

HYDRAULIC REPORT

ELGIN O'HARE – WEST BYPASS
JOB NUMBER P-91-443-06

ELGIN O'HARE EXPRESSWAY
THORNDALE AVENUE
I-290

ELGIN O'HARE/ I-290 INTERCHANGE RAMPS
ILLINOIS ROUTE 53
OVER

DEVON AVENUE TRIBUTARY TO SALT CREEK
DUPAGE COUNTY, ILLINOIS

VOLUME 3

Prepared For:

Illinois Department of Transportation
201 West Center Court
Schaumburg, IL 60196-1096

Prepared By:

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CBBEL Project No. 07-0404

October 2012



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Rosemont, Illinois 60018-4920 Tel (847) 823-0500 Fax (847) 823-0520

SECTION 9

EXISTING CONDITIONS ANALYSIS



LEGEND	
DA305	SUBBASIN ID
F24	LEVEL POOL RESERVOIR
B-62	FEO BRANCH

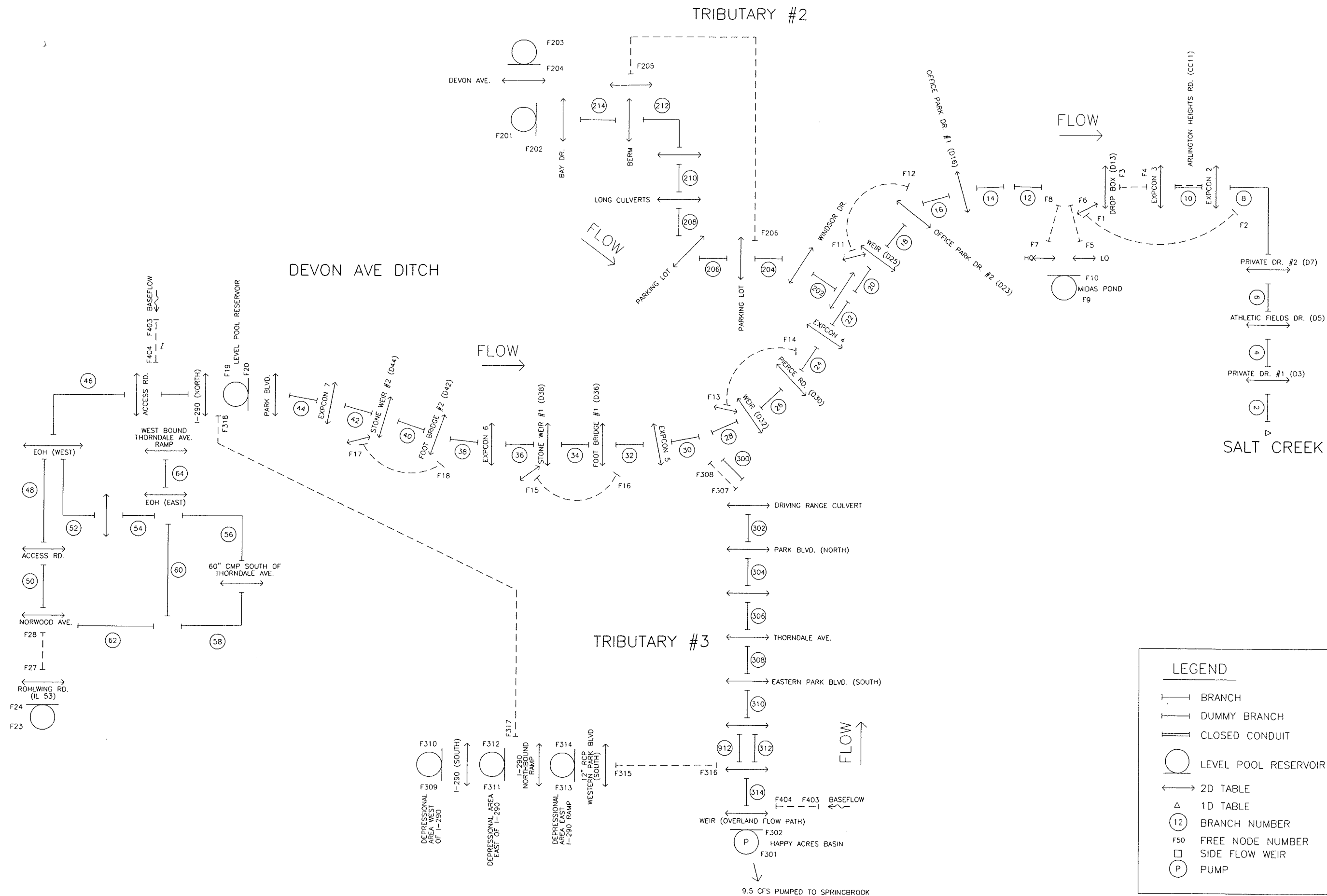


FILE NAME = \$FILEL\$	USER NAME = \$USER\$	DESIGNED -	REVISED -	 ELGIN O'HARE WEST BYPASS  Illinois Department of Transportation  CH2M HILL communities. opportunities. solutions.	ELGIN O'HARE – WEST BYPASS DEVON AVENUE TRIBUTARY – EXISTING CONDITIONS CULVERT LOCATION MAP				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			EXHIBIT 9.2		\$TOTAL	\$NUM				
	PLOT SCALE =	CHECKED -	REVISED -		SCALE:		SHEET NO. \$NUM OF \$TOTALSHEETS	STA.	TO STA.	CONTRACT NO.			
	PLOT DATE = 10/8/2012	DATE -	REVISED -		ILLINOIS FED. AID PROJECT								





FILE NAME = DE0WB-00-Exh9.4 Devon Avenue Elevations.dgn	DESIGNED JOC / MA	REVISED -	 communities. opportunities. solutions.	ELGIN O'HARE WEST BYPASS	 CHRISTOPHER S. BAUME DIRECTOR	DEVON AVENUE TRIBUTARY WILDSRING SUBDIVISION LOW ENTRY AND ROAD OVERTOP ELEVATIONS					
	DRAWN PWN / MYG	REVISED -				F.A. RTE.	SECTION EXHIBIT 9.4	COUNTY	TOTAL SHEETS NO.		
	CHECKED CW	REVISED -							231	ODP01	
	PLOT SCALE = 1/80'										
	PLOT DATE = 10/8/2012	DATE -				REVISED -	SCALE:	SHEET NO.	OF	SHEETS	STA.
										ILLINOIS FED. AID PROJECT	



FILE NAME =	USER NAME = elmatode	DESIGNED -	REVISED -	 ELGIN O'HARE WEST BYPASS communities. opposing. solutions.			DEVON AVENUE TRIBUTARY FEQ MODEL SCHEMATIC EXISTING CONDITIONS				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
N:\dot\070404\Water\Exhibit MY\070404\h Devon Ave Existing Condition Schematic.dgn		DRAWN -	REVISED -								\$TOTAL	\$NUM			
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PLOT DATE = 3/24/2012		DATE -	REVISED -								ILLINOIS FED. AID PROJECT				
							SCALE:	SHEET NO. \$NUM OF \$TOTALSHEETS	STA.	TO STA.					

Baseline Conditions
[Floder: \Devon\FEQ\070404\baseline]

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FEQ Peak File for Long TSF:
FEQ Output File for Long TSF:
FEQ Input File for BIG TSF:
FEQ Peak File for BIG TSF:
FEQ Output File for BIG TSF:
PVSTATS Analysis:

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See Folder pvstats_BI

Existing Conditions
[Floder: \Devon\FEQ\070404\Exist]

FEQ Input File for Long TSF:
FEQ Peak File for Long TSF:
FEQ Output File for Long TSF:
FEQ Input File for BIG TSF:
FEQ Peak File for BIG TSF:
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Natural Conditions
[Floder: \Devon\FEQ\070404\natural7]

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FEQ Output File for Long TSF:
FEQ Input File for BIG TSF:
FEQ Peak File for BIG TSF:
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See Folder pvstats_n7b

Proposed Conditions
[Floder: \Devon\FEQ\070404\proposed]

FEQ Input File for Long TSF:
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See Folder pvstats_Pr9j

PVSTATS Statistical Analysis Results
Devon Avenue Tributary
Existing (FEQ Models Used: DAlEx8c.FEQ, DABEx8c.FEQ)

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NAVD88)	PVS30 10-Year (ft-NAVD88)	PVS30 50-Year (ft-NAVD88)	PVS30 100-Year (ft-NAVD88)	PVS30 500-Year (ft-NAVD88)
XS_196	dsf of Norwood Avenue (50: 1)	1668	701.79	713.12	713.35	713.43	713.59
XS_194	usf of Access Road (50: 8)	1396	700.27	712.33	712.87	713.09	713.55
XS_192	dsf of Access Road (48: 1)	1337	699.95	711.73	712.05	712.17	712.43
XS_190	Approx 597 feet ds of Access Road (48: 5)	740	699.02	710.36	711.03	711.28	711.85
XS_188	usf of EOH - West (48: 12)	642	696.92	710.36	711.03	711.28	711.85
XS_186	U46 dsf of EOH - West Culvert (46: 1)	455	696.14	707.14	707.34	707.78	708.69
XS_184	222 feet ds of EOH - West Culvert (46: 6)	233	693.28	706.09	707.34	707.78	708.69
XS_182	294 feet ds of EOH - West Culvert (46: 9)	161	692.11	706.07	707.34	707.78	708.69
XS_180	D46 usf of Access Road(46: 13)	0	692.72	706.03	707.33	707.78	708.69
XS_4905c	dsf of Access Road (U47)	1085	692.62	704.67	706.05	706.69	708.05
XS_4905	70 feet ds of Access Road (47:17)	1015	692.62	704.23	706.05	706.69	708.05
XS_4904	375 feet ds of Access Roadn (47:33)	710	692.12	700.47	702.66	703.45	705.11
XS_4903	570 feet ds of Access Road (47:49)	515	691.82	699.10	700.39	700.92	702.13
XS_9183 (B21)	823 feet ds of Access Road (47:65)	262	691.41	697.46	698.65	699.13	700.25
XS_4902	155 feet us of I-290 - North (47:81)	155	691.22	695.63	697.17	697.89	699.90
XS_9182 (B20)	37 feet us of I-290- North (47:113)	37	690.98	694.84	696.63	697.55	699.90
XS_9181 (B19)	20 feet us of I-290- North (47:21)	20	690.95	694.76	696.63	697.55	699.90
XS_9181 (B19)	usf of I-290- North (D47)	0	690.95	694.68	696.63	697.55	699.90
F20	F20 Pond downstream of I-290- North (0: F20)		691.52	693.31	694.52	695.09	696.61
XS_9178 (B7)	U44 dsf of Park Blvd. (44: 1)	8656	684.72	691.80	692.38	692.59	693.05
XS_178a	D44 10 feet ds of Park Blvd. (expon 7) (44: 7)	8646	684.72	691.78	692.35	692.56	693.01
XS_176	U42 679 feet us of Stone Weir 2(42: 1)	8392	687.75	690.13	690.67	690.88	691.39
XS_174	326 feet us of Stone Weir 2 (42: 4)	8039	687.69	690.13	690.66	690.88	691.38
XS_172	D42 us of Stone Weir 2 (42: 7)	7713	687.62	690.12	690.64	690.85	691.34
XS_170	U40 ds of Stone Weir 2 (40: 1)	7662	685.56	688.94	689.73	690.07	690.90
XS_9170 (B6)	D40 usf Foot Bridge 2 (40: 4)	7653	685.56	688.94	689.71	690.04	690.84
XS_9168 (B5)	U38 dsf Foot Bridge 2 (38: 1)	7613	683.39	688.92	689.65	689.96	690.68
XS_168a	D38 40 feet ds of Foot Bridge 2 (expon 6) (38: 4)	7573	683.32	688.92	689.65	689.96	690.68
XS_166	U36 544 feet us of Stone Weir 1 (expon 6) (36: 1)	7252	683.22	688.92	689.65	689.96	690.68
XS_164	254 feet us of Stone Weir 1 (36: 4)	6962	682.72	688.92	689.64	689.94	690.67
XS_162	128 feet us of Stone Weir 1 (36: 7)	6836	682.22	688.92	689.64	689.94	690.67
XS_160	D36 us of Stone Weir 1 (36: 10)	6708	681.72	688.92	689.63	689.93	690.63
XS_158	U34 ds of Stone Weir 1 (34: 1)	6667	681.28	687.17	688.49	689.05	690.45
XS_9158 (B4)	D34 usf of Foot Bridge 1 (34: 4)	6663	681.28	687.15	688.45	689.02	690.45
XS_9156 (B3)	U32 dsf of Foot Bridge 1 (32: 1)	6578	683.13	687.09	688.42	689.02	690.45
XS_156a	D32 75 feet ds of Foot Bridge 1 (expon 5) (32: 4)	6503	683.07	687.09	688.39	688.98	690.40
XS_154	U30 387 feet ds of Foot Bridge 1 (expon 5) (30: 1)	6191	683.02	687.09	688.38	688.97	690.38
XS_154a	D30 Confluence of South Branch (30: 4)	5973	683.02	687.09	688.34	688.91	690.32
F24	Pond us of Rohwing Road (IL 53) (0: F24)		710.62	714.27	715.44	715.95	717.20
XS_224	dsf of Rohwing Road (IL 53) (62: 1)	12608	697.64	713.73	714.30	714.52	714.96
XS_222	Approx. 11 feet ds of Rohwing Road (IL 53) (62: 6)	12597	697.64	713.70	714.30	714.52	714.96
XS_220	Approx. 59 feet ds of Rohwing Road (IL 53) (62: 11)	12549	697.64	713.70	714.30	714.52	714.96
XS_218	Approx. 163 feet ds of Rohwing Road (IL 53) (62: 16)	12445	700.94	713.70	714.30	714.52	714.96
XS_216	Approx. 341 feet ds of Rohwing Road (IL 53) (62: 21)	12267	700.22	713.69	714.30	714.52	714.96
XS_214	Approx. 698 feet ds of Rohwing Road (IL 53) (62: 26)	11910	701.47	713.65	714.26	714.47	714.88
XS_212	Approx. 863 feet ds of Rohwing Road (IL 53) (62: 31)	11725	700.61	713.19	713.82	714.05	714.54
XS_210	Approx. 1,103 feet ds of Rohwing Road (IL 53) (62: 36)	11505	700.47	712.43	713.52	713.88	714.54
XS_208	Approx. 385 feet us of Unnamed Culv 1 (58: 1)	820	700.47	712.43	713.52	713.88	714.54
XS_206	usf of Unnamed Culv 1 (58: 8)	600	700.43	712.35	713.52	713.88	714.54
XS_204	dsf of Unnamed Culv 1 (56: 1)	435	699.75	712.35	713.50	713.86	714.52

PVSTATS Statistical Analysis Results
Devon Avenue Tributary
Existing (FEQ Models Used: DALex8c.FEQ, DABex8c.FEQ)

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NAVD88)	PVS30 10-Year (ft-NAVD88)	PVS30 50-Year (ft-NAVD88)	PVS30 100-Year (ft-NAVD88)	PVS30 500-Year (ft-NAVD88)
XS 202	usf of EOH - East (56: 4)	0	693.32	712.23	713.32	713.65	714.27
XS401	dsf of EOH - East (64: 1)	10864	697.72	710.49	711.43	711.84	712.66
XS401	usf of Westbound Thorndale Ave Ramp (64: 4)	10798	695.72	710.28	711.43	711.84	712.66
XS 210	U60 (60: 1)	11506	700.47	712.41	713.50	713.95	714.93
XS 202	D60 (60: 4)	11104	698.32	712.32	713.50	713.95	714.93
F310	usf of I-290 (South)		706.20	707.68	708.15	708.36	708.92
F312	Usf of I-290 Northbound Ramp		703.04	704.81	705.45	705.74	706.46
F314	usf of Western Park Blvd - south		797.66				
XS 338	Approx. 275 feet ds of Happy Acres Basin (314: 5)	3609	680.08	693.68	694.18	694.36	695.26
XS 336	Approx. 572 feet ds of Happy Acres Basin (314: 8)	3312	679.94	693.68	694.15	694.36	695.26
XS 334	Approx. 794 feet ds of Happy Acres Basin (314: 13)	3090	680.72	693.66	694.15	694.36	695.26
XS2001	Approx. 804 feet ds of Happy Acres Basin (312: 1)	3080	663.68	693.66	694.15	694.36	695.26
XS2001	Approx. 1166 feet ds of Happy Acres Basin (312: 7)	2718	663.18	693.66	694.15	694.36	695.26
XS 332	Approx. 1088 feet us of Eastern Park Blvd - South (310: 1)	2712	681.18	692.69	693.87	694.30	695.26
XS 330	Approx 931 feet us of EasternPark Blvd - South (310: 7)	2555	680.40	692.69	693.87	694.30	695.26
XS 328	Approx 689 feet us of EasternPark Blvd - South (310: 11)	2313	679.82	692.69	693.87	694.30	695.26
XS 326	Approx 468 feet us of Eastern Park Blvd - South (310: 15)	2092	679.44	692.69	693.87	694.30	695.26
XS 324	Approx 283 feet us of Eastern Park Blvd - South (310: 20)	1907	680.66	692.69	693.87	694.30	695.26
XS 322	D310 usf of Eastern Park Blvd - South (310 :25)	1624	679.67	692.69	693.87	694.30	695.26
XS 320	U308 dsf of Eastern Park Blvd - South (308: 1)	1544	680.41	692.53	693.68	694.12	695.12
XS 318	53 feet DS of Eastern Park Blvd south(308: 5)	1465	680.41	692.53	693.65	694.10	695.08
XS 9316 (J4)	D308 usf of Thorndale Ave (308: 9)	1384	680.41	692.50	693.65	694.10	695.08
XS 9314 (J3)	U306 dsf of Thorndale Ave (306: 1)	1232	678.84	691.79	693.19	693.74	694.94
XS 312	D306 usf of a culvert located 7 feet DS of Thorndale Ave. (306: 5)	1188	678.87	691.78	693.19	693.74	694.94
XS 310	U304 dsf of a culvert located 7 feet DS of Thorndale Ave.(304: 1)	1131	678.57	691.50	692.98	693.56	694.88
XS 308	66 feet ds of a culvert located 7 feet DS of Thorndale Ave(304: 4)	1034	678.48	691.39	692.96	693.55	694.86
XS 9306 (J2)	D304 usf of Park Blvd. (304: 7)	959	678.57	691.36	692.93	693.51	694.78
XS 9304 (J1)	U302 dsf of Park Blvd. - North (302: 1)	834	677.42	690.89	691.96	692.28	692.87
XS 302	D302 usf of Driving Range Culvert (302: 6)	731	677.35	690.89	691.96	692.28	692.87
XS3018	U300 dsf of Driving Range Culvert (300: 1)	750	677.35	690.89	691.96	692.28	692.87
XS3019	550 feet ds of Driving Range Culvert (300: 5)	200	675.60	690.88	691.96	692.28	692.87
XS3020	554 feet ds of Driving Range Culvert (300: 9)	196	675.60	690.72	691.96	692.28	692.87
XS 152	U28 confluence of South Branch(28: 1)	5972	683.02	687.07	688.34	688.91	690.32
XS 152a	242 feet us of Weir (28: 4)	5890	683.02	687.07	688.34	688.91	690.32
XS 150	D28 us stream of Weir(d32) (28: 7)	5448	683.02	687.07	688.34	688.91	690.32
XS 148	U26 ds stream of Weir(d32) (26: 1)	5401	682.09	687.07	688.34	688.91	690.26
XS 9146 (B2)	D26 usf of Pierce Rd. (26: 4)	5373	682.07	687.07	688.34	688.90	690.21
XS 9144 (B1)	U24 dsf of Pierce Rd. (24: 1)	5225	683.15	686.85	687.77	688.24	689.64
XS 144a	D24 30 ds of Pierce Rd. (Expon 4) (24: 4)	5195	683.02	686.81	687.72	688.24	689.64
XS 142	U22 59 feet ds of Pierce Rd. (Expon 4) (22: 1)	5166	682.92	686.81	687.72	688.24	689.64
XS 142a	184 feet d/s of Pierce Rd (22: 6)	5041	682.92	686.81	687.73	688.24	689.64
XS 140	557 feet d/s of Pierce Rd (22: 11)	4668	682.92	686.79	687.73	688.24	689.64

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-1002.89 692.35 2 1938844.48 1071351.44 0002 XDI Ext. Sta.
-865.39 691.06 2 1938749.01 1071450.40 0003 XDI Ext. Sta.
-727.89 690.52 2 1938653.55 1071549.36 0004 XDI Ext. Sta.
-590.39 691.82 2 1938558.09 1071648.33 0005 XDI Ext. Sta.
-452.88 692.21 3 1938462.63 1071747.29 0006 XDI Ext. Sta.
-315.38 692.17 3 1938367.17 1071846.25 0007 XDI Ext. Sta.
-201.8 691.84 4
-177.0 690.12 4
-156.6 688.50 4
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9.9 683.19 5
20.2 683.91 5
24.5 685.70 5
33.2 685.91 5
60.6 687.24 6
78.5 690.14 6
86.7 690.17 6
100.2 688.59 6
127.3 689.25 6
173.2 689.96 6
218.23 692.95 6 1938141.87 1072319.32 0023 GRD 1327
428.23 690.37 6 1938069.77 1072516.56 0024 XDI Ext. Sta.
638.23 691.61 6 1937997.66 1072713.79 0025 XDI Ext. Sta.
848.23 691.97 6 1937925.56 1072911.03 0026 XDI Ext. Sta.
1058.23 692.30 6 1937853.46 1073108.26 0027 XDI Ext. Sta.
1268.24 694.28 6 1937781.36 1073305.50 0028 XDI Ext. Sta.
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-361.14 687.62 2 1938284.94 1071760.78 0003 XDI Ext. Sta.
-261.13 688.27 2 1938219.62 1071836.50 0004 XDI Ext. Sta.
-185.2 689.09 2
-168.4 689.88 2
-152.3 689.88 2
-127.2 689.51 2
-94.3 689.06 2
-85.7 689.04 2

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-7.9	686.15	3	1937794.18	1072550.83	0022	XDI	Ext. Sta.
-7.3	683.28	3	1937794.18	1072550.83	0022	XDI	Ext. Sta.
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9.5	683.74	3	1937593.56	1072896.89	0024	XDI	Ext. Sta.
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27.9	686.40	4					
53.3	689.94	4					
86.3	690.75	4					
104.1	690.46	4					
120.4	691.21	4					
126.60	691.06	4	1938017.15	1072165.01	0019	GRD	1356
172.21	688.73	4	1937994.79	1072204.77	0020	GRD	1357
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772.22	692.33	4	1937693.87	1072723.86	0024	XDI	Ext. Sta.
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Page 3 of 7

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	75.7	691.74	7						
	86.3	692.35	7						
	233.00	695.24	8	1938039.02	1069884.60	0020	XDI	Ext.	Sta.
	332.00	702.45	9	1937975.58	1069808.60	0021	XDI	Ext.	Sta.
	391.15	704.30	9	1937937.67	1069763.20	0022	XDI	Ext.	Sta.
	543.65	704.55	-1	1937839.94	1069646.12	0023	XDI	Ext.	Sta.
FEQX									
GISID=	001SCDA9178								
TABLE#	9178	OUT12	EXTEND						
STATION#	8672.13								
NAME	0								
NSUB	5	0.035	0.030	0.045	0.035				
X5	B7	D/S of	Park	Boulevard					
;	-922.70	701.03	1	1939497.04	1069534.56	0001	XDI	Ext.	Sta.
	-747.70	702.50	1	1939329.53	1069483.94	0002	XDI	Ext.	Sta.
	-572.70	712.39	1	1939162.01	1069433.31	0003	XDI	Ext.	Sta.
	-460.20	706.86	1	1939054.32	1069400.76	0004	XDI	Ext.	Sta.
	-347.70	701.04	1	1938946.63	1069368.22	0005	XDI	Ext.	Sta.
	-235.20	697.86	1	1938838.94	1069335.67	0006	XDI	Ext.	Sta.
	-122.70	697.70	1	1938731.25	1069303.12	0007	TS	1468	
	-108.40	694.58	1	1938717.19	1069300.56	0008	TOE	1469	
	-88.56	697.25	1	1938697.89	1069295.92	0009	TS	1470	
	-47.8	696.40	1						
	-32.4	695.40	1						
	-21.2	694.02	1						
	-17.5	693.63	1						
	-16.1	691.97	1						
	-7.6	691.26	2						
	-1.40	685.00	2						
	1.17	685.00	2						
	7.1	691.25	2						
	12.8	691.69	3						
	15.4	691.86	3						
	16.3	693.56	3						
	20.9	694.93	3						
	24.5	695.90	3						
	35.1	695.91	3						
	42.2	694.91	3						
	48.4	693.97	3						
	93.62	697.57	3	1938520.42	1069255.76	0017	GRD	1478	
	213.62	700.26	4	1938402.58	1069233.08	0018	XDI	Ext.	Sta.
	333.62	701.83	4	1938284.74	1069210.41	0019	XDI	Ext.	Sta.
	453.62	703.50	4	1938166.90	1069187.73	0020	XDI	Ext.	Sta.
	573.62	707.65	5	1938049.06	1069165.06	0021	XDI	Ext.	Sta.
	693.62	710.97	-1	1937931.22	1069142.39	0022	XDI	Ext.	Sta.

FEQX
GISID= 001SCDA9179
TABLE# 9179 OUT12 EXTEND
STATION= 8767.00
NAVM= 0
NSUB 3 0.035 0.036 0.035
XS B8 U/S of Park Boulevard
-275.0 702.28 1
-205.0 700.28 1
-105.0 698.28 1
-81.1 697.93 1
-70.0 698.01 1
-60.7 697.64 1
-54.8 697.80 1
-41.1 698.35 1
-29.4 696.42 1
-29.3 696.37 1
-20.4 695.26 1
-18.2 690.75 2
-14.9 690.71 2
-6.1 690.59 2
0.0 690.38 2
2.7 690.49 2
11.2 694.90 3
22.3 695.06 3
30.6 695.42 3
41.3 695.50 3
145.0 696.28 3
240.0 697.28 3
290.0 698.28 3
315.0 699.28 3
338.0 700.28 -1

FEQX
GISID= 001SCDA9180
TABLE# 9180 OUT12 EXTEND
STATION= 9999.99
NAVM= 0
NSUB 3 0.035 0.036 0.035
XS B16 D/S of I-290
-125.0 701.28 1
-105.0 700.28 1
-95.0 699.28 1
-68.0 698.18 1
-42.9 697.81 1
-29.9 697.52 1
-15.7 695.82 2
-6.9 694.43 2
-6.4 694.36 2
0.0 690.44 2
4.3 690.67 2
8.2 691.57 2
16.7 694.16 2
17.8 694.01 2
24.8 696.28 3
49.3 698.59 3
64.7 698.76 3
78.1 699.00 3
99.0 699.78 3
106.0 700.28 3
120.0 701.28 3
158.0 702.28 -1

FEQX
GISID= 001SCDA9181
TABLE# 9181 OUT12 EXTEND
STATION= 22.00

NAVM= 0
NSUB 3 0.055 0.045 0.055
XS B19 U/S of I-290
-235.0 701.28 1
-208.0 700.28 1
-188.0 699.28 1
-148.2 697.85 1
-70.7 694.94 1
-42.4 694.86 1
-25.9 695.10 2
-13.6 693.94 2
-9.0 693.72 2
-7.9 692.69 2
-5.0 691.23 2
0.0 691.23 2
5.0 691.23 2
5.5 693.37 2
12.4 695.88 3
22.1 697.33 3
72.8 700.39 -1

FEQX
GISID= 001SCDA9182
TABLE#= 9182 OUT12 EXTEND
STATION= 37.00
NAVM= 0
NSUB 3 0.055 0.045 0.055
XS B20
-236.0 701.28 1
-201.0 700.28 1
-176.0 699.28 1
-150.9 697.96 1
-138.8 697.66 1
-108.3 696.37 1
-63.8 695.36 2
-19.3 694.77 2
-6.6 693.58 2
-4.1 693.38 2
-4.0 691.26 2
0.0 691.26 2
4.0 691.26 2
4.1 693.88 2
8.2 693.88 1
16.2 695.59 2
25.1 697.25 3
32.6 698.53 3
76.9 700.54 3
77.4 700.71 -1

FEQX
GISID= 001SCDA9183
TABLE#= 9183 OUT12 EXTEND
STATION= 262.00
NAVM= 0
NSUB 3 0.055 0.045 0.055
XS B21
-206.0 702.28 1
-189.0 701.28 1
-159.0 700.48 1
-159.0 700.48 1
-141.7 700.74 1
-121.3 700.56 1
-102.0 701.34 1
-70.8 702.68 1
-47.7 702.69 1
-28.2 700.25 1
-13.8 697.66 2

-3.3	696.19	2
-3.1	696.19	2
3.0	691.69	2
0.0	691.69	2
3.0	691.69	2
3.1	691.69	2
4.2	696.20	2
18.0	698.20	2
26.6	698.66	2
34.1	700.48	2
41.9	701.77	2
52.9	702.80	1
56.9	704.47	1
59.3	705.09	1
65.4	705.36	1
81.5	705.87	1
85.5	707.15	1
	707.16	-1

FTABIN \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX
GISID= 001SCDA9304
TABLE#= 9304 OUT12 EXTEND
STATION= 834.00
NAVM= 0
NSUB 3 0.045 0.050 0.045
XS J1 D/S of Park Blvd (North)
-260.0 696.28 1
-210.0 695.28 1
-170.0 694.28 1
-136.9 693.20 1
-83.7 692.06 1
-42.2 690.13 1
-6.0 689.37 2
0.0 687.76 2
0.1 677.70 2
0.2 687.76 2
3.0 689.53 2
23.2 693.00 3
65.6 695.92 3
112.1 696.27 -1

FEQX
GISID= 001SCDA9306
TABLE#= 9306 OUT12 EXTEND
STATION= 959.00
NAVM= 0
NSUB 3 0.045 0.050 0.045
XS J2 U/S of Park Blvd (North)
-48.2 694.40 1
-37.8 693.84 1
-12.9 691.02 1
-5.9 689.47 2
-3.5 688.19 2
-0.1 688.19 2
-0.05 678.85 2
0.0 687.73 2
3.6 688.01 2
7.0 688.87 2
16.3 688.94 3
34.7 691.29 3
61.4 692.99 3
87.4 694.12 3
140.0 695.28 -1

FEQX
GISID= 001SCDA9314
TABLE#= 9314 OUT12 EXTEND
STATION= 1232.00
NAVM= 0
NSUB 3 0.045 0.050 0.045
XS J3 D/S of Thorndale Ave
-238.0 696.28 1
-185.0 695.28 1
-178.0 694.28 1
-105.7 693.86 1
-80.0 692.63 1
-47.5 691.66 1
-21.9 690.69 1
-19.5 688.90 1

-14.0	690.83	1
-7.0	690.73	1
-4.8	689.18	2
-0.1	689.18	2
-0.05	677.12	2
0.0	688.97	2
11.3	689.09	2
32.7	692.92	3
50.8	694.28	3
74.6	694.40	3
86.7	694.63	3
160.0	695.28	3
260.0	696.28	-1

FE0X

GISID=	001SCDA9316		
TABLE#	9316		
STATION#	1384.00		
NAV#	0		
NSUB	3		
XS J4	U/s of Thorndale Ave		
	-88.9	0.045	0.050
	697.89	1	
	-88.0	697.77	1
	-62.2	696.52	1
	-39.8	694.45	1
	-21.2	692.27	1
	-18.5	691.86	1
	-6.6	690.35	2
	-0.1	690.35	2
	-0.05	690.35	2
	0.0	690.27	2
	0.4	691.19	2
	0.9	691.39	2
	5.2	691.49	2
	14.1	690.40	3
	24.1	690.50	3
	54.1	692.72	3
	72.2	693.09	3
	105.0	693.28	3
	405.0	694.28	3
	575.0	694.28	-1

FINISH

FTABIN \utlheader\embweir.mtb
FILE= \utlheader\type5.mtb
TABID= -1

FE0X
GISID= 001SCDA9181
TABLE# 9181 SAVE22 NOOUT NEWBETAM EXTEND
STATION= 22.00
NAVM= 0
NSUB 3 0.055 0.045 0.055
XS B19 U/S of I-290
-235.1 800.00 1
-235.0 701.28 1
-208.0 700.28 1
-188.0 699.28 1
-148.2 697.85 1
-70.7 694.94 1
-42.4 694.86 1
-25.9 695.10 2
-13.6 693.94 2
-9.0 693.72 2
-7.9 692.69 2
-5.0 691.23 2
0.0 691.23 2
5.0 691.23 2
5.5 693.37 2
12.4 695.88 3
22.1 697.33 3
72.8 700.39 -1

FE0X
GISID= 001SCDA9180
TABLE# 9180 SAVE22 NOOUT NEWBETAM EXTEND
STATION= 9999.99
NAVM= 0
NSUB 3 0.035 0.036 0.035
XS B16 D/S of I-290
-125.1 800.00 1
-125.0 701.28 1
-105.0 700.28 1
-95.0 699.28 1
-68.0 698.18 1
-42.9 697.81 1
-29.9 697.52 1
-15.7 695.82 2
-6.9 694.43 2
-6.4 694.36 2
0.0 690.44 2
4.3 690.67 2
8.2 691.57 2
16.7 694.16 2
17.8 694.01 2
24.8 696.28 3
49.3 698.59 3
64.7 698.76 3
78.1 699.00 3
99.0 699.78 3
106.0 700.28 3
120.0 701.28 3
158.0 702.28 -1

MULCON
TABID= 3104 SAVE22 NOOUT
WSLOT= 0.10
NPIES= 30.0
NPIPES= 1


```

TYPE:      BOX
SPAN:      9.50
RISE:      3.64
BOTT:      0.0
ROUG:      0.013

CULVERT
TABID= C9104
TYPE= 13
LABEL= HWY 290 (9.5' X 3.64' RCBC)
Approach-Section Data
APPTAB= 9181
APPELV= 691.23
APPLEN= 10.0
APPLOS= 0.1
APEXP= 0.50
Culvert Description
NODEID=YES
SFAC= 1.0

NODE      NODEID  XNUM  STATION  ELEVATION  KA  KD
100      U/S      3104  320.00  691.67  0.0  0.0
        D/S      3104  0.00    690.67  0.0  0.0

-1
CULCLS= BOX
Departure Section Data
DEPTAB= 9180
DEPELV= 690.44
LOSOPT=MOMENTUM
Discharge Coefficient Data
KRB= 1.00
KWIN= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
RBVALUE= 0.03
BVANGLE= 0.0
WVANGLE= 0.0
LPOVERD= 0.0
TYPE5SBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999

CREST      WIDTH  APPROACH SURFACE
OFFSET      0.0    702.00
264.97      702.00  690.0 PAVED
698.86      702.00  END
Head Sequence Definition
NFRAC= 10
POWER= 2.0
0.1
0.2
0.3
0.5
0.8
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.3
4.5
    
```


4.7
5.0
5.5
6.0
6.5
7.0
7.5
8.0
8.5
8.6
8.7
8.8
8.9
9.0
9.5
10.0
10.5
11.0
11.5
12.0
-1

FINISH

FTABIN
 FILE= \ut\header\embweir.mtb
 FILE= \ut\header\type5.mtb
 TABID= -1

FEQX
 TABLE# 1004 SAVE22 NOOUT NEWBETAM EXTEND
 STATION# 0.00
 NAVM# 0
 NSUB 3 0.055 0.040 0.055
 Approach XS
 -70.10 750. 1
 -70.00 706.28 1
 -35.00 705.28 1
 -10.00 700.28 2
 -0.50 697.94 2
 0.00 697.94 2
 0.50 697.94 2
 22.00 700.28 2
 30.00 701.28 3
 75.00 702.28 3
 90.00 705.28 3
 120.00 707.28 -1

FEQX
 TABLE# 1005 SAVE22 NOOUT NEWBETAM EXTEND
 STATION# 0.00
 NAVM# 0
 NSUB 3 0.055 0.040 0.055
 Departure XS (Fabricated wide XS)
 -50.10 750. 1
 -50.00 697.34 1
 0.00 697.34 1
 50.00 697.34 1
 50.10 712.28 -1

MULCON
 TABID= M314 SAVE22 OLDBETA NOOUT
 WSL0T=0.01
 HSL0T=100
 NPIPES= 1
 TYPE= CIRC
 SPAN= 1.00
 RISE= 1.00
 BOTI= 0.00
 ROUG= 0.013

CULVERT
 TABID= C314
 TYPE= 13
 LABEL= 12-inch RCP under Park Blvd
 APPROACH SECTION DATA
 APPTAB= 1004
 APPELV= 697.94
 APPLEN= 30.0
 APPLOS= 0.0
 APPEXP= 0.5
 CULVERT DESCRIPTION
 NODEID=YES
 SFAC= 1.0
 NODE NODENAME XTAB STATION ELEVATION
 1 UPSTREAM M314 72.00 697.94
 DNSTREAM M314 0.00 697.34

-1
CULCLS=BOX
DEPARTURE SECTION DESCRIPTION
DEPTAB= 1005
DEPELV= 697.34
LOSOPT=MOMENTUM
DISCHARGE COEFFICIENT DATA
KRB= 0.00
KWIN= 0.00
KPROJ= 0.00
C46= 0.00
TYPE 5 flow parameters
RVALUE= 0.03
BYANGLE= 0.00
WVANGLE= 40.0
LPOVERD= 0.0
TYPESSBF= 0.75
ROADWAY DESCRIPTION
PLCWTB=9994
GLCWTB=9995
PHCWTB=9996
GHCWTB=9997
PSUBTB=9998
GSUBTB=9999
OFFSET CREST WIDTH APPROACH SURFACE
-56.39 989.66 74.00 688.50 PAVED
-53.64 989.68 688.27
-27.36 989.90 686.11
-22.29 989.94 684.40
-11.69 990.03 682.35
0.00 990.13 682.38
6.03 990.16 682.40
17.33 990.23 684.50
20.44 990.25 686.29
46.60 990.40 689.50 END
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
NPRAC=11
POWER=2.0
.250
.500
.750
1.000
1.500
2.000
2.500
3.000
3.500
4.000
4.500
5.000
5.500
6.000
6.500
7.000
8.000
9.000
10.000
12.000
14.000
16.000
18.000
-1.000

EMBANKQ
TABID= E314 CSHIFT= 0.00
PLCWTB= 9994
GLCWTB= 9995

PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
LABEL=EMBANKQ FLOW FOR CULVERT C314
OFFSET CREST WIDTH APPROACH SURFACE
-600.00 705.28 30.0 699.00 PAVED
-470.00 704.28
-400.00 704.28
-370.00 705.28
-330.00 706.28
-210.00 706.28
-180.00 705.28
-160.00 703.28
0.00 702.78
75.00 703.28
160.00 704.28
200.00 705.28
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
NFRAC=40
POWER=2.0
LIPREC=0.02
MINPED=0.01
0.100
12.000
-1.000
FINISH

FTABIN \utlheader\embweir.mtb
 FILE= \utlheader\type5.mtb
 TABID= -1

FEQX
 TABLE# 1000 SAVE22 NOOUT NEWBETAM EXTEND
 STATION= 0.00
 NAVM= 0
 NSUB 3 0.055 0.040 0.055
 Approach XS
 -740.10 750. 1
 -740.00 715.28 1
 -640.00 714.28 1
 -540.00 713.28 1
 -440.00 712.28 1
 -340.00 711.28 1
 -245.00 710.28 1
 -130.00 709.28 1
 -50.00 708.28 2
 -1.75 706.48 2
 0.00 706.48 2
 1.75 706.48 2
 50.00 708.28 2
 100.00 709.28 3
 170.00 710.28 3
 255.00 711.28 3
 320.00 712.28 3
 435.00 713.28 3
 480.00 714.28 -1

FEQX
 TABLE# 1001 SAVE22 NOOUT NEWBETAM EXTEND
 STATION= 0.00
 NAVM= 0
 NSUB 3 0.055 0.040 0.055
 Departure XS
 -455.10 750. 1
 -455.00 709.78 1
 -415.00 709.28 1
 -310.00 708.28 1
 -200.00 707.28 2
 -1.75 704.38 2
 0.00 704.38 2
 1.75 704.38 2
 10.00 706.28 2
 40.00 707.28 2
 115.00 708.28 3
 185.00 709.28 3
 310.00 710.28 3
 375.00 711.28 3
 410.00 712.28 3
 480.00 713.28 -1

MULCON
 TABID= M310 SAVE22 OLDBETA NOOUT
 WSL0T=0.01
 HSL0T=100
 NPIPES= 1
 TYPE= CIRC
 SPAN= 3.50
 RISE= 3.50
 BOTI= 0.00
 ROUG= 0.013

CULVERT
TABID= CC310
TYPE= 13
LABEL= 42-inch RCP under I-290 located south of Thorndale Ave
APPROACH SECTION DATA
APPTAB= 1000
APPELV= 706.48
APPLEN= 30.0
APPLOS= 0.0
APPEXP= 0.5
CULVERT DESCRIPTION
NODEID=YES
SFAC= 1.0
NODE NODENAME XTAB STATION ELEVATION
1 UPSTREAM M310 234.00 706.48
-1 DNSTREAM M310 0.00 704.38
CULCLS=BOX
DEPARTURE SECTION DESCRIPTION
DEPTAB= 1001
DEPELV= 704.38
LOSOPT=MOMENTUM
DISCHARGE COEFFICIENT DATA
KRB= 0.00
KPROJ= 0.00
KWIN= 0.00
C46= 0.00
TYPE 5 flow parameters
RVALUE= 0.03
BVANGLE= 0.00
WMANGLE= 40.0
LPOVERD= 0.0
TYPE5SBF= 0.75
ROADWAY DESCRIPTION
PLCWTB=9994
GLCWTB=9995
PHCWTB=9996
GHCWTB=9997
PSUBTB=9998
GSUBTB=9999
OFFSET CREST WIDTH APPROACH SURFACE
-56.39 989.66 74.00 688.50 PAVED
-53.64 989.68 688.27
-27.36 989.90 686.11
-22.29 989.94 684.40
-11.69 990.03 682.35
0.00 990.13 682.38
6.03 990.16 682.40
17.33 990.23 684.50
20.44 990.25 686.29
46.60 990.40 689.50 END
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
NFRAC=11
POWER=2.0
.250
.500
.750
1.000
1.500
2.000
2.500
3.000
3.500
4.000
4.500

5.000
 5.500
 6.000
 6.500
 7.000
 7.500
 8.000
 8.500
 9.000
 10.000
 12.000
 14.000
 16.000
 18.000
 -1.000

EMBANKQ
 TABID= E310 CSHIFT= 0.00

PLCWTB= 9994
 GLCWTB= 9995
 PHCWTB= 9996
 GHCWTB= 9997
 PSUBTB= 9998
 GSUBTB= 9999

LABEL=EMBANKQ FLOW FOR CULVERT C310
 OFFSET CREST WIDTH APPROACH SURFACE
 -250.00 715.28 200.0 709.00 PAVED
 -140.00 714.28
 -50.00 713.28
 0.00 712.78
 60.00 713.28
 235.00 714.28
 460.00 715.28

END
 UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
 NFRAC=40
 POWER=2.0
 LIPREC=0.02
 MINPFD=0.01
 0.100
 12.000
 -1.000

FINISH

FTABIN
FILE= \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX
TABLE# 1002 SAVE22 NOOUT NEWBETAM EXTEND
STATION= 0.00
NAVM= 0
NSUB 3 0.055 0.040 0.055
Approach XS
-100.10 750. 1
-100.00 711.28 1
-70.00 707.28 1
-55.00 706.28 1
-25.00 705.28 2
-5.00 704.28 2
-1.75 703.32 2
0.00 703.32 2
1.75 703.32 2
5.00 704.28 2
10.00 705.28 3
20.00 707.28 3
45.00 710.28 3
65.00 713.28 -1

FEQX
TABLE# 1003 SAVE22 NOOUT NEWBETAM EXTEND
STATION= 0.00
NAVM= 0
NSUB 3 0.055 0.040 0.055
Departure XS
-105.10 750. 1
-105.00 712.78 1
-70.00 703.28 1
-60.00 702.28 1
-32.00 701.28 2
-10.00 700.28 2
-1.75 699.79 2
0.00 699.79 2
1.75 699.79 2
5.00 700.28 2
12.00 701.28 2
25.00 702.28 3
30.00 702.28 3
50.00 702.78 -1

MULCON
TABID= M312 SAVE22 OLDBETA NOOUT
WSLOT=0.01
HSLOT=100
NPIPES= 1
TYPE= CIRC
SPAN= 3.50
RISE= 3.50
BOTT= 0.00
ROUG= 0.013

CULVERT
TABID= C312
TYPE= 13
LABEL= 42-inch RCP under I-290 Ramp located south of Thorndale Ave
APPROACH SECTION DATA
APPTAB= 1002
APPELV= 703.32

APLEN= 30.0
 APPLOS= 0.0
 APPEXP= 0.5
 CULVERT DESCRIPTION
 NODEID=YES
 SFAC= 1.0
 NODE NODENAME XTAB STATION ELEVATION
 1 UPSTREAM M312 346.00 703.32

-1 DNSTREAM M312 0.00 699.79

CULCLS=BOX
 DEPARTURE SECTION DESCRIPTION
 DEPTAB= 1003
 DEPELV= 699.79
 LOSOPT=MOMENTUM
 DISCHARGE COEFFICIENT DATA

KRB= 0.00
 KPROJ= 0.00
 C46= 0.00
 TYPE 5 flow parameters

RBVALUE= 0.03
 BVANGLE= 0.00
 WANGLE= 40.0
 LPOVERD= 0.0
 TYPE5SBF= 0.75

ROADWAY DESCRIPTION
 PLCWTB=9994
 GLCWTB=9995
 PHCWTB=9996
 GHCWTB=9997
 PSUBTB=9998
 GSUBTB=9999

OFFSET	CREST	WIDTH	APPROACH SURFACE
-56.39	989.66	74.00	688.50 PAVED
-53.64	989.68		688.27
-27.36	989.90		686.11
-22.29	989.94		684.40
-11.69	990.03		682.35
0.00	990.13		682.38
6.03	990.16		682.40
17.33	990.23		684.50
20.44	990.25		686.29
46.60	990.40		689.50 END

UPSTREAM HEADS TO USE IN COMPUTING THE TABLE

NFRAC=11

POWER=2.0

.250
 .500
 .750
 1.000
 1.500
 2.000
 2.500
 3.000
 3.500
 4.000
 4.500
 5.000
 5.500
 6.000
 6.500
 7.000
 8.000
 9.000

10.000
12.000
14.000
16.000
18.000
-1.000

EMBANKQ
TABID= E312 CSHIFT= 0.00

PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999

LABEL=EMBANKQ FLOW FOR CULVERT C312
OFFSET CREST WIDTH APPROACH SURFACE
-135.00 711.28 120.0 709.00 PAVED
-20.00 710.28
0.00 709.78
60.00 710.28
275.00 711.28

UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
END

NFRAC=40
POWER=2.0
LTPREC=0.02
MINPFD=0.01
0.100
12.000
-1.000

FINISH

FTABIN
FILE= \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX
TABID= 2001 NOOUT SAVE12 EXTEND
STATION= 0 SCALE= 1.000 SHIFT= 0.000
NAVM= 0
NSUB 1 0.03
OFFSET ELEVATION SUBS
0.00 30 1
0.10 0.1
50.00 0
100.00 0.1
100.10 30 -1

FEQX
GISID= 001sCDA0224
;468.000 468.000 468.000 468.000 468.000 468.000 NAVD88
TABLE# 224 NOOUT SAVE12 EXTEND
STATION= 12607.7
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 5 0.010 0.025 0.1 0.025 0.010
XS 224
-91.31 716.51 1 1937233.12 1066358.98 0001 TM Extend Sta.
-51.20 715.35 2 1937198.01 1066378.37 0002 ALPT GR
-32.35 713.22 2 1937179.22 1066379.87 0003 TE
-7.46 711.79 2 1937154.37 1066378.47 0004 H2O
-1.87 711.79 3
-1.37 711.29 3
-1.32 697.92 3
-1.27 707.42 3
-0.77 707.92 3
4.83 707.92 4 1937142.28 1066376.26 0005 H2O
53.38 712.53 4 1937093.79 1066378.64 0006 H2O
103.66 712.63 4 1937043.51 1066378.08 0007 H2O
155.38 712.93 5 1936991.85 1066380.65 0008 ALPT H2O
181.99 715.70 5 1936975.29 1066359.82 0009 TM Extend Sta.
218.85 717.02 -1 1936953.31 1066330.23 0010 TM Extend Sta.

MULCON
TABID= 928 SAVE22 NOOUT
WSLOT= 0.10
HSLOT= 30.0
NPIPES= 2
TYPE: NHE NHE
SPAN: 5.00 5.00
RISE: 3.17 3.17
BOTT: 0.0 0.00
ROUG: 0.013 0.013

CULVERT
TABLE# C952
TYPE= 13
LABEL=Double Celled 60-in X 38-in RCEP under IL Route 53
Approach Section Data
APPTAB# 2001
APPELV= 710.98
APPLEN= 30.0
APPLEN= 0.0
APPEXP= 1.0
Culvert Description
NODEID=YES
SFAC= 1.0

NODE	NODEID	XNUM	STATION	ELEVATION	KA	KD	HTAB
300	QRDUP	928	93.00	711.08	0.0	0.0	0

-1 QRDDN 928 0.00 710.04 0.0 0.0

CULCLS=BOX
 Departure Section Data
 DEPTAB# 224
 DEPELV# 707.42
 LOSOPT=MOMENTUM
 Discharge Coefficient Data
 KRB= 1.00
 KWING= 1.00
 KPROJ= 1.0
 C46= 0.87
 Roadway Description
 PLCWTB= 9994
 GLCWTB= 9995
 PHCWTB= 9996
 GHCWTB= 9997
 PSUBTB= 9998
 GSUBTB= 9999

CREST	WIDTH	APPROACH	SURFACE
999.0	10.	658.0	PAVED
999.0	10.	658.0	END

Head Sequence Definition

NFRAC= 11
 POWER= 2.0
 0.2
 0.5
 0.7
 1.0
 1.5
 2.0
 2.5
 3.0
 4.0
 5.0
 6.0
 7.0
 8.0
 9.0
 10.
 11.
 12.
 13.
 14.
 16.
 18.
 20.
 22.
 -1.

EMBANKQ
 TABLE# E952
 PLCWTB= 9994
 GLCWTB= 9995
 PHCWTB= 9996
 GHCWTB= 9997
 PSUBTB= 9998

GSUBTB= 9999
LABEL=IL Route 53 Bridge Crossing overFlow
OFFSET CREST WIDTH APPROACH SURFACE
24000. 718.50 92.20 710.7 PAVED
24050. 718.20
24100. 717.90
24150. 717.60
24200. 717.30
24250. 717.03
24300. 716.94
24350. 717.07
24400. 717.38
24450. 717.72
24500. 718.06
24550. 718.40
24600. 718.74
24650. 719.08
24700. 719.42
24750. 719.76
END

UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
NFRAC=40
POWER=2.0
LIPREC=0.02
MINPPD=0.01
0.100
13.000
-1.000

FINISH

FTABIN \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX 001SCDA9306
TABLE# 9306 SAVE22 NOOUT MONOTONE NEWBETAM EXTEND
STATION= 959.00
NAVM= 0
NSUB 3 0.045 0.050 0.045
XS J2 U/S of Park Blvd (North)
-48.3 750.1
-48.2 694.40 1
-37.8 693.84 1
-12.9 691.02 1
-5.9 689.47 2
-3.5 688.19 2
0.0 687.96 2
3.6 688.01 2
7.0 688.87 2
16.3 688.94 3
34.7 691.29 3
61.4 692.99 3
87.4 694.12 3
140.0 695.28 -1

FEQX 001SCDA9304
TABLE# 9304 SAVE22 NOOUT MONOTONE NEWBETAM EXTEND
STATION= 834.00
NAVM= 0
NSUB 3 0.045 0.050 0.045
XS J1 D/S of Park Blvd (North)
-260.1 750.1
-260.0 696.28 1
-210.0 695.28 1
-170.0 694.28 1
-136.9 693.20 1
-83.7 692.06 1
-42.2 690.13 1
-6.0 689.37 2
0.0 688.02 2
3.0 689.53 2
23.2 693.00 3
65.6 695.92 3
112.1 696.27 -1

MULCON
TABID= 3042 SAVE22 NOOUT
WSLOT= 0.10
HSLOT= 30.0
NPIPES= 1
TYPE: NHE
SPAN: 4.50
RISE: 3.00
BOTT: 0.0
ROUG: 0.024
CULVERT
TABID= C9304
TYPE= 13
LABEL= Park Blve North Culvert - south Branch
Approach-Section Data
APPTAB= 9306


```

APPELV= 687.96
APPLEN= 10.0
APPLOS= 0.5
APPEXP= 1.0
Culvert Description
NODEID=YES
SFAC= 1.0
NODE      NODEID  XNUM      STATION  ELEVATION  KA  KD
100      U/S    3042      125.00    687.73    0.0 0.0
      D/S    3042      0.00     687.76    0.0 0.0
-1
CULCLS= PIPE
Departure Section Data
DEPTAB= 9304
DEPELV= 688.02
LOSOPT=MOMENTUM
Discharge Coefficient Data
KRB= 1.00
KWIN= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
RBVALUE= 0.03
BVANGLE= 0.0
WVANGLE= 0.0
LPOVERD= 0.0
TYPE5SBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
OFFSET      CREST      WIDTH  APPROACH SURFACE
-175.89     694.36     50.0    688.1 PAVED
-160.26     694.33
-153.70     694.86
-97.06      695.54
-41.88      695.52
0.00        695.56
45.95       695.88
98.09       695.74
150.53      695.62
199.37      695.15      END
Head Sequence Definition
NFRAC= 10
POWER= 2.0
0.05
0.1
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.1
3.2
    
```

3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.25
4.5
4.75
5.0
5.5
5.6
5.8
6.0
6.2
6.5
7.0
7.5
8.0
8.5
9.0
9.5
10.0
-1

FINISH

FTABIN \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FE0X
GISID= 001SCDA9306
TABLE#= 9306 SAVE22 NOOUT MONOTONE NEWBETAM EXTEND
STATION= 959.00
NAVM= 0
NSUB 3 0.045 0.050 0.045
XS J2 U/S of Park Blvd (North)
-48.3 750.1
-48.2 694.40 1
-37.8 693.84 1
-12.9 691.02 1
-5.9 689.47 2
-3.5 688.19 2
0.0 687.73 2
3.6 688.01 2
7.0 688.87 2
16.3 688.94 3
34.7 691.29 3
61.4 692.99 3
87.4 694.12 3
140.0 695.28 -1

FE0X
GISID= 001SCDA9304
TABLE#= 9304 SAVE22 NOOUT MONOTONE NEWBETAM EXTEND
STATION= 834.00
NAVM= 0
NSUB 3 0.045 0.050 0.045
XS J1 D/S of Park Blvd (North)
-260.1 750.1
-260.0 696.28 1
-210.0 695.28 1
-170.0 694.28 1
-136.9 693.20 1
-83.7 692.06 1
-42.2 690.13 1
-6.0 689.37 2
0.0 687.76 2
3.0 689.53 2
23.2 693.00 3
65.6 695.92 3
112.1 696.27 -1

MULCON
TABID= 3042 SAVE22 NOOUT
WSLOT= 0.10
HSLOT= 30.0
NPIPES= 1
TYPE: NHE
SPAN: 4.50
RISE: 3.00
BOTT: 0.0
ROUG: 0.024

CULVERT
TABID= C9304
TYPE= 13
LABEL= Park Blvd North Culvert - South Branch
Approach-Section data
APPTAB= 9306

APPELV= 687.73
APPLEN= 10.0
APPLOS= 0.5
APPEXP= 1.0
Culvert Description
NODEID=YES
SFAC= 1.0
NODE
100
-1
CULCLS= PIPE
Departure Section Data
DEPTAB= 9304
DEPELV= 687.76
LOOPT=MOMENTUM
Discharge Coefficient Data
KRB= 1.00
KWING= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
RVALUE= 0.03
BVANGLE= 0.0
WVANGLE= 0.0
LPOVERD= 0.0
TYPE5SBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
OFFSET
-175.89
-160.26
-133.70
-97.06
-41.88
0.00
45.95
98.09
150.53
199.37
CREST
694.36
694.33
694.86
695.54
695.52
695.56
695.88
695.74
695.62
695.15
WIDTH
50.0
APPROACH SURFACE
688.1 PAVED
END
Head Sequence Definition
NFRAC= 10
POWER= 2.0
0.05
0.1
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.1
3.2

3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.25
4.5
4.75
5.0
5.5
5.6
5.8
6.0
6.2
6.5
7.0
7.5
8.0
8.5
9.0
9.5
10.0
-1

FINISH

FTABIN
FILE= \utlheader\embweir.mtb
FILE= \utlheader\type5.mtb
TABID= -1

FEQX
:!!!!!!!!!!!!!!NEED TO GET THE CORRECT SECTION FROM ALEX!!!!!!!!!!!!!!

GLSID= NONE
TABLE# 322 SAVE22 NOOUT MONOTONE NEWBETAM EXTEND
STATION= 1624.36
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 4 0.010 0.045 0.010 0.050
XS 322
-61. 750. 1 1936633.50 1070621.30001 ALPT GR
-60.31 694.83 1 1936617.47 1070639.74002 GR
-35.87 694.59 1 1936617.06 1070640.16003 GR FACE CURB
-35.28 694.02 1 1936606.52 1070651.25004 CB
-19.98 694.55 2 1936601.19 1070656.51005 GR
-12.49 693.42 2 1936595.48 1070661.06006 GR
-5.19 691.59 2 1936593.11 1070662.08007 TE
-2.61 691.39 4
-1.86 691.39 4 Revised to match culv inv
-1.36 689.85 4
-1.31 681.39 4 Revised to match culv inv
-1.26 689.85 4
-0.76 691.39 4
0.00 689.98 2 1936592.41 1070664.59008 H2O
5.61 690.61 2 1936587.27 1070666.84009 H2O
7.02 691.09 2 1936587.30 1070668.25010 TE
12.92 692.43 1 1936582.67 1070671.91011 GR
16.70 693.82 1 1936581.09 1070675.34012 CB
23.67 694.96 1 1936576.31 1070680.41013 GR
43.69 695.51 1 1936559.49 1070691.26014 GR
56.21 692.84 -1 1936548.89 1070697.93015 ALPT GR

FEQX
GLSID= 003SCDA0320
TABLE# 320 SAVE22 NOOUT MONOTONE NEWBETAM EXTEND
STATION= 1518
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 4 0.010 0.001 0.010 0.050
XS 320
-349. 1 750. 1 1936709.52 1070396.67 0001 TM Extend Sta.
-348.61 696.29 1 1936709.52 1070396.67 0001 TM Extend Sta.
-280.61 694.25 1 1936700.42 1070464.05 0002 TM Extend Sta.
-218.15 693.11 1 1936692.22 1070525.97 0003 TM Extend Sta.
-135.59 692.31 1 1936682.21 1070607.92 0004 TM Extend Sta.
-58.46 691.84 1 1936672.19 1070684.40 0005 TM Extend Sta.
-6.58 691.62 2 1936664.13 1070735.65 0006 CB
-4.13 691.19 2 1936663.79 1070738.07 0007 TE
-2.73 691.05 2 1936663.60 1070739.46 0008 H2O
0.00 690.69 2 1936663.23 1070742.17 0009 H2O
0.47 690.69 4
0.97 689.01 4 Revised to match culv inv
1.02 680.69 4
1.07 689.01 4 Revised to match culv inv
1.57 690.69 4
2.04 690.93 2 1936662.95 1070744.19 0010 H2O
2.57 691.01 2 1936662.88 1070744.71 0011 TE
7.61 691.65 2 1936662.19 1070749.70 0012 CB
13.50 692.50 3 1936661.39 1070755.54 0013 GR
33.62 692.94 3 1936658.53 1070775.46 0014 TM Extend Sta.
69.18 693.02 3 1936650.34 1070810.06 0015 TM Extend Sta.
201.69 693.60 3 1936631.22 1070941.18 0016 TM Extend Sta.
234.59 695.24 -1 1936633.41 1070973.05 0017 TM Extend Sta.

MULCON
 TABID= 6042 SAVE22 NOOUT
 WSL0T= 0.10
 HSL0T= 30.0
 NPIPES= 1
 TYPE: NHE
 SPAN: 5.00
 RISE: 3.17
 BOTT: 0.0
 ROUG: 0.013

CULVERT
 TABID= C9310
 TYPE= 13
 LABEL= Park Blvd South Culvert - South Branch
 Approach-Section Data
 APPTAB= 322
 APPELV= 689.85
 APPLN= 10.0
 APLOS= 0.5
 APPEXP= 1.0
 Culvert Description
 NODEID=YES
 SFAC= 1.0

NODE	NODEID	XNUM	STATION	ELEVATION	KA	KD
100		6042	80.00	689.85	0.0	0.0
			U/S	689.01	0.0	0.0
			D/S	689.01	0.0	0.0

-1
 CULCLS= PIPE
 Departure Section Data
 DEPTAB= 320
 DEPELV= 689.01
 LOSOPT=MOMENTUM
 Discharge Coefficient Data
 KRB= 1.00
 KWIN= 1.00
 KPROJ= 1.00
 C46= 0.85
 TYPE 5 flow parameters
 RBVALUE= 0.03
 BVANGLE= 0.0
 WWANGLE= 0.0
 LPOVERD= 0.0
 TYPE5SBF= 0.75

Roadway Description
 PLCWTB= 9994
 GLCWTB= 9995
 PHCWTB= 9996
 GHCWTB= 9997
 PSUBTB= 9998
 GSUBTB= 9999
 OFFSET
 -184.90
 -128.41
 -71.74
 0.00
 79.07
 153.51
 212.82
 995.31
 995.00
 994.75
 994.53
 994.65
 994.92
 995.31
 Head Sequence Definition
 NFRAC= 10
 POWER= 2.0
 0.05
 0.1
 0.2

WIDTH	APPROACH SURFACE
50.0	690.0 PAVED

END

0.25
0.3
0.5
0.8
1.0
2.0
2.5
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.5
4.6
4.7
4.8
4.9
5.0
5.5
6.0
6.5
7.0
-1

EMBANKQ
TABLE#= E9310
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
LABEL=Park Blvd South Roadway overflow
OFFSET CREST WIDTH APPROACH SURFACE
-184.90 695.31 50.0 690.0 PAVED
-128.41 695.00
-71.74 694.75
0.00 694.53
79.07 694.65
153.51 694.92
212.82 695.31
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
END
NFRAC=40
POWER=2.0
LIPREC=0.02
MINPFD=0.01
0.100
13.000
-1.000

FINISH

FTABIN
FILE= \utlheader\embweir.mtb
FILE= \utlheader\type5.mtb
TABID= -1

* Park Blvd - Devon Avenue Tributary MainStem

FEQX
GISID= 001SCDA9179
TABLE#= 9179 SAVE22 NOOUT NEWBETAM EXTEND
STATION= 8767.00
NAVM= 0
NSUB 3 0.035 0.036 0.035
XS B8 U/S of Park Boulevard
-275.0 702.28 1
-205.0 700.28 1
-105.0 698.28 1
-81.1 697.93 1
-70.0 698.01 1
-60.7 697.64 1
-54.8 697.80 1
-41.1 698.35 1
-29.4 696.42 1
-29.3 696.37 1
-20.4 695.26 1
-18.2 690.75 2
-14.9 690.71 2
-6.1 690.59 2
0.0 690.38 2
2.7 690.49 2
11.2 694.90 3
22.3 695.06 3
30.6 695.42 3
41.3 695.50 3
145.0 696.28 3
240.0 697.28 3
290.0 698.28 3
315.0 699.28 3
338.0 700.28 -1

FEQX
GISID= 001SCDA9178
TABLE#= 9178 SAVE22 NOOUT NEWBETAM EXTEND
STATION= 8672.13
NAVM= 0
NSUB 5 0.035 0.030 0.045 0.035
XS B7 D/S of Park Boulevard
-922.70 701.03 1 1939497.04 1069534.56 0001 XDI Ext. Sta.
-747.70 702.50 1 1939329.53 1069483.94 0002 XDI Ext. Sta.
-572.70 712.39 1 1939162.01 1069433.31 0003 XDI Ext. Sta.
-460.20 706.86 1 1939054.32 1069400.76 0004 XDI Ext. Sta.
-347.70 701.04 1 1938946.63 1069368.22 0005 XDI Ext. Sta.
-235.20 697.86 1 1938838.94 1069335.67 0006 XDI Ext. Sta.
-122.70 697.70 1 1938731.25 1069303.12 0007 TS 1468
-108.40 694.68 1 1938717.19 1069300.56 0008 TOE 1469
-88.56 697.25 1 1938697.89 1069295.92 0009 TS 1470
-47.8 696.40 1
-32.4 695.40 1
-21.2 694.02 1
-17.5 693.63 1
-16.1 691.97 1
-7.6 691.26 2
0.0 691.08 2
7.1 691.25 2

12.8	691.69	3	1938520.42	1069255.76	0017	GRD	1478
15.4	691.86	4	1938402.58	1069233.08	0018	XDI	Ext. Sta.
16.3	693.56	4	1938284.74	1069210.41	0019	XDI	Ext. Sta.
20.9	694.93	4	1938166.90	1069187.73	0020	XDI	Ext. Sta.
24.5	695.90	5	1938049.06	1069165.06	0021	XDI	Ext. Sta.
35.1	695.91	-1	1937931.22	1069142.39	0022	XDI	Ext. Sta.
42.2	694.91	3					
48.4	693.97	3					
93.62	697.57	3	1938520.42	1069255.76	0017	GRD	1478
213.62	700.26	4	1938402.58	1069233.08	0018	XDI	Ext. Sta.
333.62	701.83	4	1938284.74	1069210.41	0019	XDI	Ext. Sta.
453.62	703.50	4	1938166.90	1069187.73	0020	XDI	Ext. Sta.
573.62	707.65	5	1938049.06	1069165.06	0021	XDI	Ext. Sta.
693.62	710.97	-1	1937931.22	1069142.39	0022	XDI	Ext. Sta.

MULCON
TABID= 348 SAVE22 OLD BETA NOOIT

TABID= 348 SAVE22 OLDBETA NOOUT
 WSL0T=0.01

HSL0T=100
NP1PES= 3

TYPE=	BOX	BOX	BOX
SPAN=	7.00	7.00	7.00
RISE=	2.00	2.00	2.00
BOTT=	0.33	0.21	0.00
ROUG=	0.013	0.013	0.013

CULVERT

TABID= C948

TYPE= 13

LABEL= Park

APPROACH SECTION DATA

APPTAB= 9179

APPELV= 690.38

APPLEN= 30.0

APPLS= 0.0

APPEXP= 1.0

CULVERT DESCRIP

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NODEID=YES
SEAC=1 0

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STATION	ELEVATION
1 UPSTREAM	690.38

DNSTREAM	348	0.00	691.38
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$$\tilde{\text{CULCLS}} = \text{BOX}$$

DEPARTMENT	SECTION	DESCRIPTION

DEPTAB= 9178

DEPELV= 691.08

LOSOPT=MOMENTUM

DISCHARGE COEFFICIENT DATA

KRB= 0.00

KWING= 0.00

KPROJ= 0.00
CAGE= 0.00

C46= 0.00
TYPE 5 f] OW parametersTYPE 5 FLOW parameters
PRVAL IIE= 0 03

RBVALUE=	0.03
BVANGI F=	0.00

BVANGLE= 0.00
WVANGLE= 40.0

```

WWANGLE=
LPOVERD=

```

TYPE5SBF= 0.75

ROADWAY DESCRIPTION

PLCWTB=9994

GLCWTB=9995

PHCWTB=9996

GHCWTB=9997

PSUBTB=9998			
GSUBTB=9999			
OFFSET	CREST	WIDTH	APPROACH SURFACE
-45.85	930.00	94.0	698.00 PAVED
-20.98	930.00		693.17
-18.30	930.00		690.50
-4.24	930.00		689.93
0.00	930.00		690.03
10.88	930.00		690.30
11.92	930.00		691.97
29.64	930.00		692.91
49.35	930.00		693.18
87.92	930.00		693.71
100.41	930.00		693.67
131.44	930.00		693.56
151.80	930.00		693.71
201.98	930.00		694.07
256.44	930.00		694.46
381.44	930.00		698.49 END
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE			
NFRAC=11			
POWER=2.0			
.250			
.500			
.750			
1.000			
1.500			
2.000			
2.500			
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11.000			
12.000			
-1.000			
EMBAKQ			
TABID= E948 CSHIFT= 0.00			
PLCWTB= 9994			
GLCWTB= 9995			
PHCWTB= 9996			
GHCWTB= 9997			
PSUBTB= 9998			
GSUBTB= 9999			
LABEL=EMBAKQ			
FLOW FOR STRUCTURE D-48 AT PARK BLVD			
OFFSET	CREST	WIDTH	APPROACH SURFACE
-45.85	698.53	94.0	698.00 PAVED
-28.00	697.37		693.17
0.00	696.98		690.03
21.00	696.75		691.97
29.64	697.88		692.91
49.35	697.82		693.18
87.92	697.72		693.71
100.41	697.69		693.67
131.44	697.77		693.56
151.80	697.82		693.71
201.98	698.32		694.07
256.44	699.01		694.46

381.44 700.59 698.49 END
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
NFRAC=40
POWER=2.0
LIPREC=0.02
MINPFD=0.01
0.100
8.000
-1.000

FEQX
TABID= R148 SAVE22 NEWBETAM NOOUT EXTEND
STATION= 0.0
NAVM= 0
NSUB 1 0.035
CHAN SECTION FOR FLOW OVER RIGHT OVERBANK AT PARK BLVD
381.44 700.59 1 interpolated from embankq/chanrat
506.44 711.39 1 1938103.88 584798.94 0019 XDI Ext. Sta.
631.44 716.25 1 1937980.13 584781.63 0020 XDI Ext. Sta.
776.44 718.66 -1 1937836.50 584761.63 0021 XDI Ext. Sta.

CHANRAT
TABID= R948
TYPE= I3
LABEL= OVERBANK FLOW - DEVON DITCH AT PARK BLVD
XSTAB= R148
BOTSLP= .000
LENGTH= 150.0 MIDELEV= 700.59
UPSTREAM HEADS USED IN COMPUTING THE TABLE
NFRAC= 40
POWER= 2.0
LIPREC= 0.02
MINPFD= 0.01
0.10
17.00
-1.00

FEQX
TABID= L148 SAVE22 NEWBETAM NOOUT EXTEND
STATION= 0.0
NAVM= 0
NSUB 3 0.035 0.250 0.050
CHANRAT SECTION FOR FLOW OVER LEFT OVERBANK OF PARK BLVD
-459.47 705.79 1 1939056.63 584945.88 0003 XDI Ext. Sta.
-395.35 705.14 2 1938993.00 584937.69 0004 XDI Ext. Sta.
-283.43 701.95 3 1938881.50 584928.44 0005 XDI Ext. Sta.
-195.43 700.76 3 1938794.00 584919.69 0006 XDI Ext. Sta.
-107.43 698.34 3 1938706.38 584910.94 0007 GRD 1496
-45.85 698.33 -1 1938646.75 584895.81 0008 TS 1495

CHANRAT
TABID= L948
TYPE= I3
LABEL= OVERBANK FLOW - DEVON DITCH AT PARK BLVD
XSTAB= L148
BOTSLP= .000
LENGTH= 150.0 MIDELEV= 698.53
UPSTREAM HEADS USED IN COMPUTING THE TABLE
NFRAC= 40
POWER= 2.0
LIPREC= 0.02
MINPFD= 0.01
0.10
7.00
-1.00

FINISH

FTABIN \utlheader\embweir.mtb
 FILE= \utlheader\type5.mtb
 TABID= -1

```
FEQX
GISID= 001SCDA9146
TABLE#= 9146 SAVE22 NOOUT NEWBETAM EXTEND
STATION= 5388.6
NAVM= 0
NSUB 4 0.001 0.035 0.036 0.035
XS B2 U/S of Pierce Road
-1012.00 800.00 1 1938783.88 1071344.01 0001 VERTICAL FRICTIONLESS WALL (MAN 03/21/05)
-1011.24 700.28 2 1938783.80 1071344.07 0002 XDI EXT. Sta.
-1011.14 692.37 2 1938284.94 1071760.78 0003 XDI EXT. Sta.
-361.14 687.62 2 1938219.62 1071836.50 0004 XDI EXT. Sta.
-261.13 688.27 2
-185.2 689.09 2
-168.4 689.88 2
-152.3 689.88 2
-127.2 689.51 2
-94.3 689.06 2
-85.7 689.04 2
-62.7 689.11 2
-24.1 687.67 2
-9.7 686.30 2
-7.9 686.15 3
-7.3 683.28 3
0.0 682.03 3
9.5 683.74 3
18.3 682.72 3
26.2 683.58 3
26.9 686.41 4
27.9 686.40 4
53.3 689.94 4
86.3 690.75 4
104.1 690.46 4
120.4 691.21 4
126.60 691.06 4 1938017.15 1072165.01 0019 GRD 1356
172.21 688.73 4 1937994.79 1072204.77 0020 GRD 1357
372.22 691.75 4 1937894.48 1072377.80 0021 XDI EXT. Sta.
572.22 692.29 4 1937794.18 1072550.83 0022 XDI EXT. Sta.
772.22 692.33 4 1937693.87 1072723.86 0023 XDI EXT. Sta.
972.22 694.30 4 1937593.56 1072896.89 0024 XDI EXT. Sta.
1372.22 696.01 -1 1937452.86 1073271.33 0025 XDI EXT. Sta.
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FEQX
GISID= 001SCDA9144
TABLE#= 9144 SAVE22 NOOUT NEWBETAM EXTEND
STATION= 5241.27
NAVM= 0
NSUB 6 0.001 0.035 0.200 0.035 0.036 0.035
XS B1 D/S of Pierce Road
-1003.00 800.00 1 1938844.54 1071351.36 0001 VERTICAL FRICTIONLESS WALL (MAN 03/21/05)
-1002.99 700.28 1 1938844.48 1071351.44 0002 XDI EXT. Sta.
-1002.89 692.35 2 1938749.01 1071450.40 0003 XDI EXT. Sta.
-865.39 691.06 2 1938653.55 1071549.36 0004 XDI EXT. Sta.
-727.89 690.52 2 1938558.09 1071648.33 0005 XDI EXT. Sta.
-590.39 691.82 2 1938462.63 1071747.29 0006 XDI EXT. Sta.
-452.88 692.21 3 1938367.17 1071846.25 0007 XDI EXT. Sta.
-315.38 692.17 4
-201.8 691.84 4
-177.0 690.12 4
-156.6 688.50 4
-111.7 688.62 4
-89.7 688.29 4
-75.8 689.39 4
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-67.4	689.29	4	
-61.2	689.04	4	
-52.1	686.39	4	
-30.2	685.37	5	
-16.6	685.41	5	
0.0	682.73	5	
9.9	683.19	5	
20.2	683.91	5	
24.5	685.70	5	
33.2	685.91	5	
60.6	687.24	6	
78.5	690.14	6	
86.7	690.17	6	
100.2	688.59	6	
127.3	689.25	6	
173.2	689.96	6	
218.23	692.95	6	1938141.87 1072319.32 0023 GRD 1327
428.23	690.37	6	1938069.77 1072516.56 0024 XDI Ext. Sta.
638.23	691.61	6	1937997.66 1072713.79 0025 XDI Ext. Sta.
848.23	691.97	6	1937925.56 1072911.03 0026 XDI Ext. Sta.
1058.23	692.30	6	1937853.46 1073108.26 0027 XDI Ext. Sta.
1268.24	694.28	6	1937781.36 1073305.50 0028 XDI Ext. Sta.
1505.98	697.09	-1	1937775.12 1073543.16 0029 XDI Ext. Sta.

MULCON TABID= M30 SAVE22 OLDBETA NOOUT
WSLOT=0.01
HSLOT=100

NPIPES= 2
TYPE= BOX BOX
SPAN= 9.00 9.00
RISE= 3.00 3.00
BOTT= 0.01 0.00
ROUG= 0.013 0.013

CULVERT
TABID= C930
TYPE= 13
LABEL= Two 9'x3' RCBCs under Pierce Road
APPROACH SECTION DATA
APPTAB= 9146
APPELV= 682.03
APPLEN= 30.0
APPOS= 0.0
APPEXP= 0.5
CULVERT DESCRIPTION
NODEID=YES
SFAC= 1.0
NODE NODENAME XTAB STATION ELEVATION
1 UPSTREAM M30 120.00 683.88

-1 DNSTREAM M30 0.00 683.85
CULCLS=BOX
DEPARTURE SECTION DESCRIPTION
DEPTAB= 9144
DEPELV= 682.73
LOSOPT=MOMENTUM
DISCHARGE COEFFICIENT DATA
KRB= 0.00
KWIN= 0.00
KPROJ= 0.00
C46= 0.00
TYPE 5 flow parameters

RBVALUE= 0.03
BVANGLE= 0.00
WVANGLE= 40.0
LPOVERD= 0.0
TYPESBF= 0.75
ROADWAY DESCRIPTION
PLCWTB=9994
GLCWTB=9995
PHCWTB=9996
GHCWTB=9997
PSUBTB=9998
GSUBTB=9999

OFFSET	CREST	WIDTH	APPROACH SURFACE
-56.39	989.66	74.00	688.50 PAVED
-53.64	989.68		688.27
-27.36	989.90		686.11
-22.29	989.94		684.40
-11.69	990.03		682.35
0.00	990.13		682.38
6.03	990.16		682.40
17.33	990.23		684.50
20.44	990.25		686.29
46.60	990.40		689.50 END

UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
NFRAC=11
POWER=2.0
.250
.500
.750
1.000
1.500
2.000
2.500
3.000
3.500
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4.500
5.000
5.500
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6.500
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9.000
10.000
12.000
14.000
16.000
18.000
-1.000

EMBANKQ
TABID= E930 CSHIFT= 0.00
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
LABEL=EMBANKQ

OFFSET	CREST	WIDTH	APPROACH SURFACE
-56.39	689.66	74.00	688.50 PAVED
-53.64	689.68		688.27
-27.36	689.90		686.11
-22.29	689.94		684.40
-11.69	690.03		682.35
0.00	690.13		682.38

FLOW FOR STRUCTURE D-30

6.03	690.16	682.40
17.33	690.23	684.50
20.44	690.25	686.29
46.60	690.40	689.50

UPSTREAM HEADS TO USE IN COMPUTING THE TABLE

NFRAC=40
POWER=2.0
LIPREC=0.02
MINPFD=0.01
0.100
12.000
-1.000

FINISH

FTABIN
FILE= \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX
GISID= 001SCDA9316
TABLE#= 9316 SAVE22 NOOUT MONOTONE NEWBETAM EXTEND
STATION= 1384.00
NAVM= 0
NSUB 3
XS J4 U/s of Thorndale Ave 0.045 0.050 0.045
-89.0 750. 1
-88.9 697.89 1
-88.0 697.77 1
-62.2 696.52 1
-39.8 694.45 1
-21.2 692.27 1
-18.5 691.86 1
-6.6 690.35 2
0.0 690.27 2
0.4 691.19 2
0.9 691.39 2
5.2 691.49 2
14.1 690.40 3
24.1 690.50 3
54.1 692.72 3
72.2 693.09 3
105.0 693.28 3
405.0 694.28 3
575.0 694.28 -1

FEQX
GISID= 001SCDA9314
TABLE#= 9314 SAVE22 NOOUT MONOTONE NEWBETAM EXTEND
STATION= 1232.00
NAVM= 0
NSUB 3
XS J3 D/s of Thorndale Ave 0.045 0.050 0.045
-238.1 750. 1
-238.0 696.28 1
-185.0 695.28 1
-178.0 694.28 1
-105.7 693.86 1
-80.0 692.63 1
-47.5 691.66 1
-21.9 690.69 1
-19.5 688.90 1
-14.0 690.83 1
-7.0 690.73 1
-4.8 689.18 2
0.0 688.97 2
11.3 689.09 2
32.7 692.92 3
50.8 694.28 3
74.6 694.40 3
86.7 694.63 3
160.0 695.28 3
260.0 696.28 -1

MULCON
TABID= 6038 SAVE22 NOOUT
WSLOT= 0.10
HSLOT= 30.0
NPIPES= 1
TYPE: NHE

Printed at 09:03 on 26 Mar 2012

SPAN: 5.00
RISE: 3.17
BOTT: 0.0
ROUG: 0.013

CULVERT
TABID= C9308
TYPE= 13
LABEL= Thorndale Ave Culvert - South Branch
Approach-Section Data
APPTAB= 9316
APPELV= 690.27
APPLEN= 10.0
APPLOS= 0.5
APPEXP= 1.0
Culvert Description
NODEID=YES
SPAC= 1.0
NODEID XNUM STATION ELEVATION KA KD
NODE U/S 6038 152.00 690.31 0.0 0.0
D/S 6038 0.00 689.27 0.0 0.0

-1
CULCLS= PIPE
Departure Section Data
DEPTAB= 9314
DEPELV= 688.97
LOSOPT=MOMENTUM
Discharge Coefficient Data
KR8= 1.00
KWRG= 1.00
KPROJ= 1.00

C46= 0.85
TYPE 5 flow parameters
RBVALUE= 0.03
BVANGLE= 0.0
WVANGLE= 0.0
LPOVERD= 0.0

TYPESSBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999

OFFSET	CREST	WIDTH	APPROACH SURFACE
-378.00	700.00	100.0	689.4 PAVED
-114.00	698.00		
0.00	696.00		
66.00	694.00		
100.00	700.00		END

Head Sequence Definition

NFRAC= 20
POWER= 2.0

0.1
0.2
0.3
0.5
0.8
1.0
2.0
3.0
3.1
3.2
3.3
3.5

3.7
4.0
4.5
5.0
5.5
6.0
6.5
7.0
7.5
8.0
8.5
9.0
9.5
10.0
-1

FINISH

FTABIN \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX
GISID= 003SCDA0312
;468.000 468.000 468.000 468.000 468.000 468.000 NAVD88
TABLE#= 312 SAVE22 NOOUT MONOTONE NEWBETAM EXTEND
STATION= 1188.41
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 4 0.010 0.045 0.010 0.050
XS 312
-430. 750. 1 1937013.86 1070591.44 0001 TM Extend Sta.
-429.22 700.32 1 1937007.41 1070620.61 0002 TM Insert Sta.
-399.35 699.40 1 1936999.19 1070657.80 0003 TM Insert Sta.
-361.27 698.57 1 1936992.89 1070686.30 0004 TM Insert Sta.
-332.07 698.07 1 1936984.79 1070722.94 0005 TM Insert Sta.
-294.54 697.25 1 1936977.17 1070757.42 0006 TM Insert Sta.
-259.23 696.51 1 1936970.87 1070785.93 0007 TM Insert Sta.
-230.04 695.81 1 1936958.20 1070818.60 0008 TM Insert Sta.
-195.00 695.30 1 1936946.45 1070848.88 0009 TM Insert Sta.
-162.51 694.62 1 1936933.80 1070881.50 0010 TM Insert Sta.
-127.53 694.19 1 1936921.02 1070914.46 0011 TM Insert Sta.
-92.18 693.93 2 1936909.07 1070945.27 0012 GR
-59.13 693.13 2 1936895.64 1070969.14 0013 GR
-31.74 693.11 2 1936881.14 1070987.17 0014 CB
-8.61 690.26 2 1936880.42 1070988.00 0015 TE
-7.51 689.54 2 1936879.13 1070988.85 0016 H2O
-5.96 689.35 2 1936877.23 1070990.28 0017 H2O
-3.59 689.15 4
-0.01 689.15 4
0.50 688.65 4
0.55 679.15 4
0.60 688.65 4
1.10 689.15 4
4.68 689.12 2 1936874.12 1070997.94 0018 H2O
5.39 689.47 2 1936873.88 1070998.61 0019 TE
5.98 690.01 3 1936873.36 1070998.89 0020 CB
43.47 690.69 3 1936859.30 1071033.64 0021 TM Extend Sta.
87.44 691.41 3 1936850.08 1071076.63 0022 TM Extend Sta.
135.73 692.13 3 1936842.14 1071124.27 0023 TM Insert Sta.
176.96 693.15 3 1936835.37 1071164.94 0024 TM Insert Sta.
218.19 693.76 3 1936828.59 1071205.60 0025 TM Extend Sta.
265.55 694.17 -1 1936823.47 1071252.69 002

FEQX
GISID= 003SCDA0310
;468.000 468.000 468.000 468.000 468.000 468.000 NAVD88
TABLE#= 310 SAVE22 NOOUT MONOTONE NEWBETAM EXTEND
STATION= 1100
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 2 0.045 0.050
XS 310
-139. 750. 1 1936983.92 1070932.60 0001 TM Extend Sta.
-138.37 694.77 1 1936962.84 1070998.93 0002 TM Extend Sta.
-68.77 694.20 1 1936943.01 1071047.28 0003 TM Extend Sta.
-16.51 692.12 1 1936935.03 1071059.10 0004 CB
-2.25 689.52 1 1936934.01 1071060.09 0005 TE
-0.83 689.09 1 1936933.76 1071060.34 0006 H2O
-0.48 688.85 2
-0.40 688.85 2
-0.30 688.35 2
-0.24 678.85 2
-0.15 688.35 2
-0.05 688.85 2
0.00 688.76 1 1936933.42 1071060.67 0007 H2O

0.53	688.94	1	1936933.04	1071061.04	0008	H2O
0.89	689.05	1	1936932.78	1071061.29	0009	TE
4.06	689.83	1	1936930.51	1071063.51	0010	CB
16.47	692.60	1	1936923.79	1071073.93	0011	TM Extend Sta.
45.86	693.83	1	1936910.15	1071099.97	0012	TM Extend Sta.
87.94	694.25	1	1936903.33	1071141.50	0013	TM Extend Sta.
144.76	694.71	1	1936896.51	1071197.91	0014	TM Extend Sta.
251.67	695.66	-1	1936878.54	1071303.29	0015	TM Extend Sta.

MULCON
TABID= 3042 SAVE22 NOOUT
WSLOT= 0.10
HSLOT= 30.0
NPIPES= 1
TYPE: NHE
SPAN: 5.00
RISE: 3.17
BOTT: 0.0
ROUG: 0.024

CULVERT
TABID= C9306
TYPE= 13
LABEL= Culvert between branches 304 and 306 - South Branch
Approach-Section Data
APPTAB= 312
APPELV= 688.65
APPLEN= 10.0
APPLOS= 0.5
APPEXP= 1.0
Culvert Description
NODEID= YES
SFAC= 1.0
NODE
100

NODEID	XNUM	STATION	ELEVATION	KA	KD
U/S	3042	57.00	689.11	0.0	0.0
D/S	3042	0.00	689.08	0.0	0.0

-1
CULCLS= PIPE
Departure Section Data
DEPTAB= 310
DEPELV= 688.35
LOSOPT=MOMENTUM
Discharge Coefficient Data
KRB= 1.00
KWING= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
RBVALUE= 0.03
BVANGLE= 0.0
WMANGLE= 0.0
LPOVERD= 0.0
TYPE5S8F= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
OFFSET
-176.18
-117.72
-57.49
0.00
59.66
114.90
CREST
695.02
694.62
693.95
693.53
694.19
694.19
WIDTH
30.0
APPROACH SURFACE
689.0 GRAVEL

174.73 694.22
Head Sequence Definition
NFRAC= 10
POWER= 2.0
0.05
0.1
0.2
0.3
0.5
0.8
1.0
2.0
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.5
5.0
5.5
6.0
6.5
7.5
-1
FINISH
END

```

FTABIN
FILE= \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

EMBANKQ
;weir For Happy Hollow Pond (F302 - U314)
TABID= 6001
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
LABEL=
OFFSET CREST WIDTH APPROACH SURFACE
-213.77 695.17 25. 0.0 GRAVEL
-212.20 695.26
-181.10 695.39
-140.20 695.27
-102.01 695.37
-71.13 695.36
-53.70 695.32
-28.28 695.35
0.00 695.26
33.66 695.39
72.39 695.12
78.43 695.05
84.56 694.33
91.19 694.07
103.67 693.63
117.91 693.32
128.30 694.05
141.36 695.43
166.06 695.92
195.94 695.90
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE 0.0 END
NFRAC= 60
POWER= 2.0
LIPREC= 0.02
MINPFD= 0.01
0.025
0.05
0.05
0.1
0.2
0.25
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
    
```

3.4
3.6
3.8
4.0
4.2
4.4
4.6
4.8
5.0
-1.

```
EMBANKQ
:weir (U54 - U54)
TABID= 6003
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
LABEL=
      OFFSET      CREST      WIDTH  APPROACH SURFACE
      -77.00      718.50      55.    0.0 GRAVEL
      -23.30      718.00
      -18.90      716.00
      0.00       715.54
      8.20       715.00
      22.40      716.00
      51.80      720.00
      0.00      0.0 END
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
NFRAC= 60
POWER= 2.0
LIPREC= 0.02
MINPPD= 0.01
0.025
0.05
0.5
0.1
0.2
0.25
0.3
0.4
0.5
0.6
0.7
1.0
2.0
2.2
-1.
```

```
EMBANKQ
:weir (D302-F307)
TABID= 6004
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
LABEL=
      OFFSET      CREST      WIDTH  APPROACH SURFACE
      -198.00     696.00      55.    0.0 GRAVEL
      -186.00     694.00
      -37.00     692.00
      0.00      691.00
      22.00     692.00
```


35.00 694.00
86.50 695.00 0.0 END
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE

NFRAC= 60
POWER= 2.0
LIPREC= 0.02
MINPFD= 0.01

0.025
0.05
0.5
0.1
0.2
0.25
0.3
0.4
0.5
0.6
0.7
1.0
2.0
2.2
-1.

EMBANKQ
;weir (D214-F205)

TABID= 6005
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999

LABEL= CREST WIDTH APPROACH SURFACE
OFFSET 693.00 55. 0.0 GRAVEL
-167.10 692.00
-107.50 690.00
-47.00 689.50
-10.00 689.10
0.00 689.50
10.00 690.00
40.30 692.00

215.00 692.00 0.0 END
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE

NFRAC= 60
POWER= 2.0
LIPREC= 0.02
MINPFD= 0.01

0.01
0.025
0.05
0.075
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.6
0.7
1.0
2.0
2.2
2.4
2.6

2.5
2.8
2.9
3.0
4.0
5.0
6.0
7.0
8.0
-1.

EMBANKQ
:weir (0214-U212)
TABID= 6006
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999

LABEL=	OFFSET	CREST	WIDTH	APPROACH SURFACE
	-163.20	692.00	55.	0.0 GRAVEL
	-36.70	690.00		
	-10.00	689.40		
	0.00	689.00		
	10.00	689.40		
	36.90	690.00		
	130.50	692.00		0.0 END

UPSTREAM HEADS TO USE IN COMPUTING THE TABLE

NFRAC= 60
POWER= 2.0
LIPREC= 0.02
MINPFD= 0.01

0.01
0.025
0.05
0.075
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.6
0.7
1.0
2.0
2.2
2.4
2.6
2.8
3.0
4.0
5.0
6.0
7.0
8.0
-1.

EMBANKQ
:weir (0314-U312)
TABID= 6007

PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
LABEL=

OFFSET	CREST	WIDTH	APPROACH	SURFACE
-50.00	695.00			
-10.00	694.00	55.		0.0 GRAVEL
0.00	693.96			
10.00	694.00			
50.00	695.00			0.0 END

UPSTREAM HEADS TO USE IN COMPUTING THE TABLE

NFRAC= 60
POWER= 2.0
LIPREC= 0.02
MINPFD= 0.01
0.025
0.05
0.1
0.2
0.25
0.3
0.5
0.7
1.0
2.0
2.2
3.0
4.0
5.0
6.0
-1.

FINISH

FTABIN \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX
GISID= 000SCDA4901
TABLE#= 4901 OUT22 MONOTONE NEWBETAM EXTEND
STATION= 20.0
NAME= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.055 0.045 0.055
XS 4901
 -265.00 706.28 1
 -245.00 705.28 1
 -225.00 704.28 1
 -210.00 703.28 1
 -200.00 702.28 1
 -185.00 701.28 1
 -170.00 700.28 1
 -150.00 699.28 1
 -122.00 697.28 1
 -100.00 696.28 2
 -55.00 695.28 2
 -30.00 694.28 2
 -12.00 693.28 2
 -0.10 691.23 2
 0.00 691.23 2
 10.00 694.28 2
 10.10 694.28 2
 12.00 695.28 2
 25.00 696.28 2
 50.00 700.28 3
 85.00 701.28 3
 100.00 702.28 3
 115.00 703.28 3
 135.00 704.28 3
 155.00 704.28 -1

FEQX
GISID= 000SCDA4902
TABLE#= 4902 OUT22 MONOTONE NEWBETAM EXTEND
STATION= 155.0
NAME= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.055 0.045 0.055
XS 4902
 -620.00 713.28 1
 -590.00 712.28 1
 -545.00 711.28 1
 -500.00 710.28 1
 -415.00 709.28 1
 -365.00 708.28 1
 -328.00 707.28 1
 -300.00 706.28 1
 -280.00 705.28 1
 -215.00 700.28 1
 -180.00 699.28 1
 -165.00 698.28 2
 -30.00 697.28 2
 -18.00 696.28 2
 -10.00 696.28 2
 -0.10 696.28 2
 0.00 691.50 2
 8.00 691.50 2
 8.10 696.28 2
 12.00 696.28 2

18.00 697.28 2
 30.00 699.28 2
 50.00 703.28 2
 60.00 704.28 3
 90.00 705.28 -1

FEQX
 GISID= 000SCDA4903
 TABLE# 4903 OUT22 MONOTONE NEWBETAM EXTEND
 STATION= 515.0
 NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
 NSUB 3 0.055 0.045 0.055
 XS 4903
 -320.00 711.28 1
 -290.00 710.28 1
 -275.00 709.28 1
 -245.00 707.28 1
 -235.00 706.28 1
 -90.00 706.28 1
 -70.00 702.28 1
 -50.00 701.28 2
 -10.00 700.28 2
 -0.10 700.28 2
 0.00 692.10 2
 6.00 692.10 2
 6.10 700.28 2
 10.00 700.28 2
 15.00 701.28 2
 35.00 705.28 2
 58.00 710.28 3
 62.00 711.28 -1

FEQX
 GISID= 000SCDA4904
 TABLE# 4904 OUT22 MONOTONE NEWBETAM EXTEND
 STATION= 710.0
 NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
 NSUB 3 0.055 0.045 0.055
 XS 4904
 -225.00 711.28 1
 -190.00 710.28 1
 -160.00 706.28 1
 -110.00 706.28 1
 -100.00 706.28 1
 -82.00 704.28 1
 -75.00 703.28 1
 -60.00 702.28 2
 -0.10 702.28 2
 0.00 692.40 2
 4.00 692.40 2
 4.10 702.28 2
 60.00 702.28 2
 70.00 705.28 2
 90.00 710.28 3
 112.00 711.28 -1

FEQX
 GISID= 000SCDA4905
 TABLE# 4905 OUT22 MONOTONE NEWBETAM EXTEND
 STATION= 1015.0
 NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
 NSUB 3 0.055 0.045 0.055
 XS 4905
 -368.00 712.00 1
 -350.00 711.00 1
 -335.00 710.00 1
 -325.00 709.00 1

-315.00	708.00	1
-305.00	707.00	1
-275.00	707.00	1
-260.00	708.00	1
-230.00	708.00	1
-178.00	707.00	1
-138.00	706.00	1
-112.00	705.00	2
-85.00	704.00	2
-0.10	704.00	2
0.00	692.90	2
2.00	692.90	2
2.10	704.00	2
85.00	704.00	2
108.00	705.00	2
132.00	706.00	3
170.00	715.00	3
195.00	721.00	-1

FINISH

FTABIN
FILE= \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX
GISID= NONE
TABLE#= 3018 OUT12 EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.050 0.040 0.050
XS A

-345.0	696.28	1
-293.0	695.28	1
-237.0	694.28	1
-170.0	693.28	1
-70.0	692.28	1
-26.0	691.28	2
-12.0	690.28	2
-5.0	689.28	2
0.0	687.48	2
0.1	677.63	2
0.2	687.48	2
5.0	689.28	2
12.0	690.28	2
20.0	691.28	3
35.0	692.28	3
60.0	693.28	3
104.0	694.28	3
120.0	695.28	3
160.0	696.28	-1

FEQX
GISID= NONE
TABLE#= 3019 OUT12 EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.050 0.040 0.050
XS B

-364.0	696.28	1
-310.0	695.28	1
-258.0	694.28	1
-198.0	693.28	1
-130.0	692.28	1
-65.0	691.28	1
-20.0	690.28	1
-9.0	689.28	2
-1.0	688.28	2
0.0	687.48	2
0.1	677.63	2
0.2	687.48	2
1.0	688.28	2
8.0	689.28	3
20.0	690.28	3
42.0	691.28	3
60.0	692.28	3
77.0	693.28	3
96.0	694.28	3
135.0	695.28	3
172.0	696.28	-1

FEQX
GISID= NONE
TABLE#= 3020 OUT12 EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.050 0.040 0.050

XS C			
-568.0	696.28	1	
-500.0	694.28	1	
-363.0	692.28	1	
-177.0	690.28	1	
-80.0	690.68	1	
-42.0	688.28	2	
0.0	687.48	2	
0.1	675.88	2	
0.2	687.48	2	
38.0	688.28	3	
97.0	690.28	3	
328.0	692.28	3	
377.0	693.28	3	
423.0	694.28	3	
494.0	695.28	3	
627.0	696.28	-1	
FINISH			

SECTION 10

NATURAL CONDITIONS ANALYSIS

Baseline Conditions

[Floder: \Devon\FEQ\070404\baseline]
FEQ Input File for Long TSF:
FEQ Peak File for Long TSF:
FEQ Output File for Long TSF:
FEQ Input File for BIG TSF:
FEQ Peak File for BIG TSF:
FEQ Output File for BIG TSF:
PVSTATS Analysis:

\\ng08\da_1\ng.feq
\\ng08\da_1\ng.pek
\\ng08\da_1\ng
\\big15\DA_IBIGr.feq
\\big15\DA_IBIGr.pek
\\big15\DA_IBIGr
See Folder pvstats_BL

Existing Conditions

[Floder: \Devon\FEQ\070404\Exist]
FEQ Input File for Long TSF:
FEQ Peak File for Long TSF:
FEQ Output File for Long TSF:
FEQ Input File for BIG TSF:
FEQ Peak File for BIG TSF:
FEQ Output File for BIG TSF:
PVSTATS Analysis:

\\ng08\DAlex8c.feq
\\ng08\DAlex8c.pek
\\ng08\DAlex8c
\\big15\DABex8c.feq
\\big15\DABex8c.pek
\\big15\DABex8c
See Folder pvstats_ex8c

Natural Conditions

[Floder: \Devon\FEQ\070404\natural]
FEQ Input File for Long TSF:
FEQ Peak File for Long TSF:
FEQ Output File for Long TSF:
FEQ Input File for BIG TSF:
FEQ Peak File for BIG TSF:
FEQ Output File for BIG TSF:
PVSTATS Analysis:

\\ng08\DALn7b.feq
\\ng08\DALn7b.pek
\\ng08\DALn7b
\\big15\DA8n7b.feq
\\ng08\DA8n7b.pek
\\big15\DA8n7b
See Folder pvstats_n7b

Proposed Conditions

[Floder: \Devon\FEQ\070404\proposed]
FEQ Input File for Long TSF:
FEQ Peak File for Long TSF:
FEQ Output File for Long TSF:
FEQ Input File for BIG TSF:
FEQ Peak File for BIG TSF:
FEQ Output File for BIG TSF:
PVSTATS Analysis:

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\\ng08\DALPr9j
\\ng08\DA8Pr9j.feq
\\ng08\DA8Pr9j.pek
\\ng08\DA8Pr9j
See Folder pvstats_Pr9j

PVSTATS Statistical Analysis Results
Devon Avenue Tributary
Natural (FEQ Models Used: DALn7b.FEQ, DABn7b.FEQ)

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NAVD88)	PVS30 10-Year (ft-NAVD88)	PVS30 50-Year (ft-NAVD88)	PVS30 100-Year (ft-NAVD88)	PVS30 500-Year (ft-NAVD88)
XS_196	dsf of Norwood Avenue (50: 1)	1668	701.79	713.59	714.04	714.21	714.59
XS_194	usf of Access Road (50: 8)	1396	700.27	712.14	712.77	713.01	713.53
XS_192	dsf of Access Road (48: 1)	1337	699.95	712.14	712.77	713.01	713.53
XS_190	Approx 597 feet ds of Access Road (48: 5)	740	699.02	710.15	710.45	710.57	710.81
XS_188	usf of EOH - West (48: 12)	642	696.92	708.34	708.58	708.83	709.86
XS_186	U46 dsf of EOH - West Culvert (46: 1)	455	696.14	707.39	708.31	708.83	709.86
XS_184	222 feet ds of EOH - West Culvert (46: 6)	233	693.28	706.76	708.31	708.83	709.86
XS_182	294 feet ds of EOH - West Culvert (46: 9)	161	692.11	706.76	708.31	708.83	709.86
XS_180	D46 usf of Access Road (46: 13)	0	692.72	706.72	708.31	708.83	709.86
XS_4905c	dsf of Access Road (U47)	1085	692.62	704.83	706.23	706.87	708.24
XS_4905	70 feet ds of Access Road (47:17)	1015	692.62	704.41	706.23	706.87	708.24
XS_4904	375 feet ds of Access Road (47:33)	710	692.12	700.79	703.20	704.05	705.83
XS_4903	570 feet ds of Access Road (47:49)	515	691.82	699.30	700.79	701.35	702.55
XS_9183 (B21)	823 feet ds of Access Road (47:65)	262	691.41	697.55	698.66	699.06	699.89
XS_4902	155 feet us of I-290 - North (47:81)	155	691.22	695.51	696.89	697.44	698.65
XS_9182 (B20)	37 feet us of I-290 - North (47:113)	37	690.98	693.93	695.15	695.69	697.22
XS_9181 (B19)	20 feet us of I-290 - North (47:21)	20	690.95	693.93	695.42	695.92	697.22
XS_9181 (B19)	usf of I-290 - North (D47)	0	690.95	693.37	694.75	695.41	697.22
F20	F20 Pond downstream of I-290 - North (0: F20)						
XS_9178 (B7)	U44 dsf of Park Blvd. (44: 1)	8656	691.52	693.37	694.75	695.41	697.22
XS_178a	D44 10 feet ds of Park Blvd. (expon 7) (44: 7)	8646	684.72	691.84	692.47	692.70	693.21
XS_176	U42 679 feet us of Stone Weir 2 (42: 1)	8392	687.75	690.16	692.43	692.66	693.16
XS_174	326 feet us of Stone Weir 2 (42: 4)	8309	687.89	690.15	690.76	691.01	691.62
XS_172	D42 us of Stone Weir 2 (42: 7)	7713	687.62	690.14	690.73	690.97	691.55
XS_170	U40 ds of Stone Weir 2 (40: 1)	7662	685.56	688.97	689.86	690.26	691.48
XS_9170 (B6)	D40 usf Foot Bridge 2 (40: 4)	7653	685.56	688.97	689.85	690.23	691.48
XS_9168 (B5)	U38 dsf Foot Bridge 2 (38: 1)	7613	683.39	688.95	689.77	690.13	691.48
XS_168a	D38 40 feet ds of Foot Bridge 2 (expon 6) (38: 4)	7573	683.32	688.95	689.77	690.13	691.48
XS_166	U36 544 feet us of Stone Weir 1 (expon 6) (36: 1)	7252	683.22	688.95	689.77	690.12	691.48
XS_164	254 feet us of Stone Weir 1 (36: 4)	6962	682.72	688.95	689.76	690.12	691.48
XS_162	128 feet us of Stone Weir 1 (36: 7)	6836	682.22	688.95	689.75	690.10	691.48
XS_160	D36 us of Stone Weir 1 (36: 10)	6708	681.72	688.95	689.75	690.10	691.48
XS_158	U34 ds of Stone Weir 1 (34: 1)	6667	681.28	687.32	688.92	689.65	691.48
XS_9158 (B4)	D34 usf of Foot Bridge 1 (34: 4)	6663	681.28	687.31	688.90	689.65	691.48
XS_9156 (B3)	U32 dsf of Foot Bridge 1 (32: 1)	6578	683.13	687.24	688.90	689.65	691.48
XS_156a	D32 75 feet ds of Foot Bridge 1 (expon 5) (32: 4)	6503	683.07	687.24	688.81	689.54	691.46
XS_154	U30 387 feet ds of Foot Bridge 1 (expon 5) (30: 1)	6191	683.02	687.24	688.81	689.54	691.45
XS_154a	D30 Confluence of South Branch (30: 4)	5973	683.02	687.24	688.82	689.54	691.41
F24	Pond us of Rohrling Road (IL 53) (0: F24)						
XS_224	dsf of Rohrling Road (IL 53) (62: 1)	12608	710.62	713.65	714.22	714.46	715.01
XS_222	Approx. 11 feet ds of Rohrling Road (IL 53) (62: 6)	12597	697.64	713.63	714.21	714.42	714.83
XS_220	Approx. 59 feet ds of Rohrling Road (IL 53) (62: 11)	12549	697.64	713.63	714.21	714.42	714.83
XS_218	Approx. 163 feet ds of Rohrling Road (IL 53) (62: 16)	12445	700.94	713.63	714.20	714.40	714.79
XS_216	Approx. 341 feet ds of Rohrling Road (IL 53) (62: 21)	12267	700.22	713.63	714.20	714.40	714.79
XS_214	Approx. 698 feet ds of Rohrling Road (IL 53) (62: 26)	11910	701.47	713.59	714.15	714.35	714.75
XS_212	Approx. 883 feet ds of Rohrling Road (IL 53) (62: 31)	11725	700.61	713.12	713.59	713.76	714.10
XS_210	Approx. 1,103 feet ds of Rohrling Road (IL 53) (62: 36)	11505	700.47	712.22	712.60	712.73	713.00
XS_210	Approx. 385 feet us of Unnamed Culv 1 (58: 1)	820	700.47	712.21	712.53	712.65	712.92
XS_208	Approx. 165 feet us of Unnamed Culv 1 (58: 8)	600	700.43	711.70	712.00	712.11	712.35
XS_206	usf of Unnamed Culv 1 (58: 14)	435	698.75	710.54	710.90	711.04	711.34
XS_204	dsf of Unnamed Culv 1 (56: 1)	317	699.05	710.54	710.90	711.04	711.34

PVSTATS Statistical Analysis Results
Devon Avenue Tributary
Natural (FEQ Models Used: DALn7b.FEQ, DABn7b.FEQ)

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NAVD88)	PVS30 10-Year (ft-NAVD88)	PVS30 50-Year (ft-NAVD88)	PVS30 100-Year (ft-NAVD88)	PVS30 500-Year (ft-NAVD88)
XS 202	usf of EOH - East (56: 4)	0	698.32	710.18	710.57	710.70	710.97
XS401	usf of EOH - East (64: 1)	10864	697.72	710.20	710.57	710.70	710.97
XS401	usf of Westbound Thorndale Ave Ramp (64: 4)	10798	695.72	708.35	709.14	709.34	709.77
XS 210	U60 (60: 1)	11506	700.47	712.22	712.60	712.73	712.98
XS 202	D60 (60: 4)	11104	698.32	710.21	710.60	710.74	711.01
F310	usf of I-290 (South)		706.20	706.54	706.64	706.68	706.79
F312	Usf of I-290 Northbound Ramp		703.04	703.77	704.03	704.15	704.44
F314	usf of Western Park Blvd - south		797.66				
XS 338	Approx. 275 feet ds of Happy Acres Basin (314: 5)	3809	680.08	693.59	694.12	694.33	694.81
XS 336	Approx. 572 feet ds of Happy Acres Basin (314: 8)	3312	679.94	693.53	694.03	694.23	694.67
XS 334	Approx. 794 feet ds of Happy Acres Basin (314: 13)	3090	680.72	693.53	694.03	694.23	694.67
XS2001	Approx. 804 feet ds of Happy Acres Basin (312: 1)	3080	663.68	693.53	694.03	694.23	694.67
XS2001	Approx. 1166 feet ds of Happy Acres Basin (312: 7)	2718	663.18	693.53	694.03	694.23	694.67
XS 332	Approx. 1068 feet us of Eastern Park Blvd - South (310: 1)	2712	681.18	692.16	692.62	693.01	693.75
XS 330	Approx. 931 feet us of Eastern Park Blvd - South (310: 7)	2555	680.40	692.16	692.62	693.01	693.75
XS 328	Approx. 689 feet us of Eastern Park Blvd - South (310: 11)	2313	679.82	692.15	692.62	693.01	693.75
XS 326	Approx. 468 feet us of Eastern Park Blvd - South (310: 15)	2092	679.44	692.15	692.62	693.01	693.75
XS 324	Approx. 233 feet us of Eastern Park Blvd - South (310: 20)	1907	680.66	692.14	692.62	693.01	693.75
XS 322	D310 usf of Eastern Park Blvd - South (310 :25)	1624	679.67	692.13	692.62	693.01	693.75
XS 320	U308 dsf of Eastern Park Blvd - South (308: 1)	1544	680.41	692.07	692.62	693.01	693.75
XS 318	53 feet DS of Eastern Park Blvd south(308: 5)	1465	680.41	692.05	692.62	693.01	693.75
XS 9316 (J4)	D308 usf of Thorndale Ave (308: 9)	1384	680.41	691.67	692.62	693.01	693.75
XS 9314 (J3)	U306 dsf of Thorndale Ave (306: 1)	1232	678.84	691.67	692.62	693.01	693.75
XS 312	D306 usf of a culvert located 7 feet DS of Thorndale Ave. (306: 5)	1188	678.87	691.41	692.62	693.01	693.75
XS 310	U304 dsf of a culvert located 7 feet DS of Thorndale Ave.(304: 1)	1131	678.57	691.41	692.62	693.01	693.75
XS 308	66 feet ds of a culvert located 7 feet DS of Thorndale Ave(304: 4)	1034	678.48	691.28	692.62	693.01	693.75
XS 9306 (J2)	D304 usf of Park Blvd. (304: 7)	959	678.47	691.28	692.62	693.01	693.75
XS 9304 (J1)	U302 dsf of Park Blvd. - North (302: 1)	834	677.42	691.28	692.62	693.01	693.75
XS 302	D302 usf of Driving Range Culvert (302: 6)	731	677.35	691.28	692.62	693.01	693.75
XS3018	U300 dsf of Driving Range Culvert (300: 1)	750	677.35	691.28	692.62	693.01	693.75
XS3019	550 feet ds of Driving Range Culvert (300: 5)	200	675.60	691.28	692.62	693.01	693.75
XS3020	554 feet ds of Driving Range Culvert (300: 9)	196	675.60	691.28	692.62	693.01	693.75
XS 152	U28 confluence of South Branch(28: 1)	5972	683.02	687.23	688.79	689.48	691.14
XS 152a	242 feet us of Weir (28: 4)	5690	683.02	687.23	688.79	689.48	691.14
XS 150	D28 us stream of Weir(d32) (28: 7)	5448	683.02	687.23	688.73	689.41	691.14
XS 148	U26 ds stream of Weir(d32) (26: 1)	5401	682.09	687.23	688.73	689.39	691.02
XS 9146 (B2)	D26 usf of Pierce Rd. (26: 4)	5373	682.07	687.23	688.73	689.38	690.98
XS 9144 (B1)	U24 dsf of Pierce Rd. (24: 1)	5225	683.15	686.89	688.05	688.61	690.14
XS 144a	D24 30 ds of Pierce Rd. (Expon 4) (24: 4)	5195	683.02	686.86	688.02	688.60	690.14
XS 142	U22 59 feet ds of Pierce Rd (Expon 4) (22: 1)	5166	682.92	686.86	688.02	688.60	690.14
XS 142a	184 feet ds of Pierce Rd (22: 6)	5041	682.92	686.86	688.02	688.60	690.14
XS 140	557 feet ds of Pierce Rd (22: 11)	4668	682.92	686.86	688.02	688.60	690.13

SECTION 11

PROPOSED CONDITIONS ANALYSIS



LEGEND

DA305

SUBBASIN ID

F24

LEVEL POOL RESERVOIR

B-62

FEO BRANCH

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	EXHIBIT 11.1		*TOTAL	*NUM
			CONTRACT NO.	
ILLINOIS FED. AID PROJECT				



NOTE: RCBC SIZES REFLECT FLOW AREA.

FILE NAME =	USER NAME = elmotoda	DESIGNED -	REVISED -	 ELGIN O'HARE WEST BYPASS  communities. opportunities. solutions.	ELGIN O'HARE – WEST BYPASS DEVON AVENUE TRIBUTARY – PROPOSED CONDITIONS CULVERT LOCATION MAP				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
N:\dot\070404\Water\Exhibit MY\070404	11.2 Devon Ave Trib Proposed Condition Cul	DRAWN Map.dgn	REVISED -							EXHIBIT 11.2		\$TOTAL	\$NUM	
	PLOT SCALE = 250.000000 ' / in.	CHECKED -	REVISED -											
	PLOT DATE = 10/8/2012	DATE -	REVISED -											
				SCALE:	SHEET NO. \$NUM OF \$TOTALSHEETS		STA.	TO STA.		CONTRACT NO.			ILLINOIS FED. AID PROJECT	



Baseline Conditions

[Floder: \Devon\FEQ\070404\baseline]
FEQ Input File for Long TSF:
FEQ Peak File for Long TSF:
FEQ Output File for Long TSF:
FEQ Input File for BIG TSF:
FEQ Peak File for BIG TSF:
FEQ Output File for BIG TSF:
PVSTATS Analysis:

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See Folder pvstats_BL

Existing Conditions

[Floder: \Devon\FEQ\070404\Exist]
FEQ Input File for Long TSF:
FEQ Peak File for Long TSF:
FEQ Output File for Long TSF:
FEQ Input File for BIG TSF:
FEQ Peak File for BIG TSF:
FEQ Output File for BIG TSF:
PVSTATS Analysis:

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See Folder pvstats_ex8c

Natural Conditions

[Floder: \Devon\FEQ\070404\natural7]
FEQ Input File for Long TSF:
FEQ Peak File for Long TSF:
FEQ Output File for Long TSF:
FEQ Input File for BIG TSF:
FEQ Peak File for BIG TSF:
FEQ Output File for BIG TSF:
PVSTATS Analysis:

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See Folder pvstats_n7b

Proposed Conditions

[Floder: \Devon\FEQ\070404\proposed]
FEQ Input File for Long TSF:
FEQ Peak File for Long TSF:
FEQ Output File for Long TSF:
FEQ Input File for BIG TSF:
FEQ Peak File for BIG TSF:
FEQ Output File for BIG TSF:
PVSTATS Analysis:

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See Folder pvstats_Pr9j

PVSTATS Statistical Analysis Results
Devon Avenue Tributary
Proposed (FEQ Models Used: DALPr9j.FEQ, DABPr9j.FEQ)

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NAVD)	PVS30 10-Year (ft-NAVD)	PVS30 50-Year (ft-NAVD)	PVS30 100-Year (ft-NAVD)	PVS30 500-Year (ft-NAVD)
F556	usf of EOH west (Dep3, F556)		708.00	710.48	711.05	711.28	711.79
F552	usf of IL53 North (Dep1, F552)		707.20	708.81	709.57	709.94	710.92
F502	usf of Ramp G5 - Pond 1 (0: F502)		703.00	706.35	707.62	708.25	709.89
F504	usf of Ramp G1 - Pond 2 (0: F504)		701.00	704.92	706.07	706.60	708.00
F554	usf of Ramp G1, G2 - (Dep2, F554))		692.00	694.52	696.84	699.20	711.98
F506	usf of I-290 North - (Pond 3, F506)		691.14	694.28	695.90	696.66	698.61
F20	F20 Pond downstream of I-290 North - (0: F20)		691.52	693.18	694.20	694.66	695.78
XS_9178 (B7)	U44 dsf of Park Blvd. (44: 1)	8656	684.72	691.71	692.23	692.41	692.78
XS_178a	D44 10 feet ds pf Park Blvd. (expon 7) (44: 7)	8646	684.72	691.69	692.20	692.38	692.74
XS_176	U42 679 feet us of Stone Weir 2 (42: 1)	8392	687.75	690.07	690.53	690.71	691.10
XS_174	326 feet us of Stone Weir 2 (42: 4)	8039	687.69	690.07	690.53	690.71	691.10
XS_172	D42 us of Stone Weir 2 (42: 7)	7713	687.62	690.06	690.51	690.68	691.06
XS_170	U40 ds of Stone Weir 2 (40: 1)	7662	685.56	688.87	689.59	689.89	690.61
XS_9170 (B6)	D40 usf Foot Bridge 2 (40: 4)	7653	685.56	688.87	689.58	689.87	690.61
XS_9168 (B5)	U38 dsf Foot Bridge 2 (38: 1)	7613	683.39	688.85	689.52	689.79	690.61
XS_168a	D38 40 feet ds of Foot Bridge 2 (expon 6) (38: 4)	7573	683.32	688.85	689.52	689.79	690.61
XS_166	U36 544 feet us of Stone Weir 1 (expon 6) (36: 1)	7252	683.22	688.85	689.52	689.79	690.61
XS_164	254 feet us of Stone Weir 1 (36: 4)	6962	682.72	688.85	689.51	689.78	690.61
XS_162	128 feet us of Stone Weir 1 (36: 7)	6836	682.22	688.85	689.51	689.78	690.61
XS_160	D36 us of Stone Weir 1 (36: 10)	6708	681.72	688.85	689.51	689.78	690.61
XS_158	U34 ds of Stone Weir 1 (34: 1)	6667	681.28	687.30	688.62	689.17	690.61
XS_9158 (B4)	D34 usf of Foot Bridge 1 (34: 4)	6663	681.28	687.27	688.59	689.15	690.61
XS_9156 (B3)	U32 dsf of Foot Bridge 1 (32: 1)	6578	683.13	687.21	688.54	689.13	690.61
XS_156a	D32 75 feet ds of Foot Bridge 1 (expon 5) (32: 4)	6503	683.07	687.19	688.53	689.13	690.61
XS_154	U30 387 feet ds of Foot Bridge 1 (expon 5) (30: 1)	6191	683.02	687.19	688.53	689.13	690.61
XS_154a	D30 Confluence of South Branch (30: 4)	5973	683.02	687.19	688.53	689.13	690.61
F24	Pond us of Rohliwing Road - IL 53 south (0: F24)		710.62	713.87	715.05	715.58	716.92
XS_224	dsf of Rohliwing Road - IL 53 south (62: 1)	12608	697.64	713.40	713.98	714.13	714.57
XS_222	Approx. 11 feet ds of Rohliwing Road - IL 53 south (62: 11)	12597	697.64	713.40	713.98	714.13	714.57
XS_220	Approx. 59 feet ds of Rohliwing Road - IL 53 south (62: 21)	12549	697.64	713.40	713.98	714.13	714.57
XS_218	Approx. 163 feet ds of Rohliwing Road - IL 53 south (62: 31)	12445	700.94	713.39	713.97	714.13	714.57
XS_216	Approx. 341 feet ds of Rohliwing Road - IL 53 south (62: 41)	12267	700.22	713.39	713.96	714.13	714.57
XS_214	Approx. 698 feet ds of Rohliwing Road - IL 53 south (62: 51)	11910	701.47	713.34	713.85	714.05	714.47
XS_212	Approx. 883 feet ds of Rohliwing Road - IL 53 south (62: 61)	11725	700.61	713.11	713.52	713.68	714.04
XS_210	Approx. 1,103 feet ds of Rohliwing Road - IL 53 south (62: 71)	11505	700.47	712.93	713.29	713.43	714.04
XS_208	Approx. 165 feet us of EOH-East Culv (62: 85)	11286	700.43	712.44	712.99	713.20	714.04
XS_206	usf of EOH - East Culv (62: 97)	11175	698.75	711.63	712.70	713.11	714.04
F508	usf of Ramp G7 - Pond 4 (0: F508)		692.50	695.09	696.51	697.25	699.41

PVSTATS Statistical Analysis Results
Devon Avenue Tributary
Proposed (FEQ Models Used: DALPr9j.FEQ, DABPr9j.FEQ)

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NAVD)	PVS30 10-Year (ft-NAVD)	PVS30 50-Year (ft-NAVD)	PVS30 100-Year (ft-NAVD)	PVS30 500-Year (ft-NAVD)
F310	usf of west of I-290 south		706.20	706.17	706.64	706.85	707.34
F312	usf of G3 Ramp (Pond 5)		703.04				
F314	usf of G6, K4 Ramp		797.66				
XS_338	Approx. 275 feet ds of Happy Acres Basin (314: 33)	3609	680.08	693.52	693.98	694.15	694.61
XS_336	Approx. 572 feet ds of Happy Acres Basin (314: 57)	3312	679.94	693.52	693.98	694.15	694.61
XS_334	Approx. 794 feet ds of Happy Acres Basin (314: 97)	3090	680.72	693.52	693.92	694.06	694.32
XS2001	Approx. 804 feet ds of Happy Acres Basin (312: 1)	3080	663.68	693.52	693.92	694.06	694.32
XS2001	Approx. 1166 feet ds of Happy Acres Basin (312: 7)	2718	663.18	693.52	693.92	694.06	694.32
XS_332	Approx. 1088 feet us of Park Blvd - South (310: 1)	2712	681.18	691.83	692.63	692.98	693.84
XS_330	Approx 931 feet us of Park Blvd - South (310: 7)	2555	680.40	691.83	692.63	692.98	693.84
XS_328	Approx 689 feet us of Park Blvd - South (310: 11)	2313	679.82	691.83	692.63	692.98	693.84
XS_326	Approx 468 feet us of Park Blvd - South (310: 15)	2092	679.44	691.83	692.63	692.98	693.84
XS_324	Approx 283 feet us of Park Blvd - South (310: 20)	1907	680.66	691.83	692.63	692.98	693.84
XS_9322	D310 usf of E-O Expy/Eastern Park Blvd - South (310 :25)	1624	679.67	691.74	692.63	692.98	693.84
XS_9304 (J1)	U302 dsf of Park Blvd. - North (302: 1)	834	677.42	689.78	690.55	690.98	691.75
XS_302	D302 usf of Driving Range Culvert (302: 6)	731	677.35	689.63	690.55	690.98	691.75
XS3018	U300 dsf of Driving Range Culvert (300: 1)	750	677.35	689.63	690.55	690.98	691.75
XS3019	550 feet ds of Driving Range Culvert (300: 5)	200	675.60	689.58	690.55	690.98	691.75
XS3020	554 feet ds of Driving Range Culvert (300: 9)	196	675.60	689.15	690.55	690.98	691.75
XS_152	U28 confluence of South Branch(28: 1)	5972	683.02	687.19	688.53	689.13	690.61
XS_152a	242 feet us of Weir (28: 4)	5690	683.02	687.19	688.53	689.13	690.61
XS_150	D28 us stream of Weir(d32) (28: 7)	5448	683.02	687.19	688.53	689.13	690.61
XS_148	U26 ds stream of Weir(d32) (26: 1)	5401	682.09	687.19	688.47	689.01	690.27
XS_9146 (B2)	U26 usf of Pierce Rd. (26: 4)	5373	682.07	687.19	688.47	689.00	690.23
XS_9144 (B1)	U24 dsf of Pierce Rd. (24: 1)	5225	683.15	686.90	687.90	688.34	689.43
XS_144a	D24 30 ds of Pierce Rd. (Expon 4) (24: 4)	5195	683.02	686.86	687.86	688.32	689.43
XS_142	U22 59 feet ds of Pierce Rd (Expon 4) (22: 1)	5166	682.92	686.86	687.86	688.32	689.43
XS_142a	184 feet d/s of Pierce Rd (22: 6)	5041	682.92	686.86	687.86	688.32	689.43
XS_140	557 feet d/s of Pierce Rd (22: 11)	4668	682.92	686.86	687.86	688.32	689.43

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GISID= NONE
TABLE# 9322 OUT12 EXTEND
STATION# 1624.36
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.045 0.050 0.045
XS 9322
-60.31 694.83 1 1936633.50 1070621.300001 ALPT GR
-35.87 694.59 1 1936617.47 1070639.740002 GR
-35.28 695.02 1 1936617.06 1070640.160003 GR FACE CURB
-21.70 694.60 2
-7.50 689.85 2
-0.1 689.85 2
-0.05 679.95 2
0.00 689.85 2
7.50 689.85 3
21.90 694.67 3
23.67 694.96 3
43.69 695.51 -1 1936559.49 1070691.260014 GR

FEQX
GISID= 003SCDA9320
TABLE# 9320 OUT12 EXTEND
STATION# 1518
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.045 0.050 0.045
XS9320
-348.61 696.29 1 1936709.52 1070396.67 0001 TM Extend Sta.
-280.61 694.25 1 1936700.42 1070464.05 0002 TM Extend Sta.
-218.15 693.11 1 1936692.22 1070525.97 0003 TM Extend Sta.
-135.59 692.31 1 1936682.21 1070607.92 0004 TM Extend Sta.
-58.46 691.84 1 1936672.19 1070684.40 0005 TM Extend Sta.
-15.50 691.66 2
-7.50 689.01 2
-0.1 689.01 2
-0.05 680.69 2
0.00 689.01 2
7.50 689.01 3
18.30 692.61 3
33.62 692.94 3
69.18 693.02 3
201.69 693.60 3
234.59 695.24 -1 1936658.53 1070775.46 0014 TM Extend Sta.
3 1936650.34 1070810.06 0015 TM Extend Sta.
3 1936631.22 1070941.18 0016 TM Extend Sta.
-1 1936639.41 1070973.05 0017 TM Extend Sta.

FEQX
GISID= 003SCDA9316
TABLE# 9316 OUT12 EXTEND
STATION# 1443.00
NAVM= 0
NSUB 3 0.045 0.050 0.045
XS U/S of Thorndale Ave
-356.0 695.28 1
-316.0 694.28 1
-234.0 693.28 1
-120.0 692.28 1
-12.7 691.36 2
-7.5 688.78 2
-0.1 688.78 2
-0.05 680.69 2
0.0 688.78 2

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7.5	688.78	2
14.5	692.29	3
60.0	693.28	3
140.0	694.28	3
273.0	694.28	3
480.0	694.28	3
630.0	695.28	3
640.0	696.28	-1

FEQX
GISID= 003SCDA9304
TABLE# 9304 OUT12 EXTEND
STATION= 999.99
NAVM= 0
NSUB 3 0.045 0.050 0.045
XS D/S of Park Blvd (North)

-260.0	696.28	1
-210.0	695.28	1
-170.0	694.28	1
-136.9	693.20	1
-83.7	692.06	1
-42.2	690.13	1
-12.7	689.51	1
-7.5	687.76	2
-0.1	687.76	2
-0.05	677.70	2
0.0	687.76	2
7.5	687.76	3
23.2	693.00	3
23.2	693.00	3
65.6	695.92	3
112.1	696.27	-1

FINISH

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FEQX
GISID= NONE
TABLE# 3018 OUT12 EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.050 0.040 0.050
XS A
-345.0 696.28 1
-293.0 695.28 1
-237.0 694.28 1
-170.0 693.28 1
-70.0 692.28 1
-26.0 691.28 2
-12.8 690.33 2
-4.2 687.48 2
-4.1 677.63 2
-4.0 687.48 2
10.8 687.48 2
26.0 691.28 3
28.0 691.28 3
180.0 693.28 3
225.0 696.28 -1

FEQX
GISID= NONE
TABLE# 3019 OUT12 EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.050 0.040 0.050
XS B Left Side
-364.0 696.28 1
-310.0 695.28 1
-258.0 694.28 1
-198.0 693.28 1
-130.0 692.28 1
-65.0 691.28 1
-20.0 690.28 1
-9.0 689.28 2
-1.0 688.28 2
0.0 687.48 2
0.1 677.63 2
0.2 687.48 2
1.0 688.28 2
8.0 689.28 3
20.1 690.28 -1

FEQX
GISID= NONE
TABLE# 3919 OUT12 EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 4 0.050 0.040 0.030 0.050
XS B Left Side
20.0 700.00 1
20.1 690.28 2
29.1 687.28 2
29.2 677.63 2
29.3 687.28 2
32.1 687.28 2
48.0 691.28 3
50.0 691.28 3

194.0 693.28 4
252.0 696.28 -1

FEQX
GISID= NONE
TABLE#= 3020 OUT12 EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.050 0.040 0.050
XS C Left Side
-568.0 696.28 1
-500.0 694.28 1
-363.0 692.28 1
-177.0 690.28 1
-80.0 690.68 1
-42.0 688.28 2
0.0 687.48 2
0.1 675.88 2
0.2 687.48 2
38.0 688.28 3
68.0 689.30 -1

FEQX
GISID= NONE
TABLE#= 3920 OUT12 EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.050 0.040 0.050
XS C Right Side
67.9 700.00 1
68.0 689.30 1
90.2 690.05 2
100.0 686.78 2
100.1 675.88 2
100.2 686.78 2
103.0 686.78 2
121.0 691.28 2
123.0 691.28 3
328.0 692.28 3
377.0 693.28 3
423.0 694.28 3
494.0 695.28 3
627.0 696.28 -1

FEQX
GISID= NONE
TABLE#= 3921 OUT12 EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.050 0.040 0.050
XS D
121.0 696.28 2
152.8 685.68 2
152.9 675.00 2
153.0 685.68 2
155.8 685.68 2
179.0 691.48 2
181.0 691.48 3
238.0 692.28 3
430.0 694.28 3
455.0 696.28 -1

FEQX
GISID= NONE
TABLE#= 3922 OUT12 EXTEND
STATION= 99.99

NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.050 0.040 0.050
XS E 68.6 694.28 2
82.2 689.76 2
96.2 685.08 2
96.3 674.00 2
96.4 685.08 2
99.2 685.08 2
128.0 692.28 2
130.0 692.28 3
195.0 692.28 3
340.0 694.28 -1

FINISH

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FEQX
GISID= 0005CDA0206
TABLE# 206 SAVE22 NOOUT MONOTONE NEWBETAM EXTEND
STATION= 0
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 6 0.045 0.025 0.050 0.025 0.045 0.010
Approach Cross Section
-0.10 750.00 1 1937320.99 1067778.32 0001 GR
0.00 714.77 1 1937313.51 1067778.55 0002 GR
7.48 714.27 1 1937304.05 1067778.23 0003 GR
16.95 715.34 1 1937292.41 1067777.11 0004 GR
28.64 717.98 1 1937287.73 1067776.94 0005 GR
33.33 718.10 1 1937278.01 1067776.87 0006 GR
43.05 715.08 1 1937274.19 1067777.01 0007 CB
46.87 712.47 1 1937271.85 1067776.96 0008 TE
49.21 710.07 2 1937271.85 1067776.96 0008 TE
49.87 709.03 3
55.91 709.03 3
56.96 711.85 5 1937264.47 1067777.08 0014 CB
72.47 717.58 5 1937249.01 1067778.30 0015 GR
84.46 716.15 5 1937237.12 1067776.79 0016 GR
187.40 715.64 5 1937134.21 1067773.94 0017 GR
259.74 715.90 5 1937061.87 1067773.88 0018 GR
317.13 716.20 6 1937004.49 1067774.13 0019 GR
342.98 716.46 6 1936983.45 1067759.10 0020 TM
400.52 717.36 6 1936936.86 1067725.34 0021 TM Extend Sta.
441.04 717.53 6 1936904.05 1067701.56 0022 TM Extend Sta.
485.93 721.38 -1 1936867.91 1067674.94 0023 TM Extend Sta.

FEQX
GISID= NONE
TABLE# 1002 SAVE22 NOOUT EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.040
Departure Cross Section
-50.10 750.00 1
-50.00 693.28 1
0.00 693.28 1
50.00 693.28 -1

MULCON
TABID= B6X3 SAVE22 NOOUT
WSLOT= 0.10
HSLOT= 50.0
NPICES= 1 BOX
TYPE:
SPAN: 6.00
RISE: 3.00
BOTT: 0.0
ROUG: 0.013
MUDL: 0.03
ROUG: 0.030

CULVERT
TABID= CD62
TYPE= 13
LABEL= Culvert between D62 and Pond4
Approach-Section Data
APPTAB= 206

```

APPELV= 709.03
APPLEN= 10.0
APPLOS= 0.5
APEXP= 1.0
Culvert Description
NODEID=YES
SFAC= 1.0
NODE      NODEID  XNUM      STATION  ELEVATION  KA  KD
100      U/S  B6X3      670.00    709.10    0.0  0.0
        D/S      0.00    693.28    0.0  0.0

-1
CULCLS= BOX
Departure Section Data
DEPTAB= 1002
DEPELV= 693.28
LOSOPT=MOMENTUM
Discharge Coefficient Data
KRB= 1.00
KWIN= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
RBVALUE= 0.03
BVANGLE= 0.0
WMANGLE= 0.0
LPOVERD= 0.0
TYPE5SBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
OFFSET      CREST      WIDTH  APPROACH SURFACE
-99.69      917.06      50.0      710.0 PAVED
-76.81      917.30
-62.41      917.48
-39.80      917.08
0.00        915.91
44.24      915.81
111.53      917.11
154.94      918.49
210.94      918.31
271.87      918.79
Head Sequence Definition
NFRAC= 10
POWER= 2.0
0.8
1.0
1.0
2.0
2.5
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.5
4.6
4.7
4.8
    
```


4.9
5.0
5.5
6.0
6.5
7.0
8.0
9.0
10.0
12.0
13.0
15.0
20.0
30.0
-1

FINISH

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FEQX
GISID= NONE
TABLE# 1001 SAVE22 NOOUT EXTEND
STATION= 99.99 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NAVM= 0
NSUB 1 0.025
Approach Cross Section
-3.10 750.00 1
-3.00 707.48 1
0.00 707.48 1
3.00 707.48 -1

FEQX
GISID= NONE
TABLE# 1002 SAVE22 NOOUT EXTEND
STATION= 99.99 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NAVM= 0
NSUB 1 0.040
Departure Cross Section
-50.10 750.00 1
-50.00 706.78 1
0.00 706.78 1
50.00 706.78 -1

MULCON
TABID= B4X4 SAVE22 NOOUT
WSLOT= 0.10
HSLOT= 30.0
NPIPES= 1
TYPE= BOX
SPAN: 4.00
RISE: 4.00
BOTT: 0.0
ROUG: 0.013
MUDL: 0.03
ROUG: 0.030

CULVERT
TABID= CDEP1
TYPE= 13
LABEL= Culvert between Dep1 and Pond1 h
Approach-Section Data
APPTAB= 1001
APPELV= 707.48
APPLEN= 10.0
APPLOS= 0.5
APPEXP= 1.0
Culvert Description
NODEID=YES
SFAC= 1.0
NODE XNUM STATION ELEVATION KA KD
100 U/S B4X4 650.00 707.48 0.0 0.0
D/S B4X4 0.00 706.78 0.0 0.0

-1
CULCLS= BOX
Departure Section Data
DEPTAB= 1002
DEPELV= 706.78
LOSOPT=MOMENTUM
Discharge Coefficient Data
KR8= 1.00

KWING= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
REVALUE= 0.03
BVANGLE= 0.0
WVANGLE= 0.0
LPOVERD= 0.0
TYPESSBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999

CREST	WIDTH	APPROACH SURFACE
995.31	50.0	690.0 PAVED
-184.90		
-128.41		
-71.74		
0.00		
79.07		
994.65		
153.51		
994.92		
212.82		
995.31		
END		

Head Sequence Definition

NFRAC= 10
POWER= 2.0

0.05
0.1
0.2
0.25
0.3
0.5
0.8
1.0
2.0
2.5
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.5
4.6
4.7
4.8
4.9
5.0
5.5
6.0
6.5
7.0
8.0
9.0
10.0
12.0
13.0
15.0
20.0
30.0
-1

FINISH

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FEQX
 GISID= NONE
 TABLE# 1001 SAVE22 NOOUT EXTEND
 STATION# 99.99
 NAVM# 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
 NSUB 1 0.025
 Approach Cross Section
 -5.10 750.00 1
 -5.00 692.28 1
 0.00 692.28 1
 5.00 692.28 -1

FEQX
 GISID= NONE
 TABLE# 1002 SAVE22 NOOUT EXTEND
 STATION# 99.99
 NAVM# 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
 NSUB 1 0.040
 Departure Cross Section
 -50.10 750.00 1
 -50.00 691.48 1
 0.00 691.48 1
 50.00 691.48 -1

MULCON
 TABID= B104 SAVE22 NOOUT
 WSLOT= 0.10
 HSLOT= 30.0
 NPIPES= 1 BOX
 TYPE: 4.00
 SPAN: 3.00
 RISE: 0.0
 BOTT: 0.013
 ROUG: 0.03
 MUDL: 0.030
 ROUG: 0.030

CULVERT
 TABID= CDEP2
 TYPE= 13
 LABEL= Culvert between Dep 2 and Pond 3
 Approach-Section Data
 APPTAB= 1001
 APPELV= 692.28
 APPLN= 10.0
 APPLS= 0.5
 APPEXP= 1.0
 Culvert Description
 NODEID= YES
 SFAC= 1.0
 NODE U/S XNUM STATION ELEVATION KA KD
 100 D/S B104 180.00 692.28 0.0 0.0
 -1 D/S B104 0.00 691.48 0.0 0.0

CULCLS= BOX
 Departure Section Data
 DEPTAB= 1002
 DEPELV= 691.48
 LOSOPT= MOMENTUM
 Discharge Coefficient Data
 KRB= 1.00

KWING= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
REVALUE= 0.03
BYANGLE= 0.0
WMANGLE= 0.0
LPOVERD= 0.0
TYPE5SBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999

OFFSET	CREST	WIDTH	APPROACH SURFACE
-184.90	995.31	50.0	690.0 PAVED
-128.41	995.00		
-71.74	994.75		
0.00	994.53		
79.07	994.65		
153.51	994.92		
212.82	995.31		END

Head Sequence Definition
NFRAC= 10
POWER= 2.0
0.05
0.1
0.2
0.25
0.3
0.5
0.8
1.0
2.0
2.5
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.5
4.6
4.7
4.8
4.9
5.0
5.5
6.0
6.5
7.0
8.0
9.0
10.0
12.0
13.0
15.0
20.0
30.0
-1

FINISH

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FEQX
GISID= NONE
TABLE#= 1001 SAVE22 NOOUT EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.025
Approach Cross Section
-5.10 750.00 1
-5.00 692.28 1
0.00 692.28 1
5.00 692.28 -1

FEQX
GISID= NONE
TABLE#= 1002 SAVE22 NOOUT EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.040
Departure Cross Section
-50.10 750.00 1
-50.00 691.48 1
0.00 691.48 1
50.00 691.48 -1

MULCON
TABID= B104 SAVE22 NOOUT
WSLOT= 0.10
HSLLOT= 30.0
NPIPES= 1
TYPE: BOX
SPAN: 4.00
RISE: 3.00
BOTT: 0.0
ROUG: 0.013
MUDL: 0.03
ROUG: 0.030

CULVERT
TABID= CDEP2
TYPE= 13
LABEL= Culvert between Dep 2 and Pond 3
Approach-Section Data
APPTAB= 1001
APPELV= 692.28
APPLEN= 10.0
APPLOS= 0.5
APPEXP= 1.0
Culvert Description
NODEID=YES
SFAC= 1.0
NODE NODEID XNUM STATION ELEVATION KA KD
100 U/S B104 180.00 692.28 0.0 0.0
D/S B104 0.00 691.48 0.0 0.0
-1
CULCLS= BOX
Departure Section Data
DEPTAB= 1002
DEPELV= 691.48
LOSOPT=MOMENTUM
Discharge Coefficient Data
KRB= 1.00

KWING= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
RVALUE= 0.03
BVANGLE= 0.0
WVANGLE= 0.0
LPOVERD= 0.0
TYPESSBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999

CREST	WIDTH	APPROACH SURFACE
995.31	50.0	690.0 PAVED
995.00		
994.75		
994.53		
0.00		
79.07		
994.65		
153.51		
994.92		
212.82		END
995.31		

Head Sequence Definition

NFRAC= 10
POWER= 2.0

0.05
0.1
0.2
0.25
0.3
0.5
0.8
1.0
2.0
2.5
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.5
4.6
4.7
4.8
4.9
5.0
5.5
6.0
6.5
7.0
8.0
9.0
10.0
12.0
13.0
15.0
20.0
30.0
50.0

FTABIN
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FEQX
 GISID= NONE
 TABLE# 1001 SAVE22 NOOUT EXTEND
 STATION= 99.99
 NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
 NSUB 1 0.025
 Approach Cross Section
 -4.10 750.00 1
 -4.00 708.28 1
 0.00 708.28 1
 4.00 708.28 -1

FEQX
 GISID= NONE
 TABLE# 1002 SAVE22 NOOUT EXTEND
 STATION= 99.99
 NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
 NSUB 1 0.040
 Departure Cross Section
 -50.10 750.00 1
 -50.00 704.28 1
 0.00 704.28 1
 50.00 704.28 -1

MULCON
 TABID= B6X3 SAVE22 NOOUT
 WSLOT= 0.10
 HSLOT= 30.0
 NPIPES= 1
 TYPE: BOX
 SPAN: 6.00
 RISE: 3.00
 BOT: 0.0
 ROUG: 0.013
 MUDL: 0.03
 ROUG: 0.030

CULVERT
 TABID= CDEP3
 TYPE= 13
 LABEL= Culvert between Dep 2 and Pond 3
 Approach-Section Data
 APPTAB= 1001
 APPELV= 708.28
 APPLN= 10.0
 APLOS= 0.5
 APEXP= 1.0
 Culvert Description
 NODEID=YES
 SFAC= 1.0
 NODE NODEID XNUM STATION ELEVATION KA KD
 100 U/S B6X3 525.00 708.28 0.0 0.0
 D/S B6X3 0.00 704.28 0.0 0.0

-1
 CULCLS= BOX
 Departure Section Data
 DEPTAB= 1002
 DEPELV= 704.28
 LOSOPT=MOMENTUM
 Discharge Coefficient Data
 KRB= 1.00

KWING= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
REVALUE= 0.03
BVANGLE= 0.0
WVANGLE= 0.0
LPOVERD= 0.0
TYPESBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999

OFFSET	CREST	WIDTH	APPROACH SURFACE
-184.90	995.31	50.0	690.0 PAVED
-128.41	995.00		
-71.74	994.75		
0.00	994.53		
79.07	994.65		
153.51	994.92		
212.82	995.31		

Head Sequence Definition
NFRAC= 10
POWER= 2.0

0.05
0.1
0.2
0.25
0.3
0.5
0.8
1.0
2.0
2.5
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.5
4.6
4.7
4.8
4.9
5.0
5.5
6.0
6.5
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
15.0
-1

END

FINISH

FTABIN
FILE= \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX
GISID= NONE
TABLE# 9322 SAVE22 NOOUT EXTEND
STATION= 1624.36
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 3 0.045 0.050 0.045
xs 9322
-60.41 750. 1 1936633.50 1070621.300001 ALPT GR
-60.31 694.83 1 1936633.50 1070621.300001 ALPT GR
-35.87 694.59 1 1936617.47 1070639.740002 GR
-35.28 695.02 1 1936617.06 1070640.160003 GR FACE CURB
-21.70 694.60 2
-7.50 689.85 2
0.00 689.85 2
7.50 689.85 3
21.90 694.67 3
23.67 694.96 3 1936576.31 1070680.410013 GR
43.69 695.51 -1 1936559.49 1070691.260014 GR

MULCON
TABID= 6038 SAVE22 OUT22
WSLOT= 0.10
HSLOT= 30.0
NPIPES= 1
TYPE: BOX
SPAN: 9.00
RISE: 3.00
BOTT: 0.0
ROUG: 0.013
MUDL: 0.03
ROUG: 0.030

QCLIMIT
TABLE#= 6038
FACTOR=1.25

EXPCON
CROSS SECTION TABLES
LOC TAB# DIST DATUM
UP 9322 0.0 689.85
DN 6038 2.0 689.85
COEFFICIENTS AND OUTPUT TABLES
DIR TAB# KA KD LABEL
UD XU0306 0.1 0.9 From Channel to Culvert
DU XD0306 0.1 0.9 From Culvert to Channel
SMOOTH=0.1
GMEAN= 0.5
DOWNSTREAM HEAD SEQUENCE FOR THE TABLE
NFRAC= 11
POWER= 2.5
0.25
0.50
0.75
1.0
1.25
1.5
1.75
2.0
2.25
2.5
2.75
3.0

3.25
 3.5
 3.75
 4.0
 4.25
 4.5
 4.75
 5.0
 5.25
 5.5
 5.75
 6.0
 6.25
 6.5
 6.75
 7.0
 7.25
 7.5
 7.75
 8.0
 8.25
 8.5
 8.75
 9.0
 9.25
 9.5
 9.75
 10.0
 15.0
 20.0
 25.0
 30.0
 -1.0

FEQX GISID= 003SCDA9304
 TABLE# 9304 SAVE22 NOOUT EXTEND
 STATION= 999.99
 NAVM= 0
 NSUB 3 0.045 0.050 0.045
 XS D/S of Park Blvd (North)
 -260.1 750. 1
 -260.0 696.28 1
 -210.0 695.28 1
 -170.0 694.28 1
 -136.9 693.20 1
 -83.7 692.06 1
 -42.2 690.13 1
 -12.7 689.51 1
 -7.5 687.76 2
 0.0 687.76 2
 7.5 687.76 3
 23.2 693.00 3
 23.2 693.00 3
 65.6 695.92 3
 112.1 696.27 -1

EXPCON
 CROSS SECTION TABLES
 LOC TAB# DIST DATUM
 UP 6038 0.0 687.76
 DN 9304 2.0 687.76
 COEFFICIENTS AND OUTPUT TABLES
 DIR TAB# KA KD LABEL
 UD XUD306 0.1 0.9 From Culvert to Channel
 DU XDD306 0.1 0.9 From Channel to Culvert
 SMOOTH=0.1

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GMEAN= 0.5
DOWNSTREAM HEAD SEQUENCE FOR THE TABLE
NFRAC= 11
POWER= 2.5
0.25
0.50
0.75
1.0
1.25
1.5
1.75
2.0
2.25
2.5
2.75
3.0
3.25
3.5
3.75
4.0
4.25
4.5
4.75
5.0
5.25
5.5
5.75
6.0
6.25
6.5
6.75
7.0
7.25
7.5
7.75
8.0
8.25
8.5
8.75
9.0
9.25
9.5
9.75
10.0
15.0
20.0
25.0
30.0
-1.0
FINISH

FTABIN
FILE= \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX
TABLE# 1000 SAVE22 NOOUT NEWBETAM EXTEND
STATION# 0.00

NAME= 0
NSUB 3 0.055 0.040 0.055

Approach XS

-740.10	750.	1
-740.00	715.28	1
-640.00	714.28	1
-540.00	713.28	1
-440.00	712.28	1
-340.00	711.28	1
-245.00	710.28	1
-130.00	709.28	1
-50.00	708.28	2
-2.00	705.08	2
0.00	705.08	2
2.00	705.05	2
50.00	708.28	2
100.00	709.28	3
170.00	710.28	3
255.00	711.28	3
320.00	712.28	3
435.00	713.28	3
480.00	714.28	-1

FEQX

GISID= NONE

TABLE# 1002 SAVE22 NOOUT EXTEND

STATION# 99.99

NAME= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00

NSUB 1 0.040

Departure Cross Section

-50.10	750.00	1
-50.00	704.28	1
0.00	704.28	1
50.00	704.28	-1

MULCON

TABID= B4X3 SAVE22 NOOUT

WSLOT= 0.10

HSLOT= 30.0

NPIPES= 1

TYPE: BOX

SPAN: 4.00

RISE: 3.00

BOTT: 0.0

ROUG: 0.013

MUDL: 0.03

ROUG: 0.030

CULVERT

TABID= CC310

TYPE= 13

LABEL= 4 x 3 Box under I-290 located south of Thorndale Ave

APPROACH SECTION DATA

APPTAB= 1000

APPELV= 705.08

APPLEN= 30.0

APPLOS= 0.0

APPEXP= 0.5

CULVERT DESCRIPTION

NODEID=YES

SFAC= 1.0

NODE	NODENAME	XTAB	STATION	ELEVATION
1	UPSTREAM	B4X3	340.00	705.08

DNSTREAM	B4X3	0.00	704.28
----------	------	------	--------

-1

CULCLS=BOX

DEPARTURE SECTION DESCRIPTION

DEPTAB= 1002

DEPELV= 704.28

LOSOPT=MOMENTUM

DISCHARGE COEFFICIENT DATA

KRB= 0.00

KWING= 0.00

KPROJ= 0.00

C46= 0.00

TYPE 5 flow parameters

RVALUE= 0.03

BVANGLE= 0.00

WVANGLE= 40.0

LPOVERD= 0.0

TYPESSBF= 0.75

ROADWAY DESCRIPTION

PLCWTB=9994

GLCWTB=9995

PHCWTB=9996

GHCWTB=9997

PSUBTB=9998

GSUBTB=9999

OFFSET	CREST	WIDTH	APPROACH SURFACE
-56.39	989.66	74.00	688.50 PAVED
-53.64	989.68		688.27
-27.36	989.90		686.11
-22.29	989.94		684.40
-11.69	990.03		682.35
0.00	990.13		682.38
6.03	990.16		682.40
17.33	990.23		684.50
20.44	990.25		686.29
46.60	990.40		689.50 END

UPSTREAM HEADS TO USE IN COMPUTING THE TABLE

NFRAC=11

POWER=2.0

.250

.500

.750

1.000

1.500

2.000

2.500

3.000

3.500

4.000

4.500

5.000

5.500

6.000

6.500

7.000

8.000

9.000

10.000

12.000

14.000

16.000
18.000
20.000
25.000
-1.000

EMBANKQ
TABID= E310 CSHIFT= 0.00
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
CSUBTB= 9999
LABEL=EMBANKQ FLOW FOR CULVERT C310

OFFSET	CREST	WIDTH	APPROACH SURFACE
-250.00	715.28	200.0	709.00 PAVED
-140.00	714.28		
-50.00	713.28		
0.00	712.78		
60.00	713.28		
235.00	714.28		
460.00	715.28		

UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
END
NFRAC=40
POWER=2.0
LIPREC=0.02
MINPFD=0.01
0.100
12.000
-1.000

FINISH

FTABIN
FILE= \utlheader\embweir.mtb
FILE= \utlheader\type5.mtb
TABID= -1

FEQX
GISID= NONE
TABLE# 1001 SAVE22 NOOUT EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.040
Approach Cross Section
-50.10 750.00 1
-50.00 705.28 1
0.00 705.28 1
50.00 705.28 -1

FEQX
GISID= NONE
TABLE# 1002 SAVE22 NOOUT EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.040
Departure Cross Section
-50.10 750.00 1
-50.00 701.28 1
0.00 701.28 1
50.00 701.28 -1

MULCON
TABID= P036 SAVE22 NOOUT
WSLOT= 0.10
HSLOT= 30.0
NPIPES= 1
TYPE= CIRC
SPAN: 3.00
RISE: 3.00
BOT: 0.0
ROUG: 0.013

CULVERT
TABID= C0312
TYPE= 13
LABEL= 4x3 Box under I-290 Ramp located south of Thorndale Ave
APPROACH SECTION DATA
APPTAB= 1001
APPELV= 705.28
APPLEN= 30.0
APPLS= 0.0
APPEXP= 0.5
CULVERT DESCRIPTION
NODEID= YES
SFAC= 1.0
NODE NODENAME XTAB STATION ELEVATION
1 UPSTREAM P036 520.00 705.28

-1 DNSTREAM P036 0.00 701.28
CULCLS= PIPE
DEPARTURE SECTION DESCRIPTION
DEPTAB= 1002
DEPELV= 701.28
LOSOPT= MOMENTUM

DISCHARGE COEFFICIENT DATA

KRB= 0.00
KWB= 0.00
KPROJ= 0.00
C46= 0.00
TYPE 5 flow parameters
RBVALUE= 0.03
BVANGLE= 0.00
WVANGLE= 40.0
LPOVERD= 0.0
TYPE5SBF= 0.75
ROADWAY DESCRIPTION
PLCWTB=9994
GLCWTB=9995
PHCWTB=9996
GHCWTB=9997
PSUBTB=9998
GSUBTB=9999

OFFSET	CREST	WIDTH	APPROACH SURFACE
-56.39	989.66	74.00	688.50 PAVED
-53.64	989.68		688.27
-27.36	989.90		686.11
-22.29	989.94		684.40
-11.69	990.03		682.35
0.00	990.13		682.38
6.03	990.16		682.40
17.33	990.23		684.50
20.44	990.25		686.29
46.60	990.40		689.50 END

UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
NFRAC=11

POWER=2.0
250
500
750
1.000
1.500
2.000
2.500
3.000
3.500
4.000
4.500
5.000
5.500
6.000
6.500
7.000
8.000
9.000
10.000
12.000
14.000
16.000
18.000
20.000
-1.000

FINISH

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FTABIN
 FILE= \ut\header\embweir.mtb
 FILE= \ut\header\type5.mtb
 TABID= -1

FEQX
 GISID= NONE
 TABLE# 1001 SAVE22 NOOUT EXTEND
 STATION= 99.99
 NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
 NSUB 1 0.025

Approach Cross Section
 -5.10 750.00 1
 -5.00 699.38 1
 0.00 699.38 1
 5.00 699.38 -1

FEQX
 GISID= NONE
 TABLE# 1002 SAVE22 NOOUT EXTEND
 STATION= 99.99
 NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
 NSUB 1 0.040

Departure Cross Section
 -50.10 750.00 1
 -50.00 697.34 1
 0.00 697.34 1
 50.00 697.34 -1

MULCON
 TABID= M312 SAVE22 OLDBETA NOOUT
 WSL0T=0.01
 HSL0T=100
 NPIPES= 1
 TYPE= CIRC
 SPAN= 2.00
 RISE= 2.00
 BOTT= 0.00
 ROUG= 0.013

CULVERT
 TABID= C314
 TYPE= 13
 LABEL= 24-inch RCP under I-290 RampK4 located south of Thorndale Ave
 APPROACH SECTION DATA
 APPTAB= 1001
 APPELV= 699.38
 APPLN= 30.0
 APPEXP= 0.5
 CULVERT DESCRIPTION
 NODEID= YES
 SFAC= 1.0
 NODE NODENAME XTAB STATION ELEVATION
 1 UPSTREAM M312 160.00 699.38

-1 DNSTREAM M312 0.00 697.34
 CULCLS= PIPE
 DEPARTURE SECTION DESCRIPTION
 DEPTAB= 1002
 DEPELV= 697.34
 LOSOPT= MOMENTUM
 DISCHARGE COEFFICIENT DATA

KRB= 0.00
KWTG= 0.00
KPROJ= 0.00
C46= 0.00
TYPE 5 flow parameters
RBVALUE= 0.03
BVANGLE= 0.00
WVANGLE= 40.0
LPOVERD= 0.0
TYPESBF= 0.75
ROADWAY DESCRIPTION
PLCWTB=9994
GLCWTB=9995
PHCWTB=9996
GHCWTB=9997
PSUBTB=9998
GSUBTB=9999

OFFSET	CREST	WIDTH	APPROACH SURFACE
-56.39	989.66	74.00	688.50 PAVED
-53.64	989.68		688.27
-27.36	989.90		686.11
-22.29	989.94		684.40
-11.69	990.03		682.35
0.00	990.13		682.38
6.03	990.16		682.40
17.33	990.23		684.50
20.44	990.25		686.29
46.60	990.40		689.50 END

UPSTREAM HEADS TO USE IN COMPUTING THE TABLE

NFRAC=11

POWER=2.0

.250
.500
.750
1.000
1.500
2.000
2.500
3.000
3.500
4.000
4.500
5.000
5.500
6.000
6.500
7.000
8.000
9.000
10.000
12.000
14.000
16.000
18.000
20.000
-1.000

FINISH

FTABIN \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX
GISID= NONE
TABLE#= 1001 SAVE22 NOOUT EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.040
Approach Cross Section
-50.10 750.00 1
-50.00 691.42 1
0.00 691.42 1
50.00 691.42 -1

FEQX
GISID= 001SCDA9180
TABLE#= 9180 SAVE22 NOOUT NEWBETAM EXTEND
STATION= 9999.99
NAVM= 0
NSUB 3 0.035 0.036 0.035
XS B16 D/S of I-290
-125.1 800.00 1
-125.0 701.28 1
-105.0 700.28 1
-95.0 699.28 1
-68.0 698.18 1
-42.9 697.81 1
-29.9 697.52 1
-15.7 695.82 2
-6.9 694.43 2
-6.4 694.36 2
0.0 690.44 2
4.3 690.67 2
8.2 691.57 2
16.7 694.16 2
17.8 694.01 2
24.8 696.28 3
49.3 698.59 3
64.7 698.76 3
78.1 699.00 3
99.0 699.78 3
106.0 700.28 3
120.0 701.28 3
158.0 702.28 -1

MULCON
TABID= 3104 SAVE22 NOOUT
WSLOT= 0.10
HSLOT= 30.0
NPIPES= 1
TYPE: BOX
SPAN: 9.50
RISE: 3.64
BOTT: 0.0
ROUG: 0.013

CULVERT
TABID= C9104
TYPE= I3
LABEL= Hwy 290 (9.5' X 3.64' RCBC)
Approach-Section Data
APPTAB= 1001
APPELV= 691.42
APPLEN= 10.0

APLOS= 0.1
APEXP= 0.50
Culvert Description
NODEID=YES
SFAC= 1.0
NODE
100
D/S 3104
U/S 3104
STATION 275.00
ELEVATION 691.42
KA 0.0
KD 0.0
-1
CULCLS= BOX
Departure Section Data
DEPTAB= 9180
DEPELV= 690.44
LOSOPT=MOMENTUM
Discharge Coefficient Data
KRB= 1.00
KWIN= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
RVALUE= 0.03
BVANGLE= 0.0
WMANGLE= 0.0
LPOVERD= 0.0
TYPE5SBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
CREST 702.00
WIDTH 200.
APPROACH SURFACE 690.0 PAVED
OFFSET 0.0
264.97
698.86
Head Sequence Definition
NFRAC= 10
POWER= 2.0
0.1
0.2
0.3
0.5
0.8
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.3
4.5
4.7
5.0
5.5
6.0
6.5
7.0
7.5
8.0
8.5
8.6
8.7
8.8
8.9
9.0
END

9.5
10.0
10.5
11.0
11.5
12.0
15.0
-1

FINISH

FTABIN
 FILE= \ut\header\embweir.mtb
 FILE= \ut\header\type5.mtb
 TABID= -1

FEQX
 TABID= 2001 NOOUT SAVE12 EXTEND
 STATION= 0 SCALE= 1.000 SHIFT= 0.000
 NAVM= 0
 NSUB 1 0.03
 0.00
 30
 1
 OFFSET ELEVATION SUBS
 0.10
 0.1
 50.00
 0
 100.00
 0.1
 100.10
 30
 -1

FEQX
 GISID= 001SCDA0224
 ;468.000 468.000 468.000 468.000 468.000 468.000 468.000 NAVD88
 TABLE# 224 NOOUT SAVE12 EXTEND
 STATION= 12607.7
 NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
 NSUB 5 0.010 0.025 0.1 0.025 0.010
 XS 224
 -91.31 716.51 1 1937233.12 1066358.98 0001 TM Extend Sta.
 -51.20 715.35 2 1937198.01 1066378.37 0002 ALPT GR
 -32.35 713.22 2 1937179.22 1066379.87 0003 TE
 -7.46 711.79 2 1937154.37 1066378.47 0004 H2O
 -1.87 711.79 3
 -1.37 711.29 3
 -1.32 697.92 3
 -1.27 707.42 3
 -0.77 707.92 3
 4.83 707.92 4 1937142.28 1066376.26 0005 H2O
 53.38 712.53 4 1937093.79 1066378.64 0006 H2O
 103.66 712.63 4 1937043.51 1066378.08 0007 H2O
 155.38 712.93 5 1936991.85 1066380.65 0008 ALPT H2O
 181.99 715.70 5 1936975.29 1066359.82 0009 TM Extend Sta.
 218.85 717.02 -1 1936953.31 1066330.23 0010 TM Extend Sta.

MULCON
 TABID= 928 SAVE22 NOOUT
 WSLT= 0.10
 HSLT= 30.0
 NPIPES= 3
 TYPE: NHE NHE NHE
 SPAN: 5.00 5.00 5.00
 RISE: 3.17 3.17 3.17
 BOT: 0.00 0.00 0.00
 ROUG: 0.013 0.013 0.013

CULVERT
 TABLE# C952
 TYPE= 13
 LABEL=Triple Celled 60-in x 38-in RCEP under IL Route 53
 Approach Section Data
 APPTAB# 2001
 APPELV= 710.98
 APPLN= 30.0
 APPLS= 0.0
 APPEXP= 1.0
 Culvert Description
 NODEID=YES
 SFAC= 1.0

NODE	NODEID	XNUM	STATION	ELEVATION	KA	KD	HTAB
300	GROUP	928	93.00	711.08	0.0	0.0	0

QRODN	928	0.00	710.04	0.0	0.0
-------	-----	------	--------	-----	-----

-1

CULCLS=BOX
Departure Section Data
DEPTAB#= 224
DEPELV= 707.42
LOSOPT=MOMENTUM
Discharge Coefficient Data
KRB= 1.00
KWING= 1.00
KPROJ= 1.0
C46= 0.87

Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999

CREST	WIDTH	APPROACH SURFACE
999.0	10.	658.0 PAVED
999.0		658.0 END

OFFSET

Head Sequence Definition

NFRAC= 11
POWER= 2.0

0.2

0.5

0.7

1.0

1.5

2.0

2.5

3.0

4.0

5.0

6.0

7.0

8.0

9.0

10.

11.

12.

13.

14.

16.

18.

20.

22.

-1.

EMBANKQ
TABLE#= E952
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998

GSUBTB= 9999
LABEL=IL Route 53 Bridge Crossing overFlow
OFFSET CREST WIDTH APPROACH SURFACE
24000. 718.50 92.20 710.7 PAVED
24050. 718.20
24100. 717.90
24150. 717.60
24200. 717.30
24250. 717.03
24300. 716.94
24350. 717.07
24400. 717.38
24450. 717.72
24500. 718.06
24550. 718.40
24600. 718.74
24650. 719.08
24700. 719.42
24750. 719.76
END
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
NERAC=40
POWER=2.0
LIPREC=0.02
MINPFD=0.01
0.100
13.000
-1.000

FINISH

FTABIN \utlheader\embweir.mtb
FILE= \utlheader\type5.mtb
TABID= -1

FEQX
GISID= 001SCDA0224
;468.000 468.000 468.000 468.000 468.000 468.000 NAVD88
TABLE# 224 SAVE22 NOOUT MONOTONE NEWBETAM EXTEND
STATION= 12607.7
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 5 0.010 0.025 0.1 0.025 0.010
Approach Cross Section
-91.4 750.00 1 1937233.12 1066358.98 0001 TM Extend Sta.
-91.31 716.51 1 1937198.01 1066378.37 0002 ALPT GR
-51.20 715.55 2 1937179.22 1066379.87 0003 TE
-32.35 713.22 2 1937154.37 1066378.47 0004 H2O
-7.46 711.79 3
-1.87 711.79 3
-1.37 711.29 3
-1.27 707.42 3
4.27 707.42 3
4.83 707.92 4 1937142.28 1066376.26 0005 H2O
53.38 712.53 4 1937093.79 1066378.64 0006 H2O
103.66 712.63 4 1937043.51 1066378.08 0007 H2O
155.38 712.93 5 1936991.85 1066380.65 0008 ALPT H2O
181.99 715.70 5 1936975.29 1066359.82 0009 TM Extend Sta.
218.85 717.02 -1 1936953.31 1066330.23 0010 TM Extend Sta.

FEQX
GISID= NONE
TABLE# 1002 SAVE22 NOOUT EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.025
Departure Cross Section
-3.10 750.00 1
-3.00 708.28 1
0.00 708.28 1
3.00 708.28 -1

MULCON
TABID= B4X3 SAVE22 NOOUT
WSLOT= 0.10
HSLLOT= 30.0
NRIPES= 1 BOX
TYPE: 5.00
SPAN: 3.00
RISE: 0.0
BOTT: 0.013
ROUG: 0.03
MUDL: 0.030
ROUG: 0.030

CULVERT
TABID= CNWD1
TYPE= 13
LABEL= Culvert between U62 and Dep3
Approach-Section Data
APPTAB= 224
APPELV= 707.42
APPLEN= 10.0
APPLOS= 0.5
APPEXP= 1.0
Culvert Description
NODEID=YES

SFAC= 1.0
NODE NODEID XNUM STATION ELEVATION KA KD
100 U/S B4X3 970.00 710.20 0.0 0.0

D/S B4X3 0.00 708.28 0.0 0.0

-1

CULCLS= BOX

Departure Section Data

DEPTAB= 1002

DEPELV= 708.28

LOSOPT=MOMENTUM

Discharge Coefficient Data

KR8= 1.00

KWING= 1.00

KPROJ= 1.00

C46= 0.85

TYPE 5 flow parameters

REVALUE= 0.03

BVANGLE= 0.0

WVANGLE= 0.0

LPOVERD= 0.0

TYPESSBF= 0.75

Roadway Description

PLCWTB= 9994

GLCWTB= 9995

PHCWTB= 9996

GHCWTB= 9997

PSUBTB= 9998

GSUBTB= 9999

WIDTH 50.0 APPROACH SURFACE
710.0 PAVED

CREST

717.06

717.30

717.48

717.08

715.91

715.81

717.11

154.94

718.49

210.94

718.31

271.87

718.79

END

Head Sequence Definition

NFRAC= 10

POWER= 2.0

0.05

0.1

0.2

0.25

0.3

0.5

0.8

1.0

2.0

2.5

3.0

3.1

3.2

3.3

3.4

3.5

3.6

3.7

3.8

3.9

4.0

4.5

4.6

4.7

4.8
4.9
5.0
5.5
6.0
6.5
7.0
8.0
9.0
-1

FINISH

FTABIN
FILE= \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX
GISID= NONE
TABLE#= 1001 SAVE22 NOOUT EXTEND
STATION# 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.040
Approach Cross Section
-50.10 750.00 1
-50.00 703.28 1
0.00 703.28 1
50.00 703.28 -1

FEQX
GISID= NONE
TABLE#= 1002 SAVE22 NOOUT EXTEND
STATION# 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.040
Departure Cross Section
-50.10 750.00 1
-50.00 702.28 1
0.00 702.28 1
50.00 702.28 -1

MULCON
TABID= B4X3 SAVE22 NOOUT
WSLOT= 0.10
HSLOT= 30.0
NPIPES= 1 BOX
TYPE: 5.00
SPAN: 3.00
RISE: 0.0
BOTT: 0.013
ROUG: 0.03
MUDL: 0.030
ROUG: 0.030

CULVERT
TABID= CPND1
TYPE= 13
LABEL= Culvert between Pond 1 and Pond 2
Approach-Section Data
APPTAB= 1001
APPELV= 703.28
APPLEN= 10.0
APPLOS= 0.5
APPEXP= 1.0
Culvert Description
NODEID=YES
SFAC= 1.0
NODE 100
U/S B4X3
D/S B4X3
STATION ELEVATION KA KD
230.00 703.28 0.0 0.0
0.00 702.28 0.0 0.0
-1

CULCLS= BOX
Departure Section Data
DEPTAB= 1002
DEPELV= 702.28
LOSOPT=MOMENTUM
Discharge Coefficient Data
KRB= 1.00

KWING= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
REVALUE= 0.03
BYANGLE= 0.0
WMANGLE= 0.0
LPOVERD= 0.0
TYPESSBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999

CREST	WIDTH	APPROACH SURFACE
995.31	50.0	690.0 PAVED
995.00		
994.75		
994.53		
994.65		
994.92		
153.51		
212.82		END
995.31		

Head Sequence Definition
NFRAC= 10
POWER= 2.0
0.05
0.1
0.2
0.25
0.3
0.5
0.8
1.0
2.0
2.5
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.5
4.6
4.7
4.8
4.9
5.0
5.5
6.0
6.5
7.0
8.0
9.0
10.0
12.0
13.0
15.0
20.0
30.0
-1

FINISH

FTABIN
FILE= \ut\header\embweir.mtb
FILE= \ut\header\types.mtb
TABID= -1

FEQX
GISID= NONE
TABLE#= 1001 SAVE22 NOOUT EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.040
Approach Cross Section
-50.10 750.00 1
-50.00 701.28 1
0.00 701.28 1
50.00 701.28 -1

FEQX
GISID= NONE
TABLE#= 1002 SAVE22 NOOUT EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.040
Departure Cross Section
-50.10 750.00 1
-50.00 691.48 1
0.00 691.48 1
50.00 691.48 -1

MULCON
TABID= B4X3 SAVE22 NOOUT
WSLOT= 0.10
HSLOT= 30.0
NPIPES= 1
TYPE: BOX
SPAN: 3.00
RISE: 3.00
BOTT: 0.0
ROUG: 0.013
MUDL: 0.03
ROUG: 0.030

CULVERT
TABID= CPND2
TYPE= 13
LABEL= Culvert between Pond 2 and Pond 3
Approach-Section Data
APPTAB= 1001
APPELV= 701.28
APPLEN= 10.0
APPLOS= 0.5
APPEXP= 1.0
Culvert Description
NODEID=YES
SFAC= 1.0
NODE NODEID XNUM STATION ELEVATION KA KD
100 U/S B4X3 510.00 701.28 0.0 0.0
D/S B4X3 691.48 0.0 0.0

-1
CULCLS= BOX
Departure Section Data
DEPTAB= 1002
DEPELV= 691.48
LOSOPT=MOMENTUM
Discharge Coefficient Data
KRB= 1.00

KWING= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
REVALUE= 0.03
BVANGLE= 0.0
WVANGLE= 0.0
LPOVERD= 0.0
TYPESSBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999

CREST	WIDTH	APPROACH SURFACE
995.31	50.0	690.0 PAVED
995.00		
994.75		
994.53		
994.65		
79.07		
153.51		
994.92		
212.82		
995.31		END

Head Sequence Definition
NFRAC= 10
POWER= 2.0

0.05
0.1
0.2
0.25
0.3
0.5
0.8
1.0
2.0
2.5
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.5
4.6
4.7
4.8
4.9
5.0
5.5
6.0
6.5
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
15.0
-1

FINISH

FTABIN
FILE= \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

FEQX
GISID= NONE
TABLE# 1001 SAVE22 NOOUT EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.040
Approach Cross Section
-50.10 750.00 1
-50.00 692.78 1
0.00 692.78 1
50.00 692.78 -1

FEQX
GISID= NONE
TABLE# 1002 SAVE22 NOOUT EXTEND
STATION= 99.99
NAVM= 0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB 1 0.040
Departure Cross Section
-50.10 750.00 1
-50.00 691.48 1
0.00 691.48 1
50.00 691.48 -1

MULCON
TABID= B4X3 SAVE22 NOOUT
WSLOT= 0.10
HSLOT= 30.0
NPIPES= 1
TYPE: BOX
SPAN: 7.00
RISE: 3.00
BOTT: 0.0
ROUG: 0.013
MODL: 0.03
ROUG: 0.030

CULVERT
TABID= CPND4
TYPE= 13
LABEL= Culvert between Pond 4 and Pond 3
Approach-Section Data
APPTAB= 1001
APPELV= 692.78
APPLEN= 10.0
APPLOS= 0.5
APPEXP= 1.0
Culvert Description
NODEID= YES
SFAC= 1.0
NODE 100 NODEID XNUM STATION ELEVATION KA KD
U/S B4X3 120.00 692.78 0.0 0.0
D/S B4X3 0.00 691.48 0.0 0.0

-1
CULCLS= BOX
Departure Section Data
DEPTAB= 1002
DEPELV= 691.48
LOSOPT= MOMENTUM
Discharge Coefficient Data
KRB= 1.00

KWING= 1.00
KPROJ= 1.00
C46= 0.85
TYPE 5 flow parameters
REVALUE= 0.03
BYANGLE= 0.0
WVANGLE= 0.0
LPOVERD= 0.0
TYPESSBF= 0.75
Roadway Description
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
CREST
995.31
995.00
994.75
994.53
994.65
994.92
995.31
212.82
Head Sequence Definition
NFRAC= 10
POWER= 2.0
0.05
0.1
0.2
0.25
0.3
0.5
0.8
1.0
2.0
2.5
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
4.0
4.5
4.6
4.7
4.8
4.9
5.0
5.5
6.0
6.5
8.0
9.0
10.0
12.0
13.0
15.0
20.0
30.0
-1
WIDTH 50.0
APPROACH SURFACE 690.0 PAVED
END

FINISH

FTABIN \ut\header\embweir.mtb
FILE= \ut\header\type5.mtb
TABID= -1

ORIFICE
TABLE#= C312
LABEL=Orifice for Pond east of I-290 (F312)
Numb Shape Edge VertD HorID Invt OrifC Weirc
1 CIRC SHARP 0.50 0.50700.28 0.60 0.6
AppTb Orifb MxZup MxHup MxPPD MxPPD LIPrc
720.0 0.05 0.95 0.007 0.03

FINISH

SECTION 12

IDNR-OWR FLOODWAY PERMIT SUMMARY

The tributary area to each crossing is less than 1 square mile, therefore IDNR-OWR floodway permit summary forms are not required for this waterway.

SECTION 13

CORRESPONDENCE AND NOTES

MEETING SUBJECT: Elgin O'Hare - West Bypass Project
Drainage Working Group Coordination
Meeting

RECORDER: CBBEL/Peter
Procaccio

MEETING DATE & TIME: December 1, 2010 – 9:30 a.m.

PREPARATION DATE: December 3,
2010

MEETING LOCATION: DuPage County Jack T. Knuepfer Admin.
Bldg. Room 1500

ISSUE STATUS: ☒ Draft for Review ☐ Final

ATTENDEE NAME	ORGANIZATION	E-MAIL
Rick Wojcik	IDOT-District 1	rick.wojcik@illinois.gov
Perry Masouridis	IDOT-District 1	eleftherios.masouridis@illinois.gov
Anthony Charlton	DuPage County Stormwater Management	anthony.charlton@dupageco.org
Ying Miao	DuPage County Stormwater Management	ying.miao@dupageco.org
Christine Klepp	DuPage County Stormwater Management	chris.klepp@dupageco.org
Cleyton Heffter	DuPage County Stormwater Management	cleyton.heffter@dupageco.org
Chris Vonnahme	DuPage County Stormwater Management	chris.vonnahme@dupageco.org
Kevin Nichols	CH2M HILL	knichols@ch2m.com
Ron Krall	SEC Group, Inc.	ronald.krall@illinois.gov
Steve Bicking	SEC/HRG	sbicking@hrgreen.com
Edward Yousif	AECOM	edwardyousif@aecom.com
Thomas Burke	CBBEL	tburke@cbbel.com
Chinliang Wang	CBBEL	cwang@cbbel.com
Peter Procaccio	CBBEL	pprocaccio@cbbel.com

An Elgin O'Hare - West Bypass Project Drainage Working Group (DWG) coordination meeting was held on December 1, 2010 at the DuPage County Jack T. Knuepfer Administration Building, room 1500 beginning at 9:30 a.m. through approximately 11:00 a.m. A copy of the meeting agenda is included as the last page of these minutes.

The following is a summary of topics and issues discussed at the meeting and any action items determined/assigned.

1. Functional Plan

Chinliang Wang from CBBEL began the meeting by outlining the Elgin O'Hare - West Bypass project limits.

Action Items:

1. No Action Items identified.

2. Location Drainage Study

Chinliang Wang then began to discuss CBBEL's status in the preparation of the Location Drainage Study. Currently, CBBEL is completing the Existing Drainage Plan by developing sub-basins to determine the tributary area to the project right of way.

Additionally included in the Location Drainage Study are various Drainage Investigations of areas with chronic drainage and flooding problems. There are two such investigations within DuPage County: the southeast quadrant of Plum Grove Road and Elgin O'Hare Expressway (commonly known as the North

Medinah subdivision) and the Village of Itasca south of Thorndale Road and south of the Hamilton Lakes development.

After investigation of the North Medinah subdivision, CBBEL evaluated if that a corrugated metal pipe culvert under the sidewalk running along Medinah Road contributed to a sprawling upstream flood stages. This culvert creates headwaters of 0.3 feet for the 100-year flood event. Flooding complaints in this area are associated with damaged structures that lie within this floodplain. However, due to the flat topography, improvement of the culvert to eliminate the 0.3 feet of created head will not significantly reduce the floodplain boundary or stage. It was suggested that reduction of the flooding for a less frequent storm event may be more feasible by providing a conveyance system within the North Medinah subdivision. Construction of the Elgin O'Hare expressway did not increase the runoff rate and volume to the North Medinah subdivision. To aid in the investigation of flooding at Plum Grove Road and the Elgin O'Hare Expressway, DuPage County Stormwater Management (DPCSM) can provide a coded map specifying flooding complaints in the area.

Complete investigation of the flooding in Itasca south of the Hamilton Lakes development and Thorndale Road will be included as a part of the Hydraulic Report for the Devon Avenue Tributary. Discussions with representatives from the Village of Itasca revealed that a culvert under Thorndale Avenue may not only be undersized, but the upstream invert of the pipe may lie as much as 0.5 feet above the ditch bottom; both characteristics combining to almost 1 foot of created headwaters. Anthony Charlton from DuPage County Stormwater Management indicated that enlargement of the cross-road culvert would be allowed only if the hydraulic analysis can demonstrate no increase in flow discharges and water surface elevations to downstream properties. In addition, Tony requested that any regional storage provided as part of the Elgin O'Hare Expressway work, be maximized with possible DuPage County involvement.

Action Items:

1. CBBEL will contact Chris Vonnahme of DPCSM for a specific flooding complaint map in the North Medinah subdivision.

3. Waterway Hydrology and Hydraulics

There are five waterways within DuPage County that are included in the project: Meacham Creek, Devon Avenue Tributary, Salt Creek, Willow Creek, and the Bensenville Drainage Ditch. Meacham Creek, Devon Avenue Tributary and Salt Creek are all being modeled using FEQ unsteady state analysis while Willow Creek and the Bensenville Drainage Ditch are being modeled using HEC-RAS. Tony Charlton commented that DuPage County would like to review all calculations involved in the modeling.

Action Items:

1. No Action Items identified.

4. Non-Riverine Depressional Sites Study

CBBEL submitted the second Draft of the Non-Riverine Depressional Sites Study to address comments received from IDOT Hydraulics Section. CBBEL took the approach in determining the depressional storage areas as it would for any development in DuPage County. CBBEL analyzed storm events ranging from 1 hour to 240 hours. IDOT believes the depressional storage analysis should be limited to a one or two day event. Thomas Burke explained that CBBEL analyzed sites without gravity outlets and others where the existing release rate may be less than 0.1 cfs/acre. In total there were 9 sites analyzed. CBBEL did not use the Draft Ordinance language associated with depressional storage because complete agreement has not been reached regarding the language. Tony Charlton suggested as long as our depressional storage impact does not affect upstream or downstream, that the DWG does not get hung up on the numbers. In addition, Tony Charlton said CBBEL can look at the Draft Ordinance language because he expects it to be implemented in 2011.

Action Items:

1. No Action Items identified.

Post-Meeting Note: Rick Wojcik agreed to modeling storm duration of 240-hours for selecting a critical storm event after the coordination meeting with DPCSM staff on December 1, 2010.

5. Detention Facilities

Release rate of 0.1 cfs per acre will be used to determine required detention volume for the EOWB project located within DuPage County. A drainage criteria table was distributed to all attendees.

Action Items:

1. No Action Items identified.

6. Compensatory Storage Sites

Incremental compensatory storage ratio of 1.5:1 will be used to determine required compensatory storage volume for segments of the EOWB project within DuPage County. A drainage criteria table was distributed to all attendees.

Action Items:

1. No Action Items identified.

MEETING SUBJECT: Elgin O'Hare - West Bypass Project
 Drainage Working Group Meeting
 RECORDER: ISTHA/Edward Yousif

MEETING DATE & TIME: February 25, 2011 – 10:00 a.m.
 PREPARATION DATE: March 1, 2011

MEETING LOCATION: Village of Itasca Village Hall

ISSUE STATUS: ☐ Draft for Review ☒ Final

ATTENDEE NAME	ORGANIZATION	E-MAIL
Rick Wojcik	IDOT-District 1	rick.wojcik@illinois.gov
Perry Masouridis	IDOT-District 1	eleftherios.masouridis@illinois.gov
Albert Stefan	Baxter & Woodman	astefan@baxterwoodman.com
Nicole P. Aranas	Village of Itasca	naranas@itascal.com
Ross Hitchcock	Village of Itasca	rhitchcock@itasca.com
Mark Phipps	Baxter & Woodman	mphipps@baxterwoodman.com
Kevin Nichols	CH2M HILL	knichols@ch2m.com
Steve Bicking	SEC/HRG	sbicking@hrgreen.com
Edward Yousif	AECOM	edwardyousif@aecom.com
Chinliang Wang	CBBEL	cwang@cbbel.com
Peter Procaccio	CBBEL	pprocaccio@cbbel.com

A DWG Coordination Meeting was held with the Village of Itasca to discuss the scope for the Elgin O'Hare – West Bypass (EOWB) project to discuss the existing drainage patterns in the Village of Itasca. The meeting was held at the Village of Itasca Village Hall beginning at 10:00 a.m. and ending at approximately 12:30 p.m. A copy of the meeting agenda is included as the last pages of these minutes.

The following is a summary of topics and issues discussed at the meeting and any action items determined/assigned.

1. Overall Project Limits

Chinliang Wang of CBBEL outlined the overall EOWB project limits and identified project limits within the Village of Itasca.

Action Items:

1. The DWG will meet with the Village of Itasca again during the development of the proposed drainage plans.

2. Existing Drainage Plan

Chinliang Wang gave a brief overview of the existing drainage conditions of the proposed improvements for the EOWB project within the Village of Itasca. Under existing conditions there are 3 major outlets (Salt Creek, Devon Avenue Tributary, and Meacham Creek) that will be potentially impacted with the proposed improvements.

Action Items:

1. The existing drainage plans will be submitted to IDOT on March 1st for review, and then forwarded to the Village of Itasca for reference and comments.

3. Detention and Compensatory Storage

Chinliang Wang highlighted various locations within the Village of Itasca that can be used to provide stormwater detention or compensatory storage. It should be known that the locations outlined in this meeting are "first cut" and based on the DuPage county Countywide Stormwater and Floodplain Ordinance requirements. The Village wanted to reduce the footprint for these facilities as much as possible to keep space available for future developments. If IDOT criteria are used then the acquired land footprints would be much smaller. Rick Wojcik of IDOT stated that even if the minimal detention or

compensatory storage is implemented for this project (per IDOT criteria); there would be no adverse impacts to any of the downstream outlets. The existing release rates would still be maintained.

The Village was in favor of less stringent detention and compensatory storage criteria as long as a proper rationale was presented to the county and accepted. Nicole Aranas also mentioned using the northwest parcel at the Salt Creek crossing of Thorndale Avenue for compensatory storage, since the owner is willing to sell the "go-cart" property located within a floodplain. IDOT seemed comfortable with this suggestion and CBBEL will investigate. The Village also requested the conceptual detention site bounded by Thorndale Avenue, Prospect Avenue and Arlington Heights Road be relocated to a parcel south of Thorndale Avenue.

Ross Hitchcock of Itasca was also concerned that even though both Wood Dale and Itasca were located within the Salt Creek watershed, why were all the detention and compensatory storage facilities proposed within Village of Itasca limits? Rick Wojcik mentioned that IDOT looks at providing detention and compensatory storage based on the watershed and at low points rather than what village it's located in. Kevin Nichols interjected by mentioning that these potential storage areas are only conceptual and that we are meeting with the Village to check the feasibility and whether they have other suggestions. Ed Yousif also mentioned that once the proposed drainage plans are completed there could be several locations where detention storage has to be provided in order to not increase runoff to a sensitive outlet. These facilities or restrictors will probably be located within both villages.

Action Items:

1. CBBEL will examine viability of suggested alternate detention and compensatory storage sites.

4. Drainage Concerns

The Village had concerns that the existing 5' x 3' elliptical pipe culvert under Thorndale Road (near Park Boulevard) was under capacity and is responsible for upstream flooding. This culvert was constructed approximately 18" above the ditch grade. The DWG met with DuPage County regarding this culvert and talked about the possibility of providing compensatory storage downstream to provide for a possible loss of backwater storage if the culvert crossing is improved. A potential storage site was suggested in the recently abandoned sanitary basin of the Hamilton Lakes development. According to the Village of Itasca, the sanitary basin could be used as a fill site by Hamilton Group, but could potentially be sold for detention storage purposes.

In the interim, FEQ modeling will be performed at this location to check if removal of the restrictive culvert will increase flood elevation and flood velocity downstream. The Village also stated that other than this location, they have no other drainage concerns.

Action Items:

1. CBBEL is currently modeling this culvert as a part of the Devon Avenue Tributary Hydraulic Report and will provide information to village for reference.

**Elgin O'Hare West Bypass Tier 2
Drainage Working Group Coordination Meeting
February 25, 2011 (10:00 AM)
Village of Itasca Village Hall**

1. Overall Project Limits
 - a. General Location Map
2. Existing Drainage Plan (EDP)
 - a. EDP Sheets Covering the Village of Itasca
3. Detention and Compensatory Storage
 - a. Overall Detention and Compensatory Storage Sites Map
4. Drainage Concerns

Emily T. Anderson

From: Masouridis, Eleftherios P [Eleftherios.Masouridis@illinois.gov]
Sent: Friday, October 29, 2010 2:45 PM
To: eanderson@cbbel.com
Cc: cwang@cbbel.com; Wojcik, Rick F
Subject: RE: I-290, Addison Creek Overtopping at 30th Avenue to I-290

Follow Up Flag: Follow up
Flag Status: Flagged

Emily,

We had a meeting with IDNR/OWR yesterday. If the FIS has an obvious correction (such as representing the wrong size structure in this case) then that correction can be made to the FIS model and the results used for permitting purposes. If a proposed structure is part of the project and it needs to be enlarged (such as to lower the profile to match the incorrect regulatory profile) then it may be more feasible to construct a supplemental pipe in this case. However, we would need to discuss this with the Tollway.

We should plan on using two models (independent/design & permit) if we cannot get a good match (within 0.1'). The comparison will be based on the truncated FIS that reflects the corrected culvert size. The independent can be used to reflect to reflect the upstream development if needed.

Is there potential to modify the County Line Rd structure? If not then the natural condition could be based on the removal of I-294 only.

Perry

E. Perry Masouridis, P.E.
Hydrology and Hydraulics Engineer
Illinois Department of Transportation, Region 1
Bureau of Programming, Hydraulics Section
201 West Center Court
Schaumburg, IL. 60196-1096

Phone: (847) 705-4474 Fax: (847) 221-3052
Email: eleftherios.masouridis@illinois.gov

From: Emily T. Anderson [mailto:eanderson@cbbel.com]
Sent: Wednesday, October 27, 2010 9:54 AM
To: Masouridis, Eleftherios P
Cc: cwang@cbbel.com; Wojcik, Rick F
Subject: RE: I-290, Addison Creek Overtopping at 30th Avenue to I-290

From the site visit and aerials, I-294 is not shown on a skew, and it does not appear from the X2 card that it was modeled on a skew either.

Correcting the I-294 bridge (decreasing the opening size) increases the 100-year profile 0.9 ft upstream of I-294 and 0.1 ft upstream of County Line Road, but does not change the 2- through 50-year flood profiles. (The 500-year increases by 1.0 ft between I-294 and County Line Road and 0.5 ft upstream of the road). Just to clarify, the permit baseline model would be the corrected FEMA Effective model with the surveyed I-294 bridge?

-Emily

Emily T. Anderson, EI, CFM

Water Resources Engineer

Christopher B. Burke Engineering, Ltd.

9575 W. Higgins Road, Suite 600 Rosemont, IL 60018

Phone: (847) 823-0500 Fax: (847) 318-9793

E-Mail: eanderson@cbbel.com

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From: Masouridis, Eleftherios P [<mailto:Eleftherios.Masouridis@illinois.gov>]

Sent: Wednesday, October 27, 2010 7:55 AM

To: eanderson@cbbel.com

Cc: cwang@cbbel.com; Wojcik, Rick F

Subject: RE: I-290, Addison Creek Overtopping at 30th Avenue to I-290

Thanks for the exhibit.

I will look through this information regarding I-294. Before I get to it is the FIS opening larger because it is on a skew and they modeled the skewed geometry?

We had something similar on Lake St over Addison Creek. If that is the case and it results in a higher flood profile then we can use the FIS model as is except for the I-294 bridge. Our permit condition could then be based on this modified FIS profile.

Perry

E. Perry Masouridis, P.E.

Hydrology and Hydraulics Engineer

Illinois Department of Transportation, Region 1

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Schaumburg, IL. 60196-1096

Phone: (847) 705-4474 Fax: (847) 221-3052

Email: eleftherios.masouridis@illinois.gov

Emily T. Anderson

From: Masouridis, Eleftherios P [Eleftherios.Masouridis@illinois.gov]
Sent: Friday, October 08, 2010 11:20 AM
To: eanderson@cbbel.com
Cc: cwang@cbbel.com
Subject: RE: Addison Creek Regulatory Model for O'Hare Bypass Project

Emily,

That crossing should have been picked up as part of the survey effort. Whether or not there is a model that reflects it I do not know. Probably someone did one to get a permit but tracking it down (and assuming someone would share it with us) is not worth the time since we need to reflect it our analysis anyway and it should have been surveyed.

Our practice has been to use the regulatory model. Since we do not expect that the FIS will change throughout the life of this project and probably into Phase II/III we will proceed with using the FIS as the base model.

Generally we run the FIS (as is) and include the input & output in the report. Then we obtain the new survey data and insert it into the regulatory model. We try to match the regulatory results within 0.1 ft for all profiles. Sometimes minor adjustments are needed to do so. That way we are not responsible for obtaining a LOMR.

If this can be done then we can base our entire study on one analysis for both permitting and IDOT design criteria.

Sometimes it is not possible to match within 0.1'. In this case we use two models. The first is the FIS 'as-is'. The IDOT structure is removed to develop a natural condition. The existing condition is the FIS and then proposed is modeled based on the project scope. A WIT is then developed and it is labeled FIS or permit. This way we demonstrate compliance with the effective regulatory analysis.

Another model is then developed using the survey data to create a model that better reflects the existing conditions in the study reach. Existing, natural and proposed conditions are then developed and a WIT labeled design is prepared to evaluate IDOT design criteria.

It seems that we can use similar techniques for the I-294 and County line Rd crossing. Sometimes coming up with a natural condition when there is a downstream structure causing a tailwater (such if I-294 causes a tailwater on County line rd) takes some thought. Having the most downstream structure's created reflected in the upstream structure is not desirable.

Perry

E. Perry Masouridis, P.E.
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Illinois Department of Transportation, Region 1
Bureau of Programming, Hydraulics Section
201 West Center Court
Schaumburg, IL. 60196-1096

Phone: (847) 705-4474 Fax: (847) 221-3052

Email: eleftherios.masouridis@illinois.gov

From: Emily T. Anderson [<mailto:eanderson@cbbel.com>]

Sent: Wednesday, October 06, 2010 9:18 AM

To: Masouridis, Eleftherios P

Cc: cwang@cbbel.com

Subject: Addison Creek Regulatory Model for O'Hare Bypass Project

Hello Perry,

I have attached the June 2005 FEMA Effective HEC-2 model for your review. This is the current regulatory model, and we used it as a starting point for the Addison Creek Restoration Commission and MWRD projects. We would also like to use it for the I-294 and County Line Road crossings analysis for the O'Hare bypass project if it meets your approval. It extends from the confluence with Salt Creek to the Redmond Reservoir upstream of George Street.

Currently, we are trying to find if there is a newer non-regulatory model that includes a new crossing upstream of County Line Road circa 2006-2008, however we would like to approach this new crossing by starting with the regulatory model and adding the surveyed as-built bridge for the existing conditions model. I have attached a .pdf and picture of the new crossing that is not included in the regulatory model for your reference. Do you agree with this approach? Or is there another model that you would prefer us to use? Please let me know if you have any questions or concerns.

-Emily

Emily T. Anderson, EI, CFM

Water Resources Engineer

Christopher B. Burke Engineering, Ltd.

9575 W. Higgins Road, Suite 600 Rosemont, IL 60018

Phone: (847) 823-0500 Fax: (847) 318-9793

E-Mail: eanderson@cbbel.com

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Meeting Minutes

Re: IDOT Drainage Meeting
Thorndale Avenue Improvements
Section No. 01-00245-04-CH

Date: June 24, 2009

Location: IDOT District 1 - Bureau of Local Roads and
Streets Conference Room

Time: 10:00 A.M.

Attending: See Attached Roster

Civiltech, DuPage County Division of Transportation (DCDOT), and Village of Itasca (Baxter & Woodman) staff met with the Illinois Department of Transportation (IDOT) to discuss the drainage plan for this project. The purposes of this meeting were to formally introduce the project to IDOT - Hydraulics staff, discuss the existing drainage plan and discuss proposed concepts for the proposed drainage plan.

1. This is the first formal discussion with IDOT - Hydraulics, so Mr. Woods reviewed the project history. A feasibility study was conducted in 2002 to develop a concept plan to relieve congestion along westbound Thorndale Avenue approaching the intersection with the westbound I-290 off-ramp during the P.M. peak hours. The recommended improvement is considered to be an interim improvement that will provide several years of congestion relief in advance of construction of the Elgin-O'Hare expressway extension project. Civiltech explained the causes of the congestion, stating that approximately 2/3 of the traffic approaching the I-290 interchange on westbound Thorndale Avenue is destined to westbound or eastbound I-290. The other 1/3 is destined to westbound Elgin-O'Hare expressway. Therefore, 2/3 of the traffic desires to be in the rightmost lanes, and the left lanes are generally underutilized. Other causes of congestion are a high truck percentage and an existing incline leading up to the interchange on Thorndale Avenue.
2. Civiltech described the proposed improvement, which is a Collector-Distributor (C-D) roadway that would allow motorists destined to eastbound I-290 to bypass the T-intersection at the westbound I-290 off-ramp and Thorndale Avenue. A jersey-style barrier would be constructed east of the intersection that would channelize motorists destined to both westbound and eastbound I-290 onto a two-lane C-D roadway. East of the interchange, the right lane on the C-D would lead to the westbound I-290 on-ramp. The left lane of the C-D would bypass the traffic signal at the ramp intersection and lead to the eastbound I-290 on-ramp. No access back onto westbound Thorndale Avenue would be provided. The third westbound through lane leading up to the interchange and crossing the overpass would be removed and re-established east of the eastbound I-290 off-ramp. The existing shoulders along the north side of Thorndale Avenue between Park Boulevard and the interchange will be replaced with curb and gutter.

3. Baxter & Woodman gave a history of drainage problems within the Village of Itasca near the Thorndale Avenue project and how these problems may relate to the Thorndale Avenue improvement plan. Along Bryn Mawr Avenue, a regional detention facility was constructed over 30 years ago. This basin was designed to accommodate a 13-year storm. Baxter & Woodman is in the process of studying this area including expanding this detention basin. Also, Willow Street within the Village floods one to two times per year. The Village suspects that the source of the flooding could be the culvert under Thorndale Avenue that releases into the Hamilton Lakes via a series of culverts and ditches. The cause of the flooding may be a combination of not enough capacity and high elevation of the inverts of the culverts and ditches.
4. Baxter & Woodman is conducting a study to determine the extent of the improvement to the culverts leading to Hamilton Lakes. Civiltech and Baxter & Woodman will coordinate the drainage studies as both projects move along. Improvements to this area/culvert should be noted "by others" on the proposed drainage plan.
5. Another drainage problem exists north of Thorndale Avenue between Park Boulevard and the westbound I-290 entrance ramp. During the winter months, runoff from the elevated Thorndale Avenue section overtops the back of curb along Park Boulevard, and freezes on the roadway, creating a hazardous condition. The proposed improvement along the westbound I-290 entrance ramp will reduce the amount of runoff onto Park Boulevard because of the proposed curb and gutter along Thorndale Avenue and a portion of the ramp. Other improvements to reduce the runoff to Park Boulevard will be evaluated as part of the proposed drainage plan.
6. The proposed drainage plan was discussed. Ms. Lewis stated that the existing flow rates should be maintained for the proposed condition and all sensitive outlets determined. Diversions from one sub-basin to another should be avoided, if possible, and drainage calculations should be included in the Location Drainage Study. A combination of DuPage County and IDOT stormwater criteria will be used for this project.
7. After the meeting, Ms. Lewis discussed the project with Rick Wojcik - IDOT Hydraulics Section Chief. He stated that a full LDS will be required as part of this project. Also, a local meeting should be held with Hamilton Partners, Itasca, DuPage County and IDOT when a proposed drainage concept is complete. The concept will include new storm sewer and detention locations. No detailed storm sewer sizing is needed for the drainage concept.

IDOT requested copies of all local coordination.

The meeting was adjourned at 11:05 A.M.

By: Joel E. Christell, P.E.

Date: July 7, 2009

ATTENDANCE ROSTER

BUREAU OF LOCAL ROADS AND STREETS

PROJECT: DuPage County, 01-00245-04-CH
Thorndale Ave

DATE: 6/24/09

TIME: 10:00 AM

LOCATION: Schaumburg / District One

ROOM: Local Roads Conf. Rm. B

	NAME (Please Print)	REPRESENTING	PHONE NUMBER
1	Marilyn Solomon	IDOT-DI-BLRS	(847) 705-4407
2	Jay Coleman	IDOT-DI-BLRS (McDonough)	(847) 705-4021
3	Jim Woods	Civiltech For IDOT	(630) 735-3942
4	Joel Christell	Civiltech	(630) 735-3941
5	Dan Nowak	DuPage Co. D.O.T.	(630) 407-6900
6	JIM SPARBER	BAXTER WOODMAN - VILLAGE OF ITASCA	(615) 787-3111
7	Michelle Lewis	IDOT HYDRAULICS/FLUID MECHANICS	(847) 705-4720
8			()
9			()
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SECTION 14

SURVEY NOTES

DEVON AVENUE - TREASURY - I-290

File: DEVON 11609-TR-

CP# 120 1937220.098

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1926798.254

CP# 121 1070103.649

PR MAIL 697.544

1949038.091

CP# 211 10666347.935

Tot. 965

1947677.781

CP# 202 1066637.915

Tot. 691

ATTENTION -

7-15-09

22

CP# 14 CASH - 4607

TRANSDERIVATION NAME: DEVON

DEVON TRANSF N E

RECEIPTS - 9.918 9.918

0.009 - 0.016

0.003 0.017

- 0.001 - 0.019

CHARTER ACTUALS

N = 40.012

E = 40.015

PLANT 0.001

CP# 14

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441.4003

200135 DEMONSTR

1067083.596

45 = 0.011

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70.1003

445.0006

VICOR/TOM

DEON ONE REMARK

File Name: DATA11709.GPS

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1402 698.062

1938658.284

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1402 691.454

GP 59 1938632.215

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GP 58 115055.514

AVG: 10000

GP 58 115057.415

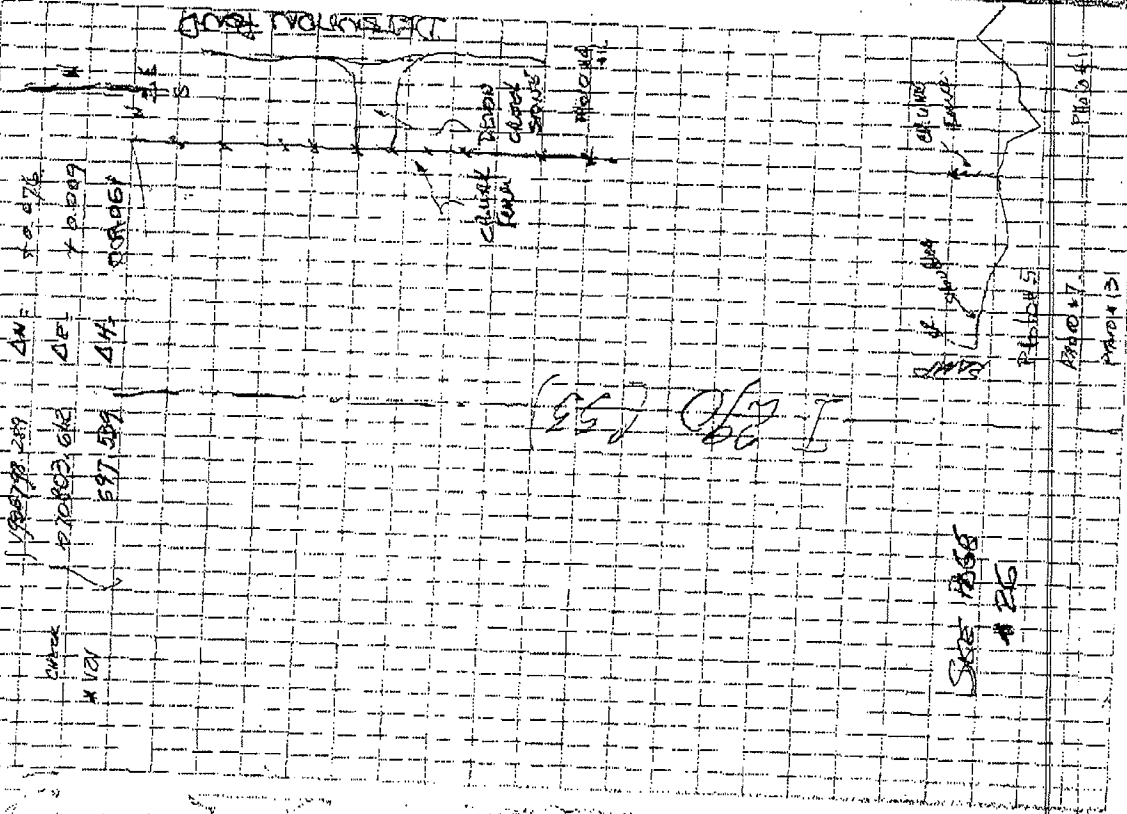
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X. Section 500 UPS

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X. Section 500 UPS

#26

11.17.09

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4-17-09

25

APT. - RAIN - 485F

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SEE PAGE

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Time

10:00:18

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11-18-03

AP-71-201N-0004

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200 37 S

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500' 10/5

47-12-44

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ARTY. 2000 - 1600

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Check 225 1971126.226 DE = -0.0029

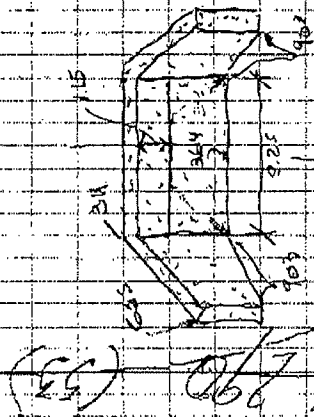
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Accuracy 11/100 = 1/10

THRU OUTLINE

SEE PAGE #17

D/S FACE



ENTRANCE PANEL

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3-7-11

3-4-10
CME/205

FOR TRIBUTARIES

DEVON AVE

Job# 183-TR18.CME THORNDALE HIC 6.502

STA # ΔH ΔV

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√@ 121 40024 0.12 -0.055

US SIDE THORNDALE AVE

40025-40030 OUTSIDE EDGE OF US CONC. MEDIAN

40031 US INV 5' X 3.2' CULV

40032-40040 US FACE XS

DOWN STREAM SIDE THORNDALE AVE

40047-40053 OUTSIDE EDGE 40051 INSIDE

40054-40062 DS FACE XS

40069 DS INV 5' X 3.2' CULV CONC.

PACK BLVD CROSSING

US SIDE

40070 US INV 4' X 3.2' BLUE CMP

40071-40082 US FACE XS

40083 US TOP OF PIPE

DS SIDE

40084-40090 DS FACE XS

40096 DS INV 4' X 3.2' BLUE CMP

40097 DS TOP OF PIPE

40098 W/ - MANHOLE 5-SIDE PIECE RD

40099 " 2-SIDE PIECE RD

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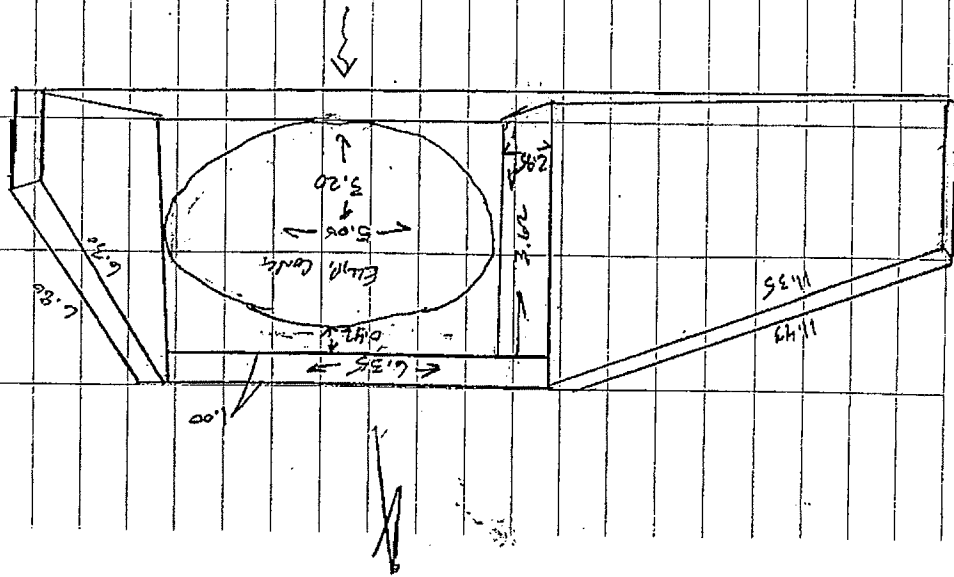
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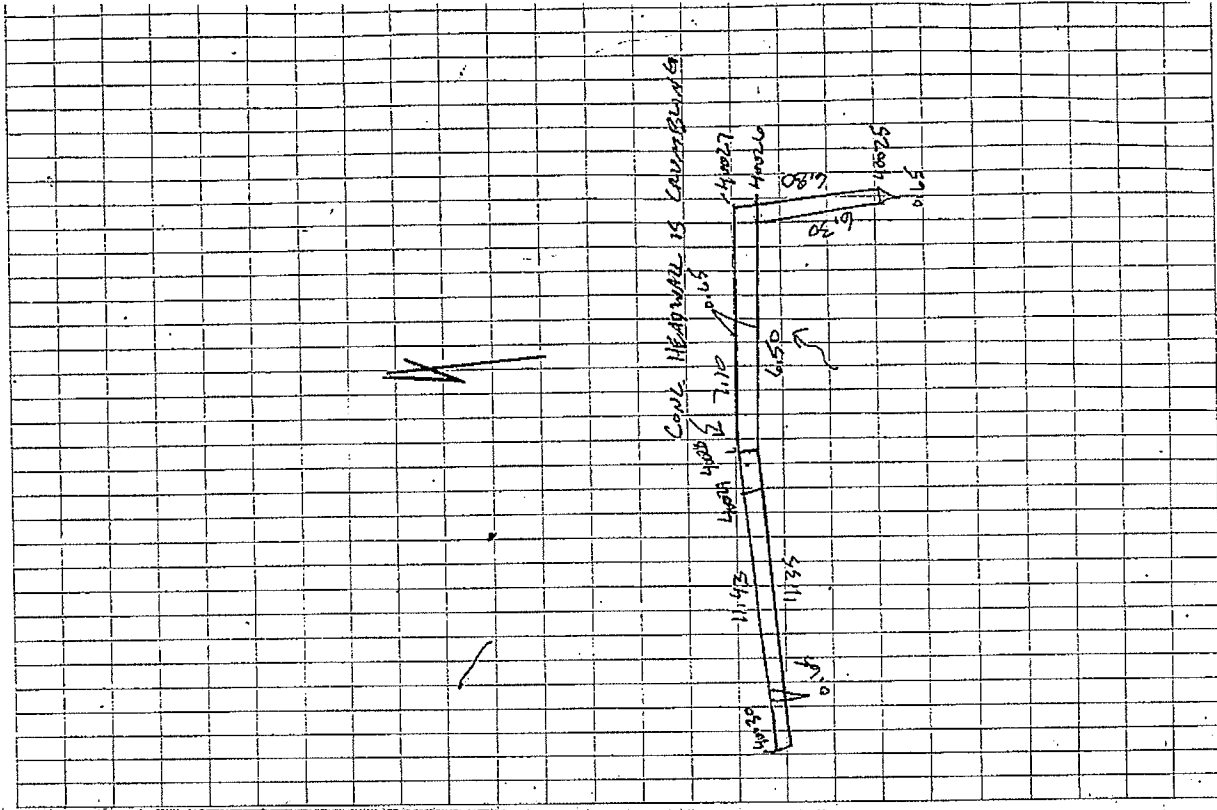
THORNDALE AVE
CROSSING PLAN VIEW



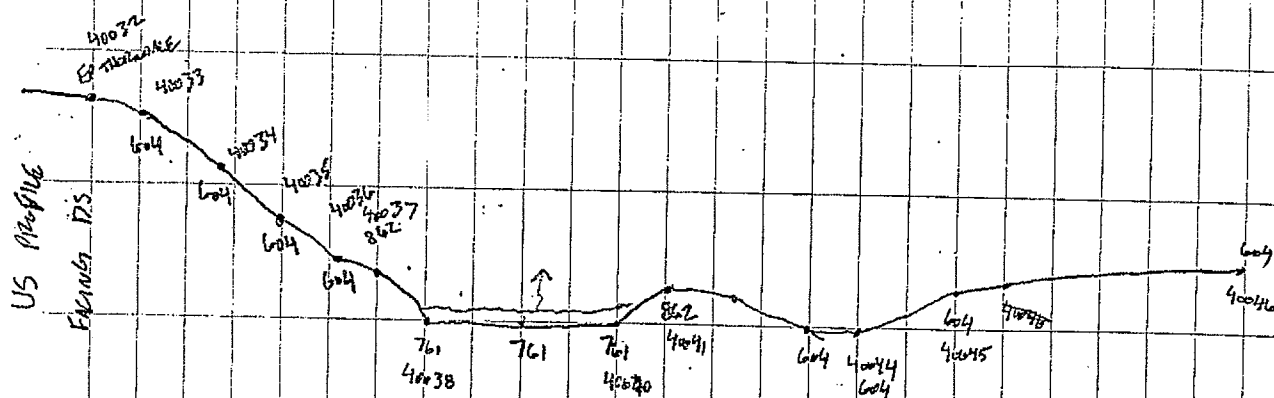
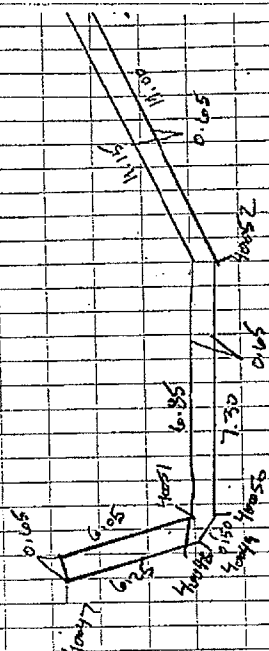
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5' X 3.20' BLUP. CONCL.
W/ CONG HEADWALL



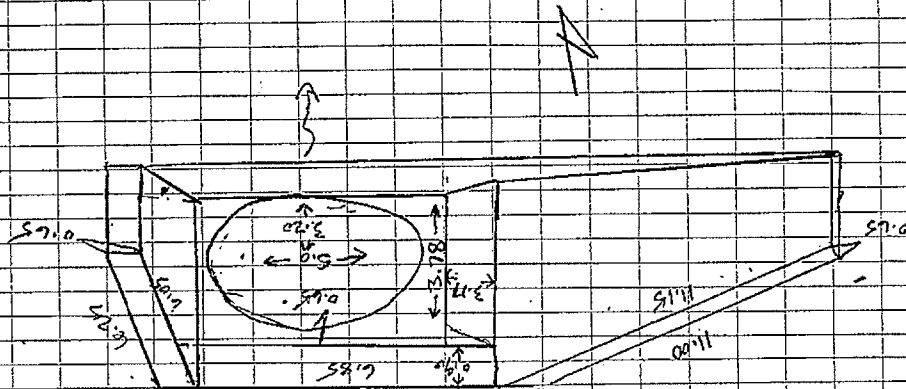
TOP VIEW
US SIDE



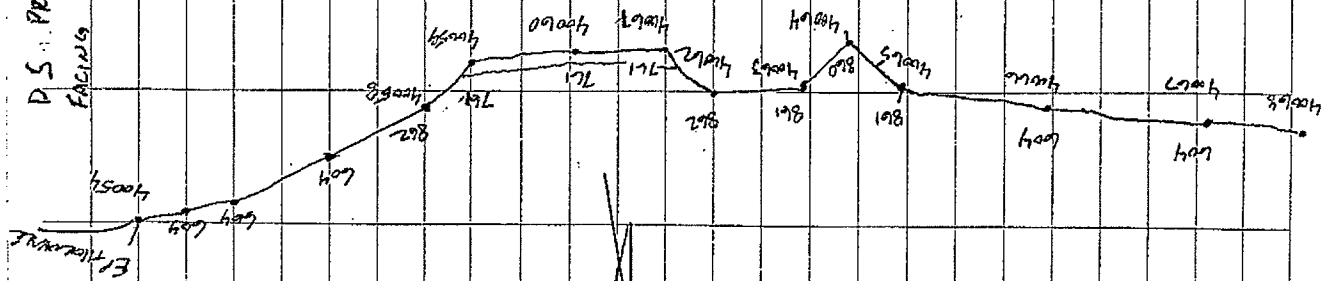
TOP VIEW
DS SIDE



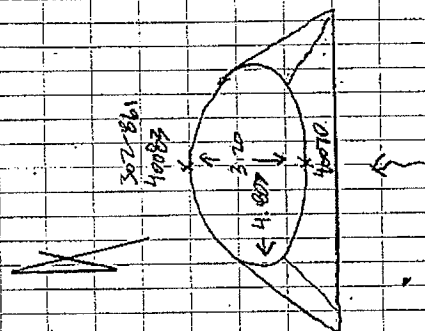
PS FAVORITE US:
5' X 3.20 EUR CONC.
W/ CONC. HERRINGDALE



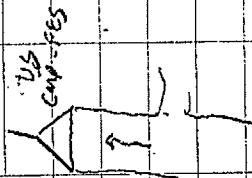
DS PROFILE	FACING DS
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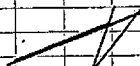
PARK BLVD CROSSING
PLAN VIEW



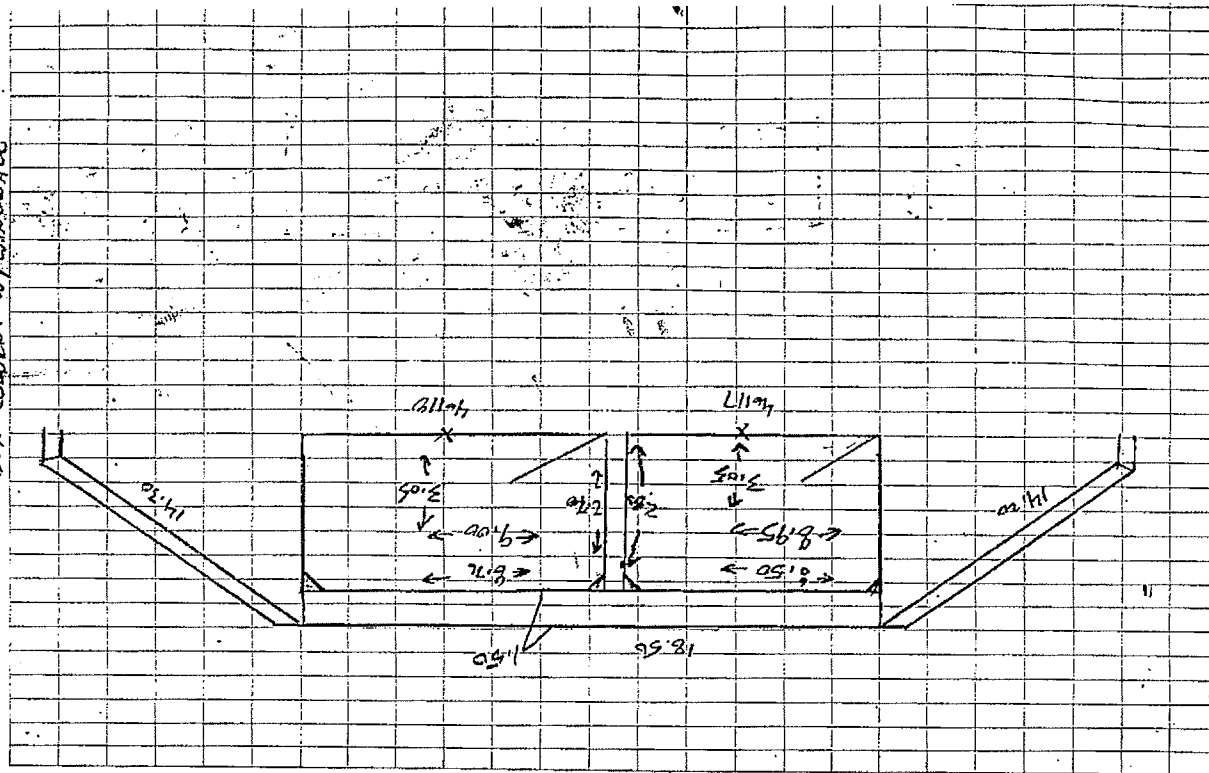
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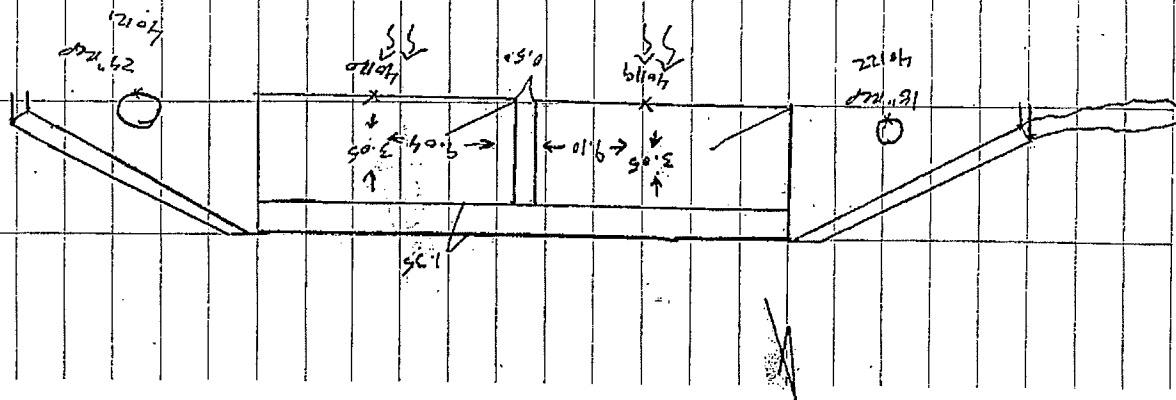
A hand-drawn diagram of a lens on graph paper. The lens is represented by a horizontal oval. A vertical line passes through the center of the lens, with arrows at both ends pointing outwards, indicating it is a diverging lens. To the left of the lens, a point is labeled 'u' with a horizontal arrow pointing to it, and the value '3.20' is written below. To the right of the lens, a point is labeled 'v' with a horizontal arrow pointing to it, and the value '4.9010' is written below. Above the lens, a point is labeled 'f' with a vertical arrow pointing to it, and the value '1.5007' is written to the left. The diagram is drawn on a grid of small squares.



DS FACING US
BOX CONCRETE WALL



US FACING DS
BOX CONCRETE WALL



PIERCE RD CROSSING

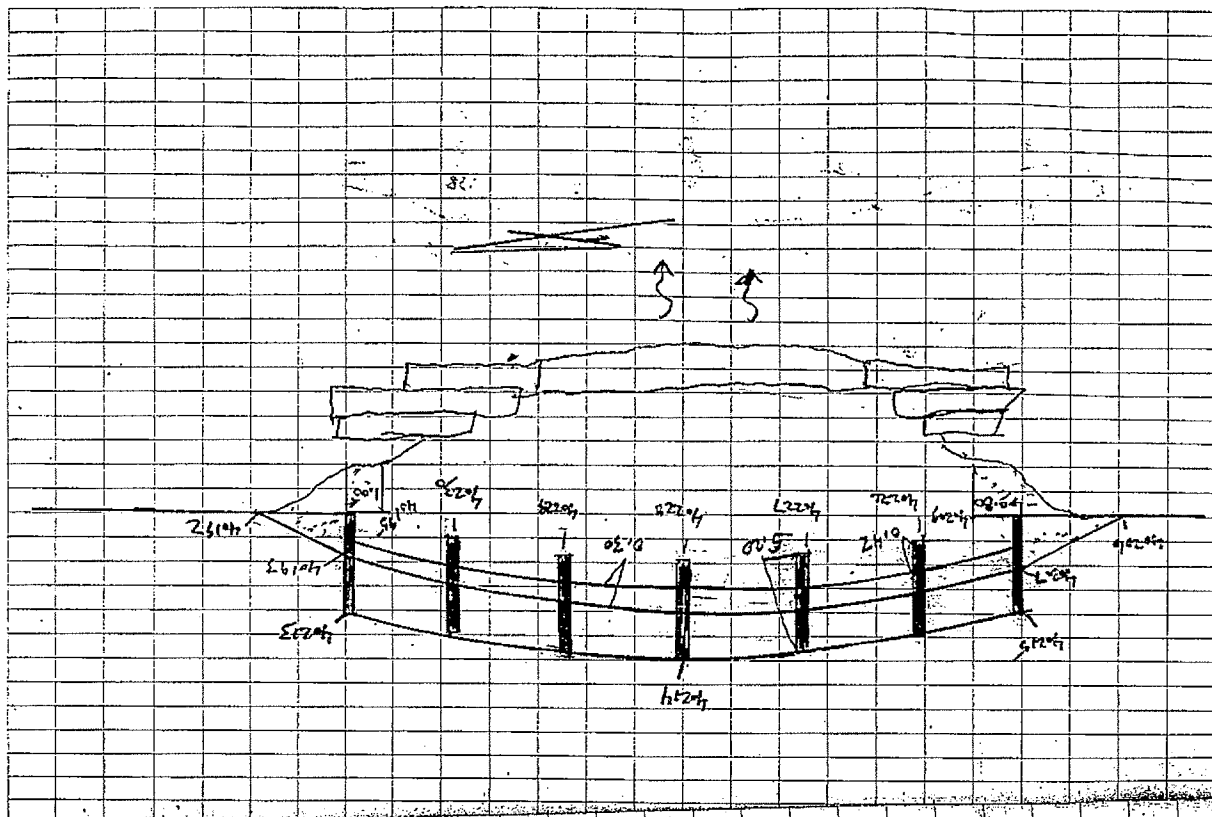
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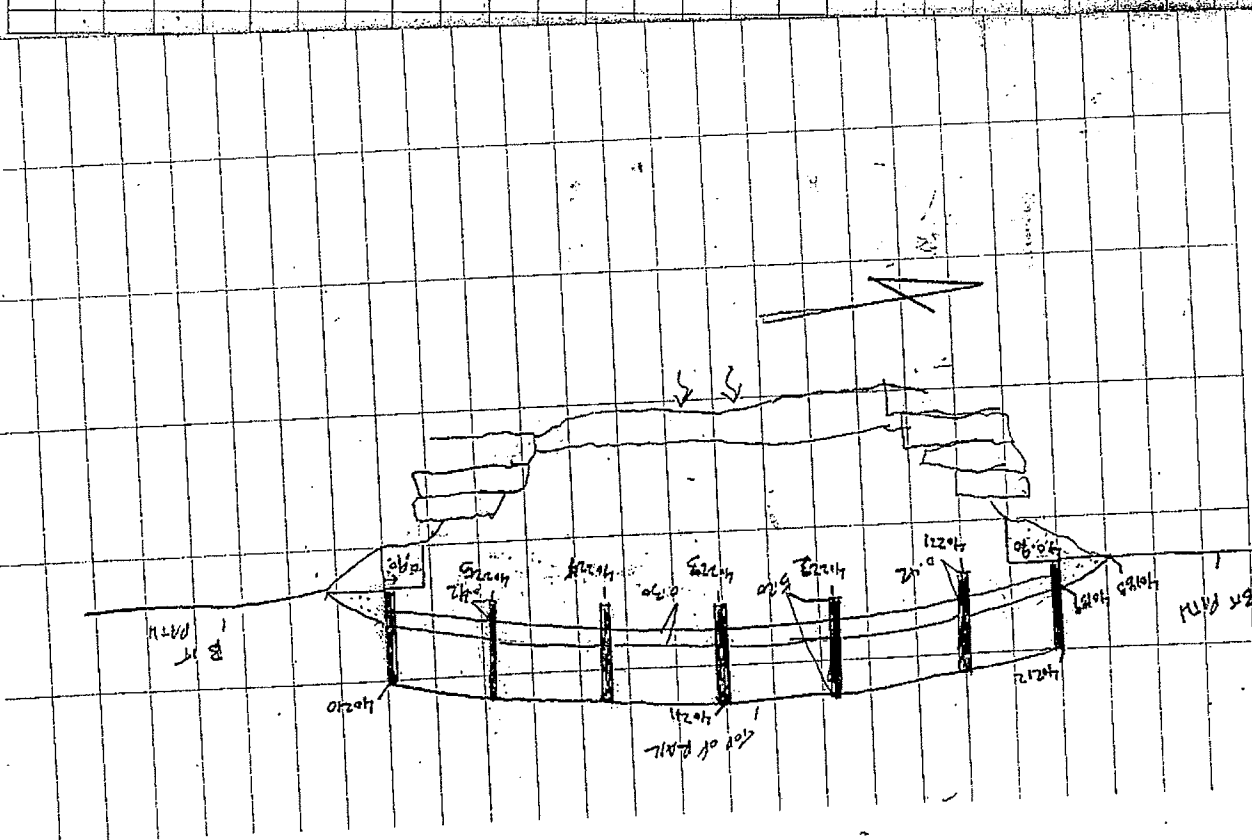
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40092CHK	✓ @ 40092 GPS	TRIMONE @ 6.562	
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	N 19379.73		
	E 107093.368	ELEV 691.605	
40103	SET CP MAG S. SIDE OF MIDDLE BRIDGE		
	N = 19379.789		
	E 107094.016	ELEV 692.435	
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	N = 1938228.010		
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	N 1938071.151		
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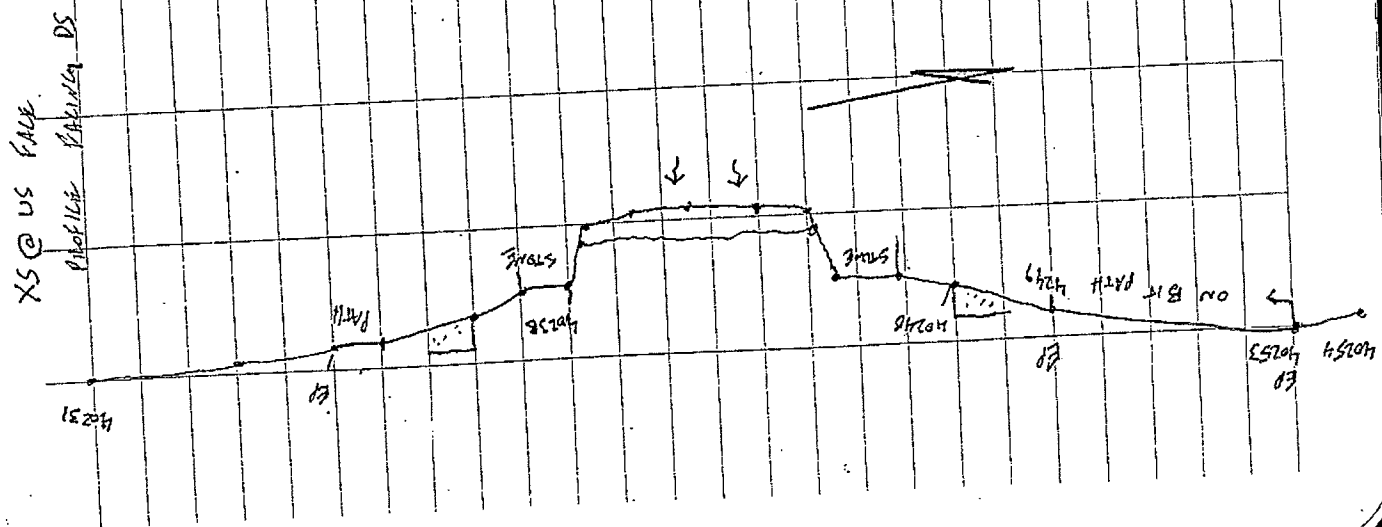
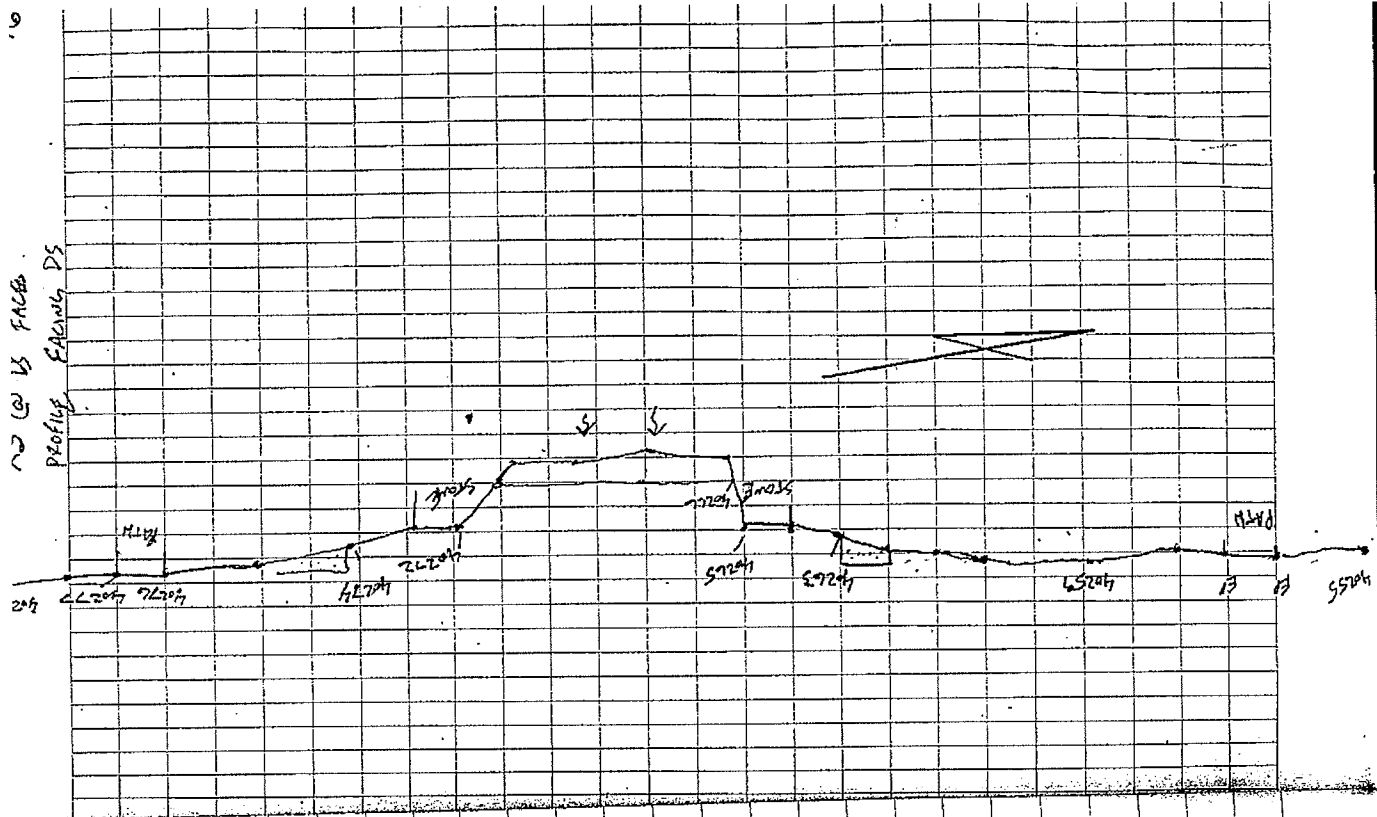
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✓ 40099	ΔH = 0.0016	AVE 40007	40106
40107-40118	DS FACE DETAIL		
40119-40136	US FACE DETAIL		
40137-40140	CORR WALL		
40141-40161	XS @ US FACE OF BOX CULVERT		
40162-40186	XS @ US FACE		
✓ 40099	ΔH = 0.0094	AVE 40103	
40103 CHK	✓ GPS CORRECT	ΔH = 0.0037	
40102 CHK	ΔH = 0.042	ΔH = 0.093	
40105 CHK	ΔH = 0.032	ΔH = 0.064	

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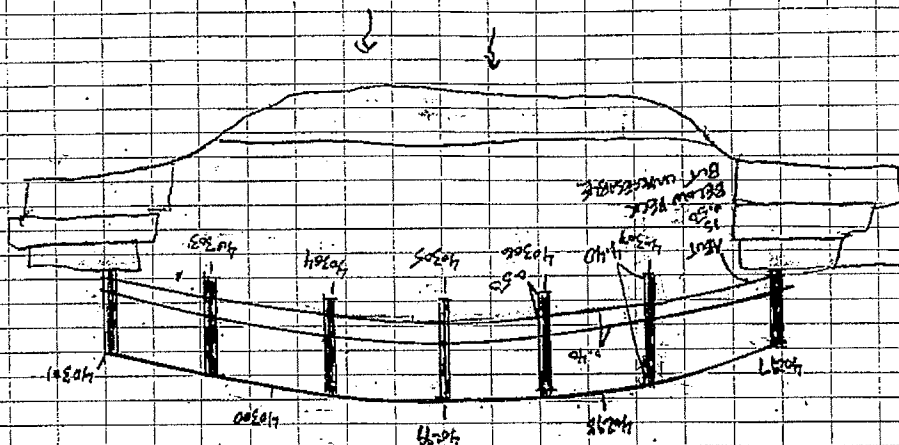
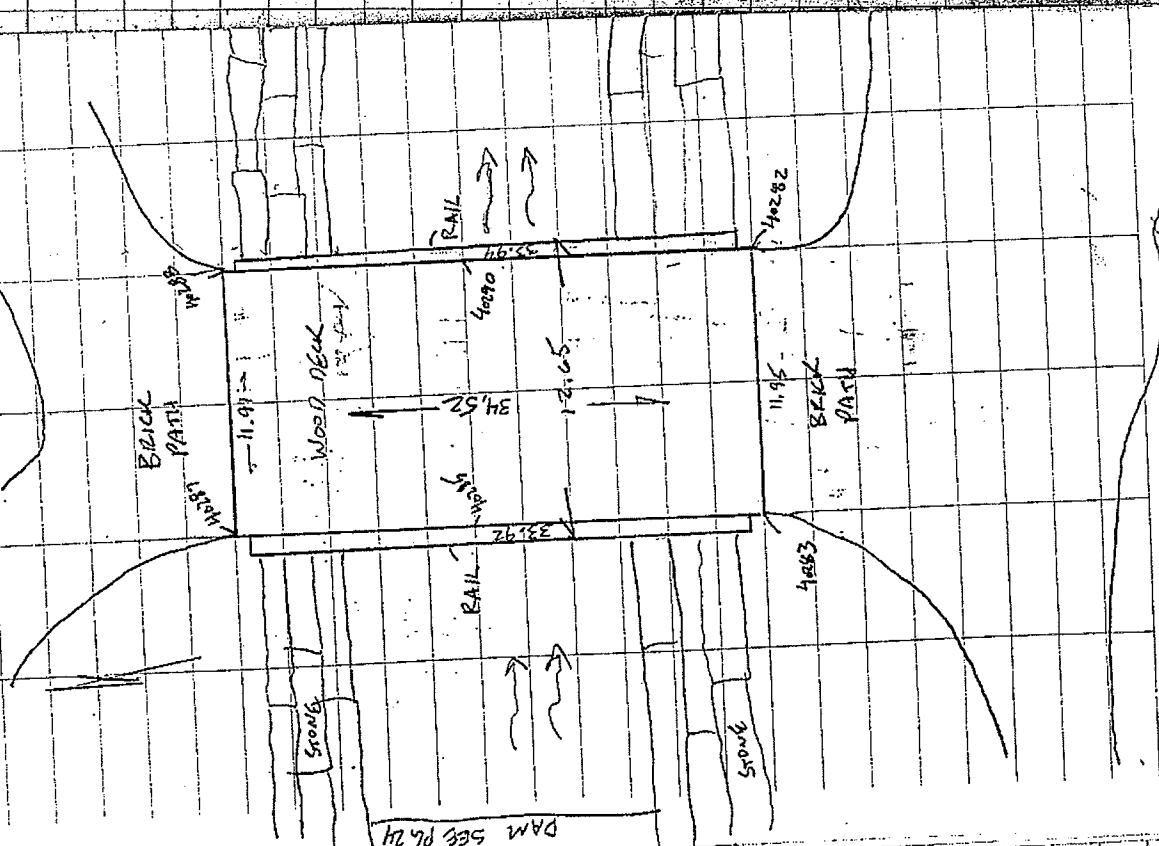
US FACING D.S.:





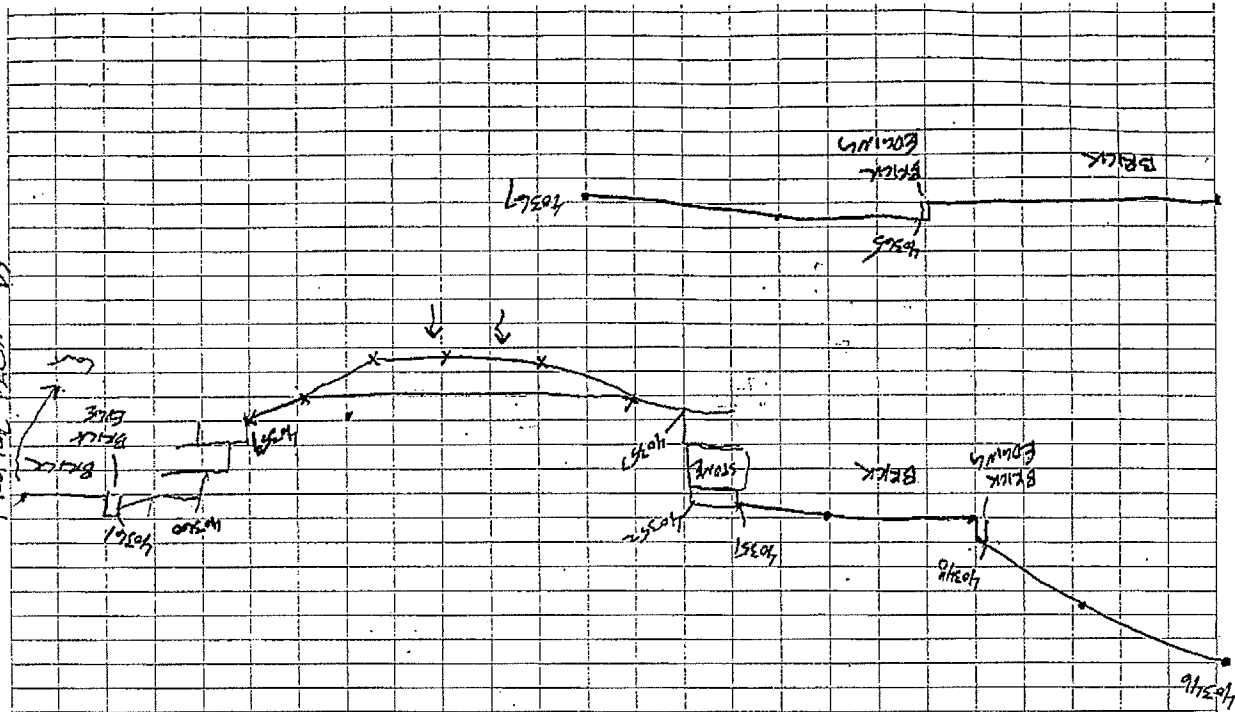
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W. BRIDGE
PLAN VIEW
WOOD & METAL BRIDGE

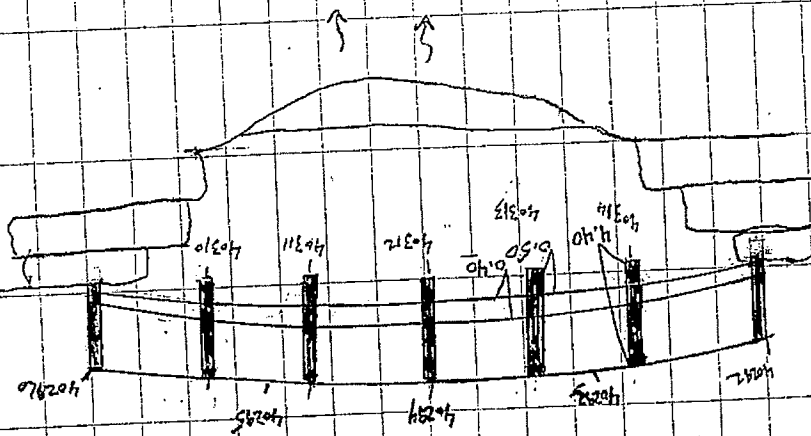


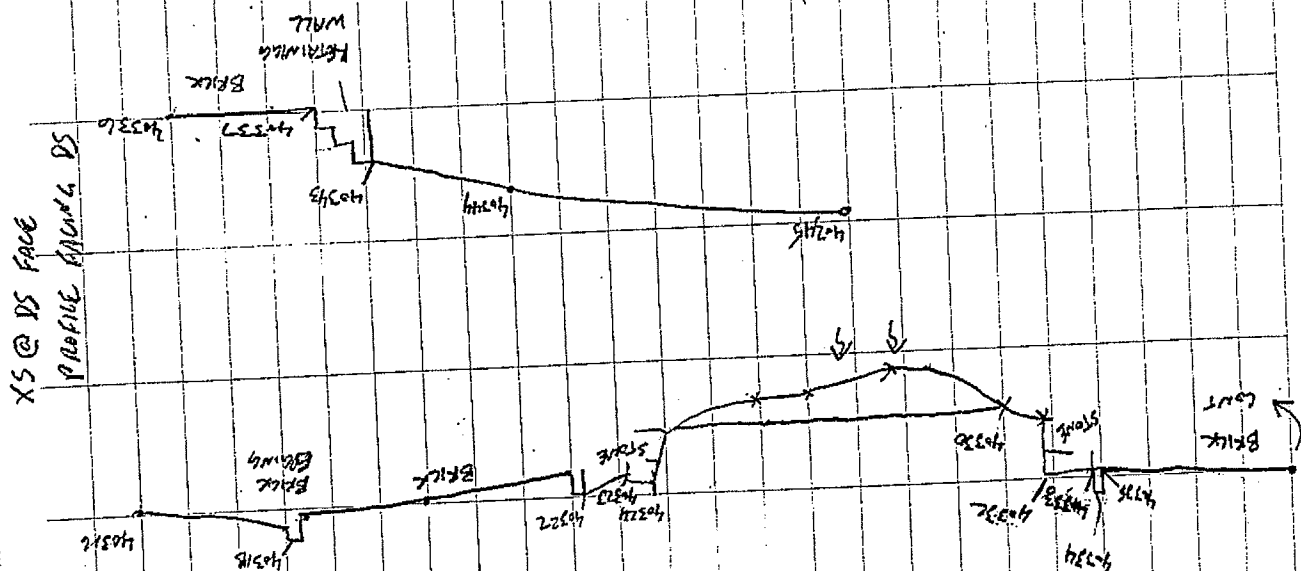
AS (W) US PAGE

PROFILE FACING DS



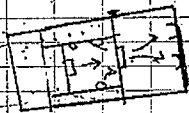
DS FACING US



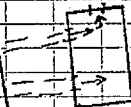


METALWORKS

VIRGINIA DR. CROSSING



VIRGINIA DR.



SECTION 15

CD (MODELING AND SURVEY DATA)
