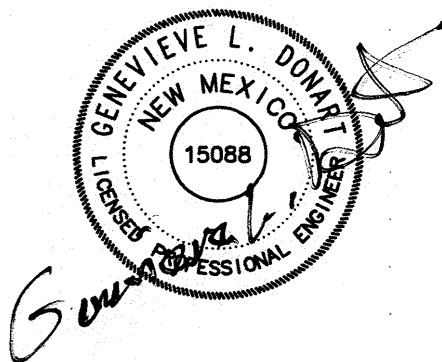


DECEMBER 21, 2023

SUPPLEMENTAL INFORMATION

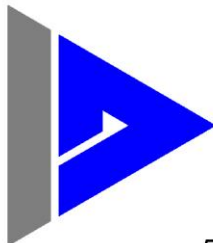
for

ASPIRE SUBDIVISION UNITS 3 & 4



by

Isaacson &^{EST 1990}
Arfman, Inc.
Civil Engineering Consultants



128 Monroe Street NE
Albuquerque, NM 87108
505-268-8828 | www.iacivil.com

AHYMO PROGRAM (AHYMO-S4) - Version: S4.01a - Rel: 01a
RUN DATE (MON/DAY/YR) = 12/19/2023
START TIME (HR:MIN:SEC) = 14:11:21 USER NO.= AHYMO_Temp_User:20122010
INPUT FILE = S\AHYMO UNITS 3&4 ESC STUDY\2year - 100 percent c study\2591-2yr storm study.DAT

*S ASPIRE UNITS 3&4
*S CONSTRUCTION CONDITIONS
*S 2-YR, 24-HR STORM
*S 2591-2yr storm study.DAT
*S DECEMBER 2023
*S ISAACSON & ARFMAN, INC.
*S*****

START RAINFALL BEGINS AT 0.0 HRS
RAINFALL TYPE=2 RAIN QUARTER=0 RAIN ONE=0.711
RAIN SIX=0.992 RAIN DAY=1.23 DT=0.05HR

24-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1
DT = 0.050000 HOURS END TIME = 24.000002 HOURS

0.0000	0.0019	0.0038	0.0058	0.0081	0.0103	0.0129
0.0166	0.0226	0.0289	0.0355	0.0426	0.0498	0.0572
0.0648	0.0725	0.0809	0.0897	0.0991	0.1091	0.1194
0.1332	0.1488	0.1681	0.1938	0.2227	0.2727	0.3504
0.4835	0.5771	0.6508	0.6879	0.7204	0.7438	0.7624
0.7785	0.7904	0.8013	0.8103	0.8192	0.8281	0.8362
0.8438	0.8506	0.8571	0.8635	0.8696	0.8746	0.8774
0.8801	0.8828	0.8853	0.8877	0.8902	0.8925	0.8949
0.8971	0.8993	0.9015	0.9036	0.9057	0.9077	0.9097
0.9116	0.9136	0.9155	0.9173	0.9191	0.9209	0.9227
0.9244	0.9261	0.9278	0.9295	0.9311	0.9328	0.9344
0.9360	0.9376	0.9392	0.9407	0.9422	0.9437	0.9452
0.9467	0.9482	0.9497	0.9511	0.9525	0.9539	0.9553
0.9567	0.9581	0.9594	0.9608	0.9621	0.9634	0.9647
0.9660	0.9673	0.9686	0.9699	0.9711	0.9724	0.9736
0.9748	0.9760	0.9772	0.9784	0.9796	0.9808	0.9819
0.9831	0.9842	0.9854	0.9865	0.9876	0.9887	0.9898
0.9909	0.9920	0.9931	0.9942	0.9953	0.9963	0.9974
0.9985	0.9996	1.0006	1.0017	1.0028	1.0038	1.0049
1.0059	1.0070	1.0081	1.0091	1.0102	1.0112	1.0123
1.0133	1.0143	1.0154	1.0164	1.0174	1.0185	1.0195
1.0205	1.0216	1.0226	1.0236	1.0246	1.0256	1.0266
1.0276	1.0287	1.0297	1.0307	1.0317	1.0327	1.0337
1.0347	1.0356	1.0366	1.0376	1.0386	1.0396	1.0406
1.0415	1.0425	1.0435	1.0445	1.0454	1.0464	1.0474
1.0483	1.0493	1.0502	1.0512	1.0521	1.0531	1.0540
1.0550	1.0559	1.0569	1.0578	1.0587	1.0597	1.0606
1.0615	1.0625	1.0634	1.0643	1.0652	1.0661	1.0670

1.0680	1.0689	1.0698	1.0707	1.0716	1.0725	1.0734
1.0743	1.0752	1.0761	1.0769	1.0778	1.0787	1.0796
1.0805	1.0813	1.0822	1.0831	1.0840	1.0848	1.0857
1.0866	1.0874	1.0883	1.0891	1.0900	1.0908	1.0917
1.0925	1.0934	1.0942	1.0950	1.0959	1.0967	1.0975
1.0984	1.0992	1.1000	1.1008	1.1017	1.1025	1.1033
1.1041	1.1049	1.1057	1.1065	1.1073	1.1081	1.1089
1.1097	1.1105	1.1113	1.1121	1.1129	1.1137	1.1144
1.1152	1.1160	1.1168	1.1175	1.1183	1.1191	1.1198
1.1206	1.1213	1.1221	1.1229	1.1236	1.1244	1.1251
1.1259	1.1266	1.1273	1.1281	1.1288	1.1295	1.1303
1.1310	1.1317	1.1325	1.1332	1.1339	1.1346	1.1353
1.1360	1.1367	1.1374	1.1382	1.1389	1.1396	1.1403
1.1409	1.1416	1.1423	1.1430	1.1437	1.1444	1.1451
1.1457	1.1464	1.1471	1.1478	1.1484	1.1491	1.1498
1.1504	1.1511	1.1517	1.1524	1.1530	1.1537	1.1543
1.1550	1.1556	1.1563	1.1569	1.1575	1.1582	1.1588
1.1594	1.1600	1.1607	1.1613	1.1619	1.1625	1.1631
1.1637	1.1644	1.1650	1.1656	1.1662	1.1668	1.1674
1.1680	1.1685	1.1691	1.1697	1.1703	1.1709	1.1715
1.1720	1.1726	1.1732	1.1738	1.1743	1.1749	1.1755
1.1760	1.1766	1.1771	1.1777	1.1782	1.1788	1.1793
1.1799	1.1804	1.1810	1.1815	1.1820	1.1826	1.1831
1.1836	1.1841	1.1847	1.1852	1.1857	1.1862	1.1867
1.1872	1.1877	1.1882	1.1887	1.1892	1.1897	1.1902
1.1907	1.1912	1.1917	1.1922	1.1927	1.1932	1.1936
1.1941	1.1946	1.1951	1.1955	1.1960	1.1965	1.1969
1.1974	1.1978	1.1983	1.1987	1.1992	1.1996	1.2001
1.2005	1.2010	1.2014	1.2018	1.2023	1.2027	1.2031
1.2036	1.2040	1.2044	1.2048	1.2052	1.2056	1.2061
1.2065	1.2069	1.2073	1.2077	1.2081	1.2085	1.2089
1.2093	1.2097	1.2100	1.2104	1.2108	1.2112	1.2116
1.2119	1.2123	1.2127	1.2130	1.2134	1.2138	1.2141
1.2145	1.2148	1.2152	1.2156	1.2159	1.2162	1.2166
1.2169	1.2173	1.2176	1.2179	1.2183	1.2186	1.2189
1.2192	1.2196	1.2199	1.2202	1.2205	1.2208	1.2211
1.2214	1.2218	1.2221	1.2224	1.2227	1.2229	1.2232
1.2235	1.2238	1.2241	1.2244	1.2247	1.2249	1.2252
1.2255	1.2258	1.2260	1.2263	1.2266	1.2268	1.2271
1.2273	1.2276	1.2278	1.2281	1.2283	1.2286	1.2288
1.2291	1.2293	1.2295	1.2298	1.2300		

*S BASIN 100
 COMPUTE NM HYD

ID=1 HYD NO=101 AREA= 0.0553 SQ MI
 PER A=0 PER B=0 PER C=100 PER D=0
 TP=-0.1333 HR MASS RAIN=-1

K = 0.113396HR TP = 0.133300HR K/TP RATIO = 0.850680 SHAPE CONSTANT, N = 4.184160
UNIT PEAK = 152.36 CFS UNIT VOLUME = 1.002 B = 367.27 P60 = .71100
AREA = 0.055300 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 101.00

RUNOFF VOLUME = 0.17609 INCHES = 0.5193 ACRE-FEET
PEAK DISCHARGE RATE = 22.41 CFS AT 1.550 HOURS BASIN AREA = 0.0553 SQ. MI.

22,621 CF

REMOVED FROM 100-YR PEAK TO
DETERMINE DIFFERENCE TO DISCHARGE

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 14:11:21

AHYMO PROGRAM (AHYMO-S4) - Version: S4.01a - Rel: 01a
 RUN DATE (MON/DAY/YR) = 12/20/2023
 START TIME (HR:MIN:SEC) = 09:27:34 USER NO.= AHYMO_Temp_User:20122010
 INPUT FILE = 0\CALCS\AHYMO UNITS 3&4 ESC STUDY\100 percent c study\2591-100yr storm study.DAT

*S ASPIRE UNITS 3&4
 *S CONSTRUCTION CONDITIONS
 *S 100-YR, 24-HR STORM
 *S 2591-100yr storm study.DAT
 *S DECEMBER 2023
 *S ISAACSON & ARFMAN, INC.
 *S*****

START RAINFALL BEGINS AT 0.0 HRS
 RAINFALL TYPE=2 RAIN QUARTER=0 RAIN ONE=1.81
 RAIN SIX=2.31 RAIN DAY=2.64 DT=0.05HR

24-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1

DT =	0.050000 HOURS			END TIME =			24.000002 HOURS
0.0000	0.0033	0.0068	0.0104	0.0144	0.0185	0.0232	
0.0297	0.0401	0.0512	0.0627	0.0753	0.0880	0.1011	
0.1146	0.1284	0.1436	0.1595	0.1767	0.1999	0.2260	
0.2611	0.3008	0.3499	0.4154	0.4891	0.6163	0.8141	
1.1529	1.3911	1.5790	1.6734	1.7561	1.8155	1.8628	
1.9041	1.9342	1.9619	1.9848	2.0032	2.0193	2.0338	
2.0474	2.0594	2.0708	2.0819	2.0926	2.1015	2.1065	
2.1113	2.1162	2.1207	2.1251	2.1295	2.1338	2.1380	
2.1420	2.1459	2.1498	2.1536	2.1574	2.1610	2.1645	
2.1680	2.1715	2.1749	2.1781	2.1814	2.1845	2.1877	
2.1908	2.1938	2.1968	2.1998	2.2028	2.2057	2.2086	
2.2114	2.2142	2.2170	2.2197	2.2224	2.2251	2.2278	
2.2304	2.2330	2.2356	2.2381	2.2406	2.2431	2.2456	
2.2480	2.2504	2.2528	2.2552	2.2575	2.2599	2.2622	
2.2645	2.2667	2.2690	2.2712	2.2734	2.2756	2.2777	
2.2799	2.2820	2.2841	2.2862	2.2883	2.2903	2.2924	
2.2944	2.2964	2.2984	2.3004	2.3023	2.3043	2.3062	
2.3081	2.3100	2.3109	2.3118	2.3127	2.3137	2.3146	
2.3155	2.3164	2.3173	2.3182	2.3192	2.3201	2.3210	
2.3219	2.3228	2.3238	2.3247	2.3256	2.3265	2.3274	
2.3283	2.3293	2.3302	2.3311	2.3320	2.3329	2.3338	
2.3348	2.3357	2.3366	2.3375	2.3384	2.3393	2.3403	
2.3412	2.3421	2.3430	2.3439	2.3448	2.3458	2.3467	
2.3476	2.3485	2.3494	2.3503	2.3513	2.3522	2.3531	
2.3540	2.3549	2.3558	2.3568	2.3577	2.3586	2.3595	
2.3604	2.3613	2.3623	2.3632	2.3641	2.3650	2.3659	
2.3668	2.3678	2.3687	2.3696	2.3705	2.3714	2.3723	
2.3733	2.3742	2.3751	2.3760	2.3769	2.3778	2.3788	
2.3797	2.3806	2.3815	2.3824	2.3833	2.3843	2.3852	
2.3861	2.3870	2.3879	2.3888	2.3898	2.3907	2.3916	
2.3925	2.3934	2.3943	2.3953	2.3962	2.3971	2.3980	
2.3989	2.3998	2.4008	2.4017	2.4026	2.4035	2.4044	
2.4053	2.4063	2.4072	2.4081	2.4090	2.4099	2.4108	
2.4118	2.4127	2.4136	2.4145	2.4154	2.4163	2.4173	
2.4182	2.4191	2.4200	2.4209	2.4218	2.4228	2.4237	
2.4246	2.4255	2.4264	2.4273	2.4283	2.4292	2.4301	
2.4310	2.4319	2.4328	2.4338	2.4347	2.4356	2.4365	
2.4374	2.4383	2.4393	2.4402	2.4411	2.4420	2.4429	
2.4438	2.4448	2.4457	2.4466	2.4475	2.4484	2.4493	
2.4503	2.4512	2.4521	2.4530	2.4539	2.4548	2.4558	

2.4567	2.4576	2.4585	2.4594	2.4603	2.4613	2.4622
2.4631	2.4640	2.4649	2.4658	2.4668	2.4677	2.4686
2.4695	2.4704	2.4713	2.4723	2.4732	2.4741	2.4750
2.4759	2.4768	2.4778	2.4787	2.4796	2.4805	2.4814
2.4823	2.4833	2.4842	2.4851	2.4860	2.4869	2.4878
2.4888	2.4897	2.4906	2.4915	2.4924	2.4933	2.4943
2.4952	2.4961	2.4970	2.4979	2.4988	2.4998	2.5007
2.5016	2.5025	2.5034	2.5043	2.5053	2.5062	2.5071
2.5080	2.5089	2.5098	2.5108	2.5117	2.5126	2.5135
2.5144	2.5153	2.5163	2.5172	2.5181	2.5190	2.5199
2.5208	2.5218	2.5227	2.5236	2.5245	2.5254	2.5263
2.5273	2.5282	2.5291	2.5300	2.5309	2.5318	2.5328
2.5337	2.5346	2.5355	2.5364	2.5373	2.5383	2.5392
2.5401	2.5410	2.5419	2.5428	2.5438	2.5447	2.5456
2.5465	2.5474	2.5483	2.5493	2.5502	2.5511	2.5520
2.5529	2.5538	2.5548	2.5557	2.5566	2.5575	2.5584
2.5593	2.5603	2.5612	2.5621	2.5630	2.5639	2.5648
2.5658	2.5667	2.5676	2.5685	2.5694	2.5703	2.5713
2.5722	2.5731	2.5740	2.5749	2.5758	2.5768	2.5777
2.5786	2.5795	2.5804	2.5813	2.5823	2.5832	2.5841
2.5850	2.5859	2.5868	2.5878	2.5887	2.5896	2.5905
2.5914	2.5923	2.5933	2.5942	2.5951	2.5960	2.5969
2.5978	2.5988	2.5997	2.6006	2.6015	2.6024	2.6033
2.6043	2.6052	2.6061	2.6070	2.6079	2.6088	2.6098
2.6107	2.6116	2.6125	2.6134	2.6143	2.6153	2.6162
2.6171	2.6180	2.6189	2.6198	2.6208	2.6217	2.6226
2.6235	2.6244	2.6253	2.6263	2.6272	2.6281	2.6290
2.6299	2.6308	2.6318	2.6327	2.6336	2.6345	2.6354
2.6363	2.6373	2.6382	2.6391	2.6400		

*S BASIN 100
COMPUTE NM HYD

ID=1 HYD NO=101 AREA= 0.0553 SQ MI
PER A=0 PER B=0 PER C=100 PER D=0
TP=-0.1333 HR MASS RAIN=-1

K = 0.105190HR TP = 0.133300HR K/TP RATIO = 0.789122 SHAPE CONSTANT, N = 4.547253
UNIT PEAK = 161.85 CFS UNIT VOLUME = 1.002 B = 390.14 P60 = 1.8100
AREA = 0.055300 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=1 CODE=1

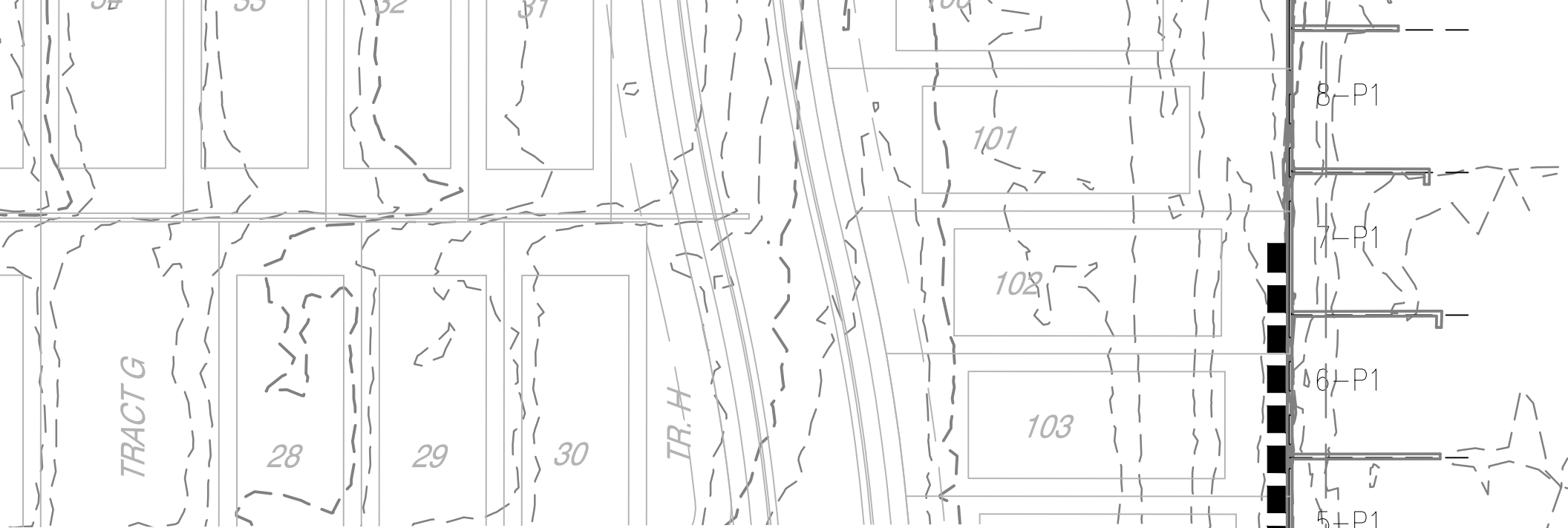
PARTIAL HYDROGRAPH 101.00

RUNOFF VOLUME = 1.05636 INCHES = 3.1155 ACRE-FEET
PEAK DISCHARGE RATE = 107.66 CFS AT 1.500 HOURS BASIN AREA = 0.0553 SQ. MI.

FOR STANDPIPE SIZING=100YR CFS-2YR CFS
(107.66-22.41=85.25 CFS)

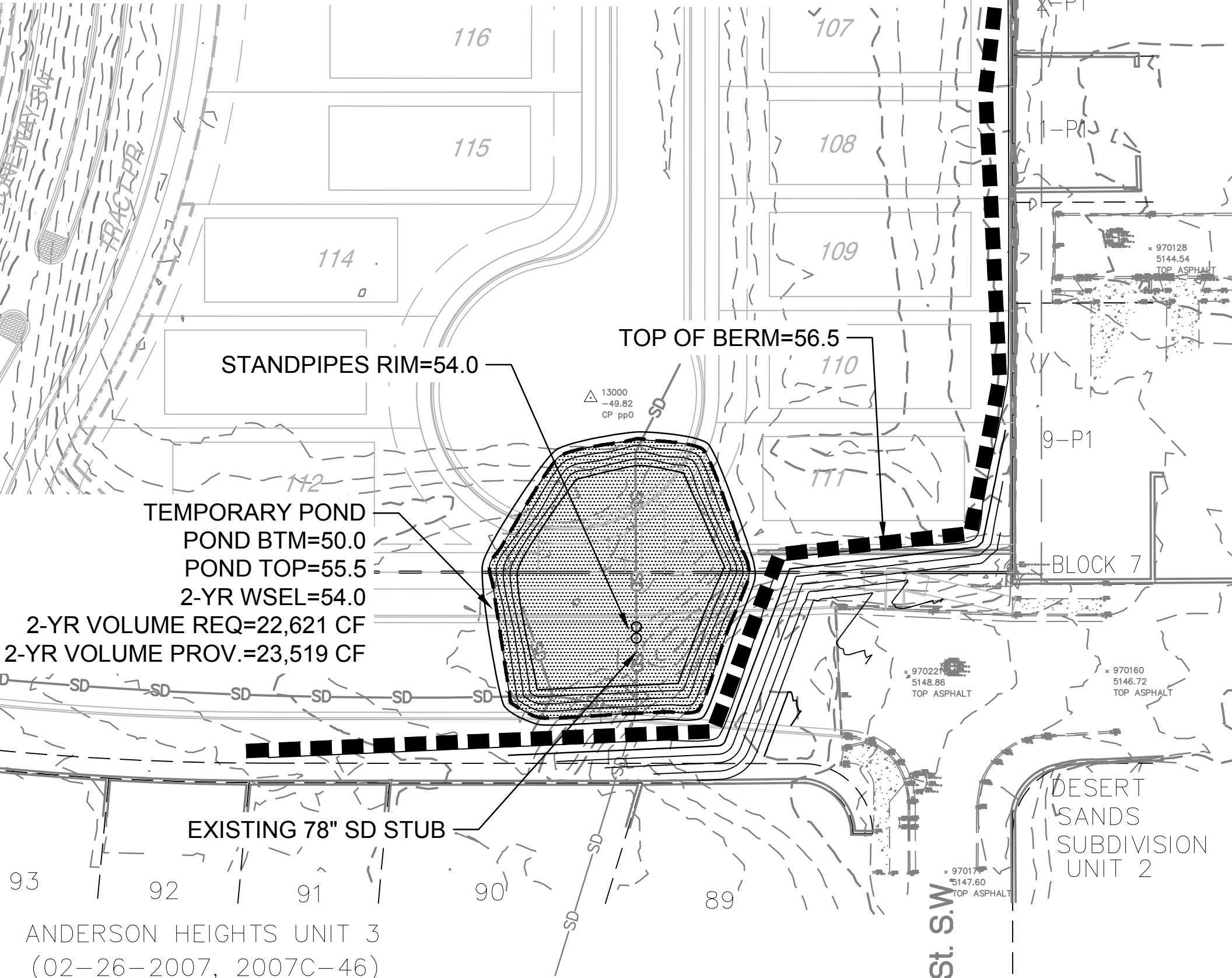
FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 09:27:34



STAGE STORAGE TABLE

ELEV	AREA (sq. ft.)	DEPT H (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)	CONIC INC. VOL. (cu. ft.)	CONIC TOTAL VOL. (cu. ft.)
5,150.00	4,570.01	N/A	N/A	0.00	N/A	0.00
5,151.00	5,179.14	1.00	4874.57	4874.57	4871.40	4871.40
5,152.00	5,843.88	1.00	5511.51	10386.08	5508.17	10379.57
5,153.00	6,560.72	1.00	6202.30	16588.38	6198.84	16578.41
5,154.00	7,326.81	1.00	6943.77	23532.15	6940.24	23518.65
5,155.00	8,254.80	1.00	7790.80	31322.95	7786.19	31304.84



ASPIRE SUBDIVISION
TEMPORARY ESC POND/BERM

STANDPIPE CALCULATIONS

(Using Orifice Equation)

Project Name: **ASPIRE TEMP POND FOR ESC**

Project #: **2600**

100-year WSEL = **55.5** ft

Bottom of Pond ELEV = **50** ft

Maximum discharge (Q_{max}) = **85.3** cfs

Diameter of Standpipe = **54** in

Top of Standpipe = **54** ft

Overflow Weir Capacity:

$$Q = C * L * H^{1.5}$$

C = 3.33

Q_{max} = 86.49 cfs

Orifice Equation: $Q = CA(2gH)^{1/2}$

C = 0.60 (sharp edged hole)

g = 32.2 ft/s²

INV of Standpipe = **43** ft

Diameter of Discharge Pipe = **54** in

Q AT VARIED WSEL FOR AHYMO

WSEL	TOTAL DISCHARGE (CFS)	CAPACITY OF DISCHARGE PIPE BY ORIFICE (CFS)	MOST LIMITING DISCHARGE
55.5	86.49	245.17	86.49
		#NUM!	#NUM!

MIN #OF 54" STANDPIPES = **1**

STANDPIPE CALCULATIONS

(Using Orifice Equation)

Project Name: **ASPIRE TEMP POND FOR ESC**

Project #: **2600**

100-year WSEL = 55.5 ft
 Bottom of Pond ELEV = 50 ft
 Maximum discharge (Q_{max}) = 85.3 cfs
 Diameter of Standpipe = 36 in

Top of Standpipe = 54 ft

Overflow Weir Capacity:

$$Q = C * L * H^{1.5}$$

C = 3.33
 $Q_{max} = 57.66$ cfs

Orifice Equation: $Q = CA(2gH)^{1/2}$

C = 0.60 (sharp edged hole)
 g = 32.2 ft/s²

INV of Standpipe = 43 ft
 Diameter of Discharge Pipe = 36 in

Q AT VARIED WSEL FOR AHYMO			
WSEL	TOTAL DISCHARGE (CFS)	CAPACITY OF DISCHARGE PIPE BY ORIFICE (CFS)	MOST LIMITING DISCHARGE
55.5	57.66	112.88	57.66

MIN #OF 36" STANDPIPES = 2