

DIAMOND POINT
DETERMINATION REPORT

SUBMITTED BY
MUSLER ENGINEERING COMPANY
J.R. SMITH, E.I.T.
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28 JULY 1974
REV 5 AUGUST 1974

AREA OF SITE: 40.21 AC

A PERMANENT DETENTION BASIN WILL BE CONSTRUCTED ON THE SITE, USING THE 25 YEAR/20 MINUTE STORM EVENT. THE 2 YEAR, 5 YEAR, AND 15 YEAR STORM EVENT WILL ALSO BE ROUTED THROUGH THE BASIN

THE TOTAL FLOW FROM THE UNDEVELOPED SITE IS 93.07 CFS (25YR STORM), OF WHICH 68.81 CFS FLOWS INTO THE UNDEVELOPED TRIBUTARY OF BELLEAU CREEK LOCATED TO THE NORTH OF THE SITE.

THE TOTAL FLOW FROM THE DEVELOPED SITE IS 131.35 CFS (25YR STORM) OF WHICH 69.70 CFS FLOWS INTO THE DETENTION BASIN. THE PEAK DISCHARGE FROM THE BASIN, USING THE ST CHARLES COUNTY HIGHWAY DEPARTMENT DETENTION BASIN PROGRAM IS 28.89 CFS. (SEE ATTACHED) THE ALLOWABLE DISCHARGE FROM THE DETENTION IS 31.42 CFS.

THE TOTAL FLOW OFFSITE FROM THE DEVELOPED SITE IS 90.54 CFS, WHICH IS LESS THAN THE UNDEVELOPED FLOW OF 93.07 CFS.

THE TOP OF THE OVERFLOW STRUCTURE IS 492.13 USING THE PEAK ELEVATION FOR THE 25 YEAR STORM.

THE TOP OF DAM HAS DETERMINED TO BE 494.65 USING THE 100YR HIGH WATER AND 1' OF FREE BOARD.

RETENTION EARTH VOLUMES

<u>ELEVATION</u>	<u>AREA</u>	<u>VOLUME</u>	<u>CUMULATIVE VOLUME</u>
487.00	0		
		5380	5380
488.00	10761		
		25066	30446
490.00	14305		
		32483	62929
492.00	18178		
		40561	103490
494.00	22383		

25 YEAR - 20 MINUTE STORM EVENT

$$P.I. = 2.31 \text{ (5.0\% IMPERVIOUS PER CITY OF O'FALLON)}$$

$$P.I. = 3.26 \text{ (40.0\% IMPERVIOUS PER CITY OF O'FALLON)}$$

UNDEVELOPED CONDITIONS

$$\begin{aligned} Q_{25YR}^{UNDEV} &= (40.29 A^2)(2.31) \\ &= 93.07 \text{ CFS} \end{aligned}$$

DEVELOPED CONDITIONS

$$\begin{aligned} Q_{25YR}^{DEV} &= (40.29 A^2)(3.26) \\ &= 131.35 \text{ CFS} \end{aligned}$$

FLOW BY-PASSING DETENTION BASIN

$$\begin{aligned} Q_{25YR}^{BY-PASS} &= (10.91 A^2)(3.26) \\ &= 61.65 \text{ CFS} \end{aligned}$$

FLOW TO DETENTION BASIN

$$\begin{aligned} Q_{25YR}^{DET} &= (21.58 A^2)(3.26) \\ &= 69.70 \text{ CFS} \end{aligned}$$

ALLOWABLE DISCHARGE FROM BASIN

$$\begin{aligned} Q_{25YR}^{ALLOW} &= Q_{25YR}^{UNDEV} - Q_{25YR}^{BY-PASS} \\ &= 93.07 - 61.65 \\ &= 31.42 \text{ CFS} \end{aligned}$$

DISCHARGE FROM BASIN PER MINUTE FLOW

$$Q_{25YR} = 28.87 \text{ CFS} < 31.42 \text{ CFS}$$

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*****
*
* RECTANGULAR ORIFICE
* 10 in W X 48 in H ELEV= 487
*
* Outlet Pipe - .013 ft - 36 in pipe
* UFL= 483.8 LFL= 483.45 n= .013
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DIAMOND POINTE

SUBMITTAL DATE: 5 AUGUST 1997

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	862.42	862.42	0.00	862.42	487.16
2	1724.84	2587.26	8.34	2578.92	487.48
3	2587.26	5166.18	43.14	5123.04	487.95
4	3449.68	8572.72	120.78	8451.94	488.25
5	4312.10	12764.04	180.60	12583.44	488.57
6	4312.10	16895.51	256.89	16638.65	488.90
7	4312.10	20950.75	340.01	20610.74	489.22
8	4312.10	24922.84	428.61	24494.23	489.53
9	4312.10	28806.33	521.62	28284.71	489.83
10	4312.10	32596.81	618.09	31978.72	490.09
11	4312.10	36290.82	707.61	35583.21	490.32
12	4312.10	39895.31	785.09	39110.22	490.53
13	4312.10	43422.32	863.45	42558.88	490.75
14	4312.10	46870.98	942.44	45928.54	490.95
15	4312.10	50240.44	1021.82	49218.82	491.16
16	4312.10	53530.92	1437.50	52093.42	491.33
17	4312.10	56405.53	1495.35	54910.17	491.51
18	4312.10	59222.28	1549.94	57672.33	491.68
19	4312.10	61984.43	1601.66	60382.77	491.84
20	4312.10	64694.87	1650.85	63044.03	492.01
21	3449.68	66493.71	1697.35	64796.36	492.09
22	2587.26	67383.62	1721.57	65662.05	492.13
23	1724.84	67386.90	1733.42	65653.47	492.13
24	862.42	66515.90	1733.30	64782.59	492.09
25	0.00	64782.59	1721.39	63061.21	492.01

PEAK OUTFLOW= 28.89 CFS AT 23 MINUTES

2 YEAR - 20 MINUTE STORM EVENT

$$P.I. = 1.15 \text{ (5.0\% IMPERVIOUS PER M.S.D.)}$$

$$P.I. = 1.61 \text{ (40.0\% IMPERVIOUS PER M.S.D.)}$$

UNDEVELOPED CONDITIONS

$$Q_{2\text{YR UNDEV}} = (40.29 \text{ A}^2)(1.15) \\ = 46.33 \text{ CFS}$$

DEVELOPED CONDITIONS

$$Q_{2\text{YR DEV}} = (40.29 \text{ A}^2)(1.61) \\ = 64.87 \text{ CFS}$$

FLOW BY-PASSING DETENTION BASIN

$$Q_{2\text{YR BY-PASS}} = (18.91 \text{ A}^2)(1.61) \\ = 30.45 \text{ CFS}$$

FLOW TO DETENTION BASIN

$$Q_{2\text{YR DCT}} = (21.38 \text{ A}^2)(1.61) \\ = 34.42 \text{ CFS}$$

ALLOWABLE DISCHARGE FROM BASIN

$$Q_{2\text{YR ALLOW}} = Q_{2\text{YR UNDEV}} - Q_{2\text{YR BY-PASS}} \\ = 46.33 - 30.45 \\ = 15.88 \text{ CFS}$$

DISCHARGE FROM BASIN PER BASIN PROGRAM

$$Q_{2\text{YR DISCHARGE}} = 12.43 \text{ CFS} < 15.88 \text{ CFS} \quad \text{ok}$$

24.17

 *
 * RECTANGULAR ORIFICE *
 * 10 in W X 48 in H ELEV= 487 *
 *
 * Outlet Pipe - 34.1 ft - 36 in pipe *
 * UFL= 483.8 LFL= 483.45 n= .013 *
 * 2YR- 20MIN STORM EVENT *

DIAMOND POINTE 25 JULY 1997 SUBMITTAL DATE: 25 JULY 1997

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	426.00	426.00	0.00	426.00	487.08
2	852.00	1278.00	2.90	1275.10	487.24
3	1278.00	2553.10	15.00	2538.10	487.47
4	1704.00	4242.10	42.12	4199.98	487.78
5	2130.00	6329.98	89.65	6240.33	488.07
6	2130.00	8370.33	143.60	8226.73	488.23
7	2130.00	10356.73	176.71	10180.02	488.38
8	2130.00	12310.02	211.43	12098.59	488.54
9	2130.00	14228.59	247.48	13981.11	488.69
10	2130.00	16111.11	284.66	15826.45	488.83
11	2130.00	17956.45	322.74	17633.71	488.98
12	2130.00	19763.71	361.55	19402.16	489.12
13	2130.00	21532.16	400.93	21131.23	489.26
14	2130.00	23261.23	440.72	22820.51	489.39
15	2130.00	24950.51	480.80	24469.72	489.52
16	2130.00	26599.72	521.01	26078.71	489.65
17	2130.00	28208.71	561.28	27647.43	489.78
18	2130.00	29777.43	601.49	29175.94	489.90
19	2130.00	31305.94	641.55	30664.39	490.01
20	2130.00	32794.39	680.04	32114.35	490.10
21	1704.00	33818.35	710.48	33107.87	490.16
22	1278.00	34385.87	731.59	33654.28	490.20
23	852.00	34506.28	743.29	33762.99	490.20
24	426.00	34188.99	745.63	33443.36	490.18
25	0.00	33443.36	738.77	32704.60	490.14

PEAK OUTFLOW= 12.43 CFS AT 24 MINUTES

5 YEAR - 20 MINUTE STORM EVENT

$$P.I. = 1.41 \text{ (5.0\% IMPERVIOUS PER M.S.D.)}$$

$$P.I. = 1.98 \text{ (40.0\% IMPERVIOUS PER M.S.D.)}$$

UNDEVELOPED CONDITIONS

$$\begin{aligned} Q_{5YR}^{UNDEV} &= (40.29 \text{ AF}) (1.41) \\ &= 56.81 \text{ CFS} \end{aligned}$$

DEVELOPED CONDITIONS

$$\begin{aligned} Q_{5YR}^{DEV} &= (40.29 \text{ AF}) (1.98) \\ &= 79.77 \text{ CFS} \end{aligned}$$

FLOW BY-PASSING DETENTION BASIN

$$\begin{aligned} Q_{5YR}^{BYPASS} &= (18.91 \text{ AF}) (1.98) \\ &= 37.44 \text{ CFS} \end{aligned}$$

FLOW TO DETENTION BASIN

$$\begin{aligned} Q_{5YR}^{INLET} &= (21.38 \text{ AF}) (1.98) \\ &= 42.33 \text{ CFS} \end{aligned}$$

ALLOWABLE DISCHARGE FROM BASIN

$$\begin{aligned} Q_{5YR}^{ALLOW} &= Q_{5YR}^{UNDEV} - Q_{5YR}^{BYPASS} \\ &= 56.81 - 37.44 \\ &= 19.37 \text{ CFS} \end{aligned}$$

DISCHARGE FROM BASIN PER BASIN PROGRAM

$$Q_{5YR}^{DISCHARGE} = 15.27 \text{ CFS} < 19.37 \text{ CFS} \quad \text{OK}$$

 *
 * RECTANGULAR ORIFICE *
 * 10 in W X 48 in H ELEV= 487 *
 *
 * Outlet Pipe - 34.1 ft - 36 in pipe *
 * UFL= 483.8 LFL= 483.45 n= .013 *
 * *5YR - 20 MIN STORM EVENT* *

DIAMOND POINTE 25 JULY 1997 SUBMITTAL DATE: 25 JULY 1997

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	523.92	523.92	0.00	523.92	487.10
2	1047.84	1571.76	3.95	1567.81	487.29
3	1571.76	3139.57	20.45	3119.12	487.58
4	2095.68	5214.80	57.38	5157.42	487.96
5	2619.60	7777.02	122.00	7655.02	488.18
6	2619.60	10274.62	166.95	10107.67	488.38
7	2619.60	12727.27	210.10	12517.17	488.57
8	2619.60	15136.77	255.60	14881.17	488.76
9	2619.60	17500.77	303.03	17197.74	488.94
10	2619.60	19817.34	352.06	19465.28	489.12
11	2619.60	22084.88	402.36	21682.52	489.30
12	2619.60	24302.12	453.67	23848.45	489.47
13	2619.60	26468.05	505.73	25962.32	489.64
14	2619.60	28581.92	558.33	28023.59	489.81
15	2619.60	30643.19	611.27	30031.92	489.97
16	2619.60	32651.52	664.36	31987.16	490.09
17	2619.60	34606.76	707.79	33898.98	490.21
18	2619.60	36518.58	748.56	35770.02	490.33
19	2619.60	38389.62	789.17	37600.45	490.44
20	2619.60	40220.05	829.60	39390.45	490.55
21	2095.68	41486.13	869.79	40616.35	490.63
22	1571.76	42188.12	897.66	41290.45	490.67
23	1047.84	42338.29	913.12	41425.17	490.68
24	523.92	41949.10	916.22	41032.87	490.65
25	0.00	41032.87	907.21	40125.66	490.60

PEAK OUTFLOW= 15.27 CFS AT 24 MINUTES

15 YEAR - 20 MINUTE STORM EVENT

$$P.I. = 1.87 \text{ (5.0\% IMPERVIOUS PER CITY OF O'FALLON)}$$
$$P.I. = 2.64 \text{ (40.0\% IMPERVIOUS PER CITY OF O'FALLON)}$$

UNDEVELOPED CONDITIONS

$$Q_{15\text{ YR}}^{\text{UNDEV}} = (40.29 \text{ A}^2)(1.87)$$
$$= 75.34 \text{ CFS}$$

DEVELOPED CONDITIONS

$$Q_{15\text{ YR}}^{\text{DEV}} = (40.29 \text{ A}^2)(2.64)$$
$$= 106.37 \text{ CFS}$$

FLOW BY-PASSING DETENTION BASIN

$$Q_{15\text{ YR}}^{\text{BY-PASS}} = (18.91 \text{ A}^2)(2.64)$$
$$= 49.92 \text{ CFS}$$

FLOW TO DETENTION BASIN

$$Q_{15\text{ YR}}^{\text{FLT}} = (21.38 \text{ A}^2)(2.64)$$
$$= 56.24 \text{ CFS}$$

ALLOWABLE DISCHARGE FROM BASIN

$$Q_{15\text{ YR}}^{\text{ALLOW}} = Q_{15\text{ YR}}^{\text{UNDEV}} - Q_{15\text{ YR}}^{\text{BY-PASS}}$$
$$= 75.34 - 49.92$$
$$= 25.42 \text{ CFS}$$

DISCHARGE FROM EACH POND BASIN PROGRAM

$$Q_{15\text{ YR}}^{\text{DISCHARGE}} = 25.41 < 25.42 \text{ CFS} \quad \text{OK}$$

 *
 * RECTANGULAR ORIF _E
 * 10 in W X 48 in H ELEV= 487
 *
 * Outlet Pipe - 34.1 ft - 36 in pipe
 * UFL= 483.8 LFL= 483.45 n= .013
 *
 * 15 YR - 20 MIN STORM EVENT
 *

DIAMOND POINTE 25 JULY 1997 SUBMITTAL DATE: 25 JULY 1997

MIN	INFLOW	STORAGE	OUTFLOW	NET DET.	ELEV.
1	698.40	698.40	0.00	698.40	487.13
2	1396.80	2095.20	6.08	2089.12	487.39
3	2095.20	4184.32	31.45	4152.87	487.77
4	2793.60	6946.47	88.15	6858.32	488.12
5	3492.00	10350.32	153.66	10196.66	488.38
6	3492.00	13688.66	211.73	13476.93	488.65
7	3492.00	16968.93	274.53	16694.40	488.90
8	3492.00	20186.40	341.20	19845.20	489.15
9	3492.00	23337.20	411.00	22926.20	489.40
10	3492.00	26418.20	483.34	25934.86	489.64
11	3492.00	29426.86	557.64	28869.22	489.87
12	3492.00	32361.22	633.44	31727.78	490.08
13	3492.00	35219.78	702.32	34517.46	490.25
14	3492.00	38009.46	761.90	37247.56	490.42
15	3492.00	40739.56	821.75	39917.81	490.58
16	3492.00	43409.81	881.74	42528.06	490.74
17	3492.00	46020.06	941.72	45078.34	490.90
18	3492.00	48570.34	1001.58	47568.76	491.05
19	3492.00	51060.76	1403.22	49657.54	491.18
20	3492.00	53149.54	1446.48	51703.06	491.31
21	2793.60	54496.66	1487.63	53009.04	491.39
22	2095.20	55104.24	1513.31	53590.93	491.43
23	1396.80	54987.73	1524.62	53463.12	491.42
24	698.40	54161.52	1522.14	52639.38	491.37
25	0.00	52639.38	1506.08	51133.30	491.27

PEAK OUTFLOW= 25.41 CFS AT 23 MINUTES

TOP OF DAM CALCULATIONS

25 YEAR STORM

$$\begin{array}{r}
 492.13 \\
 \underline{+ 0.25} \\
 492.38 \\
 \underline{+ 2.00} \\
 494.38
 \end{array}$$

25 YR HFD
 ADD CORRECTION FOR SEEPAGE
 FREE BOARD

$$\begin{array}{r}
 492.13 \\
 \underline{+ 0.625} \\
 492.755 \\
 \underline{+ 1.9} \\
 494.655
 \end{array}$$

100 YEAR STORM

$$Q = CLH^{3/2}$$

C = 3.0
 L = 18.76 (DAM & FLOOD WALL STRUCTURE)
 Q = Q₁₀₀
 = Q_{100 (3.0)}
 = 30.90

$$\begin{aligned}
 30.90 &= 3(18.76)H^{3/2} \\
 H &= 1.27 \text{ FT}
 \end{aligned}$$

$$\begin{array}{r}
 492.38 \\
 \underline{+ 1.27} \\
 493.65 \\
 \underline{+ 1.00} \\
 494.65
 \end{array}$$

FRE BOARD
 ← TOP OF DAM

PROJECT NAME : DIAMOND POINTE - PHASE I

PROJECT NUMBER : 96-257R3

ENGINEER/DESIGNER : J.R.S.

DATE COMPLETED : 3 JULY 1997

CLIENT/DEVELOPER :

SHEET 1 OF 2 DATE REVISED : 28 JULY 1997

HYDRAULIC COMPUTATIONS

LINE		PIPE CHARACTERISTICS					STRUCT. TOPS		DEPTH HYD. GRADE		ELEV. HYD. GR'D.		HYD. GRADE	FRICT. HEAD LOSS	VEL.	V ² /2g	VEL. HEAD LOSS	TURN LOSS	INLETS		FLOW REQUIREMENTS			PIPE CAP.	
UPPER	LOWER	LENGTH	SIZE	F.L. GRADE	F.L. UPPER	F.L. LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER							STREET GRADE	CAPACITY	DRNG. AREA	P.I.	C		TOTAL C
CI 6A	CI 6	60.26	12" RCP	0.026	488.07	486.61	495.30	494.00	6.23	487.63	487.62	0.0002	0.01	0.6	0.01	0.01	~	4.0%	1.21	0.17	2.64	0.45	0.45	5.75	
CI 4A	CI 4	41.03	12" RCP	0.01	483.44	483.07	487.50	489.70	3.01	484.44	484.38	0.0015	0.06	1.8	0.05	0.05	~	4-5	11.00	0.53	2.64	1.39	1.39	3.57	
AI 8	MH 7	84.75	12" RCP	0.026	490.43	488.28	498.00	496.50	6.52	489.56	489.38	0.0021	0.18	2.1	0.07	0.07	~	4-5	11.00	0.62	2.64	1.64	1.64	5.75	
MH 7	CI 6	64.50	12" RCP	0.026	488.18	486.61	496.50	494.00	7.12	489.96	487.62	0.0021	0.14	2.1	0.07	0	0.05	~	~	~	~	~	~	1.64	5.75
CI 6	CI 5	34.00	15" RCP	0.01	487.41	486.11	494.00	494.00	6.33	489.45	487.36	0.0027	0.09	2.7	0.11	0.10	0.05	3.9%	1.25	0.55	2.64	1.45	3.34	6.47	
CI 4	CI 4	84.13	15" RCP	0.035	485.91	483.07	494.00	489.70	6.64	485.10	484.38	0.0085	0.72	4.9	0.37	0.39	0.15	3.9%	1.25	0.56	2.64	1.48	4.59		
CI 4	CI 3	34.00	18" RCP	0.01	482.27	482.57	489.70	489.70	5.32	484.22	484.07	0.0043	0.15	3.9	0.24	0	0.15	4.0%	1.21	0.19	2.64	0.48	6.89	10.51	
MH 2	MH 2	28.15	18" RCP	0.01	482.32	482.13	489.70	489.10	5.63	483.79	483.63	0.0056	0.16	4.4	0.30	0.09	0.15	4.0%	1.21	0.36	2.64	0.95	7.84	10.51	
MH 2	FE 1	180.00	18" RCP	0.01	481.33	480.15	489.0	—	4.47	482.65	481.65	0.0056	1.00	4.4	0.30	0	0.14	~	~	~	~	~	~	7.94	10.51
CI 15	CI 15	34.00	15" RCP	0.03	522.92	521.92	526.30	526.70	2.43	503.21	503.17	0.0012	0.04	1.8	0.05	0.05	~	4.0%	3.56	0.35	2.64	2.24	2.24	11.21	
CI 14	CI 14	96.30	15" RCP	0.029	501.73	499.18	506.70	506.50	3.53	500.70	500.43	0.0023	0.27	2.8	0.12	0.12	~	4.0%	1.21	0.52	2.64	1.37	3.45		
CI 13	CI 13	110.00	15" RCP	0.05	493.93	493.33	506.20	498.00	6.07	495.94	495.25	0.0062	0.69	4.2	0.27	0.25	0.09	4-5	11.00	0.63	2.64	1.66	5.11	14.47	
CI 12	CI 12	90.00	15" RCP	0.01	492.43	492.32	499.20	499.00	2.75	494.86	494.34	0.0058	0.52	4.5	0.32	0.20	0.19	4-5	11.00	1.10	2.64	2.90	8.01	10.51	
CI 11	CI 11	25.27	15" RCP	0.01	491.42	491.2	499.20	497.70	3.66	494.15	494.00	0.0058	0.15	4.5	0.32	0	0.19	~	~	~	~	~	~	8.01	10.51
CI 10	CI 10	34.00	18" RCP	0.01	492.1	491.7	497.70	497.70	3.70	493.49	493.21	0.0081	0.28	5.4	0.45	0.24	0.27	From bypass	1.21	0.49	2.64	1.29	9.46	10.51	
CI 9	CI 9	219.34	15" RCP	0.058	491.5	488.34	497.70	—	4.49	483.04	480.43	0.0119	2.61	6.5	0.66	0.38	~	4-5	0.76	2.64	2.01	11.47			

↑ INSIDE TOP OF PIPE

↑ INSIDE TOP OF PIPE

PROJECT NAME : DIAMOND POINTE - PHASE I

PROJECT NUMBER : 96-257R3

ENGINEER/DESIGNER : J.R.S.

DATE COMPLETED : 3 JULY 1997

CLIENT/DEVELOPER : _____

SHEET 2 OF 2 DATE REVISED : 28 JULY 1997
5 AUG 1997

HYDRAULIC COMPUTATIONS

LINE		PIPE CHARACTERISTICS					STRUCT. TOPS		DEPTH HYD. GRADE	ELEV. HYD. GR'D.		HYD. GRADE	FRICT. HEAD LOSS	VEL	v ² /2g	VEL HEAD LOSS	TURB LOSS	INLETS		FLOW REQUIREMENTS			PIPE CAP.	
UPPER	LOWER	LENGTH	SIZE	F.L. GRADE	F.L. UPPER	F.L. LOWER	UPPER	LOWER		UPPER	LOWER							STREET GRADE	CAPACITY	DRNG. AREA	P.I.	Q	TOTAL Q	
AI 20	AI 19	280.00	12" RCP	0.03	511.27	502.99	516.90	508.40	4.63	506.87	503.99	0.0103	2.88	4.6	0.33	0.33	~	4-5	11.00	1.37	2.64	3.62	3.62	6.17
AI 19	AI 18	270.54	12" RCP	0.053	502.79	488.74	508.40	492.80	4.41	499.46	489.74	0.0359	9.72	8.6	1.15	1.29	~	4-5	11.00	1.19	2.64	3.14	6.76	8.21
AI 18	FE 17	90.00	15" RCP	0.044	488.54	484.67	492.80	~	3.06	487.84	485.92	0.0213	1.92	7.7	0.92	0.13	~	4-5	11.00	1.02	2.64	2.69	9.45	13.58
AI 24	AI 23	232.00	12" RCP	0.043	505.82	496.02	510.60	504.30	3.78	498.91	497.02	0.0082	1.89	4.1	0.26	0.26	~	4-5	11.00	1.22	2.64	3.22	3.22	7.39
AI 23	FE 22	110.00	12" RCP	0.066	495.82	488.68	504.30	~	7.28	493.95	491.27	0.0244	2.68	7.1	0.78	0.84	~	4-5	11.00	0.89	2.64	2.35	5.57	9.16
EX AI 21	EX AI 21	34.10	36" RCP	0.01	483.98	483.45	492.13	492.90	4.37	486.71	482.45	0.0076	0.26	8.2	1.05	1.05	~	Total To Basin			58.20	58.20	66.66	
EX AI 21	EX FE 21	117.97	36" RCP	0.011	483.45	482.21	492.90	~	6.45	486.13	485.21	0.0078	0.92	8.3	1.07	0.04	~	4-5	11.00	0.25	2.64	0.66	58.86	69.91

↑ FULL 512.27

↑ FULL 503.99

↑ FULL 489.74

↑ FULL 485.92

↑ INSIDE TOP OF PIPE

↑ FULL 506.82

↑ FULL 497.02

↑ 15' H.W. IN BASIN

↑ FULL 489.96

↑ FULL 482.45

↑ FULL 485.21

↑ INSIDE TOP OF PIPE