TIP PROJECT: U-3304

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3304	EC-1	

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

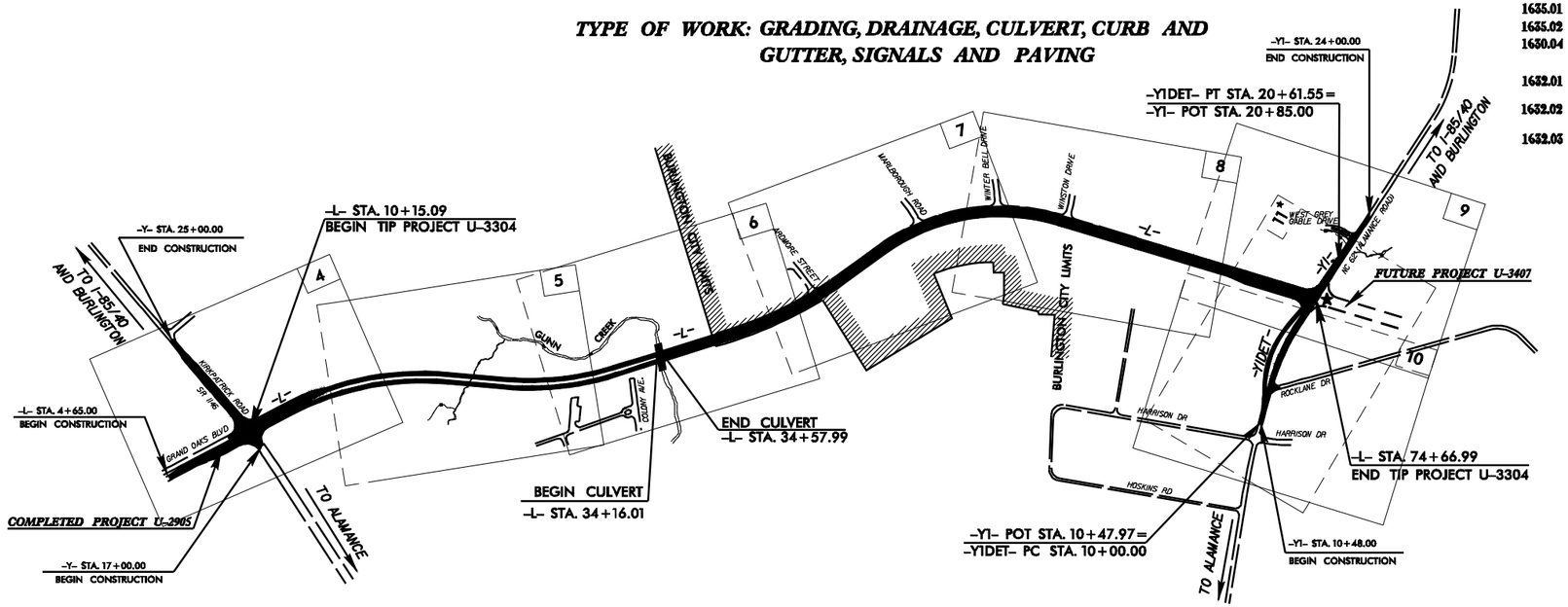
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

ALAMANCE COUNTY

LOCATION: BURLINGTON – GRAND OAKS BLVD EXTENSION FROM SR 1146 (KIRKPATRICK ROAD) TO NC 62 (ALAMANCE ROAD)

TYPE OF WORK: GRADING, DRAINAGE, CULVERT, CURB AND GUTTER, SIGNALS AND PAVING



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	
1630.01	Riser Basin	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-B	
	Wattle	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

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

GRAPHIC SCALE

0
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

Prepared In the Office of:

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

2006 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 July 18, 2006 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01 Temporary Silt Fence
1606.01 Special Sediment Control Fence
1607.01 Gravel Construction Entrance
1622.01 Temporary Berms and Slope Drains
1630.02 Silt Basin Type B
1630.03 Temporary Silt Ditch
1630.04 Stilling Basin
1630.05 Temporary Diversion
1632.02 Rock Inlet Sediment Trap Type B
1632.03 Rock Inlet Sediment Trap Type C
1633.01 Temporary Rock Silt Check Type A
1634.02 Temporary Rock Sediment Dam Type B
1635.01 Rock Pipe Inlet Sediment Trap Type A

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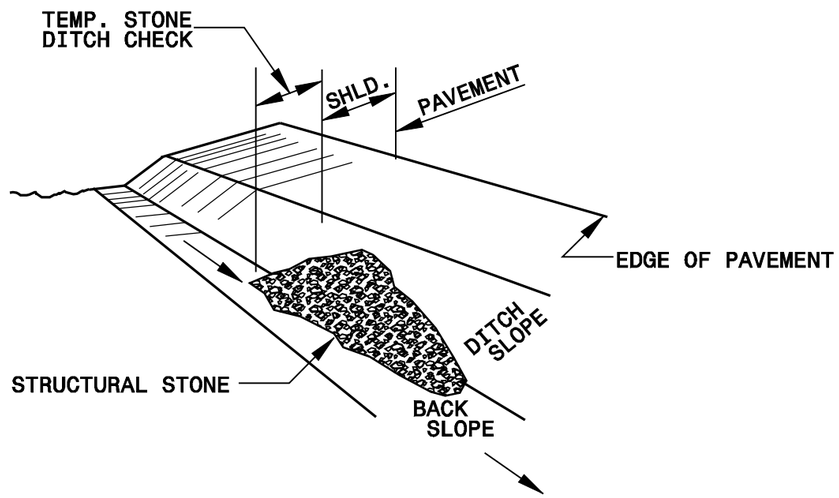
"Brasscam" at "REN\22926"

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

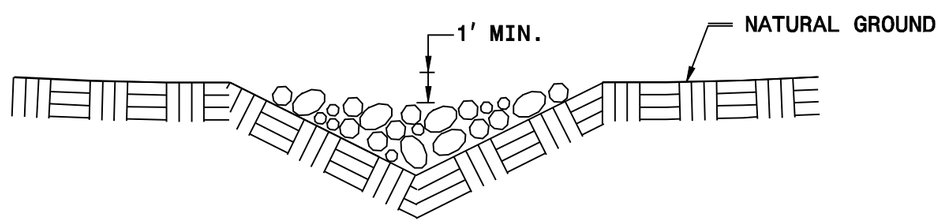


ISOMETRIC VIEW

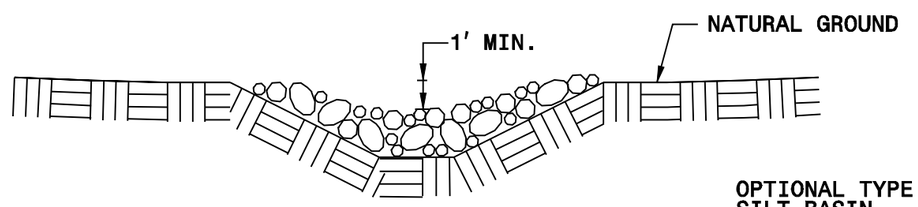
NOTES:

USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

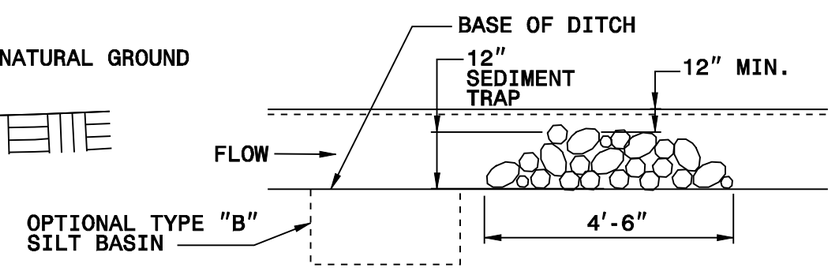
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



CROSS SECTION
VEE DITCH



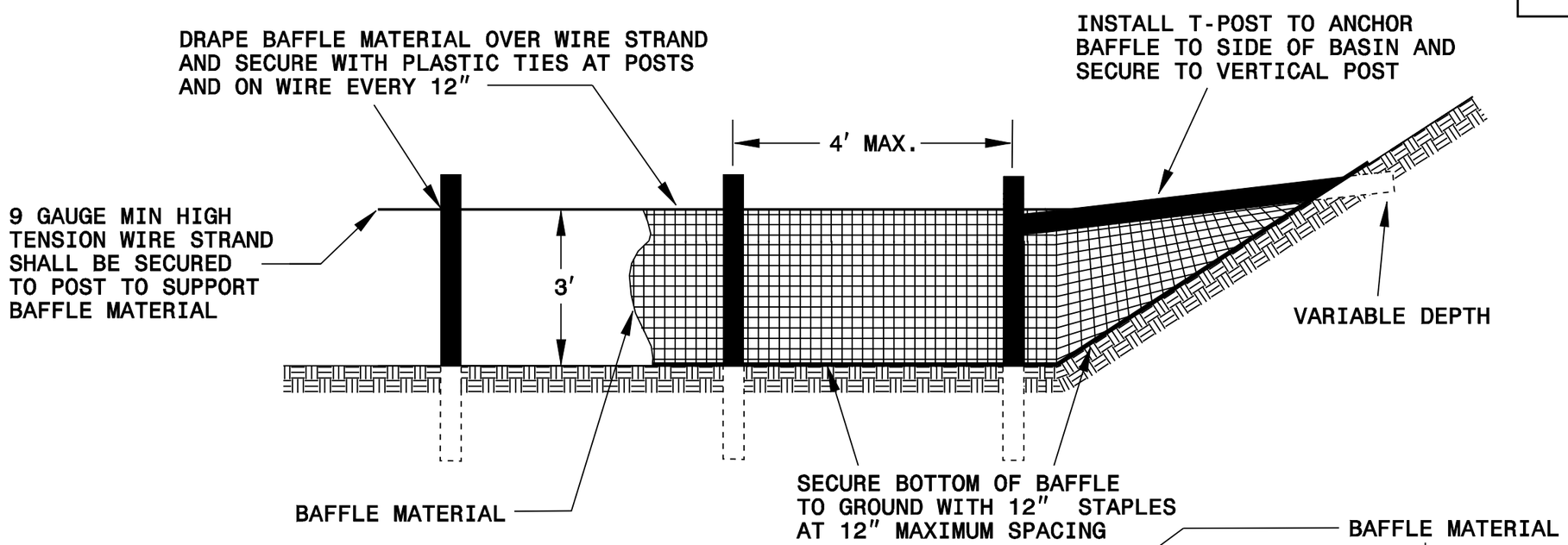
CROSS SECTION
TRAPEZOIDAL DITCH

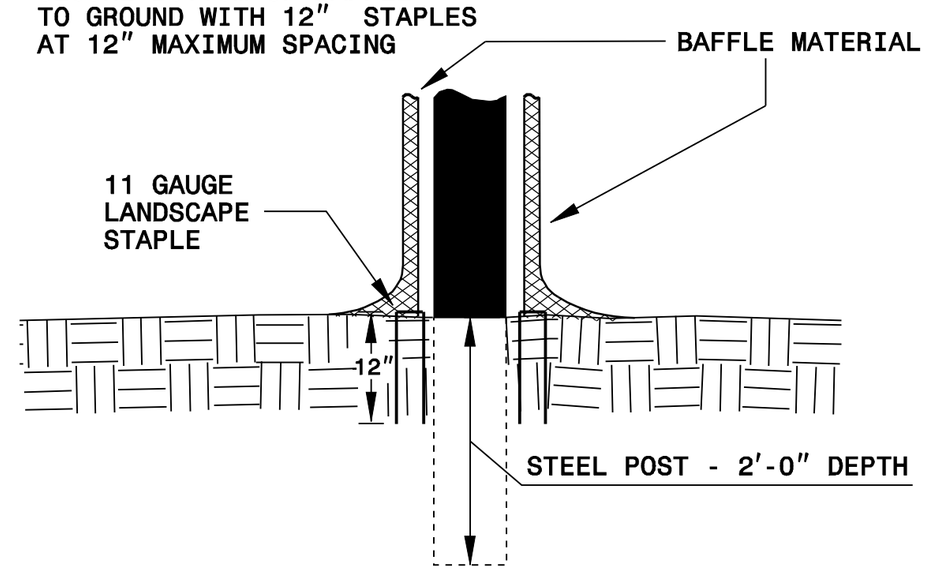


ELEVATION VIEW

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL



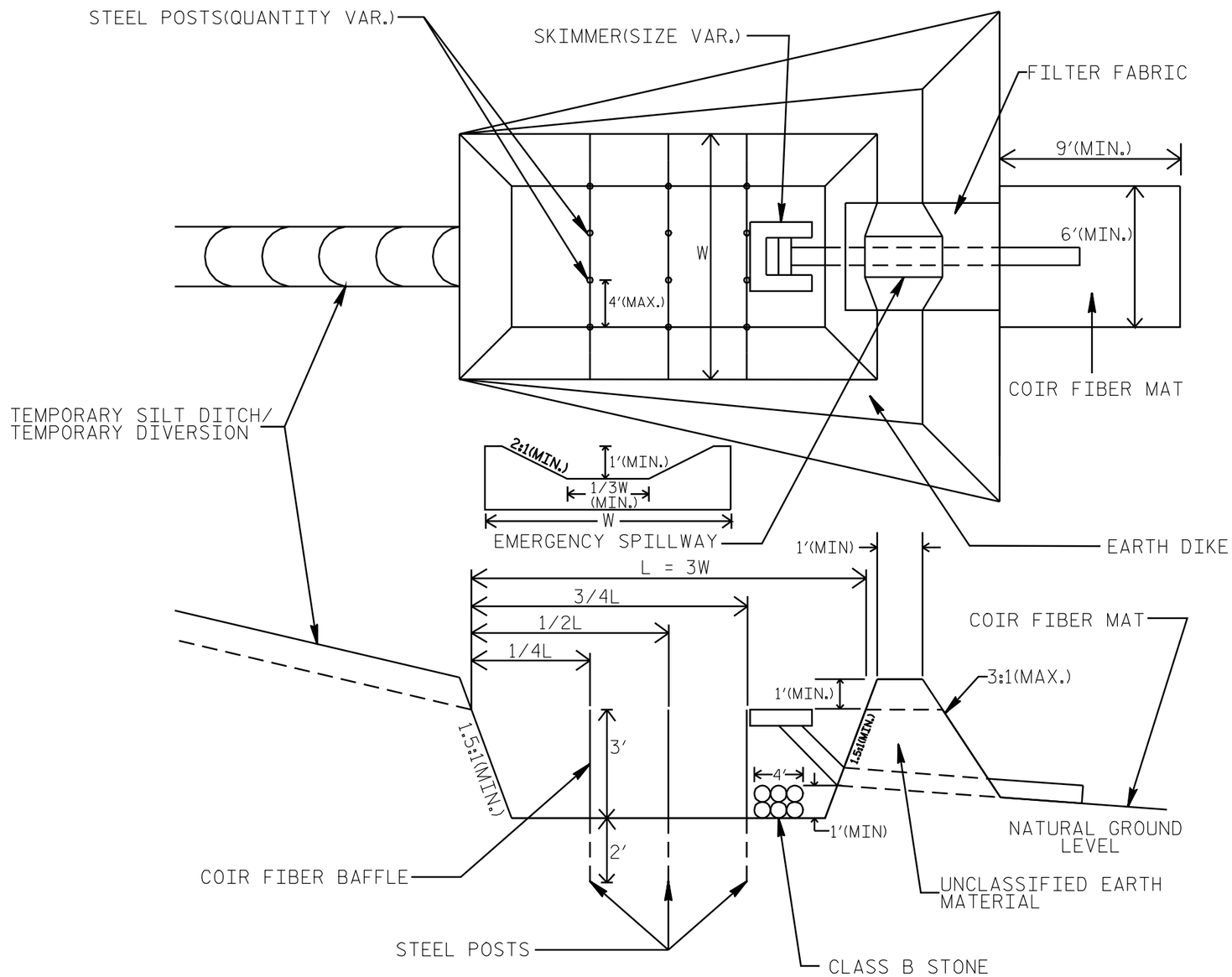


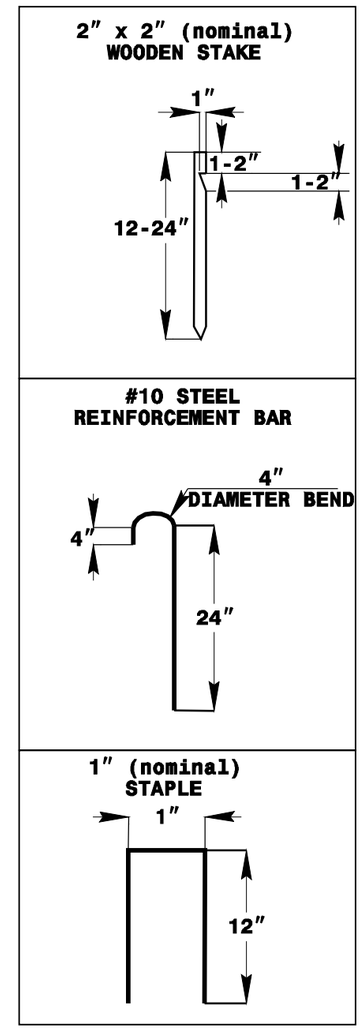
BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12″ LANDSCAPE STAPLES

NOTE: INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF ¼ THE BASIN LENGTH. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 THE BASIN LENGTH.

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL



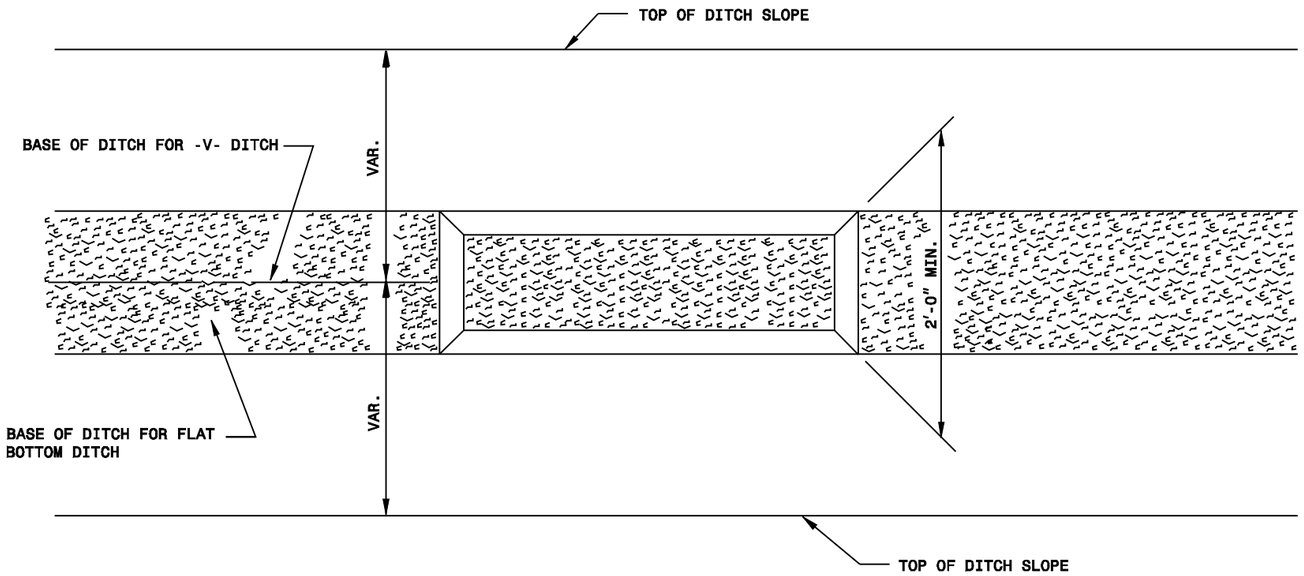


COIR FIBER MAT ANCHOR OPTIONS

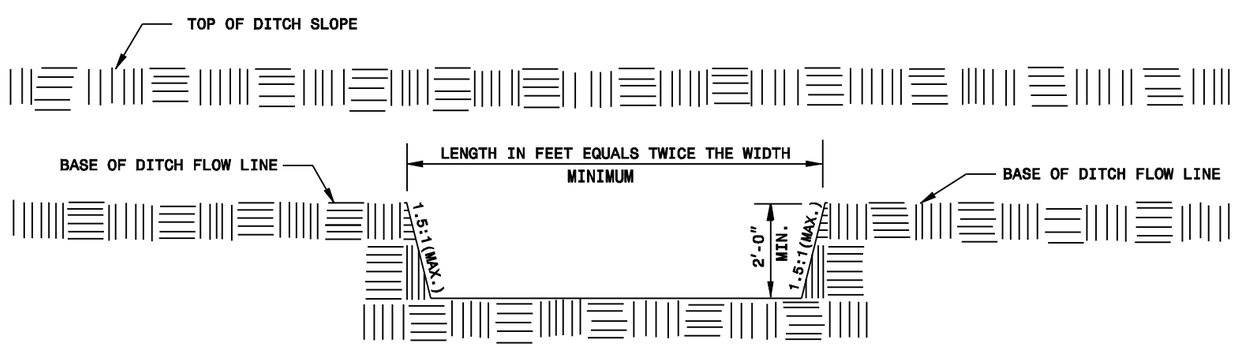
NOTES:
1. SEED AND PLACE MATTING FOR EROSION CONTROL ON SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT BASIN 'B' DETAIL



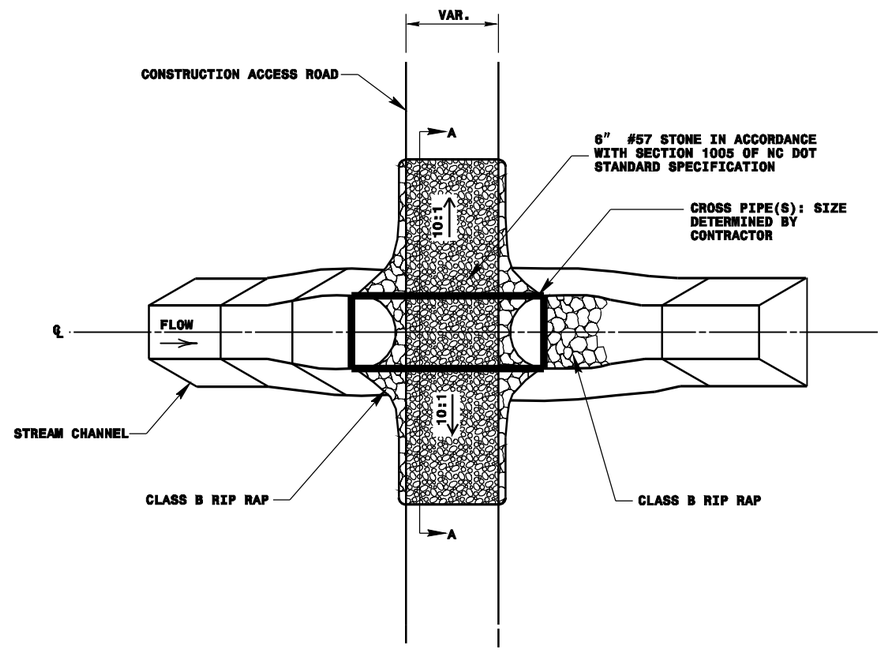
PLAN



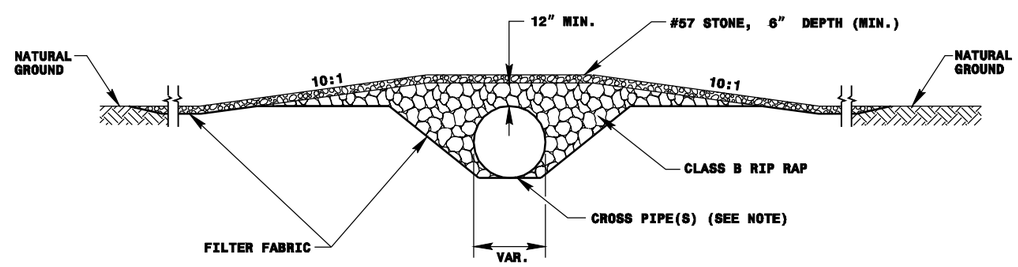
ELEVATION

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY STREAM CROSSING



PLAN VIEW



SECTION A-A

NOT TO SCALE

NOTE: PIPE(S) FOR TEMPORARY STREAM CROSSING SHALL BE DESIGNED TO PASS THE PEAK OR BANKFULL FLOW, WHICHEVER IS LESS, FROM A 2-YEAR PEAK STORM, WITHOUT OVER TOPPING.

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-3
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)
9	Y1	1300	1050	RT	230
9	Y1	1650	1050	LT	2890
11	Y1DET	1450	1100	LT	980
11	Y1DET	1800	1450	LT	780
11	Y1DET	1450	1300	RT	265
				SUBTOTAL	5145
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					4675
				TOTAL	9820
				SAY	9850

MATTING FOR EROSION CONTROL

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

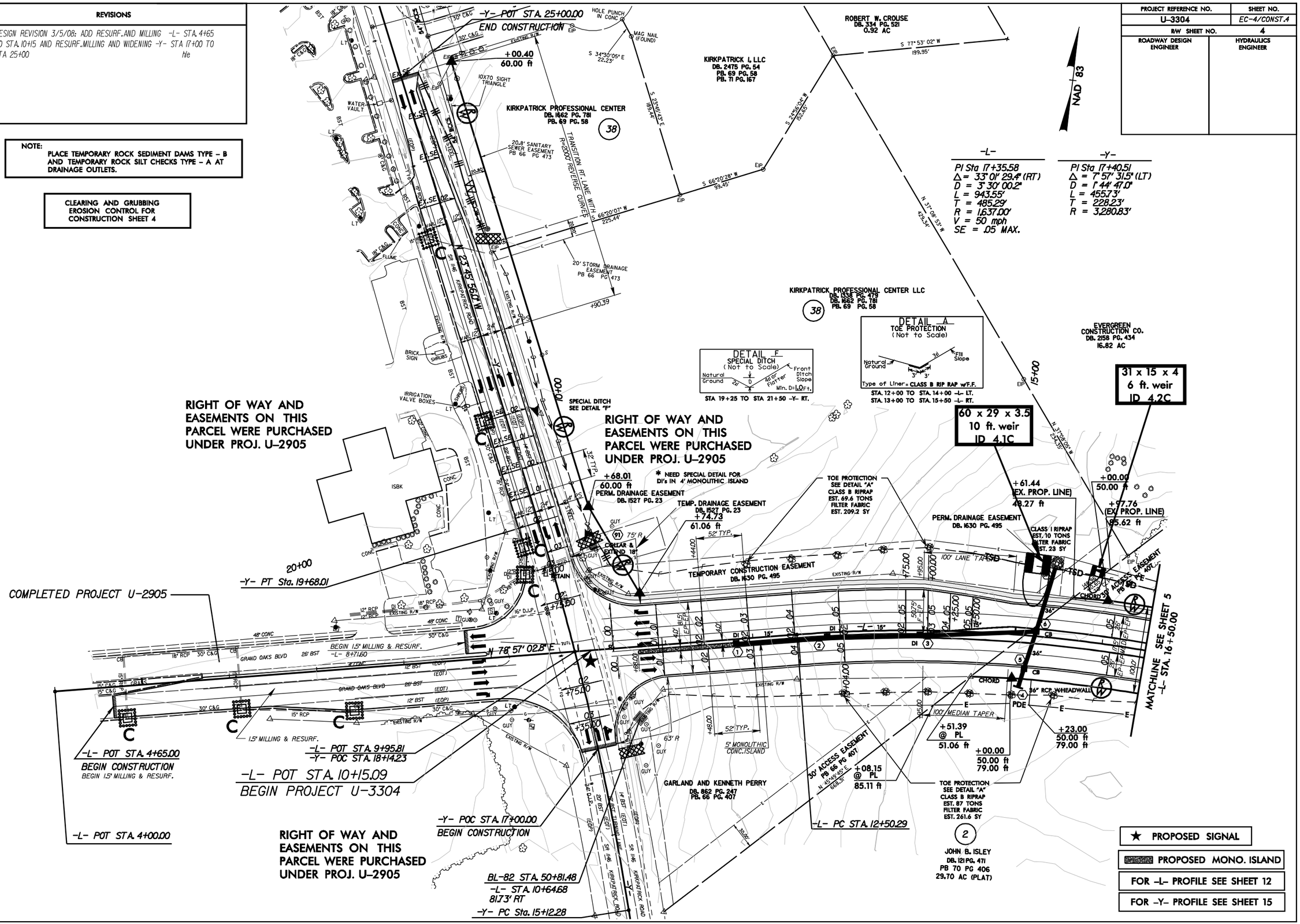
PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-4/CONST.4
R/W SHEET NO.	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

DESIGN REVISION 3/5/08: ADD RESURF. AND MILLING -L- STA. 4+65 TO STA. 10+15 AND RESURF. MILLING AND WIDENING -Y- STA 17+00 TO STA 25+00 hle

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



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PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-5/CONST.5
R/W SHEET NO.	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

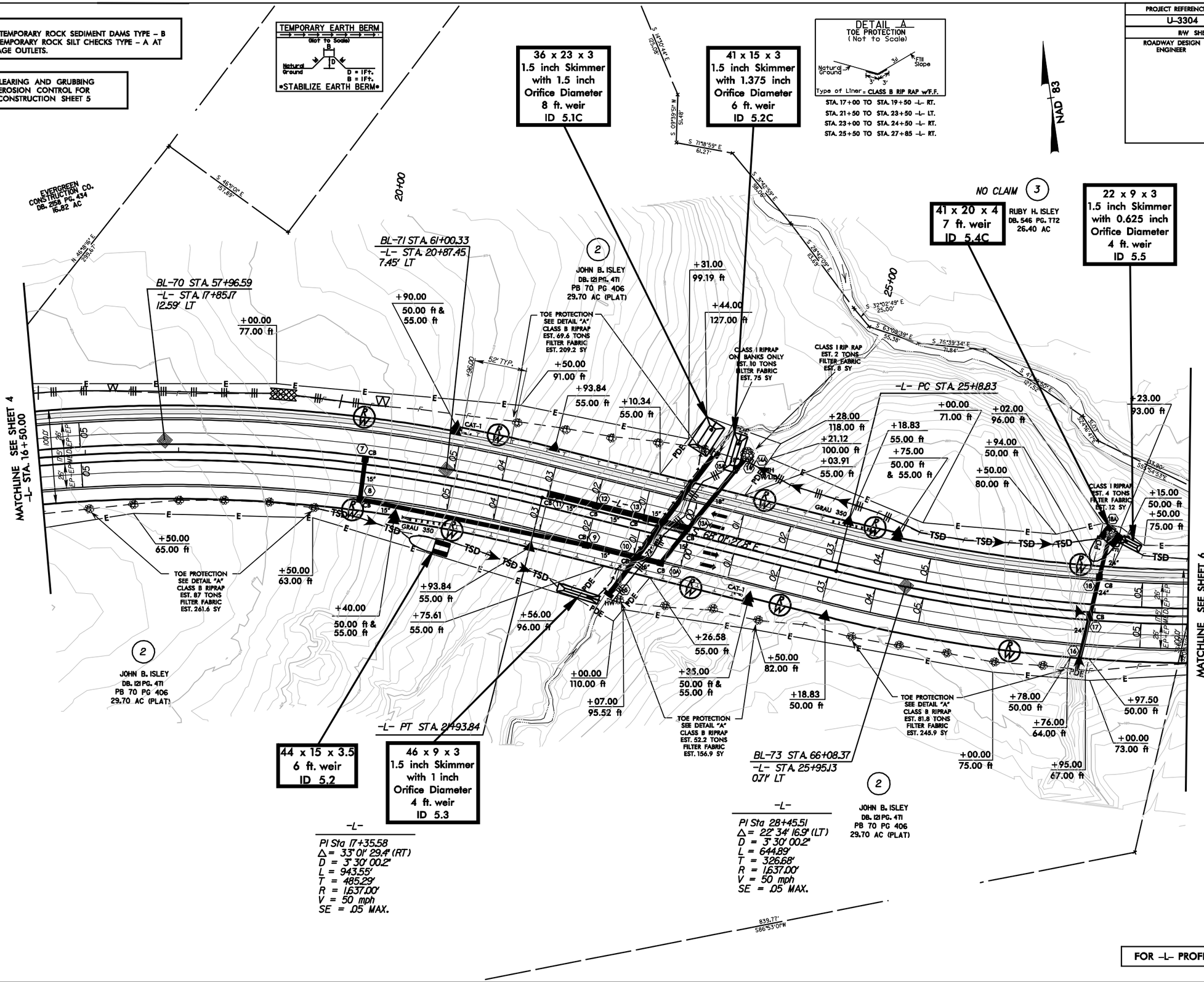
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 5

TEMPORARY EARTH BERM
(Not To Scale)
Natural Ground
D = 1Ft.
B = 1Ft.
STABILIZE EARTH BERM

DETAIL A
TOE PROTECTION
(Not to Scale)
Natural Ground
Fill Slope
3:1
3'
3'
Type of Liner = CLASS B RIP RAP w/F.F.
STA. 17+00 TO STA. 19+50 –L– RT.
STA. 21+50 TO STA. 23+50 –L– LT.
STA. 23+00 TO STA. 24+50 –L– RT.
STA. 25+50 TO STA. 27+85 –L– RT.

NAD 83



FOR –L– PROFILE SEE SHEET 12

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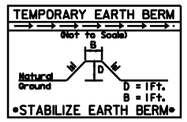
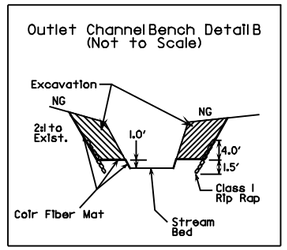
PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-6/CONST.6
R/W SHEET NO.	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

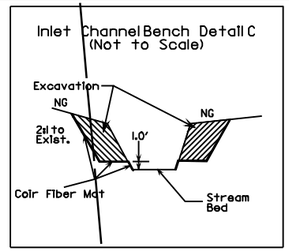
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 6

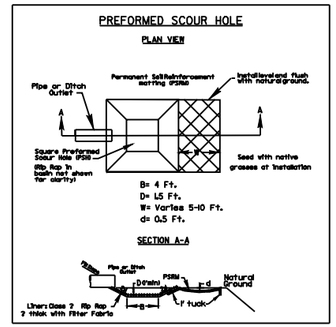




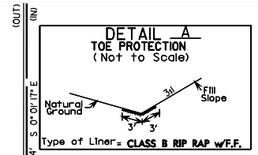
STA 34+40 –L– (RT)



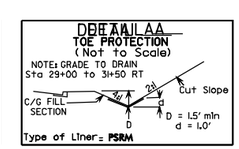
STA 34+55 –L– (LT)



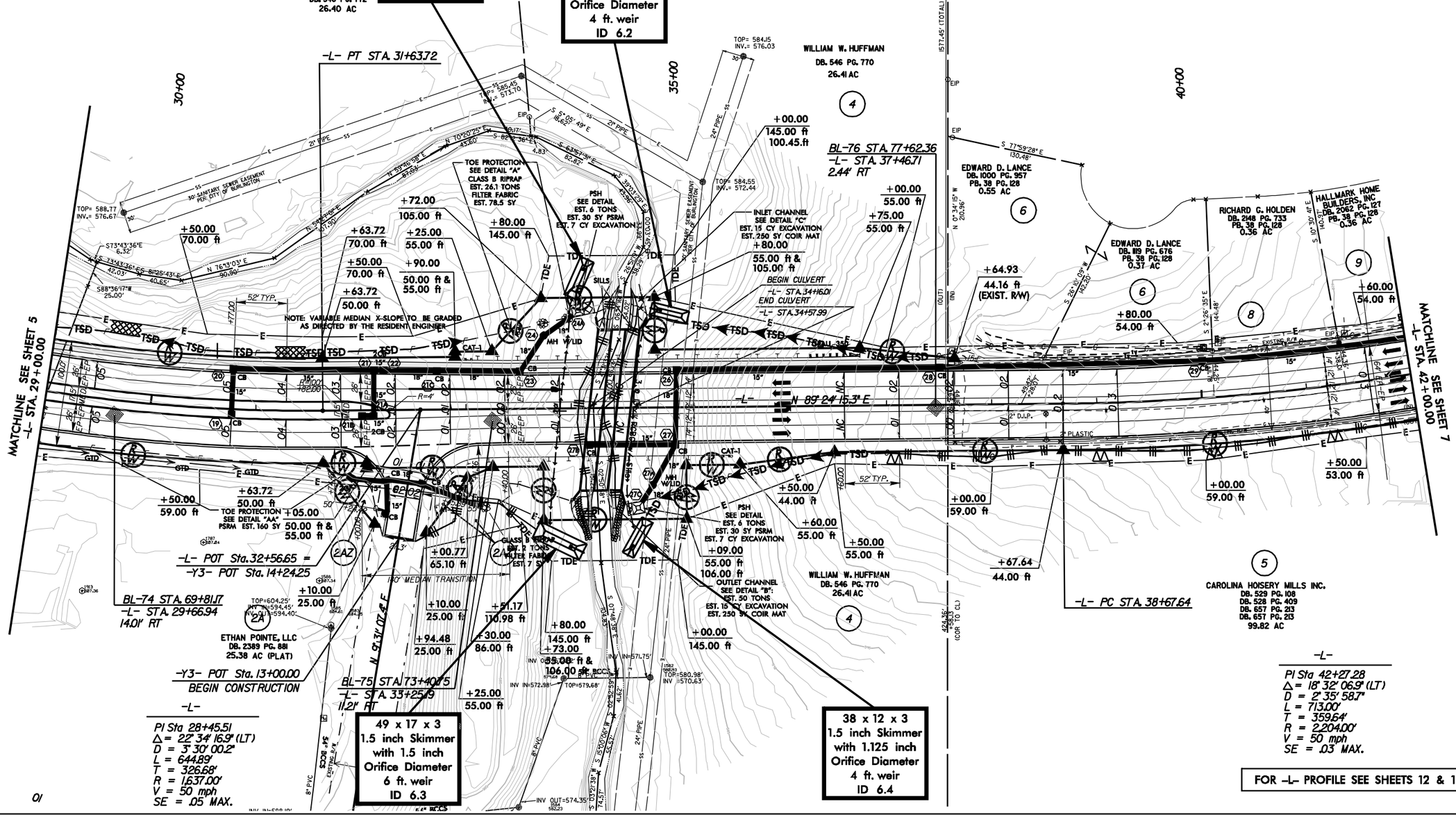
STA 34+07 –L– (LT)
STA 34+63 –L– (RT)



STA. 33+50 TO STA. 34+25 –L– LT.



STA. 29+00 TO STA. 32+00 –L– RT.



–L–
PI Sta 28+45.51
Δ= 22° 34' 16.9" (LT)
D = 3° 30' 00.2"
L = 644.89'
T = 326.68'
R = 1,637.00'
V = 50 mph
SE = .05 MAX.

–L–
PI Sta 42+27.28
Δ= 18° 32' 06.9" (LT)
D = 2° 35' 58.7"
L = 713.00'
T = 359.64'
R = 2,204.00'
V = 50 mph
SE = .03 MAX.

FOR –L– PROFILE SEE SHEETS 12 & 13

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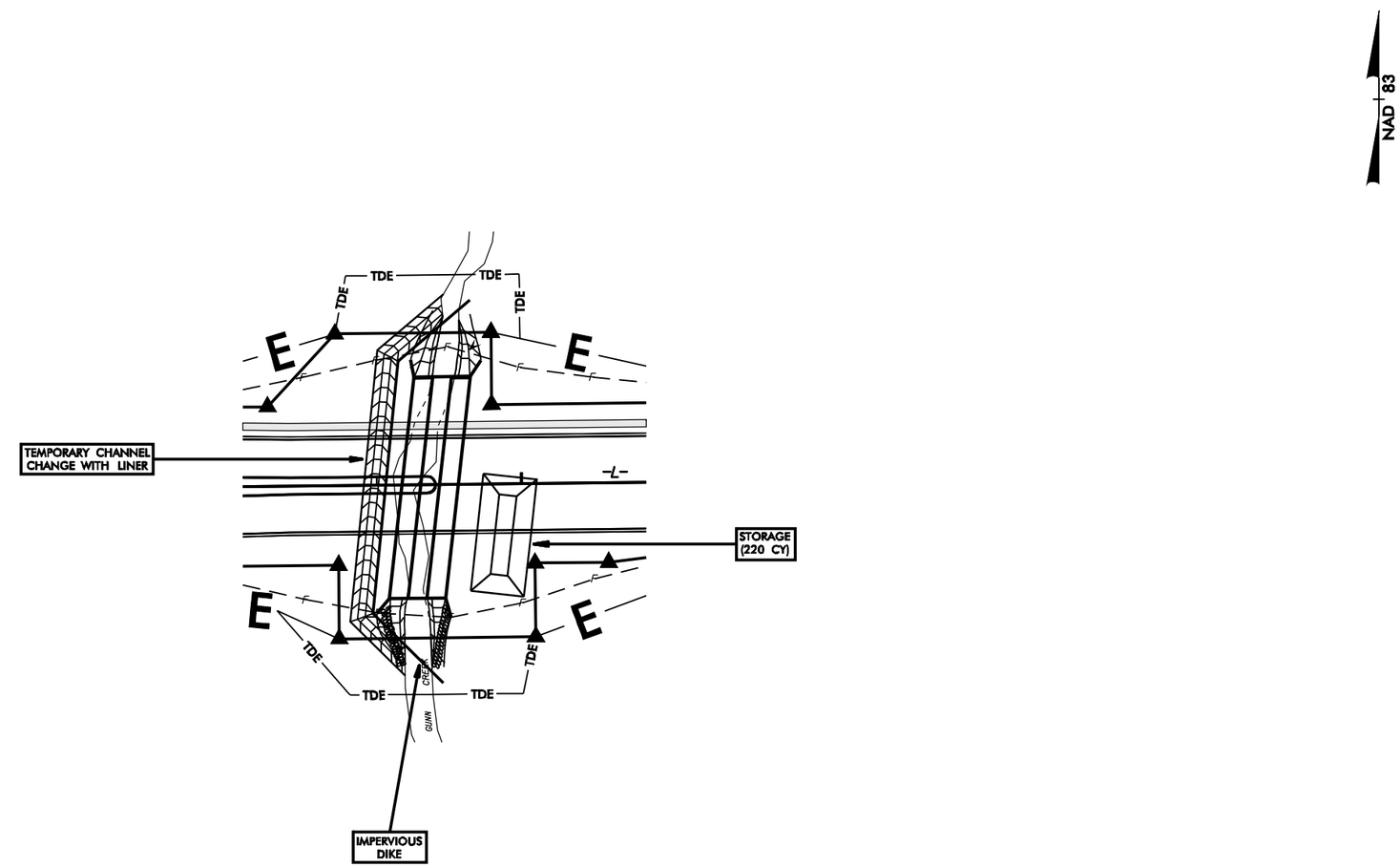
CULVERT CONSTRUCTION SEQUENCE STA. 34+37 –L–

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-7/CONST.6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

1. CONSTRUCT STILLING BASIN (220 CY).
2. CONSTRUCT TEMPORARY CHANNEL CHANGE WITH LINER (5 FT. BASE, 2.5 FT. DEEP, 2:1 SIDE SLOPES), UTILIZING AN IMPERVIOUS DIKE FOR ONE SIDE OF CHANNEL, DIVERTING FLOW.
3. CONSTRUCT PROPOSED CULVERT AND PORTION OF INLET/OUTLET CHANNEL IMPROVEMENTS.
4. REMOVE IMPERVIOUS DIKE AND TEMPORARY CHANNEL CHANGE, DIVERTING FLOW THROUGH CULVERT.
5. CONSTRUCT REMAINDER OF INLET/OUTLET CHANNEL IMPROVEMENTS.
6. REMOVE STILLING BASIN AND COMPLETE ROADWAY.



PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-8/CONST.7
R/W SHEET NO.	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

AVERAGE DAILY TRAFFIC 2008 / 2030

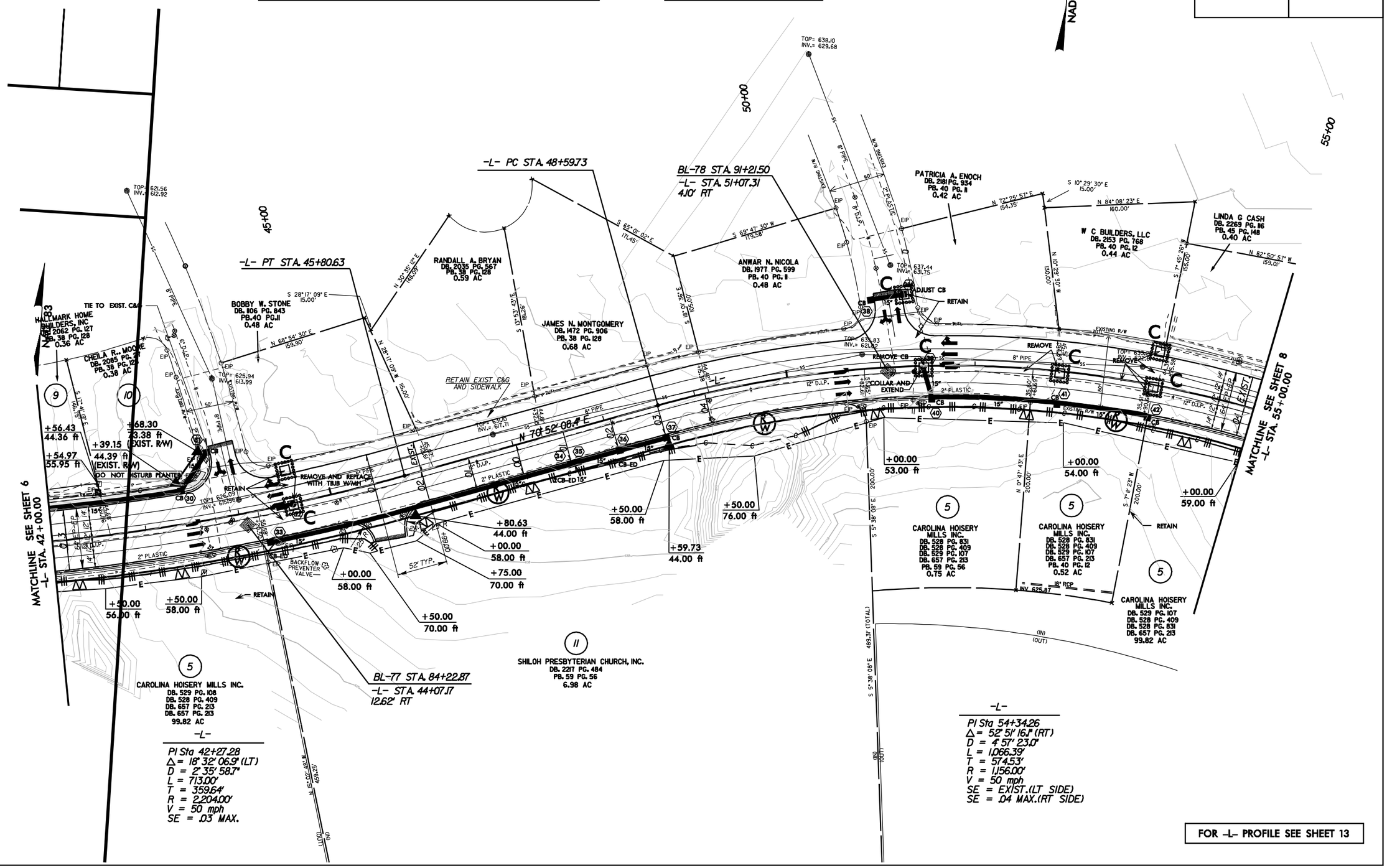
ADMORE ST. 525 / 800 — MARLBOROUGH RD. 1,158 / 1,800

10,175 / 23,100 — 317 / 500 — 208 / 300 — 10,067 / 22,900 — 633 / 1000 — 525 / 800 — 9,958 / 22,700

GRAND OAK BLVD — -L- — SR 1213

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



FOR -L- PROFILE SEE SHEET 13

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PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-9/CONST.8
R/W SHEET NO.	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

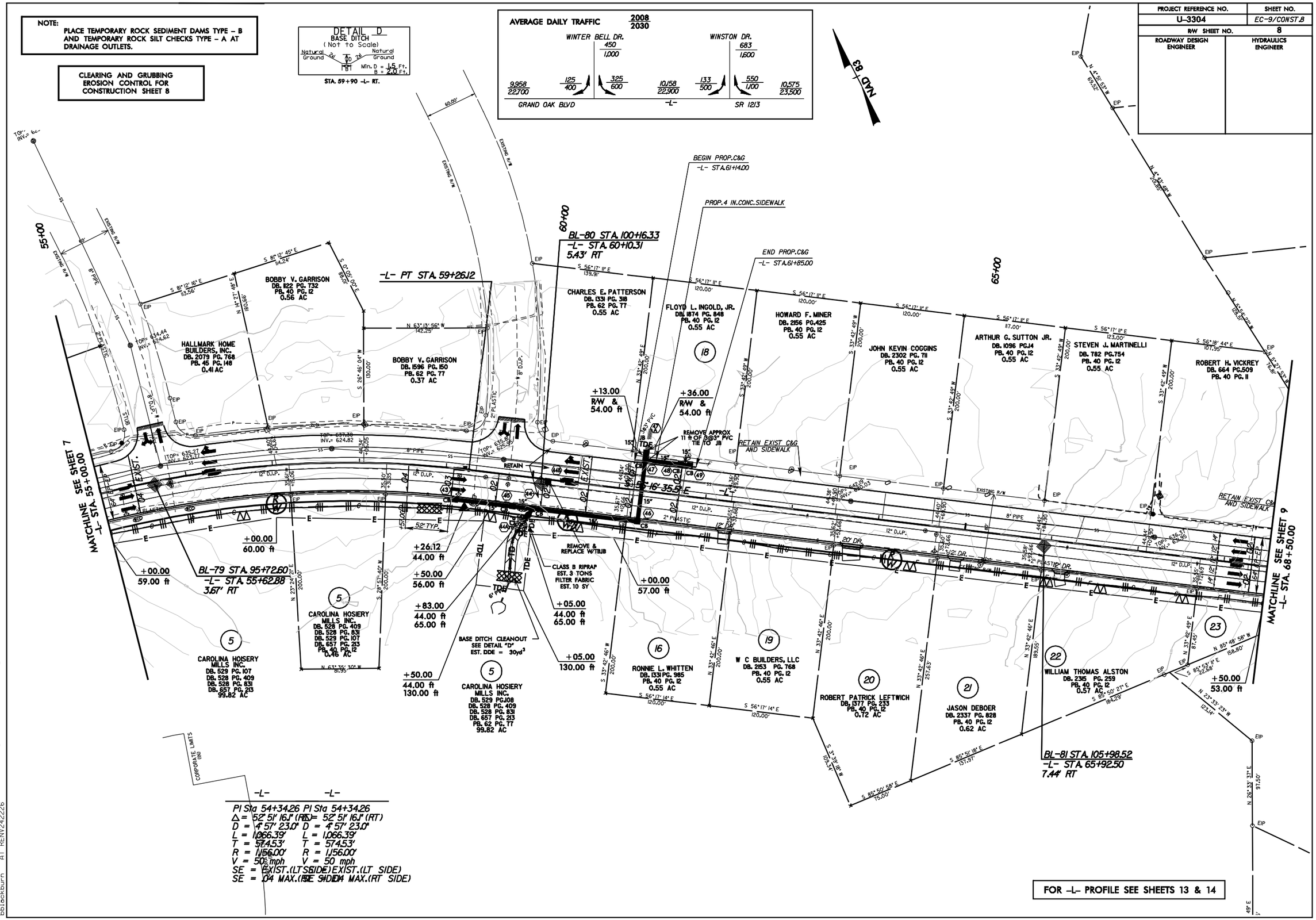
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 8

DETAIL D
BASE DITCH
(Not to Scale)
Natural Ground — 2H — 2H — Natural Ground
D — B
Min. D = 1.5 Ft.
B = 2.0 Ft.
STA. 59+90 –L– RT.

AVERAGE DAILY TRAFFIC 2008 / 2030

GRAND OAK BLVD	WINTER BELL DR.	–L–	WINSTON DR.	SR 1213
9,958 / 22,700	125 / 400	325 / 600	10,58 / 22,900	133 / 500	550 / 1,100	10,575 / 23,500
	450 / 1,000			683 / 1,600

NAD 83



FOR –L– PROFILE SEE SHEETS 13 & 14

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PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-10/CONST.9
R/W SHEET NO.	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

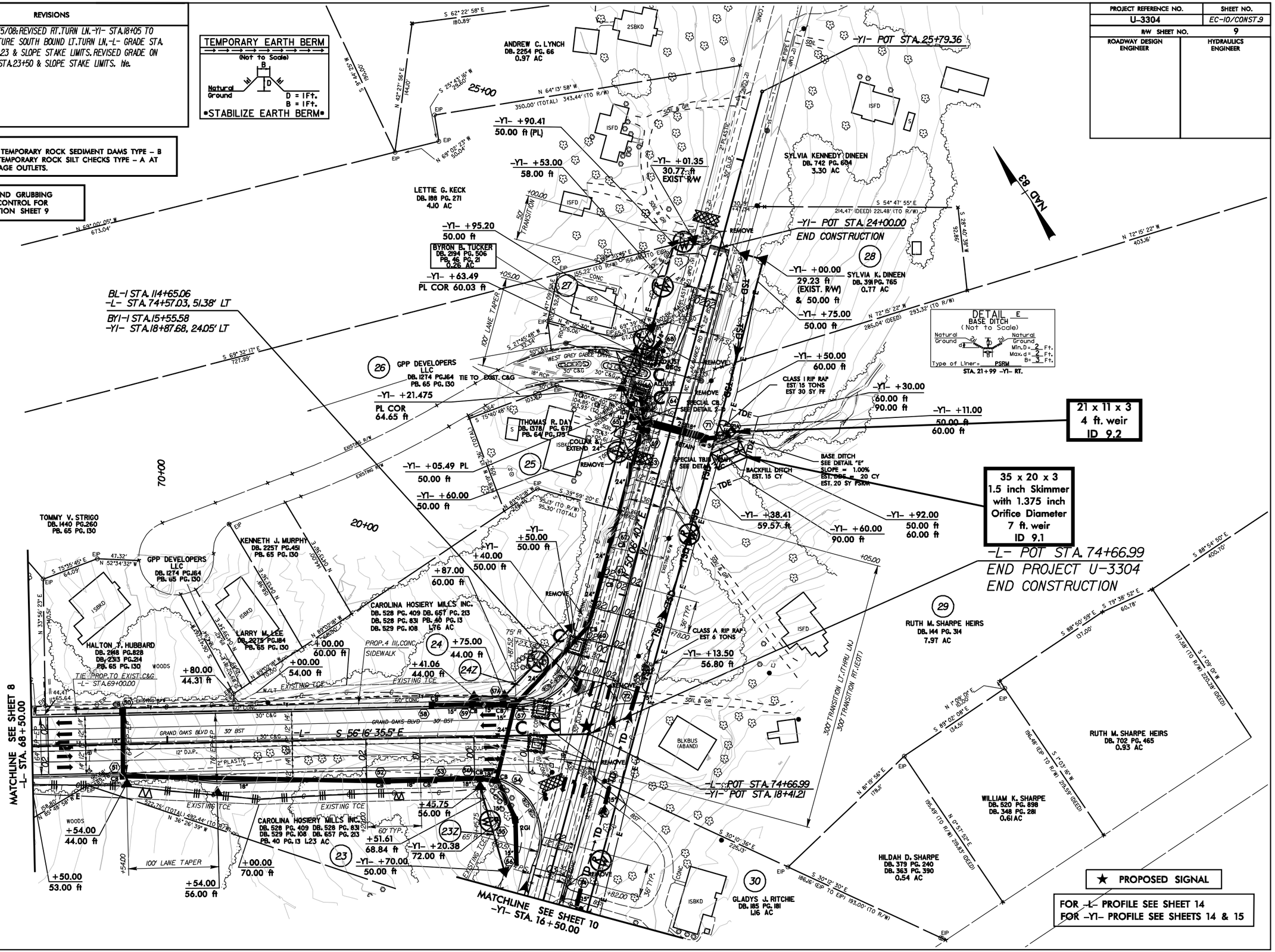
REVISIONS

DESIGN REVISION 3/5/08: REVISED RT. TURN LN. -Y1- STA. 18+05 TO STA. 22+25 FOR FUTURE SOUTH BOUND LT. TURN LN. -L- GRADE STA. 70+15 TO STA. 74+48.23 & SLOPE STAKE LIMITS. REVISED GRADE ON -Y1- STA. 10+48 TO STA. 23+50 & SLOPE STAKE LIMITS. He.

TEMPORARY EARTH BERM
(Not to Scale)
Natural Ground — B — D — M — M
D = 1Ft.
B = 1Ft.
STABILIZE EARTH BERM

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 9



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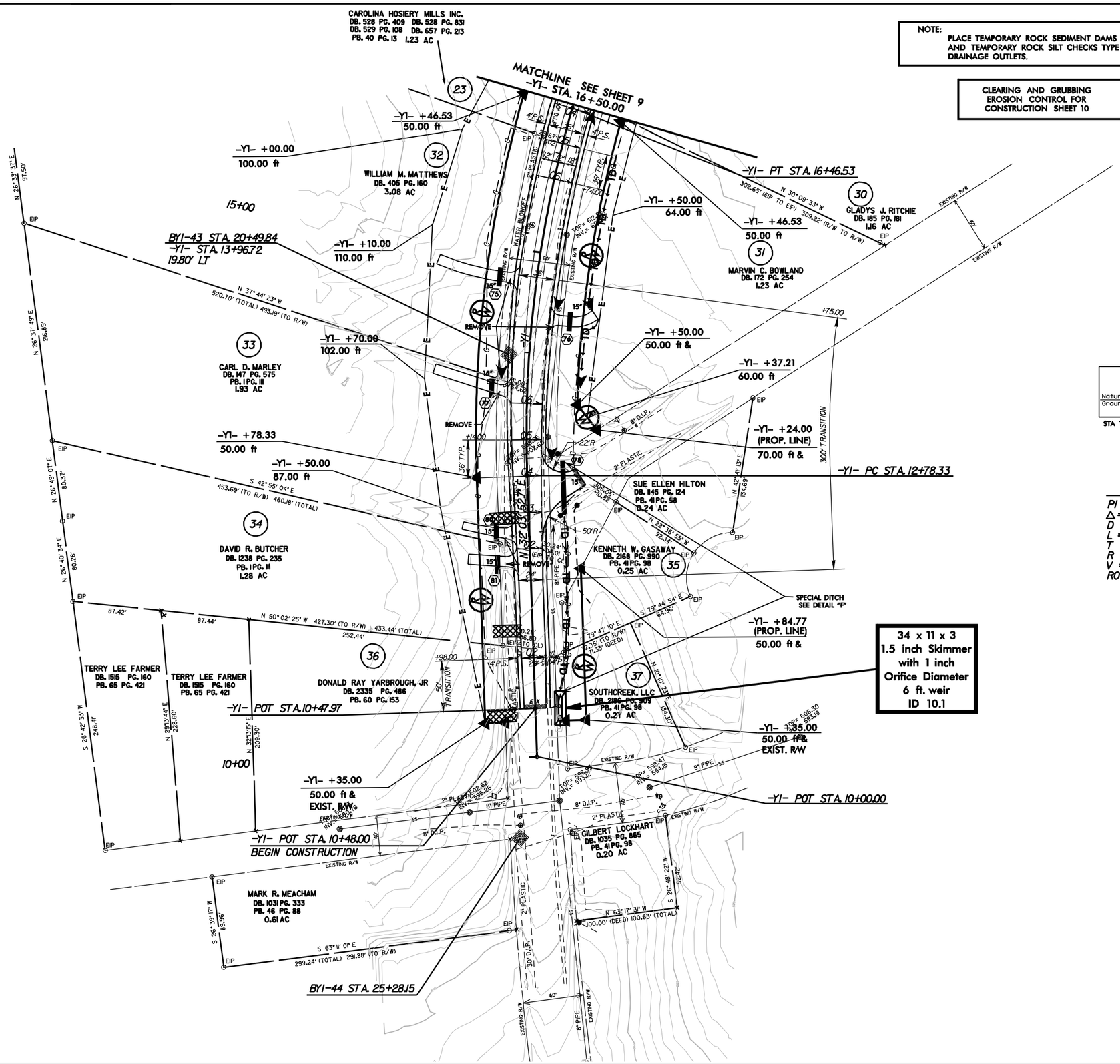
PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-11/CONST.10
R/W SHEET NO.	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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 10



DETAIL F
SPECIAL DITCH
(Not to Scale)
Natural Ground
2:1
D
4:1 or Flatter
Front Ditch Slope
Min. D=1.0 Ft.
STA 10+50 TO STA 13+00 -Y1- RT.

-Y1-
PI Sta 14+63.97
Δ = 18° 02' 48.0" (RT)
D = 4° 54' 04.6"
L = 368.20'
T = 185.64'
R = 1,169.00'
V = 50 mph
RO = 216'

FOR -Y1- PROFILE SEE SHEET 14

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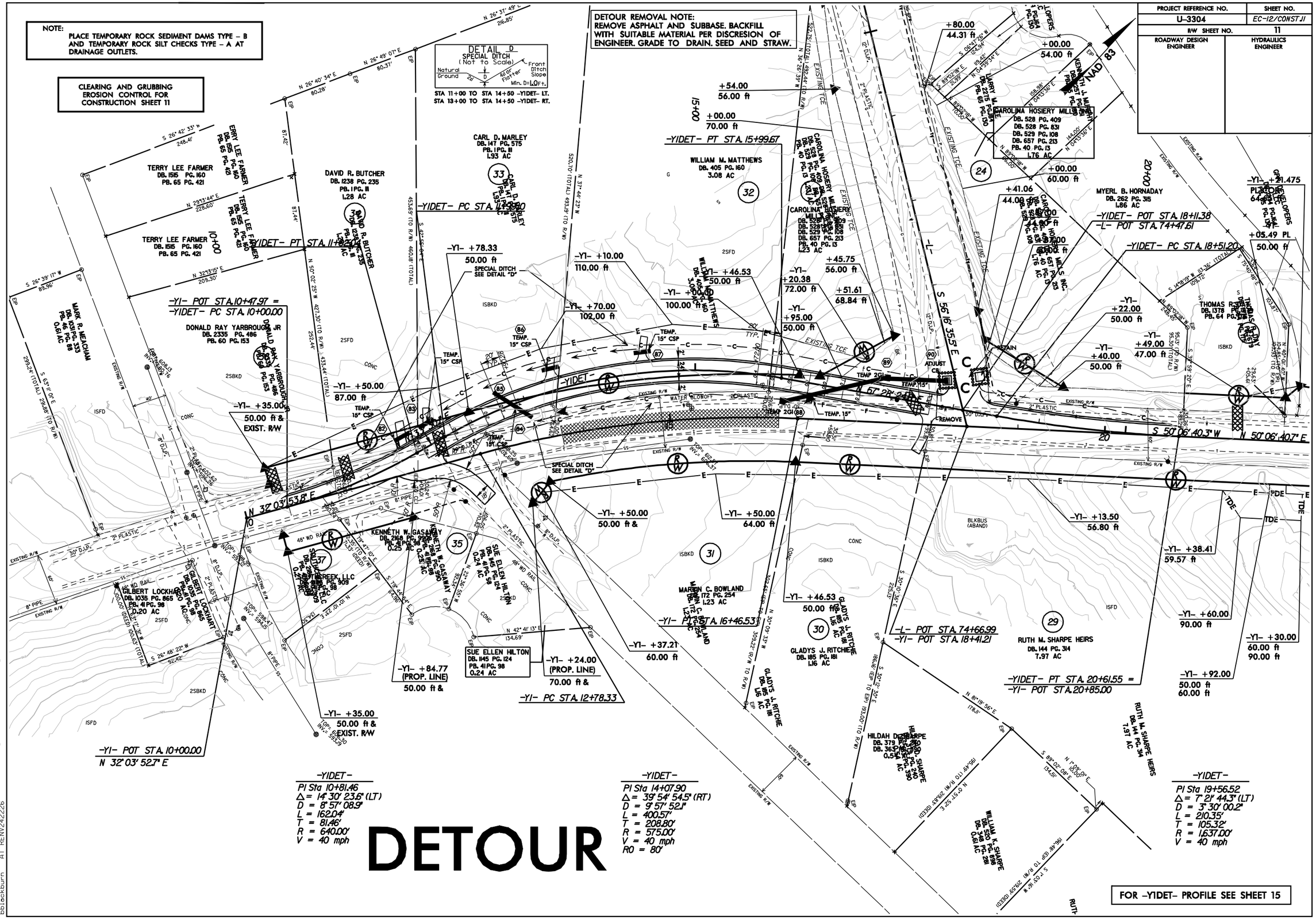
BBlackburn AT RENV242226

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-12/CONSTJI
R/W SHEET NO.	11
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 11

DETOUR REMOVAL NOTE:
REMOVE ASPHALT AND SUBBASE. BACKFILL WITH SUITABLE MATERIAL PER DISCRESION OF ENGINEER. GRADE TO DRAIN. SEED AND STRAW.



FOR –Y1DET– PROFILE SEE SHEET 15

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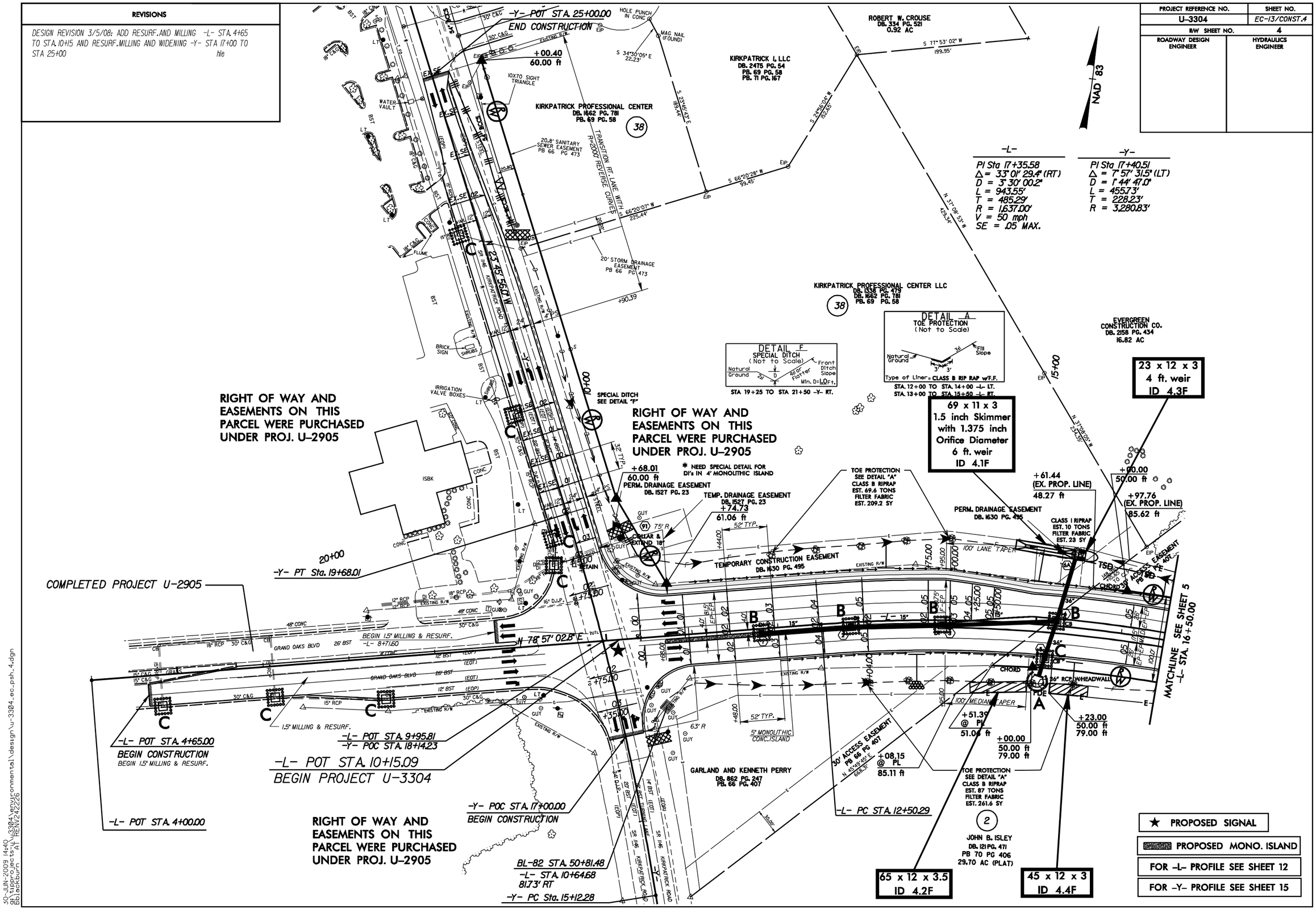
bblackburn AT REN\2412226

REVISIONS
DESIGN REVISION 3/5/08: ADD RESURF. AND MILLING -L- STA. 4+65 TO STA. 10+15 AND RESURF. MILLING AND WIDENING -Y- STA 17+00 TO STA 25+00 hle

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-13/CONST.4
R/W SHEET NO.	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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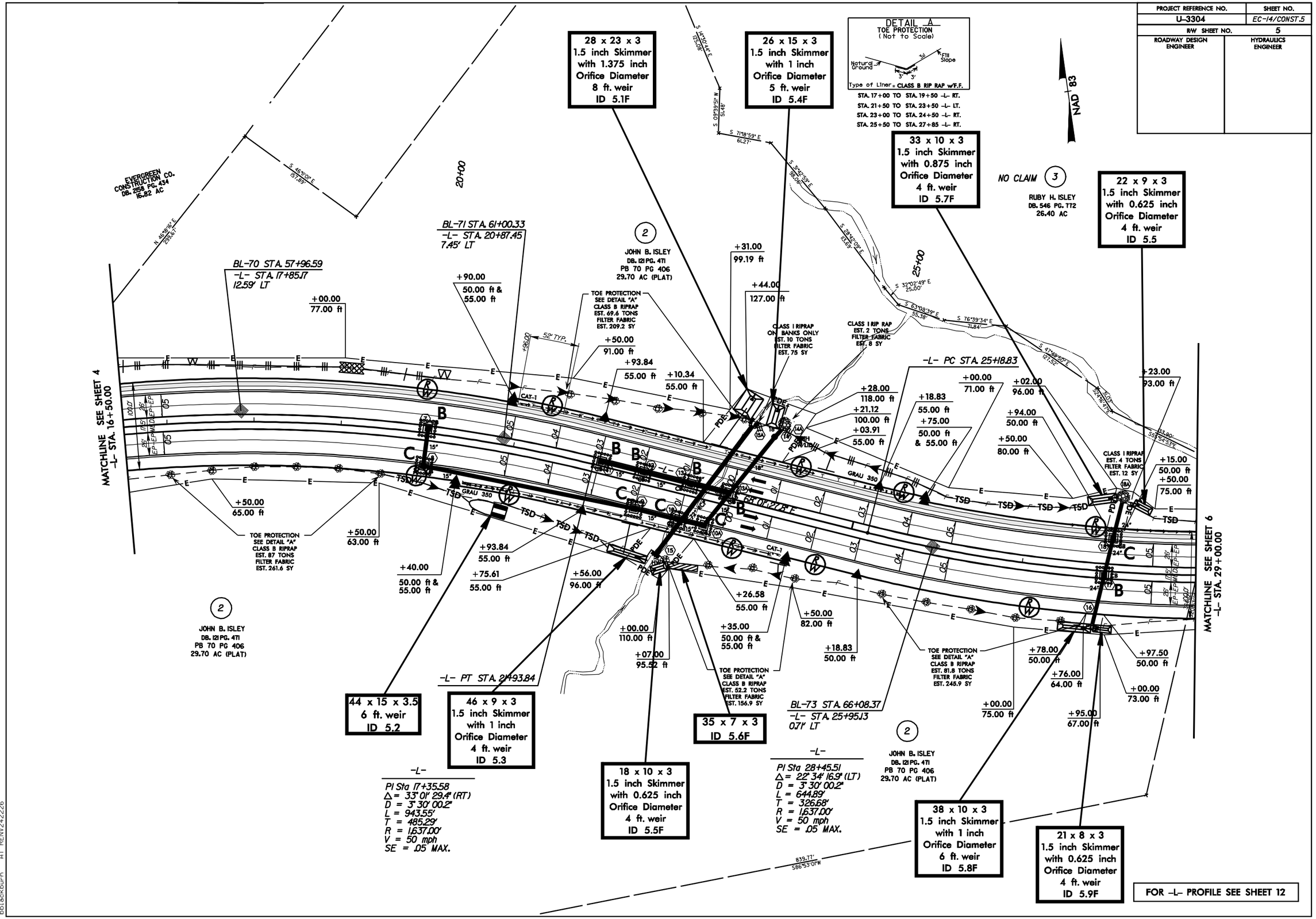
gblackburn AT REINV242226

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-14/CONST.5
R/W SHEET NO.	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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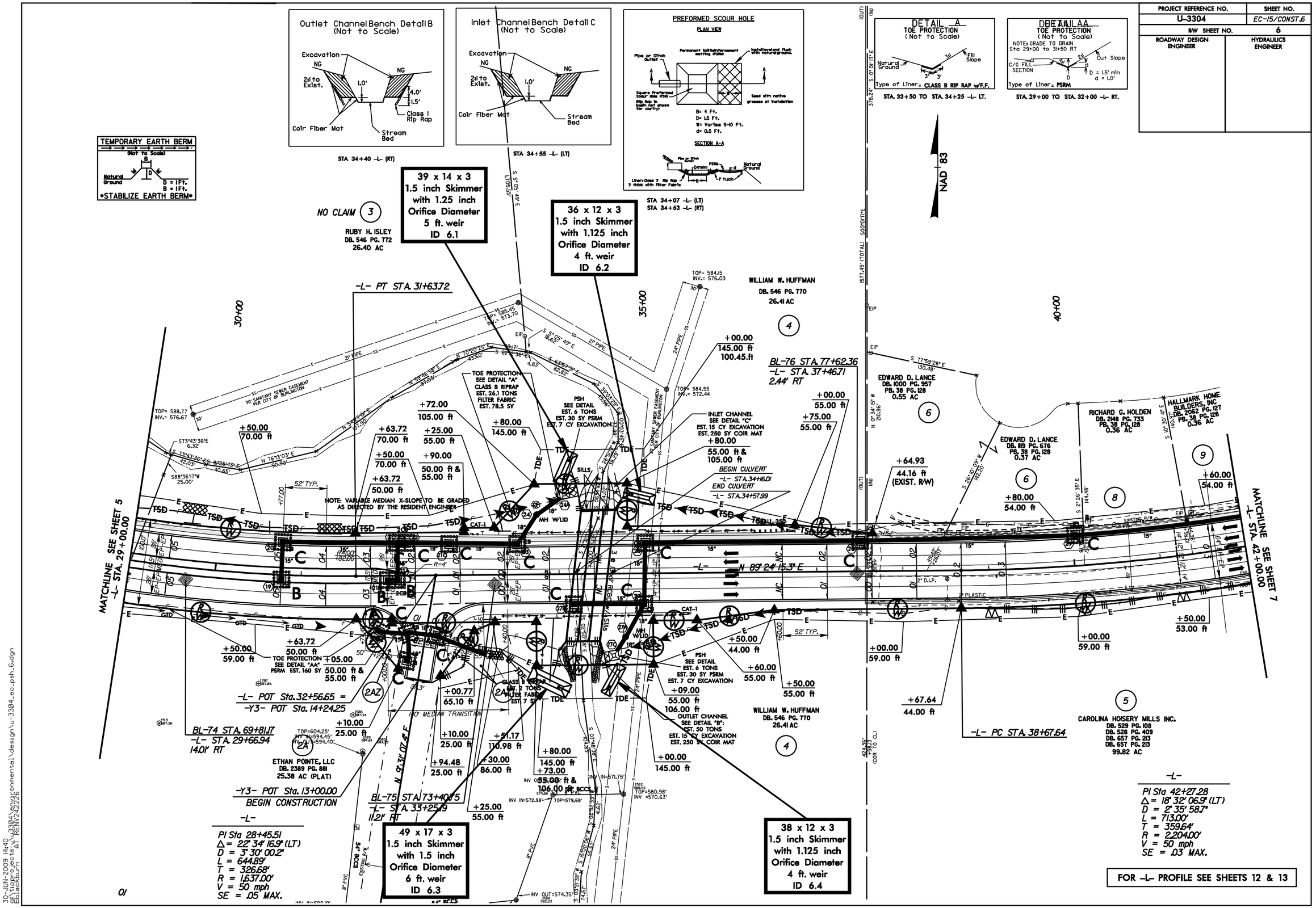
BBlackburn
A1 REN242226

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-15/CONST.6
R/W SHEET NO.	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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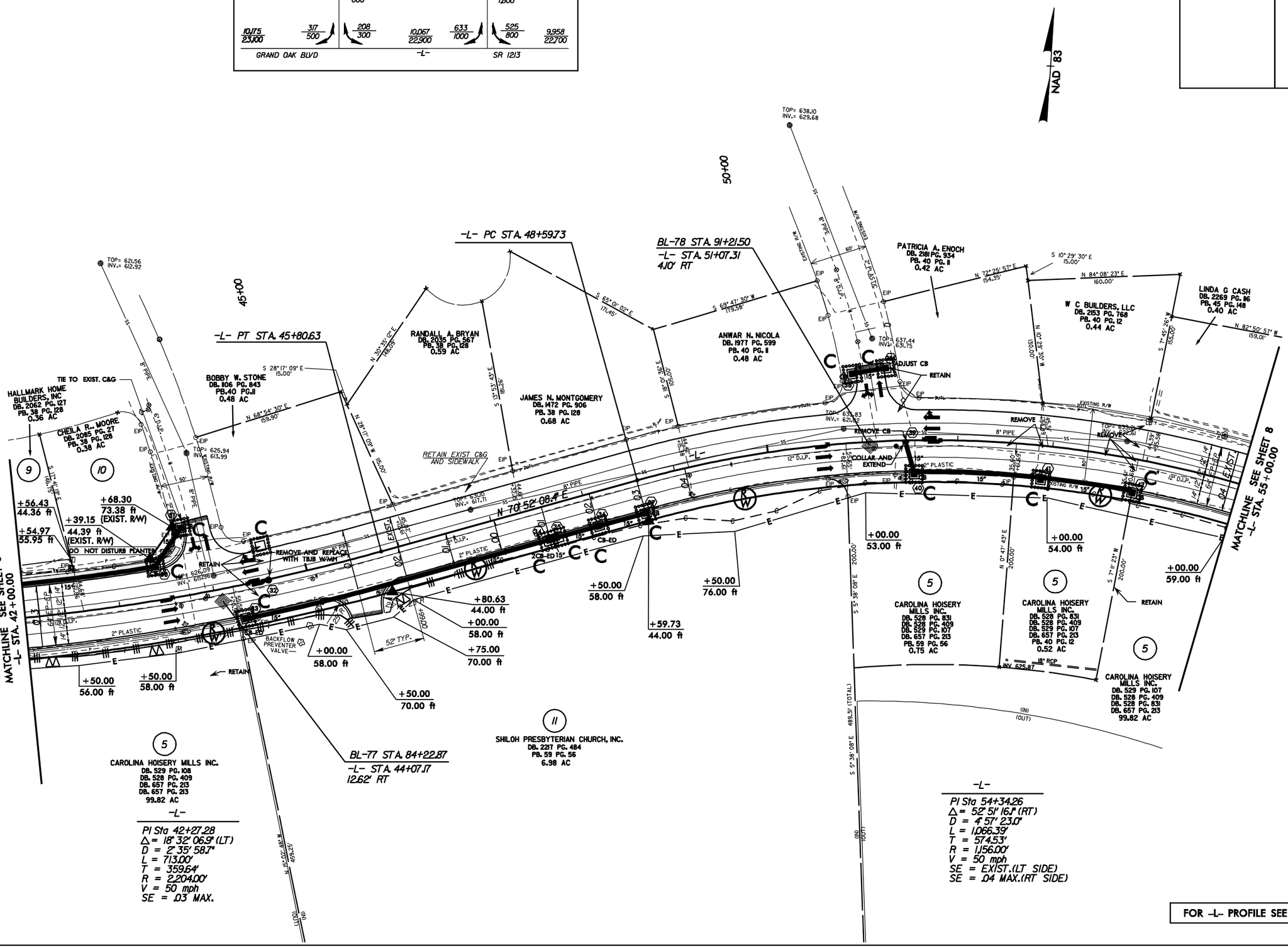
gblackburn AT REN\242226

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-16/CONST.7
R/W SHEET NO.	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



FOR -L- PROFILE SEE SHEET 13

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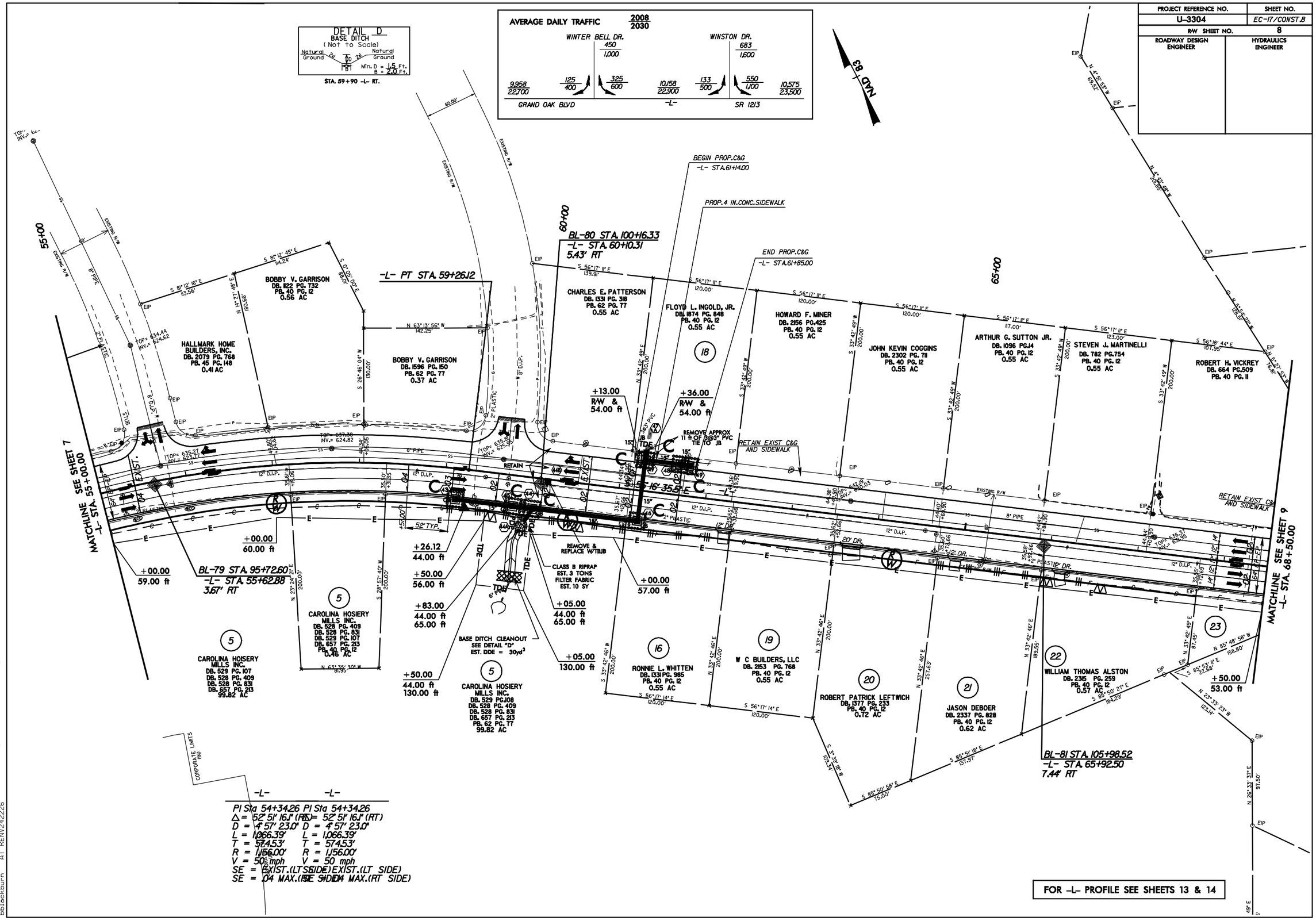
gbblackburn REN\242226

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-17/CONST.8
R/W SHEET NO.	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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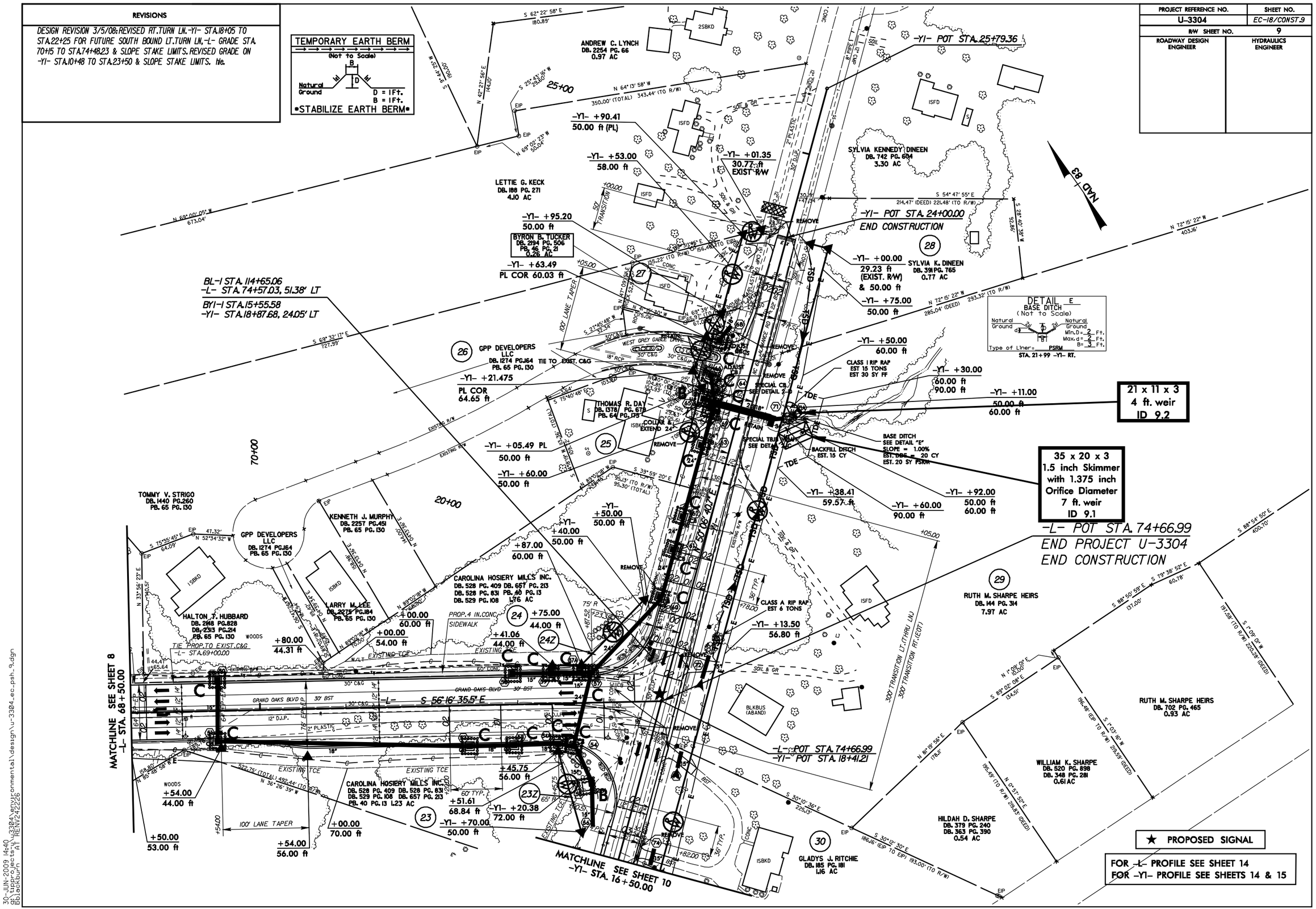
Blackburn, Al (REN)2422226

REVISIONS
DESIGN REVISION 3/5/08: REVISED RT. TURN LN. -Y1- STA. 18+05 TO STA. 22+25 FOR FUTURE SOUTH BOUND LT. TURN LN. -L- GRADE STA. 70+15 TO STA. 74+48.23 & SLOPE STAKE LIMITS. REVISED GRADE ON -Y1- STA. 10+48 TO STA. 23+50 & SLOPE STAKE LIMITS. He.

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-18/CONST.9
R/W SHEET NO.	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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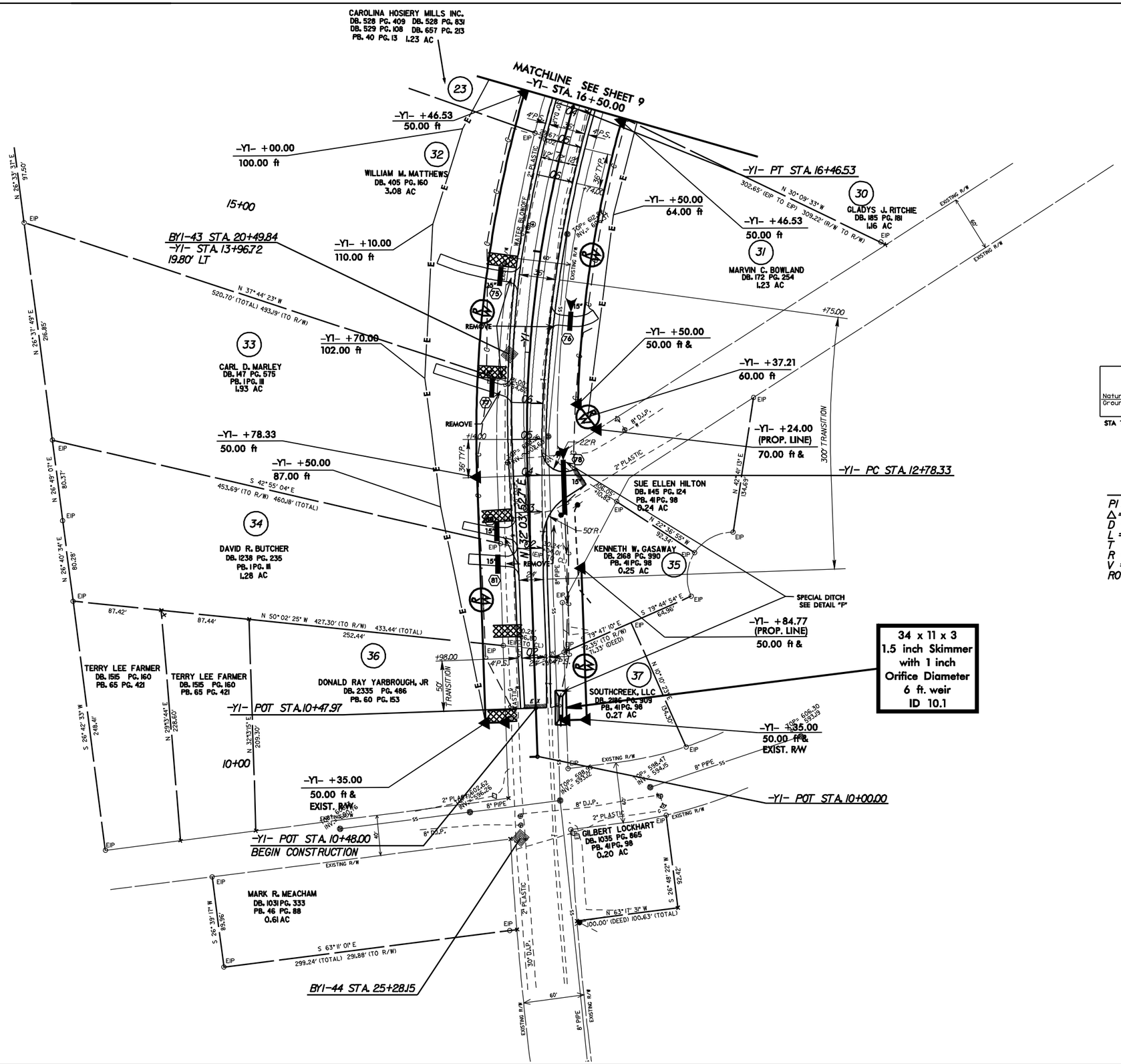
BLOOSBOURN
RENVE2422CB

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-19/CONST.10
R/W SHEET NO.	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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BBlackburn AT RENV242226

PROJECT REFERENCE NO.	SHEET NO.
U-3304	EC-20/CONST.JI
R/W SHEET NO.	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DETOUR REMOVAL NOTE:
REMOVE ASPHALT AND SUBBASE. BACKFILL WITH SUITABLE MATERIAL PER DISCRESION OF ENGINEER. GRADE TO DRAIN. SEED AND STRAW.

DETAIL D
SPECIAL DITCH
(Not to Scale)
Natural Ground — 2:1 — 0 — 4:1 or Flatter — Front Ditch Slope — Min. D=1.0 Ft.

STA 11+00 TO STA 14+50 -Y1DET- LT.
STA 13+00 TO STA 14+50 -Y1DET- RT.

-Y1- POT STA.10+47.97 =
-YIDET- PC STA.10+00.00

-YIDET- PT STA.11+20.00

-YIDET- PC STA.14+30.00

-YIDET- PT STA.15+99.67

-YIDET- PC STA.18+51.20

-YIDET- POT STA.18+11.38
-L- POT STA.74+47.61

-Y1- PT STA.16+46.53

-L- POT STA.74+66.99
-Y1- POT STA.18+41.21

-YIDET- PT STA.20+61.55 =
-Y1- POT STA.20+85.00

-Y1- POT STA.10+00.00
N 32° 03' 52.7" E

-YIDET-
PI Sta 10+81.46
Δ = 14° 30' 23.6" (LT)
D = 8° 57' 08.9"
L = 162.04'
T = 81.46'
R = 640.00'
V = 40 mph

-YIDET-
PI Sta 14+07.90
Δ = 39° 54' 54.5" (RT)
D = 9° 57' 52.1"
L = 400.57'
T = 208.80'
R = 575.00'
V = 40 mph
R0 = 80'

-YIDET-
PI Sta 19+56.52
Δ = 7° 21' 44.3" (LT)
D = 3° 30' 00.2"
L = 210.35'
T = 105.32'
R = 1,637.00'
V = 40 mph

DETOUR

FOR -Y1DET- PROFILE SEE SHEET 15

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