TIP PROJECT: P-5208A

CONTRACT: C203206

STATE OF NORTH CAROLINA
NC RAIL DIVISION

PLAN FOR PROPOSED
RAILROAD ROADBED EROSION CONTROL

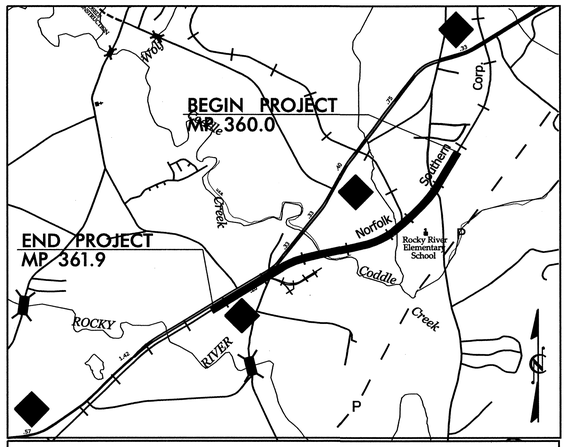
CABARRUS COUNTY

LOCATION: NCRR /NS MAINLINE RAILROAD ROADBED FROM CP "HAYDOCK" (MP 360.0) TO SOUTH OF PHARR MILL RD (SR 1158, MP 361.9)

TYPE OF WORK: GRADING, DRAINAGE, STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-5208A	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
50000.1.STR03T1B		PE/UTIL PE
50000.1.STR04T3		PE/UTIL PE
43219.2.STR09P5208		ROW
50000.3.STR01T4A	FRA-FR-0006-10-01-00	CONST/UTIL CONST



VICINITY MAP

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

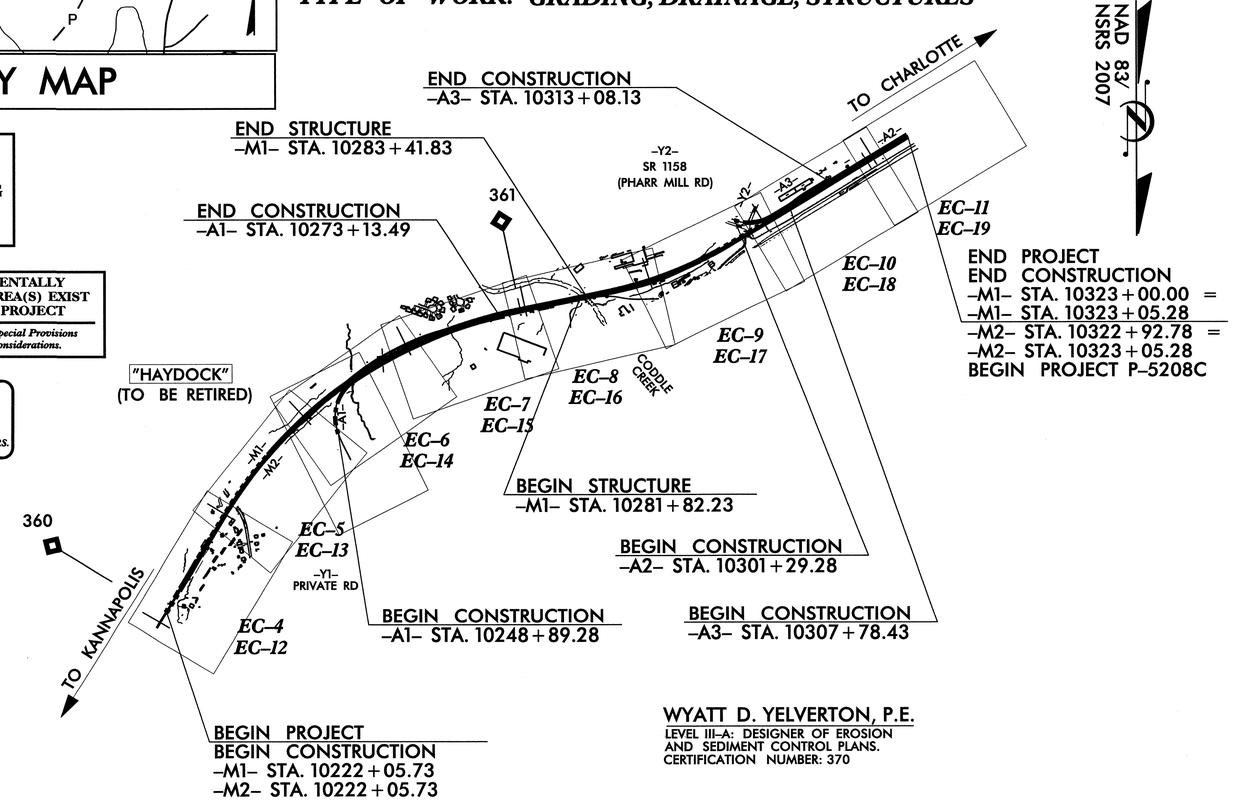
ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

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

THIS PROJECT CONTAINS 303(d) IMPAIRED WATER(S) IMPAIRED FOR TURBIDITY FROM STORMWATER-RELATED IMPACTS, OR THE PROJECT IS WITHIN ONE MILE AND DRAINS TO WATER(S) LISTED ON THE 303(d) LIST FOR TURBIDITY IMPAIRMENT. THE CONTRACTOR SHALL ADHERE TO ALL CONDITIONS AND REGULATIONS REQUIRED FOR IMPACTS TO THESE WATERS.

303(d) IMPAIRED WATER(S) EXIST ON THIS PROJECT

303(d) Impaired Water Zone(s) Exist
From Sta. 10280+50
to Sta. 10285+00
Refer To E. C. Special Provisions for Special Considerations.



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	
	Safety Fence	
	Flagging	
	Earthen Dam with Skimmer	

WYATT D. YELVERTON, P.E.
LEVEL III-A: DESIGNER OF EROSION AND SEDIMENT CONTROL PLANS.
CERTIFICATION NUMBER: 370

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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 Offices of:

HDR Engineering, Inc. of the Carolinas
440 S Church Street, Suite 1000 Raleigh, N.C. 28202
N.C.B.E.L.S. License Number: F-0116

Prepared for:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

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		

5/10/2013
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SKIMMER BASIN WITH BAFFLES DETAIL

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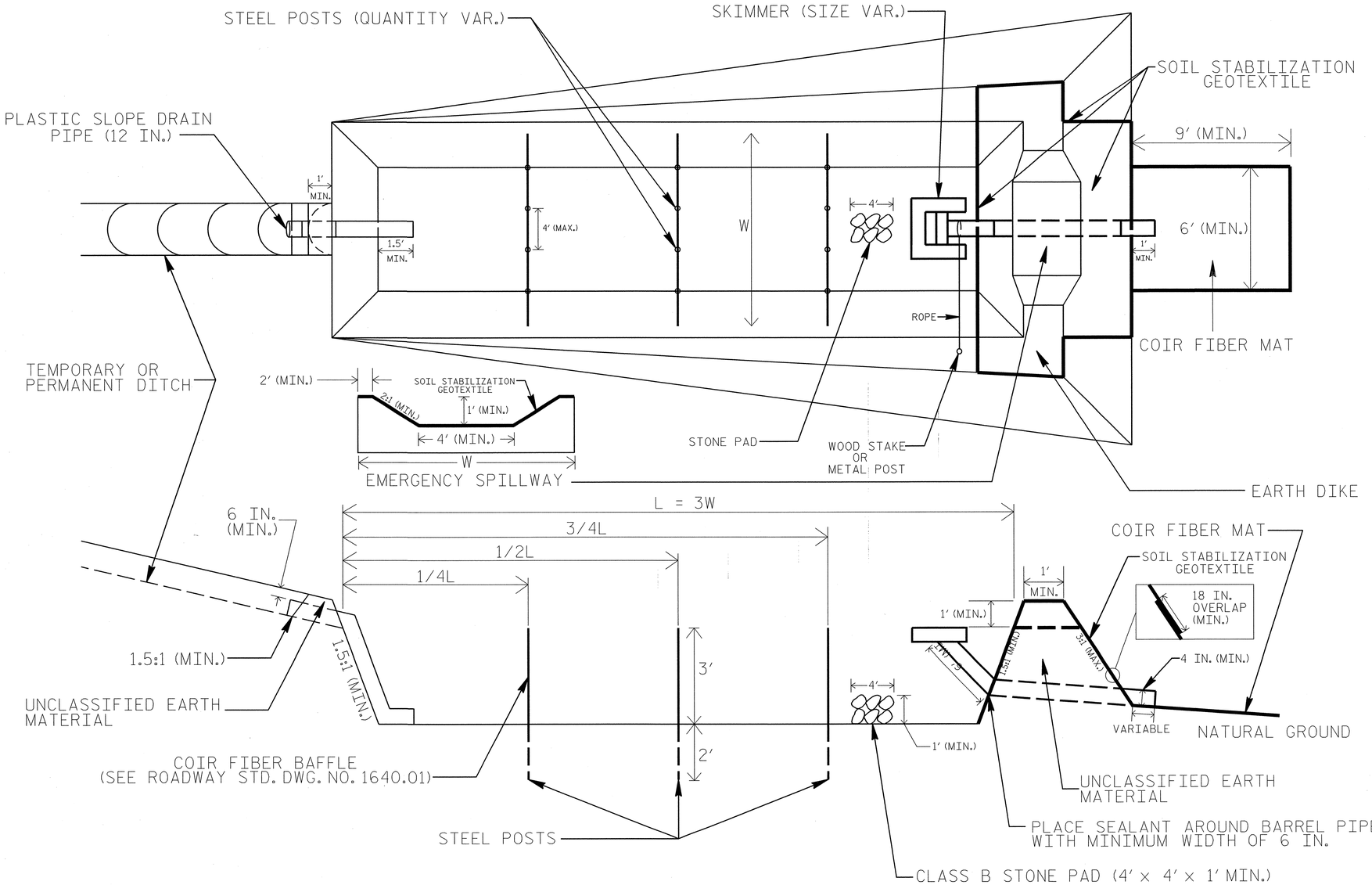
PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-2

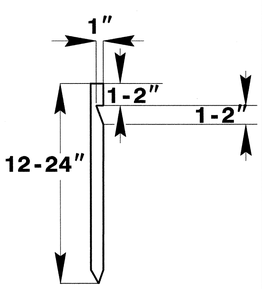
RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

***PERIMETER PROTECTION WILL BE PROVIDED DURING INSTALLATION AND REMOVAL OF BASINS AS NEEDED USING SILT FENCE WITH WATTLE BREAKS.**

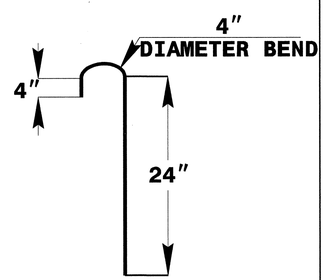


COIR FIBER MAT ANCHOR OPTIONS

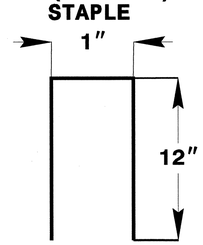
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



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 EMERGENCY SPILLWAY WEIR LENGTH (FT.) USING Q/0.8, 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 EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

4/25/2013
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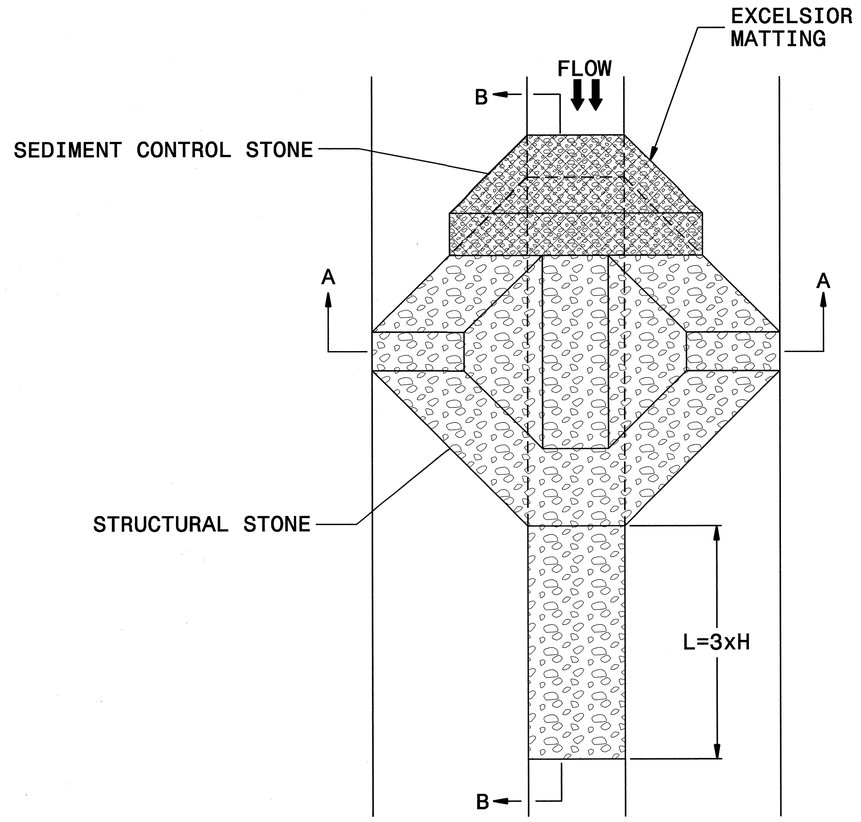
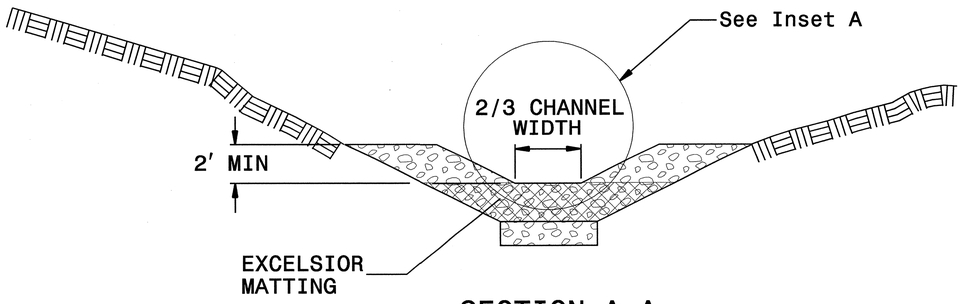
PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-2A

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



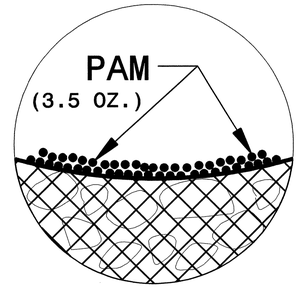
SECTION A-A

NOTES

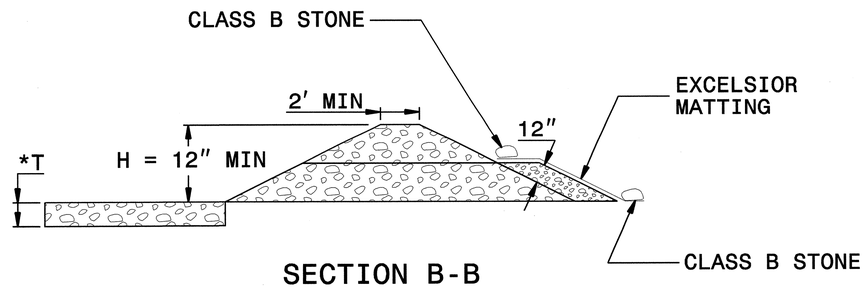
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

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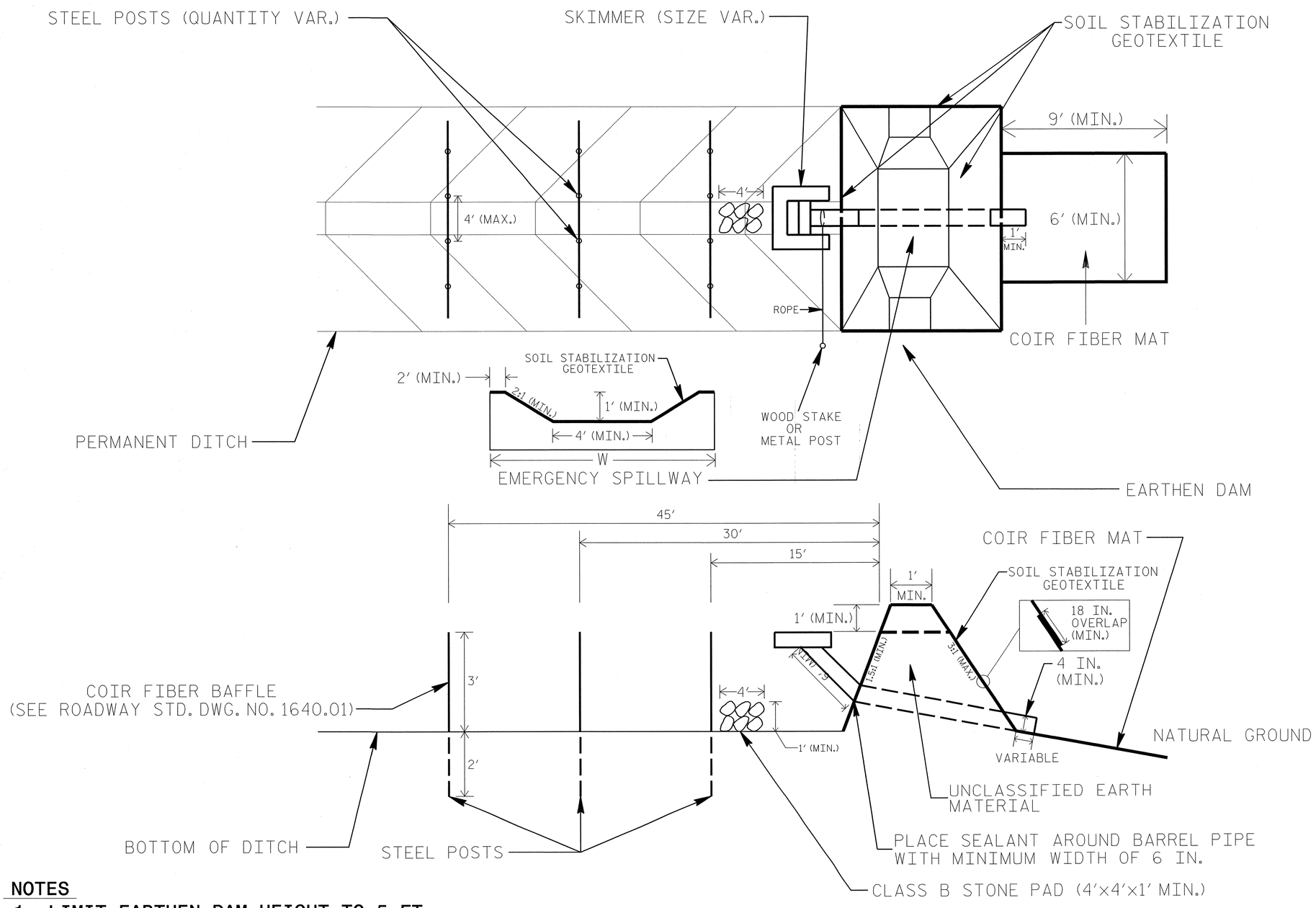
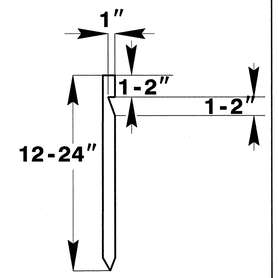
PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-2B

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

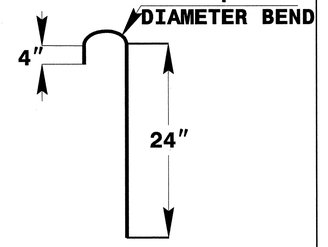
EARTHEN DAM WITH SKIMMER



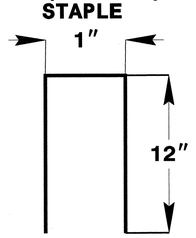
2″ x 2″ (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1″ (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

NOTES

1. LIMIT EARTHEN DAM HEIGHT TO 5 FT.
2. DETERMINE EMERGENCY SPILLWAY LENGTH (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
3. SOIL STABILIZATION GEOTEXTILE FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

4/25/2013
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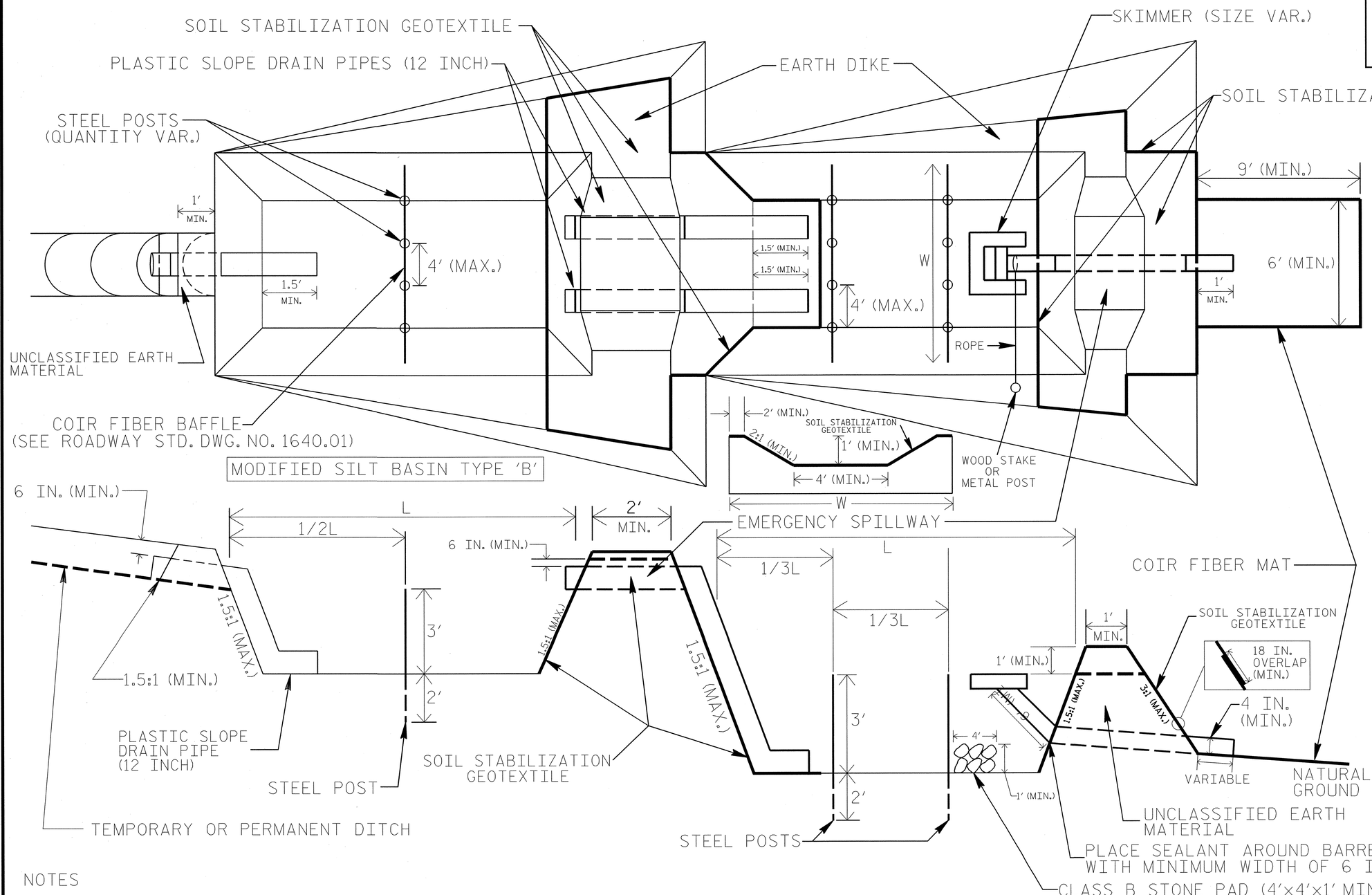
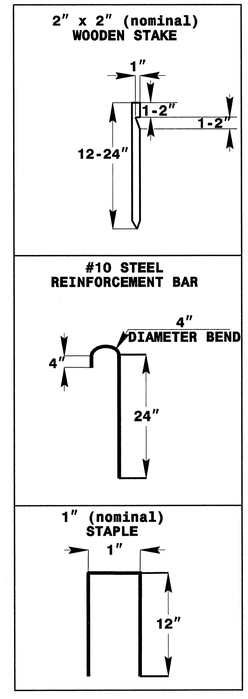
PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-2C

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

TIERED SKIMMER BASIN DETAIL





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 EMERGENCY SPILLWAY LENGTHS (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.
6. SOIL STABILIZATION GEOTEXTILE FOR EMERGENCY SPILLWAYS SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

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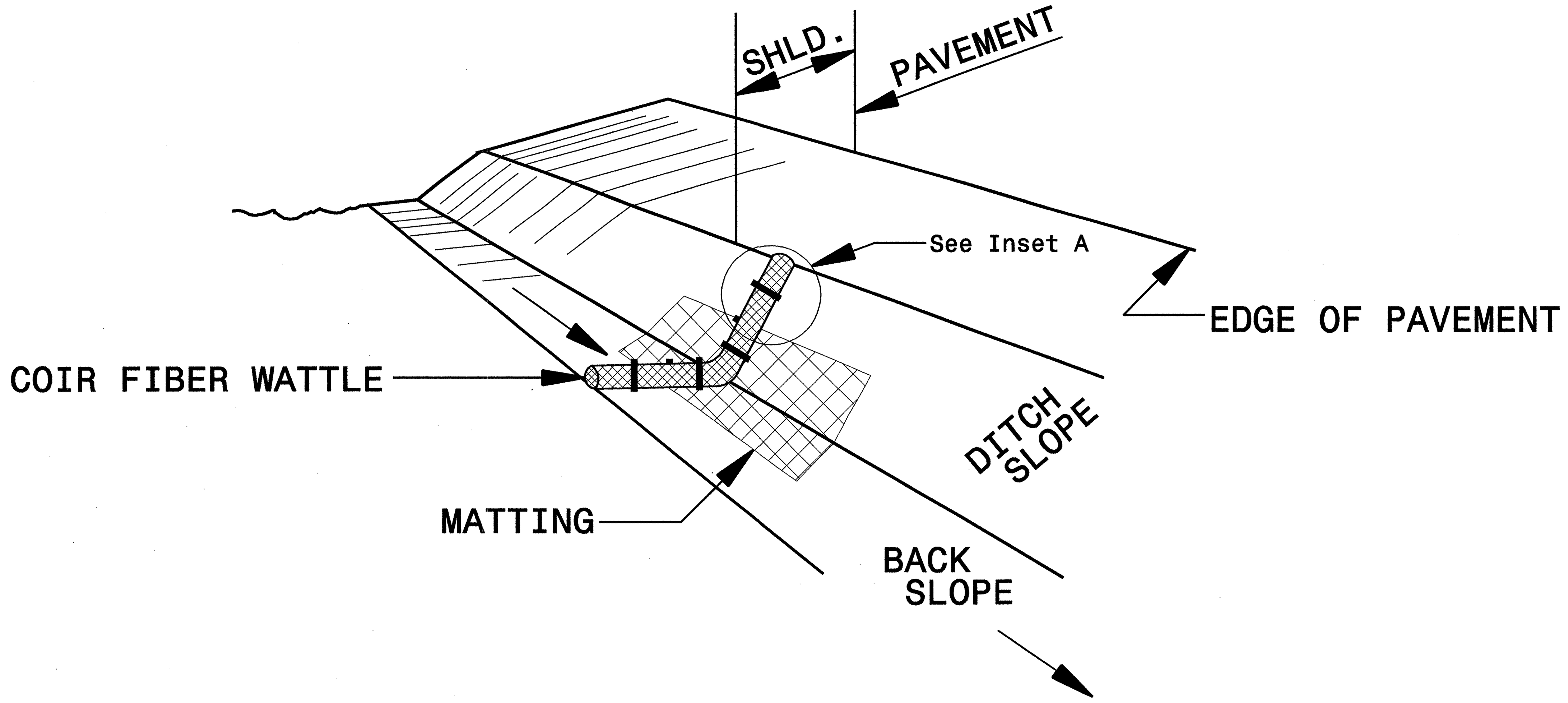
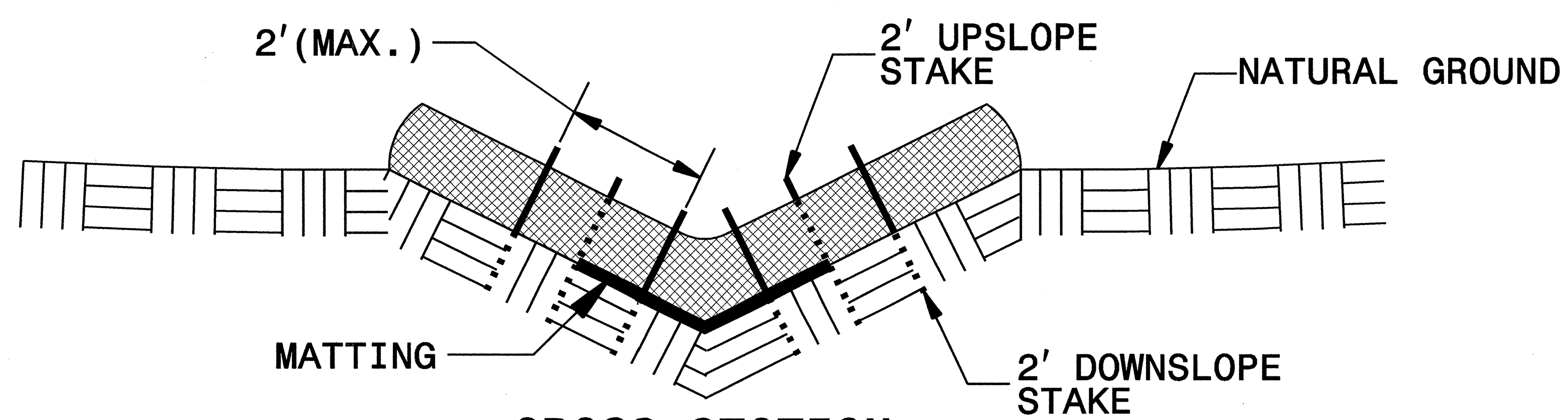
PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-2D

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

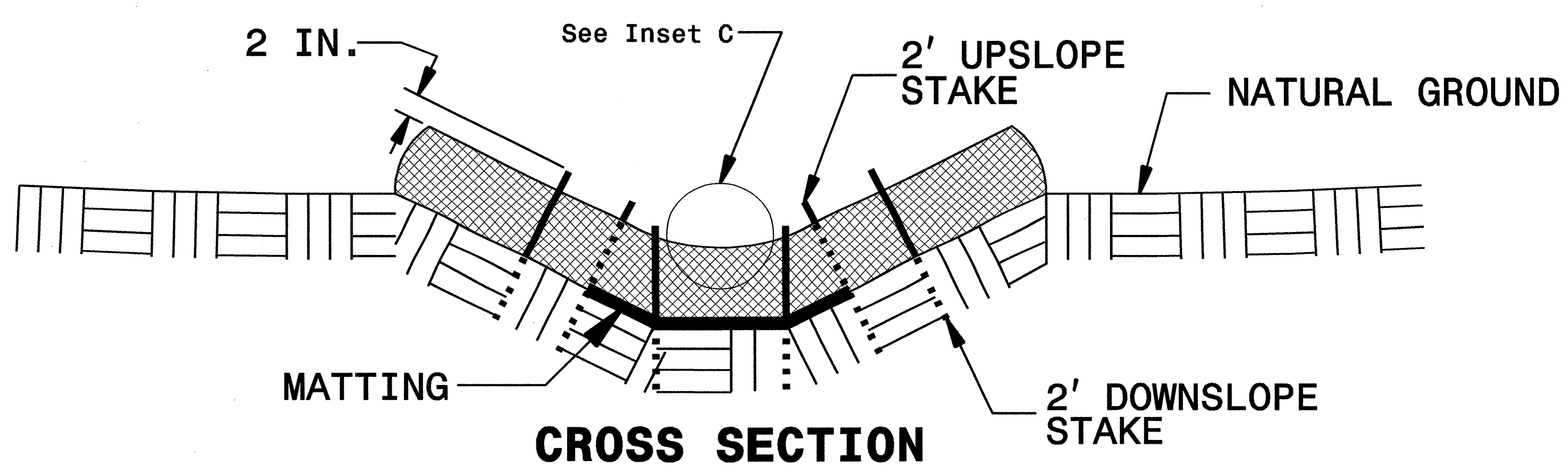
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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.

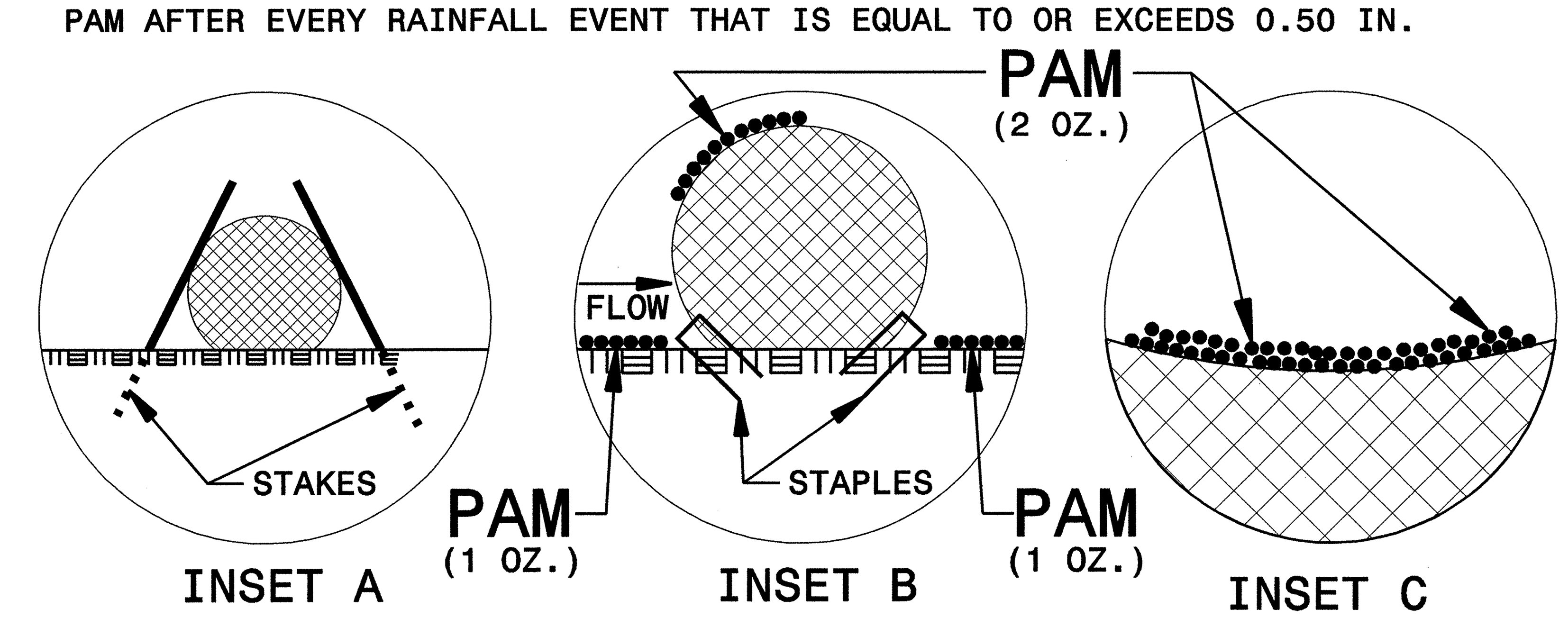
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

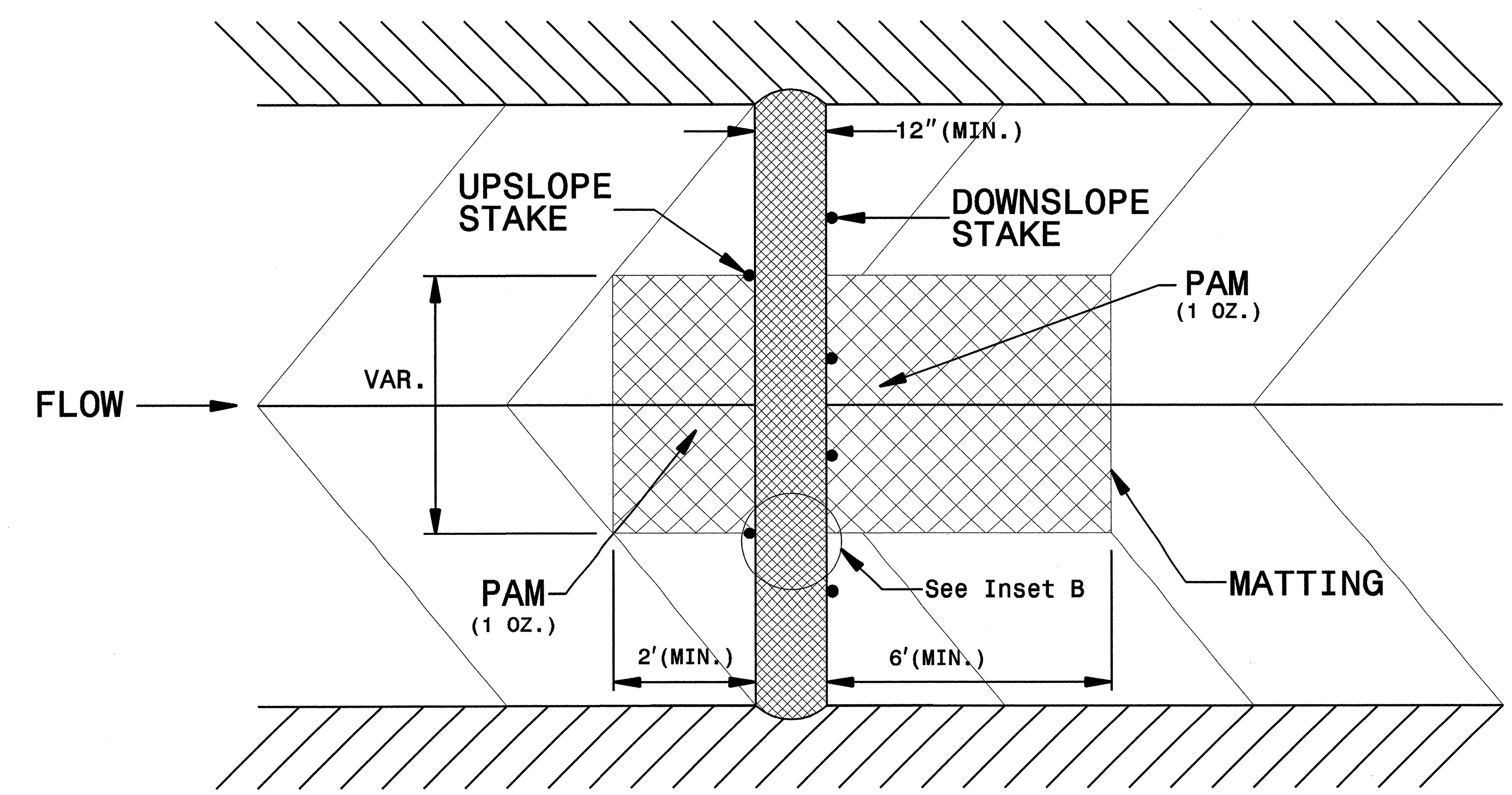
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

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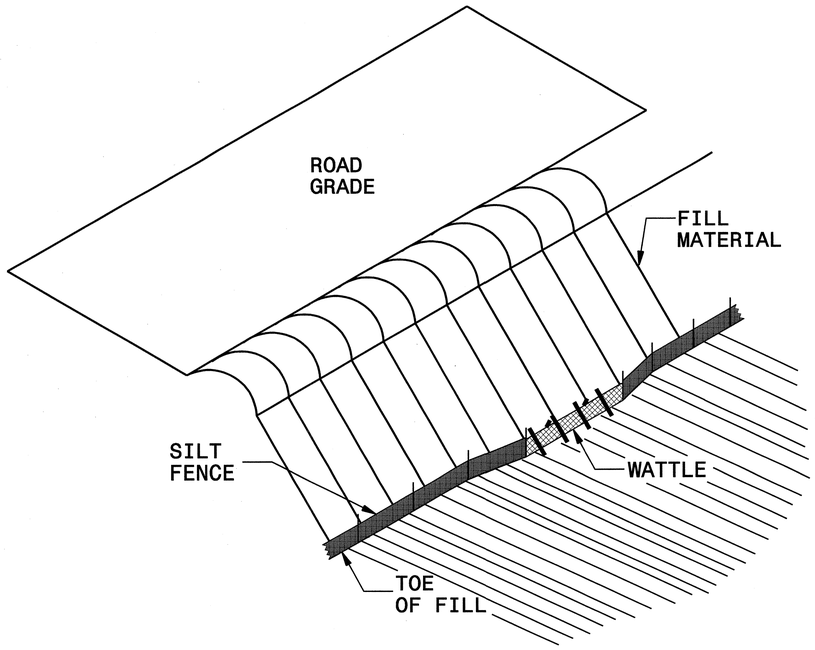
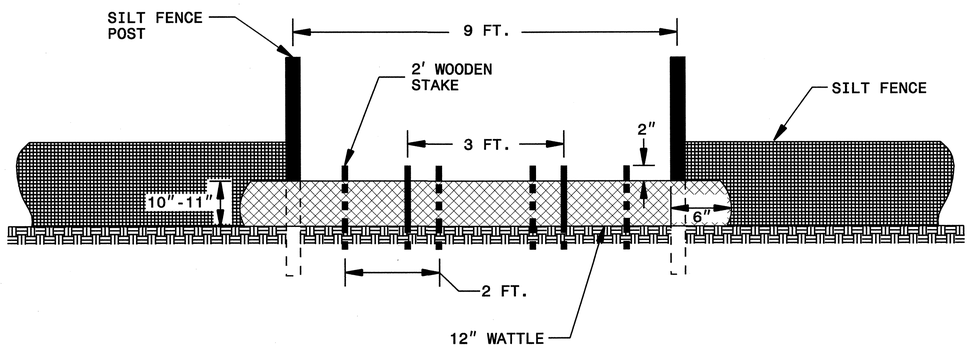
PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



ISOMETRIC VIEW



VIEW FROM SLOPE

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.

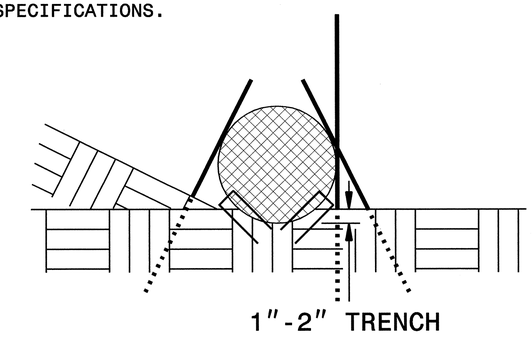
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

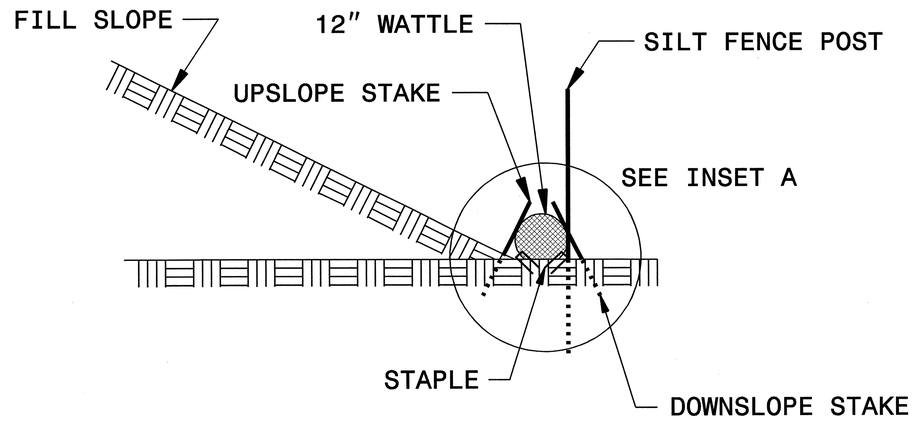
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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





SIDE VIEW

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PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-3

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL: SLOPES 2:1 OR STEEPER

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-MAIN-	10223+00	10230+00	RT	1945
6	-A1-	10251+00	10255+00	RT	2670
6	-A1-	10255+00	10258+00	RT	1835
4	-MAIN-	10224+00	10225+00	LT	135
4	-MAIN-	10227+00	10230+00	LT	1335
5&6	-MAIN-	10243+00	10253+00	LT	6670
7&8	-MAIN-	10270+00	10283+00	LT	9390
9	-MAIN-	10297+00	10301+00	LT	535
				TOTAL	24515 SY

MATTING FOR EROSION CONTROL: PROPOSED DITCH LINE

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-MAIN-	10222+00	10224+00	LT	210
4	-MAIN-	10231+00	10235+00	RT	420
5	-MAIN-	10237+00	10244+00	RT	730
5	-MAIN-	10237+00	10241+00	LT	420
6	-MAIN-	10250+67	10253+26	LT	275
6	-MAIN-	10257+50	10261+00	LT	365
6	-MAIN-	10257+00	10260+00	RT	315
7	-MAIN-	10260+00	10266+00	RT	630
7	-MAIN-	10261+00	10266+00	LT	525
7	-MAIN-	10266+00	10267+50	RT	160
7	-MAIN-	10268+00	10271+00	RT	315
8	-MAIN-	10283+50	10296+50	LT	1355
9	-MAIN-	10301+00	10303+00	RT	210
10	-MAIN-	10302+60	10316+00	RT	1400
10	-MAIN-	10305+00	10316+00	LT	1150
11	-MAIN-	10316+00	10323+00	LT	730
				TOTAL	9210 SY
PERMANENT SOIL REINFORCEMENT MATTING (PSRM)					
6	-MAIN-	10255+50	10256+00	RT	55
7	-MAIN-	10266+00	10267+50	LT	160
				TOTAL	215 SY
				SAY	300 SY
OVERALL MATTING FOR EROSION CONTROL					
		TOTAL ON FILL SLOPES			24515 SY
		TOTAL IN DITCH LINES			9210 SY
		MISC. MATTING AS DIRECTED BY ENGINEER			17550 SY
				TOTAL	51275 SY
				SAY	51300 SY

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DGN 0041DEL_P10A1

HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-3A

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.

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DGN 0041DEL_P10A1

HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

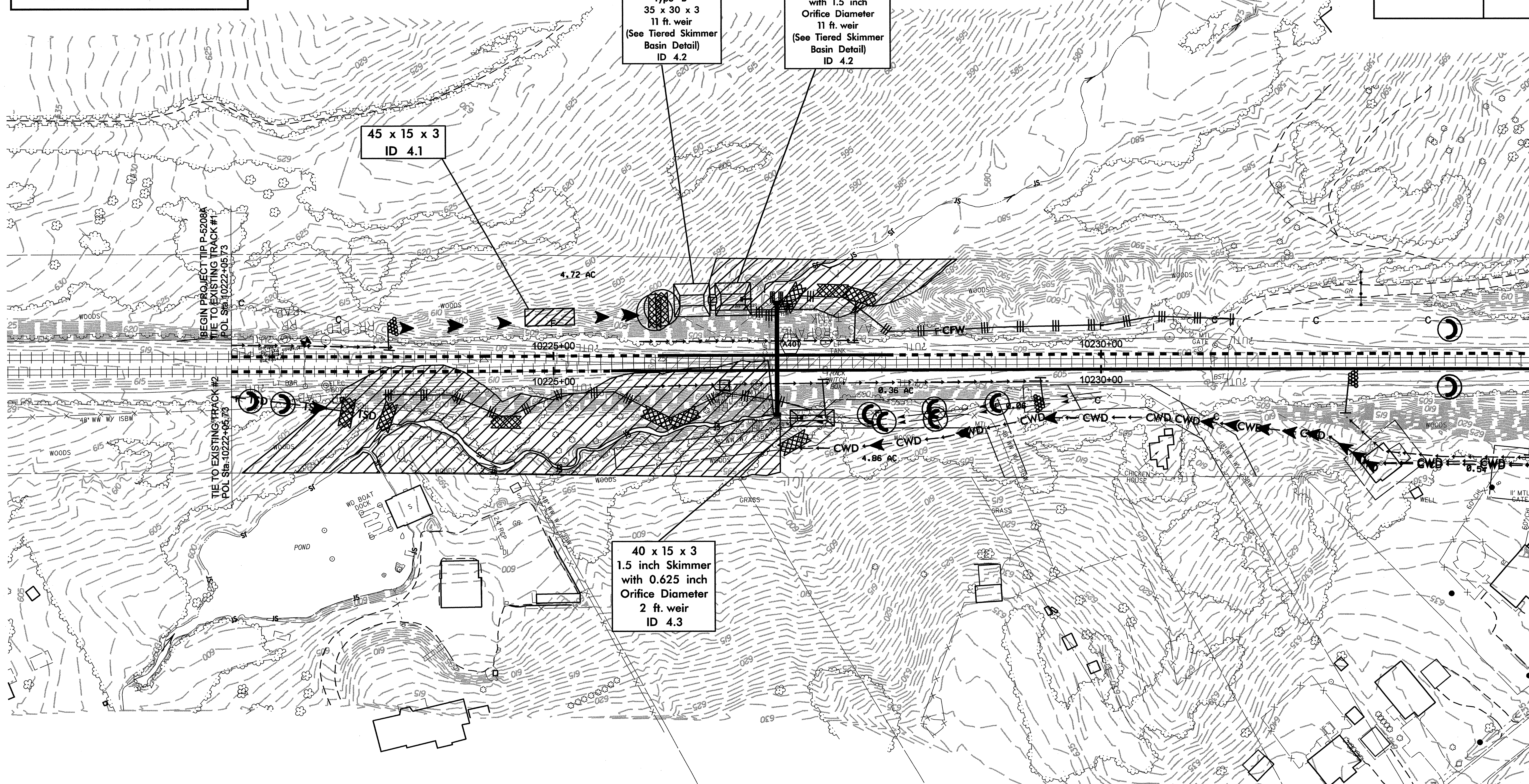
PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-4/CONST.-04

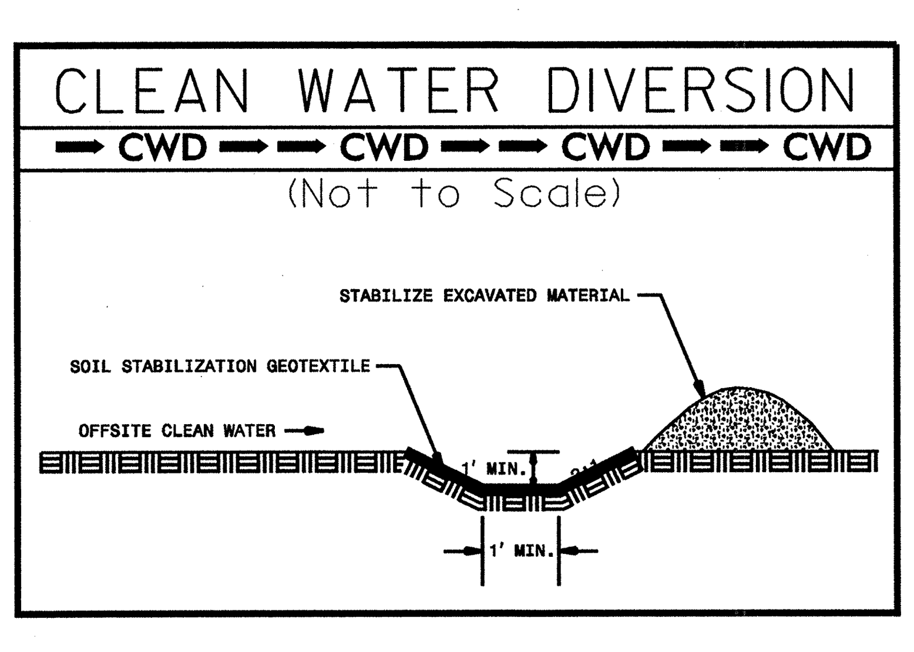
RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

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.





ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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SCALE IN FEET

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DGN

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 05

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.

HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-5/CONST.-05

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCH LINE 10234+00.00
SEE DWG. NO. EC-4

MATCH LINE 10248+00.00
SEE DWG. NO. EC-6

90 x 28 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
10 ft. weir
ID 5.2

92 x 30 x 3
1.5 inch Skimmer
with 1.5 inch
Orifice Diameter
11 ft. weir
ID 5.1

NCRR R/W

10235+00

10240+00

10245+00

2.33 AC

2.28

TSD

CWD

CWDWB

CLEAN WATER DIVERSION

CWD CWD CWD CWD

(Not to Scale)

STABILIZE EXCAVATED MATERIAL

SOIL STABILIZATION GEOTEXTILE

OFFSITE CLEAN WATER

1' MIN.

1' MIN.

50 0 50 100

SCALE IN FEET

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CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 06

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.

HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-6/CONST.-06

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCH LINE 10248+00.00
SEE DWG. NO. EC-5

MATCH LINE 10262+00.00
SEE DWG. NO. EC-7

160 x 32 x 3
2.0 inch Skimmer
with 2.0 inch
Orifice Diameter
24 ft. weir
ID 6.4

30 x 20 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
4 ft. weir
ID 6.2

Modified Silt Basin
Type 'B'
30 x 20 x 3
4 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 6.2

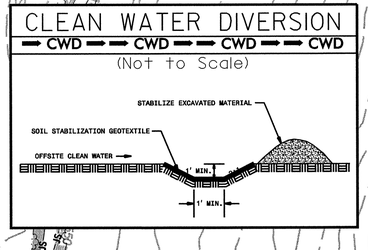
40 x 15 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
2 ft. weir
ID 6.1

72 x 18 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 6.3

CABARRUS COUNTY
PIN# 5528333230000

C-A1 EXISTING
PHILIP MORRIS LEAD

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



ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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SCALE IN FEET

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CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 07

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.

HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-7/CONST.-07

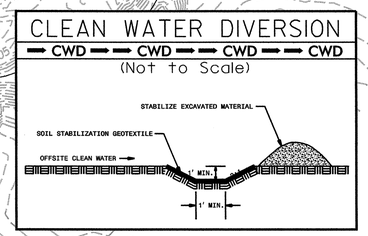
RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

65 x 20 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 7.2

MATCH LINE 10262+00.00
SEE DWG. NO. EC-6

MATCH LINE 10276+00.00
SEE DWG. NO. EC-8

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



ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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SCALE IN FEET

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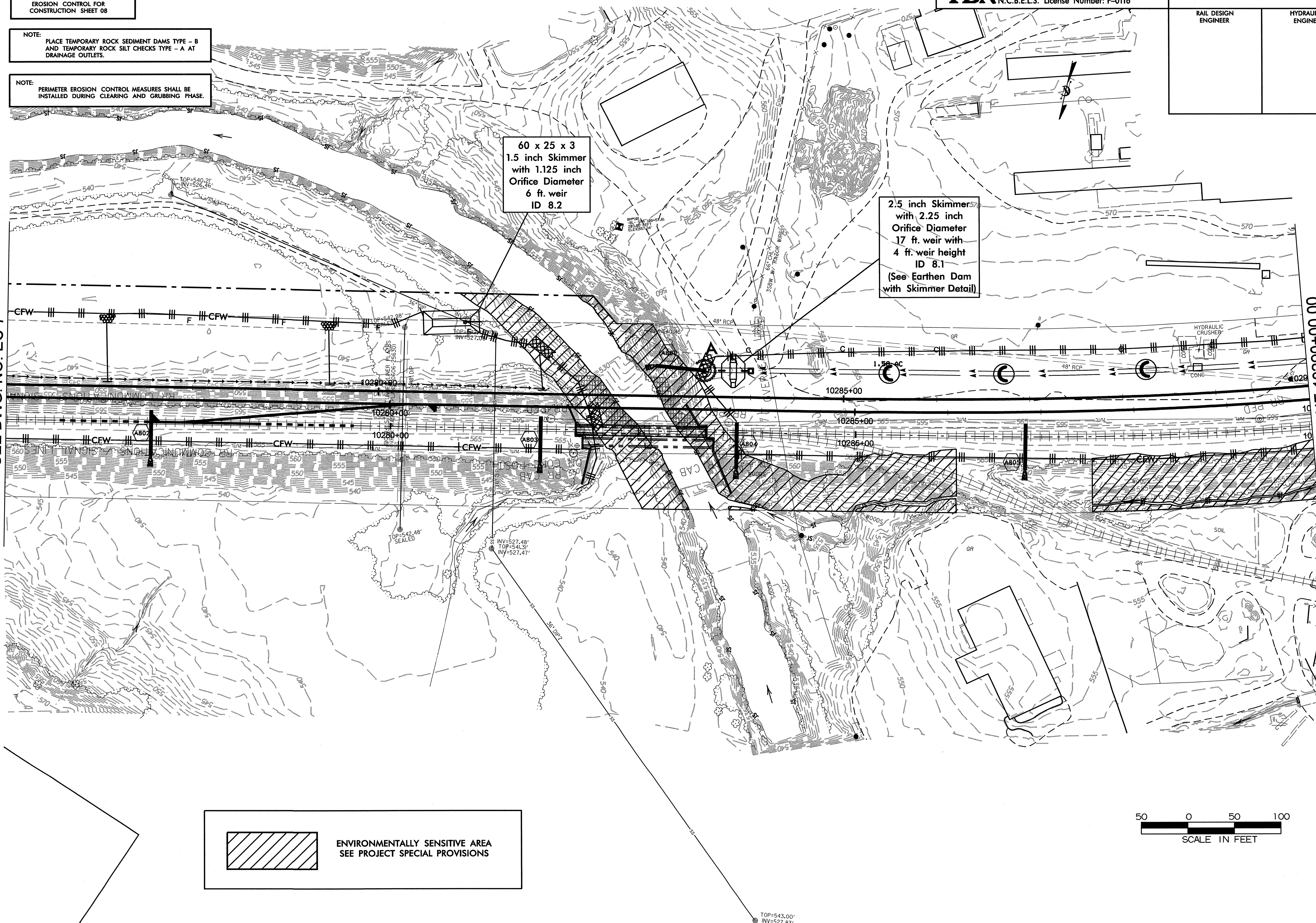
HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-8/CONST.-08
RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 08

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.



ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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SCALE IN FEET

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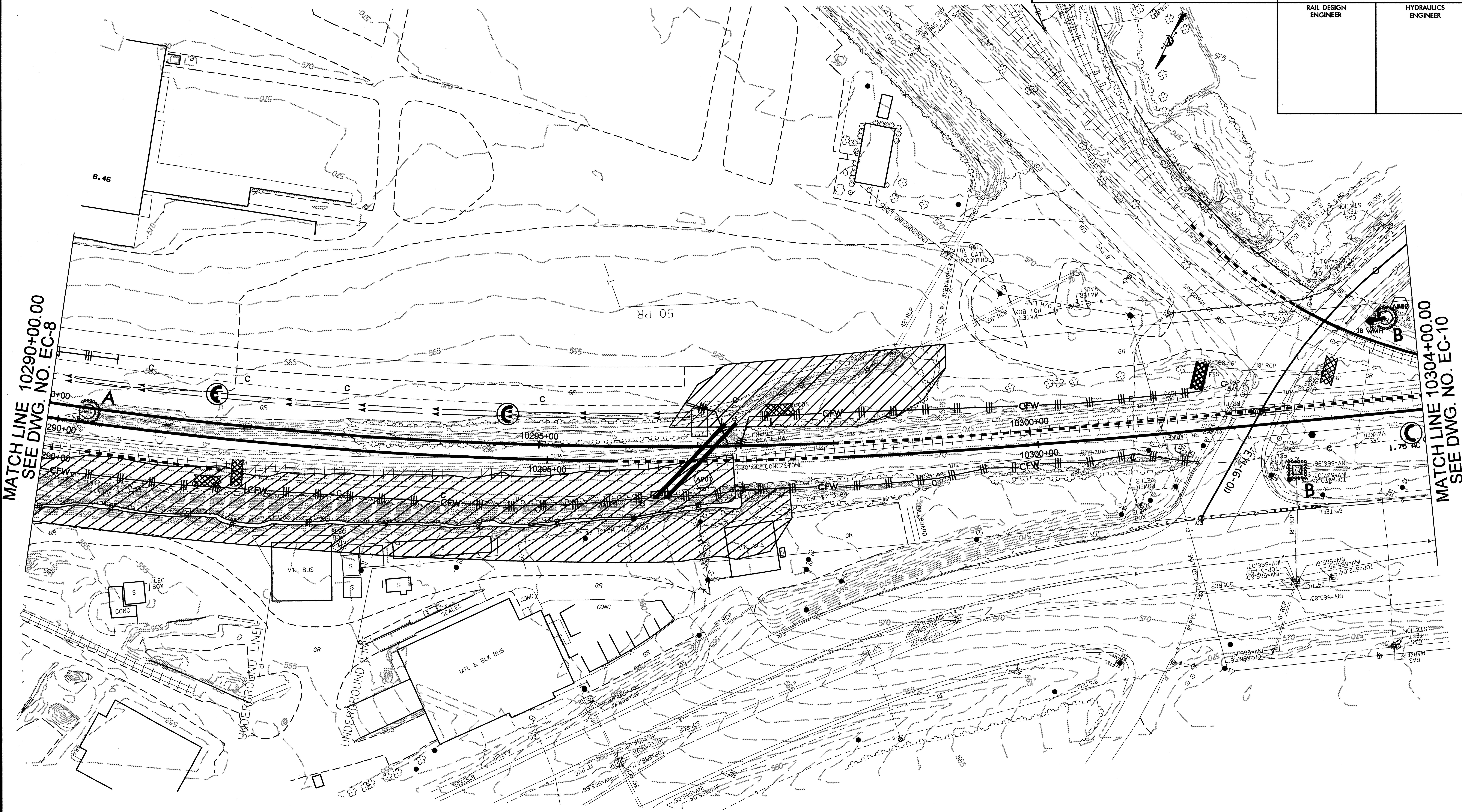
HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-9/CONST.-09
RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER



50 0 50 100
SCALE IN FEET

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 09

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.

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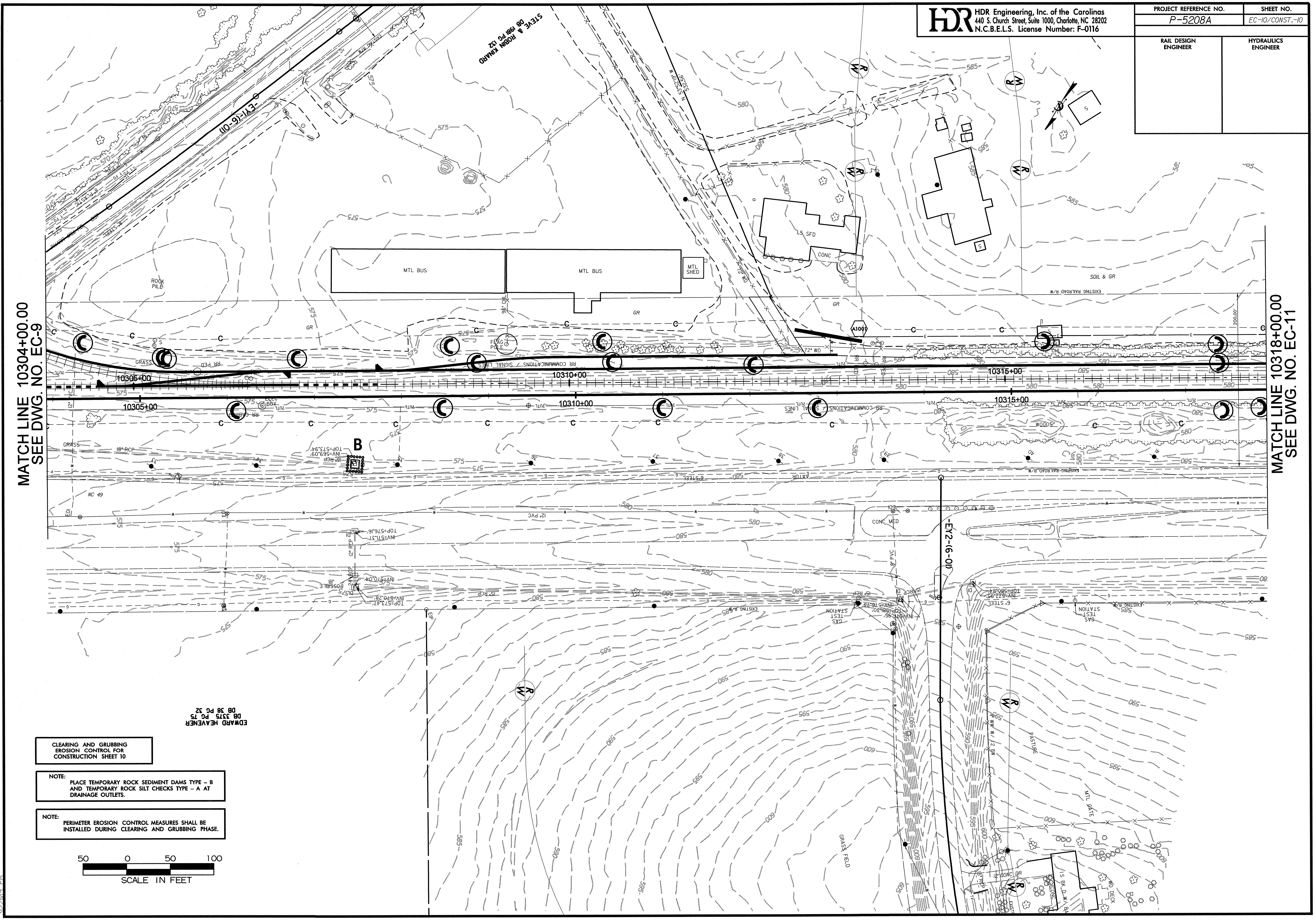
HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-10/CONST.-10

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 10

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.

50 0 50 100
SCALE IN FEET

DGN 0041DEL_P10A1

4/25/2013

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 11

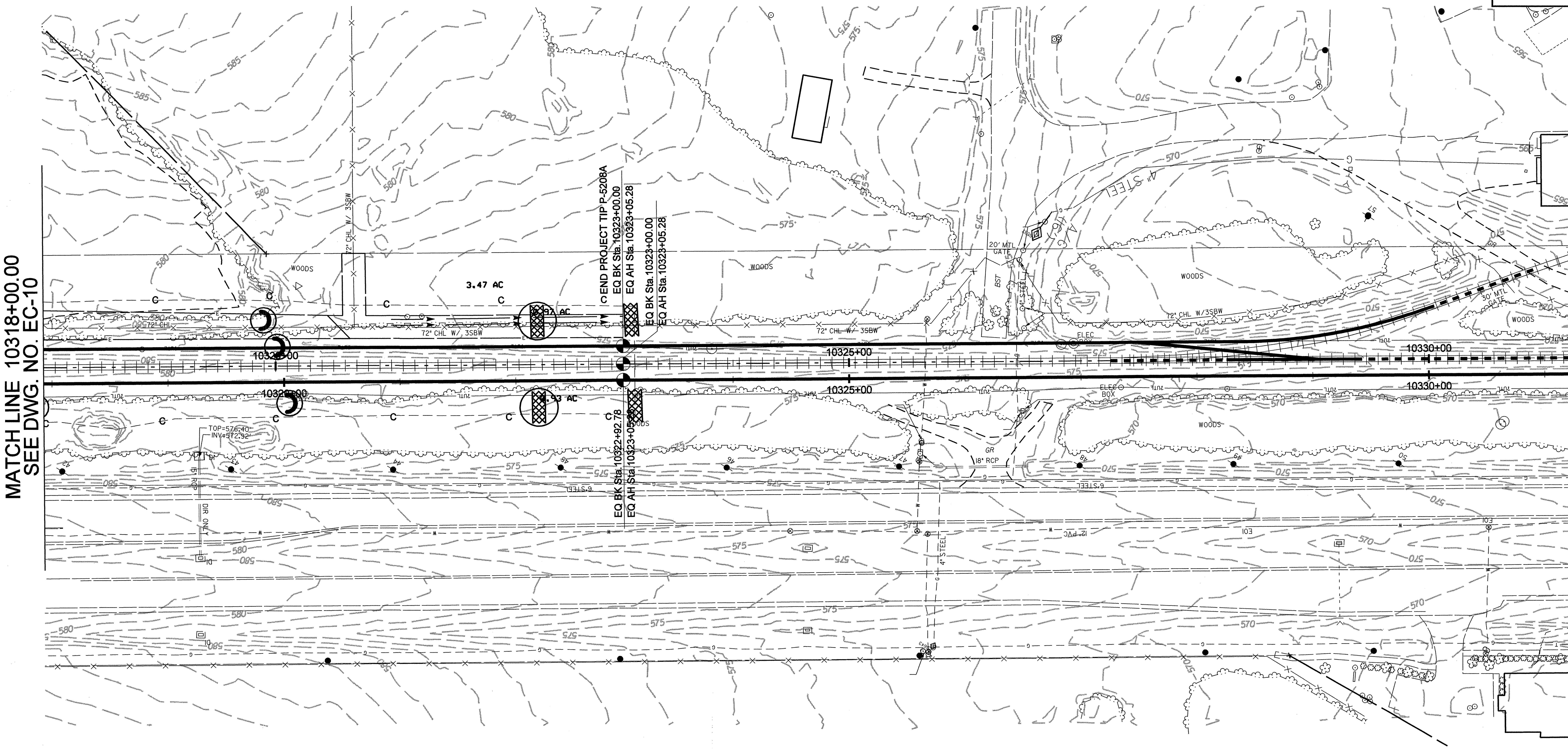
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

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

HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-11/CONST.-11

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER



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SCALE IN FEET

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HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-12/CONST.-04

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

45 x 15 x 3
ID 4.1

Modified Silt Basin
Type 'B'
35 x 30 x 3
11 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 4.2

35 x 30 x 3
1.5 inch Skimmer
with 1.5 inch
Orifice Diameter
11 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 4.2

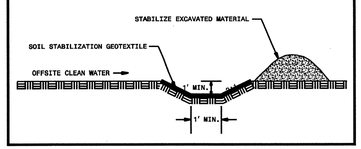
40 x 15 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
2 ft. weir
ID 4.3

BEGIN PROJECT TIP P-5208A
TIE TO EXISTING TRACK #1
POL Sta.10222+05.73

TIE TO EXISTING TRACK #2
POL Sta.10222+05.73

MATCH LINE 10234+00.00
SEE DWG. NO. EC-5

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



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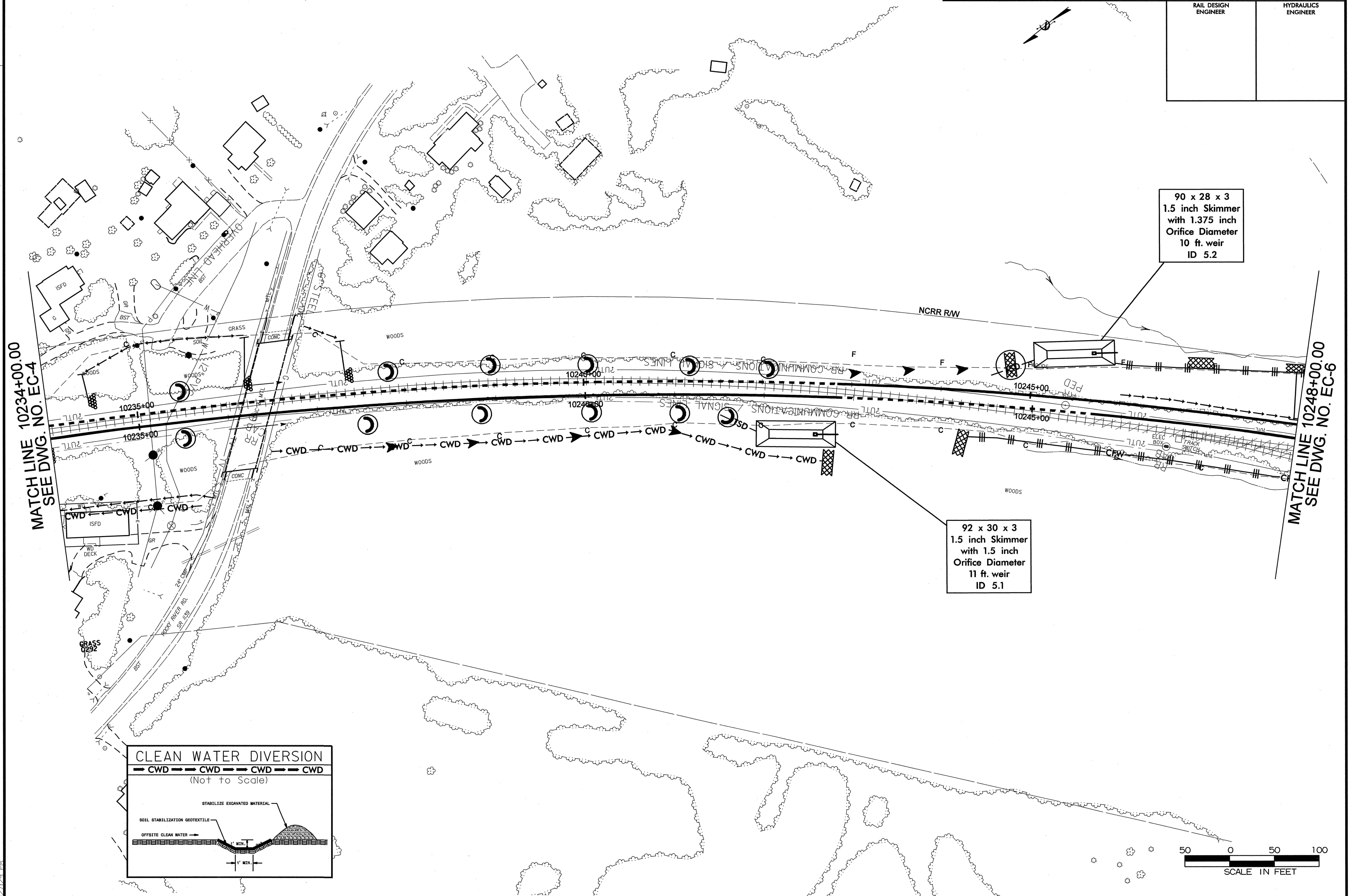
HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-13/COSNT.- 05

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER



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HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-14/CONST.-06

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

160 x 32 x 3
2.0 inch Skimmer
with 2.0 inch
Orifice Diameter
24 ft. weir
ID 6.4

30 x 20 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
4 ft. weir
ID 6.2

Modified Silt Basin
Type 'B'
30 x 20 x 3
4 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 6.2

40 x 15 x 3
1.5 inch Skimmer
with 0.625 inch
Orifice Diameter
2 ft. weir
ID 6.1

72 x 18 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 6.3

CABARRUS COUNTY
PIN# 5528333231O0000

MATCH LINE 10248+00.00
SEE DWG. NO. EC-5

MATCH LINE 10262+00.00
SEE DWG. NO. EC-7

NCRR R/W

WOODS

CONC/BRK HW

CONC HW

INV=554.99'

INV=547.99'

36" RCP

A60

TRACK

10250+00

10255+00

10260+00

CFW

CWD

FED

JS

C-A1-EXISTING
PHILIP MORRIS LEAD

50 0 50 100
SCALE IN FEET

4/25/2013
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HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-15/CONST.-07

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
6 ft. weir width
4 ft. weir height
ID 7.3
(See Earthen Dam
with Skimmer Detail)

65 x 20 x 3
1.5 inch Skimmer
with 1.0 inch
Orifice Diameter
5 ft. weir
ID 7.2

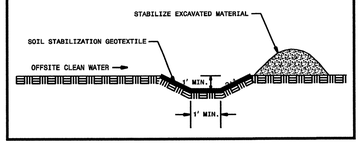
75 x 25 x 3
1.5 inch Skimmer
with 1.25 inch
Orifice Diameter
8 ft. weir
ID 7.1

MATCH LINE 10262+00.00
SEE DWG. NO. EC-6

MATCH LINE 10276+00.00
SEE DWG. NO. EC-8

GRASS
WOODS
1SFD
2SFD
CONC
30" RCP
DI
6' CONC HW
A70
A
10265+00
10270+00
10275+00
TRACK SWITCH
ELEC BOX
S 78°06'38.6" W
0.99 AC
CFW
CWD
TSD
F
Sf
GR

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



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HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-16/CONST.-08

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

60 x 25 x 3
1.5 inch Skimmer
with 1.125 inch
Orifice Diameter
6 ft. weir
ID 8.2

2.5 inch Skimmer
with 2.25 inch
Orifice Diameter
17 ft. weir with
4 ft. weir height
ID 8.1
(See Earthen Dam
with Skimmer Detail)

MATCH LINE 10276+00.00
SEE DWG. NO. EC-7

MATCH LINE 10290+00.00
SEE DWG. NO. EC-9

TOP=540.21'
INV=526.46'

TOP=542.48'
SEALED

INV=527.48'
TOP=541.31'
INV=527.47'

TOP=543.00'
INV=527.83'

TOP WW=547.98'
INV=527.08'

INV=540.45'

TOP WW=546.05'

TOP WW=549.19'

TOP WW=563.93'
TOP WW=565.55'

TOP WW=564.98'
TOP WW=565.55'

TOP WW=565.08'

TOP WW=537.33'

TOP WW=536.78'

36" DIP

48" RCP

10280+00

10285+00

A802 A803 A804 A805

CFW

WOODS

SOIL

GR

HYDRAULIC CRUSHER

CONC

50 0 50 100
SCALE IN FEET

4/25/2013
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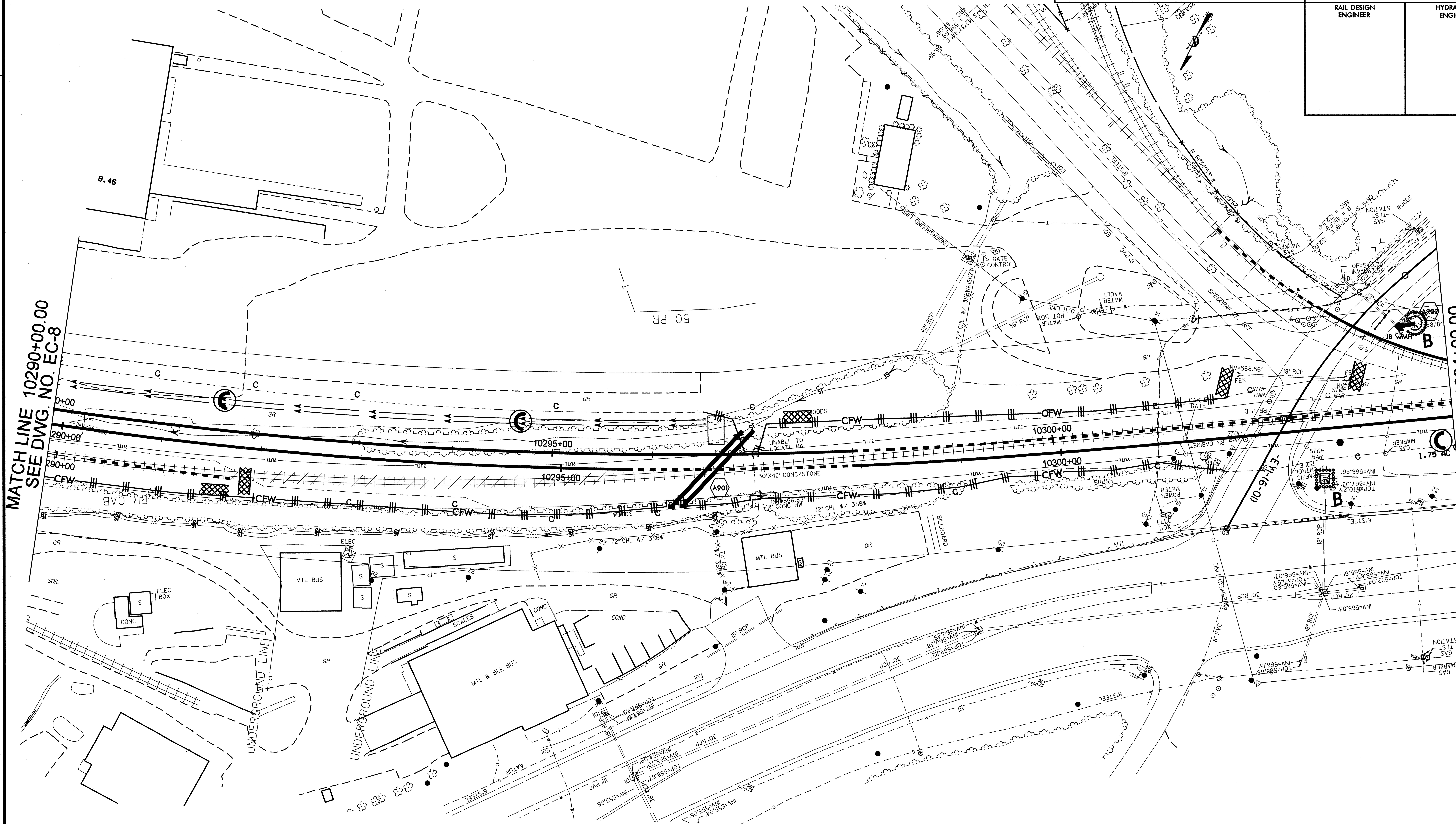
HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-17/CONST.-09
RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER



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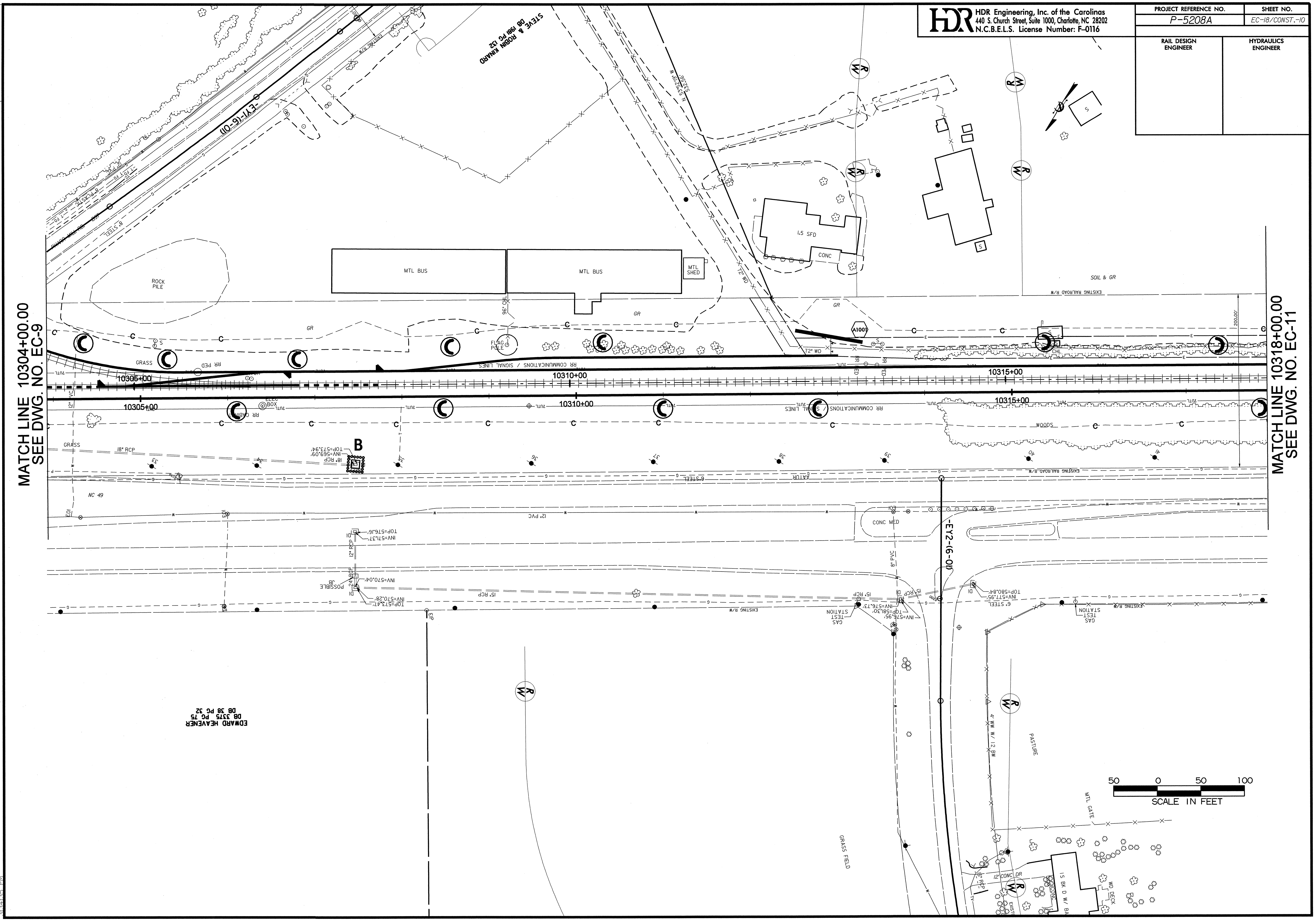

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HDR HDR Engineering, Inc. of the Carolinas
440 S. Church Street, Suite 1000, Charlotte, NC 28202
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
P-5208A	EC-19/CONST.-11

RAIL DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCH LINE 10318+00.00
SEE DWG. NO. EC-10

END PROJECT TIP P-5208A
EQ BK Sta.10323+00.00
EQ AH Sta.10323+05.28

EQ BK Sta.10323+00.00
EQ AH Sta.10323+05.28

EQ BK Sta.10322+92.78
EQ AH Sta.10323+05.28

WOODS
72" CHL
72" CHL W/ 3SBW
20' MTL GATE
4" STEEL
ELEC BOX
30' MTL GATE
TOP=576.40'
INV=572.92'
15" RCP
DIA ONLY
GR
18" RCP
12" PVC
6" STEEL
EOI
DI

10320+00
10325+00
10330+00

50 0 50 100
SCALE IN FEET

4/25/2013
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