

ERI-US 0006 CONNECTIVITY CORRIDOR

Drainage Report

PID No 116570

Final

*Prepared for:
ODOT District 3
October 2025*

Prepared by:
TRANSYSTEMS



OHIO DEPARTMENT OF
TRANSPORTATION

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DRAINAGE NARRATIVE

Project Description

TranSystems is providing engineering services to the Ohio Department of Transportation, District 3. This project includes the construction of five new roundabouts along US Route 6 in Erie County at Perkins Avenue, Camp Road, Rye Beach Road, and both ramp terminals at the interchange of US 6, SR 2, and Rye Beach Road. US 6 is also being resurfaced and widened between Camp Road and Rye Beach Road to accommodate a two-way left turn lane. Multi-modal connectivity is being improved throughout the project by extending the Sandusky Bay Pathway from Cedar Point Drive to Sports Force Park, then along US 6 to Rye Beach Road, then south along Rye Beach Road to University Drive. The bridge over Sawmill Creek is being widened to accommodate the road widening and shared use path.

Design Criteria

The drainage criteria for this project can be found on form LD-35, located in Appendix 1 of this report.

Drainage Areas

The drainage areas for this project can be found in Appendix 2 of this report. The drainage areas are drawn based on proposed elevations and existing contours provided by survey and ODOT aerial mapping.

FEMA

This project requires hydraulic analysis at Boo's Ditch for box culvert extension and Sawmill Creek for the bridge widening. Flood studies were requested from FEMA and a separate reports have been provided with the Stage 2 submittal.

Spread Calculations

The spread calculations for this project can be found in Appendix 3 of this report. The spread design is based on a 20% annual exceedance percentage (AEP) for US 6 (W), US 6 (S), Rye Beach Road (N), Rye Beach Road (S) and Cleveland Road W (E). A 50% AEP is used for the shared use path sections.

Ditch Calculations

The ditch calculations for this project can be found in Appendix 4 of this report. The ditch design is based on a 10% AEP for depth and a 20% AEP for shear. Erosion control as shown on the calculations has been added to the plan sheets.

Storm Sewer Calculations

The storm sewer calculations for this project can be found in Appendix 5 of this report. The storm sewer design is based on a 10% AEP for design capacity and a 4% AEP for hydraulic grade line. A minimum pipe size of 12 inches is used for all roads, except for the freeway ramps and associated roundabouts at these ramps, which use 15" as the minimum pipe size. Existing drainage patterns have been maintained throughout the project. GIS and survey have been used to establish the locations of the existing storm sewer systems. Erosion control at pipe outlets has been determined using Figure 1002-4 and can be found in Appendix 5 of this report.

Culvert Calculations

The culvert calculations and LD-33 form can be found in Appendix 6 of this report. LD-33 form will be completed with Stage 3. The culvert design uses a 4% AEP for all roads except the shared-use path sections, which use a 10% AEP. The 1% AEP is used as the check design for all culverts. Erosion control has been determined using Figure 1002-4 and can be found in Appendix 5 of this report.

BMP Calculations

The BMP calculation sheet can be found in Appendix 7 of this report. This project has an earth disturbed area (EDA) of 50.18 acres. Both quality and quantity BMPs will be required for a treatment percentage of 37.67% and total treatment requirement of 18.90 acres. Areas of mill and fill and sheet flow have been removed from the EDA. Currently the proposed BMP types are amended vegetated filter strips and bioretention cells along US6 and SR2. This provides 19.17 acres of treatment.

APPENDIX 1

PROJECT INFORMATION:

COUNTY	ROUTE	SECTION	PID
ERI	0006	11.33 to 15.81	116570

PIPE POLICY:

The Pipe Policy of ODOT will be used for this project.

(Attach a copy of the written pipe policy or furnish a link to the policy. In lieu of a written policy, documentation of locally funded construction practices may be provided)

POST CONSTRUCTION BMP POLICY:

The Post Construction BMP Policy of ODOT will be used for this project.

If a policy other than ODOT's is being used, the following BMP's are permitted:

DRAINAGE WATERSHED(S):

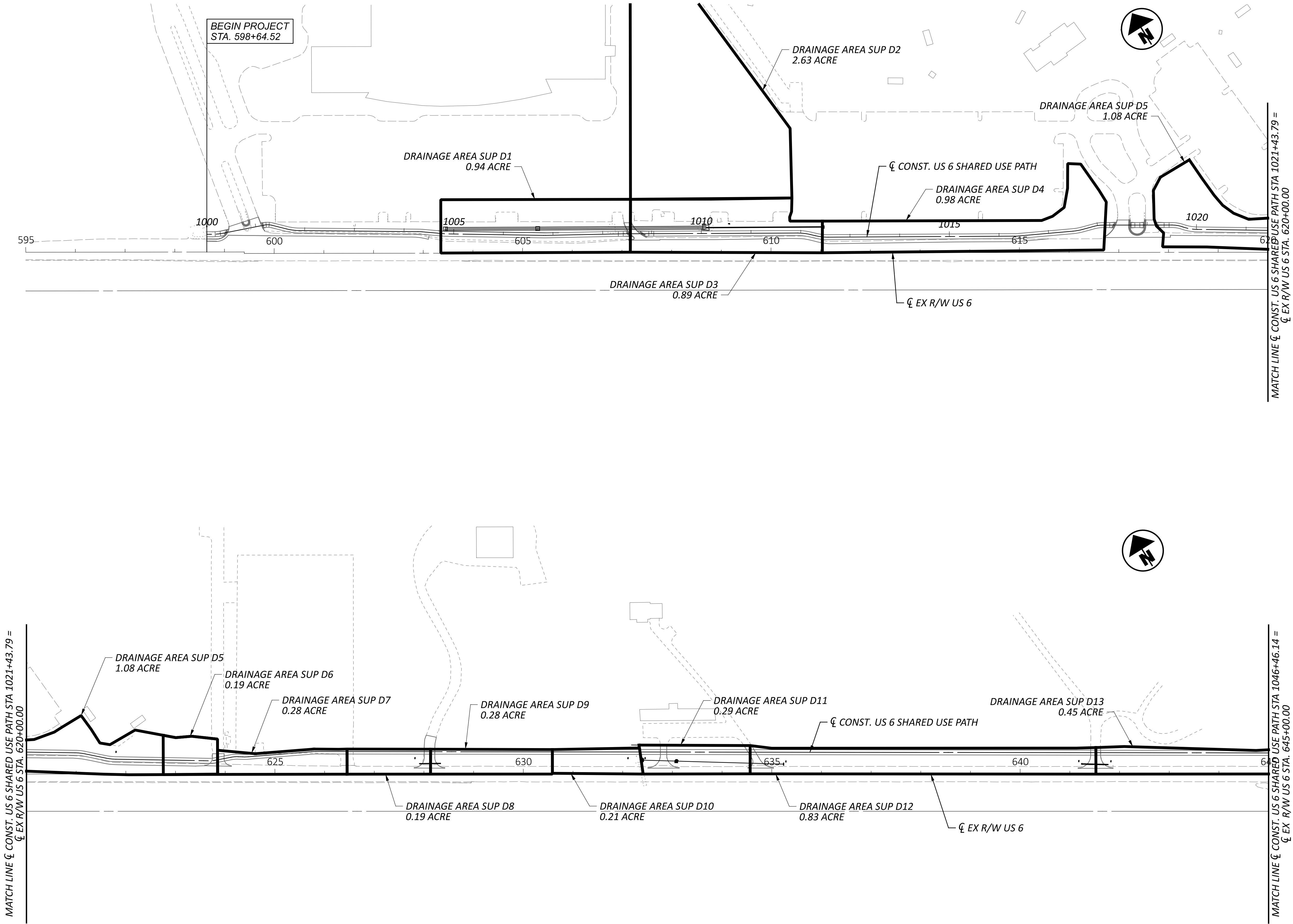
Castaway Bay	
Plum Brook	
Sawmill Creek	
Lake Erie	
Boos Ditch	

PROJECT SPECIFIC INFORMATION AFFECTING DRAINAGE:

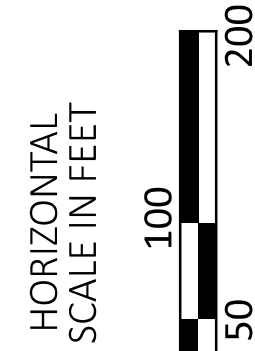
See attached chart.

LD-35 CHART														
STREET NAME	CLASSIFICATION	MAXIMUM SPEED (MPH)	ADT (2048)	MINIMUM # OF LANES	CULVERTS		DITCHES		SPREAD			STORM SEWERS		
					DESIGN (AEP)	CHECK (AEP)	DEPTH (AEP)	SHEAR (AEP)	DESIGN (AEP)	SAG CHECK (AEP)	ALLOWABLE (FT)	DESIGN (AEP)	HGL (AEP)	MINIMUM PIPE SIZE (IN)
US 6 (W)	PRINCIPAL ARTERIAL (URBAN)	45	21,750	1	4%	1%	10%	20%	20%	2%	4	10%	4%	12
US 6 (S)	PRINCIPAL ARTERIAL (URBAN)	45	18,750	2	4%	1%	10%	20%	20%	2%	4	10%	4%	12
RYE BEACH ROAD (N)	LOCAL (URBAN)	30	900	1	4%	1%	10%	20%	20%	2%	6	10%	4%	12
RYE BEACH ROAD (S)	MAJOR COLLECTOR (URBAN)	35	6,440	1	4%	1%	10%	20%	20%	2%	6	10%	4%	12/15
CLEVELAND RD W (E)	MINOR ARTERIAL (URBAN)	40	8,960	1	4%	1%	10%	20%	20%	2%	6	10%	4%	12
SHARED USE PATH	ALL OTHER HIGHWAYS	NA	NA	1	10%	1%	NA	NA	50%	4%	6	10%	4%	12

APPENDIX 2



DRAINAGE MAP
US 6 STA 620+00 TO STA 645+00



DESIGN AGENCY



DESIGNER

BLC

REVIEWER

BLS 07/26/23

PROJECT ID

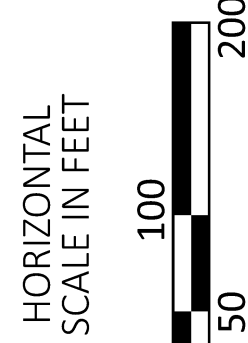
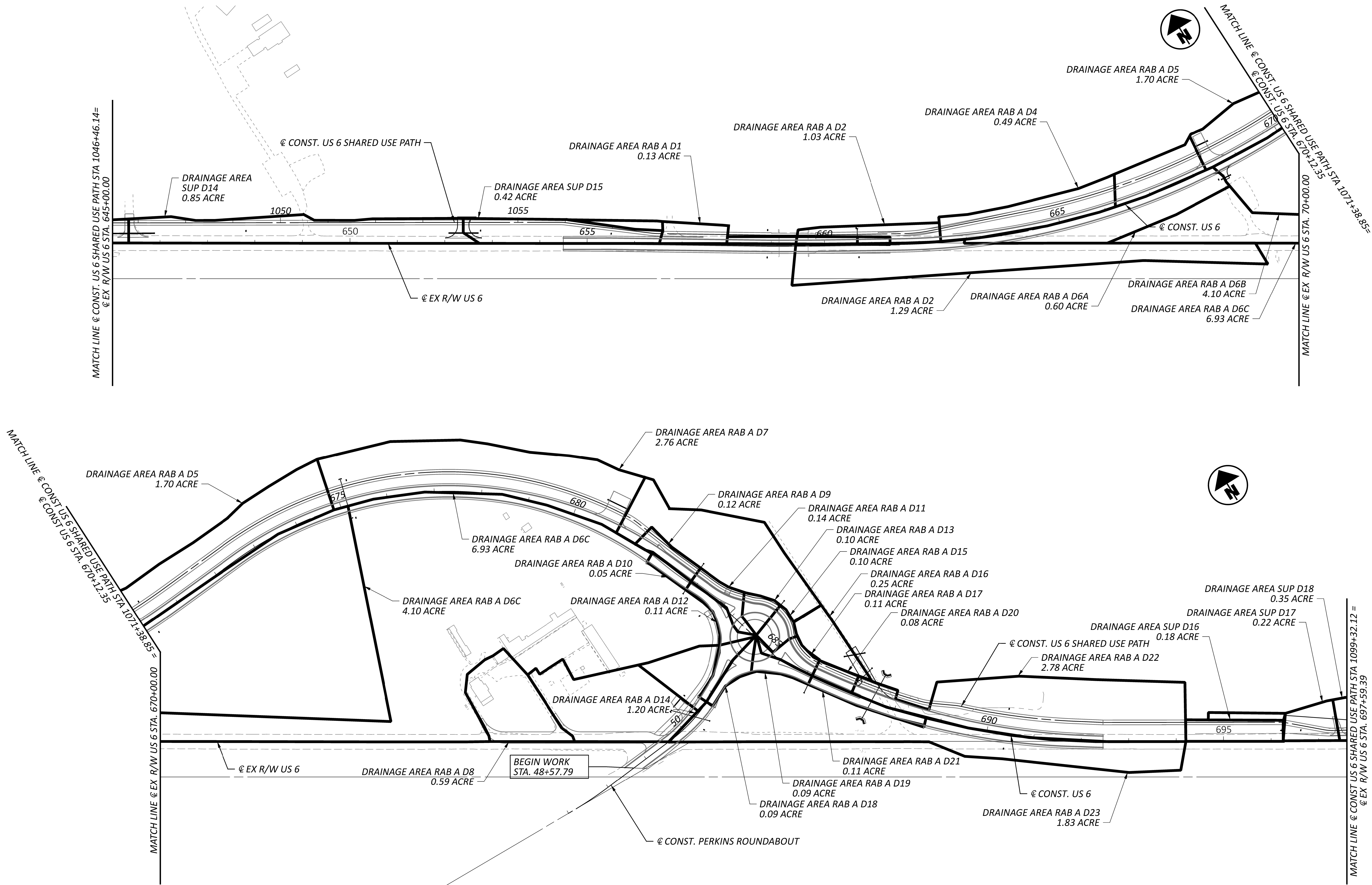
116570

SHEET

P.1

TOTAL

3



DRAINAGE MAP

US 6 STA 645+00 TO STA 697+59.39

DESIGN AGENCY



DESIGNER

BLC

REVIEWER

BLS 07/26/23

PROJECT ID

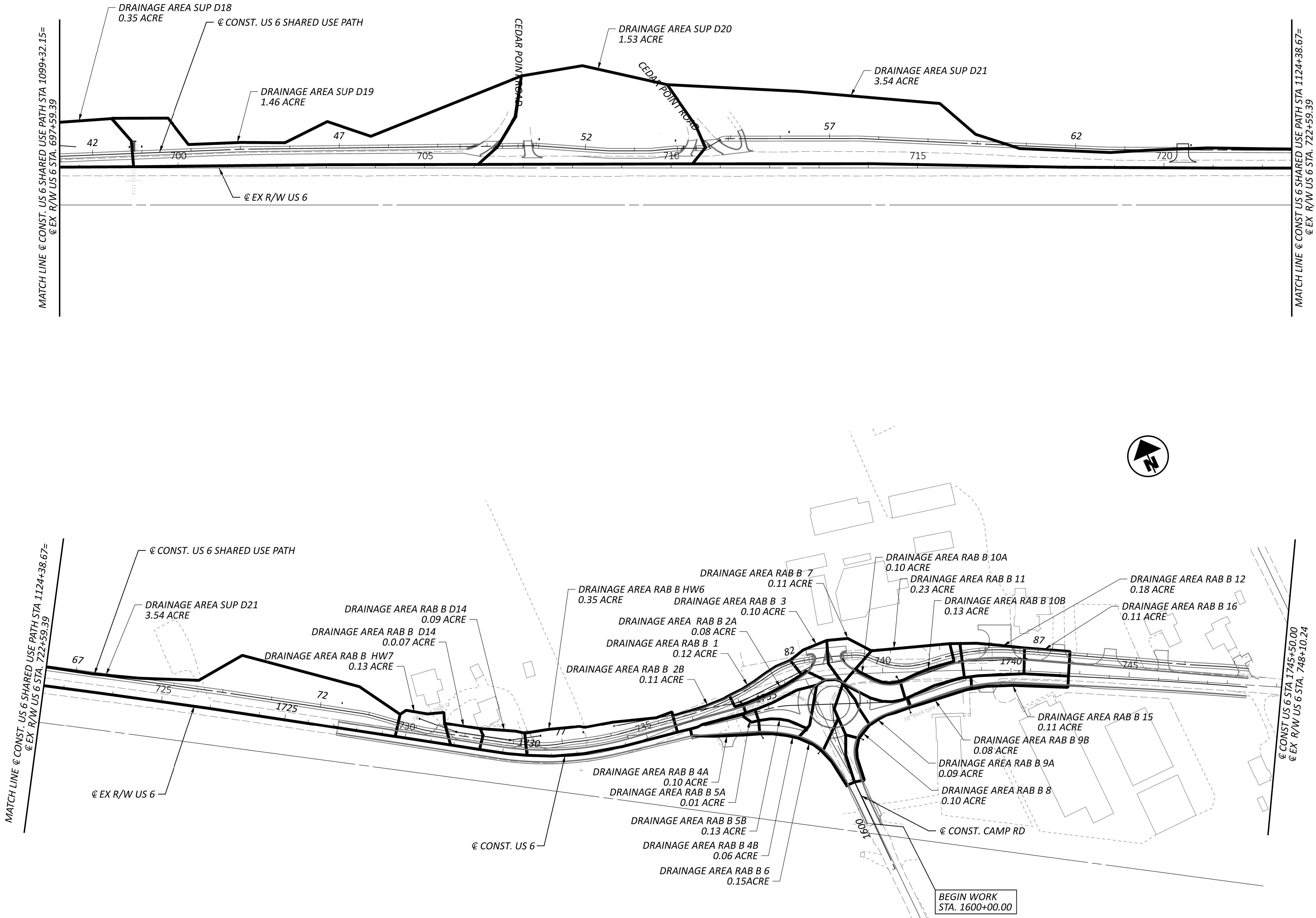
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SHEET

P.2

TOTAL

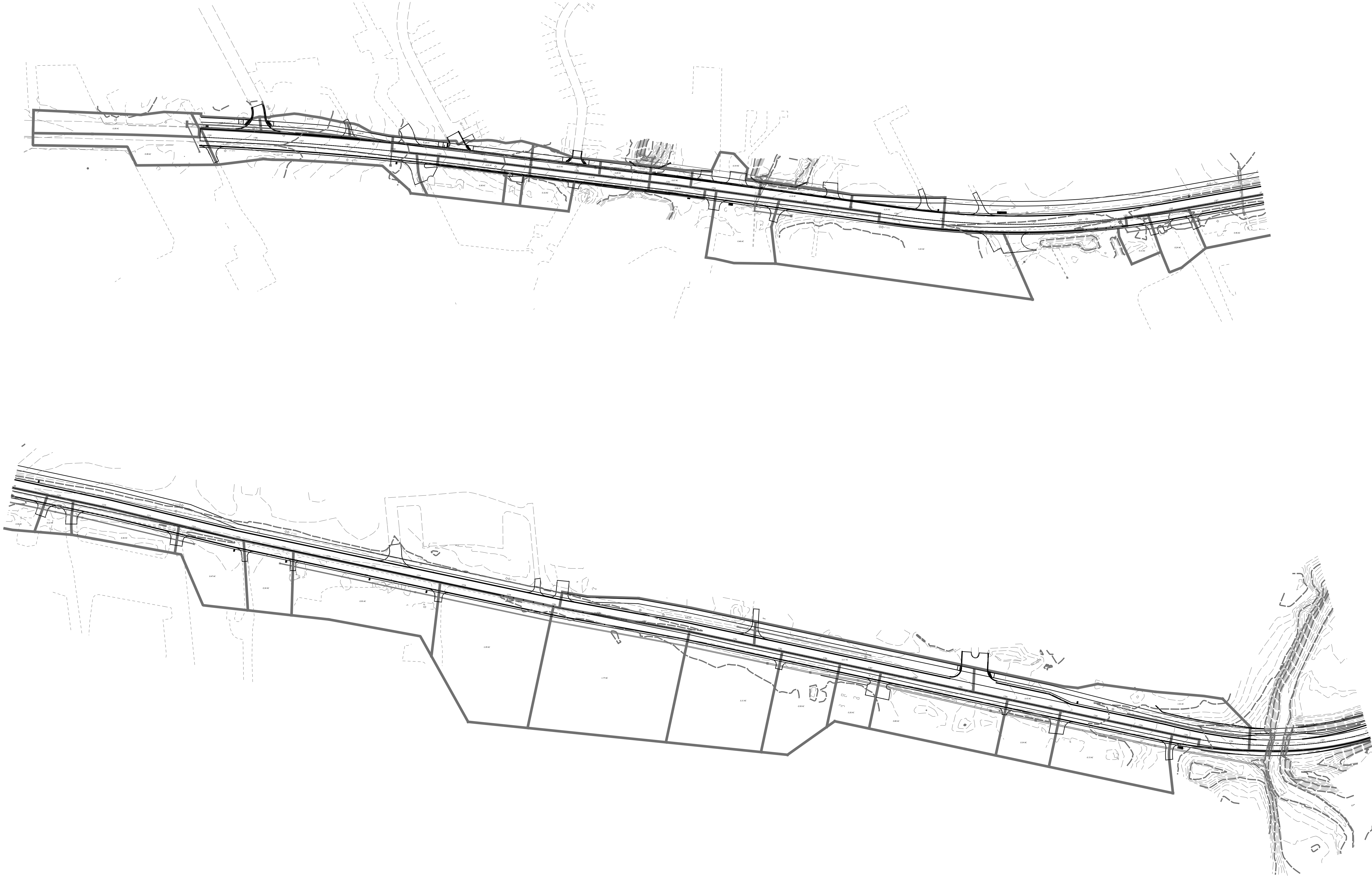
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ERI-US 0006-CONNECTIVITY CORRIDOR

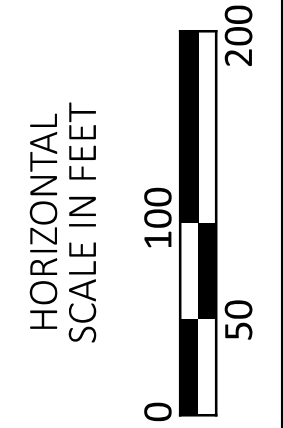
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DESIGN AGENCY	
TRANSYSTEMS 400 W. NATIONWIDE BLVD., STE 225 COLUMBUS, OHIO 43215	
DESIGNER	
JIW	
REVIEWER	
GHM 7-30-2025	
PROJECT ID	
116570	
SHEET	TOTAL
P.1	3

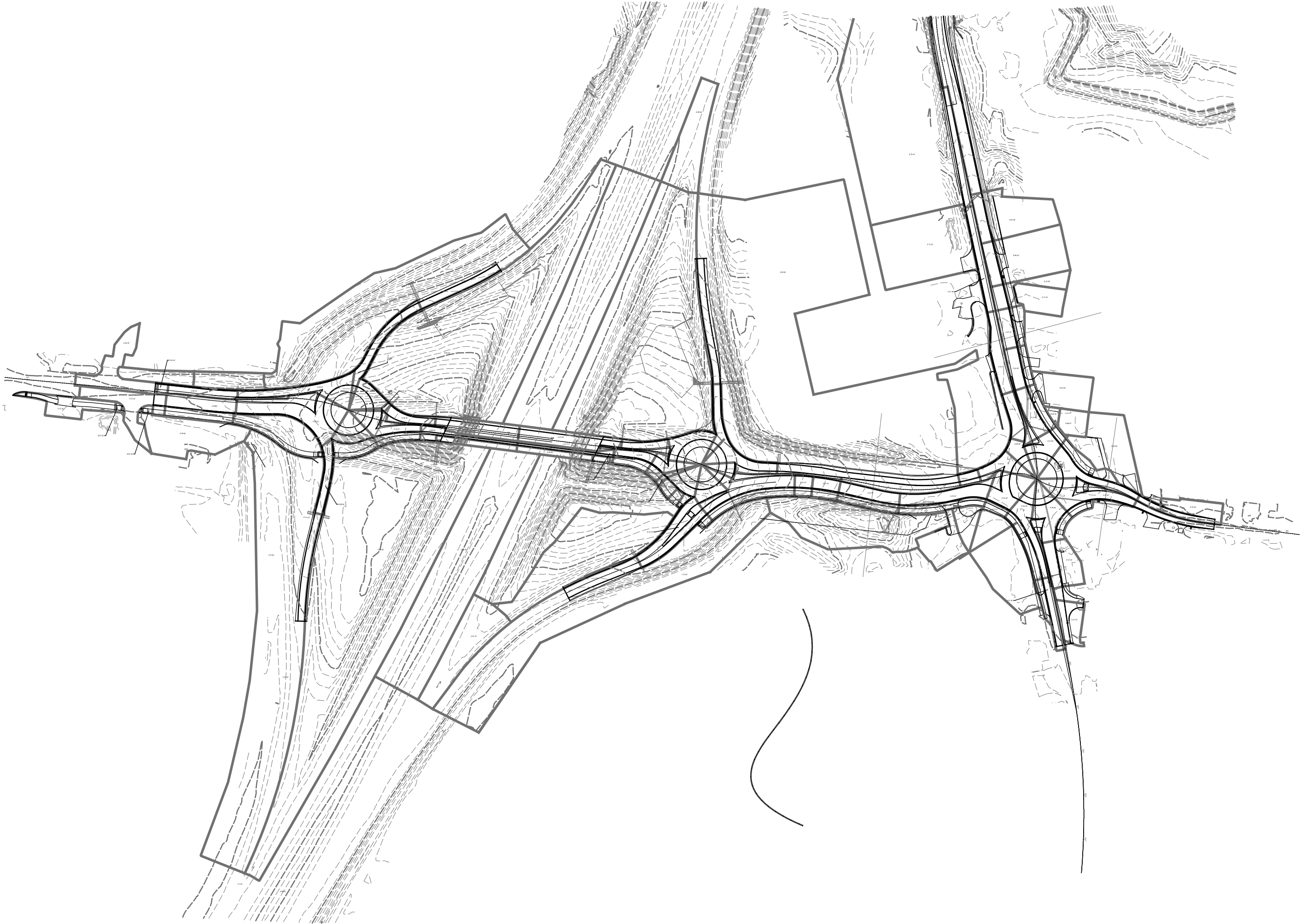
DRAINAGE MAP
US 6 STA. 1740+00 TO STA. 1798+00



ERI-US 0006-CONNECTIVITY CORRIDOR

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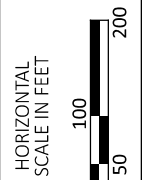
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DESIGN AGENCY	
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DESIGNER	
JIW	
REVIEWER	
GHM 7-30-2025	
PROJECT ID	
116570	
SHEET	TOTAL
P.2	3

RYE BEACH STA. 136+50 TO STA. 166+00, US 6 STA. 1798+00 TO STA. 1815+00

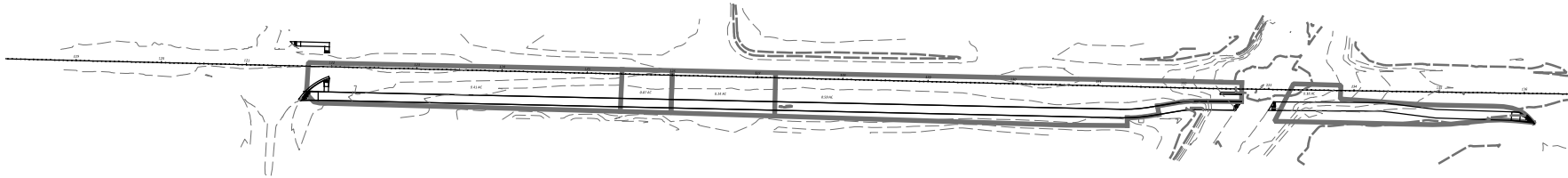
DRAINAGE MAP



ERI-US 0006-CONNECTIVITY CORRIDOR

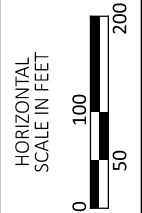
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DESIGN AGENCY	
TRANSYSTEMS 400 W. NATIONWIDE BLVD., STE 225 COLUMBUS, OHIO 43215	
DESIGNER	
JIW	
REVIEWER	
GHM 7/30/2025	
PROJECT ID	
116570	
SHEET	TOTAL
P.3	3

DRAINAGE MAP
RYE BEACH STA. 118+00 TO STA. 136+50



APPENDIX 3



INLET SPACING DESIGN

PID : 116570 **Date :** 02/01/2024 **Project :** ERI-6

Location : Sta. 660+69

Description : Inlet at Plum Creek

Designer : BLS

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
657+94	Begin																		
660+69	I-3D	275.00	0.90	0.10	8.00	7.32	15.33	0.0013	0.0400	0.0156	4.00	0.0625	3.61	*****	*****	0.33	0.175	4.99	Sag
661+39	Begin																		
660+69	I-3D	70.00	0.90	0.03	4.69	2.29	10.00	0.0013	0.0400	0.0156	4.00	0.0625	4.41	*****	*****	0.12	0.120	3.01	End

SUMP DATA

Total Flow (cfs) : 0.44

Ponded Depth (ft.) : 0.059

Spread on Pavement (ft.) : 1.06



INLET SPACING DESIGN

PID : 116570 **Date :** 07/30/2025 **Project :** ERI-6

Location : Sta. 682+86 RT

Description : D602-HW608

Designer :

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
172+08	Begin																	
171+00	CB-3A	108.00	0.90	0.14	5.42	1.08	10.00	0.0093	0.0800	0.0156	2.00	0.0000	4.41	0.55	0.01	0.56	0.190	3.94



INLET SPACING DESIGN

PID : 116570 Date : 07/30/2025 Project : ERI-6

Location : Sta. 682+87

Description :D603

Designer :

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
183+69	Begin																	
182+50	CB-3A	150.00	0.90	0.11	2.91	1.03	10.00	0.0200	0.0800	0.0156	2.00	0.0000	4.41	0.44	0.00	0.44	0.152	1.90



INLET SPACING DESIGN

PID : 116570 Date : 07/30/2025 Project : ERI-6

Location : Sta. 684+59RT

Description :D604

Designer :

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
172+08	Begin																		
172+88	CB-3	81.00	0.90	0.10	4.35	0.58	10.00	0.0200	0.0800	0.0156	2.00	0.0000	4.41	*****	*****	0.40	0.147	1.84	Sag
173+44	Begin																		
172+88	CB-3	55.00	0.90	0.10	4.63	0.39	10.00	0.0200	0.0800	0.0156	2.00	0.0000	4.41	*****	*****	0.40	0.147	1.84	End

SUMP DATA

Total Flow (cfs) : 0.79

Ponded Depth (ft.) : 0.069

Spread on Pavement (ft.) : 3.36



INLET SPACING DESIGN

PID : 116570 **Date :** 07/30/2025 **Project :** ERI-6

Location : Sta. 686+12 RT, 1687+03 RT

Description : D605-D607

Designer :

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
173+50	Begin																	
174+41	CB-3A	97.00	0.90	0.11	3.17	1.02	10.00	0.0085	0.0800	0.0156	2.00	0.0000	4.41	0.44	0.00	0.44	0.178	3.16
175+30	CB-3A	90.00	0.90	0.08	2.15	0.92	10.00	0.0085	0.0800	0.0156	2.00	0.0000	4.41	0.30	0.00	0.30	0.156	1.95



INLET SPACING DESIGN

PID : 116570 Date : 07/30/2025 Project : ERI-6

Location : Sta. 686+12 LT

Description :D606 684+63-686+11

Designer :

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
684+63	Begin																	
686+11	CB-3A	55.00	0.90	0.09	3.74	0.57	10.00	0.0092	0.0800	0.0156	2.00	0.0000	4.41	0.36	0.00	0.36	0.163	2.21



INLET SPACING DESIGN

PID : 116570 **Date :** 07/30/2025 **Project :** ERI-006

Location : Camp RAB

Description : Pavement Spread - D704

Designer : BLS

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
211+00	Begin																		
212+43	CB-3	143.00	0.90	0.11	5.14	1.95	10.00	0.0050	0.0800	0.0156	2.00	0.0000	4.41	*****	*****	0.44	0.195	4.21	Sag
213+80	Begin																		
212+43	CB-3	137.00	0.90	0.08	2.84	1.32	10.00	0.0100	0.0800	0.0156	2.00	0.0000	4.41	*****	*****	0.32	0.154	1.92	End

SUMP DATA

Total Flow (cfs) : 0.75

Ponded Depth (ft.) : 0.066

Spread on Pavement (ft.) : 3.12



INLET SPACING DESIGN

PID : 116570 Date : 07/30/2025 Project : ERI-006

Location : Camp RAB

Description : Pavement Spread - D712

Designer : BLS

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
330+60	Begin																	
331+52	CB-3	92.00	0.90	0.10	12.14	0.93	13.07	0.0100	0.0800	0.0156	2.00	0.0000	3.91	*****	*****	0.35	0.160	2.00 Sag
741+18	Begin																	
740+30	CB-3A	88.00	0.90	0.11	4.21	1.10	10.00	0.0060	0.0800	0.0156	2.00	0.0000	4.41	0.43	0.00	0.44	0.189	3.85
739+15	CB-3A	115.00	0.90	0.18	9.76	1.51	11.27	0.0052	0.0800	0.0156	2.00	0.0000	4.18	0.63	0.05	0.68	0.221	5.90
331+52	CB-3	135.00	0.90	0.13	12.14	1.80	13.93	0.0052	0.0800	0.0156	2.00	0.0000	3.79	*****	*****	0.50	0.201	4.64 End

SUMP DATA

Total Flow (cfs) : 0.85

Ponded Depth (ft.) : 0.074

Spread on Pavement (ft.) : 3.69



INLET SPACING DESIGN

PID : 116570 Date : 07/30/2025 Project : ERI-006

Location : Camp RAB

Description : Pavement Spread - D711

Designer : BLS

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
260+00	Begin																		
260+87	CB-3	87.00	0.90	0.09	4.47	1.33	10.00	0.0040	0.0800	0.0156	2.00	0.0000	4.41	*****	*****	0.36	0.189	3.86	Sag
741+18	Begin																		
739+13	CB-3A	200.00	0.90	0.11	2.49	0.77	10.00	0.0900	0.0800	0.0156	2.00	0.0000	4.41	0.44	0.00	0.44	0.115	1.44	
260+87	CB-3	133.00	0.90	0.08	2.70	1.69	10.00	0.0060	0.0800	0.0156	2.00	0.0000	4.41	*****	*****	0.32	0.169	2.59	End

SUMP DATA

Total Flow (cfs) : 0.67

Ponded Depth (ft.) : 0.058

Spread on Pavement (ft.) : 2.63



INLET SPACING DESIGN

PID : 116570 **Date :** 07/30/2025 **Project :** ERI-006

Location : Camp RAB

Description : Pavement Spread - D710

Designer : BLS

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
321+82	Begin																	
321+47	CB-3	35.00	0.90	0.10	4.80	0.25	10.00	0.0200	0.0800	0.0156	2.00	0.0000	4.41	0.40	0.00	0.40	0.147	1.84



INLET SPACING DESIGN

PID : 116570 **Date :** 07/30/2025 **Project :** ERI-006

Location : Camp RAB

Description : Pavement Spread - D709

Designer : BLS

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
330+00	Begin																	
330+28	CB-3	28.00	0.90	0.04	7.26	0.38	10.00	0.0070	0.0800	0.0156	2.00	0.0000	4.41	*****	*****	0.16	0.127	1.59 Sag
330+60	Begin																	
330+28	CB-3	32.00	0.90	0.07	7.26	0.33	10.00	0.0100	0.0800	0.0156	2.00	0.0000	4.41	*****	*****	0.28	0.146	1.83 End

SUMP DATA

Total Flow (cfs) : 0.44

Ponded Depth (ft.) : 0.032

Spread on Pavement (ft.) : 1.80



INLET SPACING DESIGN

PID : 116570 **Date :** 07/30/2025 **Project :** ERI-006

Location : Camp RAB

Description : Pavement Spread - D708

Designer : BLS

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
313+66	Begin																	
314+21	CB-3	55.00	0.90	0.15	4.90	0.53	10.00	0.0100	0.0800	0.0156	2.00	0.0000	4.41	0.59	0.00	0.59	0.192	4.07



INLET SPACING DESIGN

PID : 116570 Date : 07/30/2025 Project : ERI-006

Location : Camp RAB

Description : Pavement Spread - D707

Designer : BLS

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
231+22	Begin																		
231+37	CB-3	15.00	0.90	0.01	2.49	0.44	10.00	0.0020	0.0800	0.0156	2.00	0.0400	4.41	*****	*****	0.04	0.095	1.19	Sag
232+45	Begin																		
231+37	CB-3	108.00	0.90	0.13	4.81	1.24	10.00	0.0070	0.0800	0.0156	2.00	0.0400	4.41	*****	*****	0.52	0.194	4.21	End

SUMP DATA

Total Flow (cfs) : 0.56

Ponded Depth (ft.) : 0.046

Spread on Pavement (ft.) : 1.82



INLET SPACING DESIGN

PID : 116570 **Date :** 07/30/2025 **Project :** ERI-006

Location : Camp RAB

Description : Pavement Spread - D706

Designer : BLS

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
311+50	Begin																		
313+00	CB-3	150.00	0.90	0.10	2.45	1.51	10.00	0.0095	0.0800	0.0156	2.00	0.0000	4.41	*****	*****	0.40	0.169	2.57	Sag
313+66	Begin																		
313+00	CB-3	66.00	0.90	0.06	2.45	0.67	10.00	0.0100	0.0800	0.0156	2.00	0.0000	4.41	*****	*****	0.24	0.138	1.73	End

SUMP DATA

Total Flow (cfs) : 0.63

Ponded Depth (ft.) : 0.054

Spread on Pavement (ft.) : 2.38



INLET SPACING DESIGN

PID : 116570 Date : 07/30/2025 Project : ERI-006

Location : Camp RAB

Description : Pavement Spread - D705

Designer : BLS

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
303+92	Begin																		
304+08	CB-3	16.00	0.90	0.05	2.20	0.35	10.00	0.0020	0.0800	0.0156	2.00	0.0000	4.41	*****	*****	0.20	0.174	2.91	Sag
304+08	Begin																		
304+47	CB-3	39.00	0.90	0.05	10.00	0.52	10.52	0.0070	0.0800	0.0156	2.00	0.0000	4.31	*****	*****	0.19	0.137	1.71	End

SUMP DATA

Total Flow (cfs) : 0.39

Ponded Depth (ft.) : 0.026

Spread on Pavement (ft.) : 1.73



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : US 6 Widening Section

Description : Sta 1746+88 US 6 to Sta 1754+60 US 6 to 1761+03 US 6

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
1746+88	Begin																	
1748+97	CB-3A	209.00	0.90	0.06	1.00	1.38	10.00	0.0316	0.0833	0.0020	2.00	0.0000	4.41	0.22	0.00	0.22	0.109	1.31
1752+00	CB-3A	303.00	0.90	0.28	1.00	1.89	10.00	0.0226	0.0833	0.0160	2.00	0.0000	4.41	1.02	0.08	1.10	0.209	4.67
1753+50	CB-3A	150.00	0.90	0.13	1.00	1.24	10.00	0.0130	0.0833	0.0160	2.00	0.0000	4.41	0.60	0.00	0.61	0.189	3.40
1754+60	CB-3	110.00	0.90	0.09	1.00	1.33	10.00	0.0063	0.0833	0.0160	2.00	0.0000	4.41	*****	*****	0.35	0.176	2.58 Sag
1761+03	Begin																	
1759+00	CB-3A	203.00	0.90	0.19	1.00	1.99	10.00	0.0091	0.0833	0.0160	2.00	0.0000	4.41	0.72	0.05	0.77	0.215	5.05
1757+00	CB-3	200.00	0.90	0.16	1.00	2.12	10.00	0.0078	0.0833	0.0160	2.00	0.0000	4.41	0.67	0.00	0.67	0.211	4.79
1755+50	CB-3A	150.00	0.90	0.19	1.00	1.77	10.00	0.0061	0.0833	0.0160	2.00	0.0000	4.41	0.70	0.06	0.77	0.228	5.84
1754+60	CB-3	90.00	0.90	0.07	1.00	1.08	10.00	0.0064	0.0833	0.0160	2.00	0.0000	4.41	*****	*****	0.35	0.176	2.59 End

SUMP DATA

Total Flow (cfs) : 0.70

Ponded Depth (ft.) : 0.060

Spread on Pavement (ft.) : 2.62



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : US 6 Widening Section

Description : Sta 1746+88 US 6 to Sta 1754+60 US 6 to 1761+03 US 6

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 50

Total Allow. Spread (ft.) : 6.00 + 2' gutter

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
1746+88	Begin																	
1748+97	CB-3A	209.00	0.90	0.06	1.00	1.29	10.00	0.0316	0.0833	0.0020	2.00	0.0000	6.13	0.30	0.00	0.30	0.124	1.49
1752+00	CB-3A	303.00	0.90	0.28	1.00	1.86	10.00	0.0226	0.0833	0.0160	2.00	0.0000	6.13	1.29	0.24	1.53	0.231	6.01
1753+50	CB-3A	150.00	0.90	0.13	1.00	1.22	10.00	0.0130	0.0833	0.0160	2.00	0.0000	6.13	0.89	0.09	0.98	0.219	5.30
1754+60	CB-3	110.00	0.90	0.09	1.00	1.30	10.00	0.0063	0.0833	0.0160	2.00	0.0000	6.13	*****	*****	0.56	0.207	4.53 Sag
1761+03	Begin																	
1759+00	CB-3A	203.00	0.90	0.19	1.00	1.95	10.00	0.0091	0.0833	0.0160	2.00	0.0000	6.13	0.92	0.15	1.07	0.237	6.40
1757+00	CB-3	200.00	0.90	0.16	1.00	2.07	10.00	0.0078	0.0833	0.0160	2.00	0.0000	6.13	0.97	0.05	1.02	0.239	6.51
1755+50	CB-3A	150.00	0.90	0.19	1.00	1.72	10.00	0.0061	0.0833	0.0160	2.00	0.0000	6.13	0.91	0.21	1.12	0.253	7.42
1754+60	CB-3	90.00	0.90	0.07	1.00	1.05	10.00	0.0064	0.0833	0.0160	2.00	0.0000	6.13	*****	*****	0.60	0.211	4.78 End

SUMP DATA

Total Flow (cfs) : 1.17

Ponded Depth (ft.) : 0.101

Spread on Pavement (ft.) : 5.20



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : US 6 Widening Section

Description : Sta 1750+00 US 6 to Sta 1754+60 US 6 to 1755+82 US 6

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
1750+00	Begin																	
1752+00	CB-3A	200.00	0.90	0.15	1.00	1.29	10.00	0.0226	0.0833	0.0160	2.00	0.0000	4.41	0.60	0.00	0.60	0.170	2.22
1754+60	CB-3	260.00	0.90	0.12	1.00	3.08	10.00	0.0063	0.0833	0.0160	2.00	0.0000	4.41	*****	*****	0.48	0.197	3.93 Sag
1755+82	Begin																	
1754+60	CB-3	122.00	0.90	0.06	1.00	1.46	10.00	0.0064	0.0833	0.0160	2.00	0.0000	4.41	*****	*****	0.23	0.150	1.80 End

SUMP DATA

Total Flow (cfs) : 0.71

Ponded Depth (ft.) : 0.061

Spread on Pavement (ft.) : 2.71



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : US 6 Widening Section

Description : Sta 1750+00 US 6 to Sta 1754+60 US 6 to 1755+82 US 6

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 50

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
1750+00	Begin																	
1752+00	CB-3A	200.00	0.90	0.15	1.00	1.25	10.00	0.0226	0.0833	0.0160	2.00	0.0000	6.13	0.81	0.02	0.83	0.191	3.55
1754+60	CB-3	260.00	0.90	0.12	1.00	3.05	10.00	0.0063	0.0833	0.0160	2.00	0.0000	6.13	*****	*****	0.69	0.220	5.37 Sag
1755+82	Begin																	
1754+60	CB-3	122.00	0.90	0.06	1.00	1.49	10.00	0.0064	0.0833	0.0160	2.00	0.0000	6.13	*****	*****	0.31	0.169	2.17 End

SUMP DATA

Total Flow (cfs) : 1.01

Ponded Depth (ft.) : 0.088

Spread on Pavement (ft.) : 4.39



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** RAB C Circulating Roadway

Description : Sta 158+36 Rye Beach Rd to Sta 158+84 Rye Beach Rd to 159+52 Rye Beach Rd

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
158+36	Begin																	
158+84	CB-3	48.00	0.90	0.03	1.00	0.75	10.00	0.0045	0.0833	0.0153	2.00	0.0000	4.41	*****	*****	0.13	0.129	1.54 Sag
159+52	Begin																	
158+84	CB-3	68.00	0.90	0.09	1.00	0.76	10.00	0.0076	0.0833	0.0153	2.00	0.0000	4.41	*****	*****	0.34	0.169	2.15 End

SUMP DATA

Total Flow (cfs) : 0.47

Ponded Depth (ft.) : 0.036

Spread on Pavement (ft.) : 1.83



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : RAB C Circulating Roadway

Description : Sta 160+24 Rye Beach Rd to Sta 162+50 Rye Beach Rd

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

+ 2' gutter
= 8'

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
160+24	Begin																	
162+50	CB-3A	226.00	0.90	0.23	1.00	3.09	10.00	0.0043	0.0833	0.0160	2.00	0.0000	4.41	0.77	0.14	0.91	0.252	7.30



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** RAB C Circulating Roadway

Description : Sta 152+86 Rye Beach Rd to Sta 158+76 Rye Beach Rd to 159+31 Rye Beach Rd

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

+ 2' gutter
= 8'

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
152+86	Begin																	
155+00	CB-3A	214.00	0.90	0.33	1.00	1.05	10.00	0.0363	0.0833	0.0160	2.00	0.0000	4.41	1.21	0.10	1.30	0.205	4.39
157+00	CB-3A	200.00	0.90	0.22	1.00	1.00	10.00	0.0356	0.0833	0.0160	2.00	0.0000	4.41	0.94	0.02	0.97	0.186	3.22
158+76	CB-3	176.00	0.90	0.23	1.00	1.63	10.00	0.0100	0.0833	0.0160	2.00	0.0000	4.41	*****	*****	0.95	0.226	5.69 Sag
159+31	Begin																	
158+76	CB-3	55.00	0.90	0.14	1.00	0.74	10.00	0.0048	0.0833	0.0160	2.00	0.0000	4.41	*****	*****	0.54	0.213	4.88 End

SUMP DATA

Total Flow (cfs) : 1.48

Ponded Depth (ft.) : 0.125

Spread on Pavement (ft.) : 6.70



INLET SPACING DESIGN

PID : 116570 Date : 07/05/2023 Project : ERI-US 0006-Corridor Location : RAB C Circulating Roadway

Description : Sta 152+86 Rye Beach Rd to Sta 158+76 Rye Beach Rd to 159+31 Rye Beach Rd

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 50

Total Allow. Spread (ft.) : 6.00

+ 2' gutter
= 8'

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
152+86	Begin																	
155+00	CB-3A	214.00	0.90	0.33	1.00	1.04	10.00	0.0363	0.0833	0.0160	2.00	0.0000	6.13	1.53	0.29	1.82	0.226	5.73
157+00	CB-3A	200.00	0.90	0.22	1.00	0.99	10.00	0.0356	0.0833	0.0160	2.00	0.0000	6.13	1.33	0.16	1.50	0.214	4.98
158+76	CB-3	176.00	0.90	0.23	1.00	1.57	10.00	0.0100	0.0833	0.0160	2.00	0.0000	6.13	*****	*****	1.45	0.254	7.48 Sag
159+31	Begin																	
158+76	CB-3	55.00	0.90	0.14	1.00	0.73	10.00	0.0048	0.0833	0.0160	2.00	0.0000	6.13	*****	*****	0.75	0.234	6.22 End

SUMP DATA

Total Flow (cfs) : 2.19

Ponded Depth (ft.) : 0.174

Spread on Pavement (ft.) : 9.73

Lane is 29'



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : RAB C Circulating Roadway

Description : Sta 160+86 Rye Beach Rd to Sta 162+50 Rye Beach Rd

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

+ 2' gutter
= 8'

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
160+86	Begin																	
162+50	CB-3A	164.00	0.90	0.21	1.00	2.62	10.00	0.0031	0.0833	0.0160	2.00	0.0000	4.41	0.71	0.12	0.83	0.257	7.62



INLET SPACING DESIGN

PID : 116570 Date : 07/05/2023 Project : ERI-US 0006-Corridor

Location : RAB C Circulating Roadway

Description :Sta 1806+66 US 6 to Sta 1802+12 US 6

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

+ 2' gutter
= 6'

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
1806+66	Begin																	
1805+45	CB-3A	121.00	0.90	0.11	1.00	2.01	10.00	0.0030	0.0833	0.0202	2.00	0.0000	4.41	0.42	0.00	0.42	0.213	4.31
1804+80	CB-3A	65.00	0.90	0.12	1.00	1.28	10.00	0.0020	0.0833	0.0204	2.00	0.0000	4.41	0.47	0.01	0.48	0.236	5.41
1804+25	CB-3A	55.00	0.86	0.13	10.00	0.82	10.88	0.0037	0.0833	0.0205	2.00	0.0000	4.25	0.49	0.01	0.49	0.217	4.47
1803+25	CB-3A	100.00	0.86	0.44	10.00	0.64	10.64	0.0185	0.0833	0.0211	2.00	0.0000	4.29	1.35	0.28	1.63	0.245	5.71
1802+12	CB-3A	113.00	0.86	0.37	10.00	0.72	10.72	0.0185	0.0833	0.0218	2.00	0.0000	4.28	1.36	0.28	1.64	0.246	5.63



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : RAB C Circulating Roadway

Description : Sta 1808+09 US 6 to Sta 1807+67 US 6 to 1806+66 US 6

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

+ 2' gutter
= 6'

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
1808+09	Begin																		
1807+79	CB-3	30.00	0.90	0.14	1.00	0.50	10.00	0.0030	0.0833	0.0160	2.00	0.0000	4.41	*****	*****	0.56	0.230	5.98	Sag
1806+66	Begin																		
1807+79	CB-3	113.00	0.90	0.13	1.00	1.50	10.00	0.0050	0.0833	0.0160	2.00	0.0000	4.41	*****	*****	0.52	0.209	4.64	End

SUMP DATA

Total Flow (cfs) : 1.07

Ponded Depth (ft.) : 0.093

Spread on Pavement (ft.) : 4.72



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : RAB C Circulating Roadway

Description : Sta 1808+09 US 6 to Sta 1807+67 US 6 to 1806+66 US 6

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 50

Total Allow. Spread (ft.) : 4.00

+ 2' gutter
= 6'

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
1808+09	Begin																		
1807+79	CB-3	30.00	0.90	0.14	1.00	0.49	10.00	0.0030	0.0833	0.0160	2.00	0.0000	6.13	*****	*****	0.77	0.252	7.37	Sag
1806+66	Begin																		
1807+79	CB-3	113.00	0.90	0.13	1.00	1.47	10.00	0.0050	0.0833	0.0160	2.00	0.0000	6.13	*****	*****	0.72	0.230	5.98	End

SUMP DATA

Total Flow (cfs) : 1.49

Ponded Depth (ft.) : 0.126

Spread on Pavement (ft.) : 6.75

Lane is 30'



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : RAB C Circulating Roadway

Description : Sta 1809+44 US 6 to Sta 1811+27 US 6 (Cleveland Rd)

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

+ 2' gutter
= 8'

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
1809+44	Begin																	
1810+25	CB-3A	81.00	0.90	0.18	1.00	0.82	10.00	0.0089	0.0833	0.0131	2.00	0.0000	4.41	0.68	0.04	0.71	0.210	5.33
1811+27	CB-3A	102.00	0.90	0.17	1.00	1.41	10.00	0.0044	0.0833	0.0160	2.00	0.0000	4.41	0.66	0.07	0.73	0.235	6.31



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : RAB C Circulating Roadway

Description : Sta 1806+66 US 6 to Sta 1802+37 US 6

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

+ 2' gutter
= 6'

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
1806+66	Begin																	
1804+80	CB-3A	186.00	0.90	0.12	1.00	3.40	10.00	0.0023	0.0833	0.0227	2.00	0.0000	4.41	0.47	0.01	0.48	0.233	4.90
1802+37	CB-3A	243.00	0.90	0.11	1.00	1.62	10.00	0.0190	0.0833	0.0227	2.00	0.0000	4.41	0.46	0.00	0.46	0.159	1.91



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : RAB C Circulating Roadway

Description : Sta 1807+88 US 6 to Sta 1807+44 US 6 to 1806+66 US 6

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

+ 2' gutter
= 6'

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
1807+88	Begin																		
1807+63	CB-3	25.00	0.90	0.08	1.00	0.37	10.00	0.0040	0.0833	0.0160	2.00	0.0000	4.41	*****	*****	0.32	0.185	3.14	Sag
1806+66	Begin																		
1807+63	CB-3	97.00	0.90	0.06	1.00	1.36	10.00	0.0040	0.0833	0.0160	2.00	0.0000	4.41	*****	*****	0.24	0.167	2.00	End

SUMP DATA

Total Flow (cfs) : 0.56

Ponded Depth (ft.) : 0.046

Spread on Pavement (ft.) : 1.95



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : RAB C Circulating Roadway

Description : Sta 1807+88 US 6 to Sta 1807+44 US 6 to 1806+66 US 6

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 50

Total Allow. Spread (ft.) : 4.00

+ 2' gutter
= 6'

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
1807+88	Begin																		
1807+63	CB-3	25.00	0.90	0.08	1.00	0.37	10.00	0.0040	0.0833	0.0160	2.00	0.0000	6.13	*****	*****	0.44	0.206	4.47	Sag
1806+66	Begin																		
1807+63	CB-3	97.00	0.90	0.06	1.00	1.45	10.00	0.0040	0.0833	0.0160	2.00	0.0000	6.13	*****	*****	0.33	0.188	3.32	End

SUMP DATA

Total Flow (cfs) : 0.77

Ponded Depth (ft.) : 0.067

Spread on Pavement (ft.) : 3.09



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : RAB C Circulating Roadway

Description : Sta 1809+49 US 6 to Sta 1812+67 US 6 (Cleveland Rd)

Designer : MHT

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

+ 2' gutter
= 8'

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
1809+49	Begin																	
1811+00	CB-3A	151.00	0.90	0.19	1.00	2.68	10.00	0.0025	0.0833	0.0160	2.00	0.0000	4.41	0.66	0.11	0.77	0.258	7.74
1812+67	CB-3A	167.00	0.90	0.11	1.00	1.86	10.00	0.0067	0.0833	0.0233	2.00	0.0000	4.41	0.52	0.00	0.52	0.201	3.48



INLET SPACING DESIGN

PID : 116570 **Date :** 07/01/2023 **Project :** ERI-US 0006-Corridor

Location : RAB C SE

Description : STA.550+00 to STA. 535+91 to STA. 535+01

Designer : WK

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
535+01	Begin																		
535+91	CB-3A	90.00	0.90	0.09	1.00	0.81	10.00	0.0098	0.0833	0.0183	2.00	0.0000	4.41	*****	*****	0.36	0.165	1.98	Sag
535+01	Begin																		
535+91	CB-3A	90.00	0.90	0.13	1.00	0.86	10.00	0.0098	0.0833	0.0183	2.00	0.0000	4.41	*****	*****	0.50	0.185	3.00	End

SUMP DATA

Total Flow (cfs) : 0.86

Ponded Depth (ft.) : 0.093

Spread on Pavement (ft.) : 4.38



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : Ramp C Rightside RAB D

Description : Sta 1740+16 Ramp C to Sta 1741+75 Ramp C

Designer : NLD

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 8.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
1740+16	Begin																		
1741+75	CBPA	153.00	0.90	0.08	1.00	1.01	10.00	0.0410	0.0400	0.0160	4.00	0.1667	4.41	*****	*****	0.31	0.090	2.24	End

TIED CONCRETE BLOCK MAT WITH
TYPE 2 UNDERLAYMENT



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : Ramp D Leftside RAB D

Description : Sta 1792+16 Ramp D to Sta 1790+00 Ramp D

Designer : NLD

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 4.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
1792+16	Begin																		
1790+00	CBSA	291.00	0.82	0.10	1.00	1.72	10.00	0.0500	0.0400	0.0400	4.00	0.1667	4.41	*****	*****	0.36	0.092	2.31	End

TIED CONCRETE BLOCK MAT WITH
TYPE 2 UNDERLAYMENT



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : Ramp D Rightside RAB D

Description : Sta 1792+10 Ramp D to Sta 1790+00 Ramp D

Designer : NLD

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 10.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
1792+10	Begin																		
1790+00	CBSA	217.00	0.89	0.11	1.00	1.21	10.00	0.0513	0.0400	0.0160	6.00	0.1667	4.41	*****	*****	0.43	0.098	2.45	End

TIED CONCRETE BLOCK MAT WITH
TYPE 2 UNDERLAYMENT



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** Rye Beach Road Leftside North Leg RAB D
Description : Sta 148+23 Rye Beach Rd to Sta 145+27 Rye Beach Rd to Sta 145+20 Rye Beach Rd **Designer :** NLD

Rainfall Area: A **Storm Frequency (yr.) :** 5 **Total Allow. Spread (ft.) :** 6.00 **Allowable Depth (ft.) :** 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
148+23	Begin																		
146+34	CB-3A	189.00	0.90	0.14	1.00	1.58	10.00	0.0149	0.0385	0.0385	0.00	0.1667	4.41	0.57	0.01	0.57	0.136	3.52	
145+27	CB-3	109.00	0.90	0.06	1.00	1.02	10.00	0.0110	0.0833	0.0160	2.00	0.0417	4.41	*****	*****	0.26	0.143	1.72	Sag
145+20	Begin																		
145+27	CB-3	8.00	0.84	0.01	1.00	0.12	10.00	0.0110	0.0833	0.0160	2.00	0.0417	4.41	*****	*****	0.04	0.069	0.82	End

SUMP DATA

Total Flow (cfs) : 0.30 **Ponded Depth (ft.) :** 0.013 **Spread on Pavement (ft.) :** 1.52



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** Rye Beach Road Leftside North Leg RAB D
Description : Sta 148+23 Rye Beach Rd to Sta 145+27 Rye Beach Rd to Sta 145+20 Rye Beach Rd **Designer :** NLD

Rainfall Area: A **Storm Frequency (yr.) :** 50 **Total Allow. Spread (ft.) :** 6.00 **Allowable Depth (ft.) :** 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
148+23	Begin																		
146+34	CB-3A	189.00	0.90	0.14	1.00	1.47	10.00	0.0149	0.0385	0.0385	0.00	0.1667	6.13	0.73	0.07	0.80	0.154	3.99	
145+27	CB-3	109.00	0.90	0.06	1.00	1.01	10.00	0.0110	0.0833	0.0160	2.00	0.0417	6.13	*****	*****	0.42	0.171	2.25	Sag
145+20	Begin																		
145+27	CB-3	8.00	0.84	0.01	1.00	0.11	10.00	0.0110	0.0833	0.0160	2.00	0.0417	6.13	*****	*****	0.05	0.078	0.93	End

SUMP DATA

Total Flow (cfs) : 0.47 **Ponded Depth (ft.) :** 0.036 **Spread on Pavement (ft.) :** 1.74



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** Rye Beach Road Leftside South Leg RAB D
Description : Sta 144+16 Rye Beach Rd to Sta 140+19 Rye Beach Rd to Sta 138+09 Rye Beach Rd **Designer :** NLD

Rainfall Area: A **Storm Frequency (yr.) :** 5 **Total Allow. Spread (ft.) :** 8.00 **Allowable Depth (ft.) :** 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
144+16	Begin																		
141+78	CB-3A	267.00	0.81	0.11	1.00	2.06	10.00	0.0145	0.0833	0.0160	2.00	0.0417	4.41	0.68	0.00	0.69	0.192	3.60	
140+19	CB-3	158.00	0.90	0.08	1.00	1.99	10.00	0.0060	0.0833	0.0160	2.00	0.0417	4.41	*****	*****	0.30	0.169	2.15	Sag
138+09	Begin																		
139+95	CB-3	186.00	0.90	0.21	1.00	2.11	10.00	0.0060	0.0833	0.0200	2.00	0.0417	4.41	0.88	0.00	0.89	0.241	5.72	
140+19	CB-3	24.00	0.90	0.01	1.00	0.41	10.00	0.0060	0.0833	0.0160	2.00	0.0417	4.41	*****	*****	0.05	0.089	1.07	End

SUMP DATA

Total Flow (cfs) : 0.36

Ponded Depth (ft.) : 0.022

Spread on Pavement (ft.) : 1.60



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** Rye Beach Road Leftside South Leg RAB D
Description : Sta 144+16 Rye Beach Rd to Sta 140+19 Rye Beach Rd to Sta 138+09 Rye Beach Rd **Designer :** NLD

Rainfall Area: A **Storm Frequency (yr.) :** 50 **Total Allow. Spread (ft.) :** 8.00 **Allowable Depth (ft.) :** 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
144+16	Begin																		
141+78	CB-3A	267.00	0.81	0.11	1.00	2.04	10.00	0.0145	0.0833	0.0160	2.00	0.0417	6.13	0.90	0.05	0.95	0.213	4.92	
140+19	CB-3	158.00	0.90	0.08	1.00	1.92	10.00	0.0060	0.0833	0.0160	2.00	0.0417	6.13	*****	*****	0.47	0.198	3.94	Sag
138+09	Begin																		
139+95	CB-3	186.00	0.90	0.21	1.00	2.03	10.00	0.0060	0.0833	0.0200	2.00	0.0417	6.13	1.17	0.07	1.24	0.265	6.93	
140+19	CB-3	24.00	0.90	0.01	1.00	0.34	10.00	0.0060	0.0833	0.0160	2.00	0.0417	6.13	*****	*****	0.14	0.127	1.53	End

SUMP DATA

Total Flow (cfs) : 0.62 **Ponded Depth (ft.) :** 0.052 **Spread on Pavement (ft.) :** 1.88



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : Rye Beach Rd Rightside North Leg RAB D

Description : Sta 148+23 Rye Beach Rd to Sta 146+45 Rye Beach Rd

Designer : NLD

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
148+23	Begin																		
146+45	CEBSA	178.00	0.90	0.06	1.00	2.38	10.00	0.0150	0.0156	0.0156	0.00	0.1667	4.41	*****	*****	0.23	0.068	4.36	End

TIED CONCRETE BLOCK MAT WITH
TYPE 2 UNDERLAYMENT



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : Rye Beach Rd Rightside North Leg and Ramp C RAB D

Description : Sta 148+23 Rye Beach Rd to Sta 1741+75 RampC

Designer : NLD

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
148+23	Begin																		
146+02	CB-3A	220.00	0.81	0.01	1.00	2.03	10.00	0.0300	0.0180	0.0180	3.30	0.1667	4.41	0.29	0.01	0.30	0.070	3.89	
145+03	CB-3A	108.00	0.81	0.11	1.00	0.78	10.00	0.0175	0.0833	0.0200	2.00	0.0417	4.41	0.60	0.00	0.60	0.178	2.58	
1741+75	CB-3A	264.00	0.73	0.18	1.00	1.45	10.00	0.0450	0.0400	0.0160	4.00	0.1667	4.41	*****	*****	0.56	0.111	2.77	End



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** Rye Beach Road Rightside South Leg RAB D

Description : Sta 43+98 Rye Beach Rd to Sta 140+18 Rye Beach Rd to Sta 138+21 Rye Beach Rd **Designer :** NLD

Rainfall Area: A **Storm Frequency (yr.) :** 5 **Total Allow. Spread (ft.) :** 8.00 **Allowable Depth (ft.)** 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
144+16	Begin																	
141+75	CB-3A	225.00	0.87	0.32	1.00	1.48	10.00	0.0200	0.0833	0.0160	2.00	0.0417	4.41	1.10	0.11	1.21	0.219	5.30
140+18	CB-3	157.00	0.82	0.20	1.00	1.86	10.00	0.0060	0.0833	0.0160	2.00	0.0417	4.41	*****	*****	0.84	0.235	6.25 Sag
138+21	Begin																	
140+18	CB-3	197.00	0.90	0.21	1.00	2.33	10.00	0.0060	0.0833	0.0160	2.00	0.0417	4.41	*****	*****	0.83	0.234	6.22 End

SUMP DATA

Total Flow (cfs) : 1.67

Ponded Depth (ft.) : 0.139

Spread on Pavement (ft.) : 4.95



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** Rye Beach Road Rightside South Leg RAB D

Description : Sta 43+98 Rye Beach Rd to Sta 140+18 Rye Beach Rd to Sta 138+21 Rye Beach Rd **Designer :** NLD

Rainfall Area: A **Storm Frequency (yr.) :** 50 **Total Allow. Spread (ft.) :** 8.00 **Allowable Depth (ft.) :** 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
144+16	Begin																	
141+75	CB-3A	225.00	0.87	0.32	1.00	1.45	10.00	0.0200	0.0833	0.0160	2.00	0.0417	6.13	1.38	0.31	1.69	0.241	6.66
140+18	CB-3	157.00	0.82	0.20	1.00	1.78	10.00	0.0060	0.0833	0.0160	2.00	0.0417	6.13	*****	*****	1.32	0.266	8.21 Sag
138+21	Begin																	
140+18	CB-3	197.00	0.90	0.21	1.00	2.26	10.00	0.0060	0.0833	0.0160	2.00	0.0417	6.13	*****	*****	1.16	0.257	7.62 End

SUMP DATA

Total Flow (cfs) : 2.48

Ponded Depth (ft.) : 0.192

Spread on Pavement (ft.) : 8.25



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : RAB D South Leg Rightside

Description : Sta 144+07 Rye Beach Rd to Sta 141+75 Rye Beach Rd

Designer : NLD

Rainfall Area: A

Storm Frequency (yr.) : 10

Total Allow. Spread (ft.) : 10.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
144+07	Begin																		
141+75	CB-2-2B	210.00	0.58	0.25	1.00	2.69	10.00	0.0100	0.0160	0.0156	0.00	0.0417	4.94	*****	*****	0.70	0.112	7.20	Sag



INLET SPACING DESIGN

PID : 116570 **Date :** 07/03/2023 **Project :** ERI-US 0006-Corridor

Location : Ramp A Leftside RAB E

Description : Sta 1868+00 Ramp A to Sta 1866+86 Ramp A

Designer : NLD

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
1868+00	Begin																		
1866+86	CBSA	122.00	0.87	0.07	1.00	0.67	10.00	0.0430	0.0833	0.0160	2.00	0.0417	4.41	*****	*****	0.28	0.113	1.36	End

TIED CONCRETE BLOCK MAT WITH
TYPE 2 UNDERLAYMENT



INLET SPACING DESIGN

PID : 116570 **Date :** 07/03/2023 **Project :** ERI-US 0006-Corridor

Location : Ramp B Leftside RAB E

Description : Sta 1810+00 Ramp B to Sta 1811+91 Ramp B

Designer : NLD

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
1810+00	Begin																		
1811+91	CB-3A	193.00	0.89	0.20	1.00	0.94	10.00	0.0410	0.0833	0.0160	2.00	0.0417	4.41	*****	*****	0.76	0.167	2.01	End



INLET SPACING DESIGN

PID : 116570 **Date :** 07/03/2023 **Project :** ERI-US 0006-Corridor

Location : Ramp B Rightside RAB E

Description : Sta 1810+00 Ramp B to Sta 1811+88 Ramp B

Designer : NLD

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 2.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
1810+00	Begin																		
1811+88	CB-3A	188.00	0.80	0.11	1.00	0.96	10.00	0.0410	0.0833	0.0833	2.00	0.0417	4.41	*****	*****	0.40	0.131	1.57	End

TIED CONCRETE BLOCK MAT WITH
TYPE 2 UNDERLAYMENT



INLET SPACING DESIGN

PID : 116570 Date : 07/03/2023 Project : ERI-US 0006-Corridor

Location : Rye Beach Road Leftside South Leg and Ramp A RAB E

Description :Sta 148+23 Rye Beach Rd to Sta 1866+86 Ramp A

Designer : NLD

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 2.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
148+23	Begin																		
150+58	CB-3	235.00	0.90	0.11	1.00	1.55	10.00	0.0242	0.0400	0.0160	6.50	0.1667	4.41	0.70	0.00	0.70	0.135	3.38	
151+57	CB-3A	105.00	0.90	0.06	1.00	1.02	10.00	0.0100	0.0833	0.0200	2.00	0.0417	4.41	0.25	0.00	0.25	0.144	1.72	
1866+86	CB-3A	220.00	0.81	0.15	1.00	0.98	10.00	0.0500	0.0833	0.0160	2.00	0.0417	4.41	*****	*****	0.52	0.139	1.67	End

TIED CONCRETE BLOCK MAT WITH
TYPE 2 UNDERLAYMENT



INLET SPACING DESIGN

PID : 116570 **Date :** 07/03/2023 **Project :** ERI-US 0006-Corridor

Location : Rye Beach Road Leftside North Leg RAB E

Description : Sta 152+81 Rye Beach Rd to Sta 154+20 Rye Beach Rd

Designer : NLD

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 6.00

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF (ft.)	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
152+81	Begin																		
154+20	CBSA	139.00	0.86	0.13	1.00	0.65	10.00	0.0444	0.0833	0.0160	2.00	0.0417	4.41	*****	*****	0.49	0.139	1.67	End

TIED CONCRETE BLOCK MAT WITH
TYPE 2 UNDERLAYMENT



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** Circulating Roadway North Leg RAB E
Description : Sta 153+19 Rye Beach Rd to Sta 153+21 Rye Beach Rd to Sta 153+17 Rye Beach Rd **Designer :** NLD

Rainfall Area: A **Storm Frequency (yr.) :** 5 **Total Allow. Spread (ft.) :** 7.00 **Allowable Depth (ft.)** 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
153+17	Begin																		
153+21	CB-3	5.50	0.80	0.01	1.00	0.35	10.00	0.0010	0.0200	0.0200	3.00	0.1667	4.41	*****	*****	0.02	0.048	2.38	End
153+19	Begin																		
153+21	CB-3	28.00	0.80	0.03	1.00	1.16	10.00	0.0010	0.0200	0.0200	3.00	0.1667	4.41	*****	*****	0.10	0.092	4.61	Sag



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** Circulating Roadway North Leg RAB E
Description : Sta 153+19 Rye Beach Rd to Sta 153+21 Rye Beach Rd to Sta 153+17 Rye Beach Rd **Designer :** NLD

Rainfall Area: A **Storm Frequency (yr.) :** 50 **Total Allow. Spread (ft.) :** 7.00 **Allowable Depth (ft.)** 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
153+17	Begin																		
153+21	CB-3	5.50	0.80	0.01	1.00	0.33	10.00	0.0010	0.0200	0.0200	3.00	0.1667	6.13	*****	*****	0.02	0.054	2.70	End
153+19	Begin																		
153+21	CB-3	28.00	0.80	0.03	1.00	1.08	10.00	0.0010	0.0200	0.0200	3.00	0.1667	6.13	*****	*****	0.14	0.104	5.22	Sag



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** Rye Beach Road Rightside South Leg RAB E

Description : Sta 148+24 Rye Beach Rd to Sta 150+30 Rye Beach Rd to Sta 150+40 Rye Beach Rd **Designer :** NLD

Rainfall Area: A **Storm Frequency (yr.) :** 5 **Total Allow. Spread (ft.) :** 6.00 **Allowable Depth (ft.)** 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
148+24	Begin																		
150+30	CBSA	173.00	0.90	0.05	1.00	2.53	10.00	0.0168	0.0100	0.0100	0.00	0.0000	4.41	*****	*****	0.21	0.055	5.48	End

TIED CONCRETE BLOCK MAT WITH
TYPE 2 UNDERLAYMENT



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** Rye Beach Road Rightside South Leg RAB E

Description : Sta 148+24 Rye Beach Rd to Sta 151+63 Rye Beach Rd to Sta 151+75 Rye Beach Rd **Designer :** NLD

Rainfall Area: A **Storm Frequency (yr.) :** 5 **Total Allow. Spread (ft.) :** 6.00 **Allowable Depth (ft.) :** 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
148+24	Begin																		
150+42	CB-3A	218.00	0.90	0.00	1.00	2.07	10.00	0.0200	0.0400	0.0160	3.50	0.1667	4.41	0.22	0.00	0.22	0.091	2.28	
151+29	CB-3A	120.00	0.80	0.10	1.00	0.80	10.00	0.0200	0.0833	0.0200	2.00	0.0417	4.41	0.40	0.00	0.40	0.149	1.79	
151+63	CB-3	36.00	0.81	0.07	1.00	1.04	10.00	0.0010	0.0833	0.0200	2.00	0.0417	4.41	*****	*****	0.23	0.210	4.18	Sag
151+75	Begin																		
151+63	CB-3	12.00	0.80	0.02	1.00	0.39	10.00	0.0010	0.0833	0.0200	2.00	0.0417	4.41	*****	*****	0.06	0.132	1.58	End

SUMP DATA

Total Flow (cfs) : 0.30

Ponded Depth (ft.) : 0.013

Spread on Pavement (ft.) : 1.52



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor **Location :** Rye Beach Road Rightside South Leg RAB E

Description : Sta 148+24 Rye Beach Rd to Sta 151+63 Rye Beach Rd to Sta 151+75 Rye Beach Rd **Designer :** NLD

Rainfall Area: A **Storm Frequency (yr.) :** 50 **Total Allow. Spread (ft.) :** 6.00 **Allowable Depth (ft.) :** 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)	
148+24	Begin																		
150+42	CB-3A	218.00	0.90	0.00	1.00	1.92	10.00	0.0200	0.0400	0.0160	3.50	0.1667	6.13	0.31	0.00	0.31	0.103	2.58	
151+29	CB-3A	120.00	0.80	0.10	1.00	0.83	10.00	0.0200	0.0833	0.0200	2.00	0.0417	6.13	0.55	0.00	0.55	0.169	2.12	
151+63	CB-3	36.00	0.81	0.07	1.00	1.01	10.00	0.0010	0.0833	0.0200	2.00	0.0417	6.13	*****	*****	0.32	0.233	5.31	Sag
151+75	Begin																		
151+63	CB-3	12.00	0.80	0.02	1.00	0.36	10.00	0.0010	0.0833	0.0200	2.00	0.0417	6.13	*****	*****	0.09	0.149	1.79	End

SUMP DATA

Total Flow (cfs) : 0.41

Ponded Depth (ft.) : 0.029

Spread on Pavement (ft.) : 1.67



INLET SPACING DESIGN

PID : 116570 **Date :** 07/05/2023 **Project :** ERI-US 0006-Corridor

Location : Rye Beach Road Rightside NE Corner RAB E

Description : Sta 152+67 Rye Beach Rd to Sta 153+13 Rye Beach Rd

Designer : NLD

Rainfall Area: A

Storm Frequency (yr.) : 5

Total Allow. Spread (ft.) : 5.30

Allowable Depth (ft.) 0.42

STATION	C.B. Type	GUTTER LENGTH (ft.)	RUNOFF COEF	AREA (acres)	CONC. TIME (min.)	GUTTER TIME (min.)	TIME USED (min.)	LONG. SLOPE (ft./ft.)	GUTT. SLOPE (ft./ft.)	PAVT. SLOPE (ft./ft.)	GUTT. WIDTH (ft.)	LOCAL DEPRESS. (ft.)	RAIN FALL (in./hrs.)	INTERCPTD FLOW (cfs.)	BYPASS FLOW (cfs.)	TOTAL FLOW (cfs.)	DEPTH FLOW (ft.)	PAVT. SPREAD (ft.)
152+55	Begin																	
153+13	CB-6	73.00	0.80	0.00	1.00	0.81	10.00	0.0230	0.0133	0.0133	5.30	0.0417	4.41	0.21	0.05	0.26	0.062	4.70

APPENDIX 4



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 SUP

Description : STA. 1012+45 to 1018+15 LT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1018+15	1012+45	L	570.00	2.00	3.00	3.00	0.0068	0.98	0.98	0.73	0.72	Seed	3.11	5	0.030	20.18	1.76	0.17	2.23	0.40	4.38
												Seed	3.45	10	0.040	21.15	1.47	0.21	2.47	0.49	4.92



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 SUP

Description : STA. 1019+44 to 1023+59 LT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1019+44	1023+59	L	415.00	2.00	3.00	3.00	0.0088	0.87	0.87	0.74	0.64	Seed	3.27	5	0.030	18.54	1.90	0.20	2.10	0.36	4.16
												Seed	3.64	10	0.040	19.20	1.59	0.24	2.34	0.44	4.66



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 SUP

Description : STA. 1025+15 to 1023+59 LT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1025+15	1023+59	L	156.00	2.00	3.00	3.00	0.0190	0.25	0.25	0.76	0.19	Seed	3.48	5	0.030	16.47	1.72	0.18	0.66	0.16	2.93
												Seed	3.91	10	0.040	16.74	1.49	0.23	0.74	0.19	3.16



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 SUP

Description : STA. 1026+00 to 1033+66 RT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1026+00	1027+74	R	174.00	2.00	3.00	3.00	0.0047	0.28	0.28	0.79	0.22	Seed	3.37	5	0.030	17.53	1.11	0.07	0.74	0.24	3.47
												Seed	3.77	10	0.040	17.97	0.94	0.09	0.83	0.30	3.82
1028+10	1029+37	R	127.00	2.00	3.00	3.00	0.0112	0.19	0.47	0.79	0.37	Seed	3.25	5	0.030	18.73	1.76	0.17	1.21	0.25	3.50
												Seed	3.62	10	0.040	19.38	1.47	0.22	1.34	0.31	3.87
1029+80	1033+66	R	386.00	2.00	3.00	2.00	0.0075	0.48	0.95	0.75	0.73	Seed	2.96	5	0.030	22.10	1.85	0.18	2.16	0.39	3.96
												Seed	3.26	10	0.040	23.41	1.55	0.23	2.39	0.48	4.40



DITCH ANALYSIS

PID : 116570 **Date :** 10/13/2025 **Project :** ERI-US 0006

Location : US 0006 SUP

Description : STA. 1057+25 to 1036+21 RT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1057+25	1054+16	R	309.00	2.00	5.50	3.00	0.0051	0.42	0.42	0.76	0.32	Seed	3.21	5	0.030	19.14	1.20	0.09	1.02	0.27	4.31
												Seed	3.57	10	0.040	19.91	1.00	0.11	1.14	0.33	4.83
1053+55	1047+35	R	620.00	2.00	5.50	3.00	0.0021	0.85	1.27	0.76	0.97	Seed	2.56	5	0.030	28.01	1.10	0.07	2.47	0.53	6.50
												Seed	2.78	10	0.040	30.57	0.91	0.08	2.68	0.63	7.36
1046+48	1043+23	R	325.00	2.00	5.00	3.00	0.0006	0.43	1.70	0.77	1.30	Seed	2.22	5	0.030	35.05	0.74	0.03	2.88	0.77	8.14
												Seed	2.38	10	0.040	39.13	0.61	0.03	3.08	0.90	9.22
1042+19	1036+21	R	598.00	2.00	4.00	3.00	0.0021	0.80	2.50	0.76	1.90	Seed	1.95	5	0.030	42.60	1.28	0.09	3.71	0.67	6.68
												Seed	2.06	10	0.040	48.30	1.05	0.10	3.93	0.79	7.52



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 SUP

Description : STA. 1096+00 to 1094+18 RT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1096+00	1094+18	R	182.00	2.00	5.00	3.00	0.0099	0.19	0.19	0.74	0.14	Seed	3.37	5	0.030	17.47	1.21	0.09	0.47	0.15	3.20
												Seed	3.78	10	0.040	17.90	1.03	0.12	0.53	0.19	3.50



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 SUP

Description : STA. 1096+00 to 1098+00 RT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1096+00	1098+00	R	200.00	2.00	3.00	3.00	0.0085	0.20	0.20	0.75	0.15	Seed	3.35	5	0.030	17.68	1.21	0.09	0.50	0.17	3.00
												Seed	3.75	10	0.040	18.15	1.02	0.11	0.56	0.21	3.26



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 SUP

Description : STA. 1096+35 to 1098+00 LT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1096+35	1098+00	L	165.00	2.00	4.00	3.00	0.0118	0.06	0.06	0.67	0.04	Seed	3.30	5	0.030	18.19	0.85	0.05	0.13	0.07	2.49
												Seed	3.69	10	0.040	18.75	0.75	0.06	0.15	0.09	2.60



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 SUP

Description : STA. 1098+50 to 1098+00 RT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1098+50	1098+00	R	50.00	2.00	3.00	3.00	0.0100	0.08	0.08	0.88	0.07	Seed	3.55	5	0.030	15.81	1.00	0.07	0.25	0.11	2.64
												Seed	4.00	10	0.040	15.97	0.87	0.08	0.28	0.13	2.81



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 SUP

Description : STA. 1107+99 to 1102+00 LT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1107+99	1104+20	L	379.00	2.00	4.00	3.00	0.0036	0.49	0.49	0.82	0.40	Seed	3.11	5	0.030	20.21	1.16	0.08	1.25	0.34	4.37
												Seed	3.45	10	0.040	21.20	0.97	0.09	1.39	0.41	4.90
1104+20	1102+00	L	220.00	9.00	4.00	3.00	0.0089	0.30	0.79	0.77	0.63	Seed	2.89	5	0.030	23.00	1.28	0.08	1.83	0.15	10.05
												Seed	3.18	10	0.040	24.44	1.10	0.11	2.01	0.19	10.33



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 RAB A

Description : STA. 49+45 to 50+10 LT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
49+45	50+10	L	65.00	2.00	3.00	3.00	0.0142	1.53	1.53	0.65	0.99	Seed	3.60	5	0.030	15.41	2.61	0.37	3.58	0.42	4.52
												Seed	4.06	10	0.040	15.49	2.19	0.46	4.04	0.52	5.11



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 RAB A

Description : STA. 51+65 to 50+50 LT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
51+65	50+50	L	115.00	2.00	3.00	3.00	0.0188	0.39	0.39	0.72	0.28	Seed	3.54	5	0.030	15.96	1.96	0.23	0.99	0.20	3.18
												Seed	3.98	10	0.040	16.13	1.67	0.29	1.12	0.24	3.47



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 RAB A

Description : STA. 655+80 to 658+25 LT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
655+80	656+60	L	80.00	2.00	3.00	2.00	0.0194	0.06	0.06	0.67	0.04	Seed	3.50	5	0.030	16.27	1.01	0.08	0.14	0.06	2.32
												Seed	3.95	10	0.040	16.42	0.89	0.10	0.16	0.08	2.40
656+89	658+25	L	136.00	2.00	3.00	2.00	0.0063	0.13	0.19	0.77	0.14	Seed	3.29	5	0.030	18.33	1.08	0.07	0.46	0.17	2.87
												Seed	3.68	10	0.040	18.83	0.92	0.09	0.52	0.22	3.10



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 RAB A

Description : STA. 666+12 to 662+40 LT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
666+12	662+40	L	372.00	2.00	3.00	3.00	0.0034	0.56	0.56	0.77	0.43	Seed	3.13	5	0.030	20.00	1.19	0.08	1.35	0.37	4.19
												Seed	3.47	10	0.040	20.95	1.00	0.10	1.50	0.45	4.69



DITCH ANALYSIS

PID : 116570 **Date :** 10/13/2025 **Project :** ERI-US 0006

Location : US 0006 RAB A

Description : STA. 665+50 to 675+15 RT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
665+50	668+70	R	320.00	2.00	3.00	3.00	0.0084	0.60	0.60	0.72	0.43	Seed	3.31	5	0.030	18.13	1.66	0.16	1.43	0.30	3.79
												Seed	3.69	10	0.040	18.69	1.40	0.19	1.60	0.37	4.21
668+70	675+15	R	645.00	2.00	3.00	3.00	0.0045	4.10	4.70	0.62	2.97	Seed	2.90	5	0.030	22.91	2.17	0.24	8.61	0.86	7.18
												Seed	3.18	10	0.040	24.44	1.80	0.29	9.46	1.03	8.20



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 RAB A

Description : STA. 666+12 to 675+15 LT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
666+12	668+29	L	217.00	2.00	3.00	3.00	0.0057	0.38	0.38	0.76	0.29	Seed	3.35	5	0.030	17.72	1.30	0.09	0.97	0.27	3.60
												Seed	3.74	10	0.040	18.23	1.09	0.12	1.08	0.33	3.98
668+60	675+15	L	655.00	2.00	3.00	3.00	0.0035	1.04	1.42	0.75	1.07	Seed	2.77	5	0.030	24.66	1.49	0.12	2.96	0.55	5.27
												Seed	3.03	10	0.040	26.54	1.24	0.14	3.24	0.66	5.94



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 RAB A

Description : STA. 684+00 to 675+15 RT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
682+88	Concent							0.13		0.85	0.11					10.00					
684+00	675+15	R	885.00	2.00	3.00	3.00	0.0075	4.65	4.78	0.62	2.99	Seed	2.65	5	0.030	26.54	2.57	0.34	7.93	0.73	6.41
												Seed	2.96	10	0.040	27.61	2.14	0.41	8.86	0.89	7.33



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 RAB A

Description : STA. 681+87 to 677+71 LT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
681+87	680+99	L	88.00	2.00	3.00	3.00	0.0178	0.22	0.22	0.82	0.18	Seed	3.55	5	0.030	15.87	1.67	0.17	0.64	0.16	2.93
												Seed	4.00	10	0.040	16.02	1.45	0.22	0.72	0.19	3.16
680+53	677+71	L	282.00	2.00	3.00	3.00	0.0057	0.47	0.69	0.77	0.54	Seed	3.24	5	0.030	18.85	1.54	0.13	1.76	0.37	4.21
												Seed	3.61	10	0.040	19.55	1.29	0.16	1.96	0.45	4.71



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 RAB B

Description : STA. 1727+25 to 1736+55 LT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1735+50	1734+48	L	102.00	0.00	14.00	50.00	0.0078	0.13	0.13	0.69	0.09	Seed	3.37	5	0.030	17.53	0.68	0.06	0.30	0.12	7.56
												Seed	3.77	10	0.040	17.98	0.54	0.07	0.34	0.14	8.94
1731+85	Concent							0.43		0.86	0.46					10.00					
1731+85	1730+25	L	160.00	2.00	3.00	2.00	0.0023	0.36	0.92	0.78	0.74	Seed	3.16	5	0.030	19.65	1.24	0.08	2.34	0.56	4.78
												Seed	3.51	10	0.040	20.50	1.03	0.10	2.60	0.68	5.40
1727+70	Concent							0.11		0.82	0.83					10.00					
1727+70	1727+25	L	45.00	2.00	3.00	2.00	0.0044	0.13	1.16	0.77	0.93	Seed	3.12	5	0.030	20.10	1.67	0.15	2.91	0.53	4.63
												Seed	3.46	10	0.040	21.04	1.39	0.18	3.22	0.64	5.21



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 RAB B

Description : STA. 1734+73 to 1736+44 RT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1734+73	Concent							0.31		0.89	0.28					10.00					
1735+97	Concent							0.05		0.80	0.32					10.00					
1734+73	1736+44	R	200.00	2.00	3.00	3.00	0.0025	0.08	0.44	0.63	0.37	Seed	3.31	5	0.030	18.13	1.03	0.06	1.21	0.38	4.26
												Seed	3.69	10	0.040	18.73	0.86	0.07	1.35	0.46	4.77



DITCH ANALYSIS

PID : 116570 **Date :** 04/10/2025 **Project :** ERI-US 0006

Location : US 0006 RAB B

Description : STA. 1736+90 to 1741+17 LT/RT

Designer : KAH

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1736+97	1737+77	L	70.00	0.00	20.00	20.00	0.0196	0.08	0.08	0.63	0.05	Seed	3.50	5	0.030	16.25	0.94	0.12	0.18	0.10	3.87
												Seed	3.94	10	0.040	16.50	0.78	0.14	0.20	0.11	4.51
1738+21	1737+77	L	44.00	0.00	20.00	20.00	0.0316	0.07	0.15	0.71	0.10	Seed	3.44	5	0.030	16.81	1.29	0.23	0.34	0.12	4.62
												Seed	3.86	10	0.040	17.17	1.07	0.26	0.39	0.13	5.37
1737+78	Concent							0.77		0.89	0.79					10.00					
1736+90	Concent							0.05		0.80	0.83					10.00					
1737+78	1737+13	R	240.00	2.00	3.00	3.00	0.0042	0.16	1.13	0.69	0.94	Seed	3.20	5	0.030	19.27	1.59	0.14	2.99	0.53	5.15
												Seed	3.55	10	0.040	20.10	1.33	0.17	3.32	0.64	5.83



DITCH ANALYSIS

PID : 116570 **Date :** 07/23/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** RAMP A

Description : Ditch From Sta. 866+87 to Sta. 865+21

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
866+87	865+21	R	166.00	4.00	3.00	3.00	0.0611	0.40	0.40	0.50	0.20	Seed	3.50	5	0.030	16.28	2.14	0.29	0.69	0.08	4.46
												Seed	3.94	10	0.040	16.47	1.85	0.37	0.78	0.10	4.59



DITCH ANALYSIS

PID : 116570 **Date :** 07/23/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** RAMP C
Description : Ditch From Sta. 740+69 to Sta. 743+75 **Designer :** WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable. If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
740+69	741+75		106.00	6.00	4.00	3.00	0.0192	0.35	0.35	0.50	0.17	Seed	3.49	5	0.030	16.42	1.23	0.09	0.60	0.08	6.55
												Seed	3.92	10	0.040	16.63	1.07	0.12	0.68	0.10	6.70
741+74	Concent							0.17		0.90	0.33					15.00					
741+75	743+75	L	200.00	6.00	6.00	3.00	0.0108	0.54	1.06	0.50	0.60	Seed	3.27	5	0.030	18.53	1.54	0.12	1.95	0.19	7.67
												Seed	3.65	10	0.040	19.09	1.33	0.16	2.18	0.23	8.09



DITCH ANALYSIS

PID : 116570 **Date :** 07/23/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** RAMP C-SUP
Description : Ditch From Sta.48+57 to Sta.49+87 **Designer :** WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
48+57	49+87	R	127.00	6.00	3.00	3.00	0.0704	0.25	0.25	0.90	0.22	Seed	3.53	5	0.030	16.03	2.01	0.27	0.78	0.06	6.37
												Seed	3.98	10	0.040	16.18	1.78	0.35	0.88	0.08	6.48



DITCH ANALYSIS

PID : 116570 **Date :** 07/23/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** RAMP D

Description : Ditch From Sta. 782+00 to Sta.780+00 and Sta 791+80 to Sta 790+00

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
781+68	Concent							0.23		0.89	0.20						10.00				
780+60	Concent							0.23		0.83	0.40						10.00				
782+00	780+00	L	200.00	6.00	4.00	3.00	0.0418	0.22	0.68	0.50	0.51	Seed	3.49	5	0.030	16.41	2.33	0.31	1.76	0.12	6.83
												Seed	3.93	10	0.040	16.61	2.02	0.39	1.98	0.15	7.05
791+80	790+00	L	180.00	6.00	4.00	3.00	0.0536	0.18	0.86	0.50	0.60	Seed	3.37	5	0.030	17.53	2.65	0.39	2.00	0.12	6.83
												Seed	3.78	10	0.040	17.90	2.29	0.50	2.25	0.15	7.05
790+00	Concent							0.10		0.90	0.69						10.00				



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from 1762+64 to Retention Basin

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1762+64	1763+10	R	46.00	4.00	7.00	3.00	0.0128	0.08	0.08	0.61	0.05	Seed	3.53	5	0.030	16.00	0.74	0.04	0.17	0.05	4.54
												Seed	3.98	10	0.040	16.17	0.66	0.05	0.19	0.07	4.67



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from 1765+00 to Retention Basin

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1765+00	1764+30	R	72.00	4.00	4.00	3.00	0.0026	0.02	0.02	0.58	0.01	Seed	3.15	5	0.030	19.81	0.29	0.01	0.04	0.03	4.23
												Seed	3.63	10	0.040	19.25	0.25	0.01	0.04	0.04	4.30



DITCH ANALYSIS

PID : 116570 **Date :** 07/01/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** SR 2 WB Exit Ramp Right
Description : Ditch from Sta 810+67 to 812+64 **Designer :** HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
810+67	812+64	R	197.00	4.00	3.00	3.00	0.0293	0.38	0.38	0.50	0.19	Seed	3.43	5	0.030	16.96	1.65	0.17	0.64	0.09	4.55
												Seed	3.85	10	0.040	17.24	1.44	0.21	0.72	0.12	4.69



DITCH ANALYSIS

PID : 116570 **Date :** 06/25/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Left

Description : Ditch from Sta 1743+98 to Sta 1744+46

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1744+46	1743+98	L	48.00	4.00	4.00	4.00	0.0029	0.39	0.39	0.81	0.32	Seed	3.55	5	0.030	15.86	0.92	0.04	1.12	0.24	5.96
												Seed	4.00	10	0.040	16.01	0.79	0.06	1.27	0.31	6.45



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Left

Description : Ditch from Sta 1744+50 to Sta 1745+50

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1744+50	1745+50	L	100.00	2.00	3.00	3.00	0.0029	0.09	0.09	0.75	0.07	Seed	3.37	5	0.030	17.49	0.64	0.03	0.23	0.15	2.87
												Seed	3.77	10	0.040	17.98	0.55	0.03	0.25	0.18	3.10



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Left

Description : Ditch from Sta 1746+38 to Sta 1747+00

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1746+38	1747+00	L	62.00	2.00	4.00	3.00	0.0073	0.08	0.08	0.68	0.06	Seed	3.51	5	0.030	16.22	0.81	0.05	0.20	0.10	2.71
												Seed	3.95	10	0.040	16.42	0.70	0.06	0.22	0.13	2.90



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Left

Description : Ditch from Sta 1747+65 to STA 1747+00

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1747+65	1747+00	L	65.00	2.00	5.00	3.00	0.0025	0.08	0.08	0.63	0.05	Seed	3.43	5	0.030	16.91	0.56	0.02	0.18	0.13	3.03
												Seed	3.85	10	0.040	17.29	0.48	0.02	0.20	0.16	3.29



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Left

Description : Ditch from Sta 1781+90 to Sta 1784+00

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1781+90	1784+00	L	210.00	3.00	3.00	3.00	0.0027	0.42	0.42	0.77	0.32	Seed	3.27	5	0.030	18.51	0.95	0.05	1.05	0.28	4.71
												Seed	3.65	10	0.040	19.14	0.81	0.06	1.17	0.35	5.13



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Left

Description : Ditch from Sta 1784+20 to 1784+00

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1784+20	1784+00	L	20.00	3.00	5.00	3.00	0.0515	0.05	0.05	0.80	0.04	Seed	3.62	5	0.030	15.29	1.15	0.12	0.14	0.04	3.30
												Seed	4.09	10	0.040	15.31	1.06	0.15	0.15	0.05	3.37



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Left

Description : Ditch from Sta 1784+50 to Sta 1788+80

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1784+50	1786+97	L	247.00	3.00	3.00	3.00	0.0024	0.31	0.31	0.75	0.23	Seed	3.15	5	0.030	19.75	0.83	0.04	0.73	0.24	4.42
												Seed	3.51	10	0.040	20.57	0.71	0.04	0.81	0.30	4.77



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Left

Description : Ditch from Sta 1788+80 to 1786+97

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1788+80	1786+97	L	183.00	3.00	3.00	3.00	0.0031	0.27	0.27	0.77	0.21	Seed	3.28	5	0.030	18.39	0.88	0.04	0.69	0.21	4.29
												Seed	3.67	10	0.040	18.94	0.75	0.05	0.77	0.27	4.63



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** Rye Beach Left
Description : Ditch from Sta 163+15 to Sta 164+35 **Designer :** WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
164+35	163+15	L	120.00	2.00	3.00	3.00	0.0024	0.16	0.16	0.64	0.10	Seed	3.34	5	0.030	17.76	0.69	0.03	0.34	0.19	3.16
												Seed	3.28	5	0.040	18.42	0.57	0.03	0.34	0.22	3.32



DITCH ANALYSIS

PID : 116570 **Date :** 07/23/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** RAMP B
Description : Ditch From Sta. 55+30 to Sta. 55+71 **Designer :** WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
55+30	55+71	R	63.44	10.00	2.00	3.00	0.1042 *	0.11	0.11	0.50	0.06	Seed	3.54	5	0.030	15.96	1.11	0.11	0.19	0.02	10.09
												Seed	3.99	10	0.040	16.07	0.96	0.15	0.22	0.02	10.11



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** RAMP B

Description : Ditch From Sta. 810+67 to Sta. 812+64

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
810+67	811+89	R	122.00	4.00	3.00	3.00	0.0313	0.17	0.17	0.50	0.08	Seed	3.46	5	0.030	16.63	1.24	0.11	0.29	0.06	4.34
												Seed	3.90	10	0.040	16.85	1.08	0.14	0.33	0.07	4.44
811+89	Concent							0.11		0.90	0.18					15.00					
811+89	812+65	R	76.00	4.00	3.00	3.00	0.0326	0.20	0.48	0.50	0.28	Seed	3.39	5	0.030	17.27	1.96	0.23	0.96	0.11	4.68
												Seed	3.81	10	0.040	17.58	1.71	0.29	1.08	0.14	4.85



DITCH ANALYSIS

PID : 116570 **Date :** 06/26/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Left

Description : Ditch from Sta 1791+20 to Sawmill Creek

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1791+20	1795+40	L	420.00	4.00	2.00	2.00	0.0201	1.01	1.01	0.70	0.71	Seed	3.33	5	0.030	17.85	2.38	0.28	2.35	0.22	4.89
												Seed	3.74	10	0.040	18.29	2.06	0.35	2.64	0.28	5.13



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Left

Description : Ditch from 1798+20 to Sawmill Creek

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1798+20	1796+30	L	190.00	4.00	2.00	2.00	0.0042	0.67	0.67	0.76	0.51	Seed	3.38	5	0.030	17.41	1.28	0.08	1.72	0.29	5.17
												Seed	3.79	10	0.040	17.79	1.10	0.10	1.93	0.37	5.48



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from STA.1744+97 to STA.1744+80

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1744+97	1744+80	R	17.00	4.00	4.00	2.00	0.0029	0.38	0.38	0.70	0.27	Seed	3.61	5	0.030	15.31	0.90	0.04	0.96	0.23	5.37
												Seed	4.08	10	0.040	15.36	0.78	0.05	1.09	0.29	5.72



DITCH ANALYSIS

PID : 116570 **Date :** 06/25/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch ofrom Sta 1745+30 to Sta 1748+97

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1745+30	1748+97	R	367.00	4.00	4.00	2.00	0.0147	0.63	0.63	0.77	0.49	Seed	3.30	5	0.030	18.23	1.83	0.18	1.60	0.19	5.14
												Seed	3.69	10	0.040	18.76	1.57	0.22	1.79	0.24	5.45



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1751+90 to Sta 1752+10

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1751+90	1752+10	R	10.00	4.00	6.00	3.00	0.0110	0.04	0.04	0.54	0.02	Seed	3.62	5	0.030	15.29	0.57	0.02	0.08	0.03	4.29
												Seed	4.08	10	0.040	15.35	0.48	0.03	0.09	0.04	4.39



DITCH ANALYSIS

PID : 116570 **Date :** 06/26/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1752+30 to 1752+00

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1752+30	1752+00	R	50.00	4.00	5.00	3.00	0.0010	0.13	0.13	0.50	0.06	Seed	3.40	5	0.030	17.17	0.37	0.01	0.22	0.13	5.03
												Seed	3.82	10	0.040	17.54	0.33	0.01	0.24	0.16	5.29



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1757+55 to Sta 1757+75

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1757+55	1757+75	R	20.00	4.00	5.00	2.00	0.0340	0.20	0.20	0.57	0.12	Seed	3.62	5	0.030	15.23	1.48	0.14	0.42	0.07	4.47
												Seed	4.09	10	0.040	15.26	1.29	0.18	0.48	0.09	4.60



DITCH ANALYSIS

PID : 116570 **Date :** 06/25/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1762+10 to Sta 1757+75

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1762+10	1757+75	R	435.00	4.00	4.00	4.00	0.0091	1.41	1.41	0.54	0.76	Seed	3.22	5	0.030	19.00	1.74	0.16	2.45	0.28	6.20
												Seed	3.59	10	0.040	19.68	1.48	0.20	2.73	0.34	6.74



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1756+30 to Sta 1756+95

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1756+30	1756+95	R	65.00	4.00	6.00	2.00	0.0020	0.42	0.42	0.56	0.24	Seed	3.48	5	0.030	16.46	0.74	0.03	0.82	0.23	5.83
												Seed	3.92	10	0.040	16.70	0.63	0.04	0.93	0.29	6.30



DITCH ANALYSIS

PID : 116570 **Date :** 06/25/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1757+30 to 1756+95

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1757+30	1756+95	R	35.00	4.00	4.00	2.00	0.0074	0.04	0.04	0.71	0.03	Seed	3.52	5	0.030	16.10	0.51	0.02	0.10	0.05	4.29
												Seed	3.98	10	0.040	16.20	0.47	0.03	0.12	0.06	4.35



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from 1765+42 to Sta 1756+00

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1765+42	1765+00	R	62.00	4.00	6.00	3.00	0.0147	0.15	0.15	0.58	0.09	Seed	3.53	5	0.030	16.03	0.97	0.07	0.30	0.07	4.65
												Seed	3.98	10	0.040	16.17	0.85	0.08	0.34	0.09	4.82



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1766+00 to Sta 1766+15

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1766+00	1766+15	R	19.00	4.00	5.00	3.00	0.0168	0.14	0.14	0.62	0.09	Seed	3.61	5	0.030	15.30	1.07	0.07	0.32	0.07	4.56
												Seed	4.08	10	0.040	15.35	0.90	0.10	0.36	0.09	4.73



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1766+30 to Sta 1766+15

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1766+30	1766+15	R	15.00	4.00	5.00	3.00	0.0293	0.10	0.10	0.59	0.06	Seed	3.62	5	0.030	15.23	1.08	0.09	0.22	0.05	4.39
												Seed	4.09	10	0.040	15.26	0.94	0.11	0.25	0.06	4.49



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Sta 1766+60 to Sta 1767+54

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1766+60	1767+54	R	94.00	4.00	5.00	3.00	0.0022	0.28	0.28	0.60	0.17	Seed	3.39	5	0.030	17.27	0.67	0.03	0.57	0.18	5.44
												Seed	3.81	10	0.040	17.63	0.58	0.03	0.64	0.23	5.80



DITCH ANALYSIS

PID : 116570 **Date :** 06/26/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Sta 1768+50 to Sta 1767+54

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1768+50	1767+54	R	96.00	4.00	4.00	3.00	0.0028	0.18	0.18	0.62	0.11	Seed	3.38	5	0.030	17.43	0.63	0.02	0.38	0.13	4.94
												Seed	3.79	10	0.040	17.81	0.56	0.03	0.43	0.17	5.17



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1768+88 to 1769+00

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1768+88	1769+00	R	12.00	4.00	5.00	3.00	0.0242	0.06	0.06	0.64	0.04	Seed	3.62	5	0.030	15.23	0.86	0.06	0.14	0.04	4.32
												Seed	4.09	10	0.040	15.26	0.76	0.08	0.16	0.05	4.41



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1769+00 to 1769+20

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1769+20	1769+00	R	20.00	4.00	4.00	3.00	0.0025	0.06	0.06	0.64	0.04	Seed	3.56	5	0.030	15.74	0.44	0.01	0.14	0.08	4.53
												Seed	4.02	10	0.040	15.85	0.38	0.02	0.16	0.10	4.68



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1769+60 to Sta 1771+54

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1771+54	1769+60	R	194.00	4.00	6.00	3.00	0.0062	0.36	0.36	0.64	0.23	Seed	3.32	5	0.030	18.01	1.04	0.06	0.77	0.16	5.43
												Seed	3.71	10	0.040	18.53	0.89	0.08	0.86	0.20	5.79



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1771+90 to Sta 1772+10

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1771+90	1772+10	R	20.00	4.00	5.00	3.00	0.0225	0.07	0.07	0.70	0.05	Seed	3.61	5	0.030	15.37	0.90	0.06	0.17	0.05	4.37
												Seed	4.07	10	0.040	15.42	0.77	0.08	0.19	0.06	4.47



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1773+14 TO Sta 1772+10

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1773+14	1772+10	R	104.00	4.00	5.00	3.00	0.0050	0.40	0.40	0.55	0.22	Seed	3.45	5	0.030	16.75	0.97	0.05	0.76	0.17	5.33
												Seed	3.88	10	0.040	17.03	0.84	0.07	0.85	0.21	5.68



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1773+30 to Sta 1774+00

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1773+30	1774+00	R	70.00	4.00	4.00	4.00	0.0101	0.24	0.24	0.58	0.14	Seed	3.52	5	0.030	16.12	1.04	0.07	0.48	0.10	4.84
												Seed	3.96	10	0.040	16.29	0.91	0.08	0.54	0.13	5.05



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1774+19 to Sta 1774+00

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1774+19	1774+00	R	19.00	4.00	6.00	2.00	0.0453	0.10	0.10	0.56	0.06	Seed	3.62	5	0.030	15.25	1.23	0.11	0.21	0.04	4.32
												Seed	4.09	10	0.040	15.30	1.09	0.14	0.23	0.05	4.41



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1774+40 to Sta 1777+00

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1774+40	1777+00	R	260.00	4.00	3.00	2.00	0.0048	0.79	0.79	0.57	0.45	Seed	3.29	5	0.030	18.33	1.25	0.08	1.47	0.25	5.27
												Seed	3.67	10	0.040	18.88	1.07	0.10	1.64	0.32	5.60



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta. 1777+40 TO 1777+00

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1777+40	1777+00	R	40.00	4.00	3.00	2.00	0.0103	0.16	0.16	0.57	0.09	Seed	3.57	5	0.030	15.71	0.92	0.05	0.33	0.09	4.43
												Seed	4.02	10	0.040	15.81	0.82	0.07	0.38	0.11	4.54



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1777+63 to Sta 1780+00

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1777+63	1780+00	R	237.00	4.00	4.00	2.00	0.0017	1.39	1.39	0.54	0.75	Seed	3.24	5	0.030	18.76	1.01	0.05	2.44	0.45	6.71
												Seed	3.62	10	0.040	19.44	0.86	0.06	2.72	0.56	7.35



DITCH ANALYSIS

PID : 116570 **Date :** 06/26/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1780+00 to Sta 1783+00

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1780+00	1783+00	R	300.00	4.00	2.00	3.00	0.0015	1.77	1.77	0.53	0.94	Seed	3.17	5	0.030	19.53	1.06	0.05	2.98	0.53	6.65
												Seed	3.53	10	0.040	20.33	0.90	0.06	3.32	0.66	7.28



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Left

Description : Ditch from Sta 1783+00 to 1784+90

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1783+00	1784+80	R	180.00	4.00	4.00	3.00	0.0025	1.02	1.02	0.50	0.51	Seed	3.33	5	0.030	17.87	1.02	0.05	1.70	0.32	6.27
												Seed	3.73	10	0.040	18.38	0.86	0.06	1.90	0.41	6.84



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Left

Description : Ditch from Sta. 1784+90 TO Sta.1784+80

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1784+90	1784+80	R	10.00	4.00	3.00	3.00	0.0050	0.09	0.09	0.57	0.05	Seed	3.62	5	0.030	15.28	0.59	0.02	0.19	0.08	4.45
												Seed	4.09	10	0.040	15.32	0.51	0.03	0.21	0.10	4.58



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1785+20 to 1785+75

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1785+20	1785+75	R	55.00	4.00	4.00	3.00	0.0044	0.46	0.46	0.53	0.25	Seed	3.54	5	0.030	15.93	0.98	0.05	0.87	0.19	5.33
												Seed	3.99	10	0.040	16.07	0.85	0.07	0.98	0.24	5.67



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1785+99 to Sta 1785+75

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1785+99	1785+75	R	24.00	2.00	4.00	3.00	0.0192	0.12	0.12	0.60	0.07	Seed	3.61	5	0.030	15.33	1.25	0.11	0.26	0.09	2.62
												Seed	4.08	10	0.040	15.37	1.07	0.13	0.29	0.11	2.79



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1787+53 to Sta 1789+75

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1787+53	1789+75	R	222.00	4.00	4.00	3.00	0.0090	0.71	0.71	0.58	0.41	Seed	3.37	5	0.030	17.46	1.46	0.11	1.40	0.20	5.42
												Seed	3.78	10	0.040	17.87	1.25	0.14	1.57	0.26	5.79



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1789+97 to Sta 1789+75

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1789+97	1789+75	R	22.00	4.00	3.00	3.00	0.0036	0.09	0.09	0.58	0.05	Seed	3.57	5	0.030	15.67	0.53	0.02	0.18	0.08	4.48
												Seed	4.03	10	0.040	15.76	0.47	0.02	0.21	0.10	4.61



DITCH ANALYSIS

PID : 116570 **Date :** 06/25/2025 **Project :** ERIE-US 6 CORIDOR **Location :** US 6 Left
Description : Ditch from Sta 1790+14 to Sta 1790+75 **Designer :** WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1790+14	1790+75	61.00	4.00	4.00	3.00	0.0087	0.20	0.20	0.58	0.11	Seed	3.52	5	0.030	16.08	0.94	0.05	0.40	0.10	4.70
											Seed	3.97	10	0.040	16.23	0.81	0.07	0.46	0.13	4.88



DITCH ANALYSIS

PID : 116570 **Date :** 06/25/2025 **Project :** ERIE-US 6 CORIDOR **Location :** US 6 Left
Description : Ditch from Sta 1791+04 to Sta 1790+75 **Designer :** WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1791+04	1790+75	R	29.00	4.00	5.00	3.00	0.0038	0.14	0.14	0.63	0.09	Seed	3.56	5	0.030	15.74	0.66	0.03	0.31	0.11	4.86
												Seed	4.02	10	0.040	15.85	0.55	0.03	0.35	0.14	5.12



DITCH ANALYSIS

PID : 116570 **Date :** 07/01/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** Rye Beach Left

Description : Ditch from Sta 1791+50 to Sta 1793+40

Designer :

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1791+50	1793+40	R	190.00	4.00	3.00	3.00	0.0232	0.54	0.54	0.59	0.32	Seed	3.46	5	0.030	16.68	1.86	0.19	1.10	0.13	4.81
												Seed	3.42	5	0.040	17.00	1.54	0.23	1.09	0.16	4.95



DITCH ANALYSIS

PID : 116570 **Date :** 07/01/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** Rye Beach Left

Description : Ditch from Sta 1793+58 to Sta 1793+40

Designer :

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION	SIDE	LENGTH	RADIUS	IN	BACK	GRADE	AREA	AREA	RUNOFF	CA	PROTECT	RAIN	STORM	MANN.	TIME	VEL.	SHEAR	DESIGN	DEPTH	WIDTH
BEGIN	END	(ft.)	WIDTH	SLOPE	SLOPE	(ft./ft.)	(acres)	SUM	COEFF.	(Sum)	TYPE	INT.	FREQ.	COEFF.	FLOW	FLOW	(lbs./	FLOW	FLOW	FLOW
			(ft.)	(ft./ft.)	(ft./ft.)			(acres)				(in./hr.)	(yrs.)		(min.)	(fps.)	sq.ft.)	(cfs.)	(ft.)	(ft.)
1793+58	1793+40	18.00	4.00	3.00	3.00	0.0044	0.19	0.19	0.59	0.11	Seed	3.60	5	0.030	15.39	0.76	0.03	0.41	0.12	4.74
											Seed	3.60	5	0.040	15.46	0.64	0.04	0.41	0.15	4.87



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** Rye Beach SUP

Description : Ditch from Sta 126+00 to Sta 125+40

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
126+00	125+40	R	60.00	2.00	3.00	8.00	0.0050	0.07	0.07	0.70	0.05	Seed	3.47	5	0.030	16.53	0.67	0.03	0.16	0.10	3.06
												Seed	3.90	10	0.040	16.80	0.55	0.04	0.18	0.12	3.36



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** Rye Beach SUP

Description : Ditch from Sta 122+00 to Sta 125+40

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
122+00	125+40	R	340.00	2.00	3.00	10.00	0.0059	0.40	0.40	0.70	0.28	Seed	3.14	5	0.030	19.90	1.11	0.08	0.89	0.23	4.97
												Seed	3.49	10	0.040	20.79	0.94	0.10	0.98	0.28	5.60



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** Rye Beach SUP
Description : Ditch from Sta 131+77 to Sta 127+21 **Designer :** WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
131+50	127+21	R	429.00	2.00	3.00	3.00	0.0030	0.59	0.59	0.70	0.41	Seed	3.03	5	0.030	21.15	1.10	0.07	1.25	0.37	4.19
												Seed	3.35	10	0.040	22.29	0.93	0.08	1.38	0.45	4.67



DITCH ANALYSIS

PID : 116570 **Date :** 07/22/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** Rye Beach SUP

Description : Ditch from Sta 126+00 to Sta 127+21

Designer : WK

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
126+00	127+21	R	121.00	2.00	3.00	3.00	0.0039	0.14	0.14	0.70	0.10	Seed	3.37	5	0.030	17.45	0.82	0.04	0.33	0.16	2.97
												Seed	3.78	10	0.040	17.85	0.69	0.05	0.37	0.20	3.22



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1753+30 to Boos Ditch

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1753+30	1754+10	R	80.00	4.00	4.00	3.00	0.0110	0.17	0.17	0.68	0.12	Seed	3.50	5	0.030	16.30	1.01	0.06	0.41	0.09	4.66
												Seed	3.94	10	0.040	16.50	0.89	0.08	0.46	0.12	4.83



DITCH ANALYSIS

PID : 116570 **Date :** 07/21/2025 **Project :** ERIE-US 6-CORRIDOR **Location :** US 6 Right

Description : Ditch from Sta 1755+80 to Boos Ditch

Designer : HRT

Rainfall Area : A

Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
1755+80	1754+90	R	90.00	4.00	4.00	3.00	0.0078	0.16	0.16	0.69	0.11	Seed	3.46	5	0.030	16.69	0.89	0.05	0.37	0.10	4.68
												Seed	3.89	10	0.040	16.92	0.77	0.06	0.42	0.12	4.86



DITCH ANALYSIS

PID : 116570 **Date :** 07/01/2025 **Project :** ERIE-US 6-CORRIDOR

Location : Rye Beach Right

Description : Ditch from Sta 142+24 to Sta 143+60

Designer : HRT

Rainfall Area : A

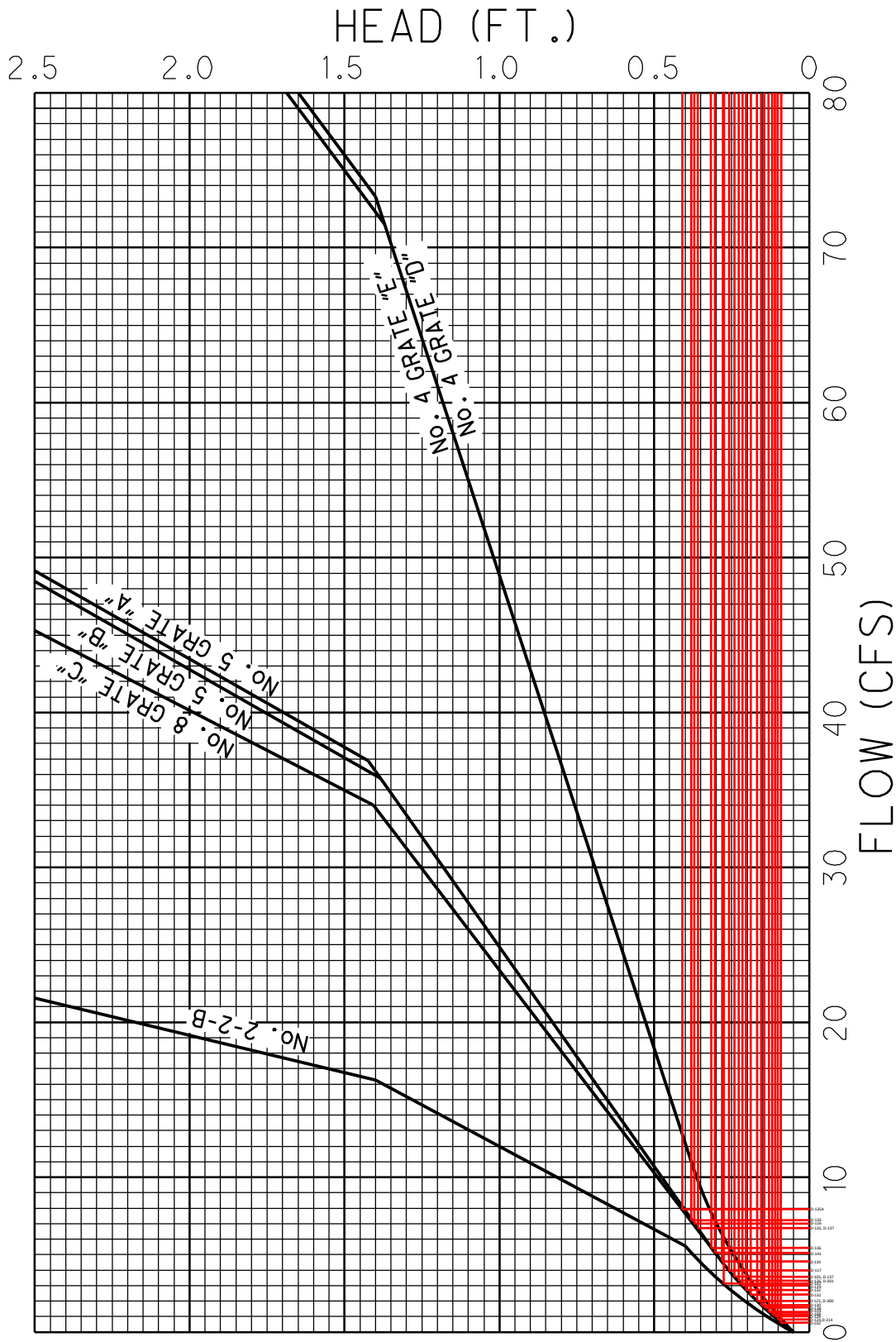
Allowable Shears

	Seed:	0.40	Jute Mat:	0.45	Temporary Mat:	1.00
Permanent Mat	Type 1:	2.00	Type 2:	3.00	Type 3:	5.00
RCP	Type B:	6.00				

(*) Warning: Grade is steeper than allowable.

If value is parantheses, design parameters have been exceeded. - See user manual.

STATION BEGIN	STATION END	SIDE	LENGTH (ft.)	RADIUS WIDTH (ft.)	IN SLOPE (ft./ft.)	BACK SLOPE (ft./ft.)	GRADE (ft./ft.)	AREA (acres)	AREA SUM (acres)	RUNOFF COEFF.	CA (Sum)	PROTECT TYPE	RAIN INT. (in./hr.)	STORM FREQ. (yrs.)	MANN. COEFF.	TIME FLOW (min.)	VEL. FLOW (fps.)	SHEAR (lbs./ sq.ft.)	DESIGN FLOW (cfs.)	DEPTH FLOW (ft.)	WIDTH FLOW (ft.)
143+60	142+24	R	130.00	4.00	8.00	3.00	0.0212	0.25	0.25	0.58	0.14	Seed	3.46	5	0.030	16.63	1.30	0.11	0.49	0.08	4.93
												Seed	3.89	10	0.040	16.87	1.12	0.14	0.55	0.11	5.18



CAPACITY OF A GRATE CATCH BASIN IN A SUMP
(WATER PONDED ON THE GRATE)

APPENDIX 5



STORM SEWER SYSTEM

PID : 116570 **Date :** 03/27/2025 **Project :** ERI-6

Location : Sta. 611+06.05 to Sta. 598+57.74

Description : Storm Run in front of Sports Force Park D801-HW801

Designer : BLC

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 0.00

Tailwater Elevation (ft.): 0.00

JUNCTION From	STATION To	From To	Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
			Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
HW80	D803		1.00 1.00	0.78 0.78	10.00	4.94	4.91	3.9	3.8	15	237.0	0.0123	576.10 573.18	5.34	6.68	0.0047	576.81 574.80	578.78 578.48	1.97	1.43	MH 3 0.015
D803	D802		0.89 1.89	0.65 1.43	10.74	4.80	4.91	6.9	7.0	43	339.0	0.0020	573.20 572.51	3.07	45.06	0.0001	574.80 574.78	578.48 577.68	3.68	1.70	MH 3 0.015
D802	D801		0.47 2.36	0.33 1.76	12.58	4.48	4.91	7.9	8.6	48	183.0	0.0009	572.51 572.34	2.38	40.82	0.0000	574.78 574.77	577.68 577.88	2.90	1.17	MH 3 0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 03/27/2025 **Project :** ERI-6

Location : Sta. 633+83

Description : Storm Run In Front Of Motel P805-P806

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 0.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.) (25 yrs.)	(10 yrs.) (25 yrs.)	(10 yrs.) (25 yrs.)	(cfs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
HW80	D804			2.55 2.55	1.96 1.96	16.00	4.00	4.48	7.9	8.8	18	215.0	0.0083	576.92 575.14	5.33	8.91	0.0093	578.65 576.65	579.92 578.42	1.27	1.50	HW Half He 0.015
D804	HW80			0.29 2.84	0.22 2.19	16.67	3.92	4.48	8.6	9.8	18	69.0	0.0093	575.14 574.50	5.65	9.43	0.0115	576.65 575.85	578.42 575.50	1.77	1.78	CB 0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 03/27/2025 **Project :** ERI-6

Location : STA. 696+22.33 to STA.698+00.33

Description : P810-P811

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION	Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
HW81	D806	696+2233	0.21	0.15	10.00	4.94	5.61	0.7	0.8	12	32.6	0.0521	585.20	5.75	7.58	0.0007	585.43	586.20	0.77	0.00	HW Half He
	begin	696+2888	0.21	0.15									583.50				584.19	583.61			0.015
D806	HW81	698+2888	0.06	0.04	10.09	4.92	5.36	0.9	1.0	12	164.0	0.0030	583.50	2.22	1.83	0.0011	584.06	585.44	1.38	0.94	CB 2-2B
	final	698+0028	0.27	0.19									583.00				583.71	584.25			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 04/02/2025 **Project :** ERI-006

Location : Perkins RAB

Description : D601-HW603 STA. 660+69.17

Designer : BLC

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION	ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
D601	H603		0.14	0.13	10.00	4.94	5.62	0.6	0.7	12	18.0	0.0478	577.86	5.34	7.26	0.0005	578.08	581.87	3.79	3.01	I 3D
			0.14	0.13									577.00				577.68	577.17			0.015



STORM SEWER SYSTEM

PID : 116570 Date : 02/02/2024 Project : ERI-006

Location : Perkins RAB

Description : D602-HW608

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION	ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
D602	H608		0.14	0.13	10.00	4.94	5.60	0.6	0.7	12	27.0	0.0126	585.60	3.36	3.73	0.0005	585.95	587.53	1.58	0.93	CB 3A
			0.14	0.13									585.26				585.94	586.50			0.015



STORM SEWER SYSTEM

PID : 116570 Date : 02/02/2024 Project : ERI-006

Location : Perkins RAB

Description :D603-HW609

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION	ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
D603	H609		0.11	0.10	10.00	4.94	5.63	0.5	0.6	12	11.0	0.0618	585.70	5.49	8.26	0.0003	585.88	587.70	1.82	1.00	CB 3A
			0.11	0.10									585.02				585.67	586.00			0.015



STORM SEWER SYSTEM

PID : 116570 Date : 02/02/2024 Project : ERI-006

Location : Perkins RAB

Description :D604-HW610

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION	Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(cfs.) (10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
D604	H610		0.20	0.18	10.00	4.94	5.61	0.9	1.0	12	27.0	0.0248	586.17	4.71	5.23	0.0011	586.48	588.18	1.70	1.01	CB 3
			0.20	0.18									585.50				586.21	856.50			0.015



STORM SEWER SYSTEM

PID : 116570 Date : 02/02/2024 Project : ERI-006

Location : Perkins RAB

Description :D605-D606-HW611

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
D605	D606			0.11 0.11	0.10 0.10	10.00	4.94	5.56	0.5	0.6	12	38.0	0.0037	584.69 584.55	2.01	2.02	0.0003	585.22 585.20	588.05 588.19	2.83	2.36	CB 3A 0.015
D606	H611			0.09 0.20	0.08 0.18	10.32	4.88	5.56	0.9	1.0	12	20.0	0.1025	584.55 582.50	7.74	10.63	0.0010	584.76 583.21	588.19 583.50	3.43	2.64	CB 3A 0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 10/13/2025 **Project :** ERI-006

Location : Perkins RAB

Description : D607 - HW614

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION STATION		ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	Σ AREA	Σ CA	TIME	INTENSITY	(cfs.)	(10 yrs.)	(25 yrs.)	DIAM.	LENGTH	SLOPE	IN / OUT	VEL	CAPACITY	SLOPE	IN / OUT	IN / OUT	MINUS	MINUS	MANNING'S
		(acres)		(min.)	(10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	(in.)	(ft.)	(ft./ft.)	(ft.)	(fps.)	(cfs.)	(ft./ft.)	(ft.)	(ft.)	HY GR	CROWN	'n'
D607	H614	0.08	0.07	10.00	4.94	5.59	0.4	0.4	12	50.0	0.0340	584.69	4.06	6.12	0.0002	584.87	587.26	2.39	1.57	CB 3A
		0.08	0.07									582.99				583.62	583.99			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 04/02/2025 **Project :** ERI-006

Location : Perkins RAB

Description : HW616 - HW616 STA. 50+34.99

Designer : BLC

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION	ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
H615	H616		0.27	0.18	10.00	4.94	5.59	0.9	1.0	12	25.0	0.0024	583.68	2.00	1.63	0.0010	584.36	583.68	-0.68	-1.00	HW Half He
			0.27	0.18									583.62				584.33	583.62			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/03/2023 **Project :** ERI-006

Location : Camp Roundabout

Description : HW702-D702-D701-HW701

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.) (25 yrs.)	(10 yrs.) (25 yrs.)	(cfs.) (10 yrs.) (25 yrs.)	(cfs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
H702	D702			0.87 0.87	0.75 0.75	10.00	4.94	5.56	3.7	4.2	18	63.0	0.0033	606.68 606.47	3.22	5.65	0.0021	607.74 607.61	610.95 608.00	3.21	2.77	HW Half He 0.015
D702	D701			0.09 0.96	0.07 0.82	10.33	4.88	5.44	4.0	4.5	18	108.0	0.0030	606.47 606.15	3.12	5.33	0.0024	607.58 607.31	610.95 610.85	3.37	2.98	CB 2-2B 0.015
D701	H701			0.07 1.03	0.06 0.88	10.90	4.77	5.37	4.2	4.7	18	78.0	0.0033	606.15 605.89	3.31	5.65	0.0027	607.27 607.06	610.85 607.00	3.58	3.20	CB 2-2B 0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/02/2023 **Project :** ERI-006

Location : Camp Roundabout

Description : D707-HW704 West Leg, South Side Storm Run

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION From	STATION To	From To	Δ AREA Σ AREA (acres)	Δ CA Σ CA	BEGIN TIME (min.)	RAINFALL		DISCHARGE		PIPE			F/L PIPE IN / OUT (ft.)	MEAN VEL (fps.)	JUST FULL CAPACITY (cfs.)	FRICT SLOPE (ft./ft.)	HYGR EL. IN / OUT (ft.)	COVER IN / OUT (ft.)	COVER MINUS HY GR	COVER MINUS CROWN	INLET TYPE MANNING'S 'n'
						INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)									
D707	D706		0.14 0.14	0.13 0.13	10.00	4.94	5.58	0.6	0.7	12	25.0	0.0040	607.50 607.40	2.21	2.10	0.0005	608.15 608.14	609.94 609.62	1.79	1.44	CB 3 0.015
D706	H704		0.16 0.30	0.14 0.27	10.19	4.91	5.58	1.3	1.5	12	11.0	0.0045	607.40 607.35	2.81	2.24	0.0024	608.14 608.11	609.62 609.00	1.48	1.22	CB 3 0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/28/2025 **Project :** ERI-006

Location : Camp Roundabout

Description : D708-HW705

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA	Σ CA	TIME	INTENSITY	(cfs.)	(10 yrs.)	(25 yrs.)	DIAM.	LENGTH	SLOPE	IN / OUT	VEL	CAPACITY	SLOPE	IN / OUT	IN / OUT	MINUS	MINUS	MANNING'S
				(acres)		(min.)	(10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	(in.)	(ft.)	(ft./ft.)	(ft.)	(fps.)	(cfs.)	(ft./ft.)	(ft.)	(ft.)	HY GR	CROWN	'n'
D708	H705			0.15	0.14	10.00	4.94	5.62	0.7	0.8	12	10.0	0.0050	607.11	2.44	2.35	0.0006	607.75	610.10	2.35	1.99	CB 3
				0.15	0.14									607.06				607.74	608.00			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/02/2023 **Project :** ERI-006

Location : Camp Roundabout

Description : D709-HW703 West Leg, North Side Storm Run

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION From	STATION To	From To	Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
			Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
D709	D705		0.11 0.11	0.10 0.10	10.00	4.94	5.53	0.5	0.5	12	62.0	0.0040	608.90 608.65	2.07	2.11	0.0003	609.32 609.30	612.33 612.20	3.01	2.43	CB 3 0.015
D705	D703		0.10 0.21	0.09 0.19	10.50	4.85	5.31	0.9	1.0	12	161.0	0.0040	608.65 608.00	2.46	2.11	0.0011	609.16 608.71	612.20 611.00	3.04	2.55	CB 3 0.015
D704	D703		0.19 0.40	0.17 0.36	10.00	4.94	5.01	0.8	0.9	12	7.0	0.0143	608.00 607.90	3.82	3.97	0.0008	608.61 608.60	610.40 611.00	1.79	1.40	CB 3 0.015
D703	HW70		0.12 0.52	0.11 0.47	11.59	4.65	5.01	2.2	2.3	15	262.0	0.0027	607.75 607.05	2.59	3.11	0.0018	608.60 607.98	611.00 609.00	2.40	2.00	CB 2-2B 0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/02/2023 **Project :** ERI-006

Location : Camp Roundabout

Description : D710-HW706

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION	Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
D710	H706		0.10	0.09	10.00	4.94	5.61	0.4	0.5	12	11.0	0.0045	607.70	2.11	2.24	0.0003	608.30	610.66	2.36	1.96	CB 3
			0.10	0.09									607.65				608.30	608.50			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/30/2025 **Project :** ERI-006

Location : Camp Roundabout

Description : D716-HW707

Designer : BLS

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION		ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
D716	D714			0.11 0.11	0.10 0.10	10.00	4.94	4.68	0.5	0.5	12	134.0	0.0030	609.22 608.82	1.86	1.81	0.0002	609.60 609.57	612.30 611.57	2.70	2.08	CB 3A 0.015
D714	D712			0.18 0.29	0.16 0.26	11.20	4.72	4.68	1.2	1.2	12	132.0	0.0033	608.82 608.38	2.45	1.92	0.0016	609.57 609.37	611.57 610.89	2.00	1.75	CB 3A 0.015
D713	D712			0.23 0.52	0.21 0.47	15.00	4.13	4.68	0.9	1.0	12	11.0	0.0027	608.41 608.38	2.08	1.73	0.0010	609.38 609.37	610.89 610.89	1.51	1.48	CB 2-2B 0.015
D712	D711			0.23 0.75	0.21 0.68	15.09	4.12	4.68	2.8	3.2	15	50.0	0.0036	608.38 608.20	3.06	3.61	0.0032	609.37 609.21	610.89 610.50	1.52	1.26	CB 3 0.015
D715	D711			0.11 0.86	0.10 0.77	10.00	4.94	4.68	0.5	0.5	12	128.0	0.0030	608.61 608.23	1.85	1.81	0.0002	609.24 609.21	611.50 610.50	2.26	1.89	CB 3A 0.015
D711	H707			0.17 1.03	0.15 0.93	15.36	4.08	4.68	3.8	4.3	15	10.0	0.0100	608.20 608.10	4.90	6.02	0.0060	609.21 609.15	610.50 609.50	1.29	1.05	CB 3 0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : US6 Left and Right

Description : Sta 1744+80 US6 to Sta 1754+39 US6

Designer : MHT

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION	ΔAREA	ΔCA	BEGIN	RAINFALL	DISCHARGE			PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
100	101	1744+80	0.38	0.29	15.00	4.13	4.69	1.2	1.3	12	67.0	0.0097	606.65	3.62	3.27	0.0019	607.11	610.15	3.04	2.50	CB 2-2B
	begin	1744+50	0.38	0.29									606.00				606.74	611.00			0.015
101	102	1744+50	0.39	0.31	15.31	4.09	4.62	2.4	2.8	15	100.0	0.0040	605.75	3.11	3.81	0.0024	606.58	611.00	4.42	4.00	CB 2-2B
		1745+50	0.77	0.60									605.35				606.31	610.30			0.015
102	103	1745+50	0.09	0.07	15.84	4.02	4.52	2.7	3.0	15	150.0	0.0050	605.35	3.47	4.26	0.0029	606.17	610.30	4.13	3.70	CB 2-2B
		1747+00	0.86	0.67									604.60				605.57	609.30			0.015
103	104	1747+00	0.17	0.14	16.56	3.93	4.44	3.2	3.6	15	198.0	0.0148	604.60	5.45	7.33	0.0041	605.24	609.30	4.06	3.45	CB 2-2B
		1748+97	1.03	0.81									601.67				602.68	605.75			0.015
105	104	1748+97	0.64	0.45	15.00	4.13	4.70	1.9	2.1	12	51.0	0.0051	600.46	3.14	2.37	0.0046	601.25	604.46	3.21	3.00	CB 5
	begin	1748+97	1.67	1.25									600.20				601.01	605.88			0.015
104	106	1748+97	0.06	0.05	17.17	3.86	4.34	5.0	5.7	15	304.0	0.0188	599.95	6.68	8.27	0.0103	600.75	605.88	5.13	4.68	CB 3A
		1752+00	1.73	1.31									594.22				595.33	598.43			0.015
108	107	1752+00	0.16	0.15	10.00	4.94	5.62	0.7	0.8	12	10.0	0.0100	593.85	3.22	3.32	0.0007	594.45	597.80	3.35	2.95	CB 2-2B
	begin	1752+00	1.89	1.45									593.75				594.44	598.42			0.015
108A	107	1751+50	0.30	0.27	10.00	4.94	5.60	1.3	1.5	12	50.0	0.0412	595.81	6.34	6.74	0.0024	596.14	599.81	3.67	3.00	CB 6
	begin	1752+00	2.19	1.72									593.75				594.51	598.42			0.015



STORM SEWER SYSTEM

JUNCTION		STATION From To	ΔAREA Σ AREA (acres)	ΔCA Σ CA	BEGIN TIME (min.)	RAINFALL		DISCHARGE		PIPE			F/L PIPE IN / OUT (ft.)	MEAN VEL (fps.)	JUST FULL CAPACITY (cfs.)	FRICT SLOPE (ft./ft.)	HYGR EL. IN / OUT (ft.)	COVER IN / OUT (ft.)	COVER MINUS HY GR	COVER MINUS CROWN	INLET TYPE MANNING'S 'n'
From	To					(10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)									
107	106	1752+00 1752+00	0.15 2.34	0.14 1.86	10.13	4.92	5.56	2.7	3.1	15	40.0	0.0050	593.50 593.30	3.47	4.26	0.0030	594.40 594.28	598.42 598.43	4.02	3.67	CB 3A 0.015
106	109	1752+00 1753+50	0.13 2.47	0.12 1.98	17.93	3.77	4.29	7.5	8.5	18	150.0	0.0097	593.05 591.60	5.66	9.63	0.0087	594.21 592.91	598.43 596.06	4.22	3.88	CB 3A 0.015
109	113	1753+50 1754+60	0.13 2.60	0.12 2.09	18.37	3.73	4.25	7.8	8.9	18	110.0	0.0114	591.60 590.35	6.10	10.44	0.0095	592.90 591.85	596.06 595.22	3.16	2.96	CB 3A 0.015
112	113 begin	1755+50 1754+60	0.19 2.79	0.17 2.26	10.00	4.94	4.25	0.8	0.7	12	90.0	0.0100	591.75 590.85	3.34	3.32	0.0006	592.08 591.85	595.81 595.22	3.73	3.06	CB 3A 0.015
114	113 begin	1754+60 1754+60	0.18 2.97	0.16 2.43	10.00	4.94	4.25	0.8	0.7	12	40.0	0.0102	591.26 590.85	3.34	3.36	0.0005	591.87 591.85	595.22 595.22	3.35	2.96	CB 3 0.015
113	113A	1754+60 1754+57	0.16 3.13	0.14 2.57	18.67	3.69	4.25	9.5	10.9	21	18.0	0.0056	590.10 590.00	4.83	11.01	0.0063	591.85 591.49	595.22 593.75	3.37	3.37	CB 3 0.015
113A	113B	1754+57 1754+55	0.00 3.13	0.00 2.57	18.73	3.69	4.25	9.5	10.9	21	15.0	0.4720	590.00 582.92	25.07	101.49	0.0063	590.40 584.41	593.75 585.64	3.35	2.00	0.015
113B	115 final	1754+55 1754+54	0.00 3.13	0.00 2.57	18.74	3.69	4.25	9.5	10.9	21	1.4	0.0208	582.92 582.89	8.15	21.32	0.0063	584.39 584.38	585.64 584.64	1.25	0.97	0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : US6 Left and Right

Description : Sta 1757+75 US6 to Sta 1756+94 US6

Designer : MHT

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION	STATION	ΔAREA	ΔCA	BEGIN	RAINFALL	DISCHARGE				PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	Σ AREA	Σ CA	TIME	INTENSITY	(cfs.)	DIAM.	LENGTH	SLOPE	IN / OUT	VEL	CAPACITY	SLOPE	IN / OUT	IN / OUT	IN / OUT	MINUS	MINUS	MINUS	MANNING'S	
		(acres)		(min.)	(10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	(in.)	(ft.)	(ft./ft.)	(ft.)	(fps.)	(cfs.)	(ft./ft.)	(ft.)	HY GR	CROWN		'n'	
116	117	1757+75	1.61	0.97	15.00	4.13	4.69	4.0	4.5	15	81.0	0.0091	591.75	4.78	5.76	0.0066	592.79	595.91	3.12	2.91	CB 5
	begin	1756+94	1.61	0.97									591.01				592.26	595.26			0.015
117	118	1756+94	0.46	0.37	15.28	4.09	4.69	5.5	6.3	15	14.0	0.0100	591.01	5.20	6.02	0.0125	592.26	595.26	3.00	3.00	CB 2-2B
		1756+94	2.07	1.34									590.87				592.00	595.58			0.015
118	119	1756+94	5.45	2.73	15.33	4.09	4.68	16.6	19.0	42	40.0	0.0240	586.15	9.54	145.31	0.0005	587.63	595.58	7.95	5.93	MH 3
		1757+06	7.52	4.06									585.19				587.61	596.60			0.015
121	119	1759+00	0.25	0.23	10.00	4.94	5.51	1.1	1.2	12	194.0	0.0340	594.10	5.62	6.13	0.0016	594.42	597.93	3.51	2.83	CB 3A
	begin	1757+06	7.77	4.29									587.50				588.23	596.60			0.015
119	119A	1757+06	0.16	0.14	15.40	4.08	4.67	18.1	20.7	42	38.0	0.0239	585.19	9.75	145.15	0.0006	586.75	596.60	9.85	7.91	CB 3
	final	1757+18	7.93	4.43									584.28				586.73	587.78			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : US6 Left and Right

Description : Sta 1764+88 US6 to Sta 1767+63 US6

Designer : MHT

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION From	STATION To	From To	ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
			Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
123	124	1764+88	0.11	0.10	10.00	4.94	4.30	0.5	0.4	12	28.0	0.0029	596.01	1.83	1.78	0.0002	597.61	600.18	2.57	3.17	MH 3
	begin	1765+00	0.11	0.10									595.93				597.60	598.85			0.015
124	125	1765+00	0.15	0.11	15.00	4.13	4.30	0.8	0.9	12	117.0	0.0031	595.93	2.17	1.84	0.0008	597.60	598.85	1.25	1.92	CB 2-2B
		1766+15	0.26	0.20									595.57				597.51	598.82			0.015
125	126	1766+15	0.24	0.17	15.90	4.01	4.30	1.5	1.6	12	138.0	0.0031	595.57	2.47	1.85	0.0027	597.51	598.82	1.31	2.25	CB 2-2B
		1767+54	0.50	0.37									595.14				597.14	599.26			0.015
131	130	1772+10	0.47	0.33	15.00	4.13	4.30	1.4	1.4	12	249.0	0.0033	596.92	2.50	1.92	0.0021	598.16	599.92	1.76	2.00	CB 2-2B
	begin	1769+60	0.97	0.70									596.09				597.64	599.86			0.015
130	129	1769+60	0.36	0.25	16.66	3.92	4.30	2.3	2.5	15	60.0	0.0033	595.84	2.85	3.48	0.0020	597.64	599.86	2.22	2.77	CB 2-2B
		1769+00	1.33	0.95									595.64				597.52	599.61			0.015
129	126	1769+00	0.12	0.08	17.01	3.88	4.30	2.6	2.9	15	146.0	0.0034	595.64	2.96	3.52	0.0026	597.52	599.61	2.09	2.72	CB 2-2B
		1767+54	1.45	1.04									595.14				597.14	599.26			0.015
126	126A	1767+54	1.80	1.53	17.83	3.79	4.30	9.7	11.0	24	96.0	0.0025	595.14	3.56	10.55	0.0032	597.14	599.26	2.12	2.12	CB 2-3
	final	1767+63	3.25	2.56									594.90				596.50	596.90			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : US6 Left and Right

Description : Sta 1774+00 US6 to Sta 1795+18 US6

Designer : MHT

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 581.07

JUNCTION	STATION	ΔAREA	ΔCA	BEGIN	RAINFALL	DISCHARGE	PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE			
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
132	133	1774+00	0.34	0.24	15.00	4.13	4.08	1.0	1.0	12	300.0	0.0070	595.93	3.07	2.78	0.0010	596.35	599.93	3.58	3.00	CB 2-2B
	begin	1777+00	0.34	0.24									593.83				595.97	598.69			0.015
133	134	1777+00	0.95	0.57	16.63	3.92	4.08	3.2	3.3	15	300.0	0.0035	593.58	3.07	3.56	0.0035	595.97	598.69	2.72	3.86	CB 2-2B
		1780+00	1.29	0.81									592.53				594.93	599.04			0.015
134	135	1780+00	1.39	0.83	18.25	3.74	4.08	6.1	6.7	18	300.0	0.0040	592.28	3.47	6.19	0.0054	594.93	599.04	4.11	5.26	CB 5
		1783+00	2.68	1.64									591.08				593.31	598.59			0.015
135	135A	1783+00	1.77	1.06	19.69	3.59	4.08	9.7	11.0	18	180.0	0.0100	591.08	5.49	9.79	0.0147	593.31	598.59	5.28	6.01	CB 5
		1784+80	4.45	2.70									589.28				590.67	598.48			0.015
135A	136	1784+80	1.11	0.67	20.24	3.54	3.92	11.9	13.2	24	95.0	0.0100	588.78	6.54	21.09	0.0045	590.40	598.48	8.08	7.70	CB 5
		1785+75	5.56	3.37									587.83				589.97	598.36			0.015
136	136A	1785+75	0.58	0.35	20.48	3.52	3.92	13.1	14.6	24	105.0	0.0050	587.83	5.02	14.91	0.0055	589.97	598.36	8.39	8.53	CB 5
		1786+80	6.14	3.72									587.31				589.39	598.79			0.015
136A	137	1786+80	0.26	0.23	20.83	3.48	3.92	13.8	15.5	24	295.0	0.0050	587.31	5.03	14.91	0.0062	589.39	598.79	9.40	9.48	CB 2-3
		1789+75	6.40	3.95									585.84				587.54	595.68			0.015
137	138	1789+75	0.80	0.56	21.81	3.40	3.90	15.3	17.6	24	100.0	0.0091	585.84	6.64	20.12	0.0080	587.49	595.68	8.19	7.84	CB 5
		1790+75	7.20	4.51									584.93				586.68	595.13			0.015



STORM SEWER SYSTEM

JUNCTION		STATION		ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
138	139	1790+75		0.34	0.24	22.06	3.37	3.78	16.0	18.0	24	265.0	0.0091	584.93	6.69	20.12	0.0084	586.54	595.13	8.59	8.20	CB 5
		1793+40		7.54	4.75									582.52				584.32	591.28			0.015
139	140	1793+40		0.73	0.51	22.72	3.32	3.78	17.5	19.9	24	244.0	0.0103	582.52	7.15	21.43	0.0103	584.32	591.28	6.96	6.76	CB 2-3
	final	1795+78		8.27	5.26									580.00				581.80	582.00			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : US6 Left and Right

Description : Sta 1784+00 US6 to Sta 1795+37 US6

Designer : MHT

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 581.07

JUNCTION	STATION	ΔAREA	ΔCA	BEGIN	RAINFALL	DISCHARGE	PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE			
From	To	Σ AREA	Σ CA	TIME	INTENSITY	(cfs.)	DIAM.	LENGTH	SLOPE	IN / OUT	VEL	CAPACITY	SLOPE	IN / OUT	IN / OUT	MINUS	MINUS	MANNING'S			
		(acres)		(min.)	(10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	(in.)	(ft.)	(ft./ft.)	(ft.)	(fps.)	(cfs.)	(ft./ft.)	(ft.)	HY GR	CROWN	'n'		
141	142	1784+00	0.46	0.32	15.00	4.13	4.23	1.3	1.4	12	298.0	0.0053	594.07	2.98	2.42	0.0019	594.63	598.07	3.44	3.00	CB 2-2B
	begin	1786+97	0.46	0.32									592.49				593.68	597.45			0.015
142	143	1786+97	0.57	0.40	16.67	3.92	4.23	2.8	3.1	12	565.0	0.0092	592.49	4.30	3.19	0.0098	593.68	597.45	3.77	3.96	CB 2-2B
		1792+62	1.03	0.72									587.29				588.16	592.68			0.015
143	144	1792+62	0.00	0.00	18.86	3.68	4.14	2.6	3.0	12	271.0	0.0258	587.29	6.41	5.34	0.0093	587.85	592.68	4.83	4.39	CB 2-2B
		1795+37	1.03	0.72									580.29				581.54	586.26			0.015
144	145	1795+37	0.00	0.00	19.56	3.60	4.14	2.6	3.0	12	50.0	0.0358	580.29	7.21	6.28	0.0093	581.54	586.26	4.72	4.97	CB 2-2B
	final	1795+86	1.03	0.72									578.50				581.07	579.50			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : RAB C Leftside along Rye Beach Road

Description : Sta 158+84 Rye Beach Rd to Sta 157+00 Rye Beach Rd

Designer : MHT

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
200	201	158+81		0.12	0.11	10.00	4.94	5.48	0.5	0.6	12	172.0	0.0241	588.09	4.00	5.16	0.0004	588.33	591.99	3.66	2.90	CB 3
	begin	156+97		0.12	0.11									583.94				584.60	585.19			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : RAB C Rightside along Rye Beach Road

Description : Storm System 202

Designer : MHT

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION	ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
204	205	158+71	0.22	0.20	10.00	4.94	5.42	1.0	1.1	12	25.0	0.0100	588.36	3.48	3.32	0.0012	588.90	590.75	1.85	1.39	CB 3A
	begin	158+86	0.22	0.20									588.11				588.87	596.28			0.015
205	203	158+86	0.37	0.33	10.12	4.92	5.42	2.6	2.9	12	198.0	0.0100	588.11	4.41	3.32	0.0085	588.87	591.77	2.90	2.66	CB 3
		157+00	0.58	0.53									586.13				587.13	596.28			0.015
202	203	155+00	0.33	0.30	10.00	4.94	5.42	1.5	1.6	12	201.0	0.0677	599.73	7.74	8.64	0.0027	600.03	603.73	3.70	3.00	CB 3A
	begin	157+00	0.91	0.82									586.13				587.13	596.28			0.015
203	203A	157+00	0.22	0.20	10.87	4.78	5.42	4.9	5.5	15	30.0	0.0067	585.88	3.97	4.92	0.0098	587.13	596.28	9.15	9.15	CB 3A
		156+96	1.13	1.02									585.68				586.78	597.00			0.015
203A	203B	156+96	0.00	0.00	10.99	4.75	5.42	4.8	5.5	15	18.0	0.4211	585.68	20.60	39.08	0.0097	586.01	597.00	10.99	10.07	
		156+81	1.13	1.02									578.10				579.20	581.35			0.015
203B	203H	156+81	0.00	0.00	11.01	4.75	5.42	4.8	5.5	15	10.0	0.0100	578.10	5.14	6.02	0.0097	579.20	581.35	2.15	2.00	
	final	156+87	1.13	1.02									578.00				579.10	579.25			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : RAB C east along US6 to the east

Description : Sta 1811+00 US6 to Sta 1799+00 US6

Designer : MHT

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 581.07

JUNCTION	STATION	ΔAREA	ΔCA	BEGIN	RAINFALL	DISCHARGE	PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.) (25 yrs.)	(cfs.) (10 yrs.) (25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
206 207 begin	1811+00 1810+98	0.19 0.19	0.17 0.17	10.00	4.94	5.59 0.8 1.0	12	42.0	0.0145	586.61 586.00	3.85	4.00	0.0010	586.96 586.71	590.57 590.45	3.61	2.96	CB 3A 0.015
208 207 begin	1811+27 1810+98	0.17 0.36	0.15 0.32	10.00	4.94	5.61 0.8 0.9	12	29.0	0.0193	586.56 586.00	4.12	4.62	0.0008	586.86 586.69	590.68 590.45	3.82	3.12	CB 3A 0.015
207 209	1810+98 1810+15	0.66 1.02	0.59 0.92	10.18	4.91	4.06 4.5 3.7	15	85.0	0.0062	582.48 581.95	4.09	4.74	0.0044	584.29 583.91	590.45 590.81	6.16	6.72	MH 3 0.015
210 209 begin	1810+24 1810+15	0.18 1.20	0.16 1.08	10.00	4.94	5.62 0.8 0.9	12	9.0	0.0144	587.13 587.00	3.77	3.99	0.0009	587.71 587.70	590.81 590.81	3.10	2.68	CB 3A 0.015
209 211	1810+15 1809+12	0.00 1.20	0.00 1.08	10.53	4.84	4.06 5.2 4.4	18	95.0	0.0053	581.70 581.20	4.16	7.13	0.0023	583.91 583.69	590.81 593.60	6.90	7.61	MH 3 0.015
214 213 begin	163+13 162+50	0.16 1.36	0.11 1.19	15.00	4.13	4.06 0.5 0.5	12	63.0	0.0159	586.00 585.00	3.32	4.18	0.0002	586.36 586.35	588.50 590.73	2.14	1.50	CB 2-2B 0.015
215 213 begin	162+03 162+50	0.36 1.72	0.32 1.52	10.00	4.94	4.06 1.6 1.3	12	59.0	0.0244	586.44 585.00	5.51	5.19	0.0018	586.80 586.35	590.45 590.73	3.65	3.01	CB 6 0.015
213 212	162+50 162+50	0.23 1.95	0.21 1.72	15.32	4.09	4.06 2.6 2.6	12	31.0	0.0161	585.00 584.50	5.36	4.22	0.0071	586.35 586.13	590.73 590.67	4.38	4.73	CB 3A 0.015



STORM SEWER SYSTEM

JUNCTION	STATION	ΔAREA	ΔCA	BEGIN	RAINFALL	DISCHARGE	PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE			
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
212	211	162+50 1809+12	0.21 2.16	0.19 1.91	15.41	4.08	4.06	3.4	3.4	12	204.0	0.0137	584.50 581.70	5.23	3.89	0.0120	586.13 583.69	590.67 593.60	4.54	5.17	CB 3A 0.015
211	216	1809+12 1807+50	0.00 2.16	0.00 1.91	16.06	3.99	4.06	7.6	7.8	24	164.0	0.0033	581.20 580.65	3.87	12.19	0.0016	583.69 583.43	593.60 593.58	9.91	10.40	MH 3 0.015
217	216 begin	1807+63 1807+50	0.14 2.30	0.12 2.04	10.00	4.94	5.59	0.6	0.7	12	48.0	0.0240	588.66 587.51	4.18	5.14	0.0005	588.92 588.18	592.38 593.58	3.46	2.72	CB 3 0.015
220	219 begin	1807+74 1807+61	0.08 2.38	0.08 2.11	10.00	4.94	5.62	0.4	0.4	12	13.0	0.0150	588.27 588.08	3.08	4.07	0.0002	588.71 588.71	592.28 592.24	3.57	3.01	CB 6 0.015
219	218	1807+61 1807+79	0.02 2.40	0.01 2.12	10.07	4.93	5.52	0.4	0.5	12	26.0	0.0133	588.08 587.74	3.10	3.83	0.0003	588.50 588.49	592.24 592.25	3.74	3.16	CB 2-2B 0.015
218	216	1807+79 1807+50	0.27 2.67	0.24 2.37	10.21	4.90	5.52	1.6	1.8	12	54.0	0.0043	587.74 587.51	2.86	2.17	0.0036	588.49 588.30	592.25 593.58	3.76	3.51	CB 3 0.015
216	221	1807+50 1806+92	0.00 2.67	0.00 2.37	16.77	3.91	4.06	9.3	9.6	24	61.0	0.0031	580.65 580.46	3.89	11.71	0.0024	583.43 583.29	593.58 592.60	10.15	10.93	MH 3 0.015
221	222	1806+92 1805+75	0.22 2.89	0.20 2.57	17.03	3.88	4.06	9.9	10.4	24	115.0	0.0033	580.46 580.08	4.05	12.12	0.0028	583.29 582.96	592.60 592.75	9.31	10.14	MH 3 0.015
223	222 begin	1805+70 1805+75	0.11 3.00	0.10 2.66	10.00	4.94	5.63	0.5	0.5	12	6.0	0.0125	588.48 588.41	3.09	3.71	0.0003	589.06 589.06	592.47 592.75	3.41	2.99	CB 3A 0.015
222	224	1805+75 1804+75	0.00 3.00	0.00 2.66	17.50	3.82	4.06	10.2	10.8	24	100.0	0.0031	580.08 579.77	3.95	11.74	0.0030	582.96 582.66	592.75 592.75	9.79	10.67	MH 3 0.015
225	226 begin	1804+80 1804+80	0.38 3.38	0.34 3.01	10.00	4.94	5.57	1.7	1.9	12	51.0	0.0050	588.44 588.19	3.08	2.35	0.0038	589.37 589.18	592.42 592.23	3.05	2.98	CB 3A 0.015



STORM SEWER SYSTEM

JUNCTION	STATION	Δ AREA	Δ CA	BEGIN	RAINFALL	DISCHARGE	PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE			
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.) (25 yrs.)	(cfs.) (10 yrs.) (25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'		
226	224	1804+80 1804+75	0.12 3.50	0.11 3.11	10.28	4.89	5.57	2.2	2.5	12	6.0	0.0050	588.18 588.15	3.17	2.35	0.0065	589.18 588.99	592.23 592.75	3.05	3.05	CB 3A 0.015
227	224 begin	1804+53 1804+75	0.15 3.64	0.13 3.24	10.00	4.94	5.61	0.7	0.7	12	28.0	0.0236	588.81 588.15	4.26	5.10	0.0006	589.08 588.83	592.80 592.75	3.72	2.99	CB 6 0.015
224	228	1804+75 1804+20	0.00 3.64	0.00 3.24	17.93	3.77	4.06	12.2	13.2	30	55.0	0.0031	579.27 579.10	4.24	21.26	0.0014	582.66 582.58	592.75 592.62	10.09	10.98	MH 3 0.015
229	228 begin	1804+25 1804+20	0.13 3.78	0.11 3.36	10.00	4.94	5.63	0.6	0.6	12	6.0	0.0100	588.13 588.07	3.00	3.32	0.0004	588.74 588.74	592.11 592.62	3.37	2.98	CB 3A 0.015
228	230	1804+20 1803+19	0.00 3.78	0.00 3.36	18.14	3.75	4.06	12.6	13.6	30	101.0	0.0032	579.10 578.78	4.31	21.52	0.0015	582.58 582.43	592.62 591.43	10.04	11.02	MH 3 0.015
231	230 begin	1803+24 1803+19	0.44 4.21	0.37 3.73	10.00	4.94	5.63	1.8	2.1	12	6.0	0.0050	587.10 587.07	3.12	2.35	0.0046	587.91 587.88	591.08 591.43	3.17	2.98	CB 3A 0.015
230	232	1803+19 1802+08	0.00 4.21	0.00 3.73	18.53	3.71	4.06	13.8	15.2	30	111.0	0.0031	578.78 578.44	4.34	21.16	0.0018	582.43 582.23	591.43 589.25	9.00	10.15	MH 3 0.015
233	234 begin	1802+37 1802+12	0.85 5.07	0.69 4.43	15.00	4.13	4.71	2.9	3.3	12	52.0	0.0098	585.85 585.34	4.43	3.29	0.0112	586.85 586.23	589.54 589.02	2.69	2.69	CB 3A 0.015
234	232	1802+12 1802+08	0.37 5.44	0.32 4.75	15.20	4.10	4.70	4.2	4.8	15	6.0	0.0098	585.09 585.03	4.96	5.96	0.0073	586.14 586.10	589.02 589.25	2.88	2.68	CB 3A 0.015
232	235	1802+08 1799+07	0.00 5.44	0.00 4.75	18.96	3.67	4.06	17.4	19.3	30	300.0	0.0027	578.44 577.62	4.30	19.99	0.0029	582.23 581.35	589.25 585.00	7.02	8.31	MH 3 0.015
235	237	1799+07 1798+27	0.00 5.44	0.00 4.75	20.12	3.55	4.06	16.9	19.3	30	75.0	0.0036	577.62 577.35	4.82	22.94	0.0029	581.35 581.13	585.00 584.25	3.65	4.88	MH 3 0.015



STORM SEWER SYSTEM

JUNCTION		STATION		ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
236	237	1797+88		2.75	1.38	15.00	4.13	4.06	5.7	5.6	36	84.0	0.0019	577.01	2.88	27.14	0.0001	581.14	580.01	-1.13	0.00	HW Half He
	begin	1798+27		8.19	6.12									576.85				581.13	584.25			0.015
237	237A	1798+27		0.00	0.00	20.38	3.52	4.06	21.6	24.9	36	32.0	0.0366	576.85	12.13	118.90	0.0018	581.13	584.25	3.12	4.40	MH 3
	final	1798+11		8.19	6.12									575.68				581.07	578.68			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR **Location :** RAB D North Leg Leftside along Rye Beach Road
Description : Sta 146+34 Rye Beach to Sta 146+34 Rye Beach **Designer :** NLD

Rainfall Area: A **Just Full Capacity Frequency (yrs.) :** 10 **Hydraulic Gradient Frequency (yrs.) :** 25
Minimum Pipe Size : 15.00 **Tailwater Elevation (ft.):** 0.00

JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
401	400	146+02		0.08	0.07	10.00	4.94	5.54	0.3	0.4	15	50.0	0.0048	610.90	1.93	4.17	0.0000	611.41	614.37	2.96	2.22	CB 3A
	begin	146+34		0.08	0.07									610.66				611.40	615.03			0.015
400	400A	146+34		0.15	0.13	10.43	4.86	5.51	1.0	1.1	15	33.0	0.0200	610.66	4.37	8.52	0.0004	610.97	615.03	4.06	3.12	CB 3A
	final	146+34		0.22	0.20									610.00				610.83	611.25			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR **Location :** RAB D North Leg Leftside along Rye Beach Road
Description : Sta 145+25 Rye Beach to Sta 145+34 Rye Beach **Designer :** NLD

Rainfall Area: A **Just Full Capacity Frequency (yrs.) :** 10 **Hydraulic Gradient Frequency (yrs.) :** 25
Minimum Pipe Size : 15.00 **Tailwater Elevation (ft.):** 0.00

JUNCTION		STATION	ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
403	402	145+03	0.16	0.13	10.00	4.94	5.47	0.7	0.7	15	85.0	0.0024	608.00	1.81	2.92	0.0002	608.60	611.31	2.71	2.06	CB 3A
	begin	145+25	0.16	0.13									607.80				608.59	609.35			0.015
402	402A	145+25	0.06	0.06	10.78	4.79	5.44	0.9	1.0	15	25.0	0.0048	607.80	2.58	4.17	0.0003	608.51	611.95	3.44	2.90	CB 3
	final	145+34	0.23	0.19									607.68				608.50	608.43			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : RAB D North Leg Rightside along Rye Beach Road

Description : Sta 142+87 Rye Beach to Sta 143+02 Rye Beach

Designer : NLD

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 15.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
404	405	142+87		5.77	5.19	15.00	4.13	4.73	21.4	24.5	30	24.0	0.0058	593.28	6.13	29.21	0.0048	595.35	600.94	5.59	5.16	MH 3
	begin	143+02		5.77	5.19									593.14				595.23	595.64			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : RAB D North Leg Rightside along Rye Beach Road

Description : Sta 141+94 Rye Beach to Sta 141+78 Rye Beach

Designer : NLD

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 15.00

Tailwater Elevation (ft.): 0.00

JUNCTION From	STATION To	From To	Δ AREA Σ AREA (acres)	Δ CA Σ CA	BEGIN TIME (min.)	RAINFALL INTENSITY				DISCHARGE (cfs.)			PIPE			F/L PIPE IN / OUT (ft.)	MEAN VEL (fps.)	JUST FULL CAPACITY (cfs.)	FRICT SLOPE (ft./ft.)	HYGR EL. IN / OUT (ft.)	COVER IN / OUT (ft.)	COVER MINUS HY GR	COVER MINUS CROWN	INLET TYPE MANNING'S 'n'
						(10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	(in.)	(ft.)	(ft./ft.)												
407	408	142+24	0.25	0.13	15.00	4.13	4.71	0.5	0.6	15	52.0	0.0692	599.00	5.61	15.85	0.0001	599.17	602.19	3.02	1.94	CB 2-2B			0.015
	begin	141+76	0.25	0.13									595.40				596.17	601.25						
407B	408	141+76	0.39	0.35	15.00	4.13	4.71	1.4	1.7	18	29.0	0.0045	594.49	2.83	6.56	0.0003	595.36	598.09	2.73	2.10	CB 2-2B			0.015
	begin	141+76	0.64	0.48									594.36				595.35	601.25						
408	409	141+76	0.32	0.29	15.17	4.11	4.66	3.1	3.6	18	54.0	0.0043	594.36	3.42	6.42	0.0015	595.33	601.25	5.92	5.39	CB 3A			0.015
		141+77	0.96	0.76									594.13				595.25	601.71						
409	409A	141+77	0.18	0.16	15.43	4.07	4.66	3.8	4.3	18	14.0	0.0043	594.13	3.57	6.41	0.0022	595.25	601.71	6.46	6.08	CB 3A			0.015
	final	141+78	1.14	0.93									594.07				595.22	597.75						



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : RAB D North Leg Rightside along Rye Beach Road

Description : Sta 139+95 Rye Beach to Sta 140+19 Rye Beach

Designer : NLD

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 15.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
411	412	139+95		0.22	0.20	10.00	4.94	5.61	1.0	1.1	15	24.0	0.0250	594.95	4.76	9.52	0.0004	595.25	599.20	3.95	3.00	CB 3A
	begin	140+19		0.22	0.20									594.35				595.18	599.18			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : RAB E Leftside along Rye Beach Road

Description : Sta 150+58 Rye Beach to Sta 150+58 Rye Beach

Designer : NLD

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 15.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
500	501	150+42		0.06	0.05	10.00	4.94	5.55	0.2	0.3	15	45.0	0.0073	610.31	2.06	5.16	0.0000	610.71	614.68	3.97	3.12	CB 3A
	begin	150+58		0.06	0.05									609.98				610.71	614.00			0.015
501	501A	150+58		0.17	0.15	10.36	4.87	5.53	1.0	1.1	15	30.0	0.0127	609.98	3.74	6.78	0.0004	610.45	614.11	3.66	2.88	CB 3
	final	150+58		0.23	0.20									609.60				610.43	610.86			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/01/2025 **Project :** ERIE-US 6-CORRIDOR

Location : RAB E Rightside along Rye Beach Road

Description : Sta 151+57 Rye Beach to Sta 151+51 Rye Beach

Designer : WK

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 15.00

Tailwater Elevation (ft.): 0.00

JUNCTION	STATION	ΔAREA	ΔCA	BEGIN	RAINFALL	DISCHARGE				PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	Σ AREA	Σ CA	TIME	INTENSITY	(cfs.)	DIAM.	LENGTH	SLOPE	IN / OUT	VEL	CAPACITY	SLOPE	IN / OUT	IN / OUT	IN / OUT	MINUS	MINUS	MINUS	MANNING'S	
		(acres)		(min.)	(10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)		(in.)	(ft.)	(ft./ft.)	(ft.)	(fps.)	(cfs.)	(ft./ft.)	(ft.)	(ft.)	HY GR	CROWN	'n'
503	504	151+29	0.11	0.09	10.00	4.94	5.55	0.4	0.5	15	36.0	0.0019	608.27	1.52	2.66	0.0001	608.97	612.51	3.54	2.99	CB 3A
	begin	151+63	0.11	0.09									608.20				608.96	612.06			0.015
504	502	151+63	0.08	0.07	10.39	4.87	5.37	0.8	0.8	15	80.0	0.0013	608.20	1.51	2.13	0.0002	608.92	612.06	3.14	2.61	CB 3
		151+57	0.19	0.16									608.10				608.91	612.10			0.015
502	502A	151+57	0.06	0.06	11.28	4.70	5.36	1.0	1.2	15	18.0	0.0194	608.10	4.40	8.40	0.0004	608.59	612.10	3.51	2.75	CB 3A
	final	151+51	0.25	0.22									607.75				608.59	608.98			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : RAB E East Leg Leftside

Description : Sta 811+91 Ramp B to Sta 811+91 Ramp B

Designer : NLD

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 15.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
505	505A	811+91		0.20	0.17	10.00	4.94	5.62	0.9	1.0	15	15.0	0.0100	599.16	3.31	6.02	0.0003	599.83	603.41	3.58	3.00	CB 3A
	begin	811+91		0.20	0.17									599.01				599.83	612.06			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 07/08/2023 **Project :** ERIE-US 6-CORRIDOR

Location : RAB E East Leg NE Corner

Description : Sta 153+21 Rye Brach Road to Sta 153+15 Rye Beach Road

Designer : NLD

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 15.00

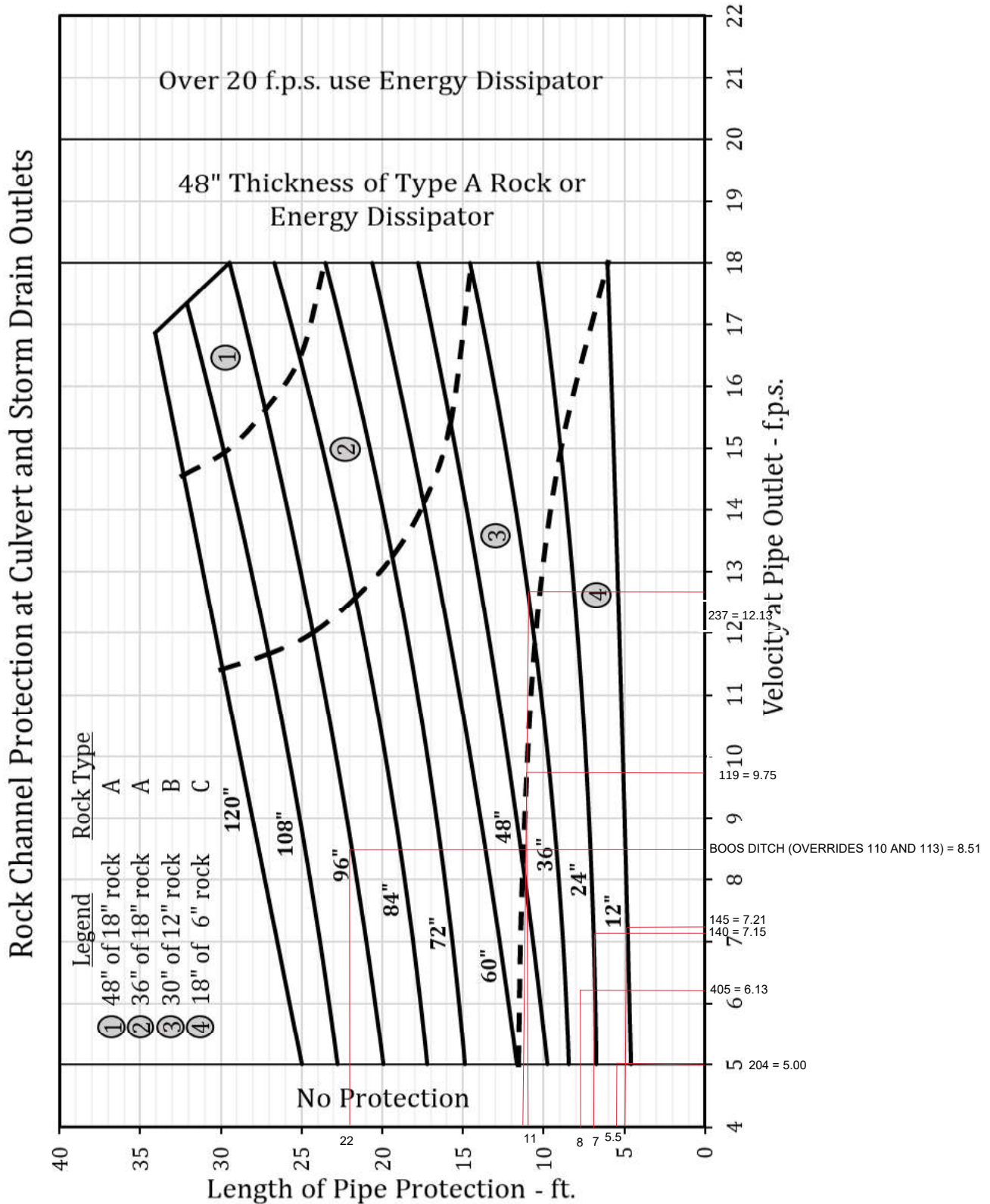
Tailwater Elevation (ft.): 0.00

JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
506	507	153+21		0.03	0.03	10.00	4.94	5.59	0.1	0.2	15	36.0	0.0414	605.35	3.15	12.25	0.0000	605.45	609.60	4.15	3.00	CB 3
	begin	153+15		0.03	0.03									603.86				604.56	609.80			0.015
507	507A	153+15		0.08	0.06	10.19	4.91	5.54	0.4	0.5	15	46.0	0.0209	603.86	3.48	8.70	0.0001	604.07	609.80	5.73	4.69	CB 6
		153+43		0.11	0.09									602.90				603.66	605.83			0.015
507A	507B	153+43		0.00	0.00	10.41	4.86	5.54	0.4	0.5	15	23.0	0.4365	602.90	10.02	39.79	0.0001	603.00	605.83	2.83	1.68	
		153+56		0.11	0.09									592.86				593.62	595.75			0.015
507B	507C	153+56		0.00	0.00	10.45	4.86	5.52	0.4	0.5	15	10.0	0.0140	592.86	3.03	7.13	0.0001	593.48	595.75	2.27	1.64	
	final	153+62		0.11	0.09									592.72				593.48	593.97			0.015

ROCK CHANNEL PROTECTION AT CULVERT AND STORM SEWER OUTLETS

1002-4

REFERENCE SECTION
1002.2.3



APPENDIX 6

Ohio Department of Transportation County Engineer Approval Form



Date Submitted to District: 08/01/2025

Date Submitted to County Engineer:

County - Route - Section: ERI-US 0006-CONNECT. COR.

PID: 116570

Station	Size & Type	Culvert Invert Elevation		Ex. Channel Elevation		Skew
		Inlet	Outlet	Inlet	Outlet	
US6 632+27.59	9'span x 4' rise box	572.70	572.55	574.2	574.1	None
US6 675+15.0	29"X45" conc. ellp.	579.10	578.40	579.4	578.9	None
US6 687+48.23	72" circular	574.95	574.45	574.8	575.3	9.0 RF
US6 699+09.22	Extend Ex 60" CMP	578.34	578.18	578.34	578.9	1.9 RF

I have reviewed and hereby approve the drainage proposed for the highway designated hereon in accordance with the provisions of the Ohio Revised Code, Section 6131.631.

County

County Engineer's Signature

Date

Comments:

Ohio Department of Transportation County Engineer Approval Form



Date Submitted to District: 8/01/2025

Date Submitted to County Engineer: 8/01/2025

County - Route - Section: ERI-US 0006-11.33-15.81

PID: 116570

Station	Size & Type	Culvert Invert Elevation		Ex. Channel Elevation		Skew
		Inlet	Outlet	Inlet	Outlet	
1754+37.79	8'X6' BOX	581.56	580.05	581.56	580.13	93°00'39"
1756+99.70	42" TYPE B	586.15	584.28	594.56	584.27	72°14'41"
1767+56.92	24" TYPE B	595.14	594.90	598.86	595.09	84°37'15"
1798+09.08	36" CMP	578.01	575.68	577.89	575.99	57°49'46"

I have reviewed and hereby approve the drainage proposed for the highway designated hereon in accordance with the provisions of the Ohio Revised Code, Section 6131.631.

County

County Engineer's Signature

Date

Comments:



CULVERT ANALYSIS

PID : 116570 **Date :** 06/15/2023 **Project :** ERI-6

Location : STA. 628+12.60

Description : Drive Pipe

Designer : BLC

HEADWATER CONTROL CODES: INLET - Inlet Control.
OUTLET - Outlet Control.
OUTLET* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.
OUTLET** - Outlet Control - See Figure III - 7D in HDS 5 for type flow.
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 804 **Use HW :** 0 **Inlet Invert Elevation (ft.) :** 577.45 **Outlet Invert Elevation (ft.) :** 577.40
Pipe Quantity : 1
Culvert Type : Circular Smooth **Pipe Length (ft.) :** 42.00 **Culvert Slope (ft./ft.) :** 0.0012
Corrugation Type :
Pipe Size : 12 in.
Design Manning 'n' : (default)
Entrance Type : No Headwall **Loss Coef. Ke :** 0.2000

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
2.05	0.43	578.34	578.44	1 - A	4.08	0.91	0.61	0.0120	OUTLET*	0.00	577.40
2.38	0.47	578.43	578.53	1 - A	4.32	0.91	0.66	0.0120	OUTLET*	0.00	577.40



CULVERT ANALYSIS

PID : 116570 **Date :** 10/30/2024 **Project :** Erie 6

Location : US 6 Sta. 632+32

Description : Pr. Culvert Under SUP

Designer : BLS

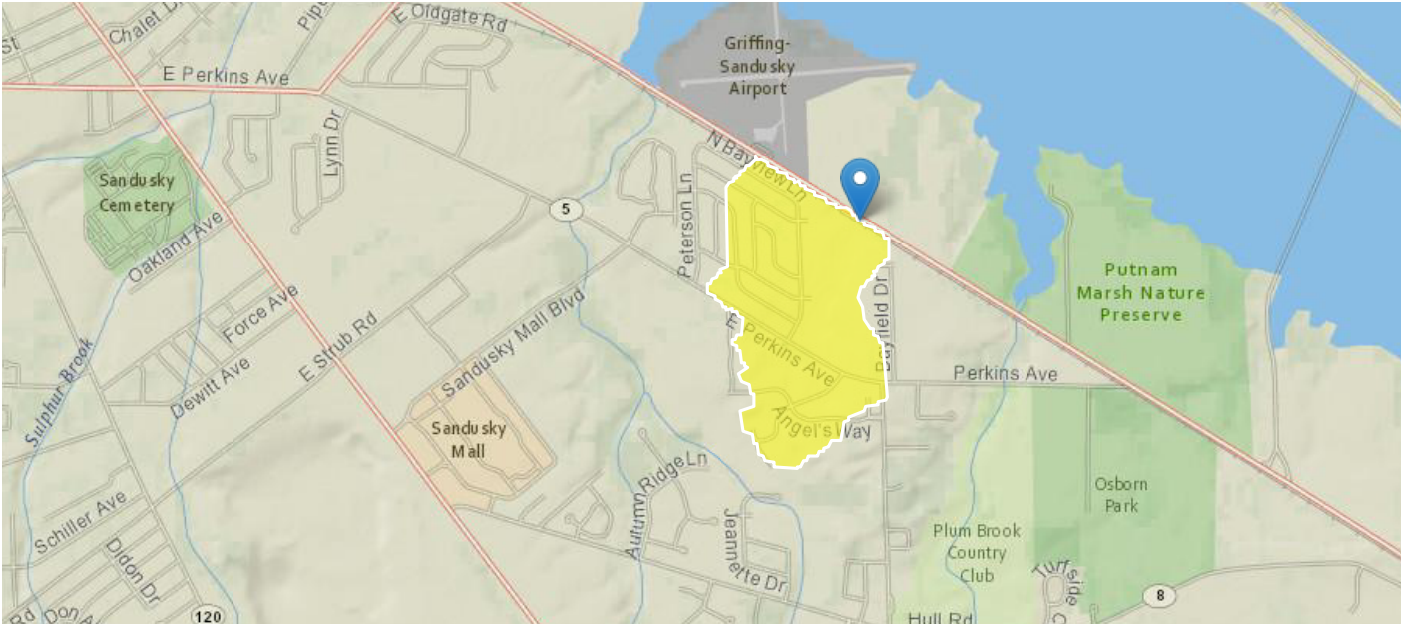
HEADWATER CONTROL CODES: INLET - Inlet Control.
OUTLET - Outlet Control.
OUTLET* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.
OUTLET** - Outlet Control - See Figure III - 7D in HDS 5 for type flow.
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 1	Use HW : 0	Inlet Invert Elevation (ft.) : 572.70	Outlet Invert Elevation (ft.) : 572.55
Pipe Quantity : 1			
Culvert Type : Box		Pipe Length (ft.) : 23.00	Culvert Slope (ft./ft.) : 0.0065
Corrugation Type :			
Pipe Size : 9.0 x 4.0 ft.			
Design Manning 'n' : (default)	Buried Manning 'n' : N/A		
Entrance Type : 0 degree (Extension of sides)		Loss Coef. Ke : 0.5000	K : 0.0610
		CD : 0.6063	c : 0.0423
			M : 0.75
			Y : 0.8200
			Max. Q : 3.50
			Min. Q : 4.00

	FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
	134.00	0.95	576.95	N/A	1 - C	10.51	1.42	1.90	0.0120	INLET	1.00	574.30
	201.00	2.20	578.49	577.66	1 - C	12.01	1.86	2.49	0.0120	INLET	1.00	574.30

StreamStats Report - Culvert 1879258

Region ID: OH
Workspace ID: OH20230503191053064000
Clicked Point (Latitude, Longitude): 41.42717, -82.64844
Time: 2023-05-03 15:11:13 -0400



Collapse All

➤ Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CSL1085LFP	Change in elevation divided by length between points 10 and 85 percent of distance along the longest flow path to the basin divide, LFP from 2D grid	21	feet per mi
DRNAREA	Area that drains to a point on a stream	0.3	square miles
FOREST	Percentage of area covered by forest	0.54	percent
LAT_CENT	Latitude of Basin Centroid	41.4234	decimal degrees
LC92STOR	Percentage of water bodies and wetlands determined from the NLCD	0.0894	percent
LONG_CENT	Longitude Basin Centroid	82.6517	decimal degrees
OHREGA	Ohio Region A Indicator	1	dimensionless
OHREGC	Ohio Region C Indicator	0	dimensionless
PRECIPCENT	Mean Annual Precip at Basin Centroid	34.1	inches
STREAM_VARG	Streamflow variability index as defined in WRIR 02-4068, computed from regional grid	0.62	dimensionless

➤ Peak-Flow Statistics

Peak-Flow Statistics Parameters [Peak Flow Full Model Reg A SIR2019 5018]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.3	square miles	0.04	5989
OHREGC	Ohio Region C Indicator 1 if in C else 0	0	dimensionless	0	1
OHREGA	Ohio Region A Indicator 1 if in A else 0	1	dimensionless	0	1
CSL1085LFP	Stream Slope 10 and 85 Longest Flow Path	21	feet per mi	1.53	516
LC92STOR	Percent Storage from NLCD1992	0.0894	percent	0	25.35

Peak-Flow Statistics Flow Report [Peak Flow Full Model Reg A SIR2019 5018]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	Plu	ASEp
50-percent AEP flood	39.4	ft ³ /s	20.7	75.1	40.1
20-percent AEP flood	70.7	ft ³ /s	38.8	129	37.2
10-percent AEP flood	96.4	ft ³ /s	52.5	177	37.6
4-percent AEP flood	134	ft ³ /s	72.4	248	38.1
2-percent AEP flood	166	ft ³ /s	88.7	311	37.8
1-percent AEP flood	201	ft ³ /s	106	381	39.6
0.2-percent AEP flood	295	ft ³ /s	154	566	40.3

Peak-Flow Statistics Citations

Koltun, G.F.,2019, Flood-frequency estimates for Ohio streamgages based on data through water year 2015 and techniques for estimating flood-frequency characteristics of rural, unregulated Ohio streams: U.S. Geological Survey Scientific Investigations Report 2019–5018, 25 p. (<https://dx.doi.org/10.3133/sir20195018>)

➤ Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region A 2012 5138]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.3	square miles	1	1250
STREAM_VARG	Streamflow Variability Index from Grid	0.62	dimensionless	0.24	1.12

Low-Flow Statistics Disclaimers [Low Flow Region A 2012 5138]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Low Flow Region A 2012 5138]

Statistic	Value	Unit
1 Day 10 Year Low Flow	0.00195	ft ³ /s
7 Day 10 Year Low Flow	0.00269	ft ³ /s

Statistic	Value	Unit
30 Day 10 Year Low Flow	0.00456	ft ³ /s
90 Day 10 Year Low Flow	0.0083	ft ³ /s

Low-Flow Statistics Citations

Koltun, G.F., and Kula, S.P.,2013, Methods for estimating selected low-flow statistics and development of annual flow-duration statistics for Ohio: U.S. Geological Survey Scientific Investigations Report 2012–5138, 195 p. (<http://pubs.usgs.gov/sir/2012/5138/>)

➤ Flow-Duration Statistics

Flow-Duration Statistics Parameters [Low Flow Region A 2012 5138]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.3	square miles	1	1250
STREAM_VARG	Streamflow Variability Index from Grid	0.62	dimensionless	0.24	1.12

Flow-Duration Statistics Disclaimers [Low Flow Region A 2012 5138]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Flow-Duration Statistics Flow Report [Low Flow Region A 2012 5138]

Statistic	Value	Unit
80 Percent Duration	0.0201	ft ³ /s

Flow-Duration Statistics Citations

Koltun, G.F., and Kula, S.P.,2013, Methods for estimating selected low-flow statistics and development of annual flow-duration statistics for Ohio: U.S. Geological Survey Scientific Investigations Report 2012–5138, 195 p. (<http://pubs.usgs.gov/sir/2012/5138/>)

➤ Annual Flow Statistics

Annual Flow Statistics Parameters [Low Flow LatGT 41.2 wri02 4068]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.3	square miles	0.12	7422
LAT_CENT	Latitude of Basin Centroid	41.4234	decimal degrees	41.2	41.59
PRECIPCENT	Mean Annual Precip at Basin Centroid	34.1	inches	34	43.2

Annual Flow Statistics Flow Report [Low Flow LatGT 41.2 wri02 4068]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
Mean Annual Flow	0.25	ft ³ /s	11.4	11.4

Annual Flow Statistics Citations

Koltun, G. F., and Whitehead, M. T.,2002, Techniques for Estimating Selected Streamflow Characteristics of Rural, Unregulated Streams in Ohio: U. S. Geological Survey Water-Resources Investigations Report 02-4068, 50 p (<https://pubs.er.usgs.gov/publication/wri024068>)

➤ Monthly Flow Statistics

Monthly Flow Statistics Parameters [Low Flow LatGT 41.2 wri02 4068]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.3	square miles	0.12	7422
LC92STOR	Percent Storage from NLCD1992	0.0894	percent	0	19
PRECIPCENT	Mean Annual Precip at Basin Centroid	34.1	inches	34	43.2
FOREST	Percent Forest	0.54	percent	0	99.1
LAT_CENT	Latitude of Basin Centroid	41.4234	decimal degrees	41.2	41.59
STREAM_VARG	Streamflow Variability Index from Grid	0.62	dimensionless	0.25	1.13

Monthly Flow Statistics Flow Report [Low Flow LatGT 41.2 wri02 4068]

PIl: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
January Mean Flow	0.316	ft ³ /s	16.6	16.6
February Mean Flow	0.508	ft ³ /s	11.9	11.9
March Mean Flow	0.537	ft ³ /s	14	14
April Mean Flow	0.476	ft ³ /s	11.2	11.2
May Mean Flow	0.323	ft ³ /s	19.5	19.5
June Mean Flow	0.192	ft ³ /s	27	27
July Mean Flow	0.126	ft ³ /s	28.2	28.2
August Mean Flow	0.0567	ft ³ /s	36.8	36.8
September Mean Flow	0.0268	ft ³ /s	43.6	43.6
October Mean Flow	0.136	ft ³ /s	50.8	50.8
November Mean Flow	0.224	ft ³ /s	37.5	37.5
December Mean Flow	0.34	ft ³ /s	21.8	21.8

Monthly Flow Statistics Citations

Koltun, G. F., and Whitehead, M. T.,2002, Techniques for Estimating Selected Streamflow Characteristics of Rural, Unregulated Streams in Ohio: U. S. Geological Survey Water-Resources Investigations Report 02-4068, 50 p (<https://pubs.er.usgs.gov/publication/wri024068>)

➤ General Flow Statistics

General Flow Statistics Parameters [Low Flow LatGT 41.2 wri02 4068]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.3	square miles	0.12	7422

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
LC92STOR	Percent Storage from NLCD1992	0.0894	percent	0	19
STREAM_VARG	Streamflow Variability Index from Grid	0.62	dimensionless	0.25	1.13
LAT_CENT	Latitude of Basin Centroid	41.4234	decimal degrees	41.2	41.59

General Flow Statistics Flow Report [Low Flow LatGT 41.2 wri02 4068]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
Harmonic Mean Streamflow	0.0149	ft ³ /s	65.9	65.9

General Flow Statistics Citations

Koltun, G. F., and Whitehead, M. T.,2002, Techniques for Estimating Selected Streamflow Characteristics of Rural, Unregulated Streams in Ohio: U. S. Geological Survey Water-Resources Investigations Report 02-4068, 50 p (<https://pubs.er.usgs.gov/publication/wri024068>)

➤ Flow Percentile Statistics

Flow Percentile Statistics Parameters [Low Flow LatGT 41.2 wri02 4068]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.3	square miles	0.12	7422
LC92STOR	Percent Storage from NLCD1992	0.0894	percent	0	19
STREAM_VARG	Streamflow Variability Index from Grid	0.62	dimensionless	0.25	1.13
LAT_CENT	Latitude of Basin Centroid	41.4234	decimal degrees	41.2	41.59
LONG_CENT	Longitude of Basin Centroid	82.6517	decimal degrees	80.53	84.6

Flow Percentile Statistics Flow Report [Low Flow LatGT 41.2 wri02 4068]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
25th Percentile Flow	0.0341	ft ³ /s	29.2	29.2
50th Percentile Flow Median	0.0872	ft ³ /s	40.3	40.3
75th Percentile Flow	0.209	ft ³ /s	47.9	47.9

Flow Percentile Statistics Citations

Koltun, G. F., and Whitehead, M. T.,2002, Techniques for Estimating Selected Streamflow Characteristics of Rural, Unregulated Streams in Ohio: U. S. Geological Survey Water-Resources Investigations Report 02-4068, 50 p (<https://pubs.er.usgs.gov/publication/wri024068>)

➤ Bankfull Statistics

Bankfull Statistics Parameters [Interior Plains D Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.3	square miles	0.19305	59927.7393

Bankfull Statistics Parameters [Central Lowland P Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.3	square miles	0.200772	59927.66594

Bankfull Statistics Parameters [USA Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.3	square miles	0.07722	59927.7393

Bankfull Statistics Flow Report [Interior Plains D Bieger 2015]

Statistic	Value	Unit
Bieger_D_channel_width	7.69	ft
Bieger_D_channel_depth	1.19	ft
Bieger_D_channel_cross_sectional_area	12.2	ft^2

Bankfull Statistics Flow Report [Central Lowland P Bieger 2015]

Statistic	Value	Unit
Bieger_P_channel_width	8.97	ft
Bieger_P_channel_depth	1.51	ft
Bieger_P_channel_cross_sectional_area	12	ft^2

Bankfull Statistics Flow Report [USA Bieger 2015]

Statistic	Value	Unit
Bieger_USA_channel_width	8.11	ft
Bieger_USA_channel_depth	0.933	ft
Bieger_USA_channel_cross_sectional_area	8.92	ft^2

Bankfull Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
Bieger_D_channel_width	7.69	ft
Bieger_D_channel_depth	1.19	ft
Bieger_D_channel_cross_sectional_area	12.2	ft^2
Bieger_P_channel_width	8.97	ft
Bieger_P_channel_depth	1.51	ft
Bieger_P_channel_cross_sectional_area	12	ft^2

Statistic	Value	Unit
Bieger_USA_channel_width	8.11	ft
Bieger_USA_channel_depth	0.933	ft
Bieger_USA_channel_cross_sectional_area	8.92	ft^2

Bankfull Statistics Citations

Bieger, Katrin; Rathjens, Hendrik; Allen, Peter M.; and Arnold, Jeffrey G.,2015, Development and Evaluation of Bankfull Hydraulic Geometry Relationships for the Physiographic Regions of the United States, Publications from USDA-ARS / UNL Faculty, 17p. (https://digitalcommons.unl.edu/usdaarsfacpub/1515?utm_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515&utm_medium=PDF&utm_campaign=PDFCoverPages)

➤ Probability Statistics

Probability Statistics Parameters [P zero Flow 2012 5138]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.3	square miles	1	1250
STREAM_VARG	Streamflow Variability Index from Grid	0.62	dimensionless	0.24	1.12

Probability Statistics Disclaimers [P zero Flow 2012 5138]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Probability Statistics Flow Report [P zero Flow 2012 5138]

Statistic	Value	Unit
Probability zero flow 1Day	0.0604	dim
Probability zero flow 7Day	0.0277	dim
Probability zero flow 30Day	0.00135	dim

Probability Statistics Citations

Koltun, G.F., and Kula, S.P.,2013, Methods for estimating selected low-flow statistics and development of annual flow-duration statistics for Ohio: U.S. Geological Survey Scientific Investigations Report 2012–5138, 195 p. (<http://pubs.usgs.gov/sir/2012/5138/>)

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Application Version: 4.14.0

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1



CULVERT ANALYSIS

PID : 116570 **Date :** 03/14/2025 **Project :** ERI-6

Location : STA. 641+50.14

Description : Drive Pipe

Designer : BLC

HEADWATER CONTROL CODES: INLET - Inlet Control.
OUTLET - Outlet Control.
OUTLET* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.
OUTLET** - Outlet Control - See Figure III - 7D in HDS 5 for type flow.
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 807 **Use HW :** 0 **Inlet Invert Elevation (ft.) :** 578.30 **Outlet Invert Elevation (ft.) :** 578.17
Pipe Quantity : 1
Culvert Type : Circular Smooth **Pipe Length (ft.) :** 54.00 **Culvert Slope (ft./ft.) :** 0.0024
Corrugation Type :
Pipe Size : 18 in.
Design Manning 'n' : (default)
Entrance Type : No Headwall **Loss Coef. Ke :** 0.2000

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
6.04	0.65	579.69	579.77	1 - A	5.12	1.37	0.95	0.0120	OUTLET*	0.00	578.17
7.10	0.74	579.85	579.94	1 - A	5.48	1.37	1.03	0.0120	OUTLET*	0.00	578.17



CULVERT ANALYSIS

PID : 116570 **Date :** 10/13/2025 **Project :** ERI-6

Location : STA. 645+36

Description : Drive Pipe

Designer : BLC

HEADWATER CONTROL CODES: INLET - Inlet Control.
OUTLET - Outlet Control.
OUTLET* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.
OUTLET** - Outlet Control - See Figure III - 7D in HDS 5 for type flow.
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 808

Use HW : 0

Inlet Invert Elevation (ft.) : 578.85

Outlet Invert Elevation (ft.) : 578.50

Pipe Quantity : 1

Culvert Type : Circular Smooth

Pipe Length (ft.) : 87.00

Culvert Slope (ft./ft.) : 0.0040

Corrugation Type :

Pipe Size : 18 in.

Design Manning 'n' : (default)

Entrance Type : No Headwall

Loss Coef. Ke : 0.2000

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
2.47	0.61	579.68	579.71	1 - A	3.78	0.61	0.60	0.0120	OUTLET*	0.00	578.50
2.68	0.63	579.72	579.75	1 - A	3.88	0.63	0.62	0.0120	OUTLET*	0.00	578.50



CULVERT ANALYSIS

PID : 116570 **Date :** 10/13/2025 **Project :** ERI-6

Location : STA. 652+50

Description : Drive Pipe

Designer : BLC

HEADWATER CONTROL CODES: INLET - Inlet Control.
OUTLET - Outlet Control.
OUTLET* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.
OUTLET** - Outlet Control - See Figure III - 7D in HDS 5 for type flow.
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 809

Use HW : 0

Inlet Invert Elevation (ft.) : 580.31

Outlet Invert Elevation (ft.) : 580.14

Pipe Quantity : 1

Culvert Type : Circular Smooth

Pipe Length (ft.) : 62.00

Culvert Slope (ft./ft.) : 0.0027

Corrugation Type :

Pipe Size : 18 in.

Design Manning 'n' : (default)

Entrance Type : No Headwall

Loss Coef. Ke : 0.2000

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
1.02	0.32	580.80	580.84	1 - A	2.93	0.42	0.38	0.0120	OUTLET*	0.00	580.14
1.14	0.33	580.83	580.87	1 - A	3.02	0.44	0.40	0.0120	OUTLET*	0.00	580.14



CULVERT ANALYSIS

PID : 116570 **Date :** 07/30/2025 **Project :** ERI-006

Location : 668+44.48

Description : Drive Pipe. Top of Drive El. 584.4

Designer : BLS

HEADWATER CONTROL CODES: INLET - Inlet Control.
OUTLET - Outlet Control.
OUTLET* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.
OUTLET** - Outlet Control - See Figure III - 7D in HDS 5 for type flow.
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 1

Use HW : 0

Inlet Invert Elevation (ft.) : 580.32

Outlet Invert Elevation (ft.) : 580.11

Pipe Quantity : 1

Culvert Type : Circular Smooth

Pipe Length (ft.) : 30.00

Culvert Slope (ft./ft.) : 0.0070

Corrugation Type :

Pipe Size : 12 in.

Design Manning 'n' : (default)

Entrance Type : Half Headwall

Loss Coef. Ke : 0.2000

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
1.10	0.12	580.95	N/A	1 - C	3.71	0.40	0.44	0.0120	INLET	0.00	580.11
1.30	0.16	581.01	N/A	1 - C	3.88	0.44	0.48	0.0120	INLET	0.00	580.11



CULVERT ANALYSIS

PID : 116570 **Date :** 10/13/2025 **Project :** ERI-6

Location : STA. 668+50

Description : Drive Pipe

Designer : BLC

HEADWATER CONTROL CODES: INLET - Inlet Control.
OUTLET - Outlet Control.
OUTLET* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.
OUTLET** - Outlet Control - See Figure III - 7D in HDS 5 for type flow.
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 601 **Use HW :** 0 **Inlet Invert Elevation (ft.) :** 582.31 **Outlet Invert Elevation (ft.) :** 581.99
Pipe Quantity : 1
Culvert Type : Circular Smooth **Pipe Length (ft.) :** 22.00 **Culvert Slope (ft./ft.) :** 0.0145
Corrugation Type :
Pipe Size : 12 in.
Design Manning 'n' : (default)
Entrance Type : No Headwall **Loss Coef. Ke :** 0.2000

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
1.43	0.29	583.04	N/A	1 - C	5.22	0.38	0.51	0.0120	INLET	0.00	581.99
1.60	0.32	583.08	N/A	1 - C	5.36	0.41	0.54	0.0120	INLET	0.00	581.99



CULVERT ANALYSIS

PID : 116570 **Date :** 07/30/2025 **Project :** ERI-006

Location : 680+76.66

Description : Drive Pipe. Road El. 586.6

Designer : BLS

HEADWATER CONTROL CODES: INLET - Inlet Control.
OUTLET - Outlet Control.
OUTLET* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.
OUTLET** - Outlet Control - See Figure III - 7D in HDS 5 for type flow.
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 1 **Use HW :** 0 **Inlet Invert Elevation (ft.) :** 583.16 **Outlet Invert Elevation (ft.) :** 582.81
Pipe Quantity : 1
Culvert Type : Circular Smooth **Pipe Length (ft.) :** 49.00 **Culvert Slope (ft./ft.) :** 0.0071
Corrugation Type :
Pipe Size : 12 in.
Design Manning 'n' : (default)
Entrance Type : Half Headwall **Loss Coef. Ke :** 0.2000

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
4.10	1.06	584.70	584.80	2 - F	5.73	1.00	0.86	0.0120	OUTLET**	0.00	582.81
4.60	1.33	584.92	585.09	2 - F	6.21	1.00	0.89	0.0120	OUTLET**	0.00	582.81



CULVERT ANALYSIS

PID : 116570 **Date :** 10/13/2025 **Project :** ERI-6

Location : Perkins RAB

Description : HW612-HW613 STA. 686+77

Designer : BLC

HEADWATER CONTROL CODES: INLET - Inlet Control.
OUTLET - Outlet Control.
OUTLET* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.
OUTLET** - Outlet Control - See Figure III - 7D in HDS 5 for type flow.
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 610

Use HW : 0

Inlet Invert Elevation (ft.) : 579.48

Outlet Invert Elevation (ft.) : 578.81

Pipe Quantity : 1

Culvert Type : Circular Smooth

Pipe Length (ft.) : 45.00

Culvert Slope (ft./ft.) : 0.0149

Corrugation Type :

Pipe Size : 12 in.

Design Manning 'n' : (default)

Entrance Type : Half Headwall

Loss Coef. Ke : 0.2000

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
0.89	0.53	580.03	N/A	1 - C	4.62	0.29	0.40	0.0120	INLET	0.00	578.81
1.07	0.57	580.10	N/A	1 - C	4.87	0.32	0.43	0.0120	INLET	0.00	578.81



CULVERT ANALYSIS

PID : 116570 **Date :** 04/02/2025 **Project :** ERI-6

Location : Perkins RAB

Description : Road Crossing HW617 - HW618 STA. 50+12

Designer : BLC

HEADWATER CONTROL CODES: INLET - Inlet Control.
OUTLET - Outlet Control.
OUTLET* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.
OUTLET** - Outlet Control - See Figure III - 7D in HDS 5 for type flow.
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 613 **Use HW :** 0 **Inlet Invert Elevation (ft.) :** 583.66 **Outlet Invert Elevation (ft.) :** 583.59
Pipe Quantity : 1
Culvert Type : Circular Smooth **Pipe Length (ft.) :** 86.00 **Culvert Slope (ft./ft.) :** 0.0008
Corrugation Type :
Pipe Size : 15 in.
Design Manning 'n' : (default)
Entrance Type : Half Headwall **Loss Coef. Ke :** 0.2000

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
2.96	0.50	584.66	584.78	1 - A	4.25	1.14	0.69	0.0120	OUTLET*	0.00	583.59
3.34	0.56	584.73	584.89	1 - A	4.44	1.14	0.74	0.0120	OUTLET*	0.00	583.59



CULVERT ANALYSIS

PID : 116570 Date : 02/01/2024 Project : ERI-6

Location : STA. 675+15

Description : HW001-HW002 CULVERT

Designer : BLC

HEADWATER CONTROL CODES: INLET - Inlet Control.
OUTLET - Outlet Control.
OUTLET* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.
OUTLET** - Outlet Control - See Figure III - 7D in HDS 5 for type flow.
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 1 Use HW : 0 Inlet Invert Elevation (ft.) : 579.10 Outlet Invert Elevation (ft.) : 578.40
Pipe Quantity : 1
Culvert Type : Elliptical Pipe Length (ft.) : 86.33 Culvert Slope (ft./ft.) : 0.0081
Corrugation Type :
Pipe Size : 29 x 45 in.
Design Manning 'n' : (default)
Entrance Type : Half Headwall Loss Coef. Ke : 0.2000

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
24.83	0.74	581.02	N/A	1 - C	8.33	1.02	1.34	0.0120	INLET	0.00	578.40
30.26	0.92	581.27	N/A	1 - C	8.83	1.14	1.49	0.0120	INLET	0.00	578.40



CULVERT ANALYSIS

PID : 116570 **Date :** 07/30/2025 **Project :** Erie 6

Location : New Culvert Perkins RAB

Description : US 6 Sta. 687+48.23

Designer : BLS

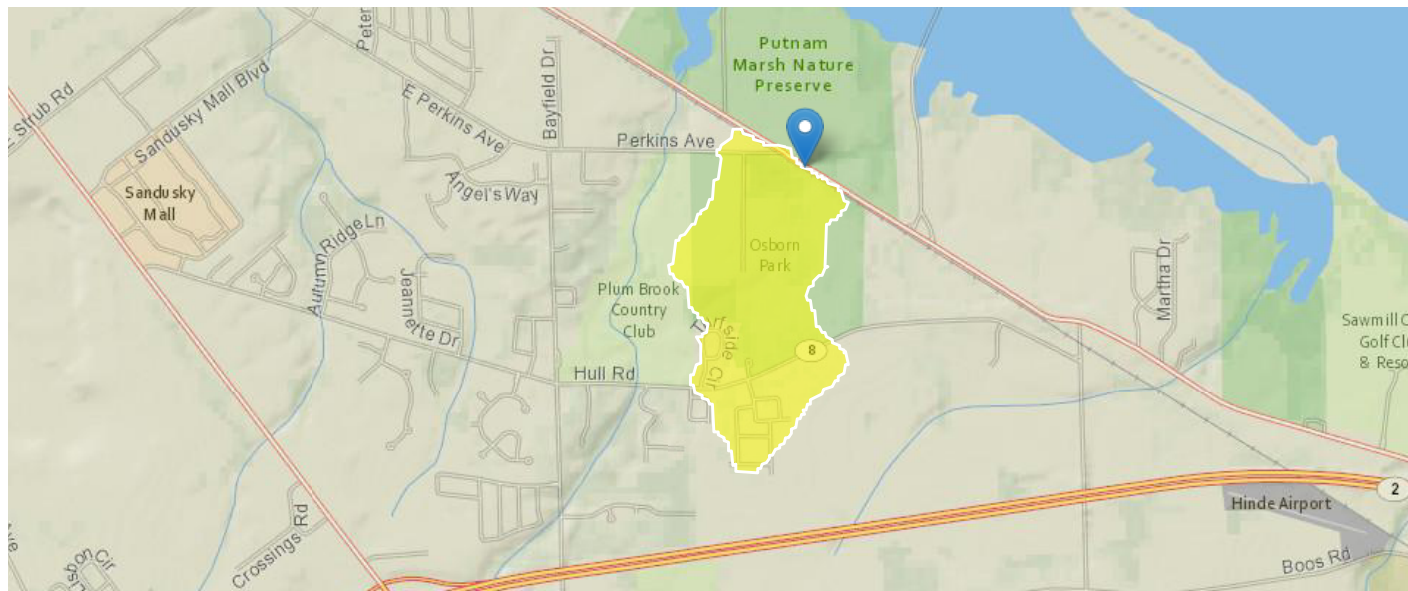
HEADWATER CONTROL CODES: INLET - Inlet Control.
OUTLET - Outlet Control.
OUTLET* - Outlet Control with backwater curve used to compute headwater. See Figure III - 7E in HDS 5 for type flow.
OUTLET** - Outlet Control - See Figure III - 7D in HDS 5 for type flow.
N/A - Flow is supercritical with low headwater and low tailwater. Control Section is at the inlet.

Pipe Number : 1 **Use HW :** 0 **Inlet Invert Elevation (ft.) :** 574.95 **Outlet Invert Elevation (ft.) :** 574.45
Pipe Quantity : 1
Culvert Type : Circular Smooth **Pipe Length (ft.) :** 108.00 **Culvert Slope (ft./ft.) :** 0.0046
Corrugation Type :
Pipe Size : 72 in.
Design Manning 'n' : (default)
Entrance Type : Full Headwall **Loss Coef. Ke :** 0.2000

FLOW (cfs.)	HEAD LOSS (ft.)	HWI (ft.)	HWO (ft.)	FLOW TYPE	VELOCITY (fps.)	DN (ft.)	DC (ft.)	MANNING N	HEADWATER CONTROL	BURIED DEPTH (ft.)	TAILWATER ELEVATION (ft.)
153.00	0.67	579.78	N/A	1 - C	9.39	2.97	3.36	0.0120	INLET	0.00	576.50
227.00	1.59	581.10	N/A	1 - C	12.04	3.79	4.12	0.0120	INLET	0.00	576.50

StreamStats Report - 1879259

Region ID: OH
Workspace ID: OH20230503192931116000
Clicked Point (Latitude, Longitude): 41.41967, -82.63221
Time: 2023-05-03 15:29:54 -0400



[+ Collapse All](#)

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CSL1085LFP	Change in elevation divided by length between points 10 and 85 percent of distance along the longest flow path to the basin divide, LFP from 2D grid	37.2	feet per mi
DRNAREA	Area that drains to a point on a stream	0.35	square miles
FOREST	Percentage of area covered by forest	12.3	percent
LAT_CENT	Latitude of Basin Centroid	41.414	decimal degrees
LC92STOR	Percentage of water bodies and wetlands determined from the NLCD	0.9	percent
LONG_CENT	Longitude Basin Centroid	82.6348	decimal degrees
OHREGA	Ohio Region A Indicator	1	dimensionless
OHREGC	Ohio Region C Indicator	0	dimensionless
PRECIPCENT	Mean Annual Precip at Basin Centroid	34.2	inches
STREAM_VARG	Streamflow variability index as defined in WRIR 02-4068, computed from regional grid	0.62	dimensionless

➤ Peak-Flow Statistics

Peak-Flow Statistics Parameters [Peak Flow Full Model Reg A SIR2019 5018]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.35	square miles	0.04	5989
OHREGC	Ohio Region C Indicator 1 if in C else 0	0	dimensionless	0	1
OHREGA	Ohio Region A Indicator 1 if in A else 0	1	dimensionless	0	1
CSL1085LFP	Stream Slope 10 and 85 Longest Flow Path	37.2	feet per mi	1.53	516
LC92STOR	Percent Storage from NLCD1992	0.9	percent	0	25.35

Peak-Flow Statistics Flow Report [Peak Flow Full Model Reg A SIR2019 5018]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	PIu	ASEp
50-percent AEP flood	45.4	ft ³ /s	23.9	86.1	40.1
20-percent AEP flood	81.1	ft ³ /s	44.7	147	37.2
10-percent AEP flood	110	ft ³ /s	60.2	201	37.6
4-percent AEP flood	153	ft ³ /s	83.1	282	38.1
2-percent AEP flood	189	ft ³ /s	102	352	37.8
1-percent AEP flood	227	ft ³ /s	121	427	39.6
0.2-percent AEP flood	331	ft ³ /s	174	630	40.3

Peak-Flow Statistics Citations

Koltun, G.F.,2019, Flood-frequency estimates for Ohio streamgages based on data through water year 2015 and techniques for estimating flood-frequency characteristics of rural, unregulated Ohio streams: U.S. Geological Survey Scientific Investigations Report 2019–5018, 25 p. (<https://dx.doi.org/10.3133/sir20195018>)

➤ Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region A 2012 5138]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.35	square miles	1	1250
STREAM_VARG	Streamflow Variability Index from Grid	0.62	dimensionless	0.24	1.12

Low-Flow Statistics Disclaimers [Low Flow Region A 2012 5138]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Low Flow Region A 2012 5138]

Statistic	Value	Unit
1 Day 10 Year Low Flow	0.00228	ft ³ /s
7 Day 10 Year Low Flow	0.00313	ft ³ /s
30 Day 10 Year Low Flow	0.00532	ft ³ /s
90 Day 10 Year Low Flow	0.00968	ft ³ /s

Low-Flow Statistics Citations

Koltun, G.F., and Kula, S.P.,2013, Methods for estimating selected low-flow statistics and development of annual flow-duration statistics for Ohio: U.S. Geological Survey Scientific Investigations Report 2012–5138, 195 p. (<http://pubs.usgs.gov/sir/2012/5138/>)

➤ Flow-Duration Statistics

Flow-Duration Statistics Parameters [Low Flow Region A 2012 5138]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.35	square miles	1	1250
STREAM_VARG	Streamflow Variability Index from Grid	0.62	dimensionless	0.24	1.12

Flow-Duration Statistics Disclaimers [Low Flow Region A 2012 5138]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Flow-Duration Statistics Flow Report [Low Flow Region A 2012 5138]

Statistic	Value	Unit
80 Percent Duration	0.0235	ft ³ /s

Flow-Duration Statistics Citations

Koltun, G.F., and Kula, S.P.,2013, Methods for estimating selected low-flow statistics and development of annual flow-duration statistics for Ohio: U.S. Geological Survey Scientific Investigations Report 2012–5138, 195 p. (<http://pubs.usgs.gov/sir/2012/5138/>)

➤ Annual Flow Statistics

Annual Flow Statistics Parameters [Low Flow LatGT 41.2 wri02 4068]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.35	square miles	0.12	7422
LAT_CENT	Latitude of Basin Centroid	41.414	decimal degrees	41.2	41.59
PRECIPCENT	Mean Annual Precip at Basin Centroid	34.2	inches	34	43.2

Annual Flow Statistics Flow Report [Low Flow LatGT 41.2 wri02 4068]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
Mean Annual Flow	0.295	ft ³ /s	11.4	11.4

Annual Flow Statistics Citations

Koltun, G. F., and Whitehead, M. T.,2002, Techniques for Estimating Selected Streamflow Characteristics of Rural, Unregulated Streams in Ohio: U. S. Geological Survey Water-Resources Investigations Report 02-4068, 50 p (<https://pubs.er.usgs.gov/publication/wri024068>)

➤ Monthly Flow Statistics

Monthly Flow Statistics Parameters [Low Flow LatGT 41.2 wri02 4068]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.35	square miles	0.12	7422
LC92STOR	Percent Storage from NLCD1992	0.9	percent	0	19
PRECIPCENT	Mean Annual Precip at Basin Centroid	34.2	inches	34	43.2
FOREST	Percent Forest	12.3	percent	0	99.1
LAT_CENT	Latitude of Basin Centroid	41.414	decimal degrees	41.2	41.59
STREAM_VARG	Streamflow Variability Index from Grid	0.62	dimensionless	0.25	1.13

Monthly Flow Statistics Flow Report [Low Flow LatGT 41.2 wri02 4068]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
January Mean Flow	0.394	ft ³ /s	16.6	16.6
February Mean Flow	0.649	ft ³ /s	11.9	11.9
March Mean Flow	0.702	ft ³ /s	14	14
April Mean Flow	0.607	ft ³ /s	11.2	11.2
May Mean Flow	0.429	ft ³ /s	19.5	19.5
June Mean Flow	0.224	ft ³ /s	27	27
July Mean Flow	0.14	ft ³ /s	28.2	28.2
August Mean Flow	0.0672	ft ³ /s	36.8	36.8
September Mean Flow	0.0395	ft ³ /s	43.6	43.6
October Mean Flow	0.16	ft ³ /s	50.8	50.8
November Mean Flow	0.265	ft ³ /s	37.5	37.5
December Mean Flow	0.454	ft ³ /s	21.8	21.8

Monthly Flow Statistics Citations

Koltun, G. F., and Whitehead, M. T.,2002, Techniques for Estimating Selected Streamflow Characteristics of Rural, Unregulated Streams in Ohio: U. S. Geological Survey Water-Resources Investigations Report 02-4068, 50 p (<https://pubs.er.usgs.gov/publication/wri024068>)

➤ General Flow Statistics

General Flow Statistics Parameters [Low Flow LatGT 41.2 wri02 4068]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.35	square miles	0.12	7422
LC92STOR	Percent Storage from NLCD1992	0.9	percent	0	19
STREAM_VARG	Streamflow Variability Index from Grid	0.62	dimensionless	0.25	1.13
LAT_CENT	Latitude of Basin Centroid	41.414	decimal degrees	41.2	41.59

General Flow Statistics Flow Report [Low Flow LatGT 41.2 wri02 4068]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
Harmonic Mean Streamflow	0.0227	ft ³ /s	65.9	65.9

General Flow Statistics Citations

Koltun, G. F., and Whitehead, M. T.,2002, Techniques for Estimating Selected Streamflow Characteristics of Rural, Unregulated Streams in Ohio: U. S. Geological Survey Water-Resources Investigations Report 02-4068, 50 p (<https://pubs.er.usgs.gov/publication/wri024068>)

➤ Flow Percentile Statistics

Flow Percentile Statistics Parameters [Low Flow LatGT 41.2 wri02 4068]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.35	square miles	0.12	7422
LC92STOR	Percent Storage from NLCD1992	0.9	percent	0	19
STREAM_VARG	Streamflow Variability Index from Grid	0.62	dimensionless	0.25	1.13
LAT_CENT	Latitude of Basin Centroid	41.414	decimal degrees	41.2	41.59
LONG_CENT	Longitude of Basin Centroid	82.6348	decimal degrees	80.53	84.6

Flow Percentile Statistics Flow Report [Low Flow LatGT 41.2 wri02 4068]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
25th Percentile Flow	0.0481	ft ³ /s	29.2	29.2
50th Percentile Flow Median	0.115	ft ³ /s	40.3	40.3
75th Percentile Flow	0.276	ft ³ /s	47.9	47.9

Flow Percentile Statistics Citations

Koltun, G. F., and Whitehead, M. T.,2002, Techniques for Estimating Selected Streamflow Characteristics of Rural, Unregulated Streams in Ohio: U. S. Geological Survey Water-Resources Investigations Report 02-4068, 50 p (<https://pubs.er.usgs.gov/publication/wri024068>)

➤ Bankfull Statistics

Bankfull Statistics Parameters [Interior Plains D Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.35	square miles	0.19305	59927.7393

Bankfull Statistics Parameters [Central Lowland P Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.35	square miles	0.200772	59927.66594

Bankfull Statistics Parameters [USA Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.35	square miles	0.07722	59927.7393

Bankfull Statistics Flow Report [Interior Plains D Bieger 2015]

Statistic	Value	Unit
Bieger_D_channel_width	8.11	ft
Bieger_D_channel_depth	1.22	ft
Bieger_D_channel_cross_sectional_area	13.1	ft^2

Bankfull Statistics Flow Report [Central Lowland P Bieger 2015]

Statistic	Value	Unit
Bieger_P_channel_width	9.46	ft
Bieger_P_channel_depth	1.55	ft
Bieger_P_channel_cross_sectional_area	12.9	ft^2

Bankfull Statistics Flow Report [USA Bieger 2015]

Statistic	Value	Unit
Bieger_USA_channel_width	8.56	ft
Bieger_USA_channel_depth	0.964	ft
Bieger_USA_channel_cross_sectional_area	9.69	ft^2

Bankfull Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
Bieger_D_channel_width	8.11	ft
Bieger_D_channel_depth	1.22	ft
Bieger_D_channel_cross_sectional_area	13.1	ft^2
Bieger_P_channel_width	9.46	ft
Bieger_P_channel_depth	1.55	ft
Bieger_P_channel_cross_sectional_area	12.9	ft^2
Bieger_USA_channel_width	8.56	ft
Bieger_USA_channel_depth	0.964	ft
Bieger_USA_channel_cross_sectional_area	9.69	ft^2

Bankfull Statistics Citations

Bieger, Katrin; Rathjens, Hendrik; Allen, Peter M.; and Arnold, Jeffrey G.,2015, Development and Evaluation of Bankfull Hydraulic Geometry Relationships for the Physiographic Regions of the United States, Publications from USDA-ARS / UNL Faculty, 17p. (https://digitalcommons.unl.edu/usdaarsfacpub/1515?utm_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515&utm_medium=PDF&utm_campaign=PDFCoverPages)

➤ Probability Statistics

Probability Statistics Parameters [P zero Flow 2012 5138]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.35	square miles	1	1250
STREAM_VARG	Streamflow Variability Index from Grid	0.62	dimensionless	0.24	1.12

Probability Statistics Disclaimers [P zero Flow 2012 5138]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Probability Statistics Flow Report [P zero Flow 2012 5138]

Statistic	Value	Unit
Probability zero flow 1Day	0.0604	dim
Probability zero flow 7Day	0.0277	dim
Probability zero flow 30Day	0.00135	dim

Probability Statistics Citations

Koltun, G.F., and Kula, S.P., 2013, Methods for estimating selected low-flow statistics and development of annual flow-duration statistics for Ohio: U.S. Geological Survey Scientific Investigations Report 2012–5138, 195 p. (<http://pubs.usgs.gov/sir/2012/5138/>)

➤ Maximum Probable Flood Statistics

Maximum Probable Flood Statistics Parameters [2.3 Percent (0.00795 square miles) Crippen Bue Region 6]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.35	square miles	0.1	10000

Maximum Probable Flood Statistics Disclaimers [2.3 Percent (0.00795 square miles) Crippen Bue Region 6]

Weighted flows were not calculated. Users should be careful to evaluate the applicability of the provided estimates. Percentage of area falls outside where region is undefined. Whole estimates have been provided using available regional equations.

Maximum Probable Flood Statistics Flow Report [2.3 Percent (0.00795 square miles) Crippen Bue Region 6]

Statistic	Value	Unit
Maximum Flood Crippen Bue Regional	2830	ft ³ /s

Maximum Probable Flood Statistics Citations

Crippen, J.R. and Bue, Conrad D. 1977, Maximum Floodflows in the Conterminous United States, Geological Survey Water-Supply Paper 1887, 52p. (<https://pubs.usgs.gov/wsp/1887/report.pdf>)

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Application Version: 4.14.0

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

APPENDIX 7



Ohio Department of Transportation - Office of Hydraulic Engineering

Post-Construction BMP Calculation Spreadsheet

Post Construction - Project Summary

Project Data

Project EDA	50.18	Units acres
Is the Project Routine Maintenance per L&D Vol. 2, Sec. 1112.2	No	
BMPs Required?	BMPs Required	NA
Ain (New Impervious Area in New Permanent R/W	8.48	acres
Does Entire Site Drain to Large River (>100 sq. miles)?	No	
Water Quality Treatment Required	Yes	
Water Quantity Treatment Required	Yes	

Treatment Percent and Treatment Requirement

Aix (Project EDA that is inside the existing right-of-way)	29.92	acres
Ain (New Impervious Area in New Permanent R/W)	8.48	acres
T% (Treatment Percent)	37.67	%
Treatment Requirement	18.90	acres

BMPs Provided

BMP Name	BMP Type	Contributing Drainage Area (acres)	Contributing Drainage Area in ODOT R/W (acres)
BMP1	Other		0.13
BMP2	Vegetated Filter Strip		10.82
BMP3	Vegetated Filter Strip		2.48
BMP4	Bioretention Cell		3.52
BMP5	Bioretention Cell		2.32

Treatment Provided

Total Area with ODOT R/W Treated (acres)	19.27
Treatment Requirements (acres)	18.90
Treatment Check	Good

BMP Submittal Requirements (Per L&D, Vol. 2, Sec. 1116.2)

1. Estimated Project Earth Disturbed Area	Yes	Good
2. Treatment Percent Calculation	Yes	Good
3. BMP Selected for use	Yes	Good
4. Drainage area mapping for post-construction BMPs that show the total contributing drainage area and the amount of contributing area within ODOT right-of-way	Yes	Good
5. Plan sheets showing locations of post-construction BMP	Yes	Good
6. Calculations for each BMP	Yes	Good
7. Explanation for any area that is not treated	Yes	Good



Ohio Department of Transportation - Office of Hydraulic Engineering

Post-Construction BMP Calculation Spreadsheet

Amended Vegetated Filter Strip

Filter Strip	Route	Begin Station	End Station	Side	Tributary Project Pavement and Shoulder Width (FT)	Avg Filter Strip Width (FT)	Max Filter Strip Slope (z:1)	Filter Strip Length (FT)	Filter Strip Area (SF)	Treatment Credit (100% AVFS Area, 45% trib area of equal width) (Acre)	Item 654 Renovating Existing Soil, APP (MSF)	Item 671 Erosion Control Mats (SY)
Filter Strip #1	SUP	1001+75	1003+00	LT	12	6	3	125	750.0	0.025	0.8	83
Filter Strip #2	SUP	1003+10	1004+50	LT	12	8	3	140	1,120.0	0.037	1.1	124
Filter Strip #3	SUP	1004+95	1006+70	LT	18.5	15	3	175	2,625.0	0.087	2.6	292
Filter Strip #4	SUP	1006+95	1008+05	LT	14	15	3	110	1,650.0	0.055	1.7	183
Filter Strip #5	SUP	1008+95	1009+95	LT	14	11	3	100	1,100.0	0.037	1.1	122
Filter Strip #6	SUP	1010+55	1012+50	LT	12	10	3	195	1,950.0	0.065	2.0	217
Filter Strip #7	SUP	1012+75	1016+75	LT	16	10	3	400	4,000.0	0.133	4.0	444
Filter Strip #8	SUP	1021+00	1023+50	LT	12	6	3	250	1,500.0	0.050	1.5	167
Filter Strip #9	SUP	1028+15	1029+30	RT	12	9	3	115	1,035.0	0.034	1.0	115
Filter Strip #10	SUP	1029+90	1032+20	RT	12	10.5	3	230	2,415.0	0.080	2.4	268
Filter Strip #11	SUP	1034+50	1036+00	RT	12	12	3	150	1,800.0	0.060	1.8	200
Filter Strip #12	SUP	1036+75	1042+50	RT	12	12	3	575	6,900.0	0.230	6.9	767
Filter Strip #13	SUP	1043+30	1046+50	LT	12	12	3	320	3,840.0	0.128	3.8	427
Filter Strip #14	SUP	1047+25	1050+25	LT	12	11.5	3	300	3,450.0	0.115	3.5	383
Filter Strip #15	SUP	1051+00	1056+00	LT	12	12	3	500	6,000.0	0.200	6.0	667
Filter Strip #16	US 6	663+00	668+00	LT	32	16	3	500	8,000.0	0.266	8.0	889
Filter Strip #17	US 6	669+00	681+00	LT	18	17	3	1,200	20,400.0	0.679	20.4	2,267
Filter Strip #18	OLD US 6	66+00	76+00			30.5	3	1,000	30,500.0	0.700	30.5	3,389
Filter Strip #19	US 6	686+91	688+75	RT	12	12	3	184	2,208.0	0.073	2.2	245
Filter Strip #20	SUP	1094+25	1095+75	RT	12	10	3	150	1,500.0	0.050	1.5	167
Filter Strip #21	RAB B	1734+30	1735+80	LT	12	11	3	150	1,650.0	0.055	1.7	183
Filter Strip #22	RAB B	1736+60	1739+20	LT	12	12	3	260	3,120.0	0.104	3.1	347
Filter Strip #23								0	0.0	0.000	0.0	0
Filter Strip #24								0	0.0	0.000	0.0	0
Filter Strip #25								0	0.0	0.000	0.0	0
Filter Strip #26								0	0.0	0.000	0.0	0

Total Treatment Credit Earned from Amended Vegetated Filter Strips
(Treatment is for quality and quantity)

3.264 acres

BMP Design Considerations

	Answer	Design Check
1 Is the filter strip width in accordance with 1113.23?	Yes	Good
2 Is the slope 3:1 or flatter	Yes	Good
3 Is the only contributing drainage to the filter strip from the road and shoulder?	Yes	Good
4 Does any concentrated flow or any outlets discharge to the filter strip?	No	Good
5 Is Item 654, Renovating Existing Soil, included for the filter strip?	Yes	Good
6 Is Item 670, Slope Erosion Protection, included for the filter strip?	Yes	Good

Amended Vegetated Filter Strip

Filter Strip	Route	Begin Station	End Station	Side	Tributary Project Pavement and Shoulder Width (FT)	Avg Filter Strip Width (FT)	Maximum Tributary Width Credit	Max Filter Strip Slope (z:1)	Filter Strip Length (FT)	Filter Strip Area (SF)	Treatment Credit (100% AVFS Area, 45% trib area of equal width) (Acre)	Item 654 Renovating Existing Soil, APP (MSF)	Item 671 Erosion Control Mats (SY)
Filter Strip #23	US 2	1027+48	1064+03	C	15	33	15	6	3,655	120,615.0	3.335	120.6	13,402
Filter Strip #24	US 2	1027+48	1064+03	C	17	35	17	6	3,655	127,925.0	3.579	127.9	14,214
Filter Strip #25	US 2	1031+89	1037+94	LT	28	20	20	3	605	12,100.0	0.403	12.1	1,344
Filter Strip #26	US 2	1038+71	1043+29	LT	28	20	20	3	458	9,160.0	0.305	9.2	1,018
Filter Strip #27	US 2	1032+40	1038+39	RT	24	20	20	3	599	11,980.0	0.399	12.0	1,331
Filter Strip #28	US 2	1039+24	1048+67	RT	23	23	23	3	943	21,689.0	0.722	21.7	2,410
Filter Strip #29	RAMP	741+79	763+00	RT	28	30	28	4	2,121	63,630.0	2.074	63.6	7,070

Total Treatment Credit Earned from Amended Vegetated Filter Strips
(Treatment is for quality and quantity)

10.817 acres

BMP Design Considerations

	Answer	Design Check
1 Is the filter strip width in accordance with 1113.23?	Yes	Good
2 Is the slope 3:1 or flatter	Yes	Good
3 Is the only contributing drainage to the filter strip from the road and shoulder?	Yes	Good
4 Does any concentrated flow or any outlets discharge to the filter strip?	No	Good
5 Is Item 654, Renovating Existing Soil, included for the filter strip?	Yes	Good
6 Is Item 670, Slope Erosion Protection, included for the filter strip?	Yes	Good



Ohio Department of Transportation - Office of Hydraulic Engineering

Post-Construction BMP Calculation Spreadsheet

Water Quality Flow Rate (WQ_F)

Drainage Area #1	Area (acres)	Coefficient of Runoff (C)
Tributary Area within Existing R/W	1.63	0.9
Impervious Trib. Area Outside Existing R/W	0.00	0
Tributary Area Land Use #3	0.00	0
Tributary Area Land Use #4		0
Total Tributary Area	1.63	0.900
BMP Type	Bioretention Cell	
Time of Concentration (minutes)	NA	
Intensity, i (in/hr)	0.65	
Water Quality Flow (WQ _F)	0.954	cfs

Drainage Area #2	Area (acres)	Coefficient of Runoff (C)
Tributary Area within Existing R/W	1.89	0.9
Impervious Trib. Area Outside Existing R/W	0.00	0
Tributary Area Land Use #3	0.00	0
Tributary Area Land Use #4		
Total Tributary Area	1.89	0.900
BMP Type	Bioretention Cell	
Time of Concentration (minutes)	NA	
Intensity, i (in/hr)	0.65	
Water Quality Flow (WQ _F)	1.106	cfs

Bioretention Cell

[illegible]

Total Treatment Credit Earned from Bioretention (within R/W):²

2.32	acres
------	-------

(Treatment is for quality and quantity)

[illegible]

Yellow: Requires Input (See instructions tab)

BMP Design Considerations	Answer	Design Check
1. Has pretreatment been provided per L&D Vol. 2, Sec. 1117.5?	Yes	Good
2. Is the water quality flow (WQ_F) through the bioretention cell limited to 1 foot per second?	Yes	Good
3. Has an overflow been provided 12 inches above the bioretention cell surface?	Yes	Good
4. Has the overflow been sized to convey the design check storm?	Yes	Good
5. Is the bioretention cell cross section designed per L&D Vol. 2, Sec. 1117.5.3.G and Figure 1117-8?	Yes	Good
6. Is temporary erosion control mat, Item 671 provided over the bioretention cell?	Yes	Good



Bioretention Cell

Drainage Area #	Total Tributary Area (acres)	Tributary Area within the R/W (acres)	Impervious Tributary Area ¹ (acres)
Bio. #3	1.63	1.63	1.63
Bio. #4	1.89	1.89	1.89

Total Treatment Credit Earned from Bioretention (within R/W):²

3.52 acres

(Treatment is for quality and quantity)

Drainage Area #	Minimum Bioretention Cell Surface Area (acres)	Bioretention Cell Surface Area Designed (acres)	Meets Design?
Bio. #3	0.08	0.27	Good
Bio. #4	0.09	0.16	Good

Yellow: Requires Input (See instructions tab)

BMP Design Considerations	Answer	Design Check
1. Has pretreatment been provided per L&D Vol. 2, Sec. 1117.5?	Yes	Good
2. Is the water quality flow (WQ _F) through the bioretention cell limited to 1 foot per second?	Yes	Good
3. Has an overflow been provided 12 inches above the bioretention cell surface?	Yes	Good
4. Has the overflow been sized to convey the design check storm?	Yes	Good
5. Is the bioretention cell cross section designed per L&D Vol. 2, Sec. 1117.5.3.G and Figure 1117-8?	Yes	Good
6. Is temporary erosion control mat, Item 671 provided over the bioretention cell?	Yes	Good



STORM SEWER SYSTEM

PID : 116570 **Date :** 06/01/2025 **Project :** ERIE-US 6-CORRIDOR

Location : ROUNDABOUT E BIORETENTION CELL

Description : ROUNDABOUT D BIORETENTION CELL OUTLET

Designer : MHT

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 15.00

Tailwater Elevation (ft.): 0.00

JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
1	2	788+19		1.89	1.70	10.00	4.94	5.55	8.4	9.4	21	100.0	0.0050	589.00	4.55	10.45	0.0047	590.42	594.00	3.58	3.25	CB 2-2B
	begin	787+24		1.89	1.70									588.50				589.95	590.25			0.015



STORM SEWER SYSTEM

PID : 116570 **Date :** 06/01/2025 **Project :** ERIE-US 6-CORRIDOR

Location : ROUNDABOUT E BIORETENTION CELL

Description : ROUNDABOUT E BIORETENTION CELL OUTLET

Designer : MHT

Rainfall Area: A

Just Full Capacity Frequency (yrs.) : 10

Hydraulic Gradient Frequency (yrs.) : 25

Minimum Pipe Size : 15.00

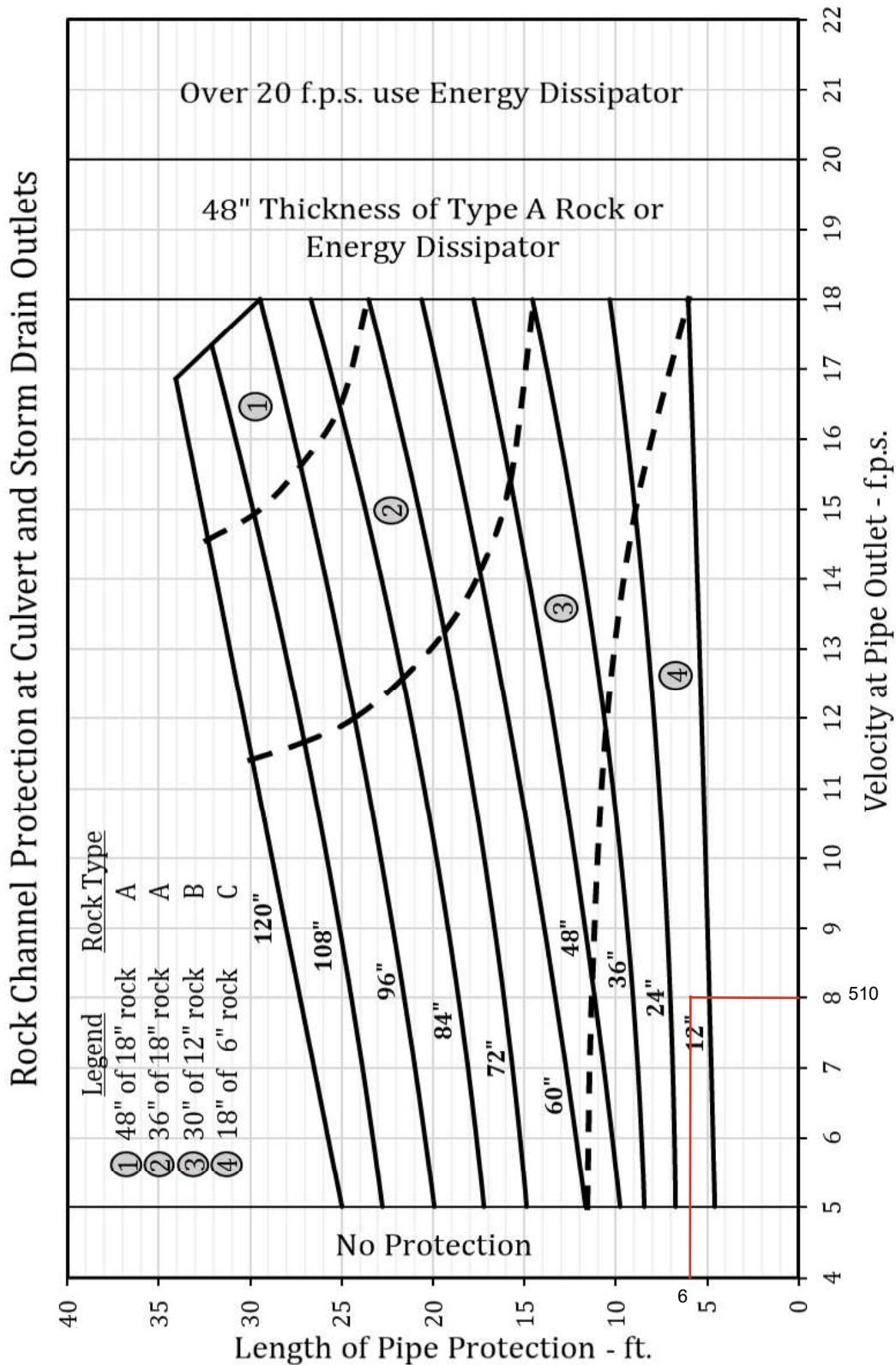
Tailwater Elevation (ft.): 0.00

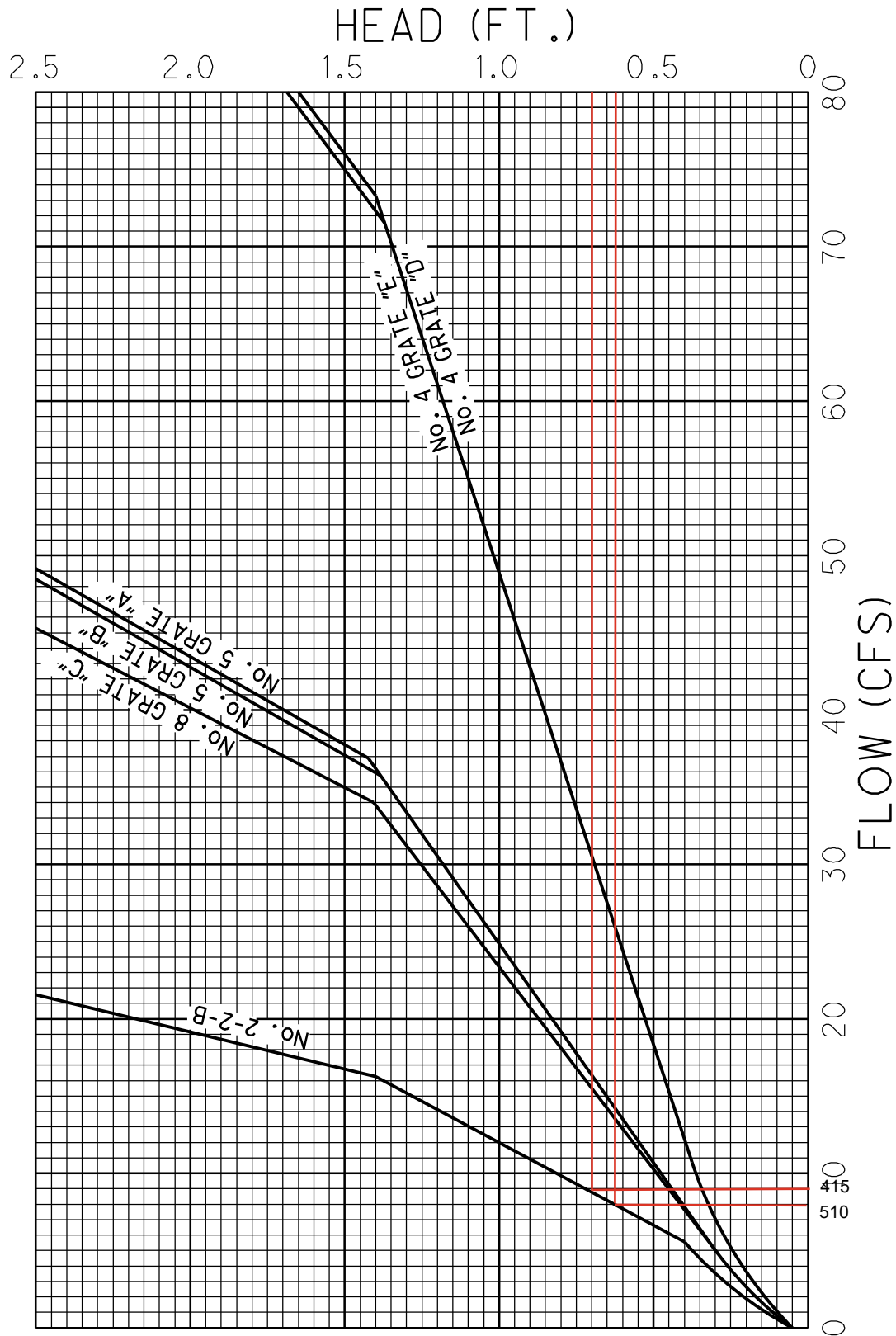
JUNCTION		STATION		Δ AREA	Δ CA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (10 yrs.)	(25 yrs.)	(10 yrs.)	(25 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
1	2	865+49		1.63	1.47	10.00	4.94	5.61	7.3	8.2	15	44.0	0.0227	598.00	7.73	9.08	0.0216	599.14	604.00	4.86	4.75	CB 2-2B
	begin	865+33		1.63	1.47									597.00				598.19	598.25			0.015

ROCK CHANNEL PROTECTION AT CULVERT AND STORM SEWER OUTLETS

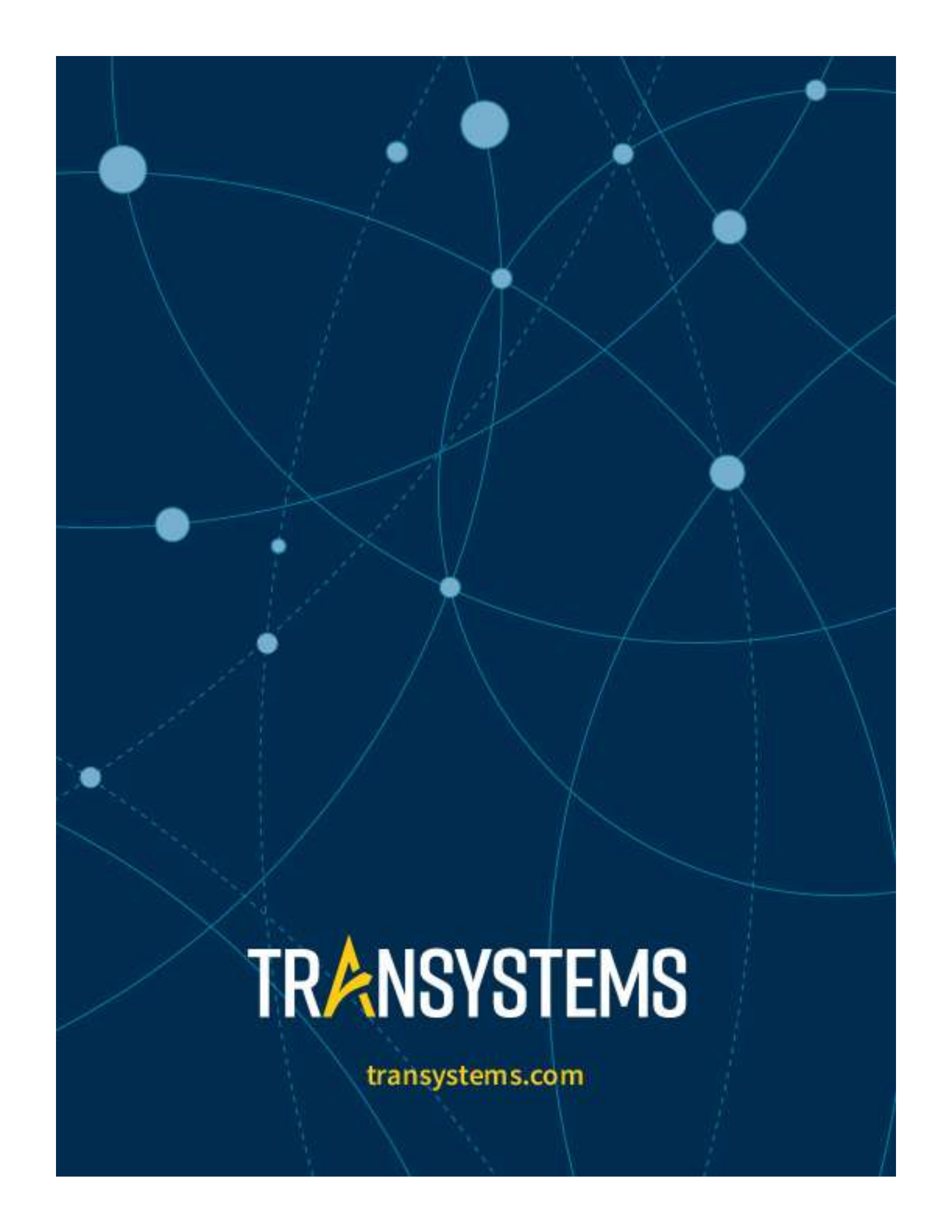
1002-4

REFERENCE SECTION
1002.2.3





CAPACITY OF A GRATE CATCH BASIN IN A SUMP
(WATER PONDED ON THE GRATE)



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