TIP PROJECT: R-2303B

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2303B	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

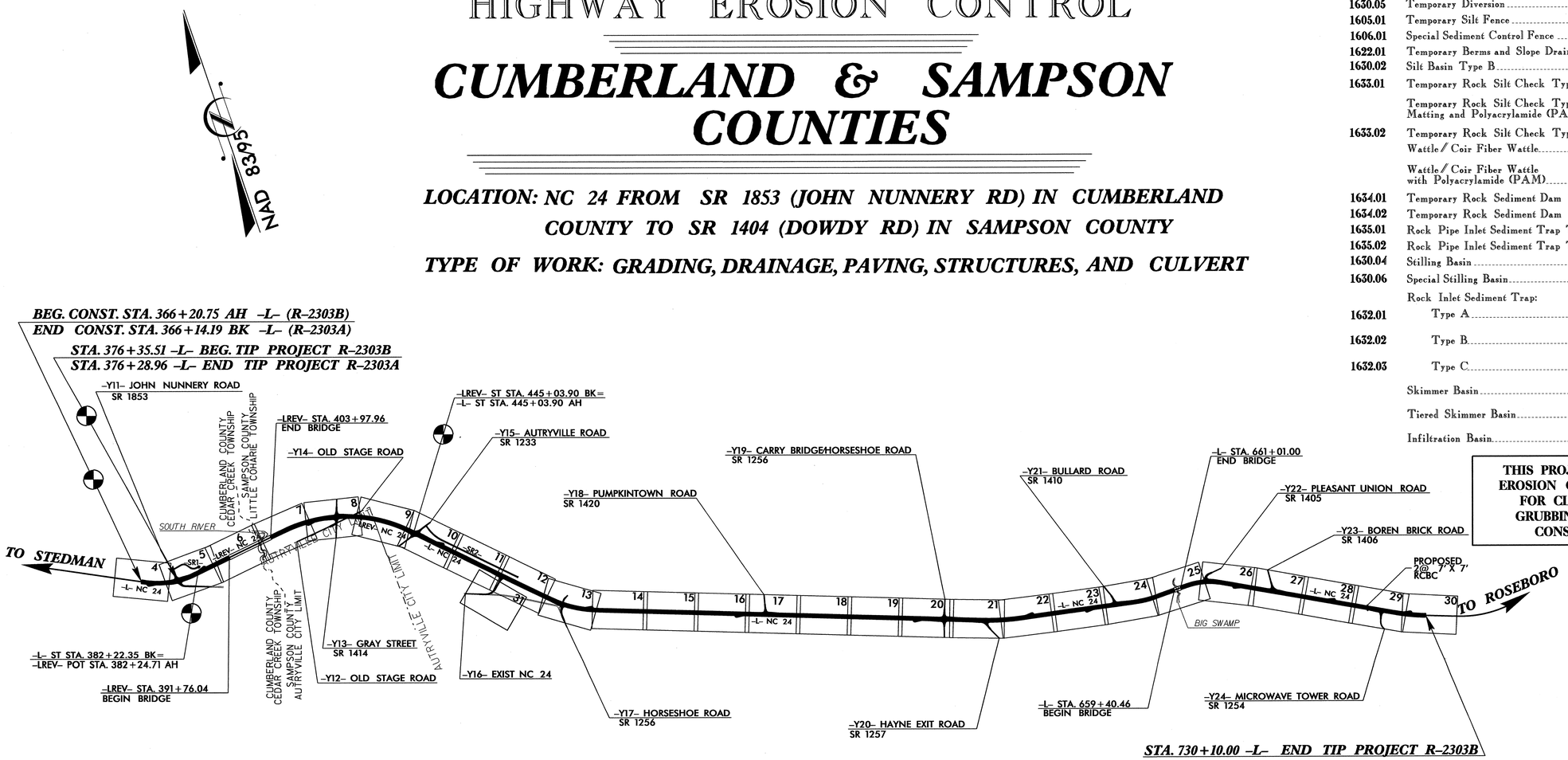
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

CUMBERLAND & SAMPSON COUNTIES

LOCATION: NC 24 FROM SR 1853 (JOHN NUNNERY RD) IN CUMBERLAND COUNTY TO SR 1404 (DOWDY RD) IN SAMPSON COUNTY

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, AND CULVERT



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

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	

GRAPHIC SCALE

0 — PLANS

0 — PROFILE (HORIZONTAL)

0 — PROFILE (VERTICAL)

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 Office of:

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		

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R:\Roadway\Proj\R-2303B_EC_tsh.dgn
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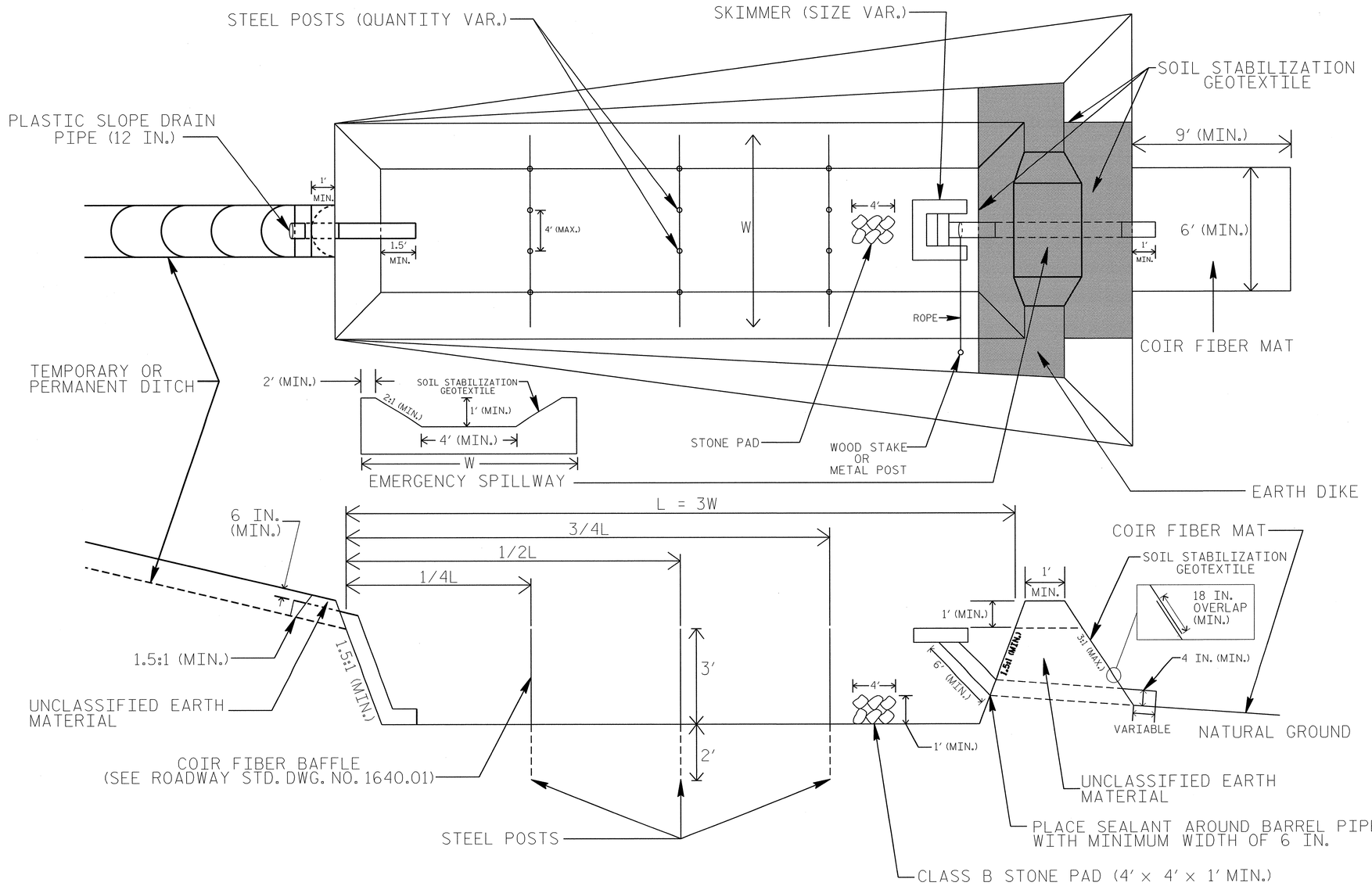
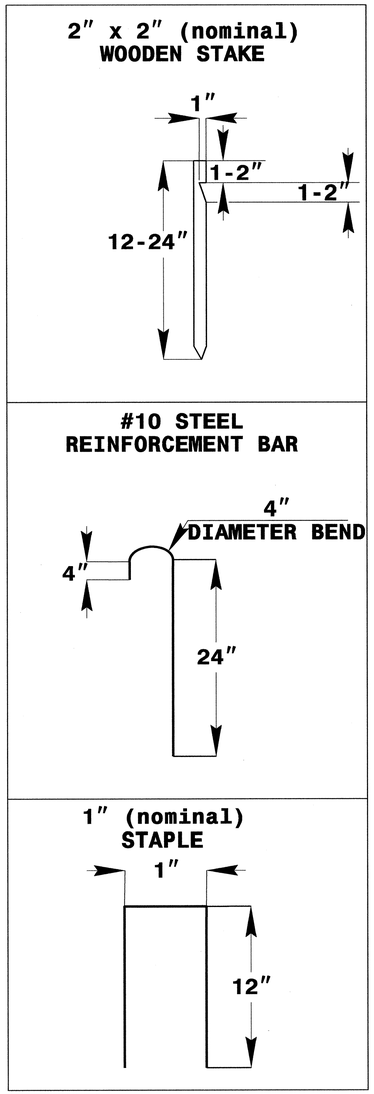
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-02
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL





COIR FIBER MAT ANCHOR OPTIONS

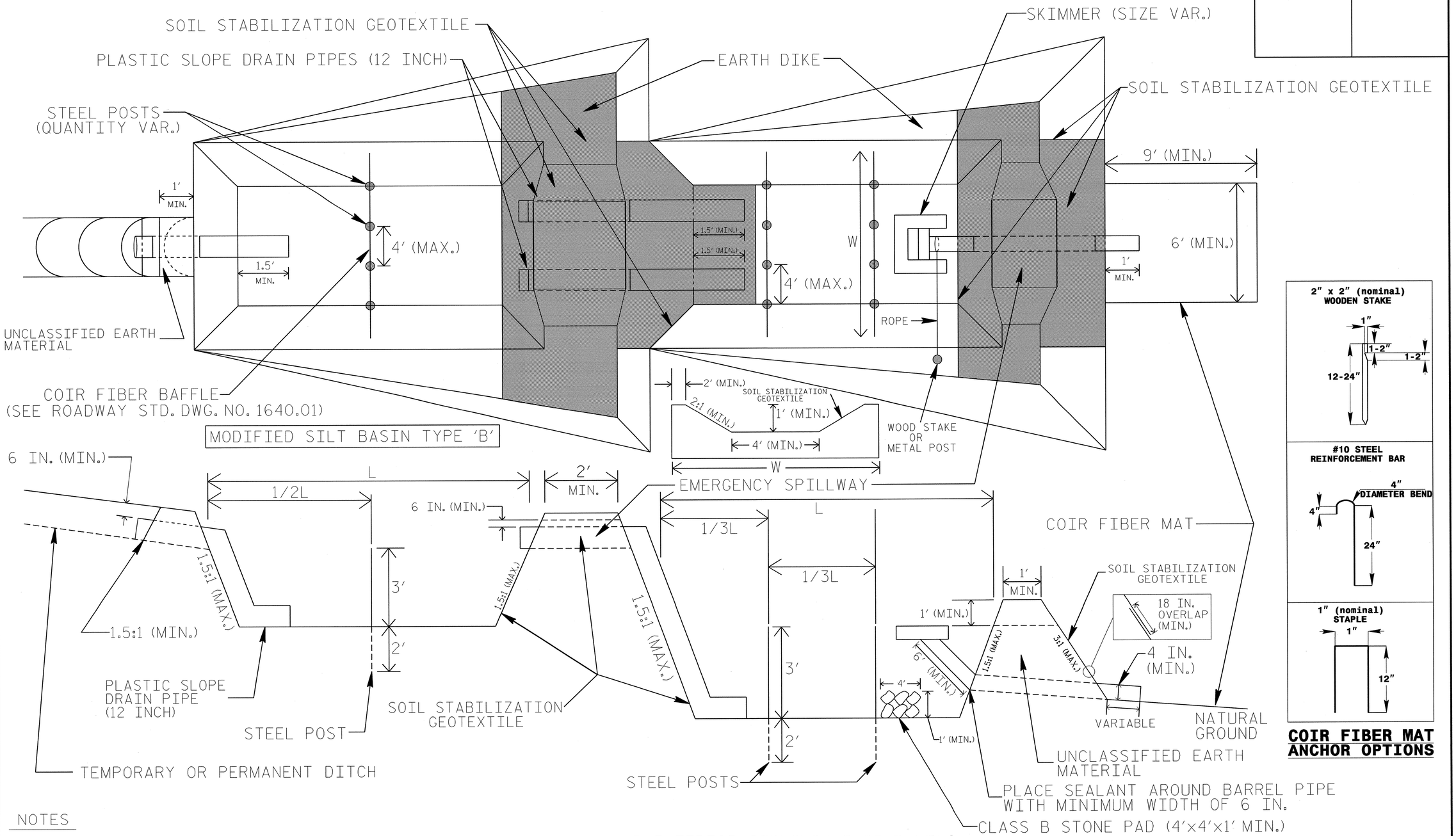
NOTES

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 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

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TIERED SKIMMER BASIN DETAIL



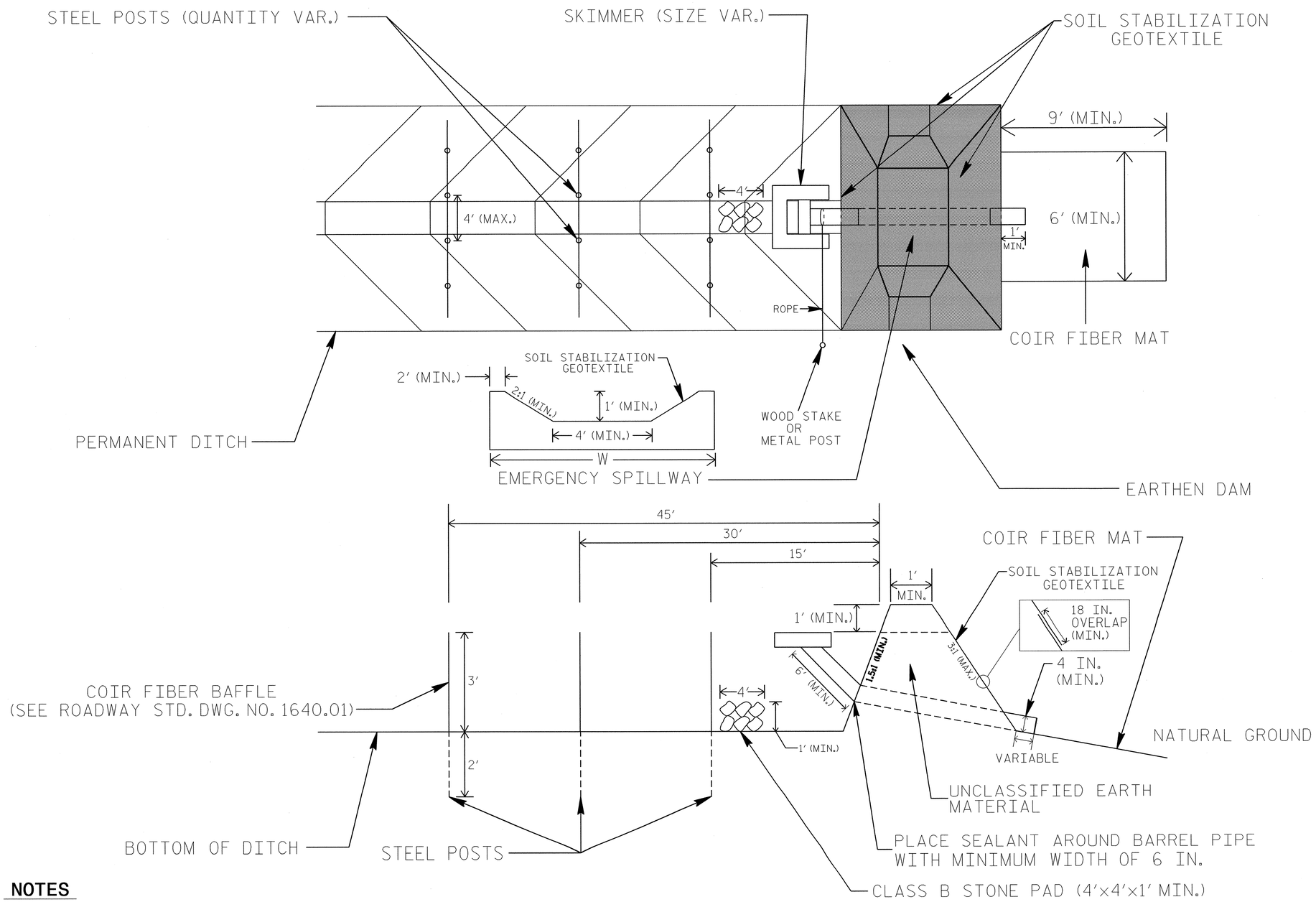
NOTES

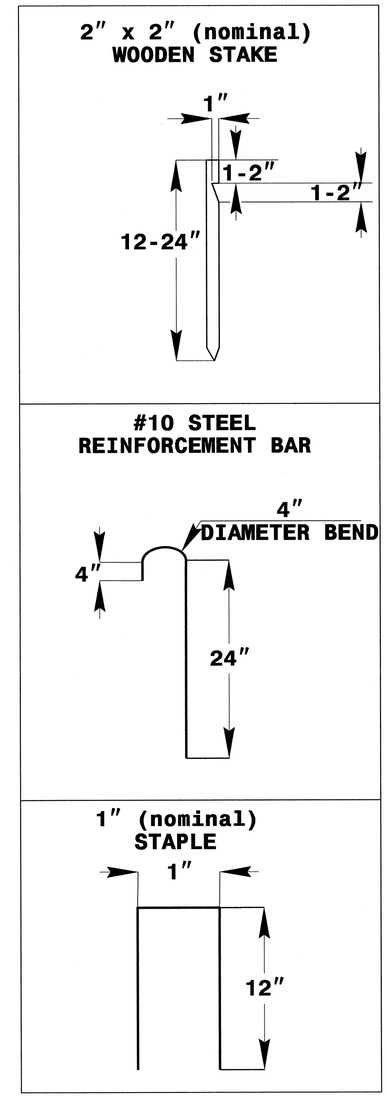
1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES OF BASINS.
2. LIMIT HEIGHT OF EARTH DIKES TO 5 FT.
3. ADDITIONAL MODIFIED SILT BASINS TYPE 'B' MAY BE NEEDED DEPENDING ON SLOPE.
4. FOR BASIN DEPTHS OF 3FT., THE MINIMUM BASIN WIDTHS SHALL BE 9 FT.
5. DETERMINE EMERGENCY 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

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EARTHEN DAM WITH SKIMMER





COIR FIBER MAT ANCHOR OPTIONS

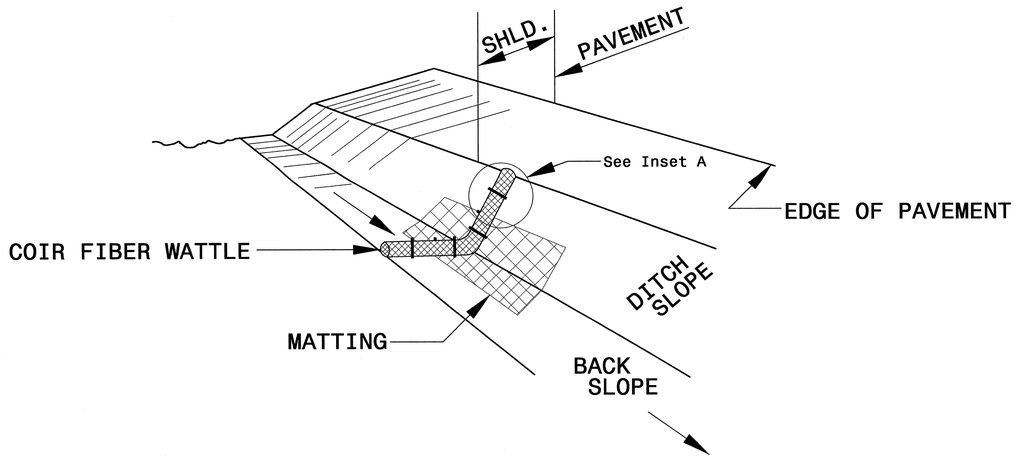
NOTES

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.).

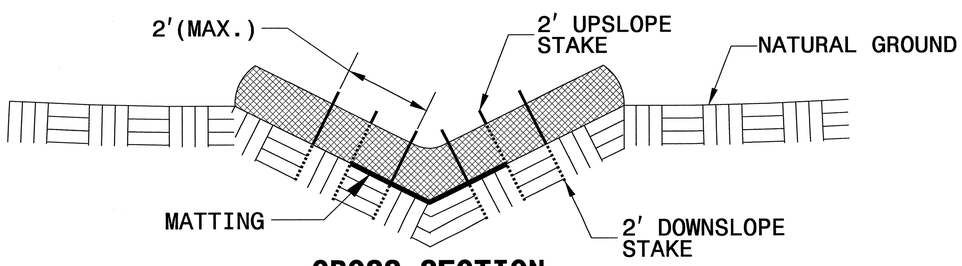
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

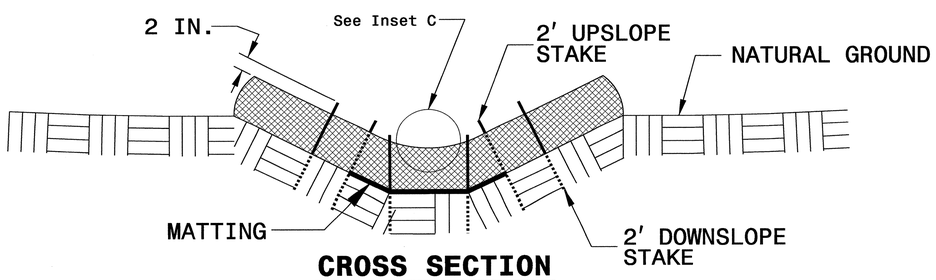
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

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

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

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

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

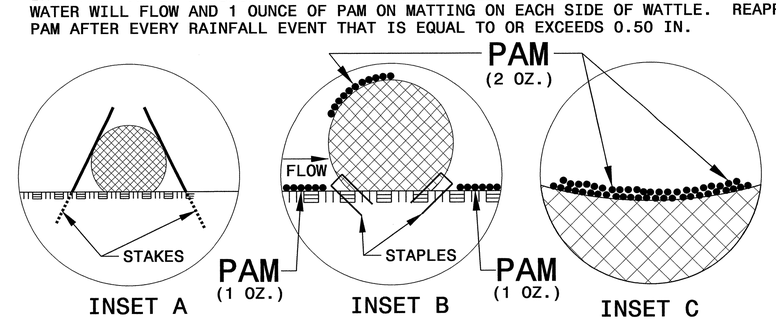
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

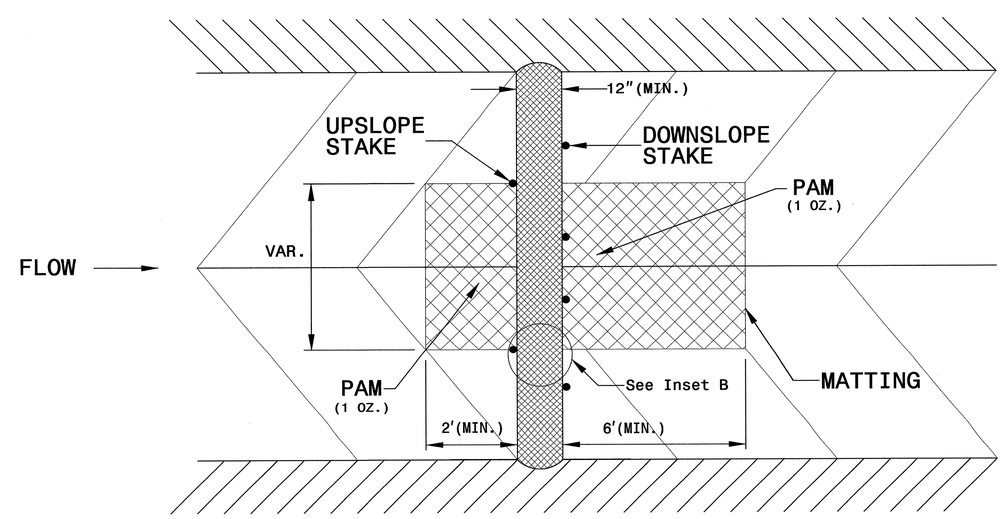
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

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

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

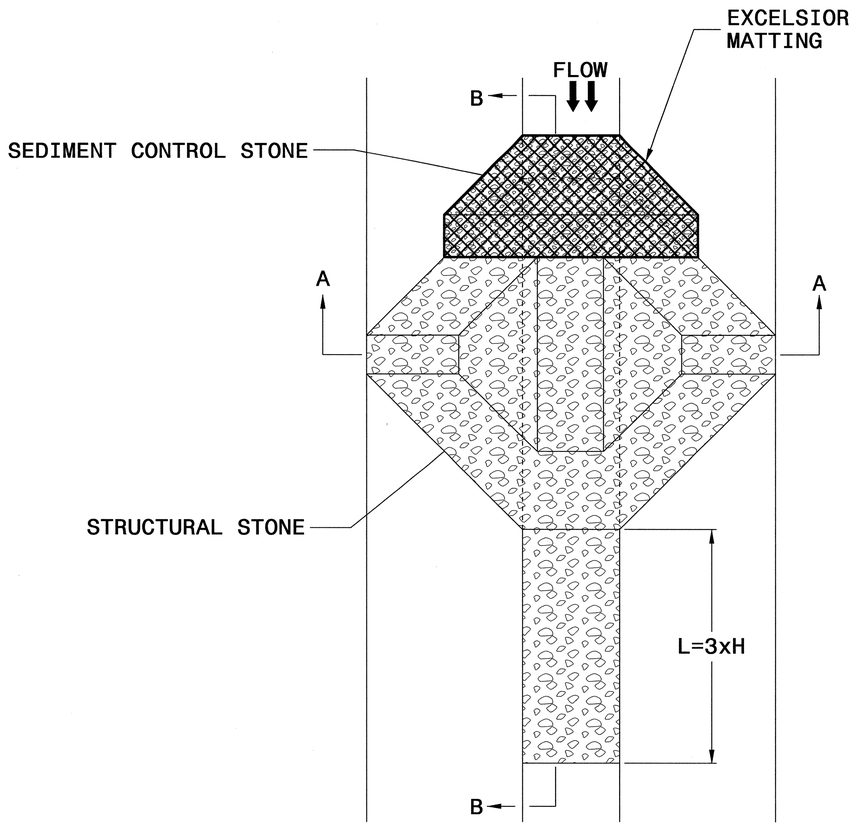




TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



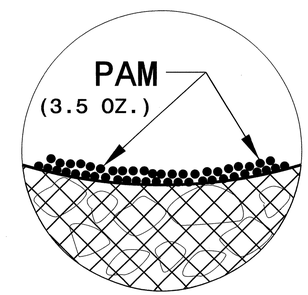
PLAN

NOTES

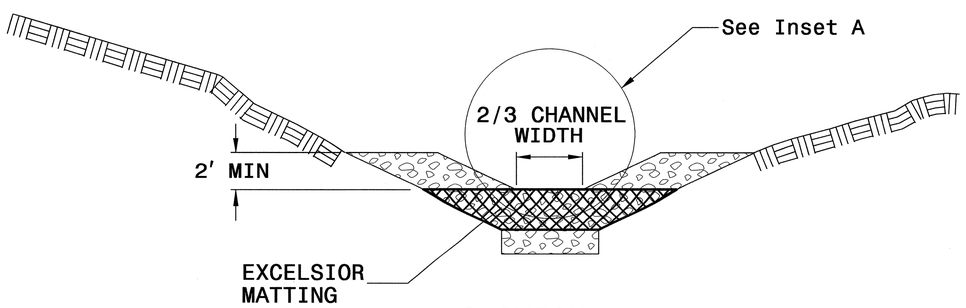
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

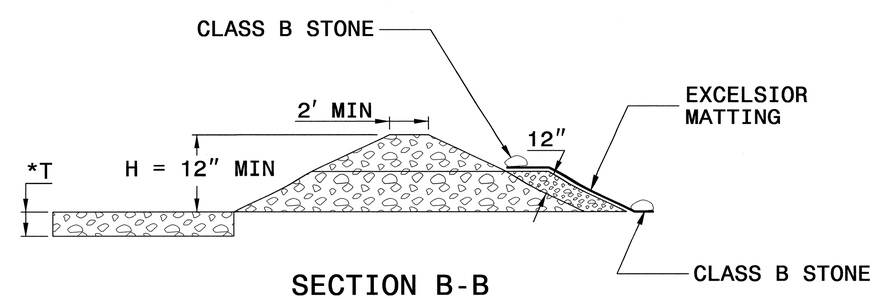
INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



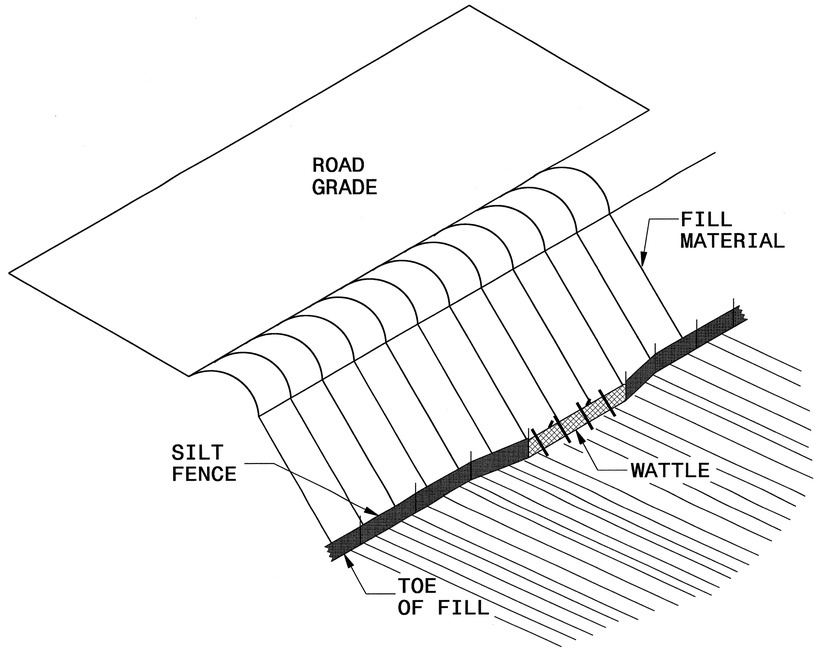
SECTION B-B

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

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



ISOMETRIC VIEW

NOTES:

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

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

DO NOT PLACE WATTLE ON TOE OF SLOPE.

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

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

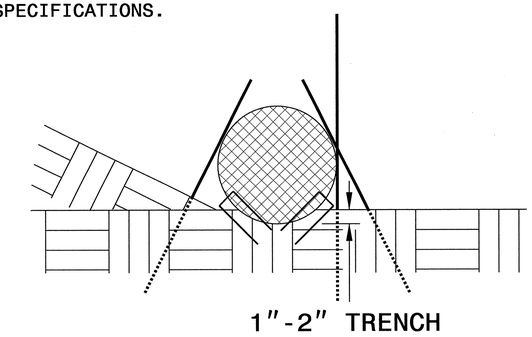
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

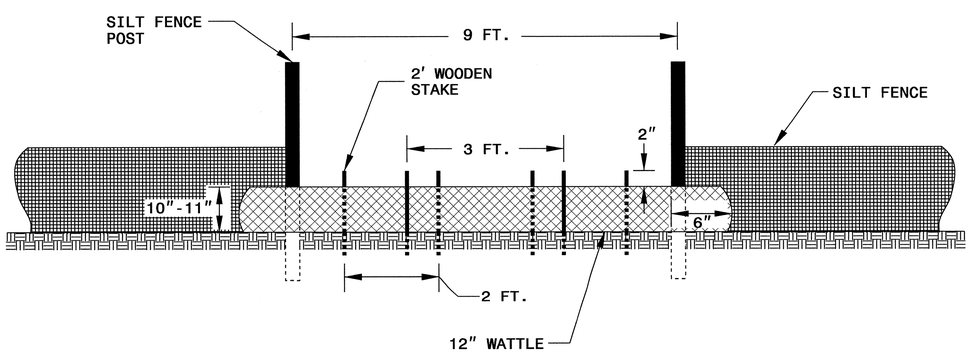
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

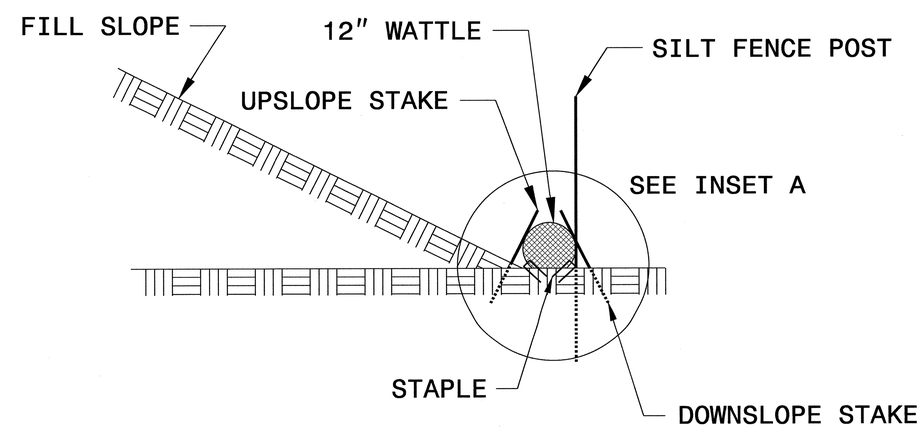
INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A





VIEW FROM SLOPE



SIDE VIEW

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-2F
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BORROW PIT DEWATERING BASIN DETAIL

GENERAL NOTES:

DETERMINE BORROW PIT DEWATERING BASIN SIZE USING $V = 8.0203 * Q * T$, WHERE V IS VOLUME (FT^3), Q IS PUMP FLOW RATE (GPM), AND T IS DEWATERING TIME (HR). USE MAXIMUM FLOW RATE OF 1000 GPM AND A MINIMUM DEWATERING TIME OF 2 HOURS.

RISER SHALL BE A NON-PERFORATED, SMOOTH OR CORRUGATED MATERIAL WITH A FLASHBOARD OPTION.

CONSTRUCT THE COIR FIBER BAFFLE IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1640.01 AND WITH MATERIAL THAT MEETS THE SPECIFICATIONS OF ROADWAY STANDARD 1060-14.

PROVIDE 5′ STEEL POSTS OF THE SELF-FASTENER ANGLE STEEL TYPE. INSTALL STEEL POSTS WITH NO MORE THAN 3′ OF THE POST APPEARING ABOVE THE GROUND.

ATTACH THE COIR FIBER MAT TO THE STEEL POSTS WITH WIRE OR OTHER ACCEPTABLE MEANS AND STAPLED INTO THE BOTTOM AND SIDE SLOPES OF THE BASIN WITH 12″ STAPLES.

INSTALL TYPE 2 GEOTEXTILE ON SIDESLOPES AND BOTTOM OF BASIN AT INLET AS SHOWN IN THE DETAIL.

USE THE TYPICAL SECTION SHOWN FOR THE BORROW PIT DEWATERING BASIN AS A GUIDE. THE BASIN MAY HAVE ANY TYPE CONFIGURATION AS LONG AS SUFFICIENT VOLUME IS PROVIDED AND PROVISIONS ARE MADE FOR A NON-PERFORATED RISER.

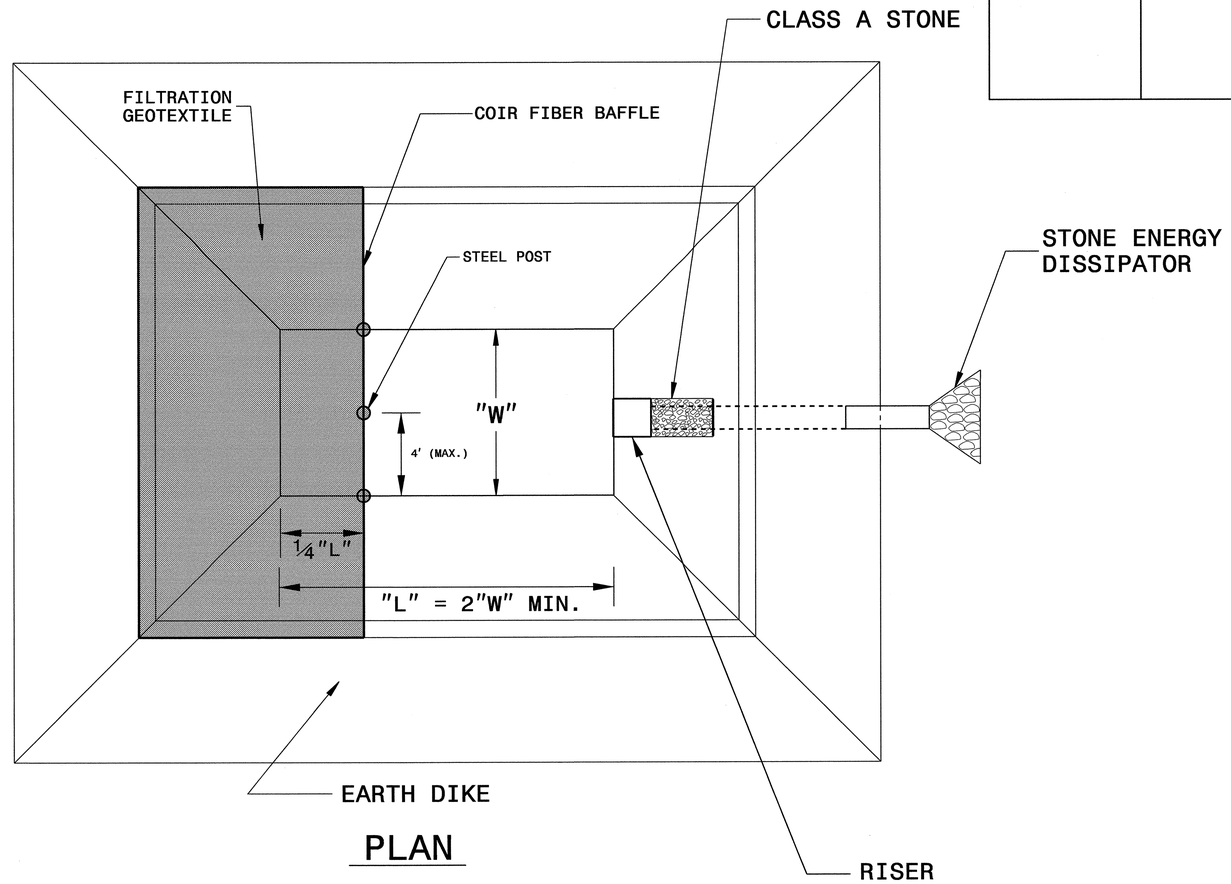
DO NOT EXCEED 3½ FT. IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR BORROW PIT DEWATERING BASIN.

THE BORROW PIT DEWATERING BASIN SIZE IS VARIABLE AND DEPENDENT ON SPECIFIC SITE REQUIREMENTS AS WELL AS PROPOSED CONSTRUCTION OPERATIONS.

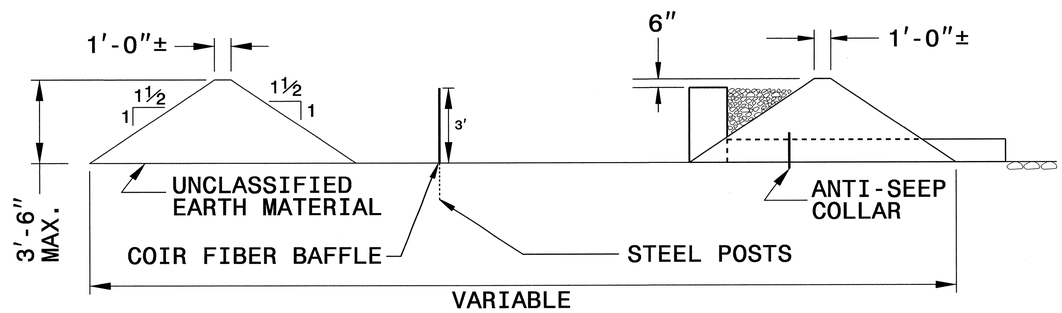
SUBMIT THE SIZE, LOCATION AND RISER PIPE MATERIAL FOR APPROVAL PRIOR TO CONSTRUCTION.

PUMP THE EFFLUENT INTO THE BORROW PIT DEWATERING BASIN TO A MAXIMUM DEPTH OF 6 IN. BELOW TOP OF EARTH DIKE.

PROVIDE A STONE ENERGY DISSIPATOR PAD AT THE OUTLET OF THE PUMP DISCHARGE HOSE AND OUTLET OF THE RISER BARREL IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 876.02 FOR OUTLET W/O DITCH.



PLAN



TYPICAL SECTION VIEW

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-03
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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-	366+20	368+60	LT	325
5	-L-	373+78	374+86	LT	270
5	-L-	377+43	378+23	RT	60
5	-L-	383+50	387+00	LT	620
5	-L-	383+50	387+00	RT	470
5	-SR1-	10+35	12+00	LT	70
5	-SR1-	10+35	11+50	RT	50
7	-L-	407+00	410+00	RT	380
7	-L-	410+50	413+00	RT	465
7	-L-	404+31	406+50	LT	240
7	-L-	411+50	413+00	MEDIAN	205
8	-L-	420+50	422+08	RT	130
8	-L-	426+50	428+00	LT	140
8	-Y13-	18+82	19+50	RT	35
8	-Y14-	16+40	16+59	LT	15
8	-Y14-	16+40	16+59	RT	15
8	-Y14-	16+75	17+15	RT	30
9	-L-	431+50	433+00	LT	190
9	-L-	433+00	434+50	LT	190
9	-L-	438+00	439+98	LT	255
10	-Y15-	13+11	13+90	RT	30
12	-SR2-	37+50	39+14	RT	75
12	-SR2-	37+50	39+14	LT	75
12	-Y16-	11+31	13+00	RT	160
12	-Y16-	13+00	14+00	RT	95
15	-L-	524+00	530+00	RT	550
17	-L-	547+37	554+00	LT	845
17	-L-	547+37	555+00	RT	970
19	-L-	574+50	577+00	LT	305
19	-L-	577+50	580+50	LT	365

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
20	-L-	589+00	594+22	RT	665
20	-Y19-	19+67	19+91	RT	10
20	-Y19-	21+48	21+94	LT	85
22	-L-	611+00	613+75	LT	280
22	-L-	617+50	627+50	LT	1615
22	-L-	616+50	627+00	RT	3205
23	-L-	628+00	635+50	LT	765
23	-L-	636+00	641+50	LT	500
24	-L-	640+00	646+00	RT	550
24	-L-	643+44	653+00	LT	1945
26	-L-	670+50	672+00	LT	190
26	-L-	672+34	673+50	LT	205
26	-L-	674+00	678+50	LT	1835
26	-Y22-	12+50	14+50	LT	210
27	-L-	682+50	685+50	RT	275
27	-L-	686+00	694+00	RT	1610
27	-L-	688+13	691+50	LT	310
27	-Y23-	17+00	18+63	LT	155
28	-L-	708+00	710+50	RT	335
29	-L-	715+50	723+14	LT	1540
29	-L-	718+00	720+52	RT	260
30	-L-	727+00	730+10	LT	625
30	-L-	728+50	730+10	RT	215
31	-Y16-	14+40	15+50	RT	80
31	-Y16-	15+50	17+00	RT	105
				SUBTOTAL	25,195
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					112,970
				TOTAL	138,165
				SAY	140,000

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	374+50	374+86	RT	40
22	-L-	615+81	616+00	LT	40
25	-L-	653+00	654+50	LT	125
29	-L-	714+50	715+97	RT	140
			SUBTOTAL		345
	ADDITIONAL PSRM TO BE INSTALLED				795
				TOTAL	1,140
				SAY	1,200

PERMANENT SOIL REINFORCEMENT MAT

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

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-3B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

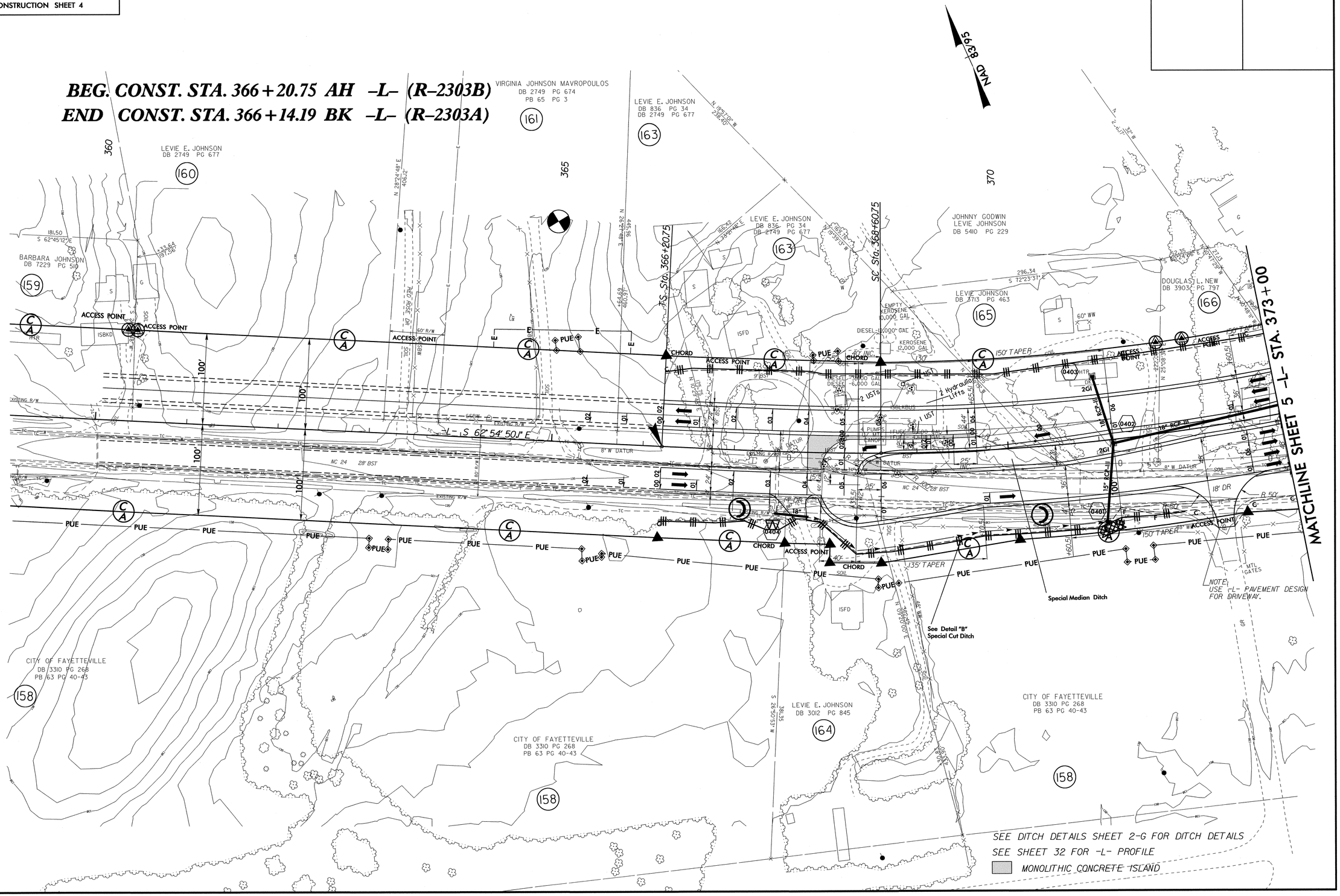
SOIL STABILIZATION TIMEFRAMES

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.

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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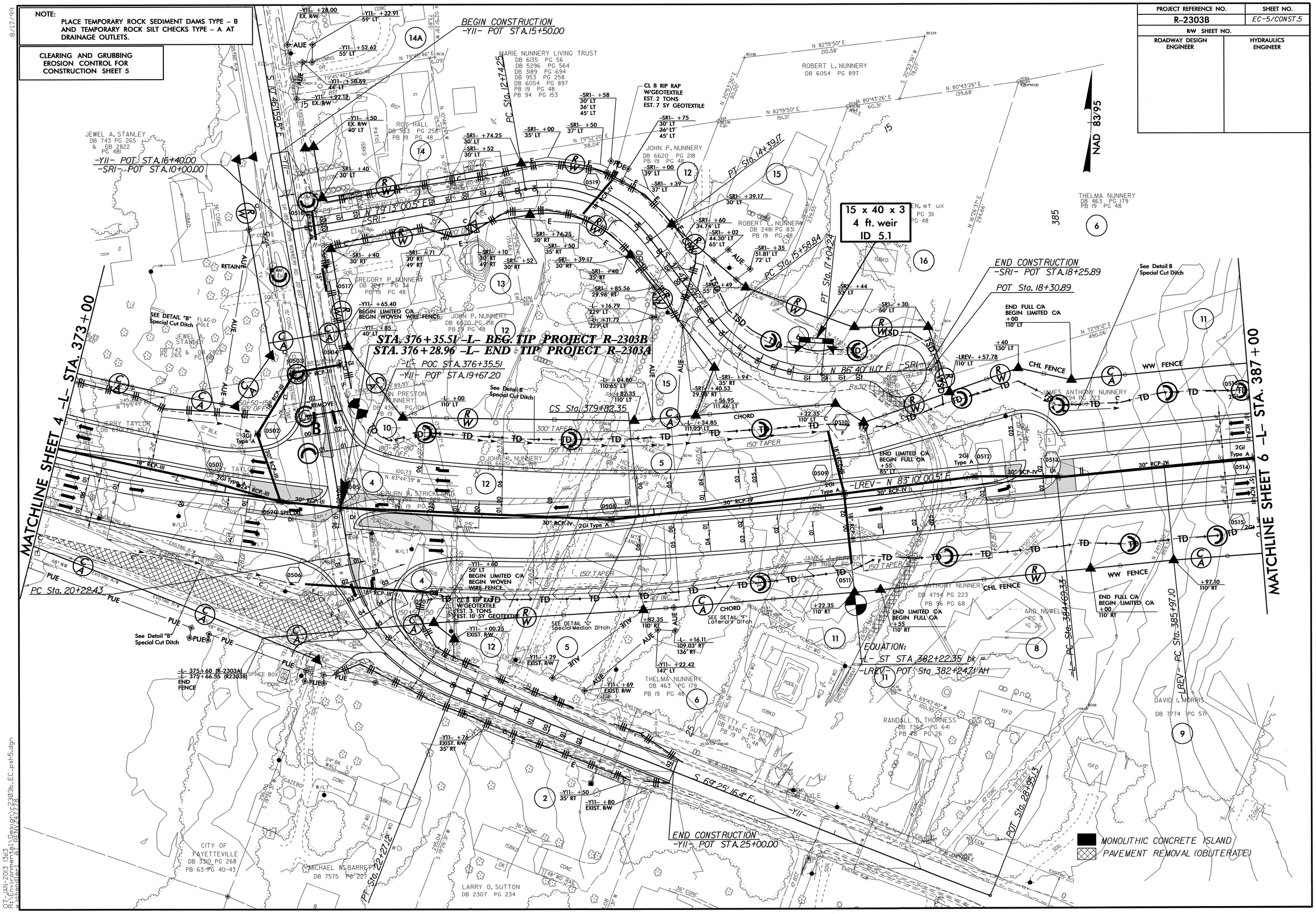
wichandler1 AT RENV247778

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-5/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5



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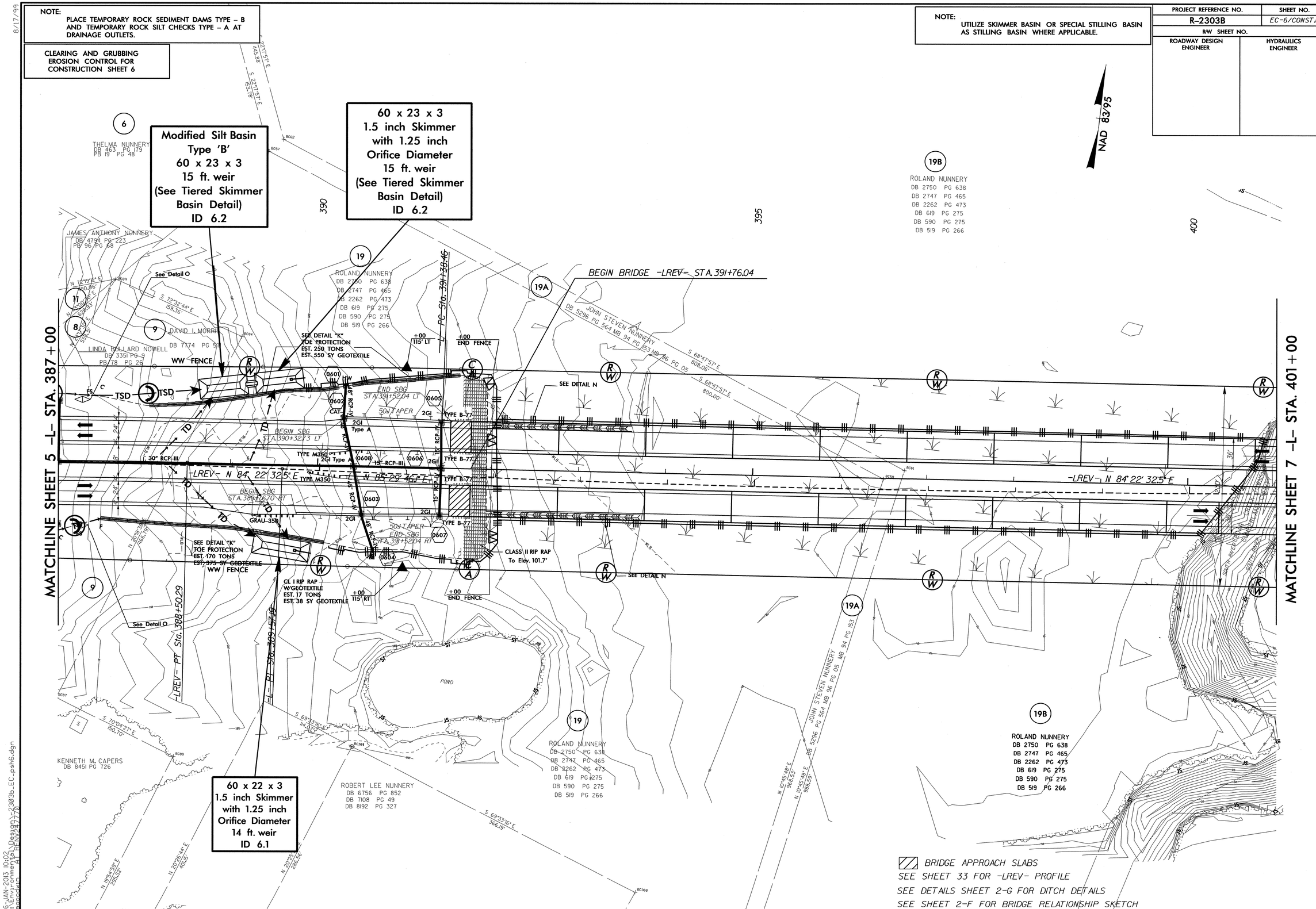
w/Chandler, Al TRN/247778

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 6

NOTE:
UTILIZE SKIMMER BASIN OR SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-6/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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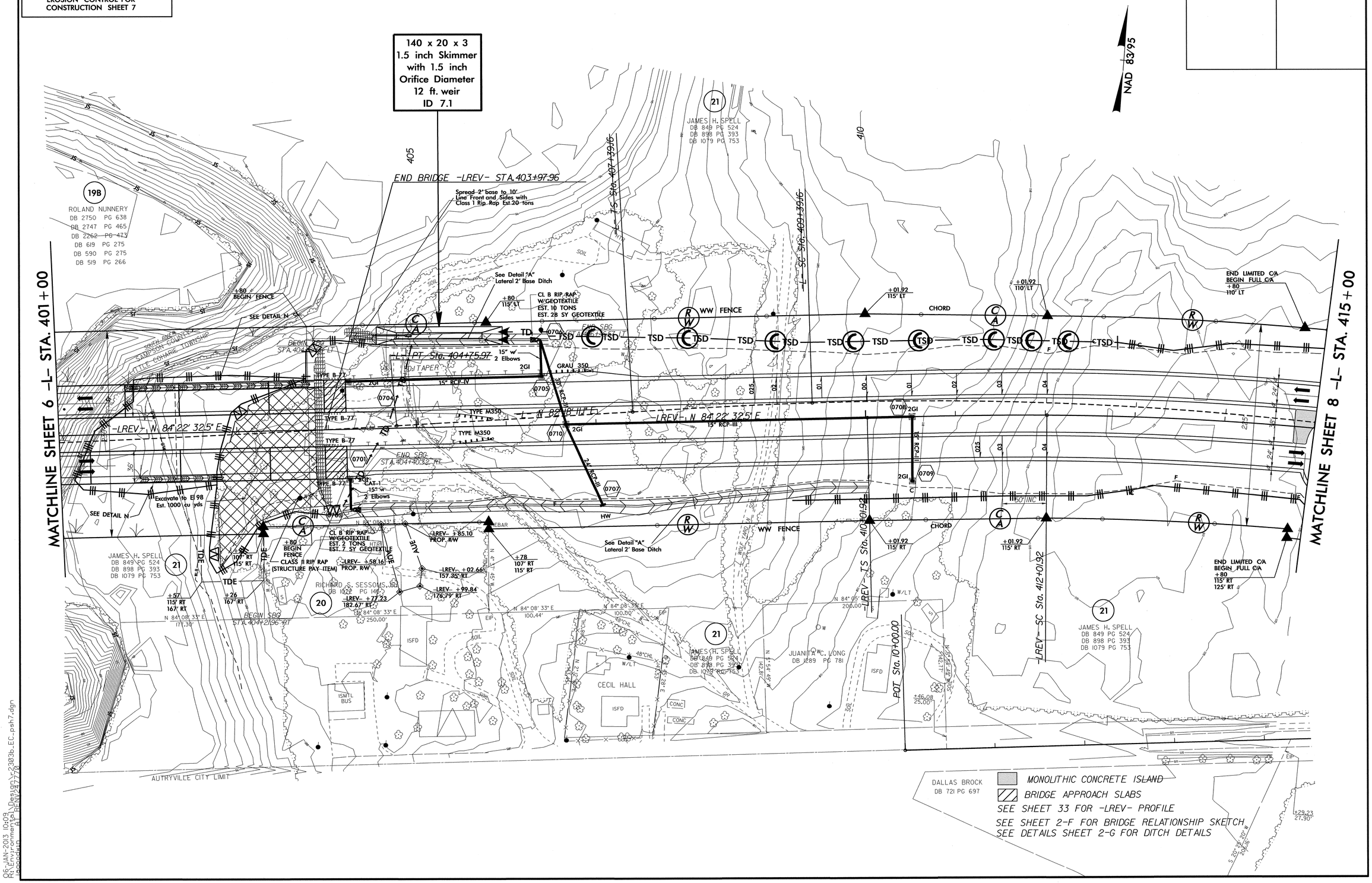
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 7

NOTE:
UTILIZE SKIMMER BASIN OR SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-7/CONST.7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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Bassham AT REV24.7.70

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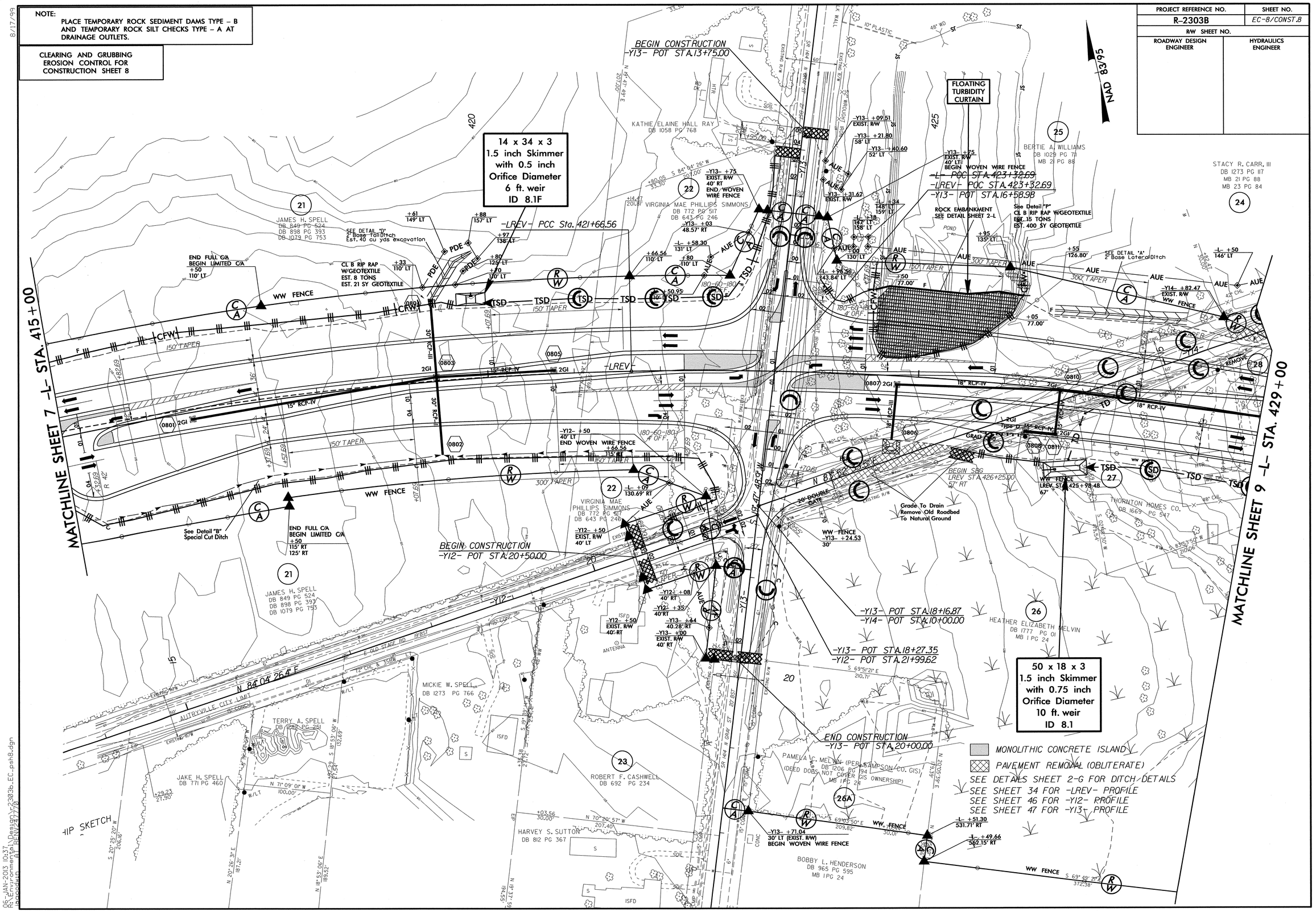
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 8

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-8/CONST.8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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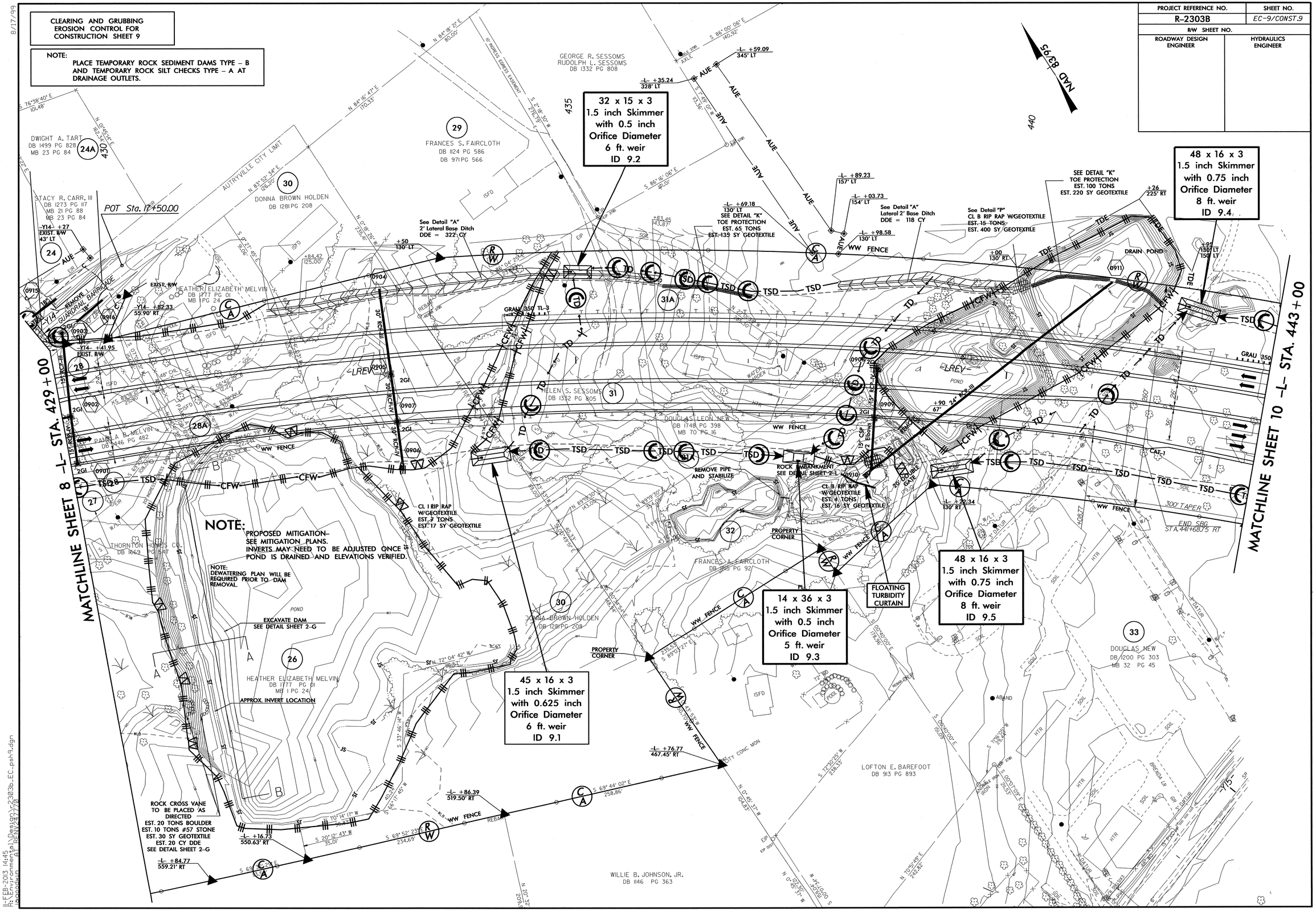
bpeacock AT REV(27.7)

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-9/CONST.9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 9

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



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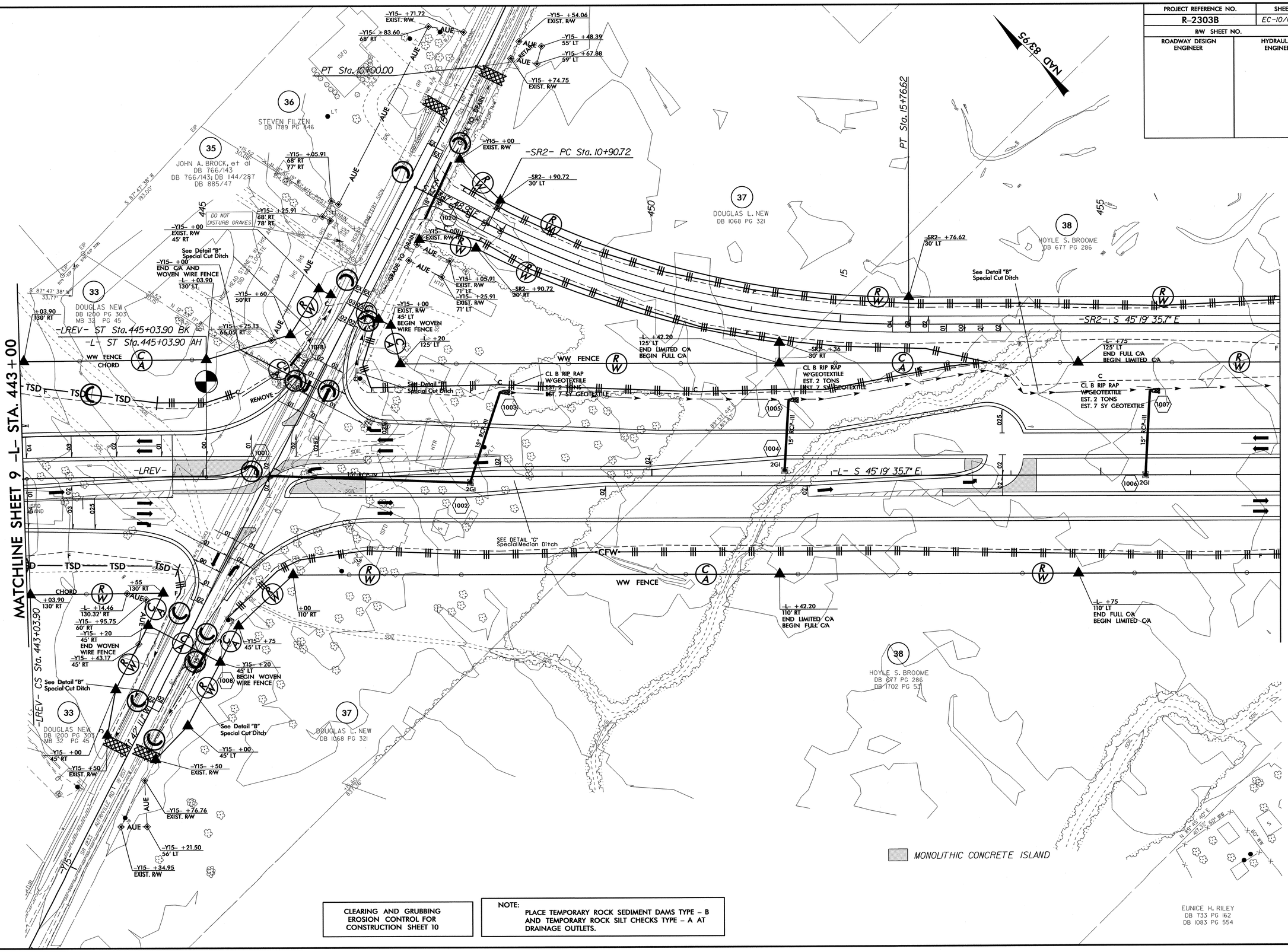
aaccadin AT REN\24777\0

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-10/CONST.10
R/W SHEET NO.	
ROADWAY 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.

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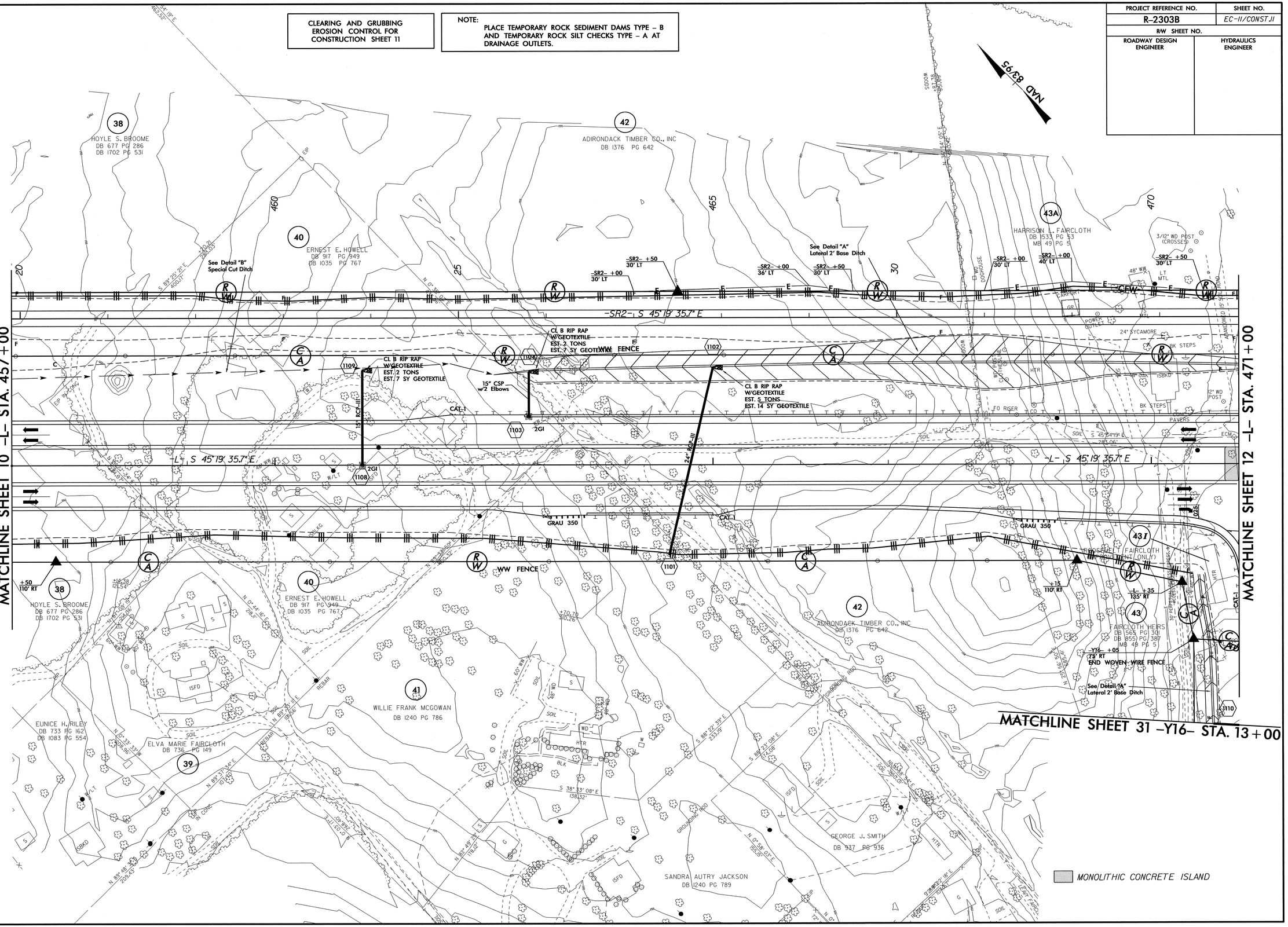
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-11/CONST.11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.



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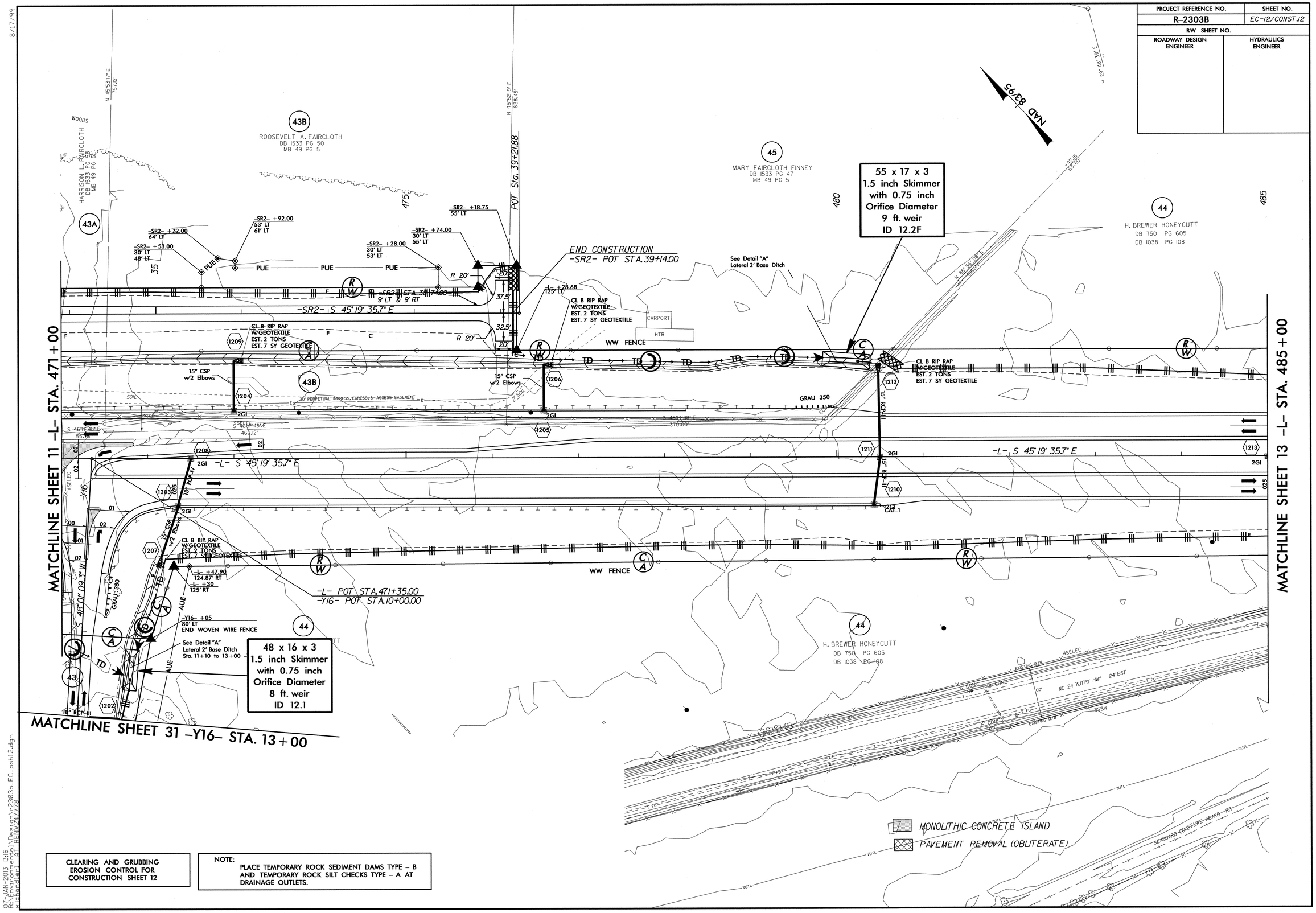
pscoggin AT RENA247770

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-12/CONST.12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 12

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

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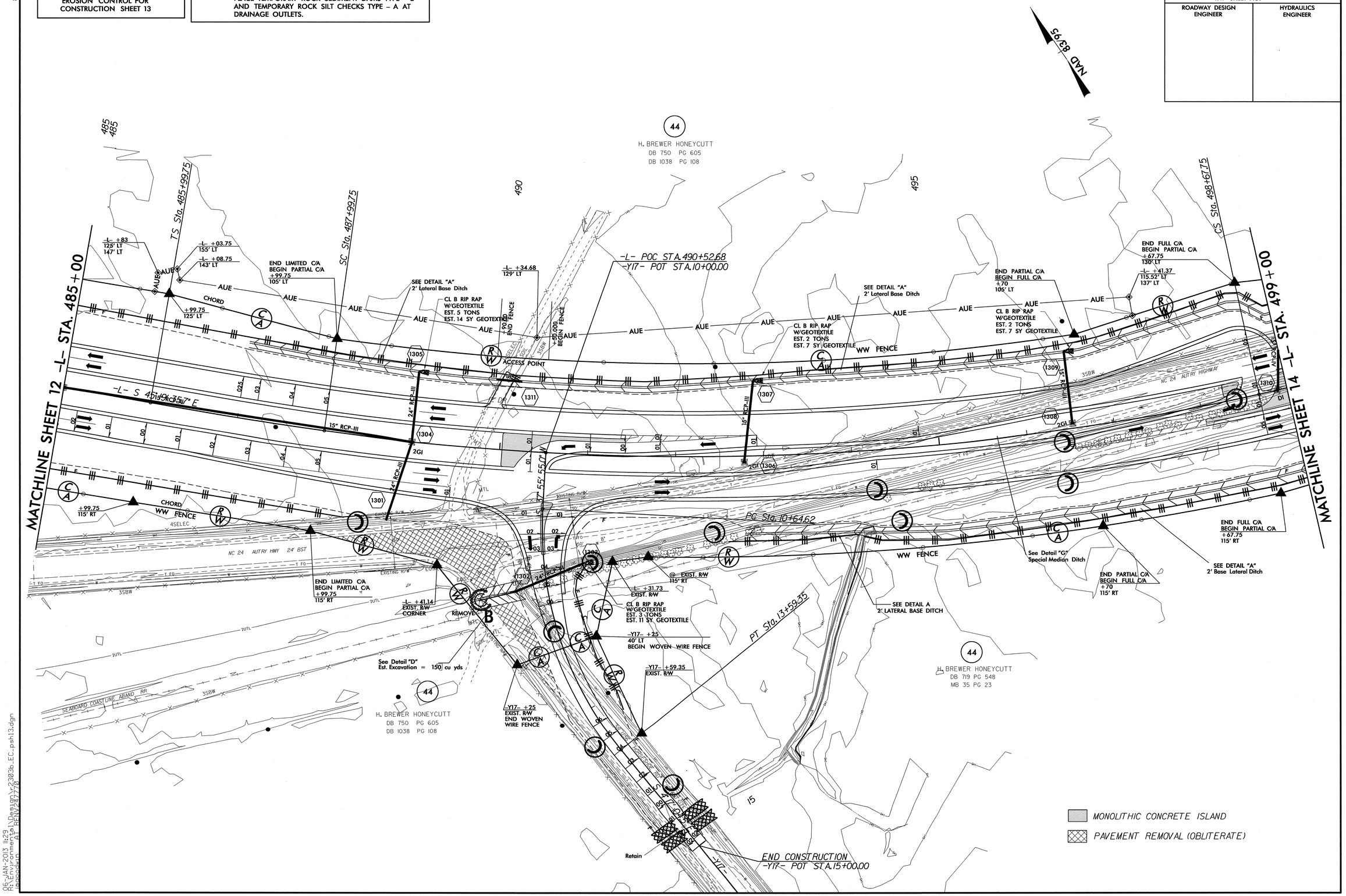
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 13

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

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-13/CONST.13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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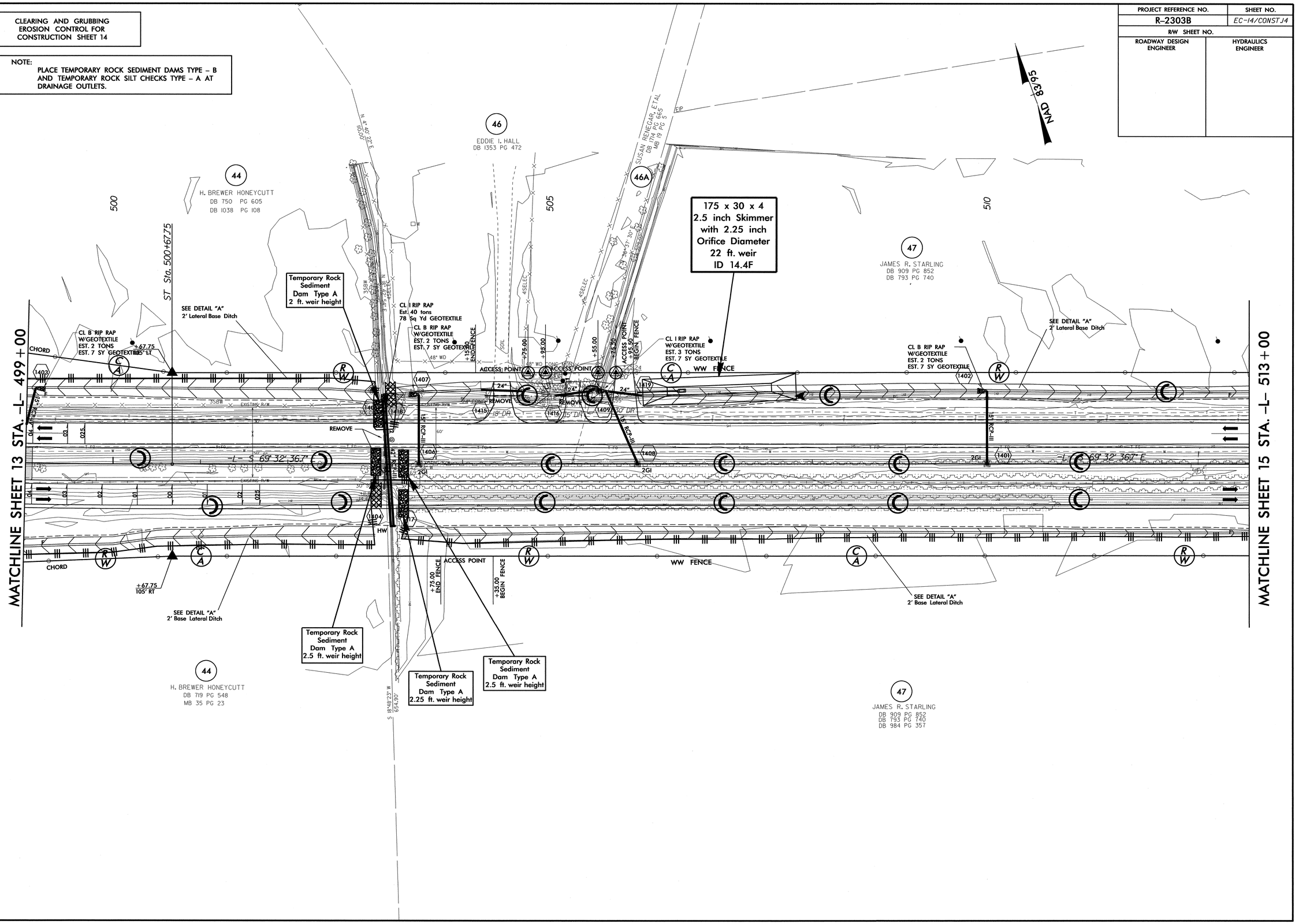
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-14/CONST.14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 14

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



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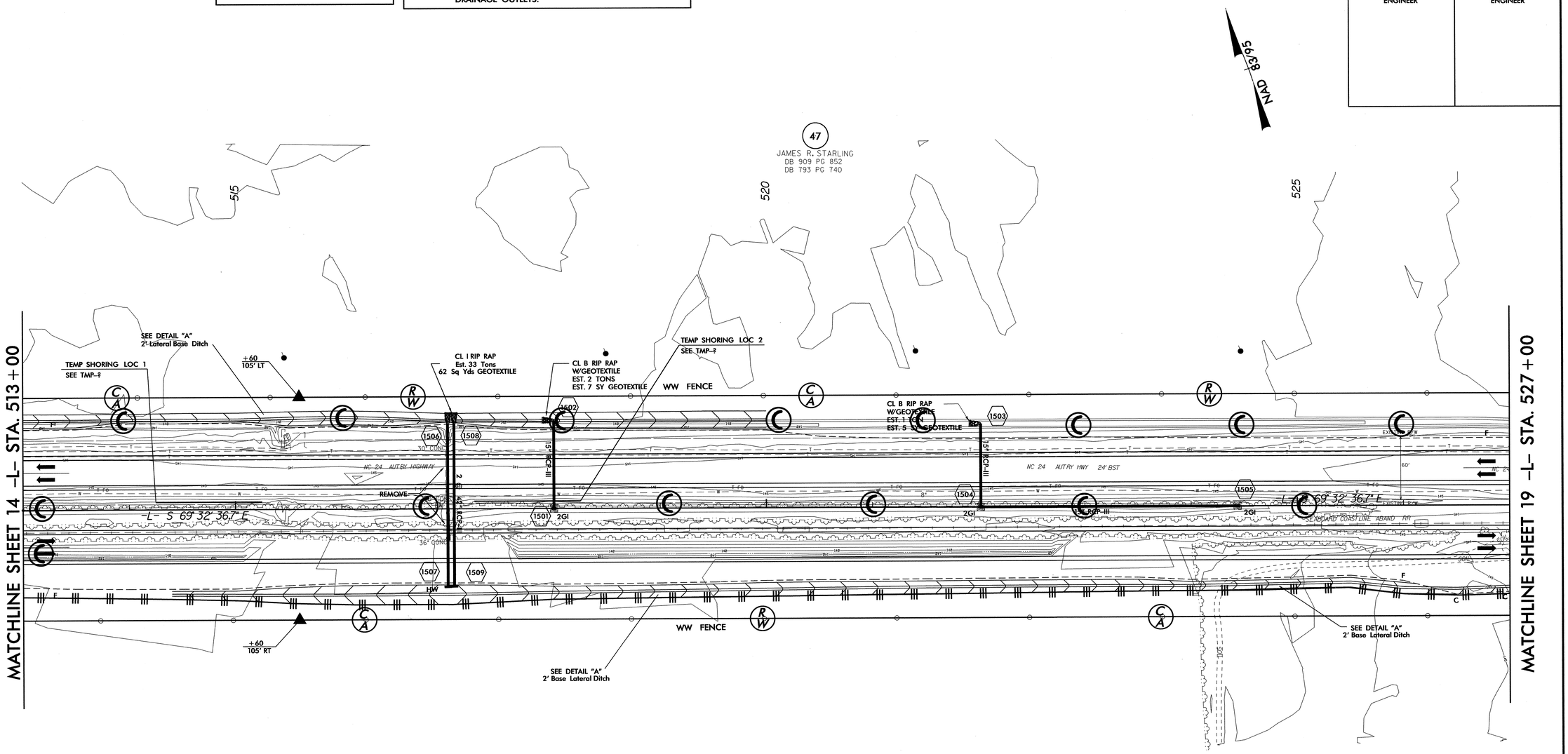
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-15/CONST.15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 15

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



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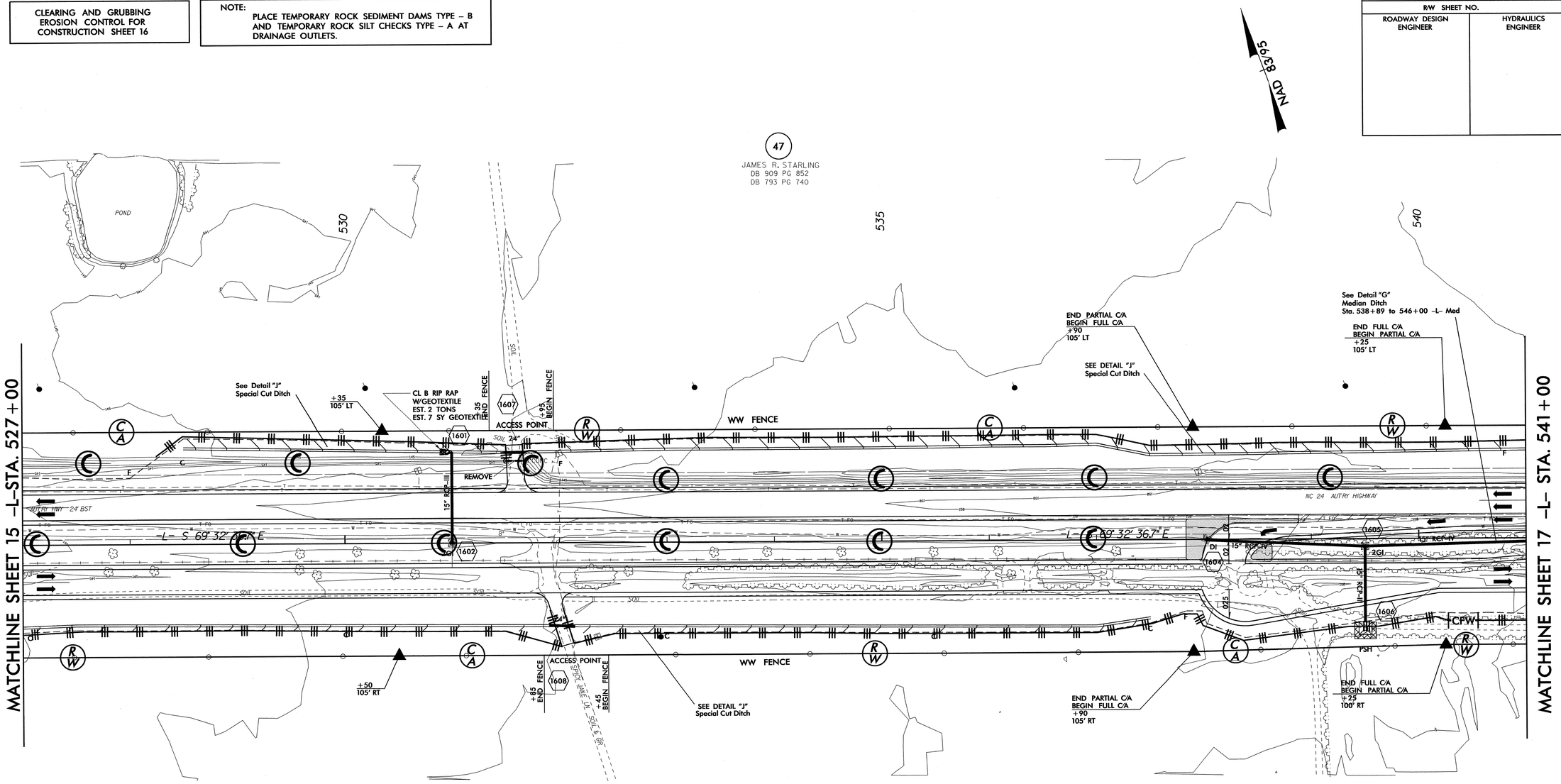
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-16/CONST J6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 16

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



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Jacobson
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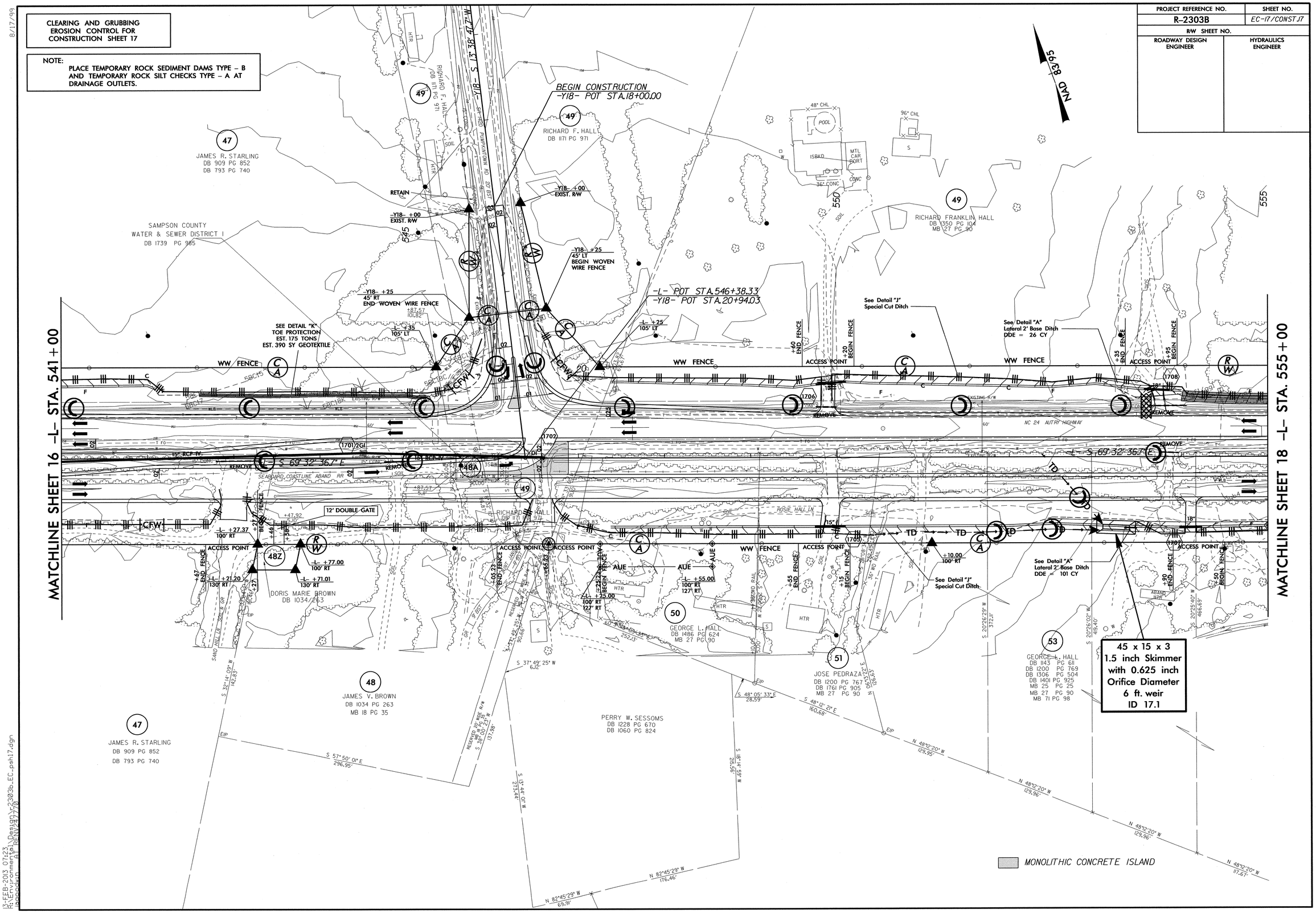
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-17/CONST.17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 17

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



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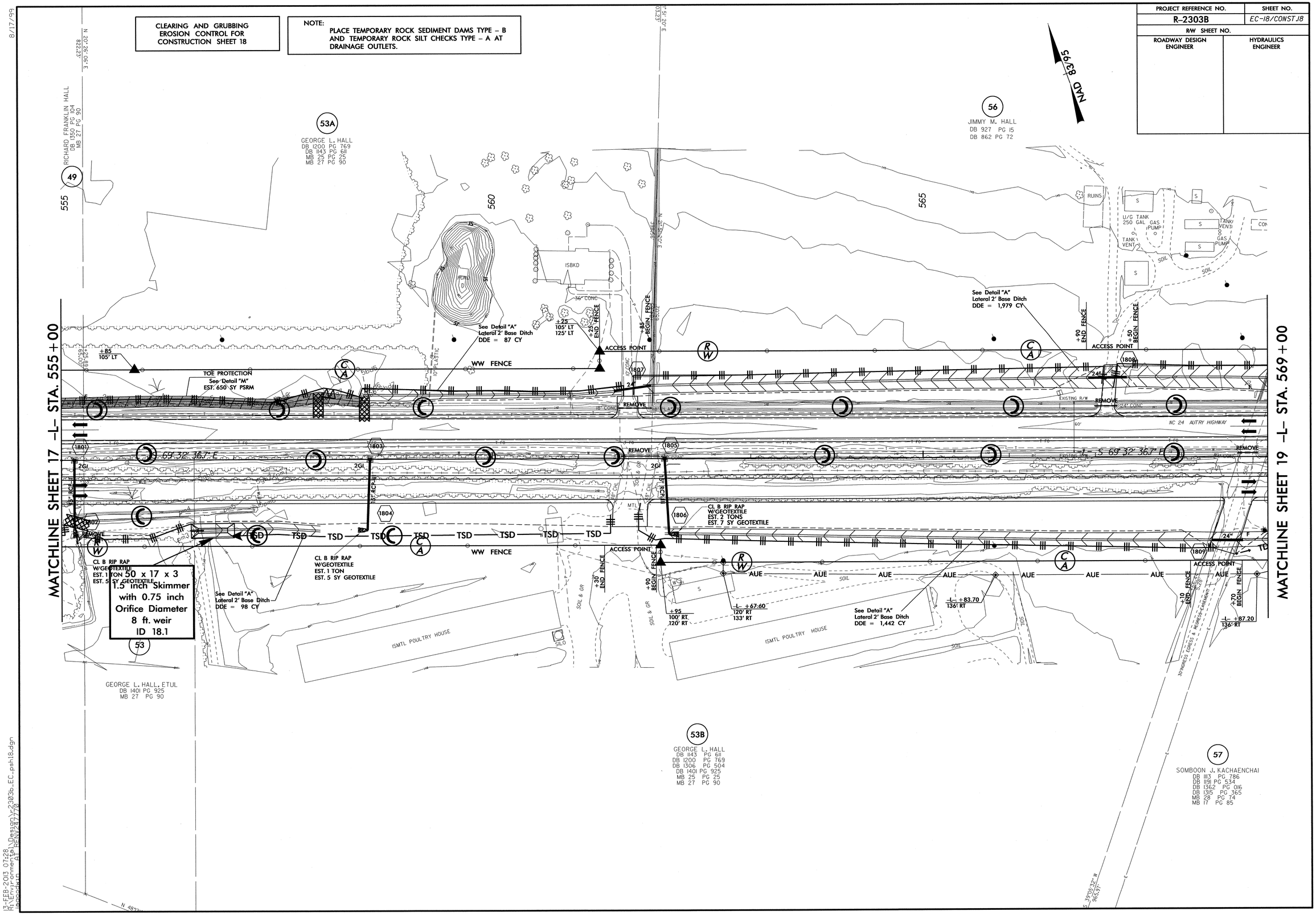
Bergquist AT RENV24/7720

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-18/CONST 18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 18

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



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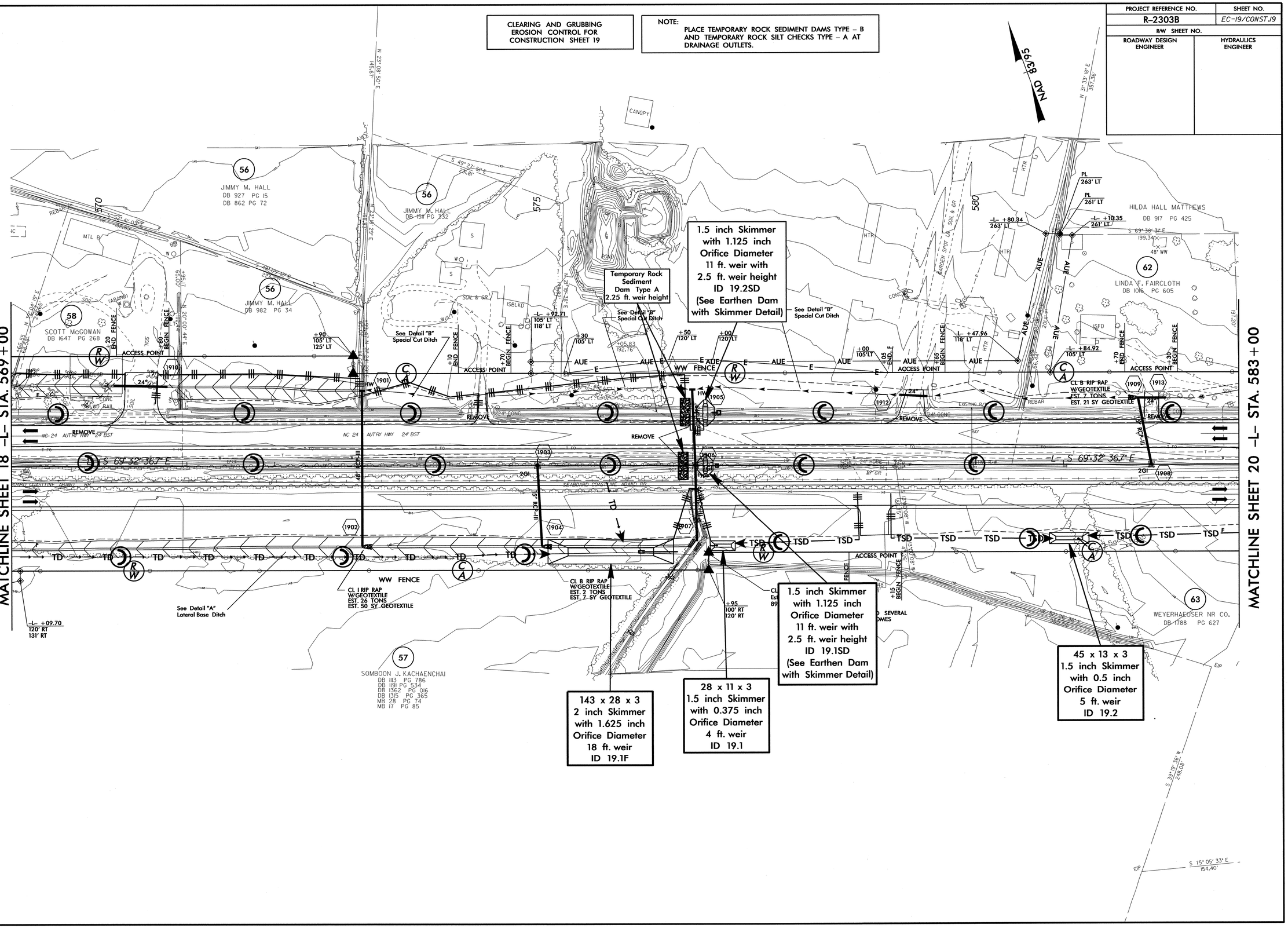
Dgnopdwn AT RENV2777

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-19/CONST.19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 19

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



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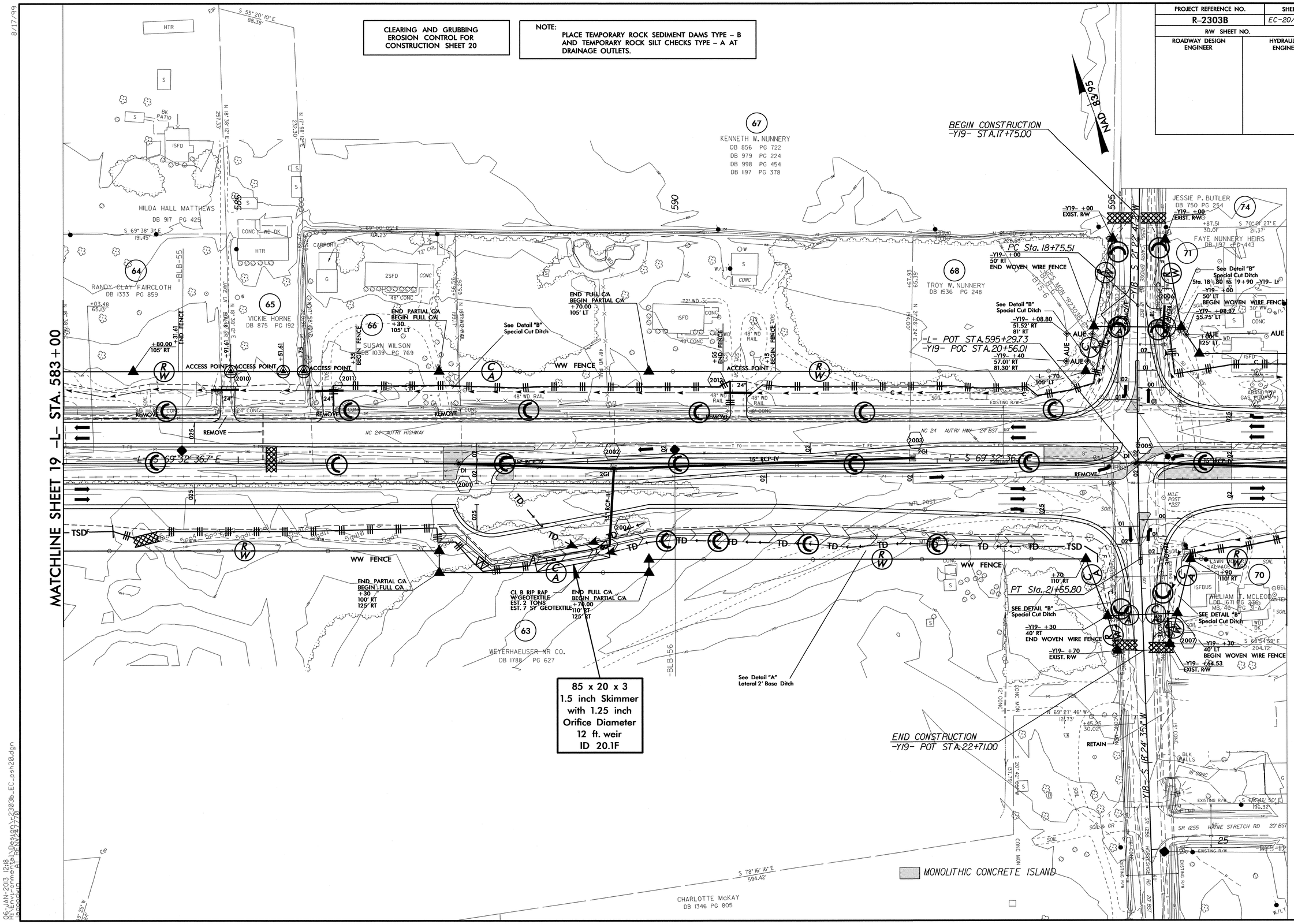
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-20/CONST.20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 20

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



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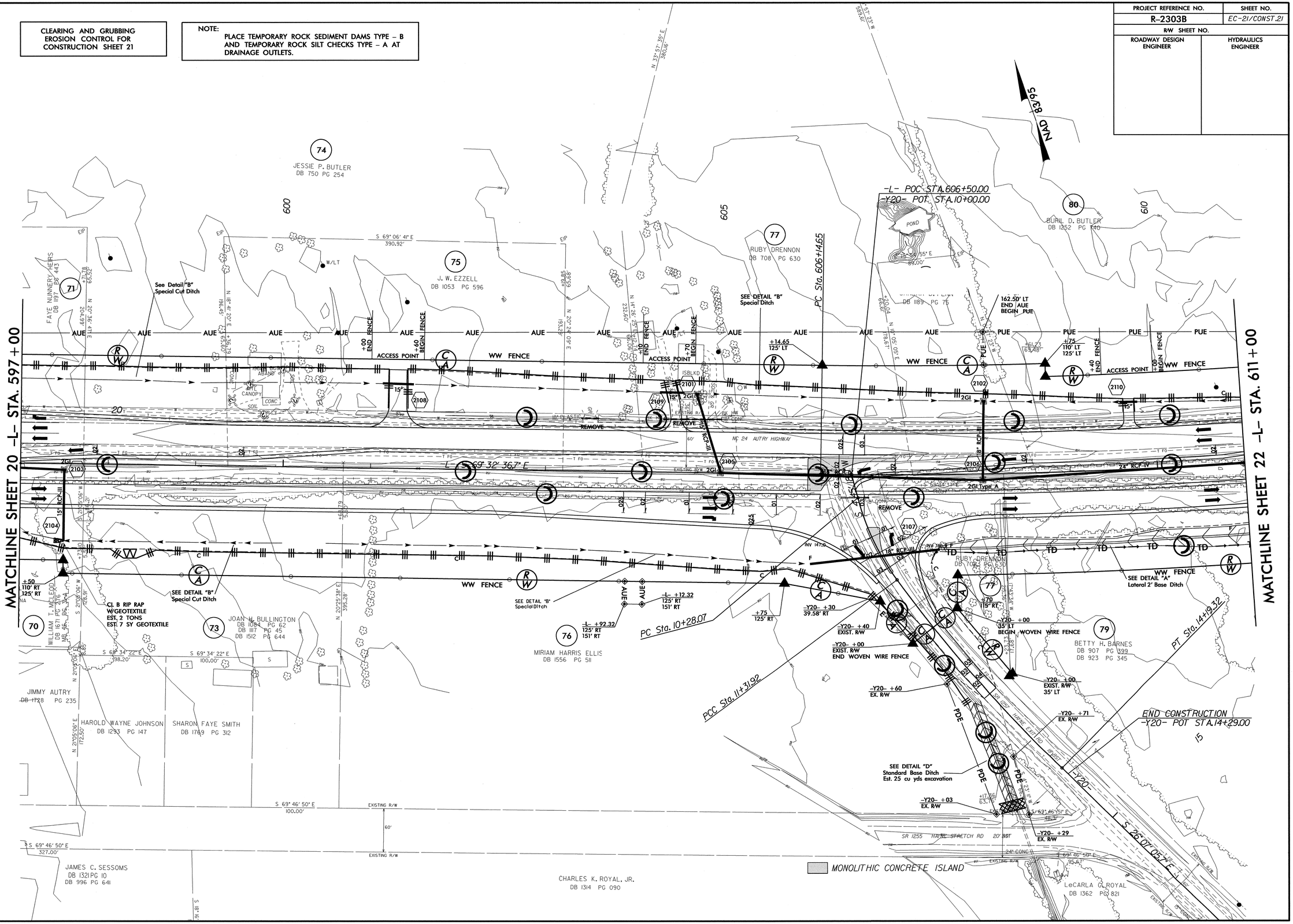
Bassowin
AT RENV24770

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-21/CONST.21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 21

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



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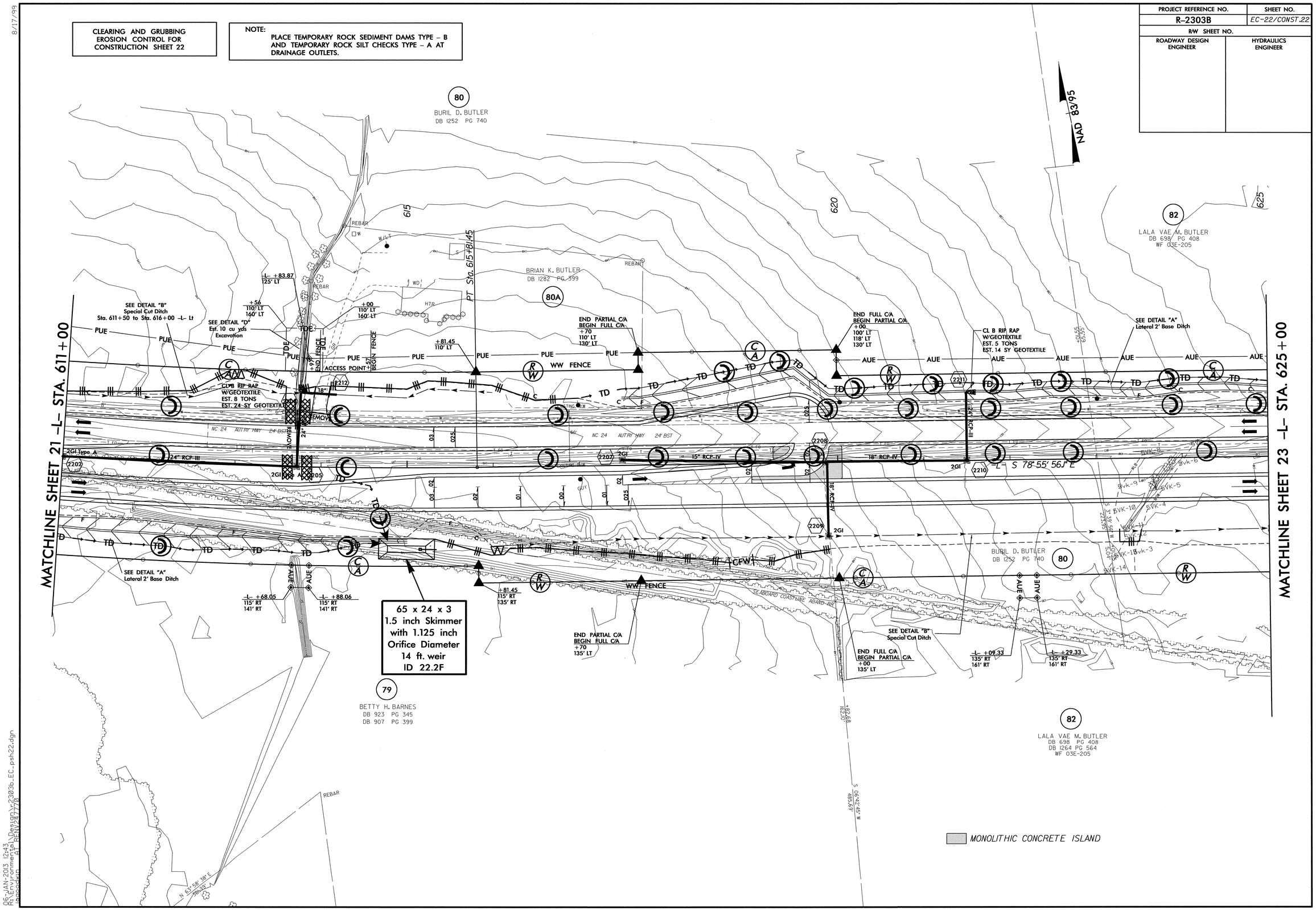
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-22/CONST.22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 22

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



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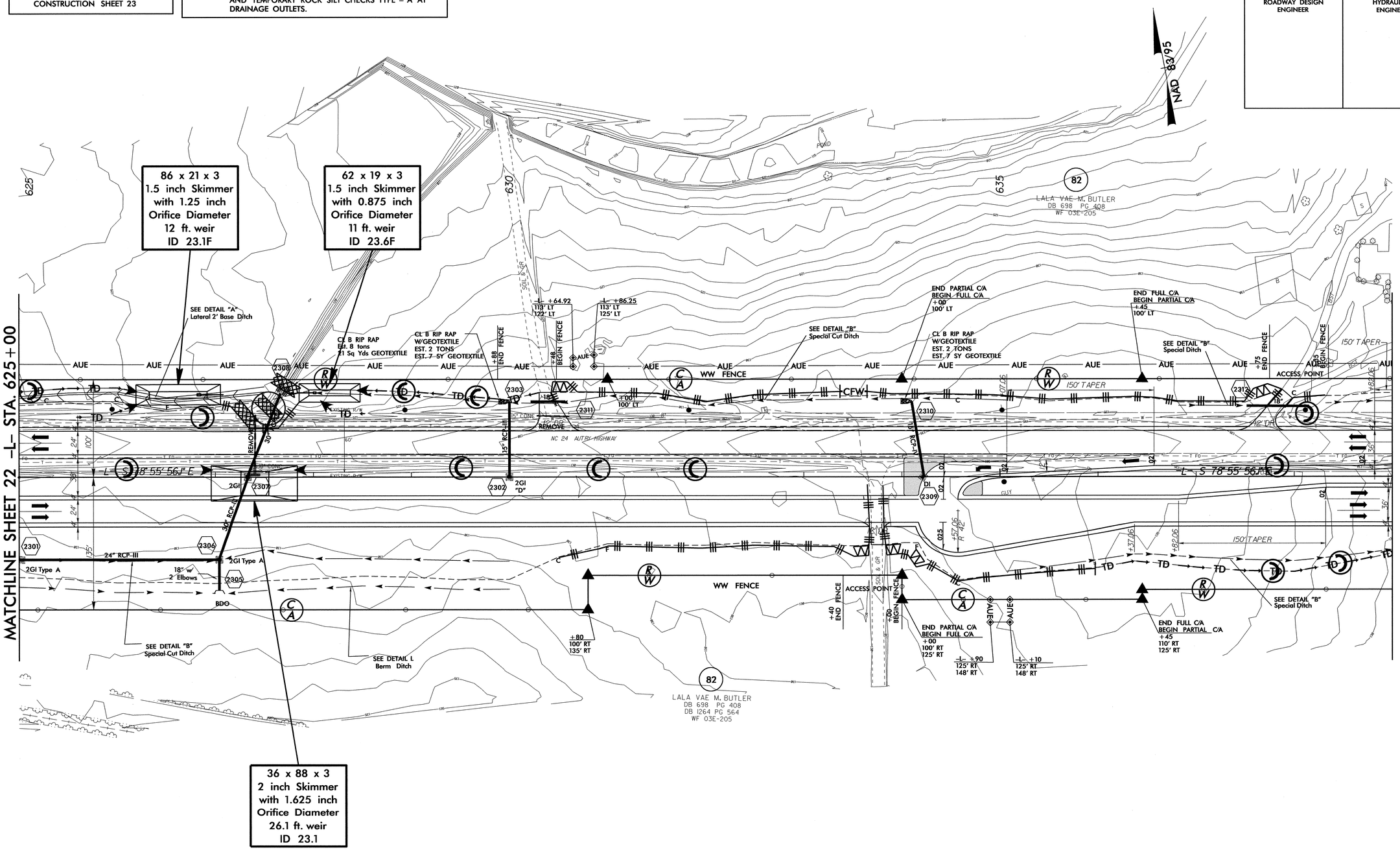
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-23/CONST.23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 23

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



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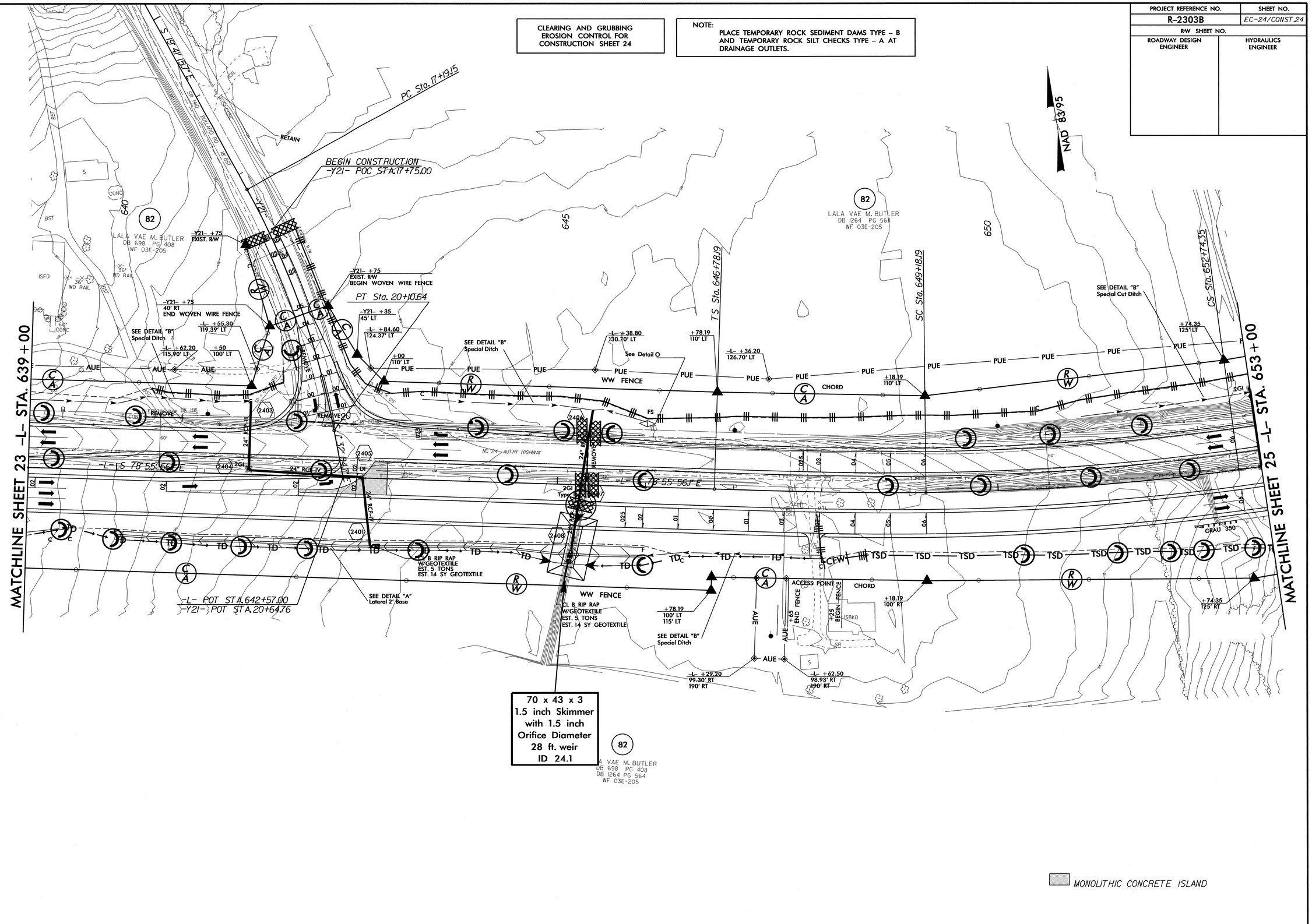
I RENV24/7/10

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-24/CONST.24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 24

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



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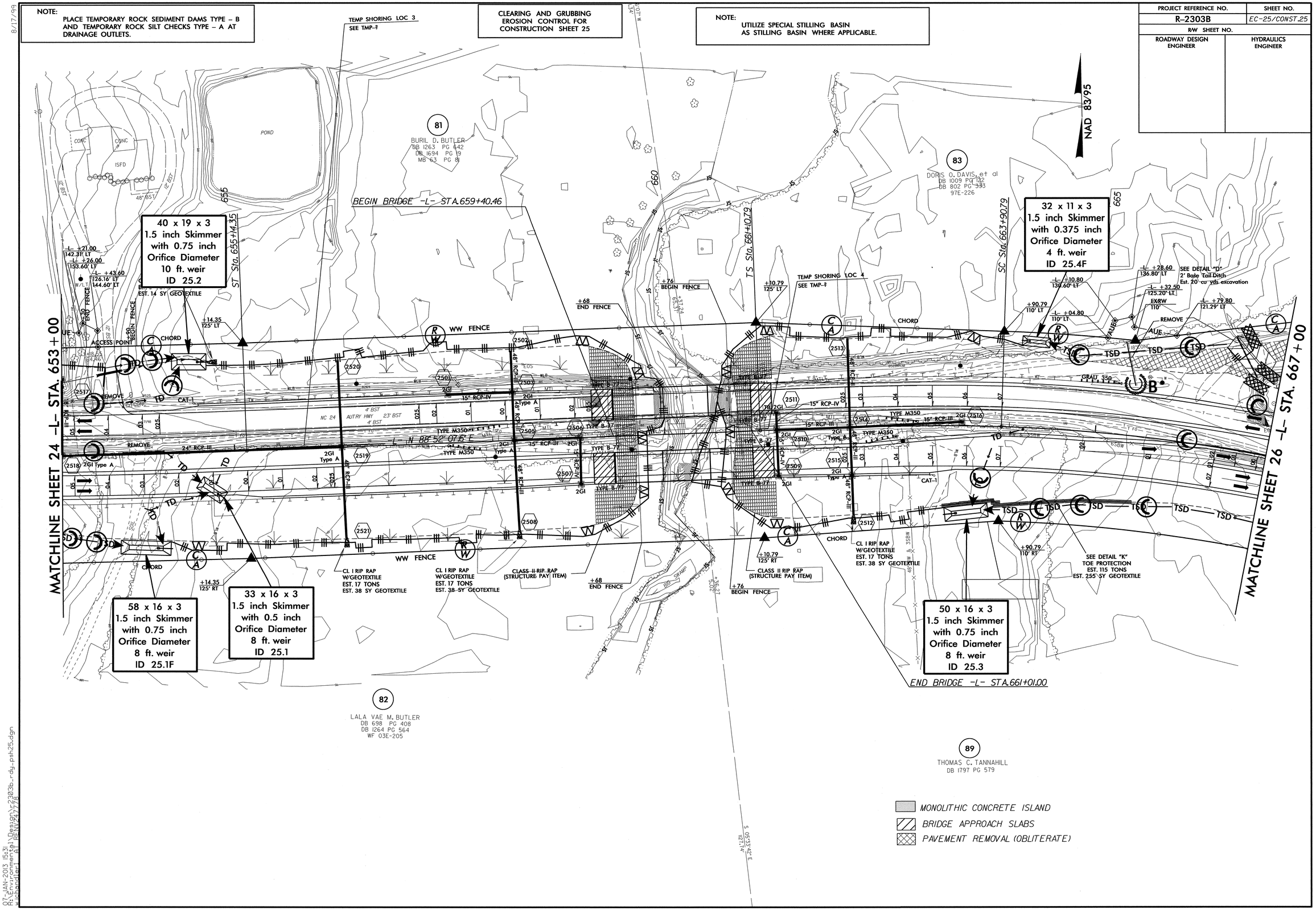
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-25/CONST.25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 25

NOTE:
UTILIZE SPECIAL STILLING BASIN
AS STILLING BASIN WHERE APPLICABLE.



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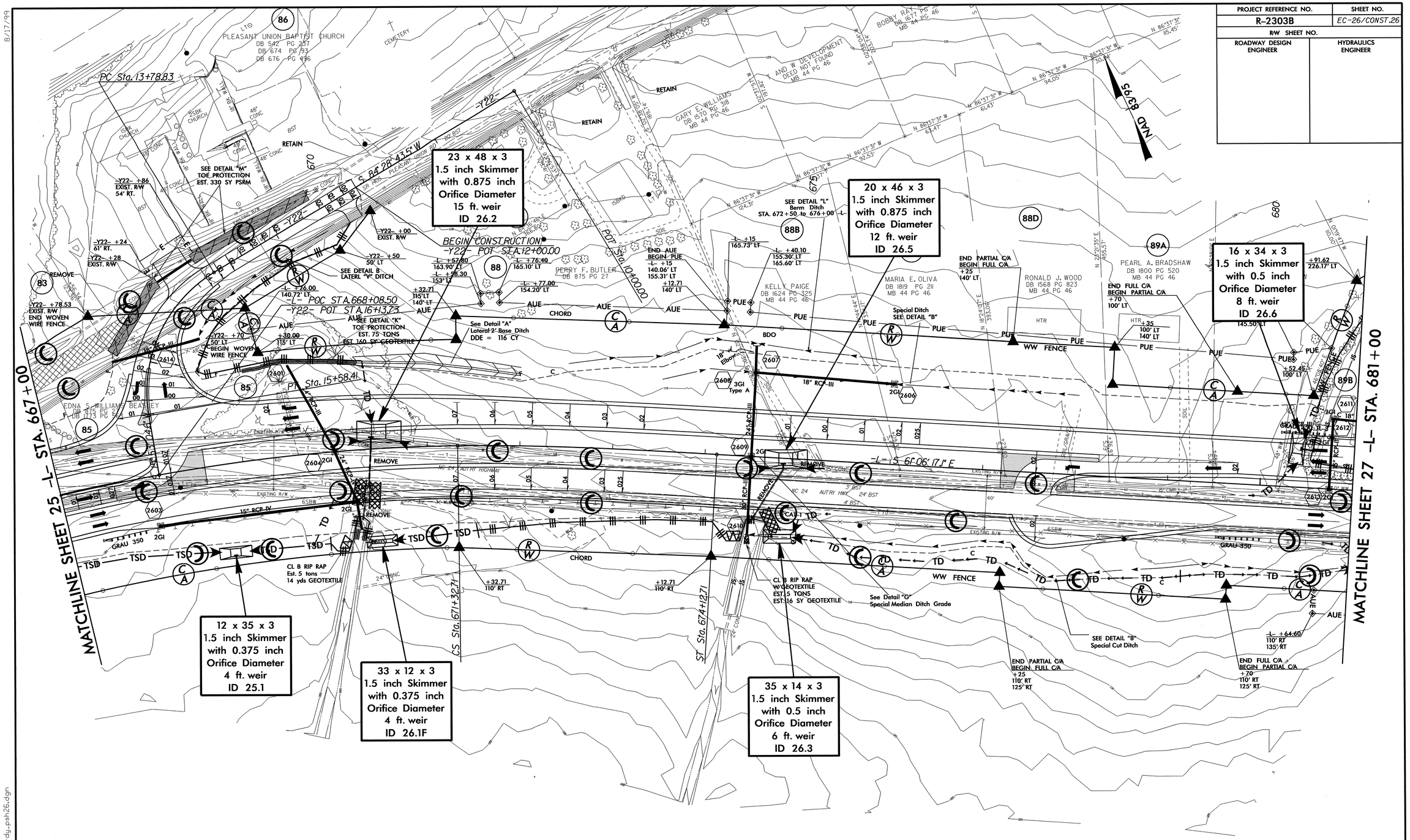
wdomsteir AT DENV27\7.78

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-26/CONST.26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 26

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

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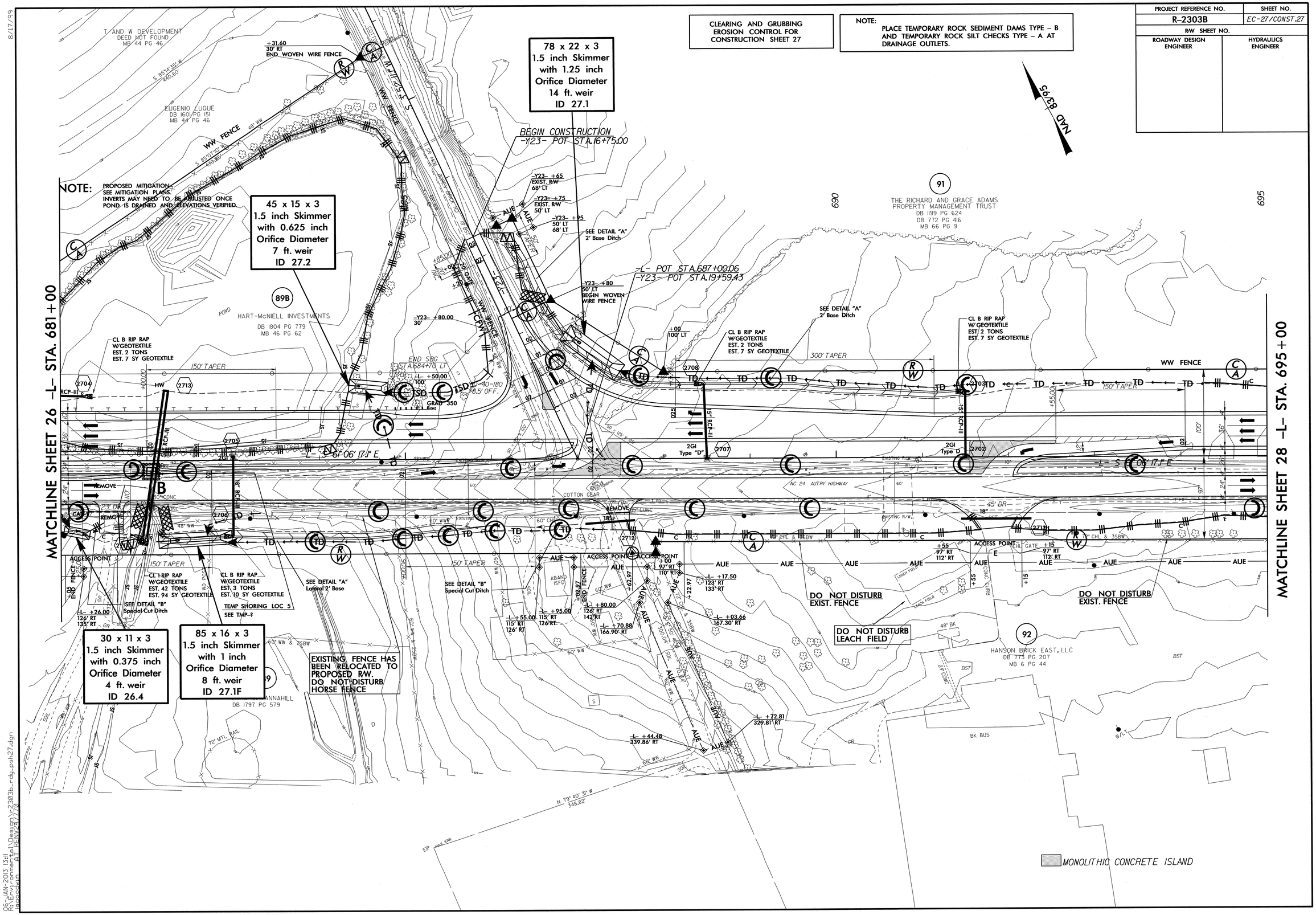
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-27/CONST.27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 27

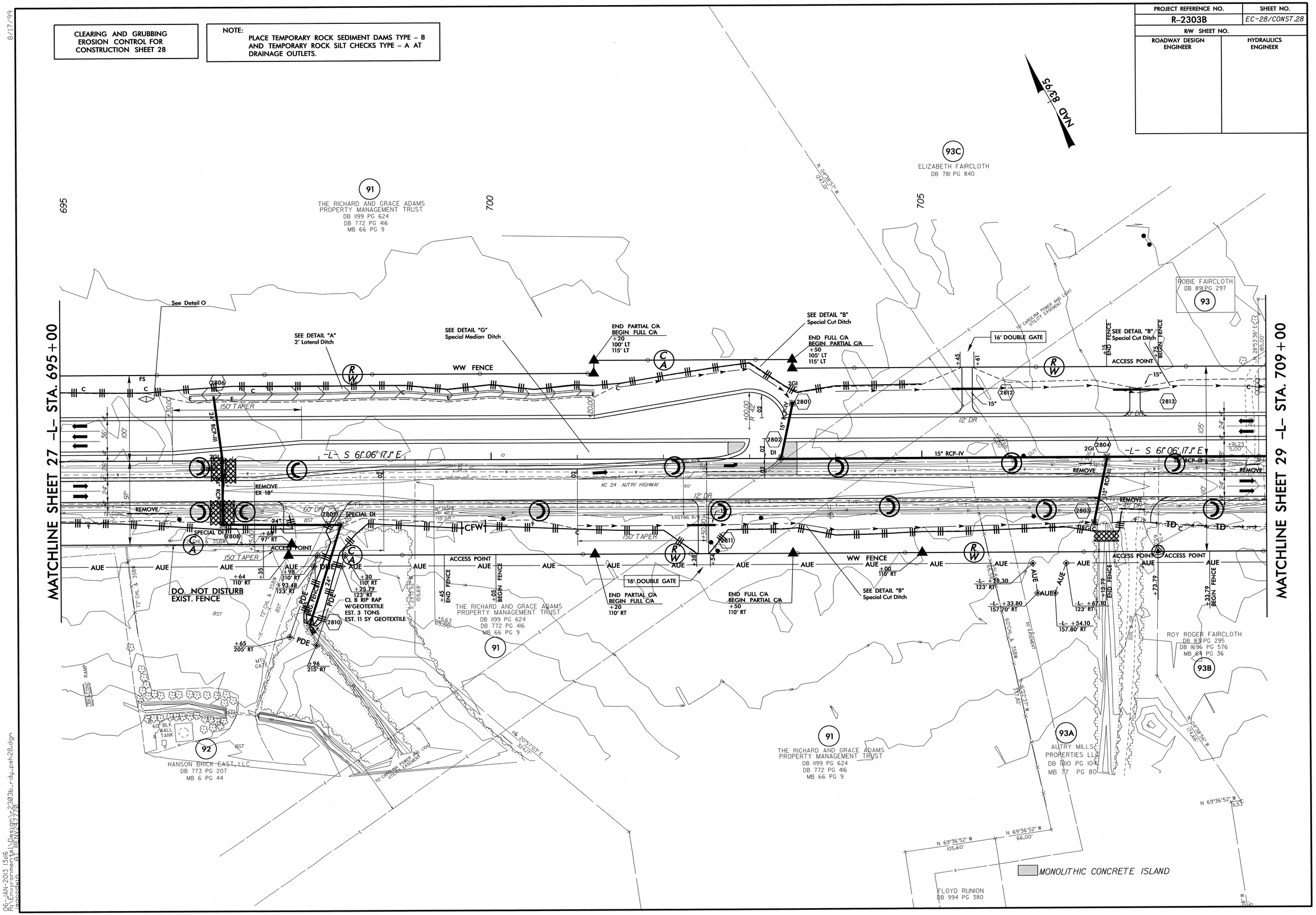
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.



PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-28/CONST.28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 28

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



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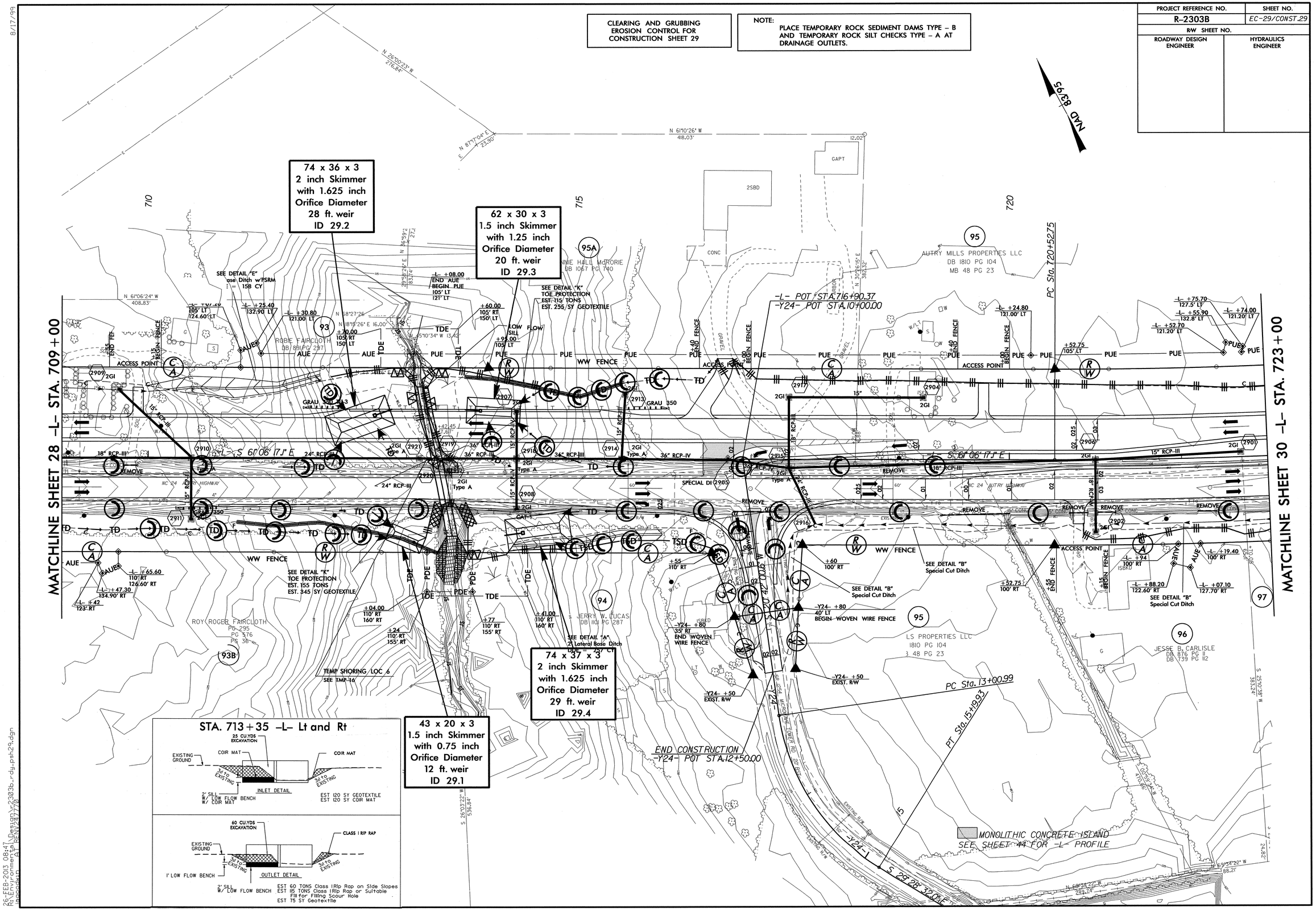
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-29/CONST.29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 29

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



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26-FEB-2013 08:47
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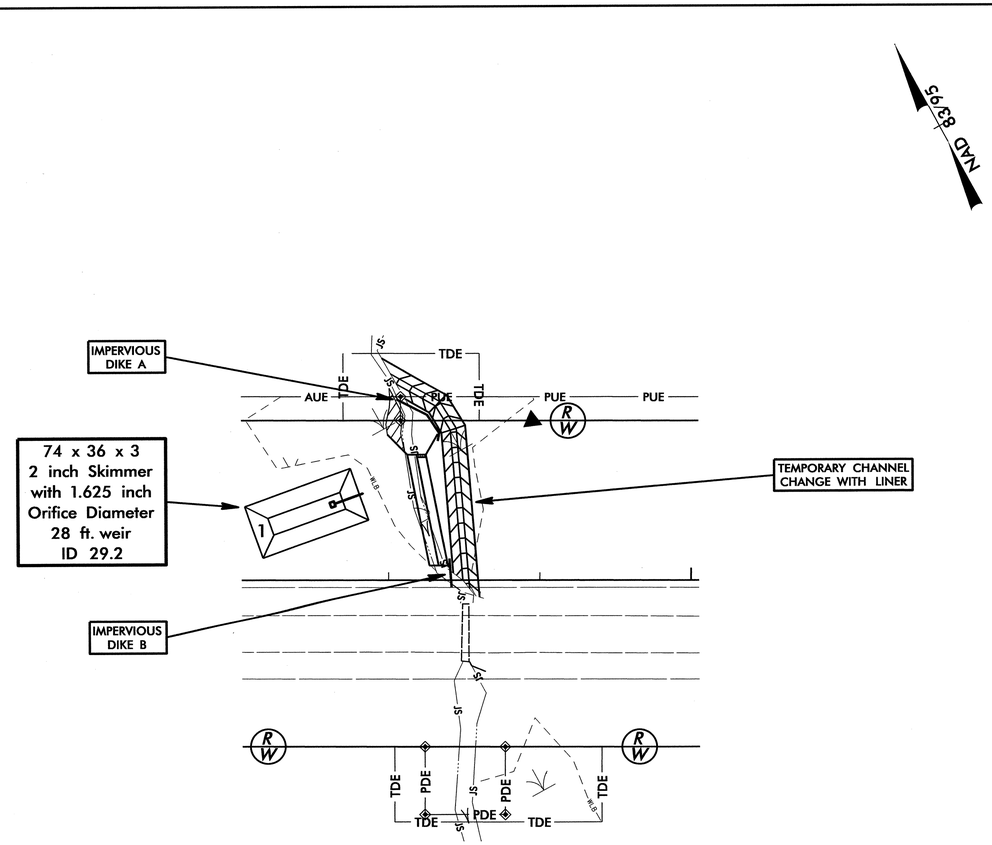
IRONGRAD A3 BRENT237770

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-30/CONST.29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE STA. 713 + 35 –L– (SHEET 1 OF 2)

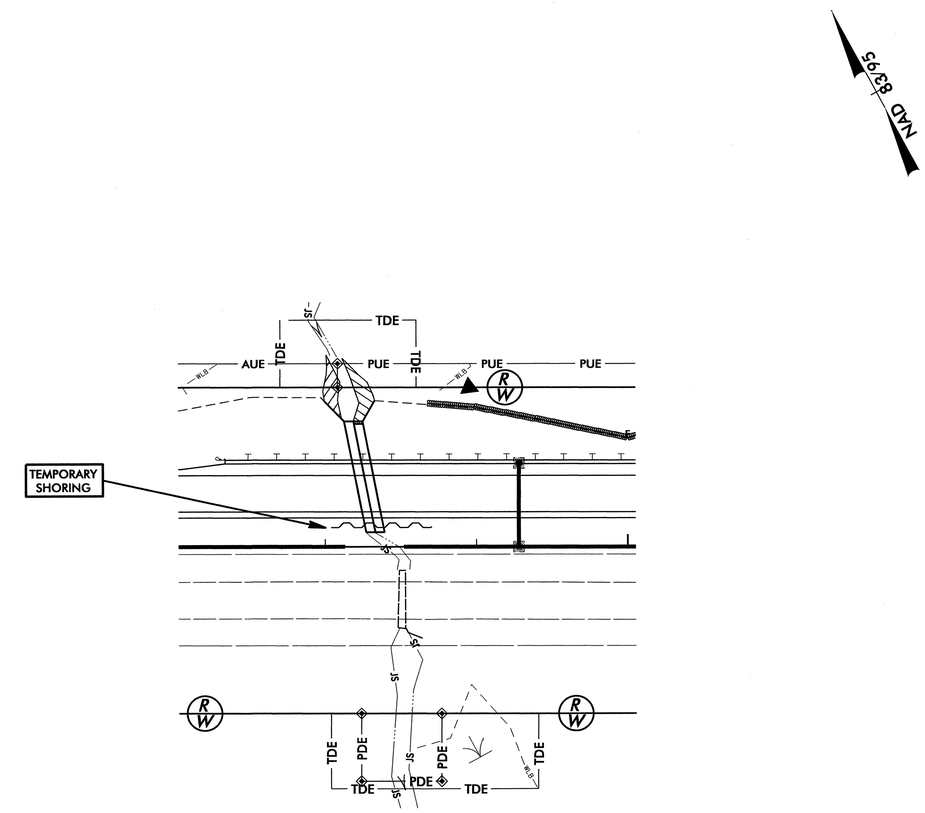
PHASE I

1. UTILIZE SKIMMER BASIN (74 FT. X 36 FT. X 3 FT.) AS STILLING BASIN 1.
2. CONSTRUCT IMPERVIOUS DIKES A AND B, AND TEMPORARY CHANNEL CHANGE WITH LINER (4 FT. BASE, 3 FT. DEEP, 2:1 SIDE SLOPES) DIVERTING FLOW AROUND WORK AREA TO EXISTING CULVERT.
3. CONSTRUCT PORTION OF INLET END OF BOTH BARRELS OF PROPOSED CULVERT AND PORTION OF INLET CHANNEL IMPROVEMENTS.



PHASE II

4. REMOVE IMPERVIOUS DIKES A AND B, AND TEMPORARY CHANNEL CHANGE, ALLOWING FLOW THROUGH COMPLETED PORTION OF PROPOSED CULVERT AND EXISTING CULVERT, MAINTAINING EXISTING CHANNEL BETWEEN THE TWO.
5. COMPLETE INLET CHANNEL IMPROVEMENTS.
6. REMOVE SKIMMER BASIN (STILLING BASIN 1).
7. CONSTRUCT TEMPORARY SHORING AND PROPOSED WESTBOUND LANES.
8. SHIFT TRAFFIC.

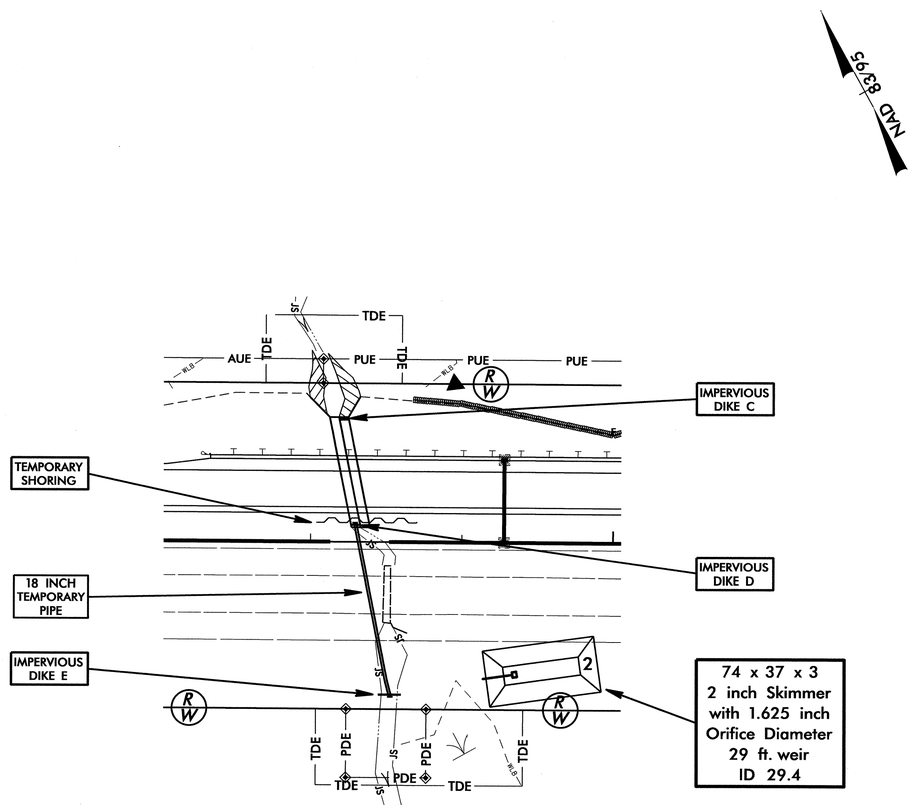


PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-31/CONST.29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE STA. 713 + 35 –L– (SHEET 2 OF 2)

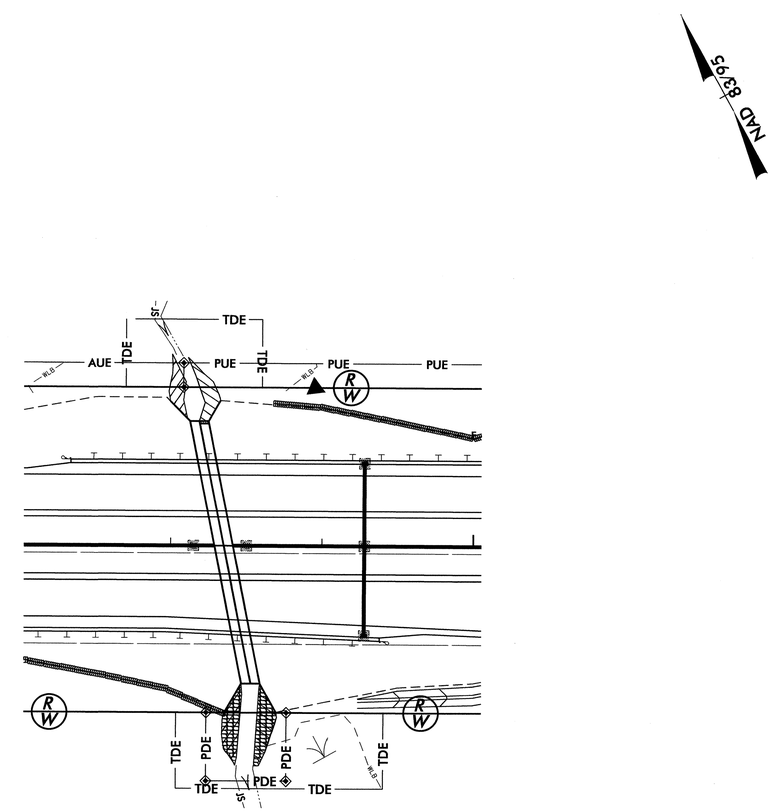
PHASE III

9. UTILIZE SKIMMER BASIN (74 FT. X 37 FT. X 3 FT.) AS STILLING BASIN 2.
10. CONSTRUCT IMPERVIOUS DIKES C, D, AND E, AND INSTALL 18 INCH TEMPORARY PIPE, DIVERTING FLOW.
11. REMOVE EXISTING CULVERT.



PHASE IV

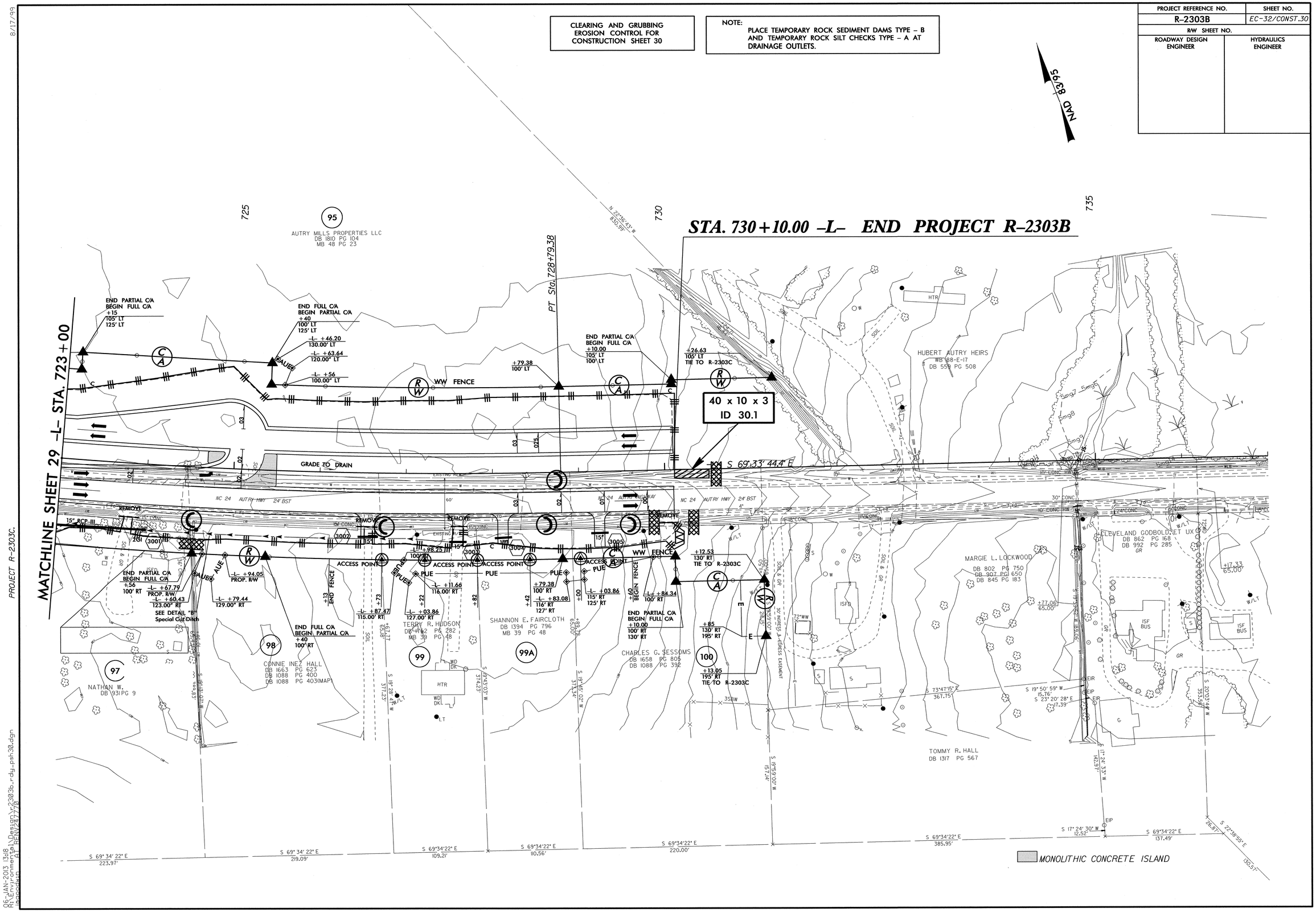
12. CONSTRUCT REMAINDER OF PROPOSED CULVERT.
13. CONSTRUCT OUTLET CHANNEL IMPROVEMENTS.
14. REMOVE IMPERVIOUS DIKES C, D, AND E, AND 18 INCH TEMPORARY PIPE, ALLOWING FLOW THROUGH PROPOSED CULVERT.
15. REMOVE SKIMMER BASIN (STILLING BASIN 2).
16. REMOVE TEMPORARY SHORING AND COMPLETE ROADWAY.



PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-32/CONST.30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 30

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



PROJECT R-2303C.

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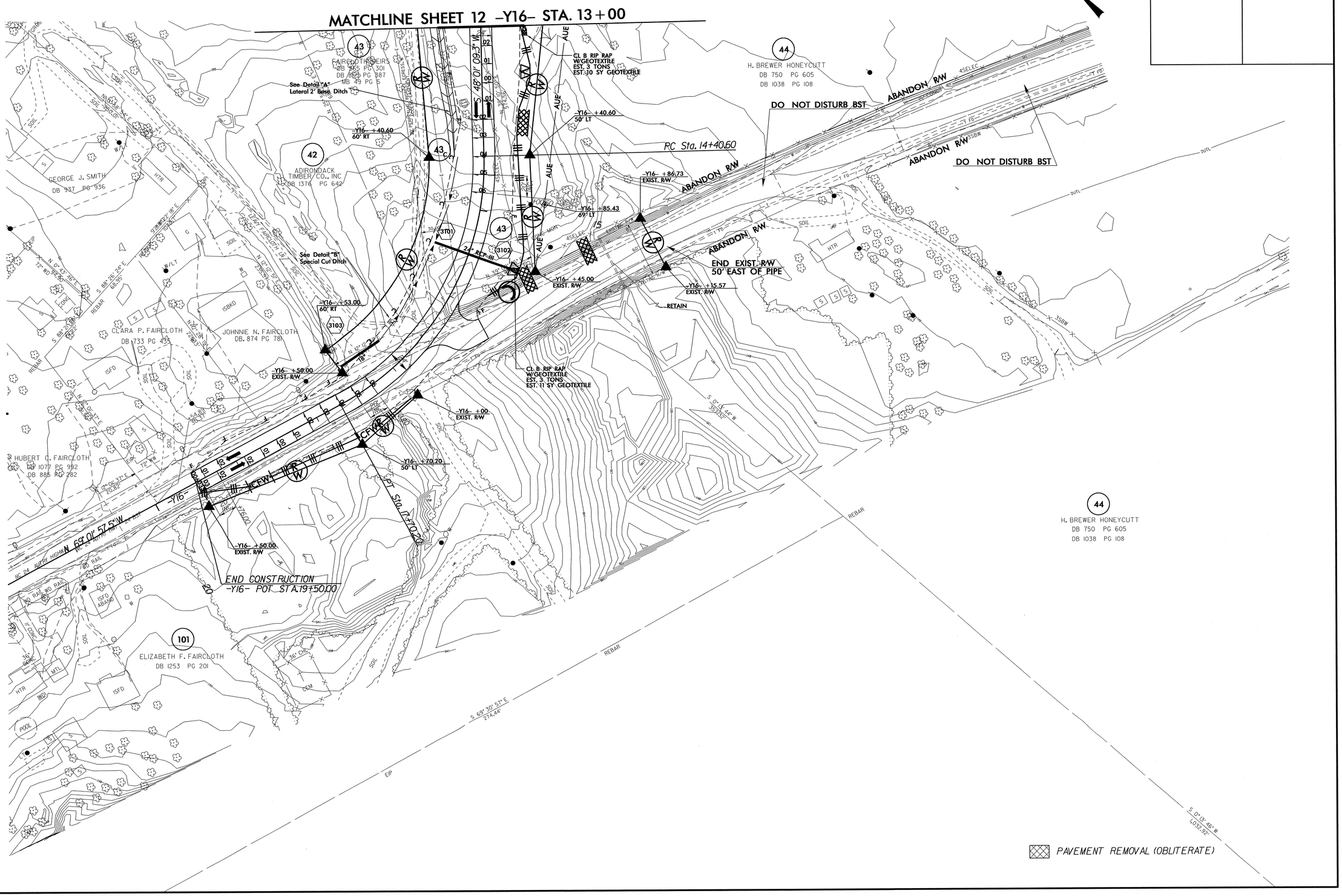
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-33/CONST.31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 31

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



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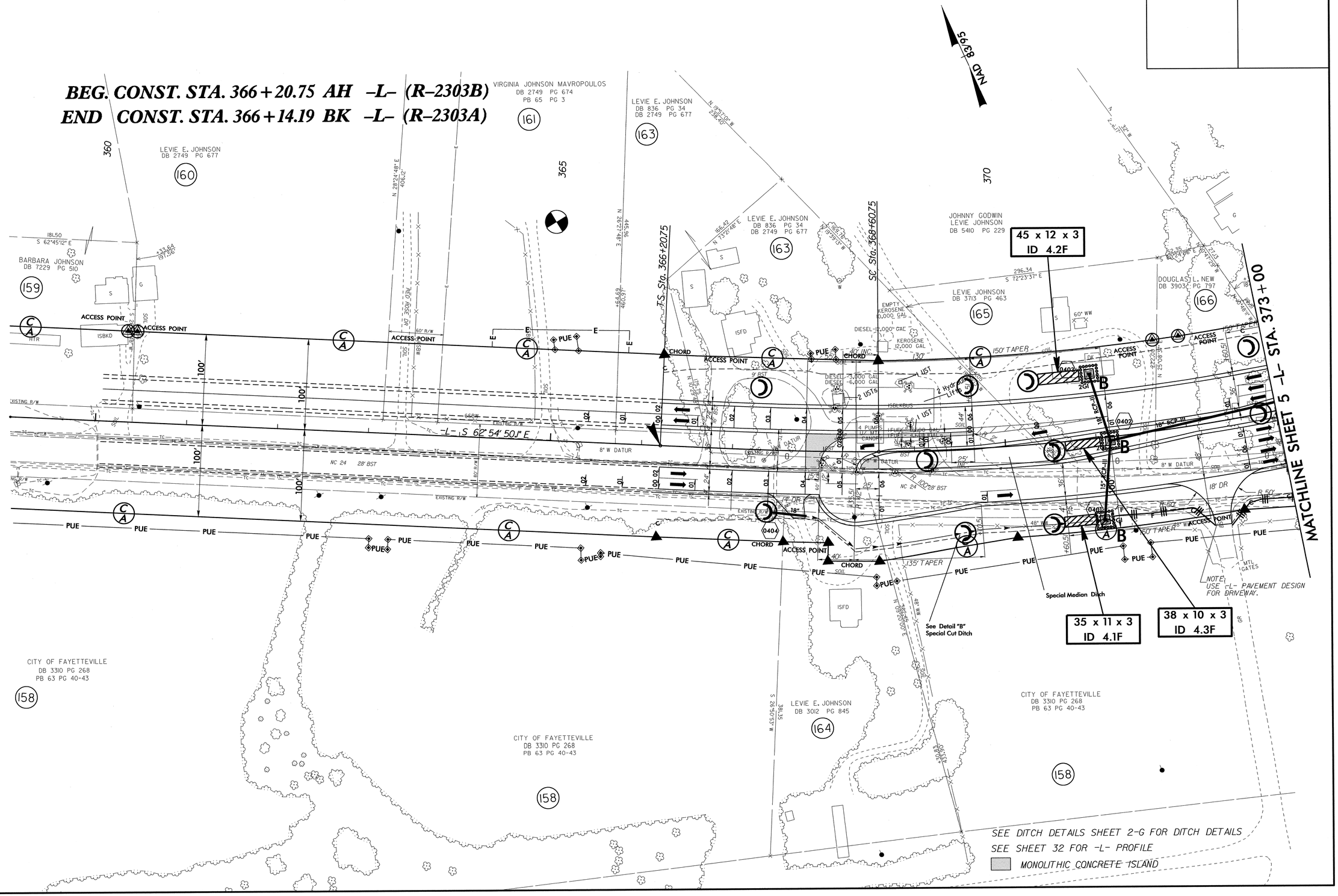
ipecorum

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-34/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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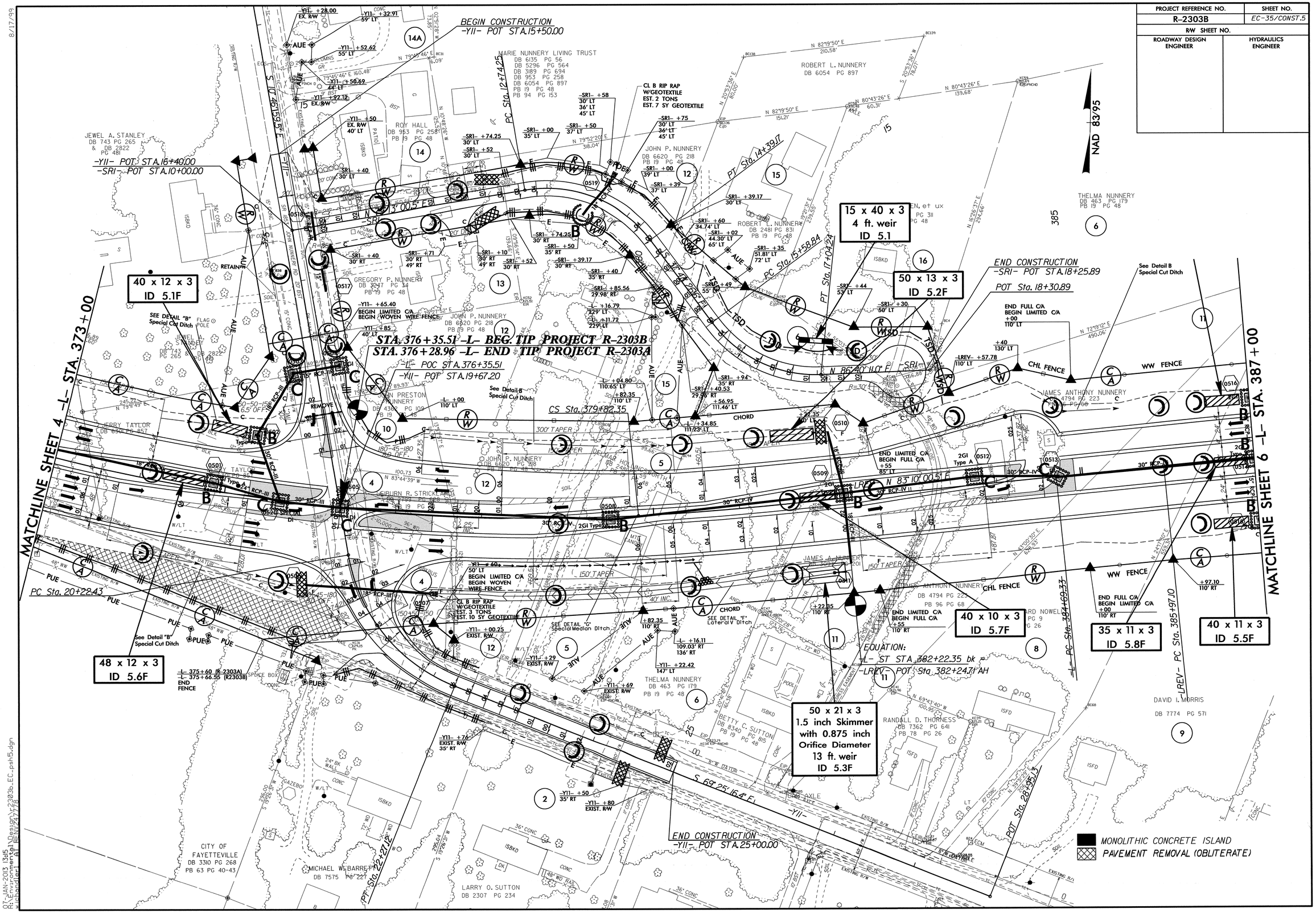
jaccodwin AT RENV247770

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-35/CONST.5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



8/17/99

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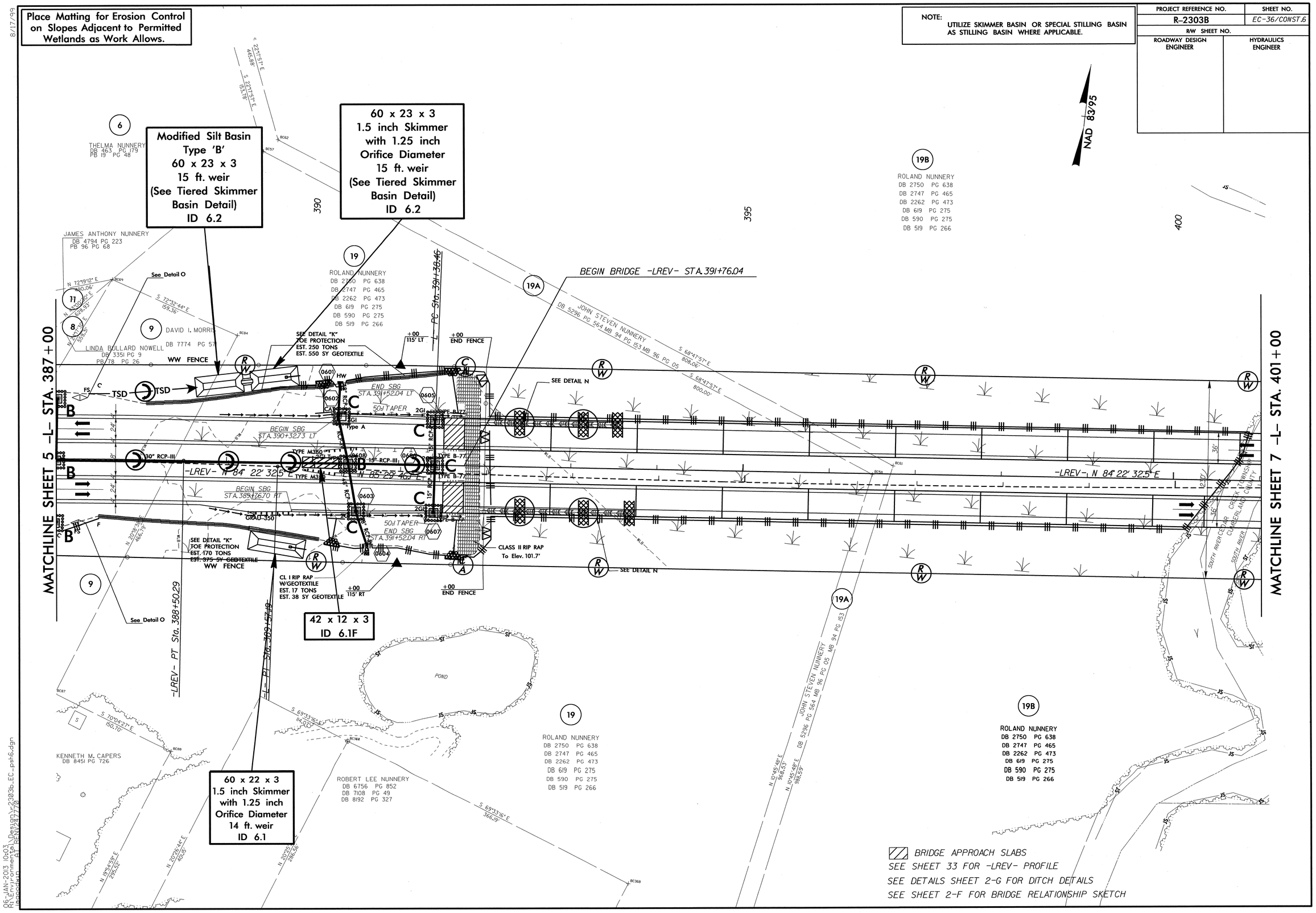
richandler AT RENV2377778

8/17/99

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

NOTE: UTILIZE SKIMMER BASIN OR SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-36/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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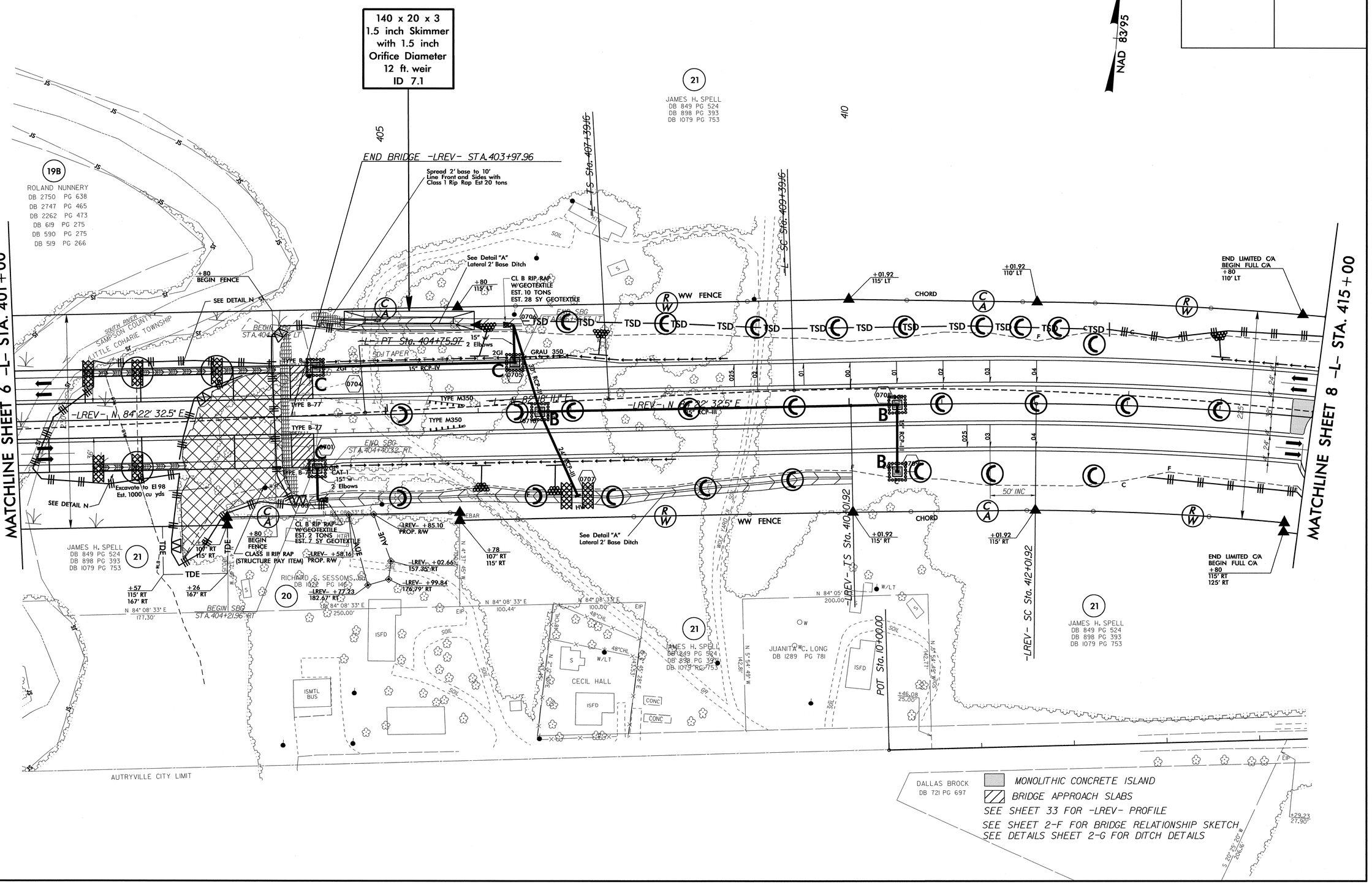
Roadway AT REN(2/7/0)

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

NOTE: UTILIZE SKIMMER BASIN OR SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-37/CONST.7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



8/17/99

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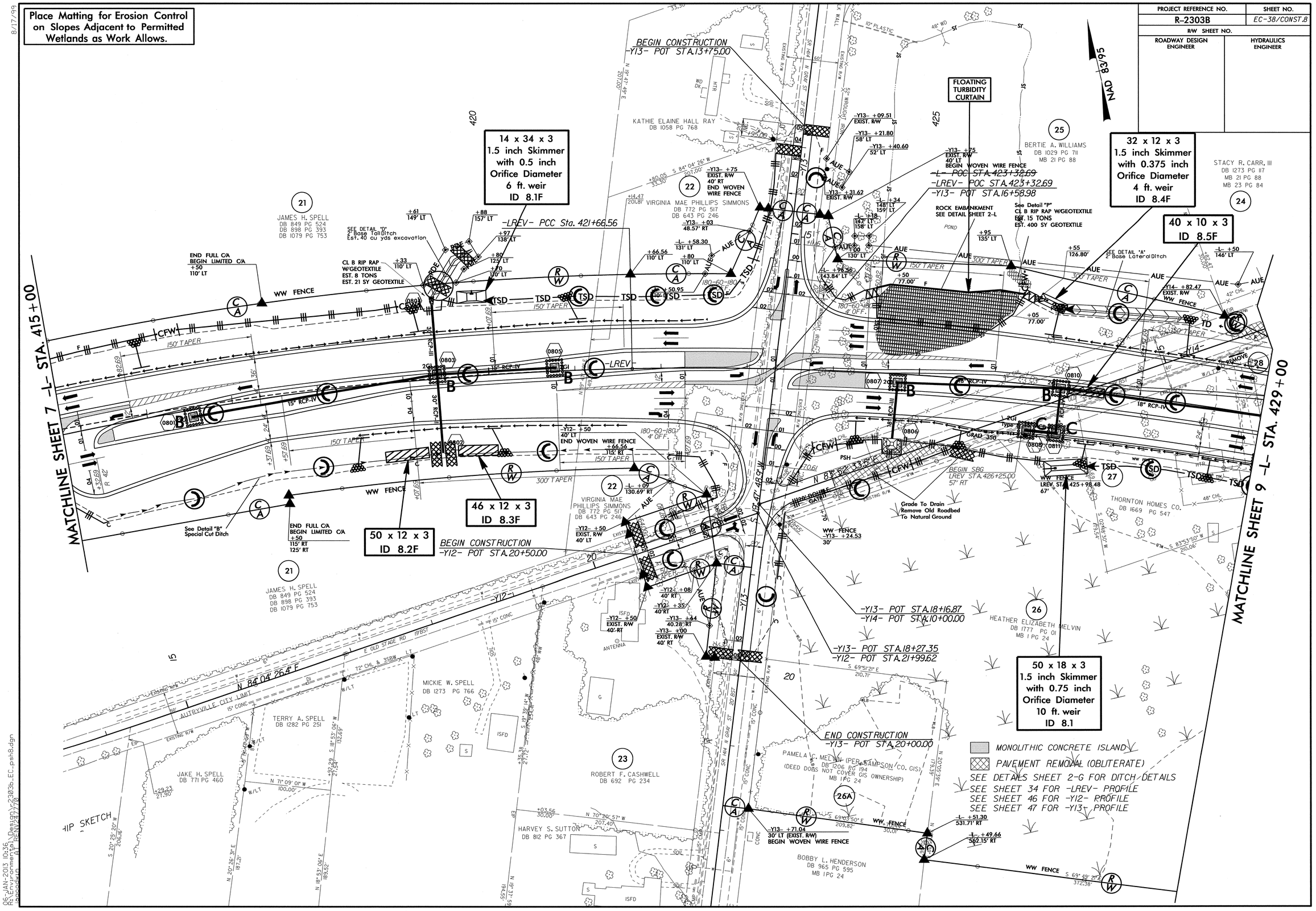
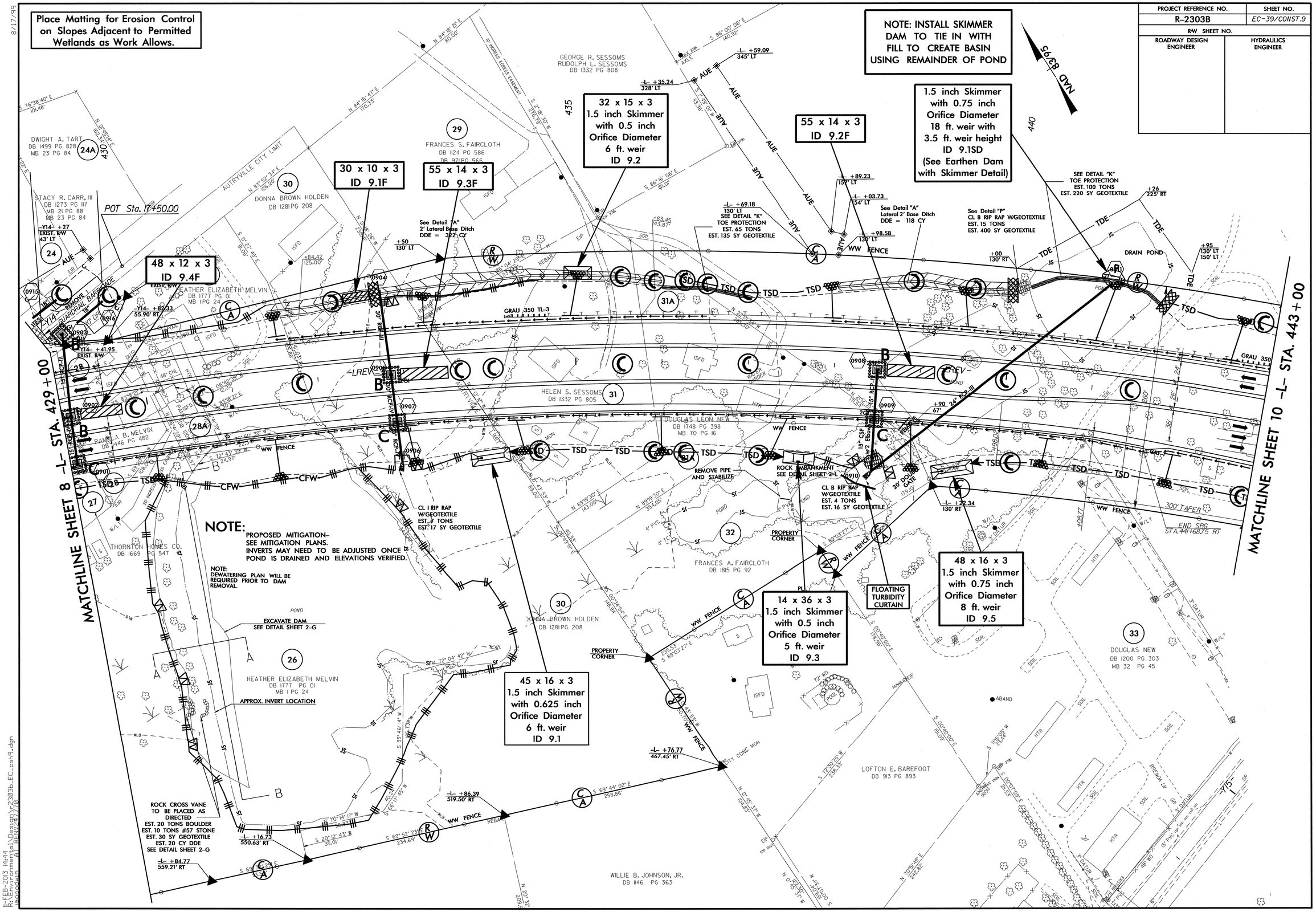


Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.
PROJECT REFERENCE NO.
R-2303B
SHEET NO.
EC-38/CONST.8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83/95
FLOATING TURBIDITY CURTAIN
BEGIN CONSTRUCTION -Y13- POT STA.13+75.00
14 x 34 x 3 1.5 inch Skimmer with 0.5 inch Orifice Diameter 6 ft. weir ID 8.1F
32 x 12 x 3 1.5 inch Skimmer with 0.375 inch Orifice Diameter 4 ft. weir ID 8.4F
40 x 10 x 3 ID 8.5F
46 x 12 x 3 ID 8.3F
50 x 12 x 3 ID 8.2F
50 x 18 x 3 1.5 inch Skimmer with 0.75 inch Orifice Diameter 10 ft. weir ID 8.1
-LREV- PCC Sta. 421+66.56
-LREV- POC STA.423+32.69
-Y13- POT STA.16+58.98
BEGIN CONSTRUCTION -Y12- POT STA.20+50.00
-Y13- POT STA.18+16.87
-Y14- POT STA.10+00.00
-Y13- POT STA.18+27.35
-Y12- POT STA.21+99.62
END CONSTRUCTION -Y13- POT STA.20+00.00
MATCHLINE SHEET 7 -L- STA. 415+00
MATCHLINE SHEET 9 -L- STA. 429+00
KATHIE ELAINE HALL RAY DB 1058 PG 768
VIRGINIA MAE PHILLIPS SIMMONS DB 772 PG 517 DB 643 PG 246
JAMES H. SPELL DB 849 PG 524 DB 898 PG 393 DB 1079 PG 753
BERTIE A. WILLIAMS DB 1029 PG 711 MB 21 PG 88
STACY R. CARR, III DB 1273 PG 117 MB 21 PG 88 MB 23 PG 84
THORNTON HOMES CO. DB 1669 PG 547
HEATHER ELIZABETH MELVIN DB 1777 PG 01 MB 1 PG 24
MICKIE W. SPELL DB 1273 PG 766
TERRY A. SPELL DB 1282 PG 251
JAKE H. SPELL DB 771 PG 460
ROBERT F. CASHWELL DB 692 PG 234
HARVEY S. SUTTON DB 812 PG 367
PAMELA C. MELVIN (PER SAMPSON CO. GIS) DB 1206 PG 194 (DEED DOES NOT COVER GIS OWNERSHIP) MB 1 PG 24
BOBBY L. HENDERSON DB 965 PG 595 MB 1 PG 24
MONOLITHIC CONCRETE ISLAND
PAVEMENT REMOVAL (OBLITERATE)
SEE DETAILS SHEET 2-G FOR DITCH DETAILS
SEE SHEET 34 FOR -LREV- PROFILE
SEE SHEET 46 FOR -Y12- PROFILE
SEE SHEET 47 FOR -Y13- PROFILE



PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-39/CONST.9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

11-FEB-2013 14:44
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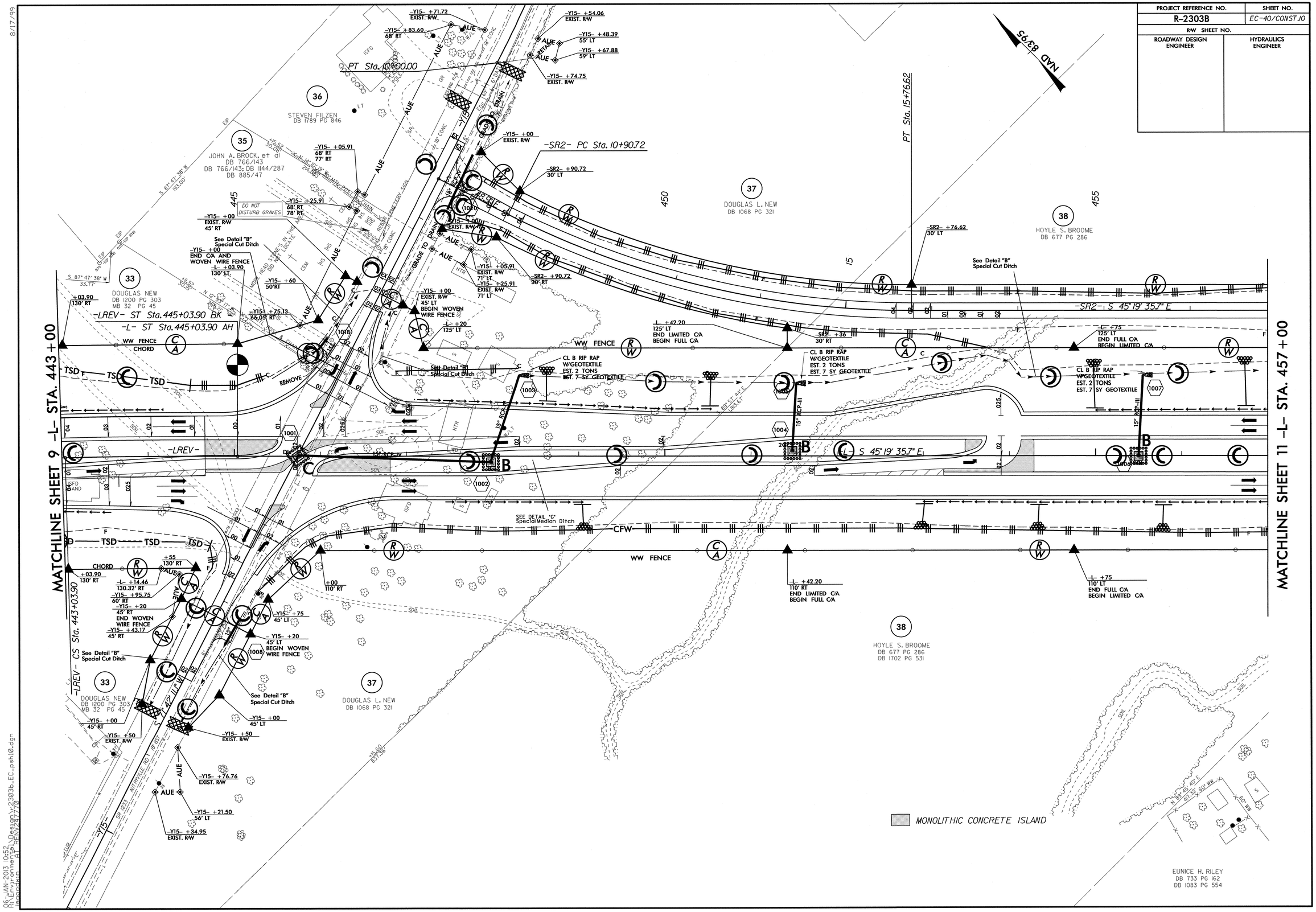
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-40/CONST.10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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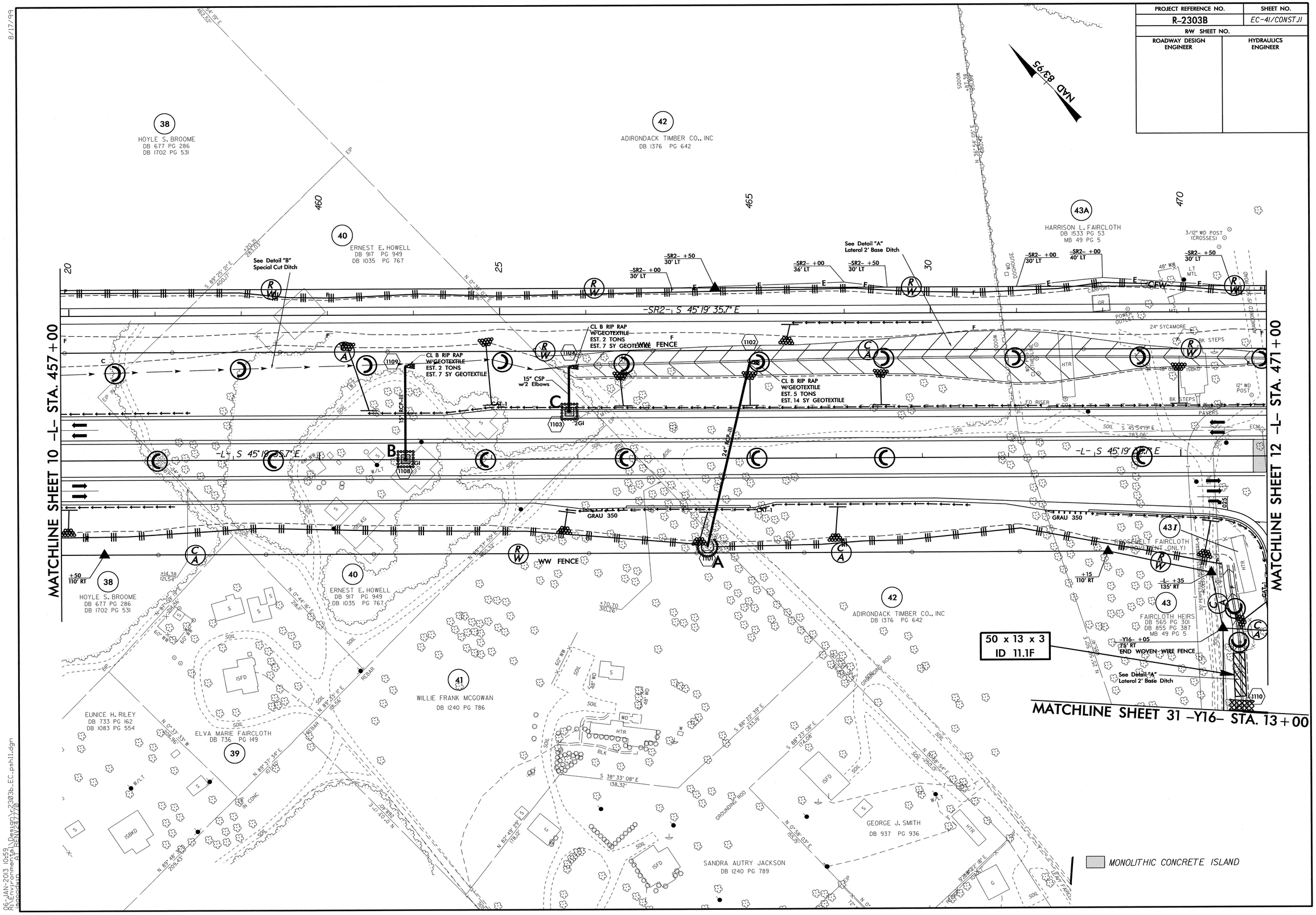
jpgoodwin AT RENV2477770

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-41/CONST.11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



8/17/99

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jaacodwin AT RENV247770

PROJECT REFERENCE NO.	SHEET NO.
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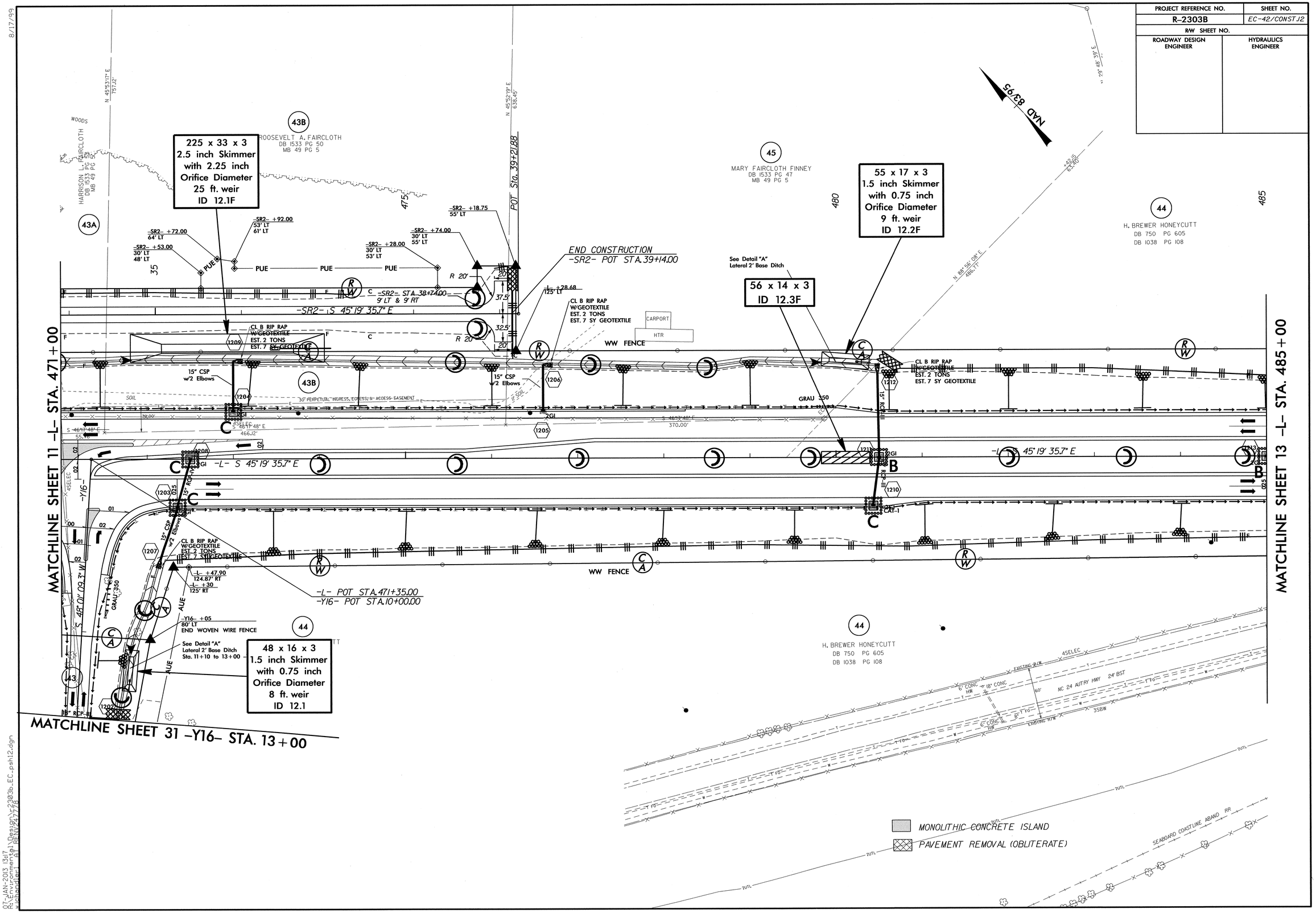
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



8/17/99

07-JAN-2013 13:17
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wichandler1 AT RENV247778

PROJECT REFERENCE NO.	SHEET NO.
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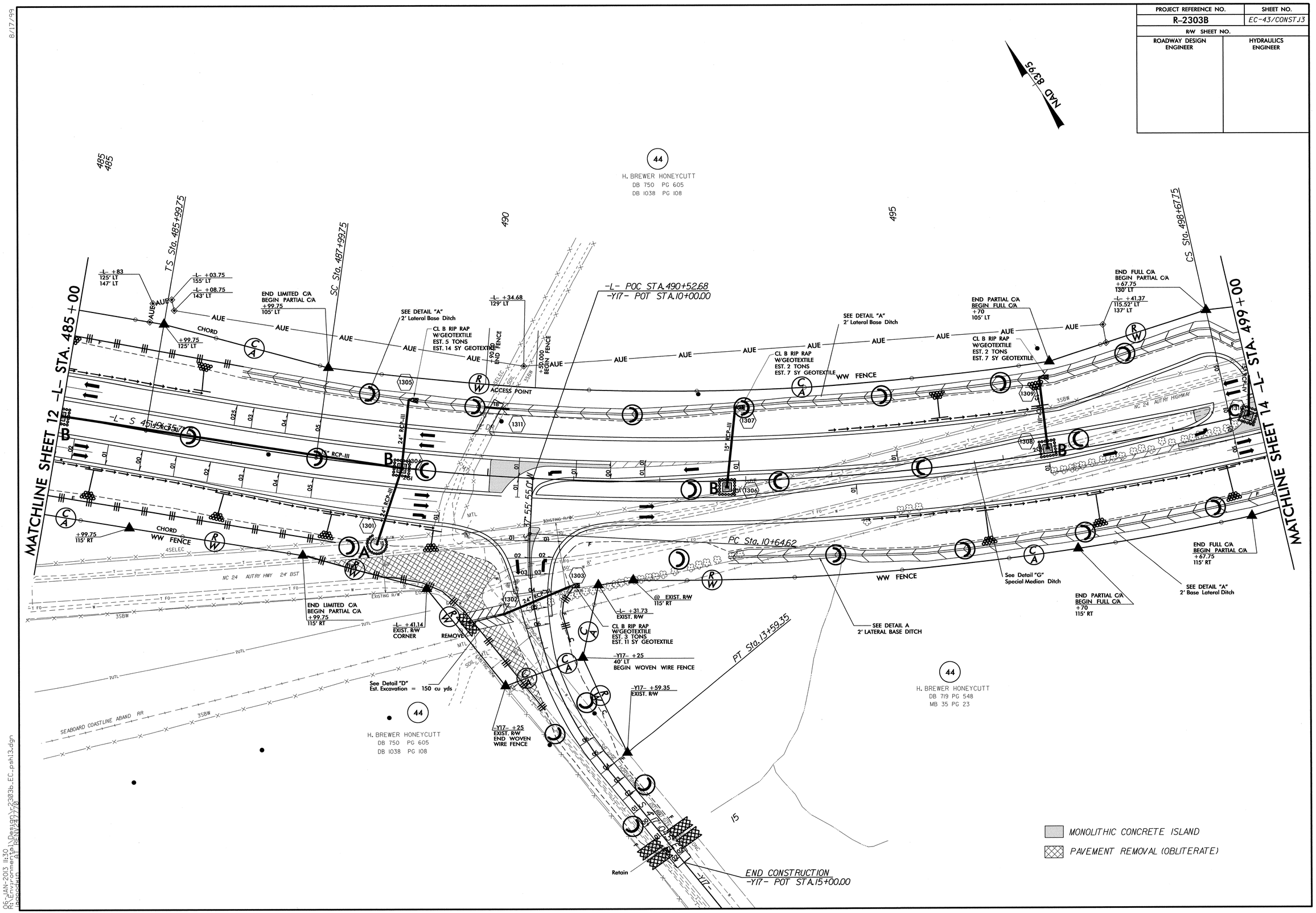
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



8/17/99

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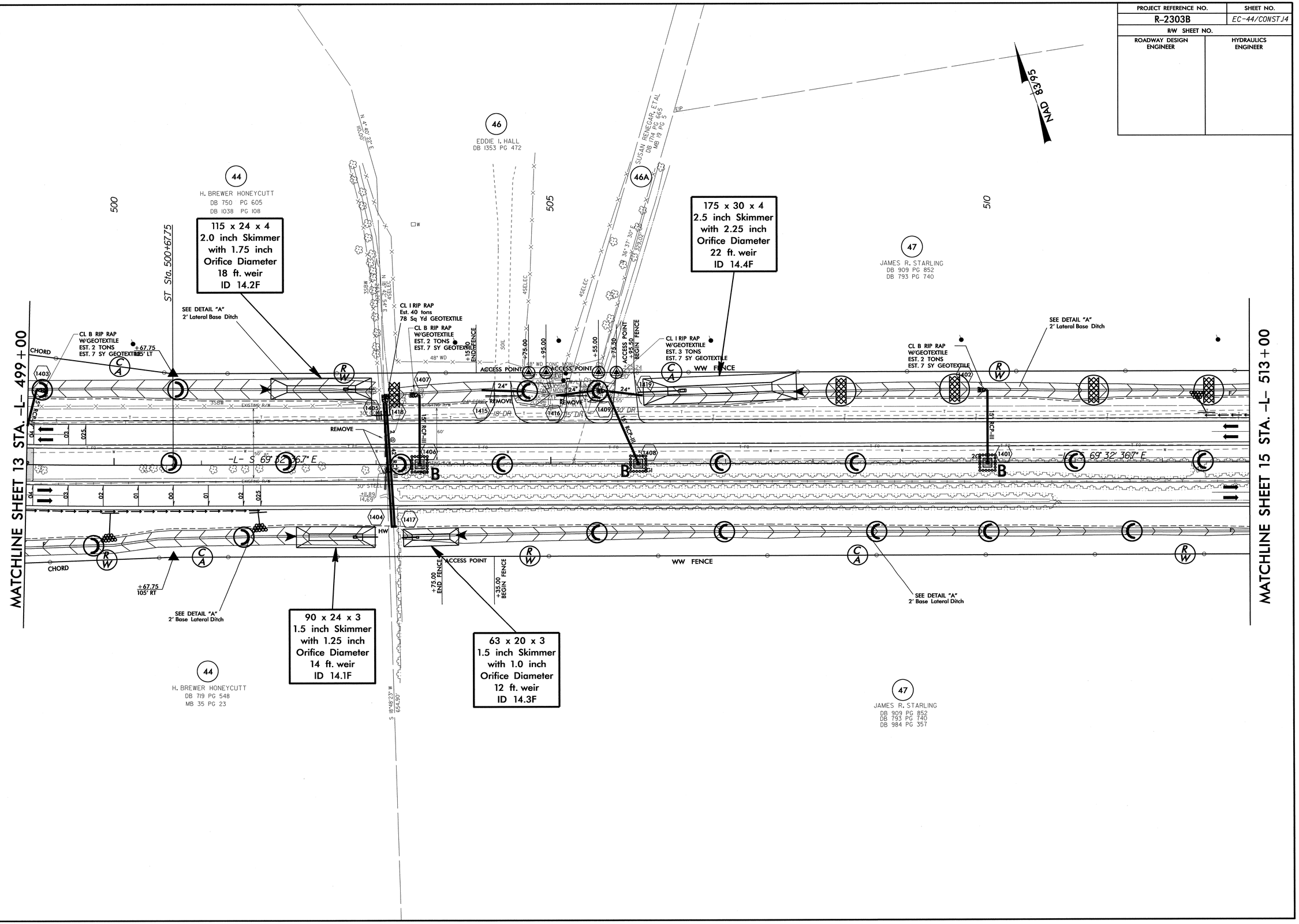
pcopeland
ATT REF(V24777)

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-44/CONST.J4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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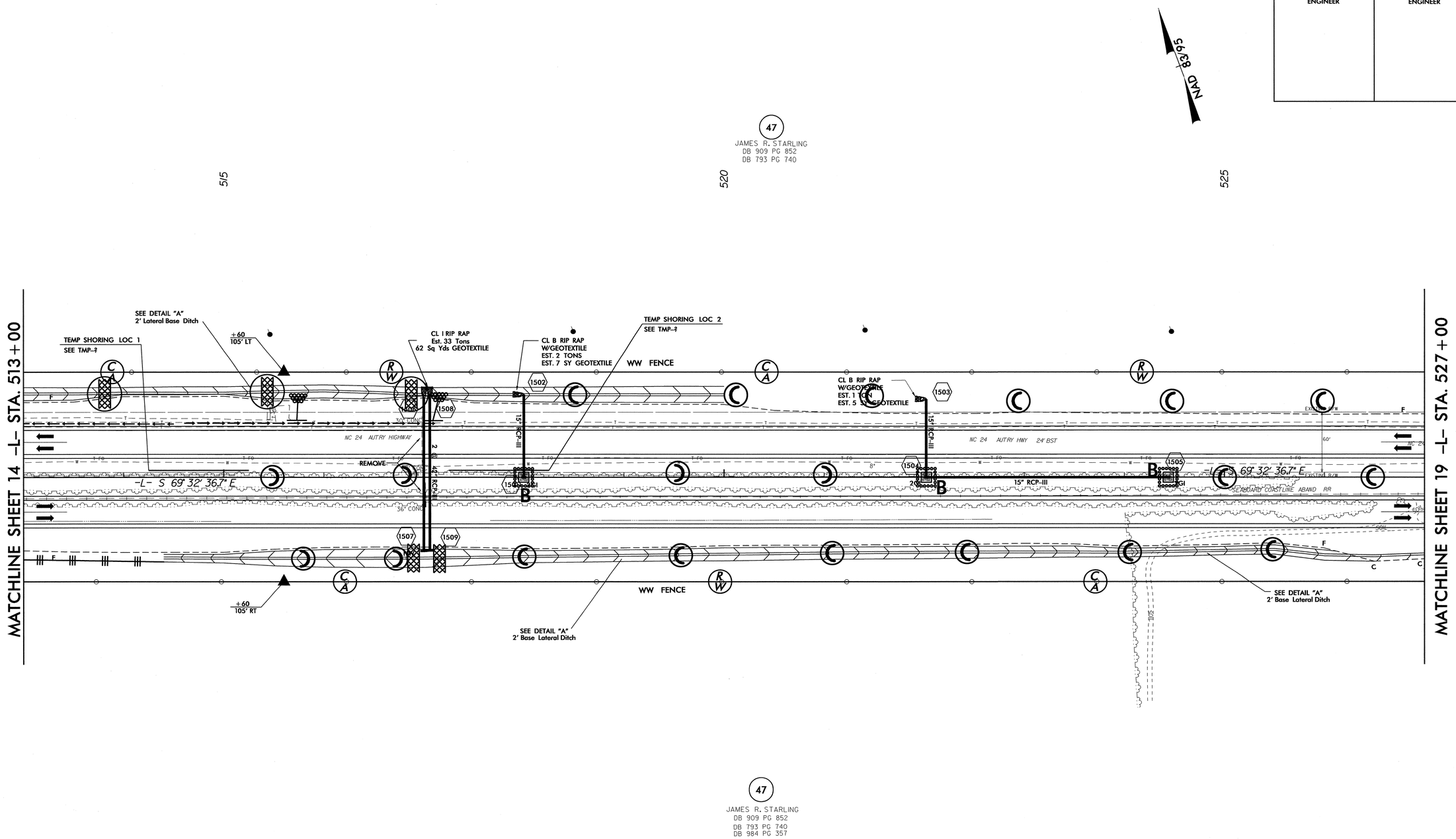
bbowman
AT RENV27770

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-45/CONST.15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



8/17/99

06-JAN-2013 11:38
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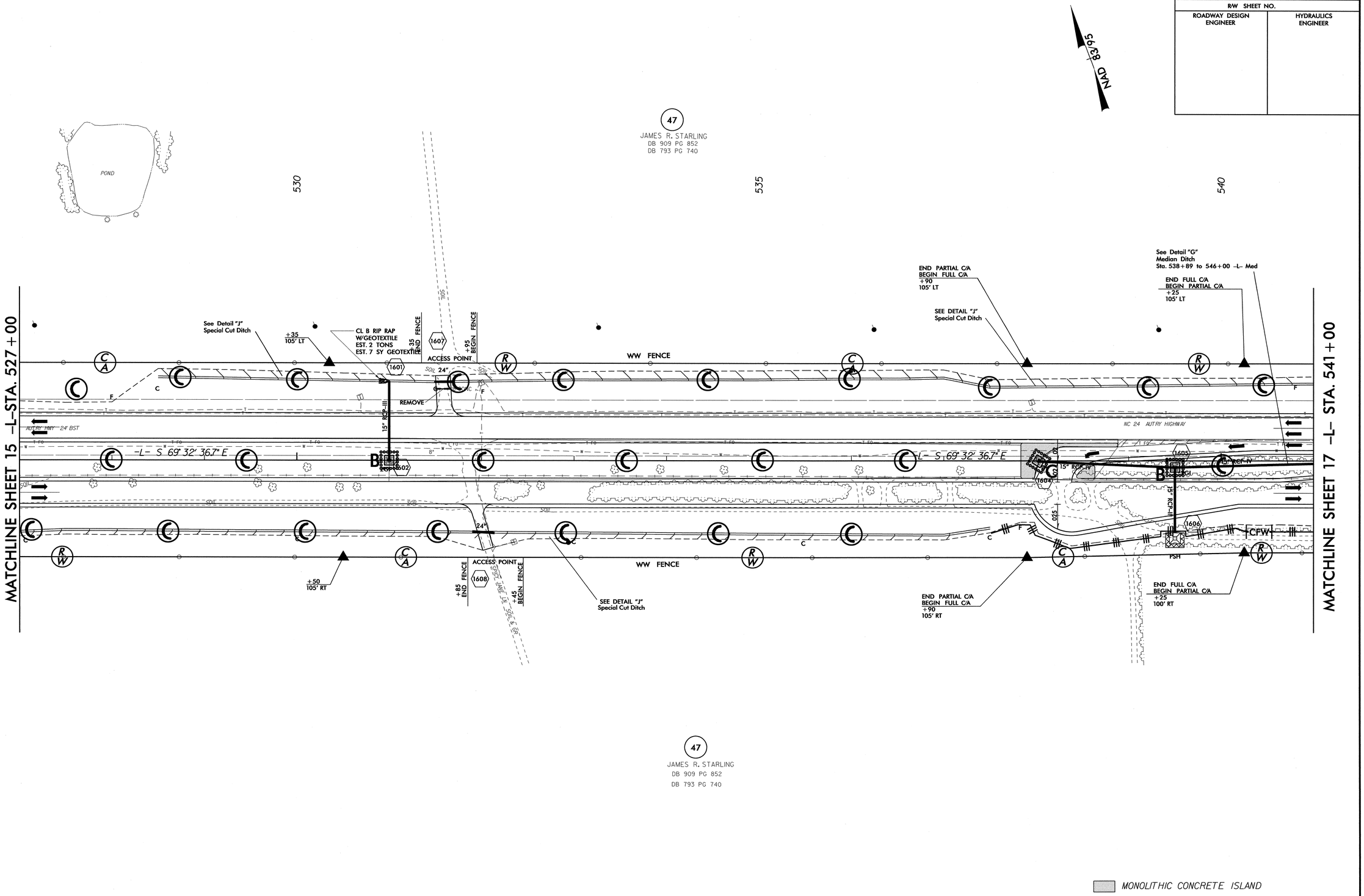
lapoodwin AT RENV247770

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-46/CONST.16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



47
JAMES R. STARLING
DB 909 PG 852
DB 793 PG 740

8/17/99

06-JAN-2013 11:56
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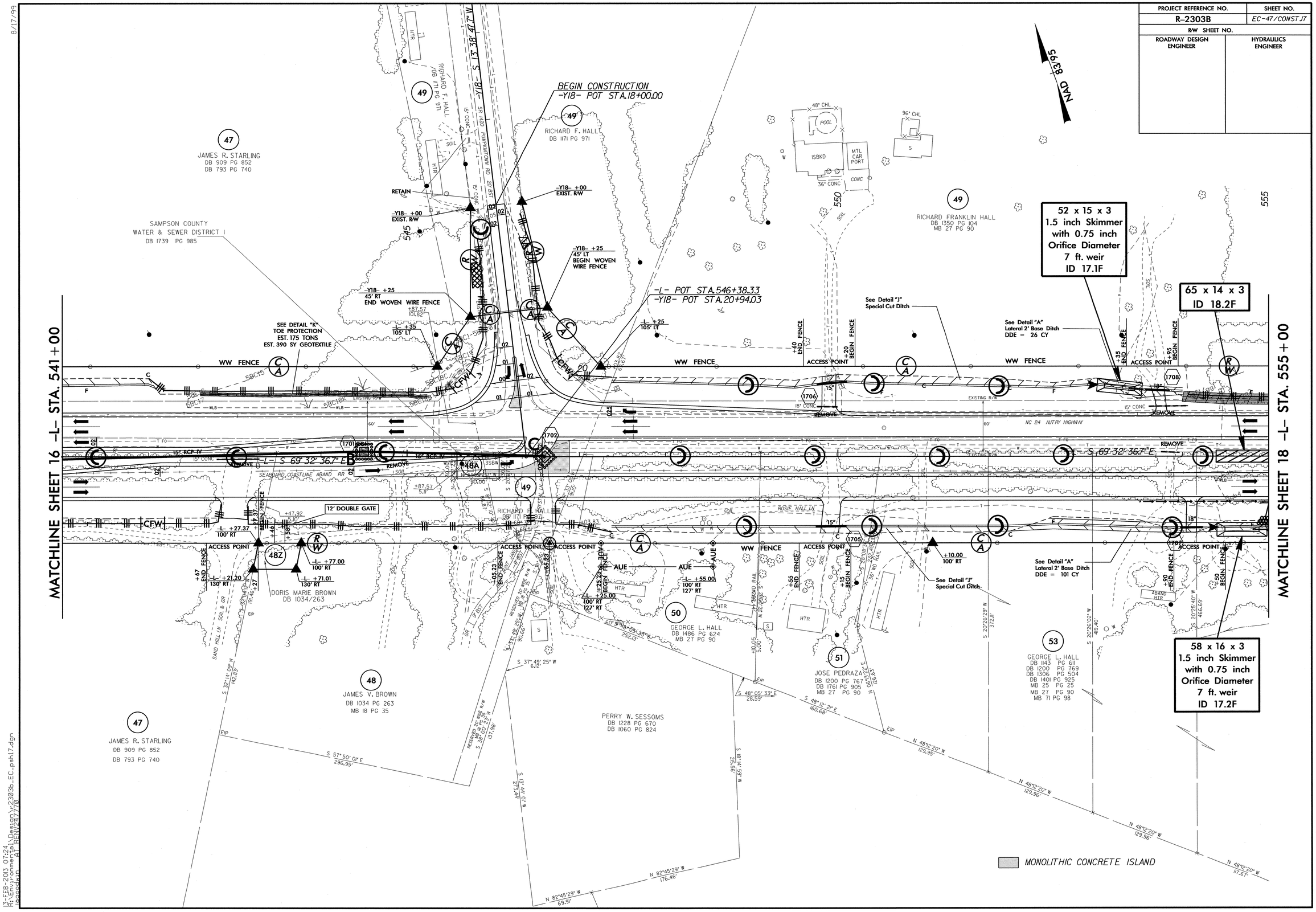
jagoodkin AT RENV247770

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-47/CONST.17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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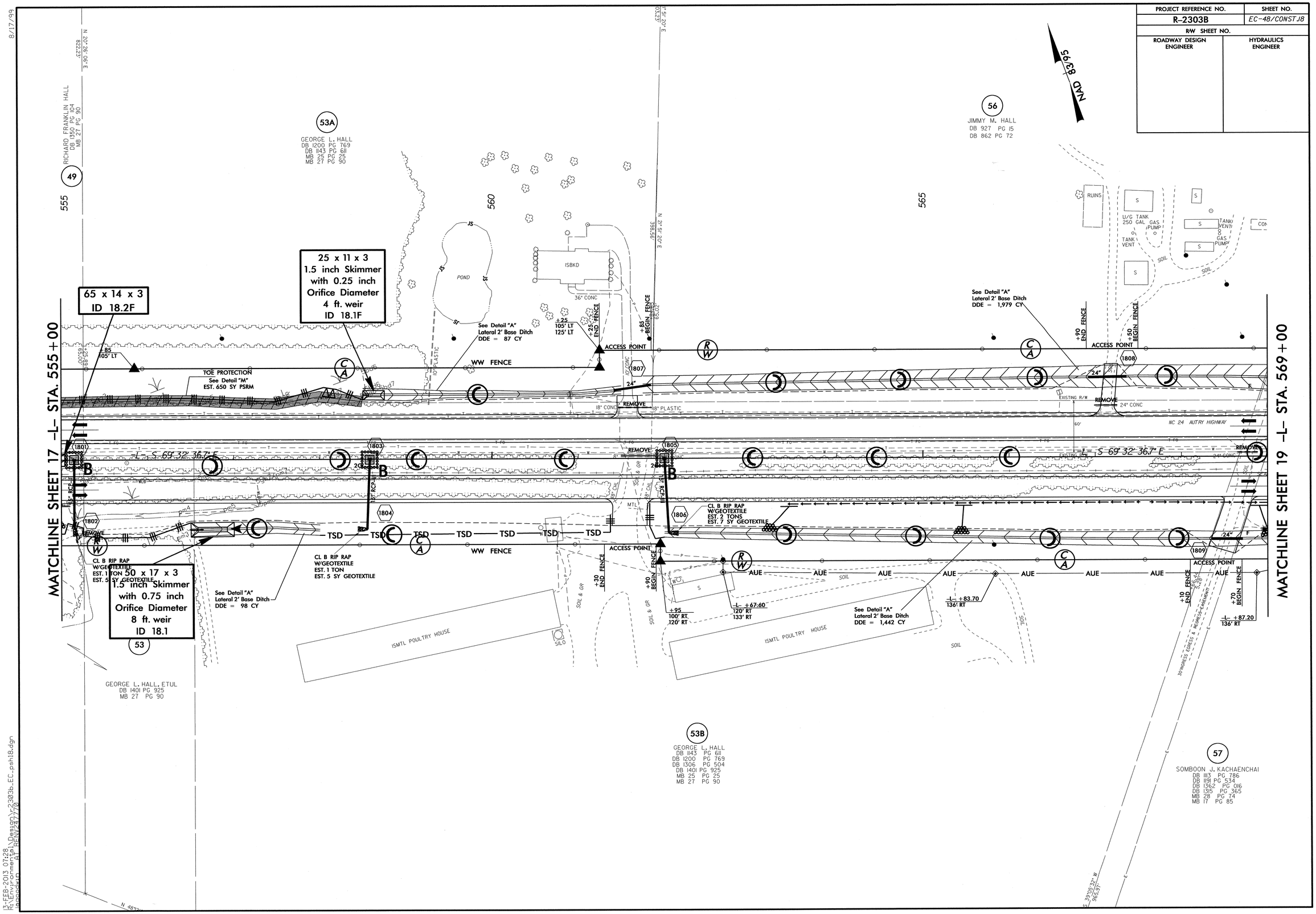
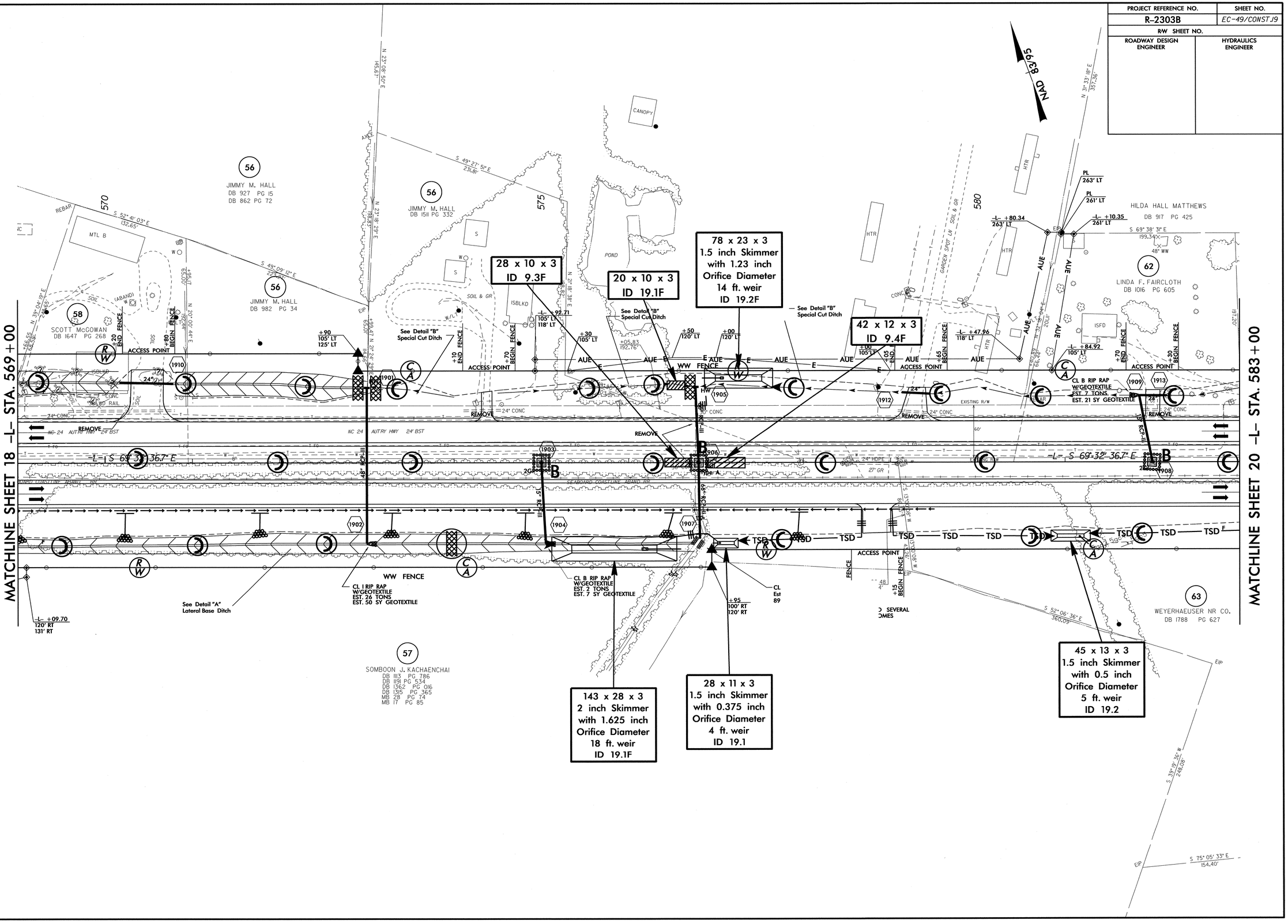
pgoodwin
$CT_REN\247770

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-48/CONST.18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-49/CONST.J9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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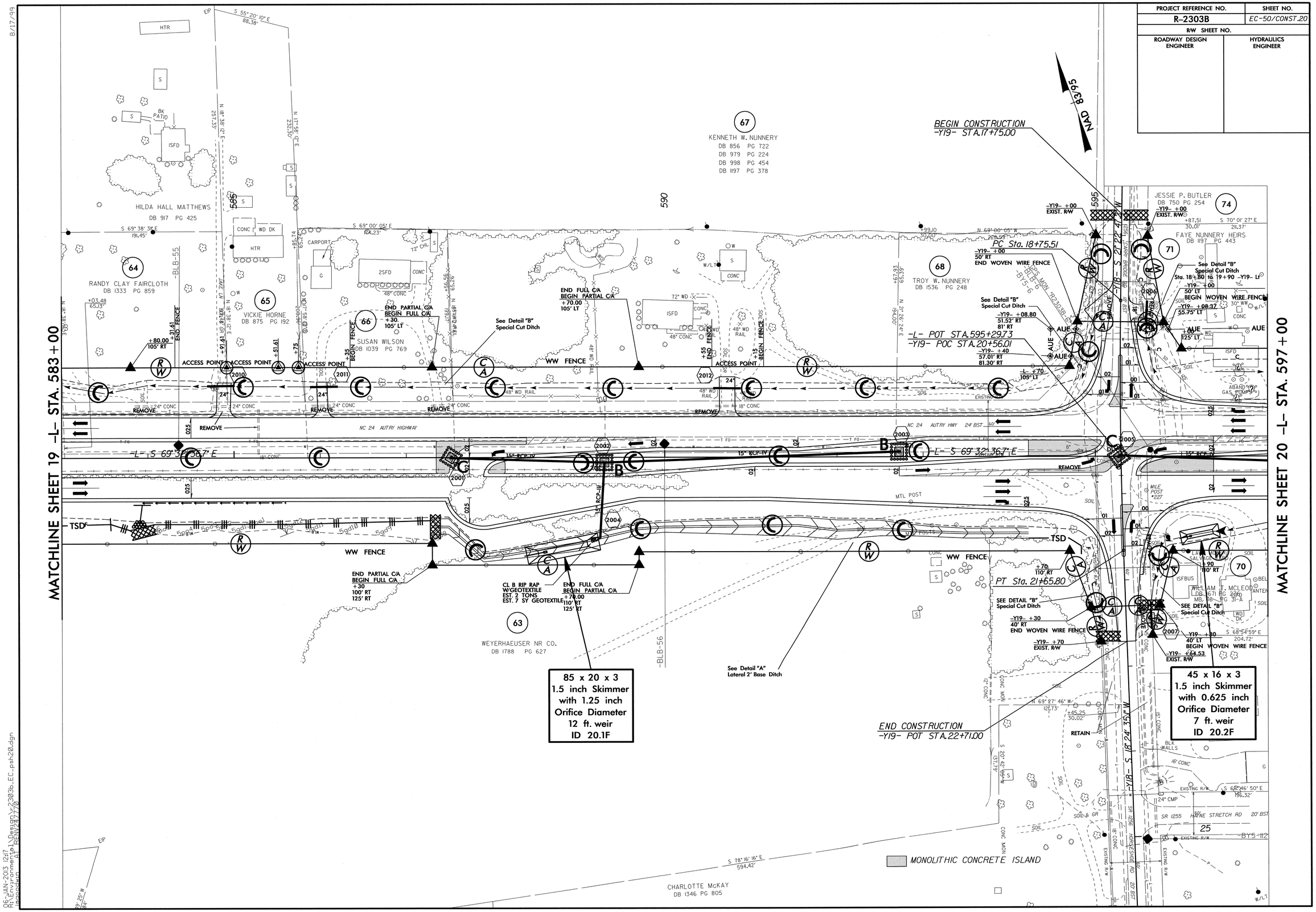
wichandler1 AT RENV247778

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-50/CONST.20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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pscoggin
at RENV22/770

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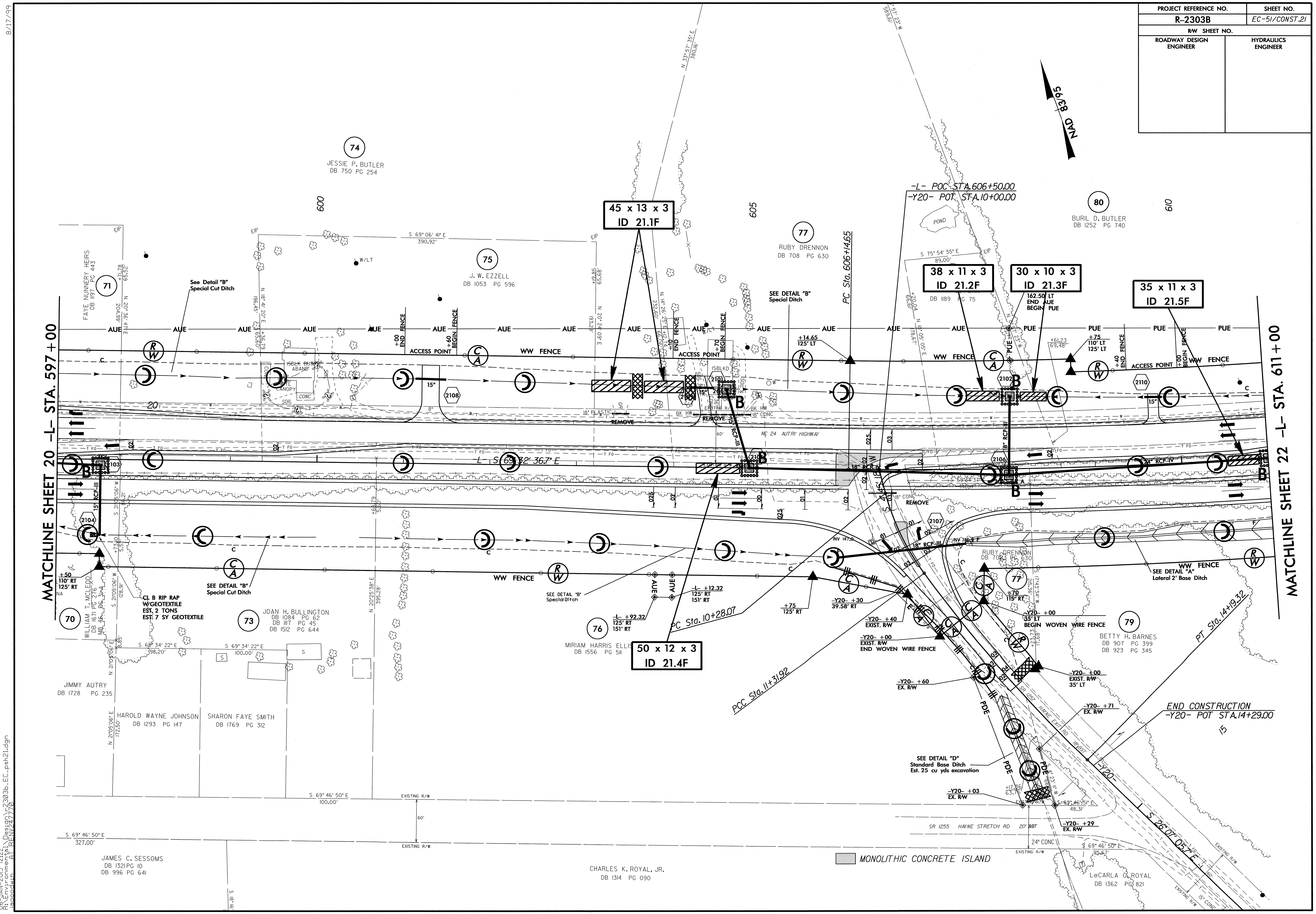
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-51/CONST.21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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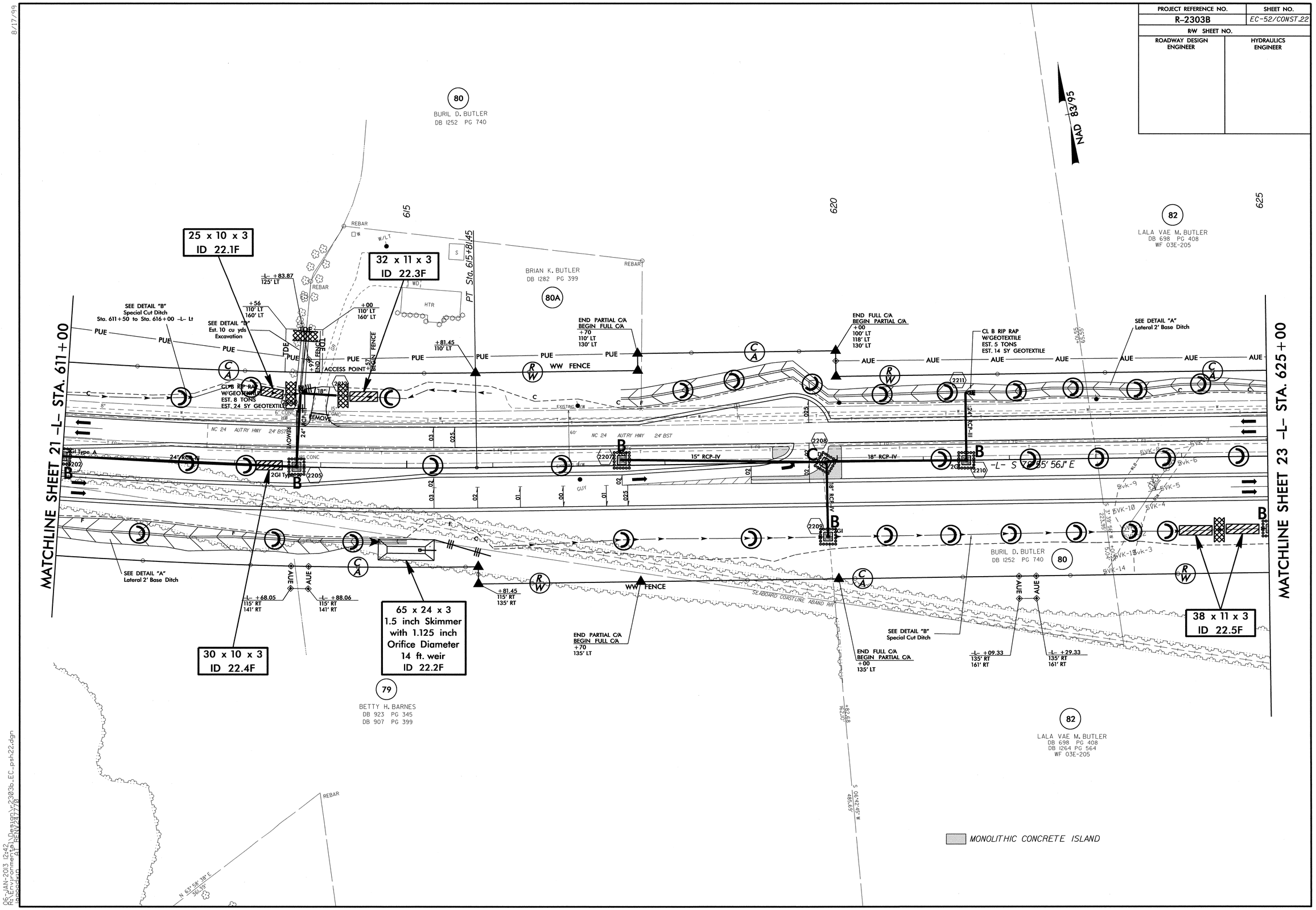
jagoodwin AT RENV247770

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-52/CONST.22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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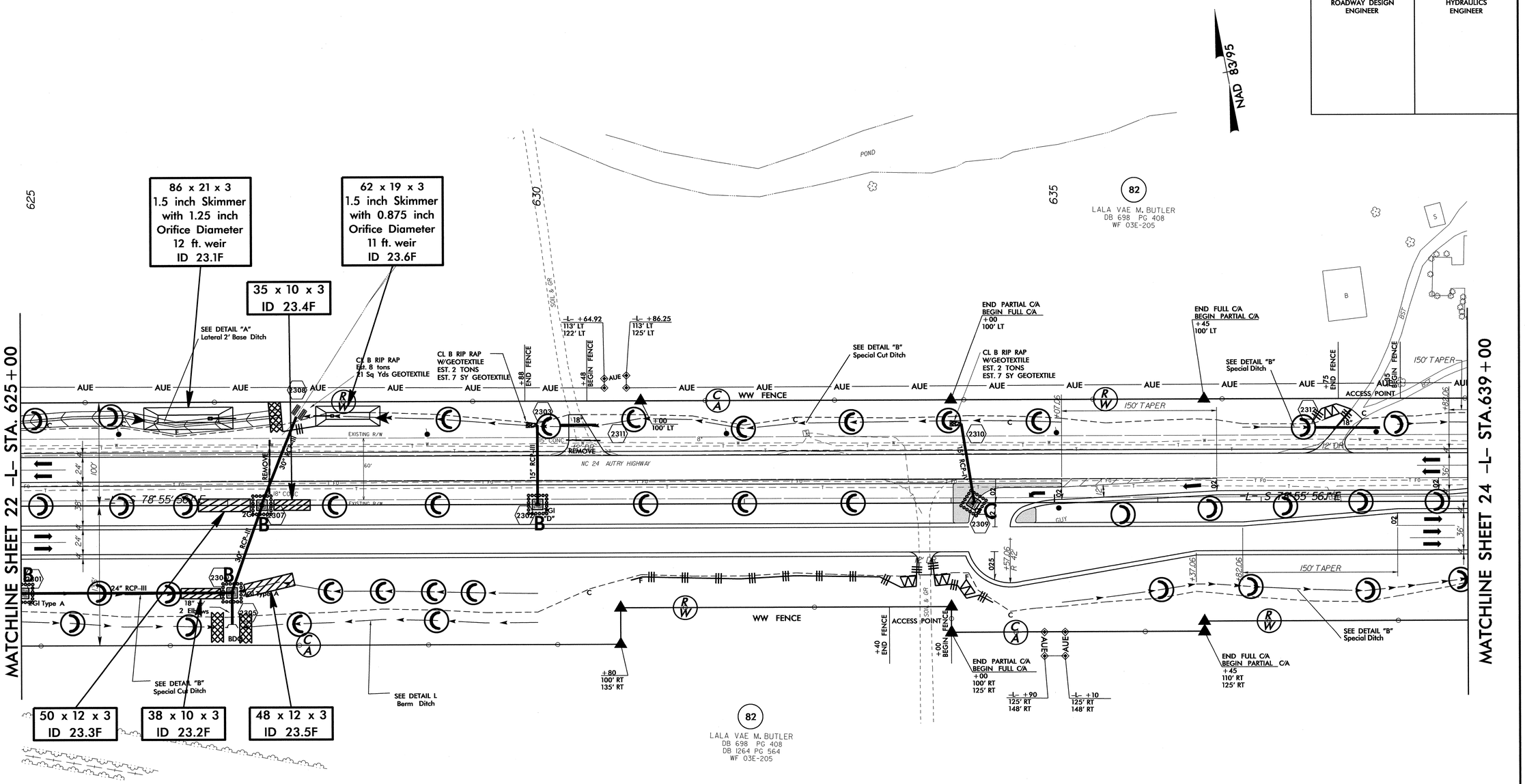
bpowell
$$ REV217.70
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-53/CONST.23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



8/17/99

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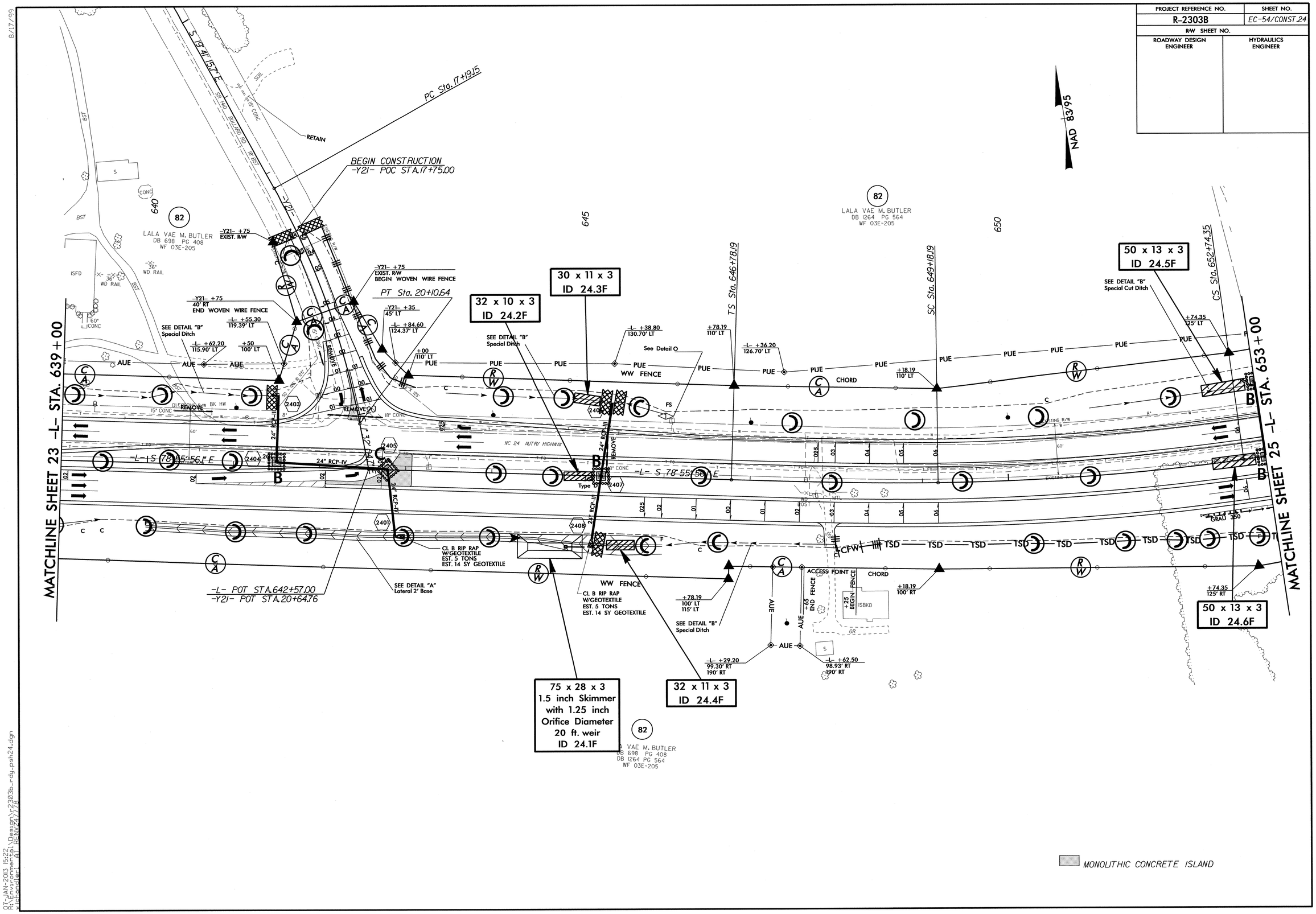
PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-54/CONST.24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



8/17/99

07-JAN-2013 15:22
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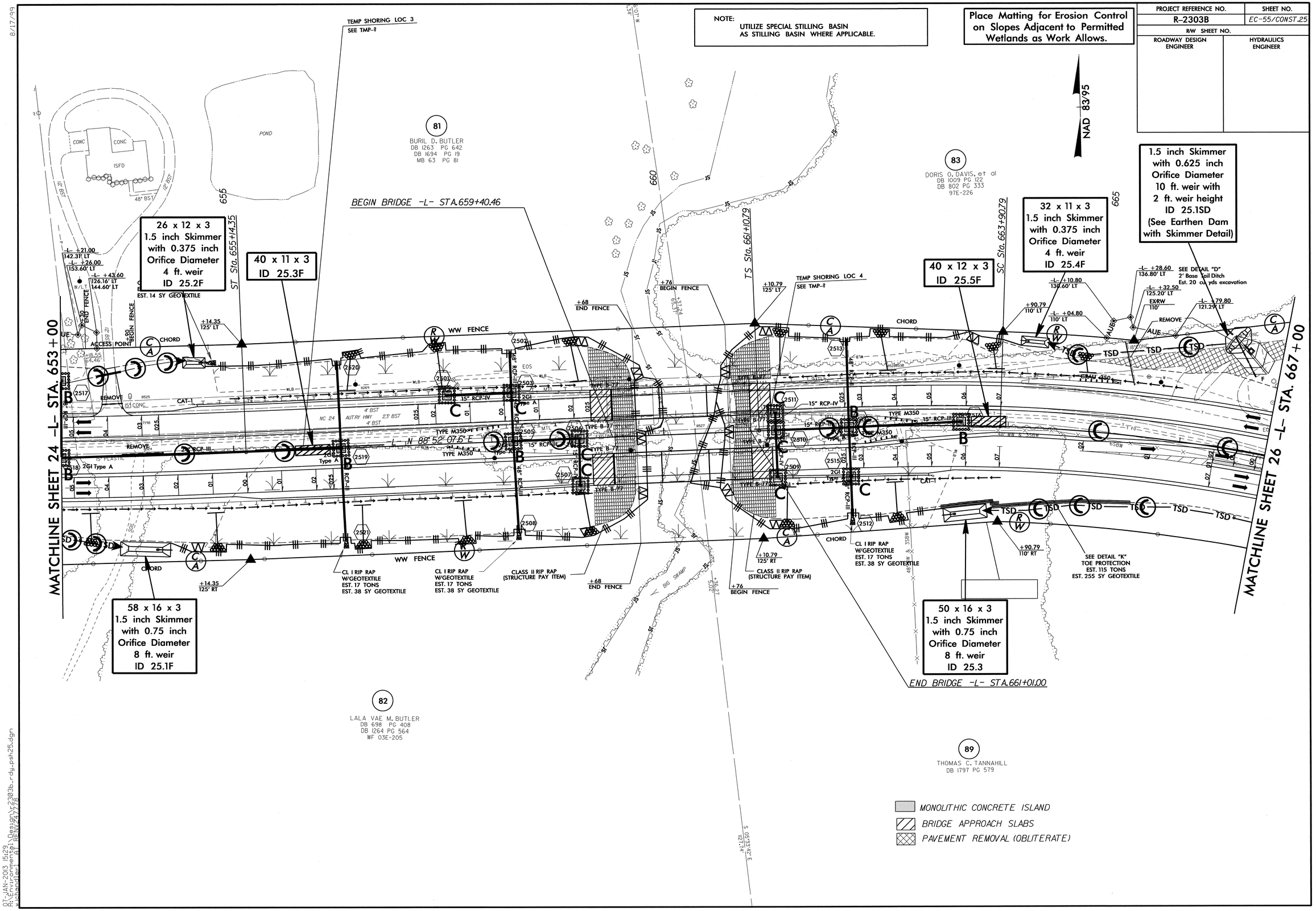
wlchandler1 AT RENV247778

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-55/CONST.25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE:
UTILIZE SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

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



8/17/99

07-JAN-2013 15:29
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wichandler1 AT RENV247778

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-56/CONST.26
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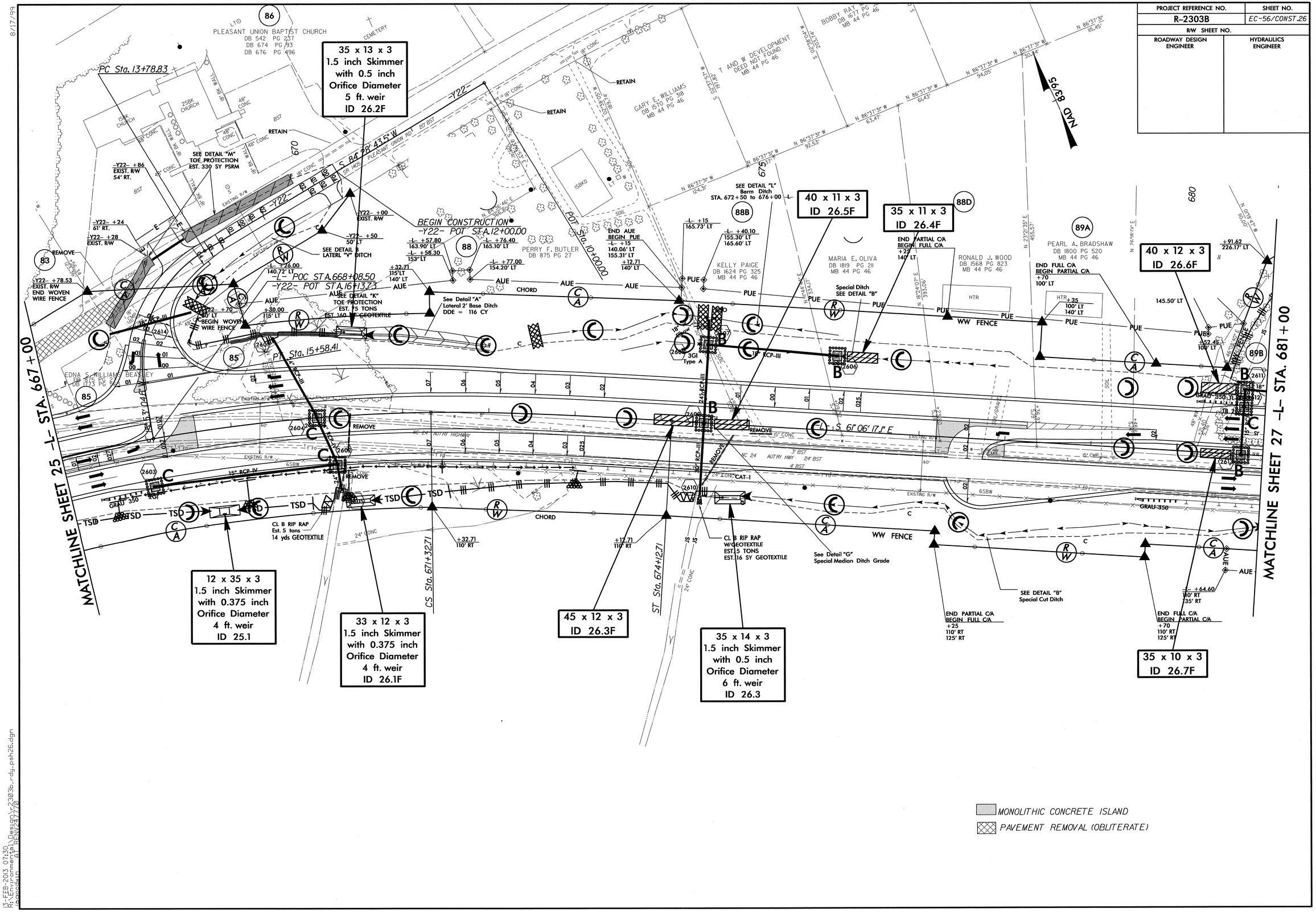
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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13-FEB-2013 07:30
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PROJECT REFERENCE NO.	SHEET NO.
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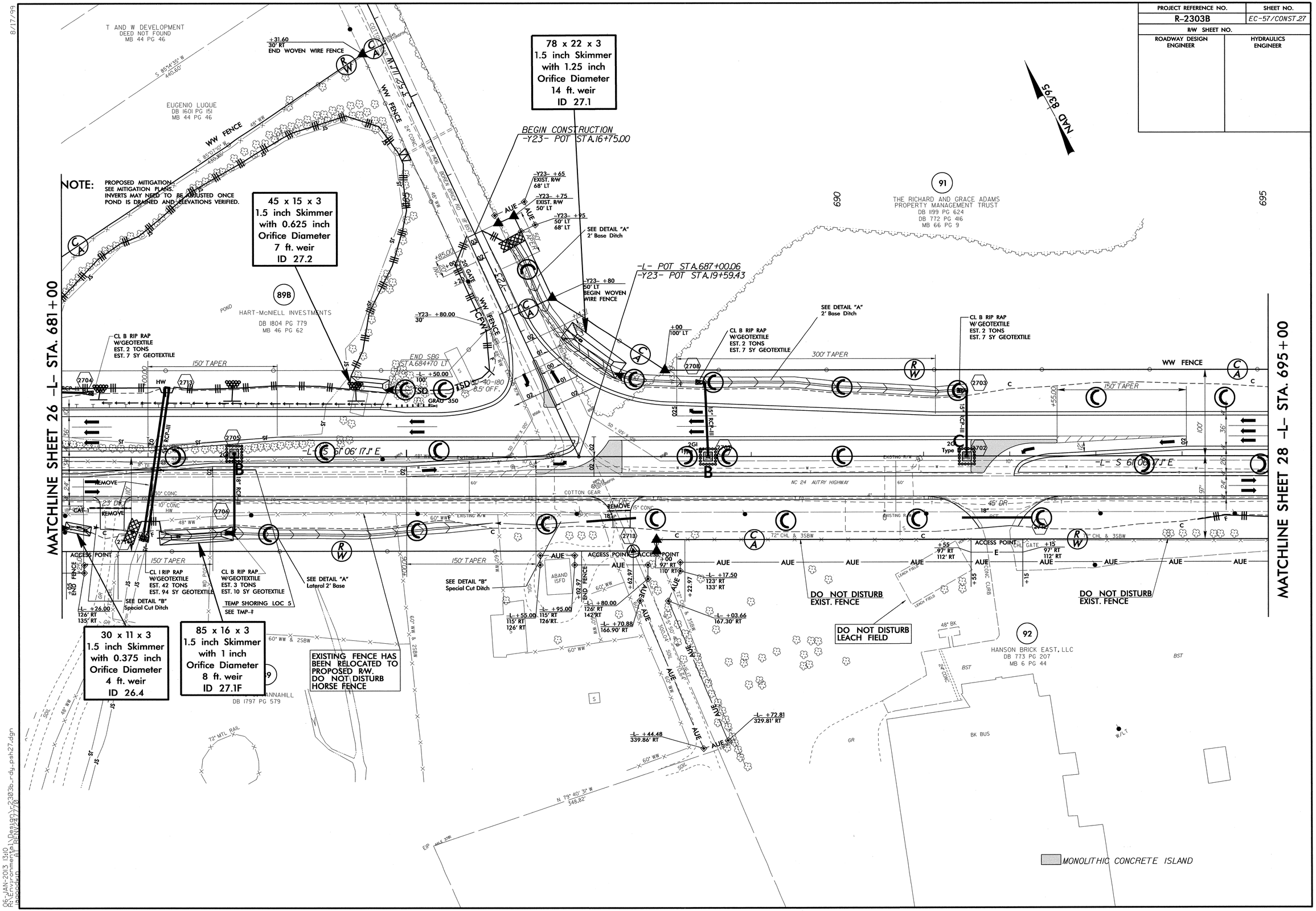

PROJECT REFERENCE NO.	SHEET NO.
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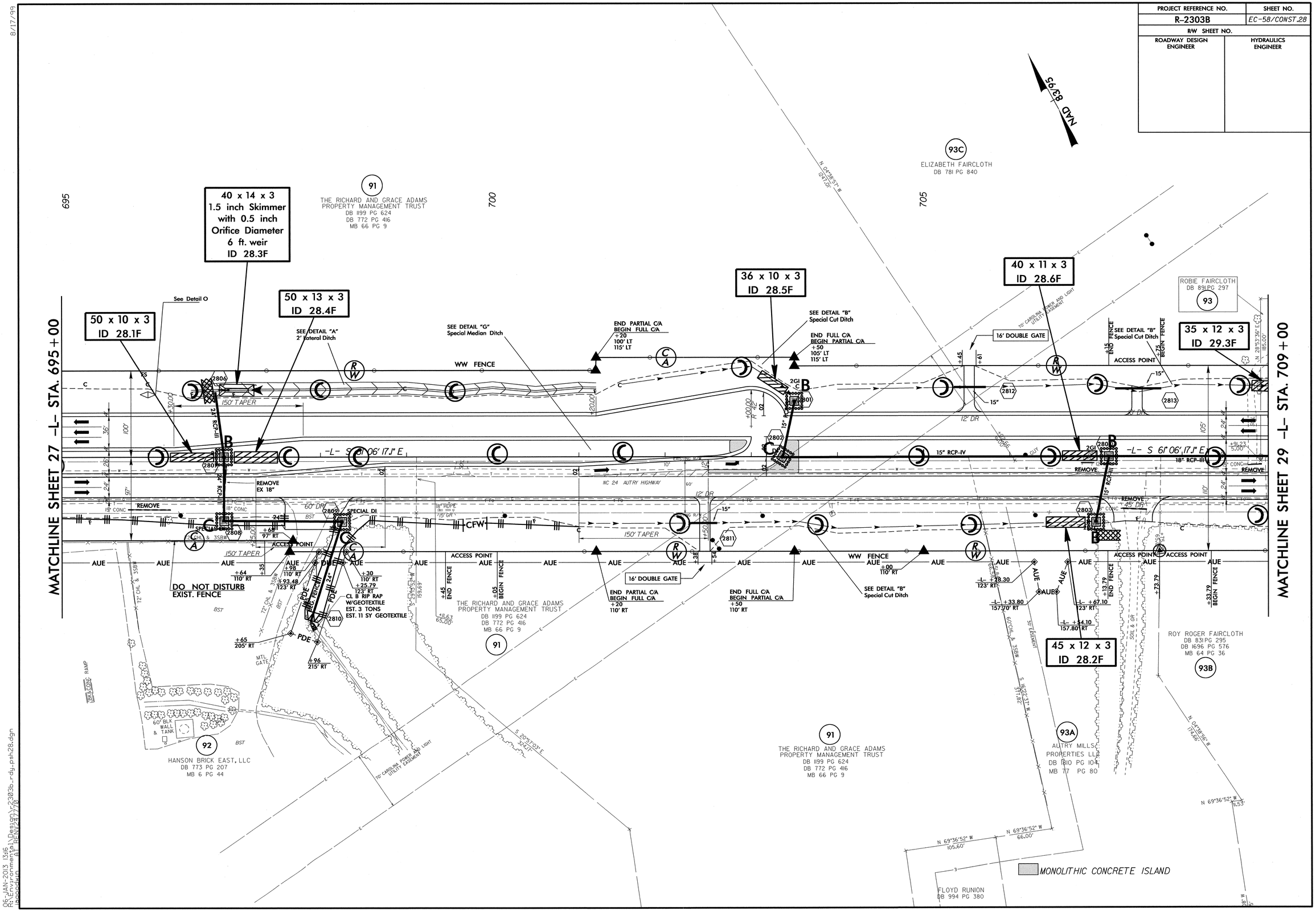

8/17/99

06-JAN-2013 13:16
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PROJECT REFERENCE NO.	SHEET NO.
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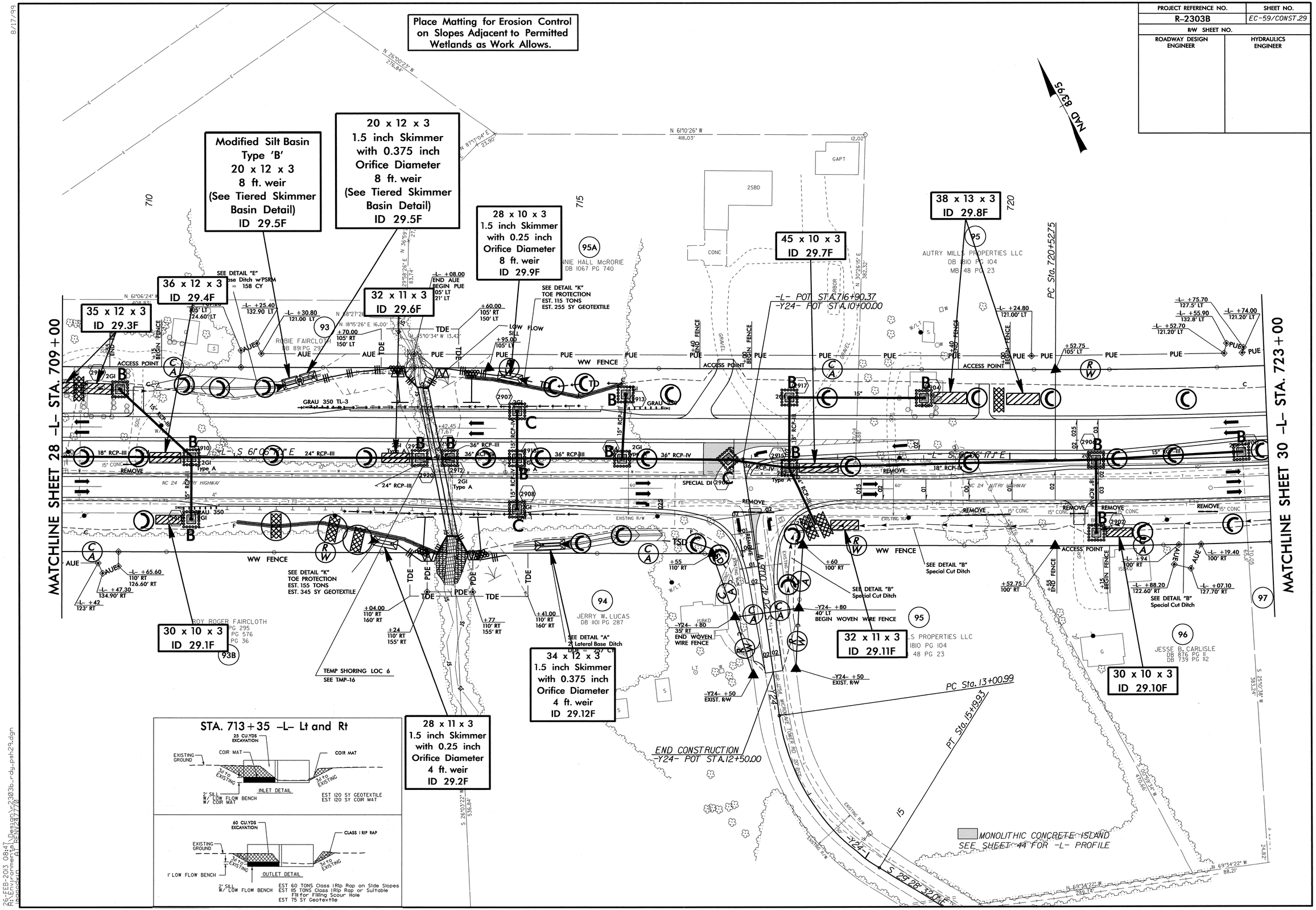

8/17/99

26-FEB-2013 08:47 R:\Environmental\Design\r2303b_rdy_psh29.dgn
bpowell ATTENTION: REVIEW

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-60/CONST.30
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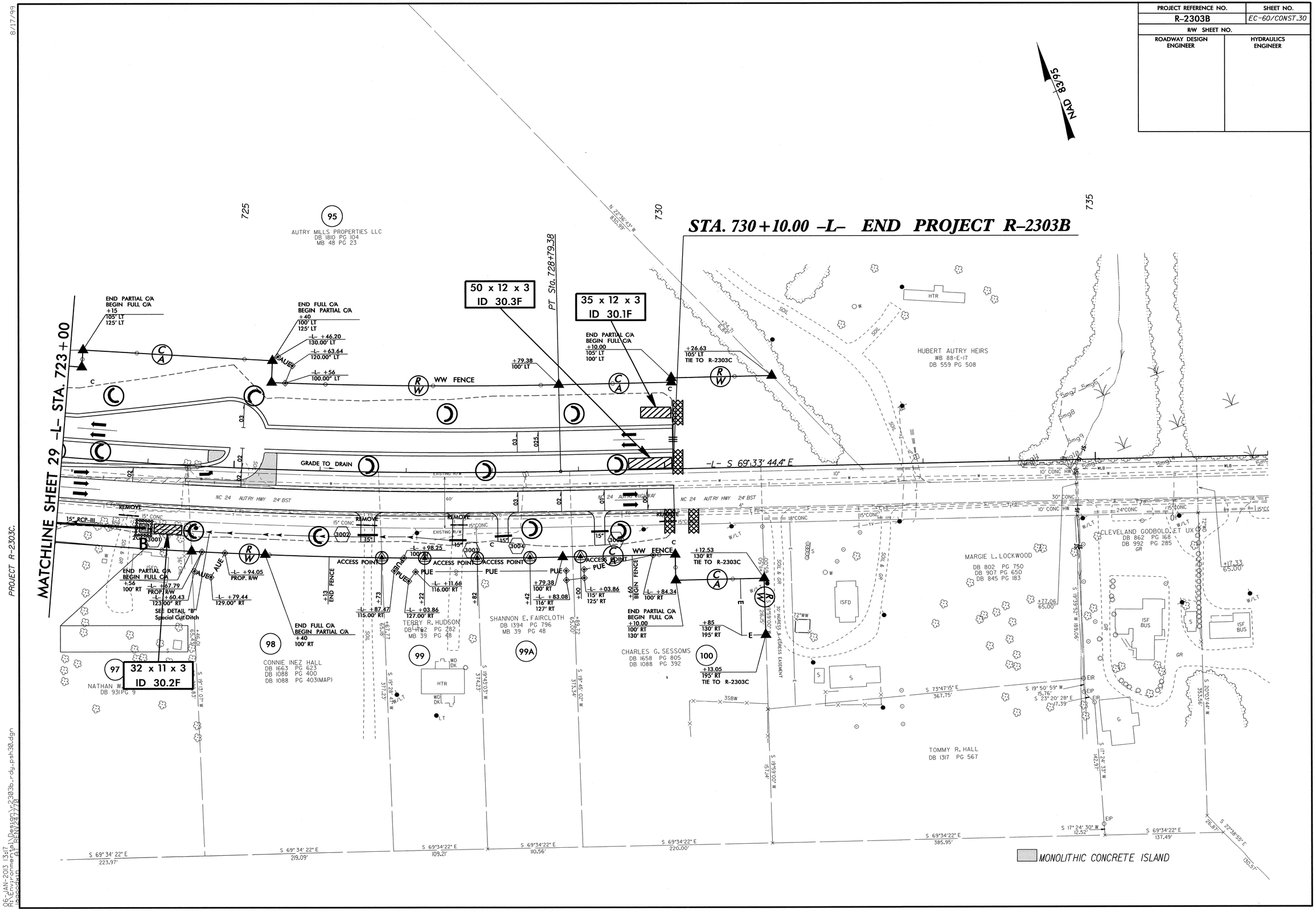
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PROJECT R-2303C.

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QR-JAN-2013 13:17
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ISCOGWIN ALBENZA7770

PROJECT REFERENCE NO.	SHEET NO.
R-2303B	EC-61/CONST.31
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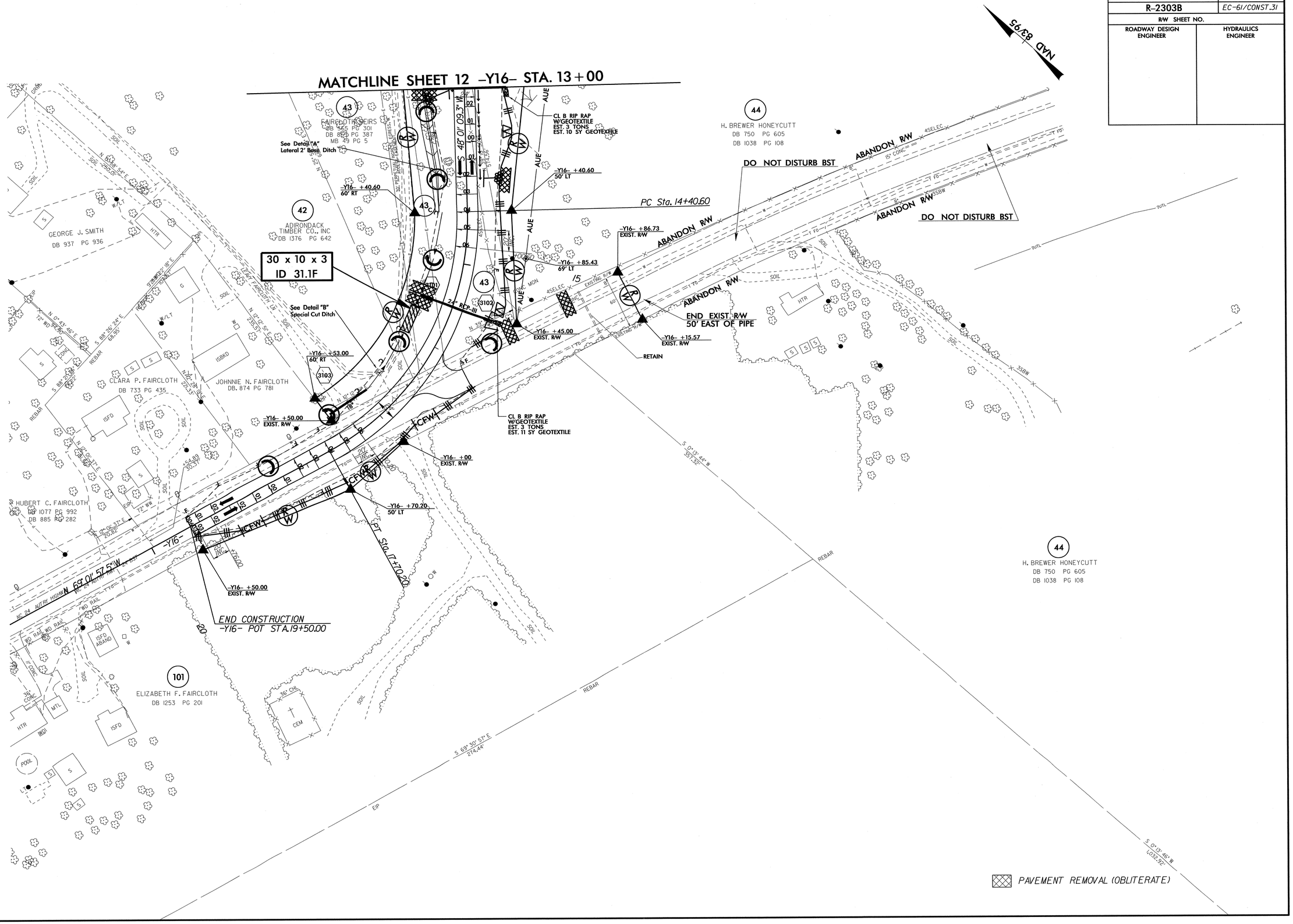
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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06-JAN-2013 12:50
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