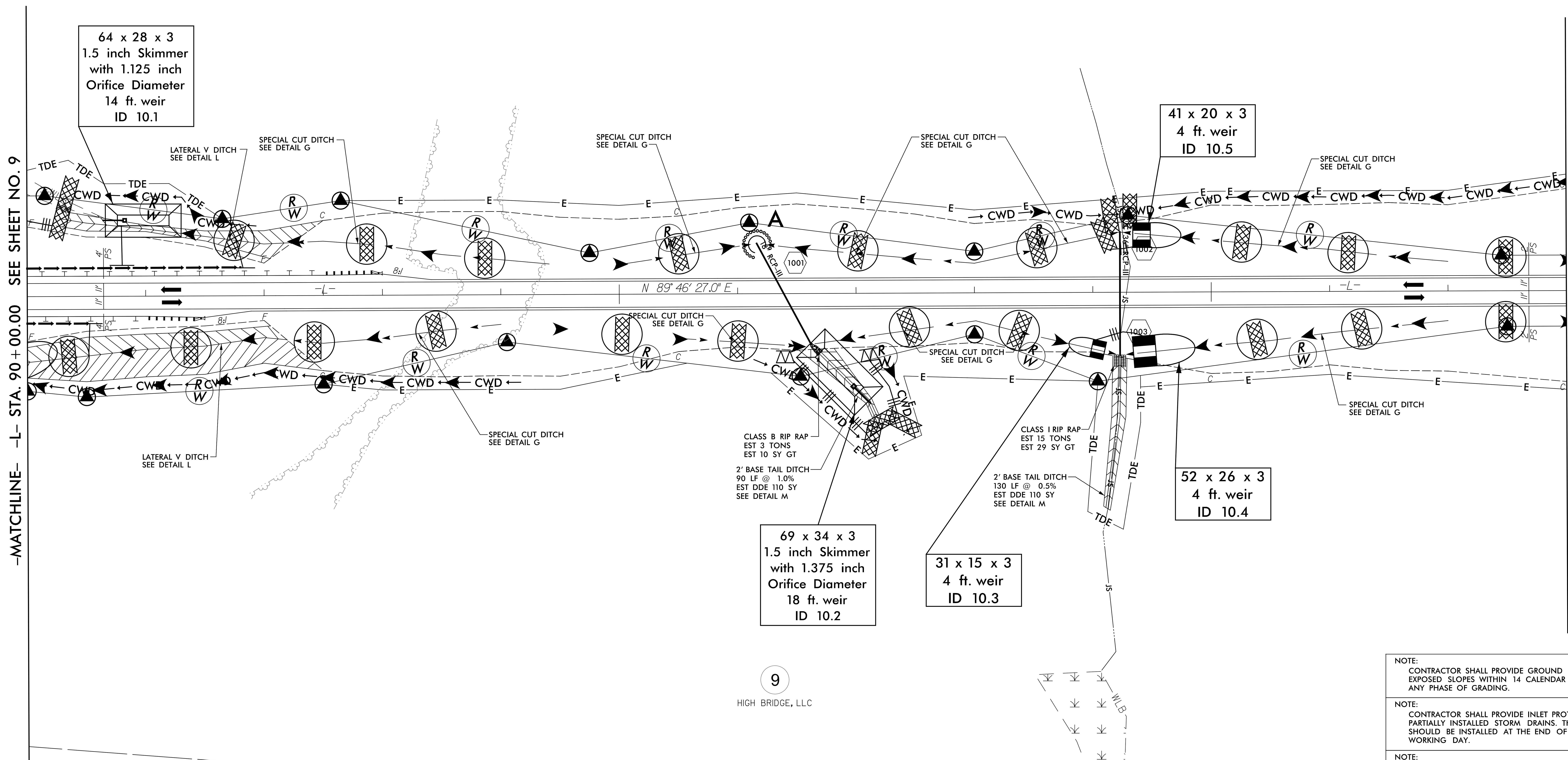
LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: OCTOBER 24, 2014

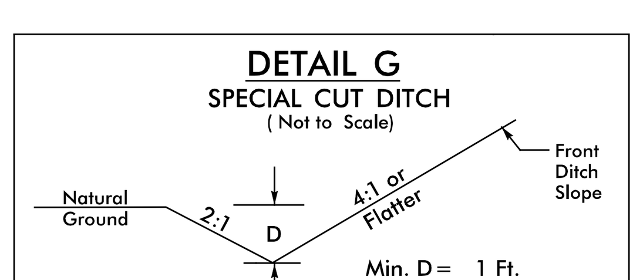
REVISIONS

10-22-14 REVISED STATION/OFFSET CALLOUTS ON PARCEL 9

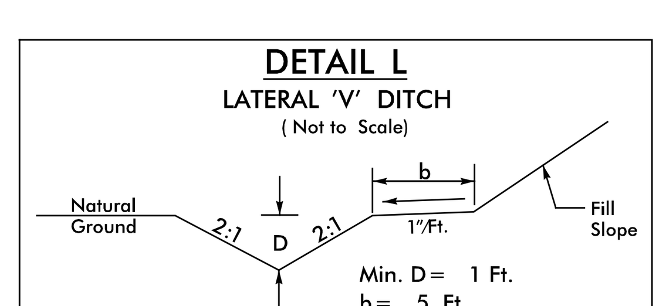


NAD 83/NSRS 2007

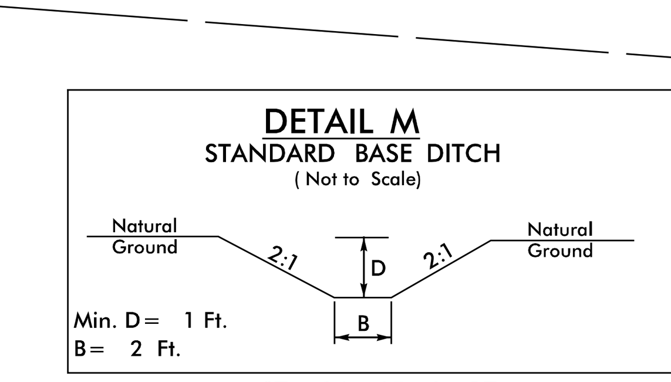




FROM STA. 92+00 TO STA. 94+50 -L- LT
FROM STA. 92+00 TO STA. 94+00 -L- RT
FROM STA. 95+00 TO STA. 96+12 -L- LT
FROM STA. 95+50 TO STA. 96+65 -L- RT
FROM STA. 96+12 TO STA. 98+00 -L- LT
FROM STA. 96+65 TO STA. 98+00 -L- RT
FROM STA. 98+00 TO STA. 99+23 -L- LT
FROM STA. 98+00 TO STA. 99+23 -L- RT
FROM STA. 99+23 TO STA. 102+50 -L- LT
FROM STA. 99+23 TO STA. 102+00 -L- RT



FROM STA. 90+00 TO STA. 92+00 -L- RT
FROM STA. 90+25 TO STA. 92+00 -L- LT



STA. 96+65 -L- RT
STA. 99+23 -L- RT

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

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NOTE:
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NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN R/W OR EASEMENT.

NOTE:
INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

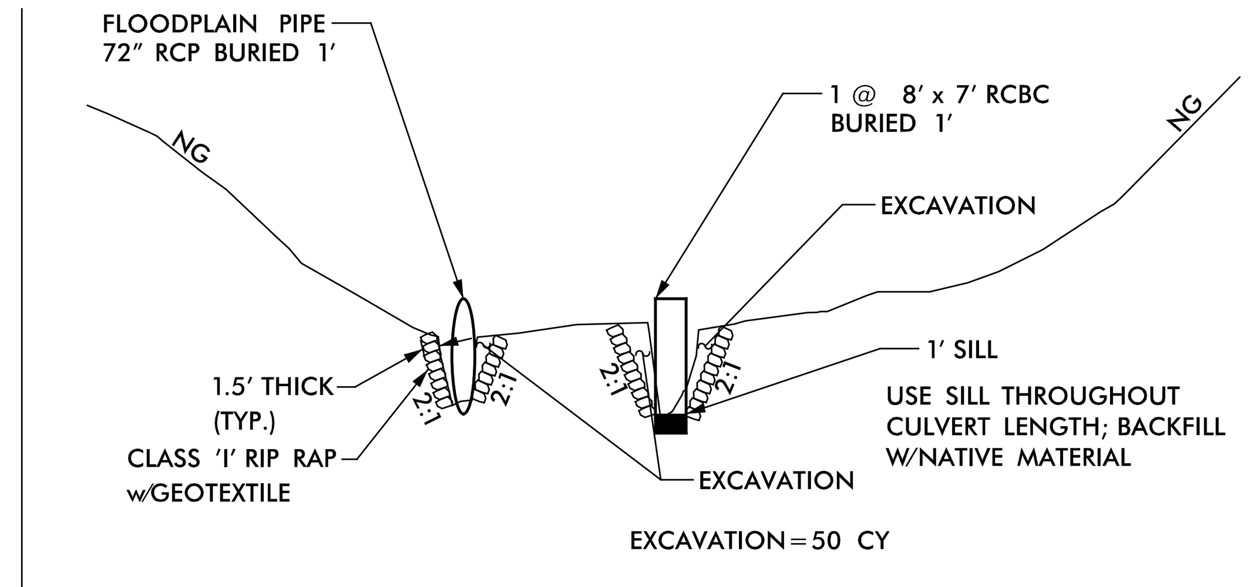
NOTE:
PLACE MATTING ON ALL CUT AND FILL SLOPES THAT ARE GREATER THAN 3:1.

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 10

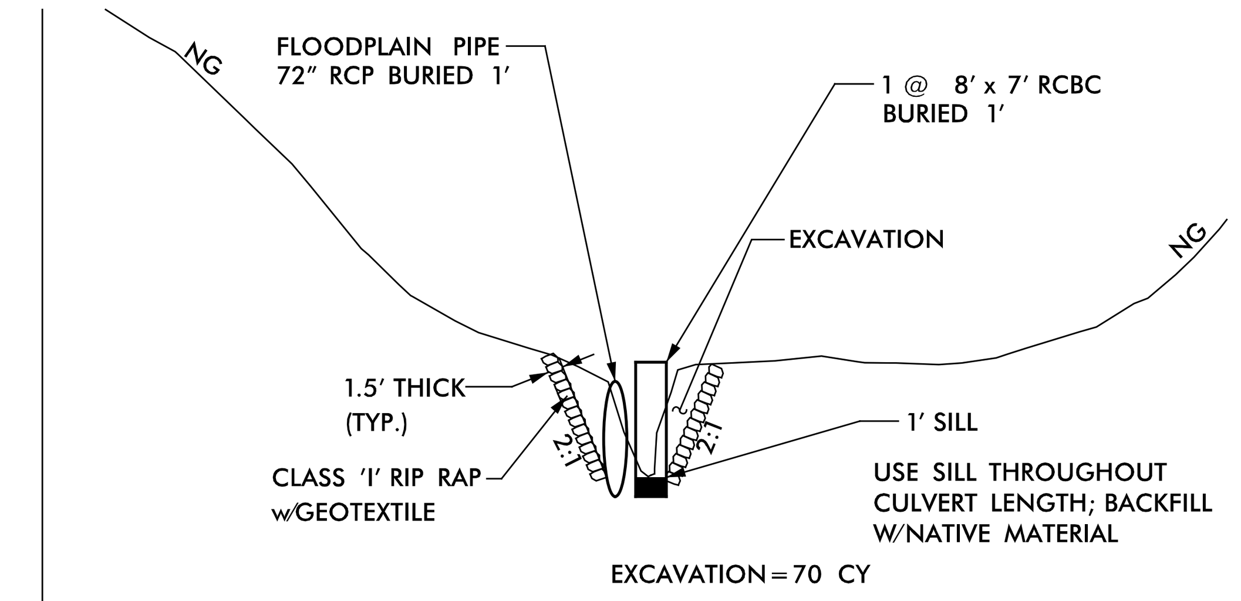
ICA Engineering	PROJECT REFERENCE NO.	SHEET NO.
5121 Kingdom Way, Suite 100, Raleigh, NC 27607, NC License No: F-0258	W-5516	EC-24/CONST.II
	R/W SHEET NO.	
	ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: MAY 26, 2015

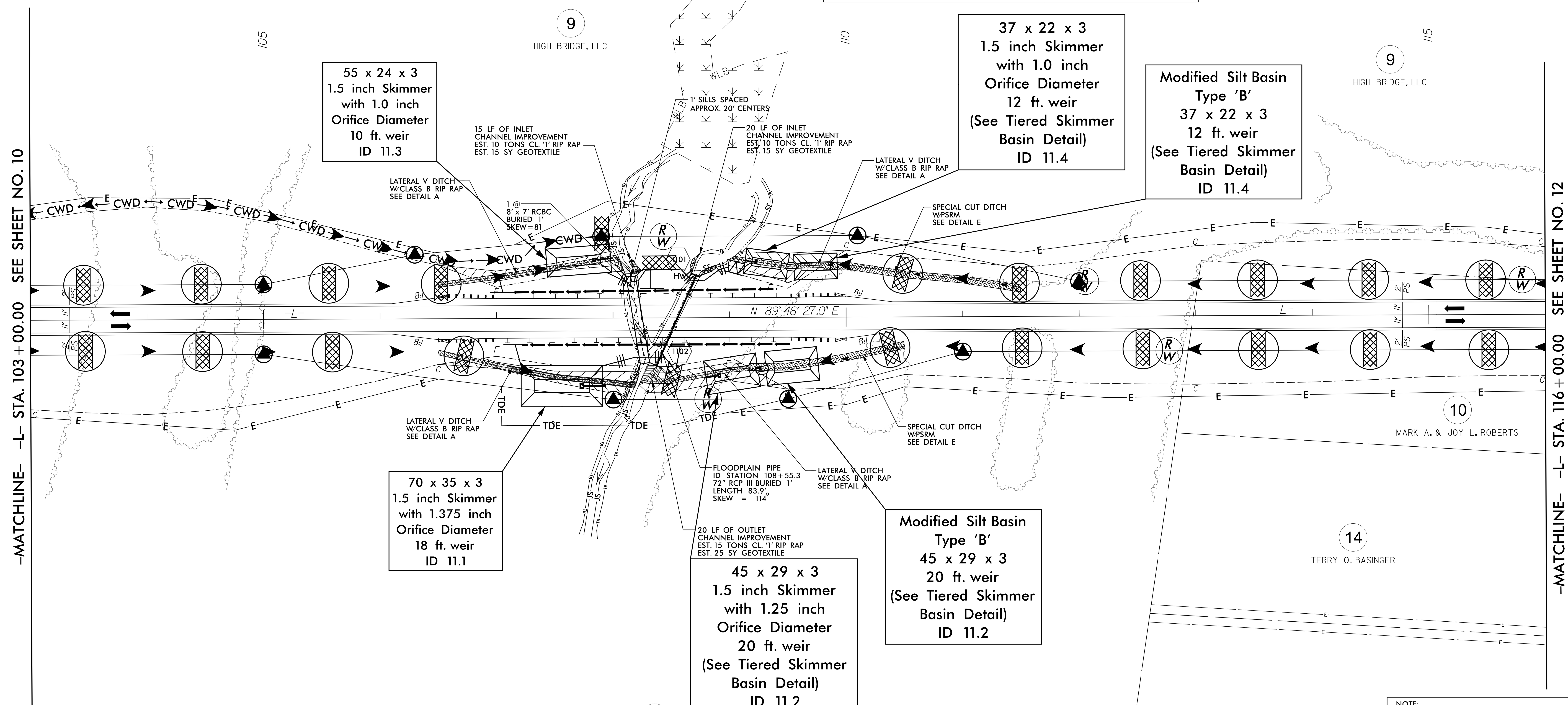
NAD 83/NSRS 2007

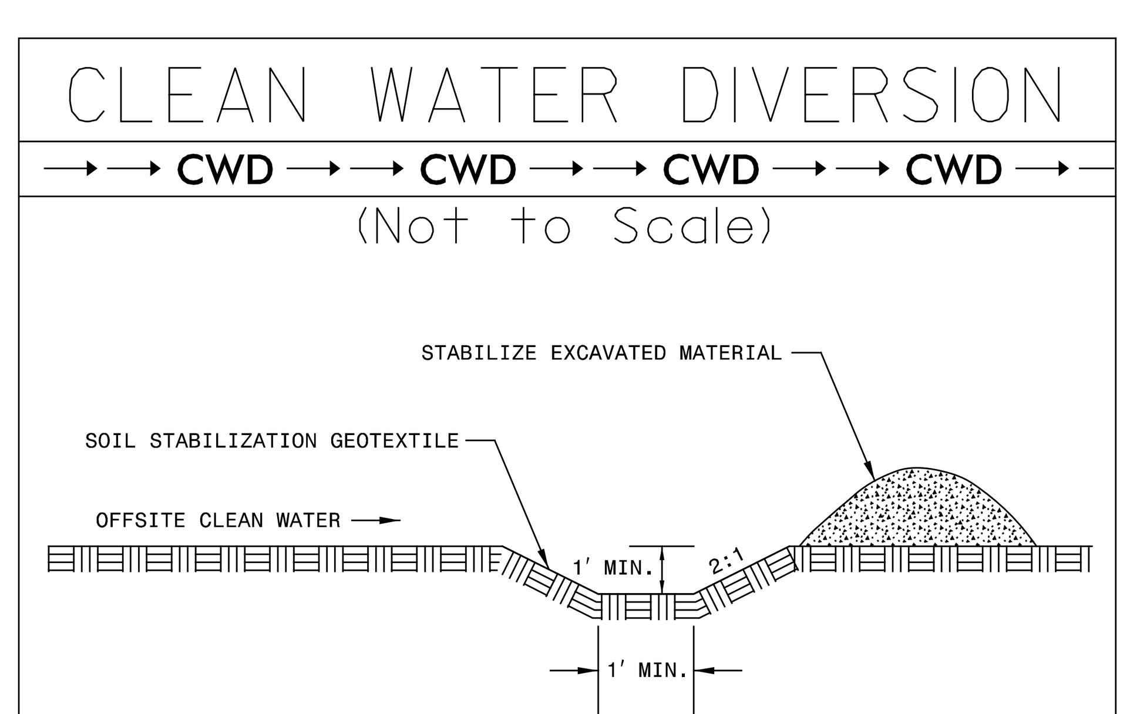


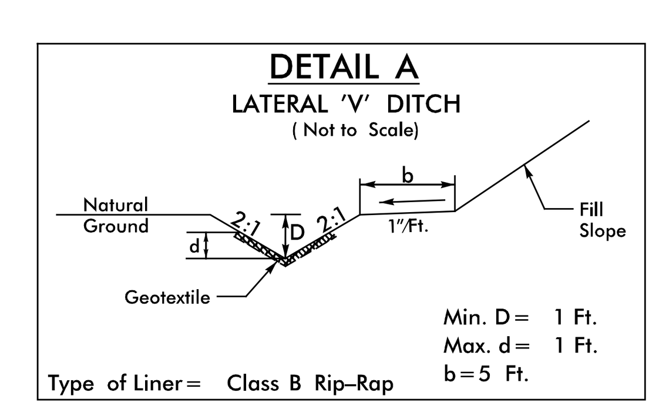
INLET CHANNEL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)



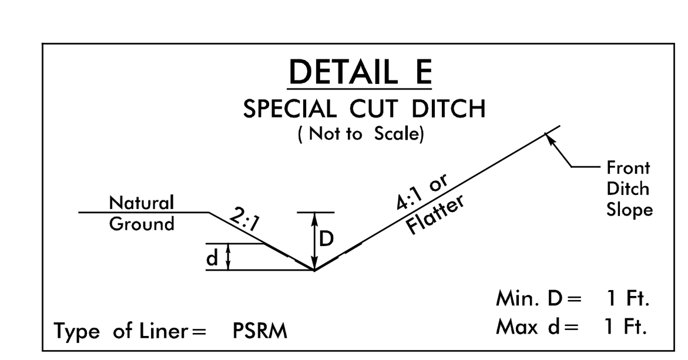
OUTLET CHANNEL
(LOOKING DOWNSTREAM)
(NOT TO SCALE)







FROM STA. 106+50 TO STA. 108+04 -L- LT
FROM STA. 106+50 TO STA. 108+20 -L- RT
FROM STA. 108+23 TO STA. 109+17 -L- RT
FROM STA. 109+00 TO STA. 110+00 -L- LT



FROM STA. 109+50 TO STA. 110+50 -L- RT
FROM STA. 110+00 TO STA. 111+50 -L- LT

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.

NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN RW OR EASEMENT.

NOTE:
INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

NOTE:
PLACE MATTING ON ALL CUT AND FILL SLOPES THAT ARE GREATER THAN 3:1.

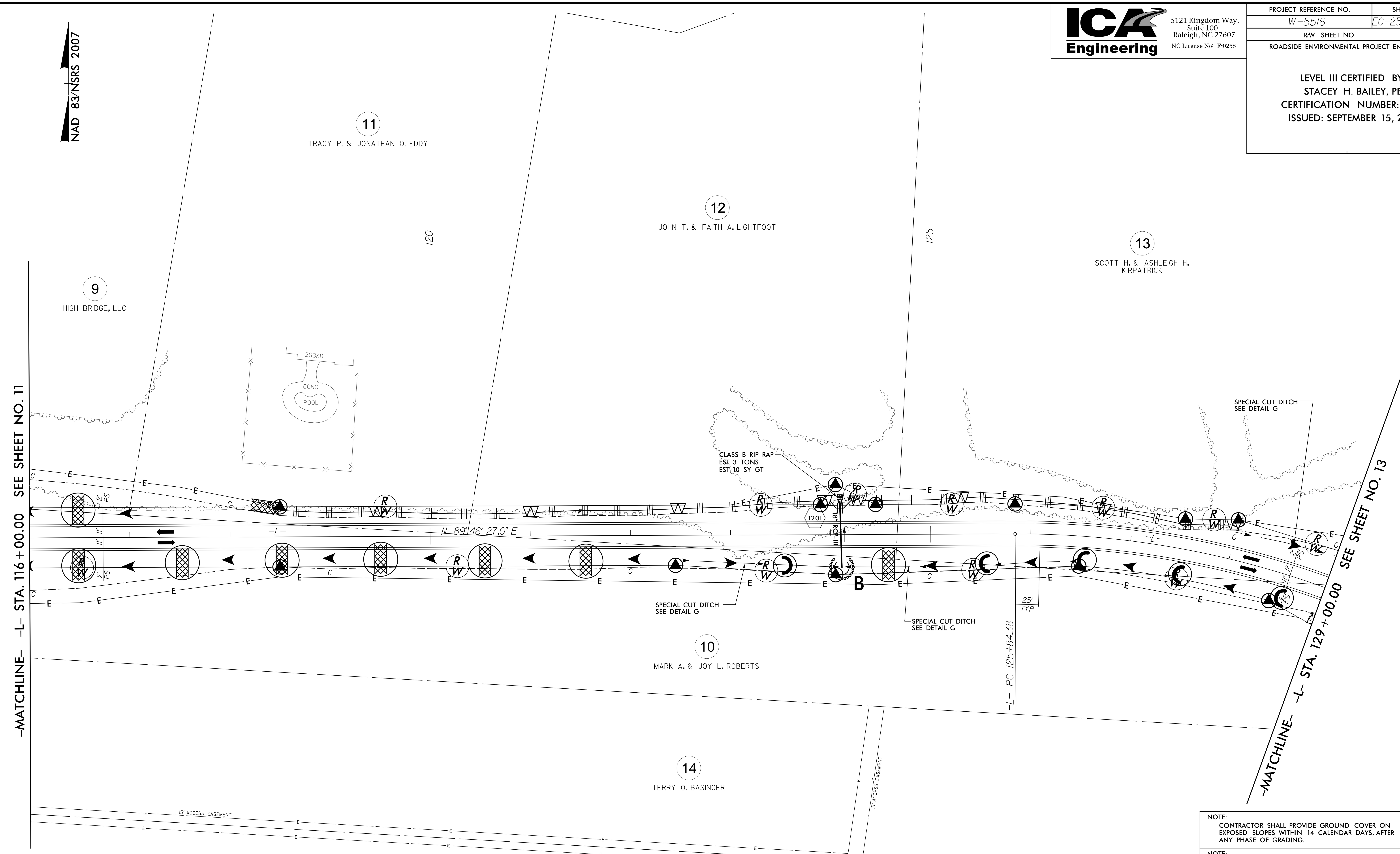
FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 11

5/14/99
6/1/2015

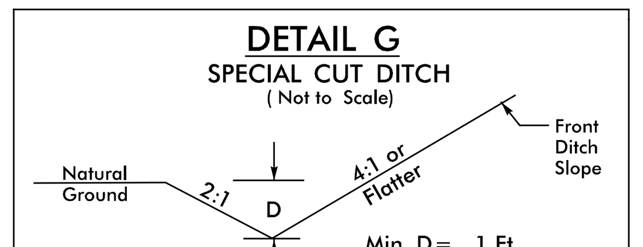
ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-25/CONST.12
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014



DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 122+50 TO STA. 124+10 -L- RT
FROM STA. 124+10 TO STA. 126+50 -L- RT
FROM STA. 128+00 TO STA. 129+00 -L- LT

-L-
PI Sta 133+40.55
Δ = 80° 04' 24.5" (RT)
D = 6° 21' 58.3"
L = 1,257.79'
T = 756.17'
R = 900.00'
SE = .06
DS = 50 MPH

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.

NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

NOTE:
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NOTE:
INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

NOTE:
PLACE MATTING ON ALL CUT AND FILL SLOPES THAT ARE GREATER THAN 3:1.

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 12

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-26/CONST 13
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014

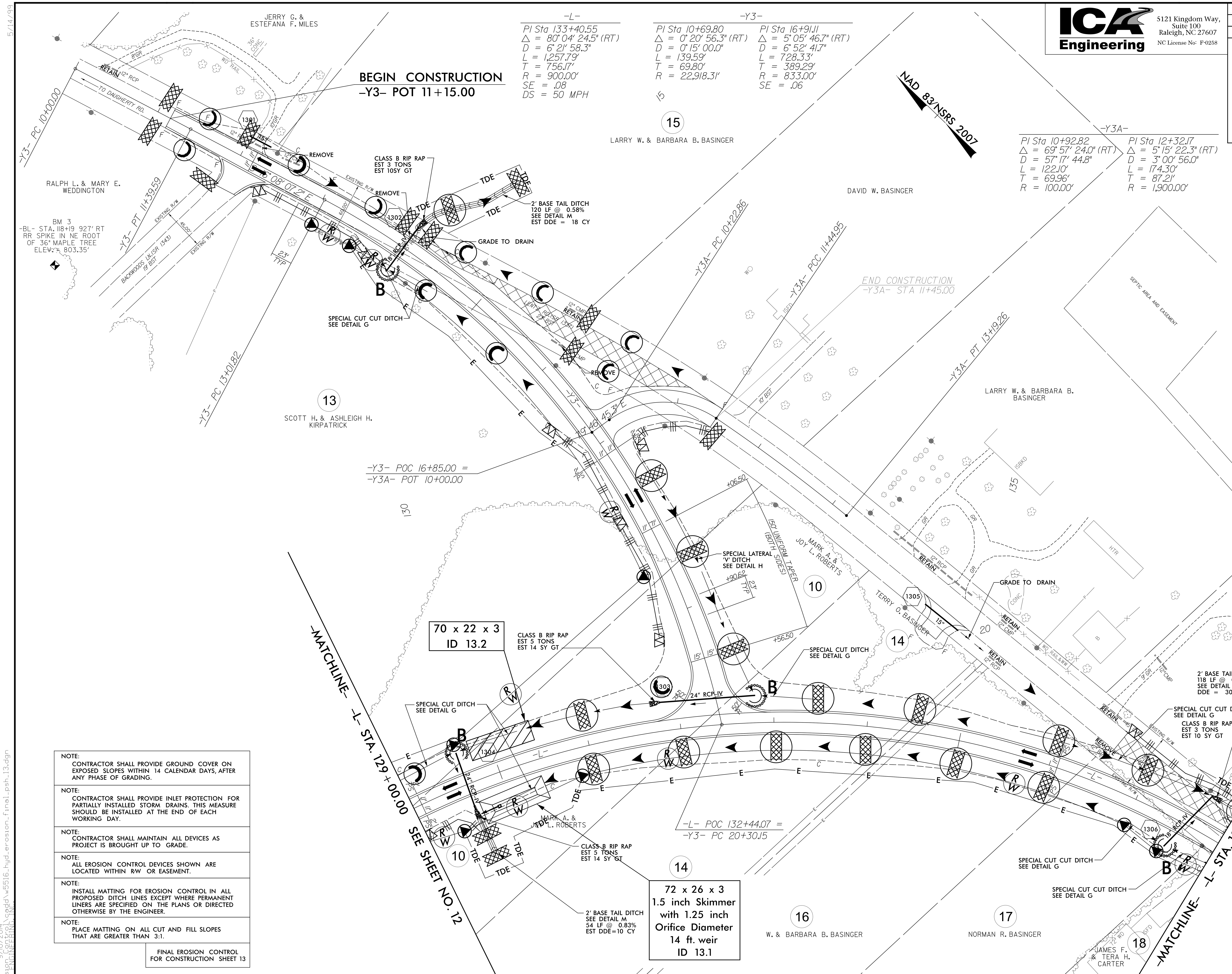
-L-
PI Sta 133+40.55
Δ = 80° 04' 24.5" (RT)
D = 6° 21' 58.3"
L = 1,257.79'
T = 756.17'
R = 900.00'
SE = .08
DS = 50 MPH

-Y3-
PI Sta 10+69.80
Δ = 0° 20' 56.3" (RT)
D = 0° 15' 00.0"
L = 139.59'
T = 69.80'
R = 22,918.31'

PI Sta 16+91.11
Δ = 5° 05' 46.7" (RT)
D = 6° 52' 41.7"
L = 728.33'
T = 389.29'
R = 833.00'
SE = .06

-Y3A-
PI Sta 10+92.82
Δ = 69° 57' 24.0" (RT)
D = 57° 17' 44.8"
L = 122.10'
T = 69.96'
R = 100.00'

PI Sta 12+32.17
Δ = 5° 15' 22.3" (RT)
D = 3° 00' 56.0"
L = 174.30'
T = 87.21'
R = 1,900.00'



DETAIL G
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground — 2:1 — D — 4:1 or Flatter — Front Ditch Slope
Min. D=1 Ft.

FROM STA. 129+00 TO STA. 129+64 -L- LT
FROM STA. 129+64 TO STA. 131+80 -L- LT
FROM STA. 129+61 TO STA. 130+50 -L- RT
FROM STA. 132+80 TO STA. 133+50 -L- LT
FROM STA. 137+00 TO STA. 137+50 -L- LT
FROM STA. 137+50 TO STA. 138+00 -L- RT
FROM STA. 13+50 TO STA. 14+00 -Y3- RT
FROM STA. 14+00 TO STA. 14+50 -Y3- RT

DETAIL M
STANDARD BASE DITCH
(Not to Scale)
Natural Ground — 2:1 — D — B — 2:1 — Natural Ground
Min. D=1 Ft.
B= 2 Ft.

STA. 129+61 -L- RT
STA. 14+00 -Y3- LT
STA. 137+70 -L- LT

DETAIL H
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground — 2:1 — D — 4:1 or Flatter — Fill Slope
Min. D= 1 Ft.

FROM STA. 17+30 TO STA. 20+08 -Y3- LT

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.

NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN R/W OR EASEMENT.

NOTE:
INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

NOTE:
PLACE MATTING ON ALL CUT AND FILL SLOPES THAT ARE GREATER THAN 3:1.

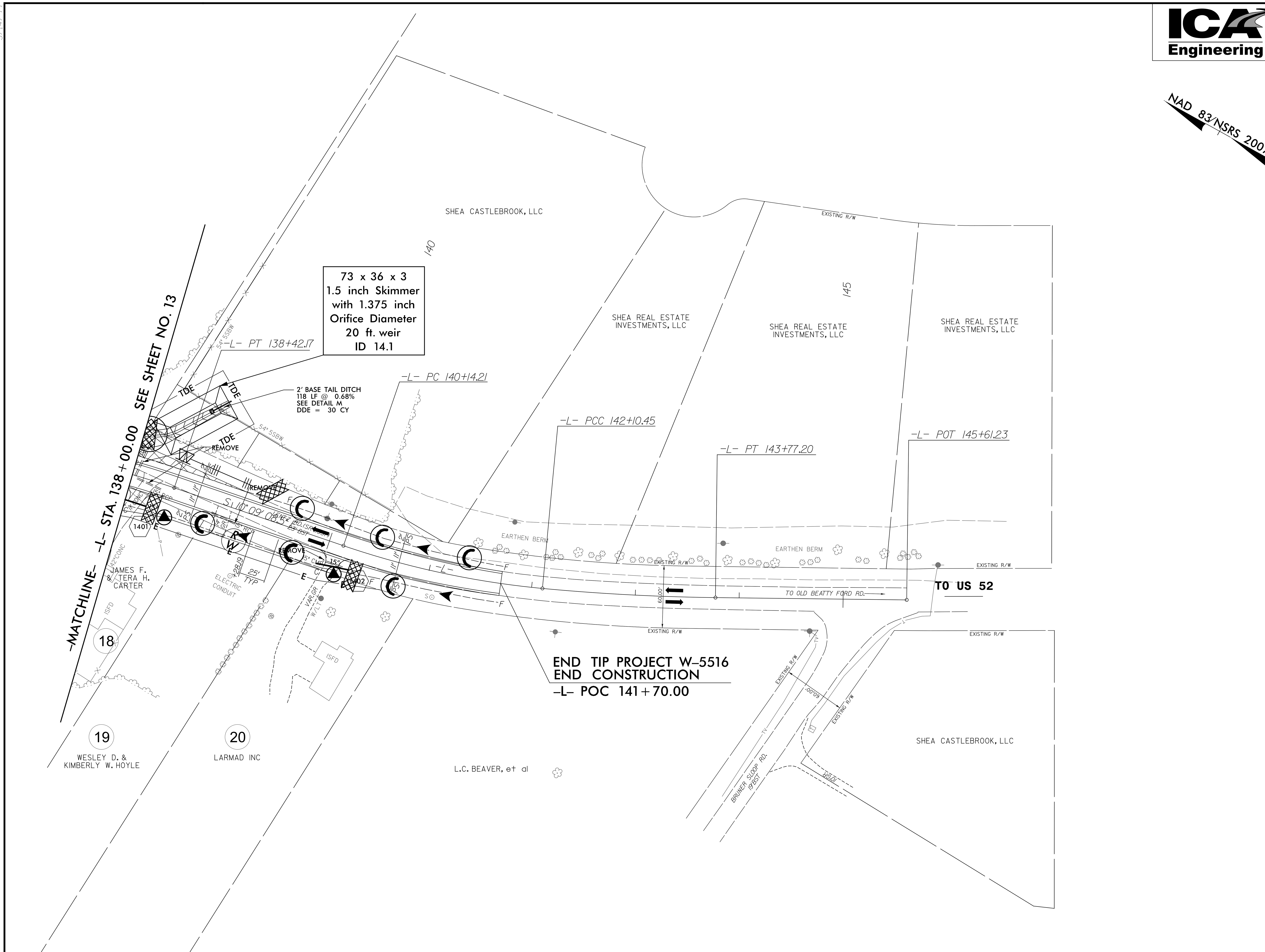
FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 13

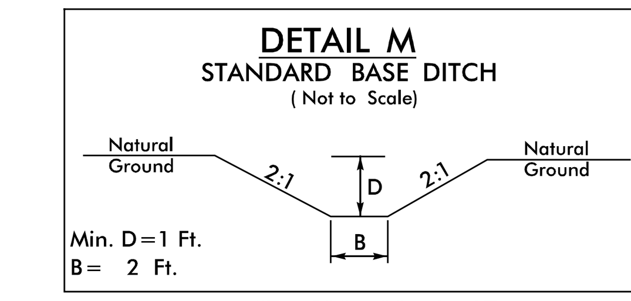
ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-27/CONST14
R/W SHEET NO.	

ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014





STA. 138+00 -L- LT

-L-

PI Sta 133+40.55	PI Sta 141+12.79	PI Sta 142+93.87
Δ = 80° 04' 24.5" (RT)	Δ = 13° 29' 54.2" (LT)	Δ = 4° 41' 00.0" (LT)
D = 6° 21' 58.3"	D = 6° 52' 41.7"	D = 2° 48' 31.0"
L = 1,257.79'	L = 196.25'	L = 166.75'
T = 756.17'	T = 98.58'	T = 83.42'
R = 900.00'	R = 833.00'	R = 2,040.00'
SE = .08	SE = .06	
DS = 50 MPH	DS = 50 MPH	

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.

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NOTE:
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NOTE:
INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

NOTE:
PLACE MATTING ON ALL CUT AND FILL SLOPES THAT ARE GREATER THAN 3:1.

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 14

PAVEMENT REMOVAL

ICA Engineering
5121 Kingdom Way, Suite 100
Raleigh, NC 27607
NC License No: F-0258

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-28/CONST.2B
R/W SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

LEVEL III CERTIFIED BY:
STACEY H. BAILEY, PE
CERTIFICATION NUMBER: 3074
ISSUED: SEPTEMBER 15, 2014

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.

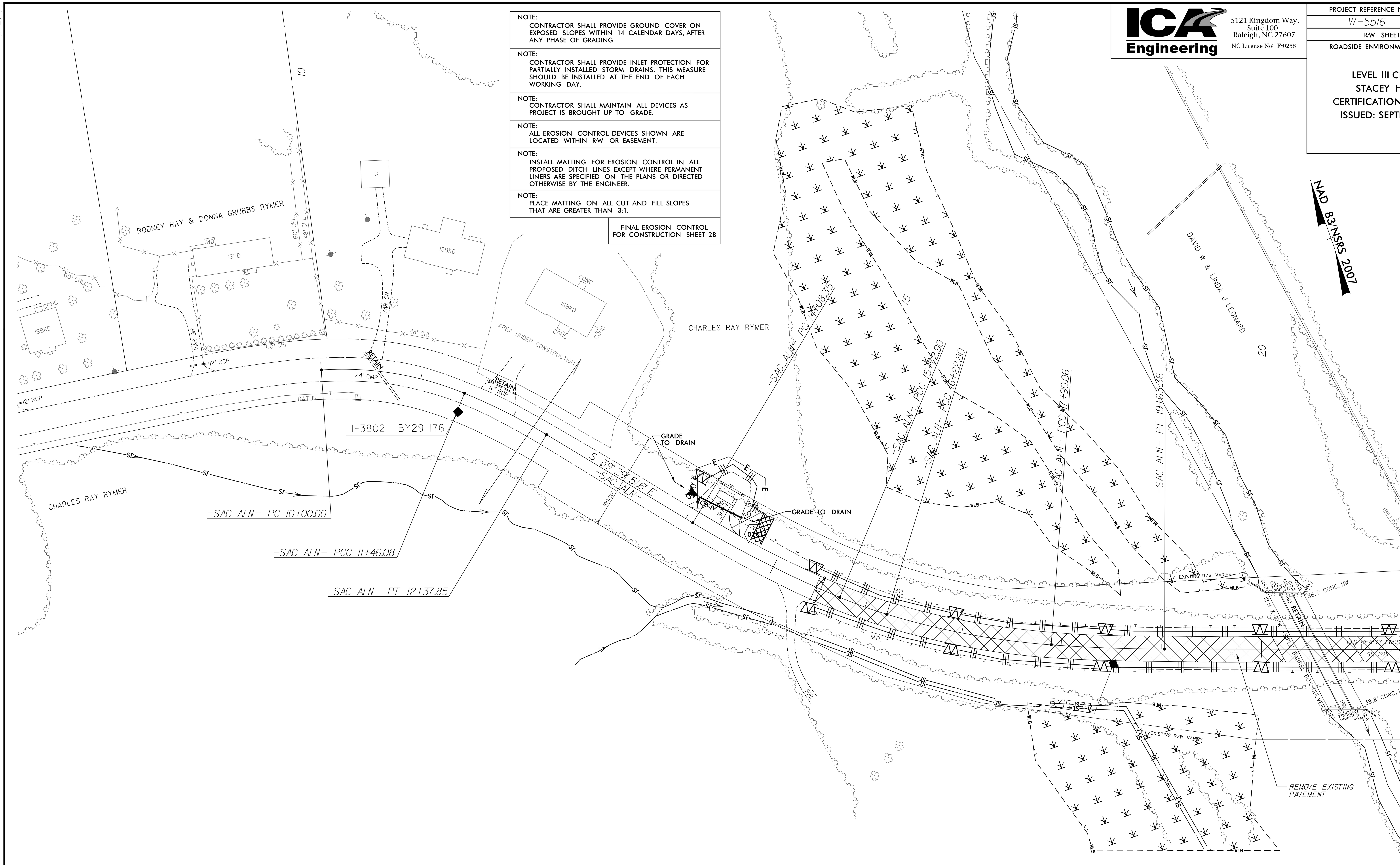
NOTE:
CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN R/W OR EASEMENT.

NOTE:
INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

NOTE:
PLACE MATTING ON ALL CUT AND FILL SLOPES THAT ARE GREATER THAN 3:1.

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 2B



-SAC_ALN-

PI Sta 10+74.34	PI Sta 11+92.06	PI Sta 14+90.77	PI Sta 15+97.87
Δ = 26° 09' 21.6" (RT)	Δ = 8° 45' 47.1" (RT)	Δ = 8° 27' 18.8" (LT)	Δ = 5° 43' 07.5" (LT)
D = 17° 54' 17.8"	D = 9° 32' 57.5"	D = 5° 08' 19.1"	D = 11° 27' 33.0"
L = 146.08'	L = 91.77'	L = 164.54'	L = 49.91'
T = 74.34'	T = 45.97'	T = 82.42'	T = 24.97'
R = 320.00'	R = 600.00'	R = 1,115.00'	R = 500.00'

PI Sta 17+06.78	PI Sta 18+46.73
Δ = 12° 46' 38.3" (LT)	Δ = 4° 03' 27.3" (LT)
D = 7° 38' 22.0"	D = 3° 34' 51.5"
L = 167.25'	L = 113.31'
T = 83.98'	T = 56.68'
R = 750.00'	R = 1,600.00'

PROJECT REFERENCE NO.	SHEET NO.
W-5516	EC-29/CONST.2C
R/W SHEET NO.	

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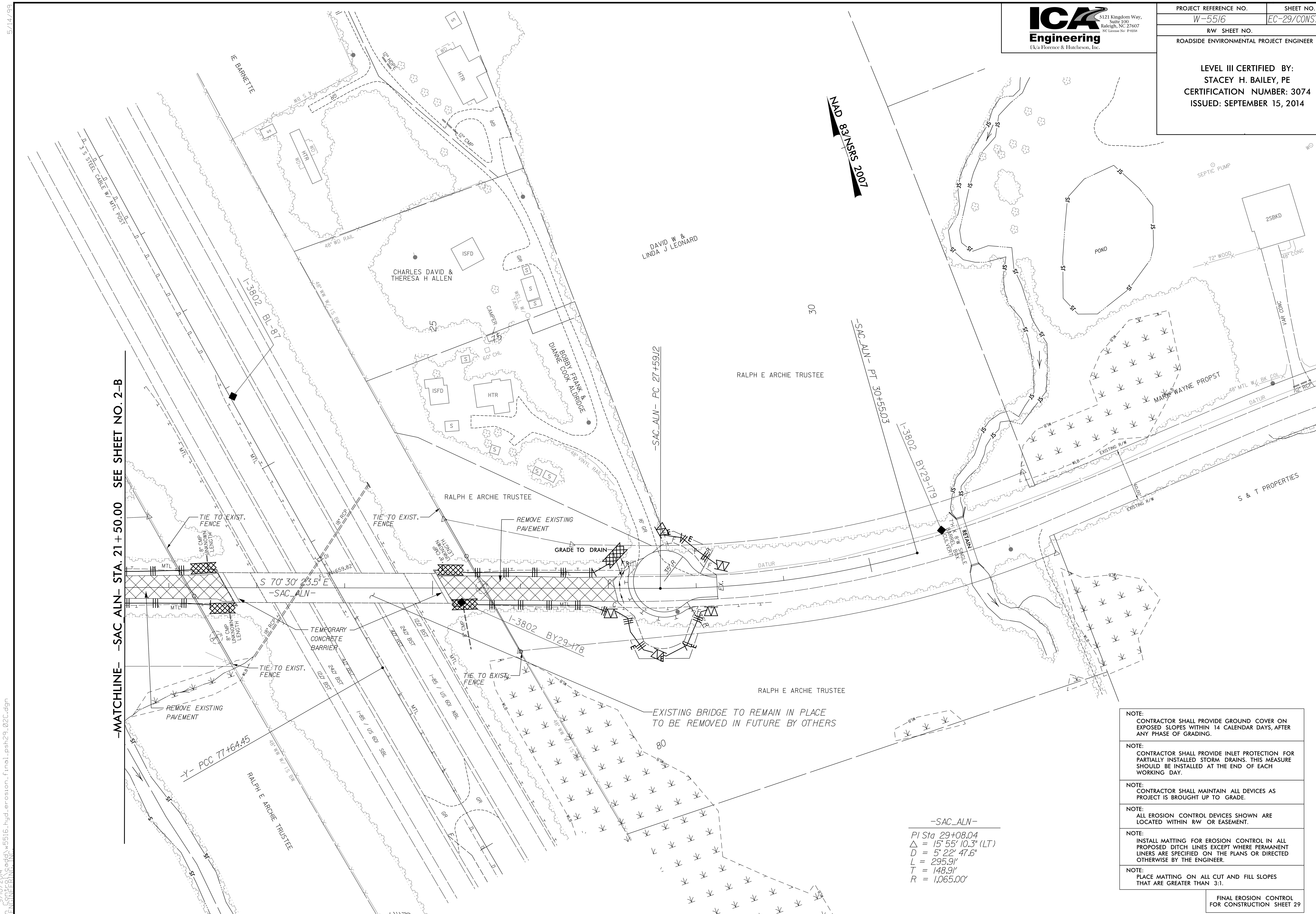

-SAC_ALN-
PI Sta 29+08.04
Δ = 15° 55' 10.3" (LT)
D = 5° 22' 47.6"
L = 295.91'
T = 148.91'
R = 1,065.00'

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

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NOTE:
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NOTE:
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NOTE:
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FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 29