TIP PROJECT: R-5600

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5600	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45818.1.FR1	STP-0107(13)	PE
45818.2.2	STP-0107(13)	ROW
45818.2.3	STP-0107(13)	UTILITIES
45818.3.1	STP-0107(13)	CONSTRUCTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

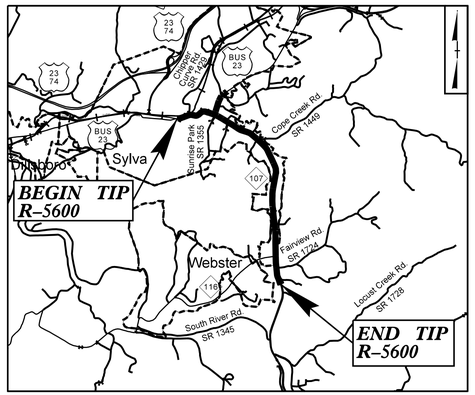
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

JACKSON COUNTY

LOCATION: NC 107, US 23 BUSINESS TO NC 116 (WEBSTER ROAD). US 23 BUSINESS, SR 1432 (SKYLAND DRIVE) TO WEST OF MUNICIPAL DRIVE IN SYLVA. CONSTRUCT ACCESS MANAGEMENT IMPROVEMENTS

TYPE OF WORK: GRADING, PAVING, DRAINAGE, RETAINING WALLS, STRUCTURES AND SIGNALS

NAD 83/2011



VICINITY MAP
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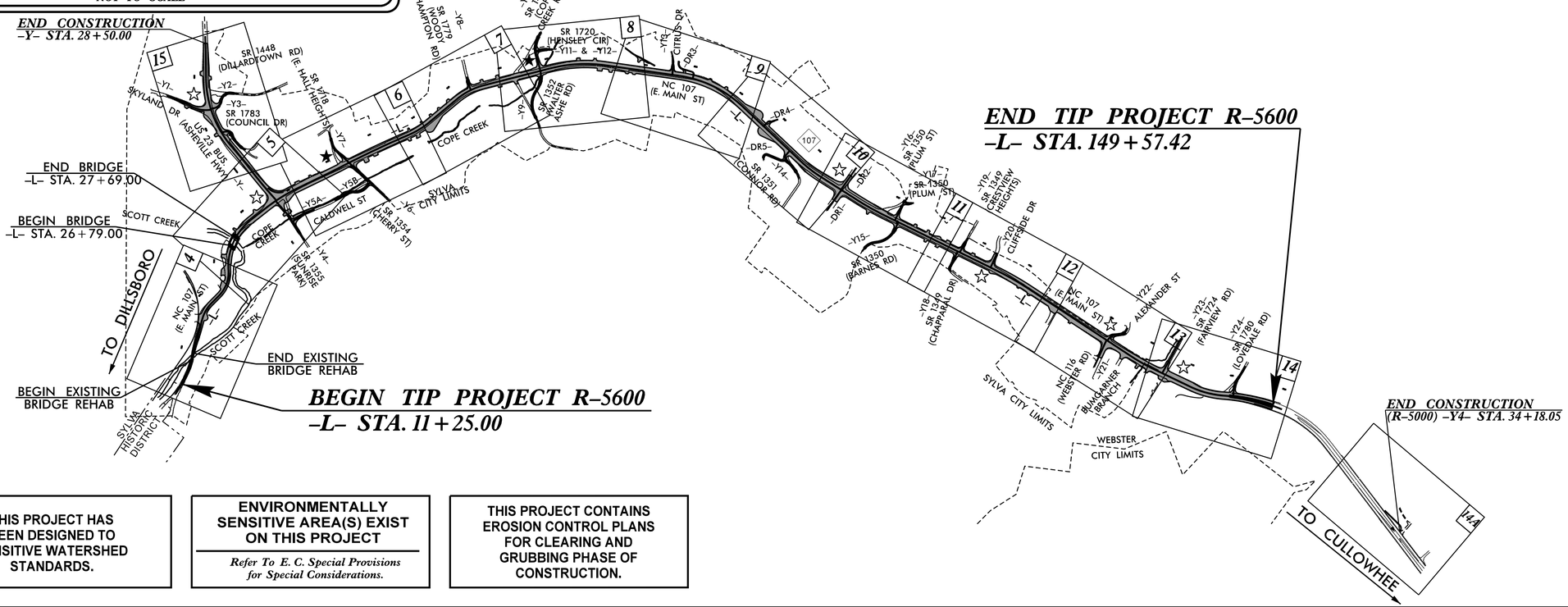


THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

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

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

GRAPHIC SCALE

50 25 0 50 100

PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL STORMWATER CONSTRUCTION PERMIT ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES.

Prepared In the Office of:

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

2024 STANDARD SPECIFICATIONS

Designed by:

David R. Wagner II, PE — NAME
4286 — LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

The "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2024 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

9/2/2025 $$$$USERNAME$$$$ $$$$DATE$$$$ $$$$TIME$$$$ $$$$FILENAME$$$$ EC_TSH.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5600	EC-02
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

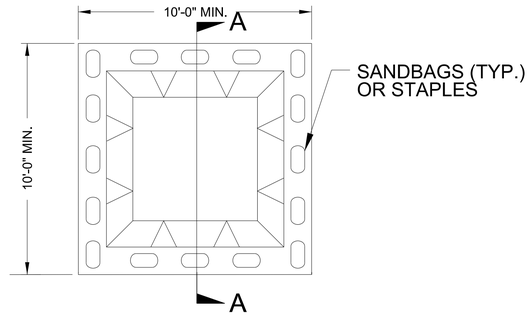
EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD
1630.04	Stilling Basin	
1630.05	Temporary Diversion	TD
1630.06	Special Stilling Basin	
1630.07	Skimmer Basin	
1630.08	Tiered Skimmer Basin	
1630.09	Earthen Dam with Skimmer	
	Infiltration Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C

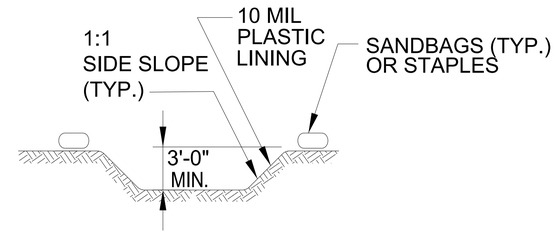
Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type A	
1633.02	Temporary Rock Silt Check Type B	
1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1634.01	Temporary Rock Sediment Dam Type A	
1634.02	Temporary Rock Sediment Dam Type B	
1635.01	Rock Pipe Inlet Sediment Trap Type A	A
1635.02	Rock Pipe Inlet Sediment Trap Type B	B
1636.01	Excelsior Wattle Check	
1636.01	Excelsior Wattle Check with Flocculant	
1636.01	Coir Fiber Wattle Check	
1636.01	Coir Fiber Wattle Check with Flocculant	
1636.02	Silt Fence Excelsior Wattle Break	EW
	Silt Fence Coir Fiber Wattle Break	CFW
1636.03	Excelsior Wattle Barrier	—EW—EW—EW—
1636.03	Coir Fiber Wattle Barrier	—CFW—CFW—CFW—

PROJECT REFERENCE NO.	SHEET NO.
R-5600	EC-02A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A

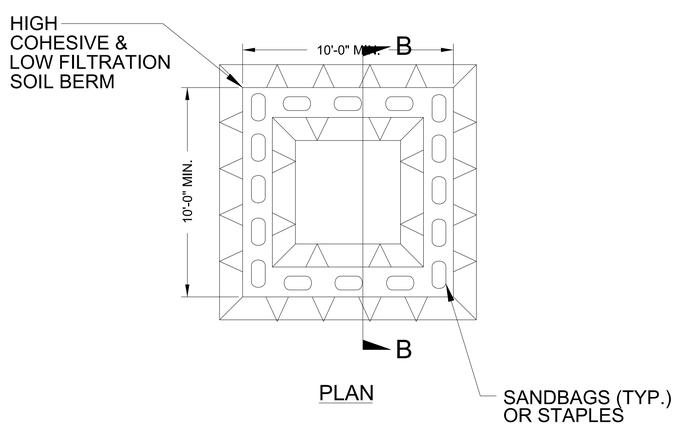
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

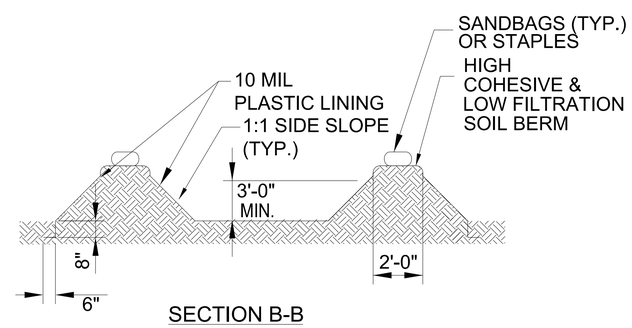
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE

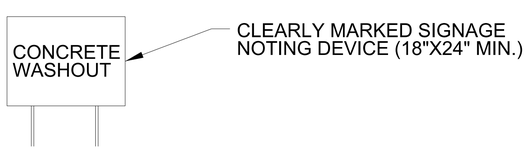
NOT TO SCALE



PLAN



SECTION B-B



NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

ABOVE GRADE WASHOUT STRUCTURE

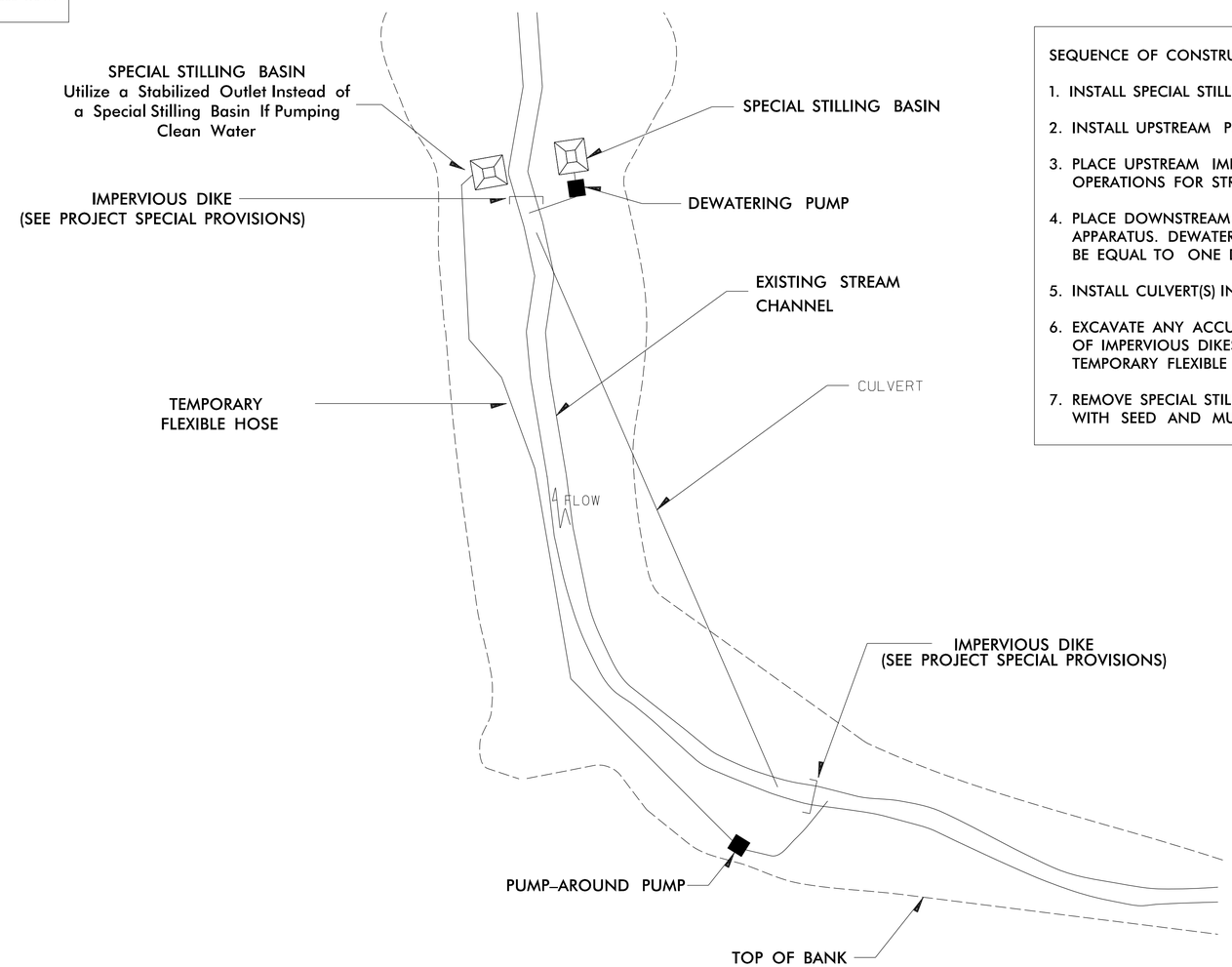
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-5600	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

EXAMPLE OF PUMP–AROUND OPERATION

NOTES:
1) All excavation shall be performed in only dry or isolated areas of the work zone.
2) Impervious dikes are to be used to isolate work from stream flow when necessary.
3) Maintenance of stream flow operations shall be incidental to the work. This includes polyethylene sheeting, diversion pipes, pumps and hoses.
4) Pumps and hoses shall be of sufficient size and quantity to dewater the work area and maintain stream bypass flow.



SEQUENCE OF CONSTRUCTION FOR TYPICAL WORK AREA

1. INSTALL SPECIAL STILLING BASIN(S).
2. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
5. INSTALL CULVERT(S) IN ACCORDANCE WITH THE PLANS.
6. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. (DOWNSTREAM IMPERVIOUS DIKES FIRST).
7. REMOVE SPECIAL STILLING BASIN(S) AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH.

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

PROJECT REFERENCE NO.	SHEET NO.
R-5600	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR SLOPE

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
5	-Y4-	12+00	12+50	RT	100
5	-Y4-	12+00	12+50	LT	100
6	-L-	41+00	41+50	RT	400
6	-Y6-	12+75	13+25	RT	115
6	-Y6-	12+75	13+25	LT	160
6	-Y6-	14+00	14+50	RT	260
6	-Y7-	11+00	12+50	RT	1240
7	-L-	52+75	53+25	RT	100
7	-L-	58+75	59+25	LT	125
8	-L-	64+25	65+25	LT	200
8	-L-	70+50	71+25	RT	150
8	-Y9-	13+00	15+50	LT	440
9	-L-	75+00	76+00	LT	485
9	-L-	78+50	79+00	LT	375
9	-L-	84+50	86+00	LT	485
9	-Y12-	11+75	12+25	RT	450
9	-Y13-	10+75	11+25	RT	1240
10	-L-	86+00	95+00	LT	5815
10	-L-	89+00	92+00	RT	2870
10	-L-	95+00	95+50	RT	250
10	-Y14-	10+70	12+85	RT	640
11	-L-	106+50	108+00	RT	400
11	-Y15-	14+00	14+50	RT	420
13	-L-	135+00	135+90	RT	205
13	-L-	135+00	137+00	LT	400
	MATTING FOR SLOPES SUBTOTAL				17,425

MATTING IN DITCHES – STRAW

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
6	-Y5B-	11+65	10+47	RT	130
8	-Y11-	10+50	11+00	RT	30
10	-L-	86+22	87+25	LT	60
11	-Y15-	10+73	10+50	LT	15
11	-Y15-	10+50	12+08	RT	505
11	-Y16-	11+00	10+62	LT	45
11	-Y16-	11+50	11+00	LT	30
14	-L-	147+10	145+65	LT	115
14	-Y24-	11+60	10+73	RT	70
14A	-L-	32+00	32+50	LT	50
14A	-L-	32+50	33+00	LT	50
14A	-L-	33+00	33+90	LT	90
	MATTING FOR DITCHES - STRAW SUBTOTAL				1190
	MATTING IN DITCHES – EXCELSIOR				
11	-Y15-	10+00	10+25	LT	20
	MATTING SUBTOTAL FOR SLOPES				17,425
	MATTING SUBTOTAL FOR DITCHES				1210
	MISCELLANEOUS MATTING AS DIRECTED BY ENGINEER				115,000
				TOTAL	133,635
				SAY	135,000
	PERMANENT SOIL REINFORCEMENT MAT – TYPE 2				
11	-Y15-	10+30	10+50	LT	15
	PSRM FOR DITCHES			TOTAL	15
				SAY	50

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PROJECT REFERENCE NO.	SHEET NO.
R-5600	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 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES

PROJECT REFERENCE NO.	SHEET NO.
R-5600	EC-4/CONST. 4
R/W SHEET NO.	RW-4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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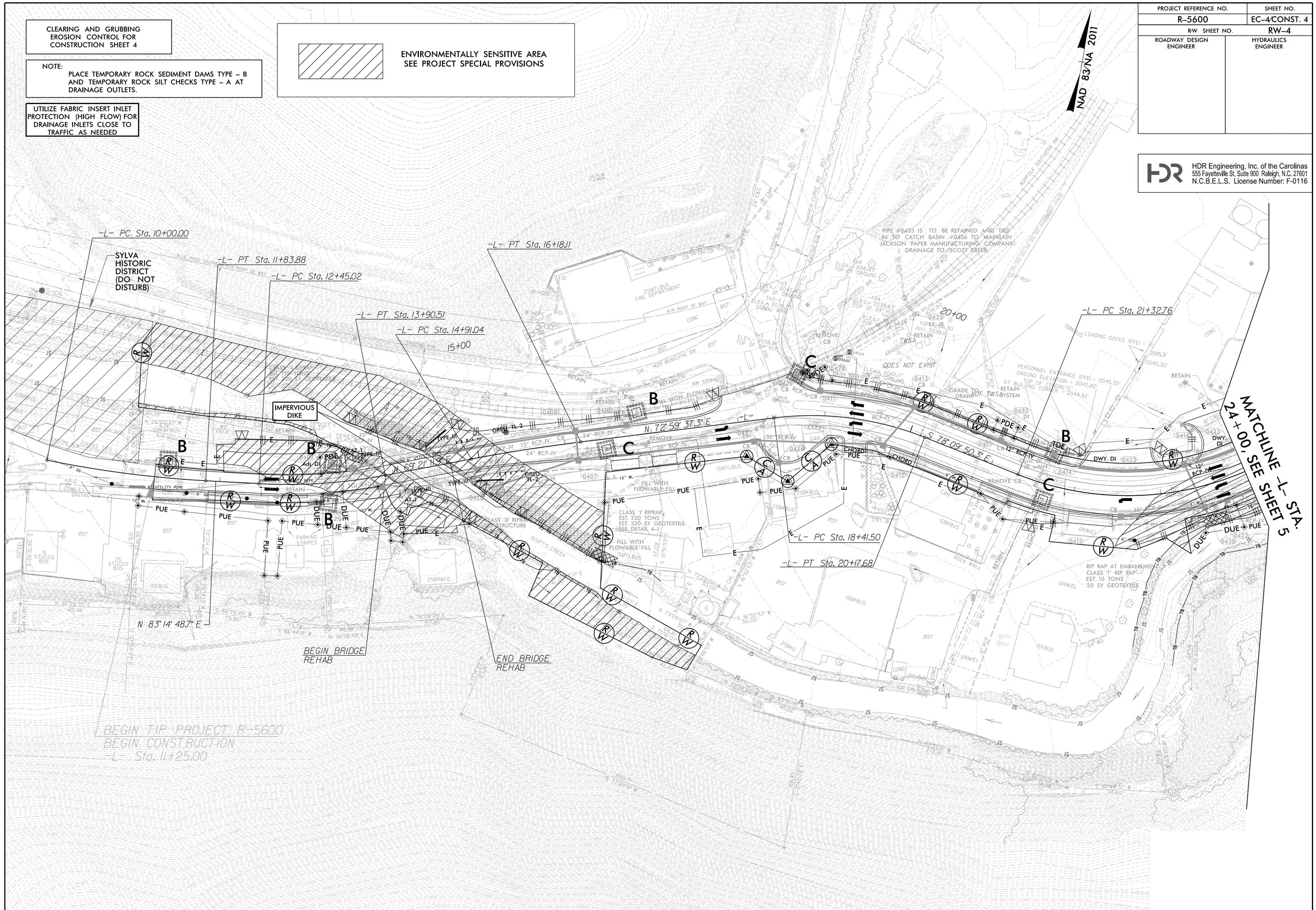
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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

UTILIZE FABRIC INSERT INLET PROTECTION (HIGH FLOW) FOR DRAINAGE INLETS CLOSE TO TRAFFIC AS NEEDED

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS



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PROJECT REFERENCE NO.	SHEET NO.
R-5600	EC-5/CONST. 5
R/W SHEET NO.	RW-5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

HDR Engineering, Inc. of the Carolinas
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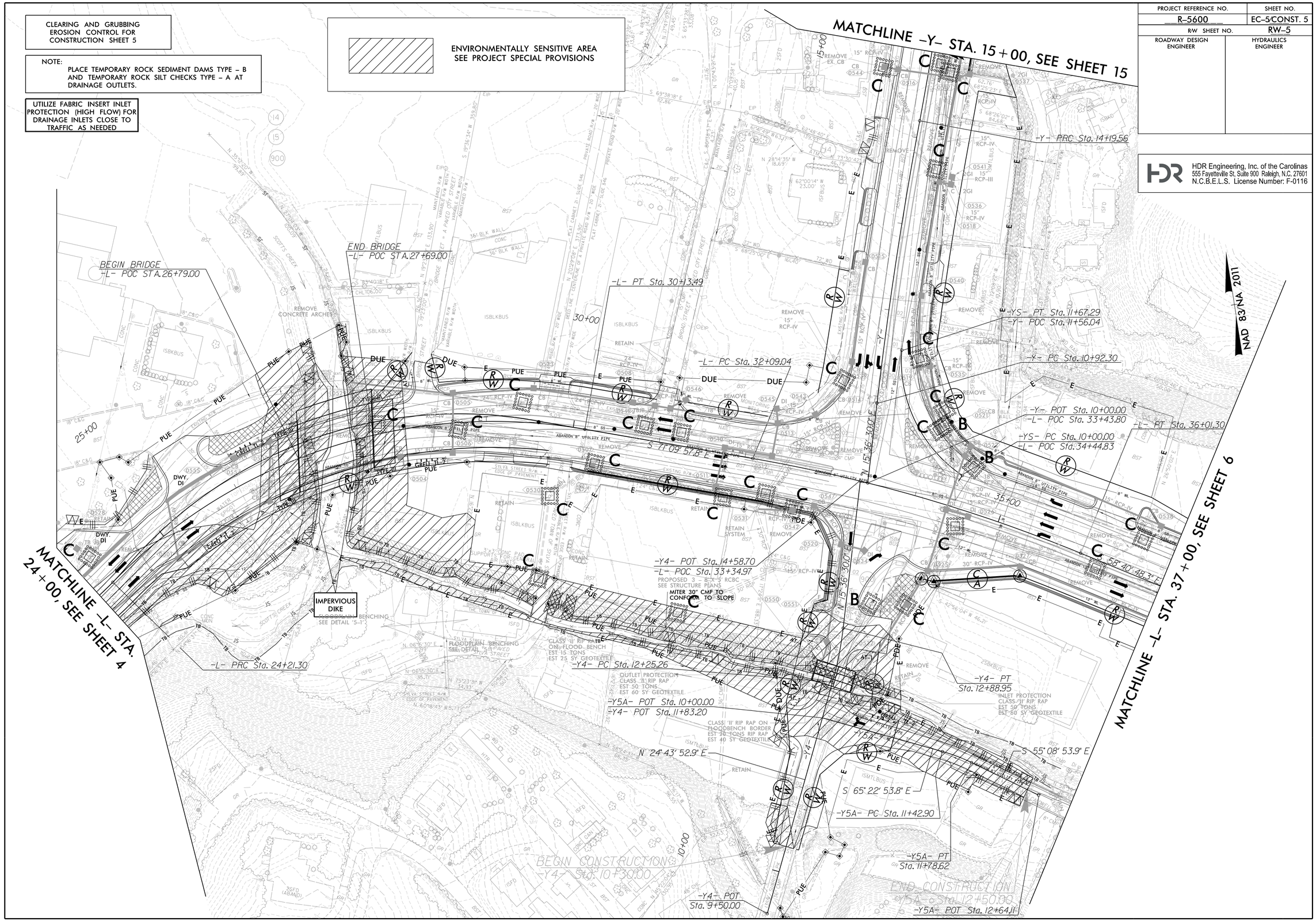
N.C.B.E.L.S. License Number: F-0116

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

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

UTILIZE FABRIC INSERT INLET PROTECTION (HIGH FLOW) FOR DRAINAGE INLETS CLOSE TO TRAFFIC AS NEEDED

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS



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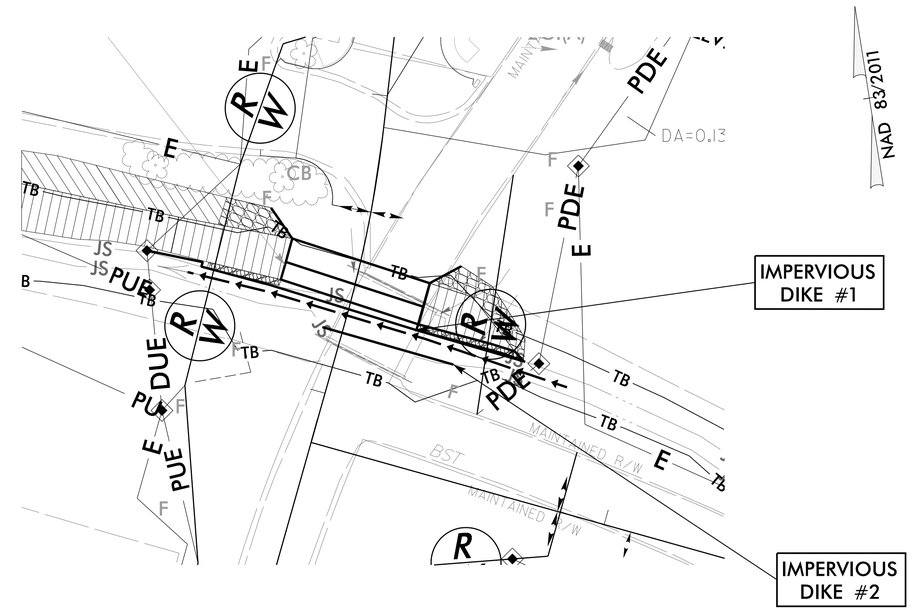
PROJECT REFERENCE NO.	SHEET NO.
R-5600	EC-5A/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

3@7'x5' RCBC CULVERT CONSTRUCTION SEQUENCE STA. 12+25 –Y4–

NOT TO SCALE

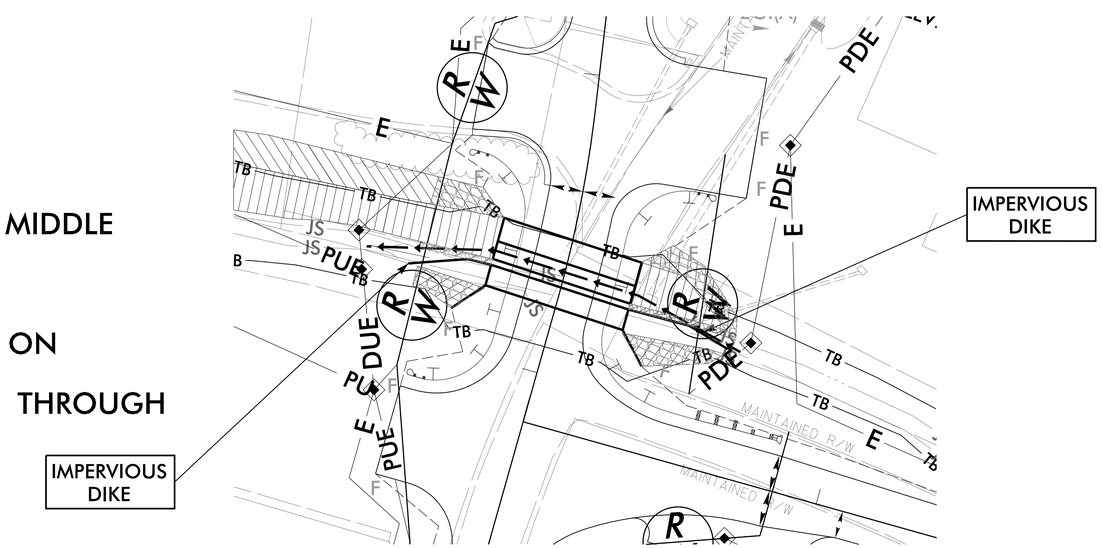
PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) DURING CULVERT CONSTRUCTION AS NEEDED.
2. INSTALL IMPERVIOUS DIKES #1 AND #2.
3. REMOVE EXISTING BRIDGE.
4. UTILIZE PUMP–AROUND TO DEWATER WORK AREA. SEE EC–2B.
5. CONSTRUCT NORTH AND MIDDLE BARRELS OF CULVERT AND UPSTREAM AND DOWNSTREAM CHANNEL IMPROVEMENTS ON NORTH BANK.
6. REMOVE IMPERVIOUS DIKES AND PUMP–AROUND.



PHASE II

1. INSTALL IMPERVIOUS DIKES TO DIRECT FLOW THROUGH NEWLY CONSTRUCTED NORTH AND MIDDLE BARRELS.
2. UTILIZE PUMP–AROUND TO DEWATER WORK AREA. SEE EC–2B.
3. CONSTRUCT SOUTH BARREL OF CULVERT.
4. COMPLETE UPSTREAM AND DOWNSTREAM CHANNEL IMPROVEMENTS ON SOUTH BANK.
5. REMOVE IMPERVIOUS DIKES AND PUMP–AROUND, AND DIRECT FLOW THROUGH NEWLY CONSTRUCTED CULVERT.
6. REMOVE ANY SPECIAL STILLING BASIN(S).
7. COMPLETE ROADWAY CONSTRUCTION.



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6

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

UTILIZE FABRIC INSERT INLET PROTECTION (HIGH FLOW) FOR DRAINAGE INLETS CLOSE TO TRAFFIC AS NEEDED

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-5600	EC-6/CONST. 6
R/W SHEET NO.	RW-6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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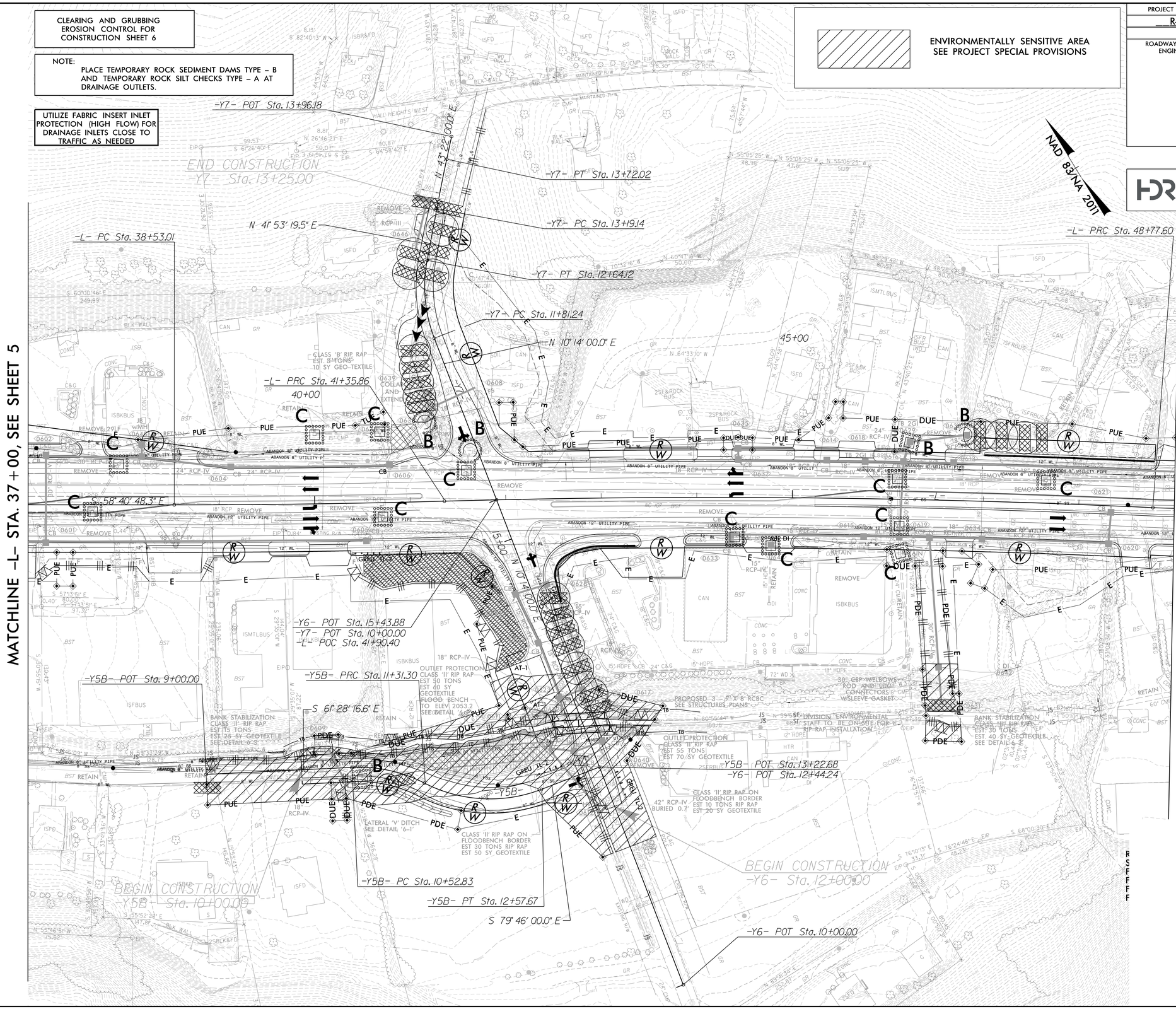
N.C.B.E.L.S. License Number: F-0116



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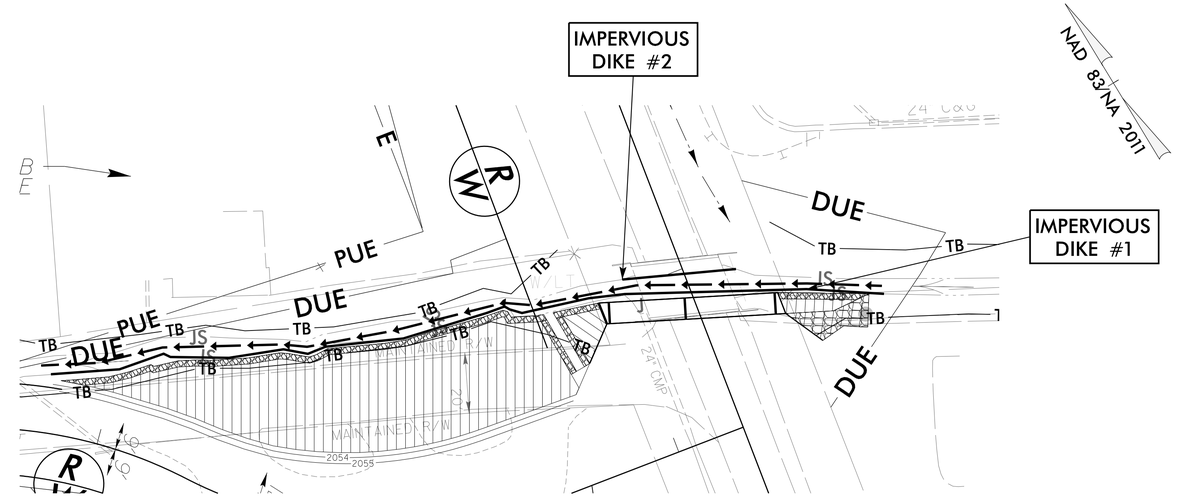
PROJECT REFERENCE NO.	SHEET NO.
R-5600	EC-6A/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

3@7'x8' RCBC CULVERT CONSTRUCTION SEQUENCE STA. 12+94 –Y6–

NOT TO SCALE

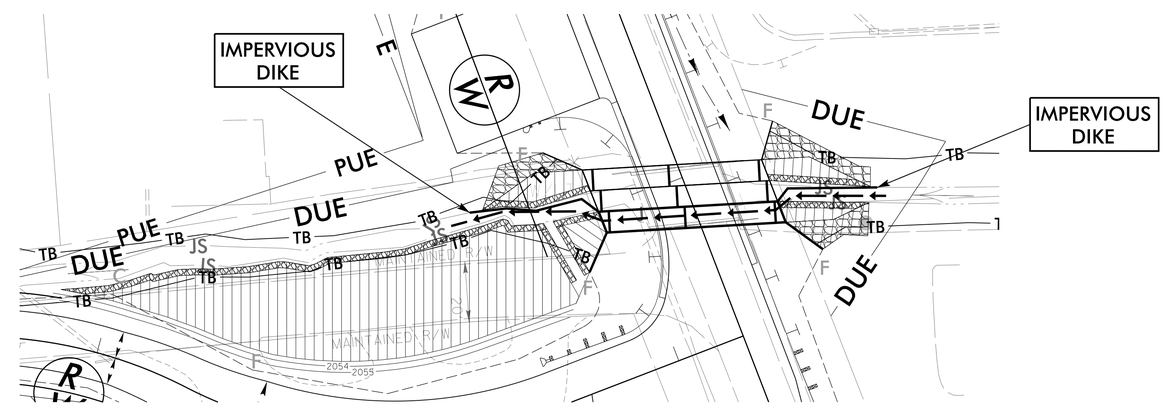
PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) DURING CULVERT CONSTRUCTION AS NEEDED.
2. INSTALL IMPERVIOUS DIKES #1 AND #2.
3. REMOVE EXISTING BRIDGE.
4. UTILIZE PUMP–AROUND TO DEWATER WORK AREA. SEE EC–2B.
5. CONSTRUCT SOUTH BARREL OF CULVERT AND UPSTREAM AND DOWNSTREAM CHANNEL IMPROVEMENTS ON SOUTH BANK.
6. REMOVE IMPERVIOUS DIKES AND PUMP–AROUND.



PHASE II

1. INSTALL IMPERVIOUS DIKES TO DIRECT FLOW THROUGH NEWLY CONSTRUCTED SOUTH BARREL.
2. UTILIZE PUMP–AROUND TO DEWATER WORK AREA. SEE EC–2B.
3. CONSTRUCT NORTH AND MIDDLE BARRELS OF CULVERT.
4. COMPLETE UPSTREAM AND DOWNSTREAM CHANNEL IMPROVEMENTS ON NORTH BANK.
5. REMOVE IMPERVIOUS DIKES AND PUMP–AROUND, AND DIRECT FLOW THROUGH NEWLY CONSTRUCTED CULVERT.
6. REMOVE ANY SPECIAL STILLING BASIN(S).
7. COMPLETE ROADWAY CONSTRUCTION.



PROJECT REFERENCE NO.	SHEET NO.
R-5600	EC-7/CONST. 7
R/W SHEET NO.	RW-7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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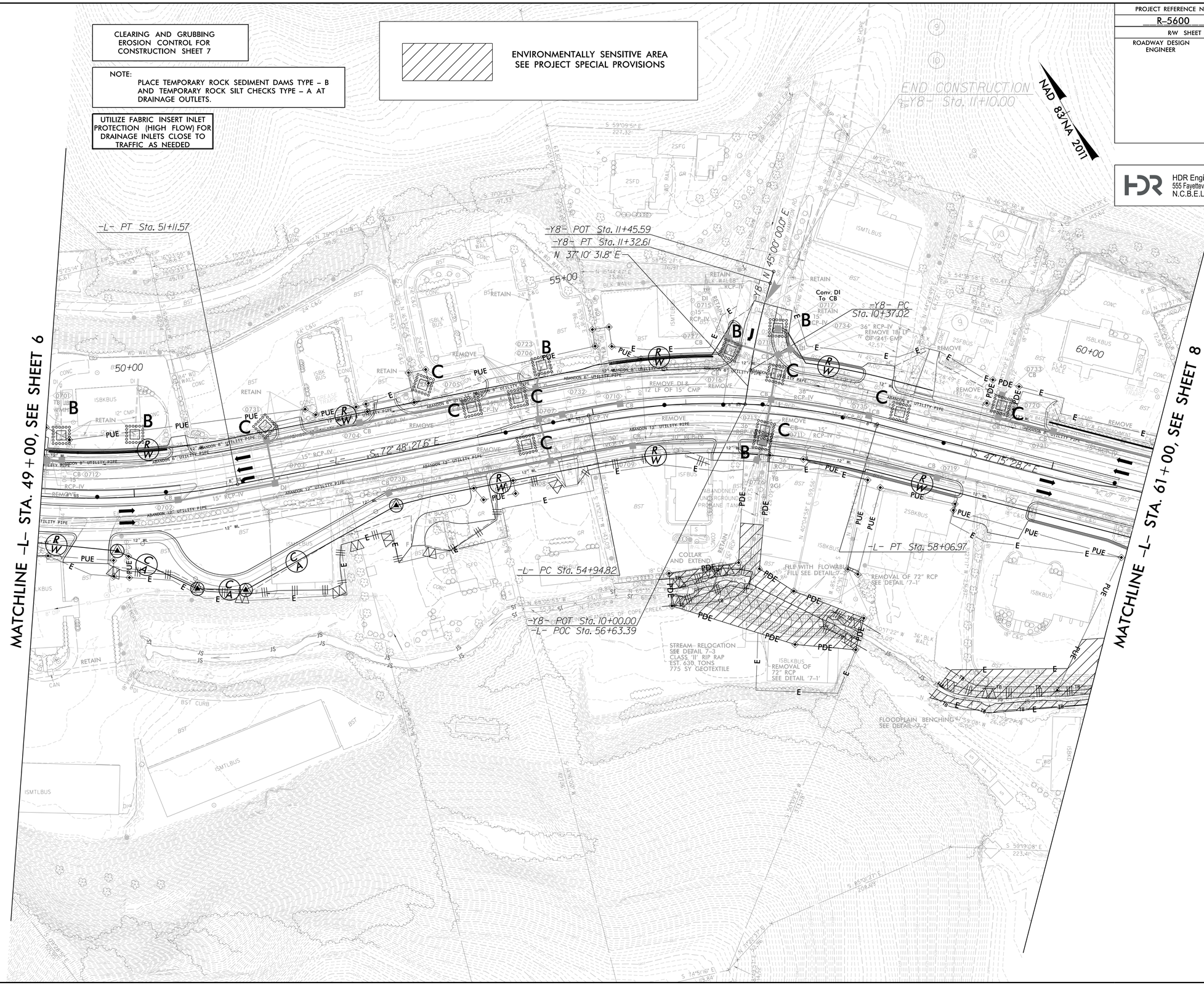
N.C.B.E.L.S. License Number: F-0116

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 7

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

UTILIZE FABRIC INSERT INLET PROTECTION (HIGH FLOW) FOR DRAINAGE INLETS CLOSE TO TRAFFIC AS NEEDED

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS



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PROJECT REFERENCE NO.	SHEET NO.
R-5600	EC-8/CONST. 8
R/W SHEET NO.	RW-8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

HDR Engineering, Inc. of the Carolinas
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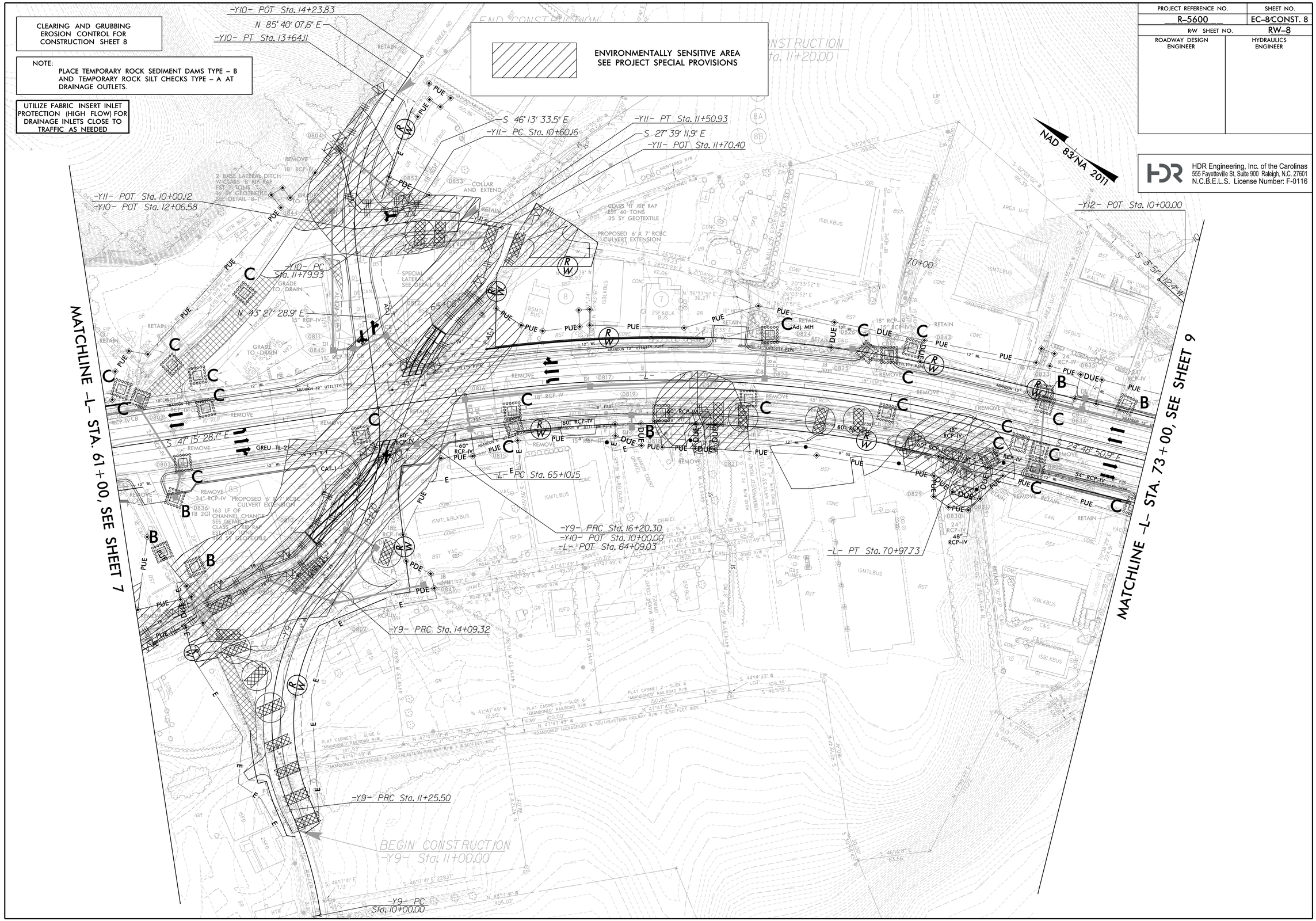
N.C.B.E.L.S. License Number: F-0116

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 8

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

UTILIZE FABRIC INSERT INLET PROTECTION (HIGH FLOW) FOR DRAINAGE INLETS CLOSE TO TRAFFIC AS NEEDED

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS



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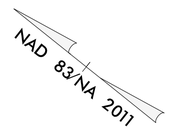
TIME: 3:08:22 PM

PROJECT REFERENCE NO.	SHEET NO.
R-5600	EC-8A/CONST.8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

3@6'x6' RCBC CULVERT CONSTRUCTION SEQUENCE STA. 64+25 –L–

NOT TO SCALE



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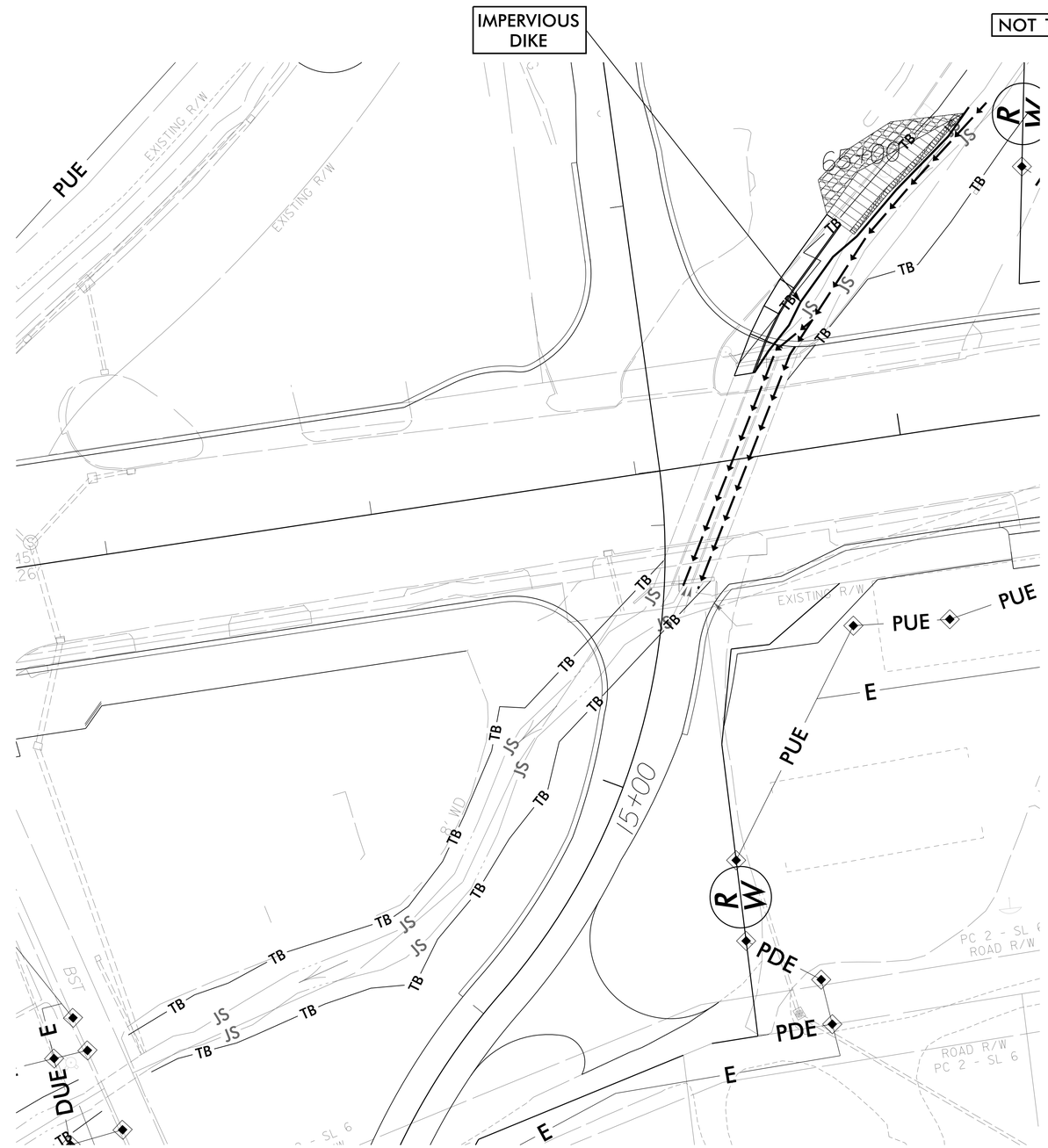
1. UTILIZE SPECIAL STILLING BASIN(S) DURING CULVERT CONSTRUCTION AS NEEDED.
2. INSTALL IMPERVIOUS DIKE TO DIRECT FLOW AWAY FROM WORK AREA.
3. UTILIZE PUMP–AROUND TO DEWATER WORK AREA. SEE EC–2B.
4. REMOVE PORTION OF EXISTING CULVERT AS NECESSARY TO CONSTRUCT EXTENSIONS OF UPSTREAM NORTH BARREL.
5. CONSTRUCT EXTENSIONS OF UPSTREAM NORTH BARREL OF CULVERT.
6. COMPLETE UPSTREAM NORTH BANK CHANNEL IMPROVEMETS.
7. REMOVE IMPERVIOUS DIKES AND PUMP–AROUND.