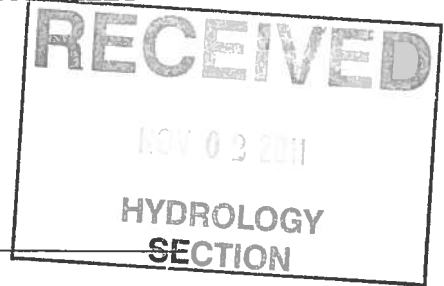


DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(Rev. 12/05)

PROJECT TITLE: **Old Town Gallery,**
ZONE MAP/DRG. FILE # J-13
DRB#: NA EPC#: NA WORK ORDER#: NA

J-13/D091



LEGAL DESCRIPTION: Tract 206 MRGCD Map No. 38
CITY ADDRESS: 424 San Felipe St. NW

ENGINEERING FIRM: GUY JACKSON & ASSOCIATES, LLC
ADDRESS: 10522 FLORENCE AVE. NE
CITY, STATE: Albuquerque, NM

CONTACT: GUY JACKSON, PE
PHONE: 235-1426
ZIP CODE: 87122

OWNER: Rumi Joe Muenala
ADDRESS: P.O. Box 67
CITY, STATE: Pacific, MO

CONTACT: Rumi Joe Muenala
PHONE: 504-319-6448
ZIP CODE: 63069

ARCHITECT: Studio Southwest Architects, Inc.
ADDRESS: 2101 Mountain Rd. NW
CITY, STATE: Albuquerque

CONTACT: Clint Wilsey
PHONE: 342-6200
ZIP CODE: 87104

SURVEYOR: High Mesa Consulting Group.
ADDRESS: 6010 Midway Park NE
CITY, STATE: ALBUQUERQUE, NM

CONTACT: Chuck Cala
PHONE: 345-4250
ZIP CODE: 87109

CONTRACTOR: SEE Architect
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☐ DRAINAGE PLAN 1st SUBMITTAL
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL G & D PLAN
☒ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERT (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT
☐ ENGINEER/ARCHITECT CERT (TCL)
☐ ENGINEER/ARCHITECT CERT (DRB S.P.)
☐ ENGINEER/ARCHITECT CERT (AA)
☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL SOUGHT:

☐ SIA/FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY (PERM)
☐ CERTIFICATE OF OCCUPANCY (TEMP)
☒ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ OTHER (SPECIFY) _____

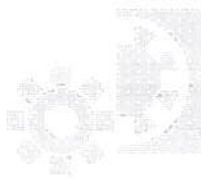
WAS A PRE-DESIGN CONFERENCE ATTENDED:

☒ YES
☐ NO
☐ COPY PROVIDED

SUBMITTED BY: GUY JACKSON, PE DATE: 11-2-11

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.



GUY JACKSON
AND ASSOCIATES, LLC
CIVIL ENGINEERING

November 2, 2011

Shahab Biazar, PE
Senior Engineer, Planning Dept.
Development & Building Services
PO Box 1293
Albuquerque, New Mexico 87103

**Re: Our Old Town Gallery -424 San Felipe NW, Albuquerque, NM
(Zone Atlas Map J-13)**

Dear Paul:

Attached for building permit approval are the following:

- One (1) drainage information sheet
- One (1) copy of the overall grading plan
- One (1) copy of the utility plan (showing pump)
- One (1) copy of the drainage calcs/spreadsheet
- One (1) copy of the pump selection data & supporting pond calcs.

The project is located at 424 San Felipe NW. The proposed improvements include the construction of a 2544sf building north of the existing building as shown on the attached plan. This is an infill site.

I've addressed your comments listed in your September 8, 2011 letter as follows:

Comment 1): I updated note #2 under the "Notice to the Contractors" to include update #8 and the signature block as requested.

Comment 2): I included the pond volume calculations for the proposed ponding/gravel parking lot area as requested.

Comment 3): The 100 yr water surface elevation WSEL has been shown as the 58.77 contour. The emergency spillway will be to the north of the new structure at elevation 59.84 and at the existing drive south of the existing building at 59.80.

Comment 4): Due to the small size of the basin & pond, pond routing calculations were not provided. I did however provide the hydrograph for the pond showing the Q release via pump and the related required and provided volumes.

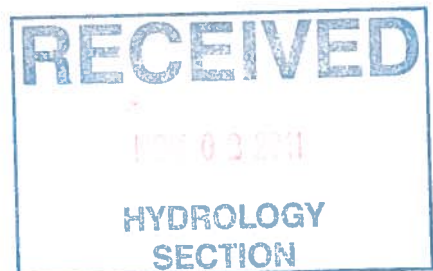
Comment 5) I added a construction note for the 2" X 4" reducer transition as requested.

Please contact me if you have any questions or comments.

Sincerely,

GUY JACKSON & ASSOCIATES, LLC

Guy C. Jackson, PE
President
10522 Florence Ave. NE
Albuquerque, NM 87122
505-235-1426



PROJECT Old Town Gallery
PROJECT NO.
DATE 08/25/11
BY GJA

DPM Section 22.2 - Hydrology

Part A-Watersheds less than 40 acres.
January, 1993

INSTRUCTIONS

- * Spread sheet requires three input areas (dark cells):
- Location
>A.1 Precipitation Zone
>A.3 Land Treatments
- * Values from the tables are automatically placed using "if" statements.
* Table values should be checked for correctness for each use.

SUMMARY

Location	Basin1Dev	Basin2Dev	TOTALS
Precipitation Zone	2	2	2
Land Area	0.19	0.18	0.37
Excess Precipitation Volume			
>>> 100-year 6-hour (design)			
10-year 6-hour	0.03	0.0241	0.06
2-year 6-hour	0.02	0.01	0.03
100-year 24-hour	0.01	0.01	0.02
Peak Discharge Rates (DPM)	0.04	0.03	0.07
>>> Q100 (design)			
Q10	0.89	0.70	1.60
Q2	0.60	0.43	1.03
	0.35	0.22	0.57

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS

LOCATION		Basin1Dev		Basin2Dev					
>A.1 PRECIPITATION ZONE (from Table A-1)		2	2	2	2	2	2	2	2
TOTALS									
>A.2 DEPTHS									
(from Table A-2)									
100-YEAR STORM (P60)		2.01	2.01	2.01	2.01	2.01	2.01	2.01	2.01
100-YEAR STORM (P360)		2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35
100-YEAR STORM (P1440)		2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75
10-YEAR (P360) (Calculated: P360*RPF10)		1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57
2-YEAR (P360) (Calculated: P360*RPF2)		1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
TOTALS									
>A.3 LAND TREATMENTS (AI)									
Treatment A		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Treatment B		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Treatment C		0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.10
Treatment D		0.19	0.08	0.00	0.00	0.00	0.00	0.00	0.27
Total Area		0.19	0.18	0.00	0.00	0.00	0.00	0.00	0.37
TOTALS									
>A.4 ABSTRACTIONS									
CALCULATIONS FOLLOW									
		See A.5	See A.5	See A.5	See A.5	See A.5	See A.5	See A.5	See A.5

INPUT AND CALCULATIONS (CONT)

>A.5 EXCESS PRECIPITATION 6 HOUR AND 24 HOUR (EI)

from Table A-8

TOTALS									
100-year 6-hour									
Treatment A	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	inches
Treatment B	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	inches
Treatment C	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	inches
Treatment D	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	inches
WEIGHTED E (Sum EI*AI/A)	2.12	1.59	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	inches
VOLUME V100:6h (E*A)	0.03	0.0241	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	acre-ft.
	1,462.16	1,049.90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	ft^3
=====									
10-year 6-hour									
Treatment A	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	inches
Treatment B	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	inches
Treatment C	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	inches
Treatment D	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	inches
WEIGHTED E (Sum EI*AI/A)	1.34	0.90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	inches
VOLUME V10:6h (E*A)	0.02	0.01	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	acre-ft.
	924.20	594.66	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	ft^3
=====									
2-year 6-hour									
Treatment A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches
Treatment B	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	inches
Treatment C	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	inches
Treatment D	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	inches
WEIGHTED E (Sum EI*AI/A)	0.79	0.45	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	inches
VOLUME V2:6h (E*A)	0.01	0.01	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	acre-ft.
	544.86	295.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	ft^3
=====									
100-year 24-hour									
VOLUME V100:24h									
(V100-6h+Ad*P1440-P360)/12)	0.04	0.03	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	acre-ft.
	1,738.04	1,172.31	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	ft^3
=====									

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS (CONT)

>A.6 PEAK DISCHARGE RATE FOR SMALL WATERSHEDS (QI) from Table A-9									
100-year									
Treatment A	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	cfs/acre
Treatment B	2.28	2.28	2.28	2.28	2.28	2.28	2.28	2.28	cfs/acre
Treatment C	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	cfs/acre
Treatment D	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	cfs/acre
Q100 (Sum QI*AI)	0.89	0.70	0.00	0.00	0.00	0.00	0.00	0.00	cfs
10-year									
Treatment A	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	cfs/acre
Treatment B	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	cfs/acre
Treatment C	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	cfs/acre
Treatment D	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	cfs/acre
Q10 (Sum QI*AI)	0.60	0.43	0.00	0.00	0.00	0.00	0.00	0.00	cfs
2-year									
Treatment A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	cfs/acre
Treatment B	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	cfs/acre
Treatment C	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	cfs/acre
Treatment D	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	cfs/acre
Q2 (Sum QI*AI)	0.35	0.22	0.00	0.00	0.00	0.00	0.00	0.00	cfs

CALCULATIONS FOLLOW

Existing hyd.

GJA,LLC

Civil Engineering

PROJECT Old Town Gallery
PROJECT NO.
DATE 08/25/11
BY GJA

DPM Section 22.2 - Hydrology

Part A-Watersheds less than 40 acres.
January, 1993

INSTRUCTIONS

- * Spread sheet requires three input areas (dark cells):
Location
>A.1 Precipitation Zone
>A.3 Land Treatments
- * Values from the tables are automatically placed using "if" statements.
- * Table values should be checked for correctness for each use.

SUMMARY

Location	0	Basin1	2	Basin2	2	2	2	TOTALS	2	2	acres
Precipitation Zone											
Land Area		0.10		0.27		0.00		0.00		0.37	
Excess Precipitation Volume		0.02		0.03		#DIV/0!		#DIV/0!		0.05	acre-ft.
>>> 100-year 6-hour (design)		0.01		0.02		#DIV/0!		#DIV/0!		0.03	acre-ft.
10-year 6-hour		0.01		0.01		#DIV/0!		#DIV/0!		0.01	acre-ft.
2-year 6-hour		0.02		0.04		#DIV/0!		#DIV/0!		0.06	acre-ft.
100-year 24-hour											
Peak Discharge Rates (DPM)		0.48		0.99		0.00		0.00		1.47	cfs
>>> Q100 (design)		0.32		0.59		0.00		0.00		0.91	cfs
Q10		0.19		0.27		0.00		0.00		0.46	cfs
Q2											

CALCULATIONS FOLLOW

Existing hyd.

INPUT AND CALCULATIONS

LOCATION		Basin1		Basin2			
>A.1 PRECIPITATION ZONE (from Table A-1)		2	2	2	2	2	2
>A.2 DEPTHS						TOTALS	
(from Table A-2)							
100-YEAR STORM (P60)		2.01	2.01	2.01	2.01	2.01	inches
100-YEAR STORM (P360)		2.35	2.35	2.35	2.35	2.35	inches
100-YEAR STORM (P1440)		2.75	2.75	2.75	2.75	2.75	inches
10-YEAR (P360) (Calculated: P360*RPF10)		1.57	1.57	1.57	1.57	1.57	inches
2-YEAR (P360) (Calculated: P360*RPF2)		1.02	1.02	1.02	1.02	1.02	inches
>A.3 LAND TREATMENTS (AI)							
Treatment A		0.00	0.00	0.00	0.00	0.00	acres
Treatment B		0.00	0.00	0.00	0.00	0.00	acres
Treatment C		0.00	0.18	0.00	0.00	0.00	acres
Treatment D		0.10	0.09	0.00	0.00	0.00	acres
Total Area		0.10	0.27	0.00	0.00	0.37	acres
>A.4 ABSTRACTIONS							
						See A.5	
						See A.5	
						See A.5	
						See A.5	
						See A.5	
						See A.5	
						See A.5	
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</							

Existing hyd.

INPUT AND CALCULATIONS (CON'T)

>A.5 EXCESS PRECIPITATION 6 HOUR AND 24 HOUR (EI)

from Table A-8

100-year 6-hour									
									TOTALS
Treatment A	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	inches
Treatment B	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	inches
Treatment C	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	inches
Treatment D	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	inches
WEIGHTED E (Sum EI*AI/A)	2.12	1.45	#DIV/0!	#DIV/0!	#DIV/0!	1.64			inches
VOLUME V100:6h (E*A)	0.02	0.03	#DIV/0!	#DIV/0!	#DIV/0!	0.05			acre-ft.
	783.41	1,431.20	#DIV/0!	#DIV/0!	#DIV/0!	2,214.61			ft^3
=====									
10-year 6-hour									
Treatment A	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	inches
Treatment B	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	inches
Treatment C	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	inches
Treatment D	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	inches
WEIGHTED E (Sum EI*AI/A)	1.34	0.79	#DIV/0!	#DIV/0!	#DIV/0!	0.94			inches
VOLUME V10:6h (E*A)	0.01	0.02	#DIV/0!	#DIV/0!	#DIV/0!	0.03			acre-ft.
	495.18	775.94	#DIV/0!	#DIV/0!	#DIV/0!	1,271.12			ft^3
=====									
2-year 6-hour									
Treatment A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches
Treatment B	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	inches
Treatment C	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	inches
Treatment D	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	inches
WEIGHTED E (Sum EI*AI/A)	0.79	0.36	#DIV/0!	#DIV/0!	#DIV/0!	0.48			inches
VOLUME V2:6h (E*A)	0.01	0.01	#DIV/0!	#DIV/0!	#DIV/0!	0.01			acre-ft.
	291.93	353.74	#DIV/0!	#DIV/0!	#DIV/0!	645.67			ft^3
=====									
100-year 24-hour									
VOLUME V100:24h (V100-6h+Ad*P1440-P360)/12)	0.02	0.04	#DIV/0!	#DIV/0!	#DIV/0!	0.06			acre-ft.
	931.23	1,559.99	#DIV/0!	#DIV/0!	#DIV/0!	2,491.21			ft^3
=====									

CALCULATIONS FOLLOW

Existing hyd.

INPUT AND CALCULATIONS (CON'T)

>A.6 PEAK DISCHARGE RATE FOR SMALL WATERSHEDS (QI)
from Table A-9

		100-year				TOTALS	
Treatment A	1.56	1.56	1.56	1.56	1.56	1.56	cfs/acre
Treatment B	2.28	2.28	2.28	2.28	2.28	2.28	cfs/acre
Treatment C	3.14	3.14	3.14	3.14	3.14	3.14	cfs/acre
Treatment D	4.70	4.70	4.70	4.70	4.70	4.70	cfs/acre
Q100 (Sum QI*AI)		0.48	0.99	0.00	0.00	1.47	cfs
=====							
		10-year					
Treatment A	0.38	0.38	0.38	0.38	0.38	0.38	cfs/acre
Treatment B	0.95	0.95	0.95	0.95	0.95	0.95	cfs/acre
Treatment C	1.71	1.71	1.71	1.71	1.71	1.71	cfs/acre
Treatment D	3.14	3.14	3.14	3.14	3.14	3.14	cfs/acre
Q10 (Sum QI*AI)		0.32	0.59	0.00	0.00	0.91	cfs
=====							
		2-year					
Treatment A	0.00	0.00	0.00	0.00	0.00	0.00	cfs/acre
Treatment B	0.08	0.08	0.08	0.08	0.08	0.08	cfs/acre
Treatment C	0.60	0.60	0.60	0.60	0.60	0.60	cfs/acre
Treatment D	1.86	1.86	1.86	1.86	1.86	1.86	cfs/acre
Q2 (Sum QI*AI)		0.19	0.27	0.00	0.00	0.46	cfs
=====							

CALCULATIONS FOLLOW

WHPacific

NAME OF PROJECT / CALCULATION

OLD TOWN GALLERY

SHEET NO.

OF 1/2

COMPUTED BY:

CHECKED BY:

JOB/TASK NO.

DATE:

9/2/11

IDENTIFY/ADDRESS THESE ELEMENTS

1.0 SUBJECT

2.0 PURPOSE

3.0 REFERENCES

4.0 ASSUMPTIONS

5.0 CRITERIA / REQUIREMENTS

6.0 SKETCHES

7.0 CALCULATIONS

8.0 CONCLUSIONS

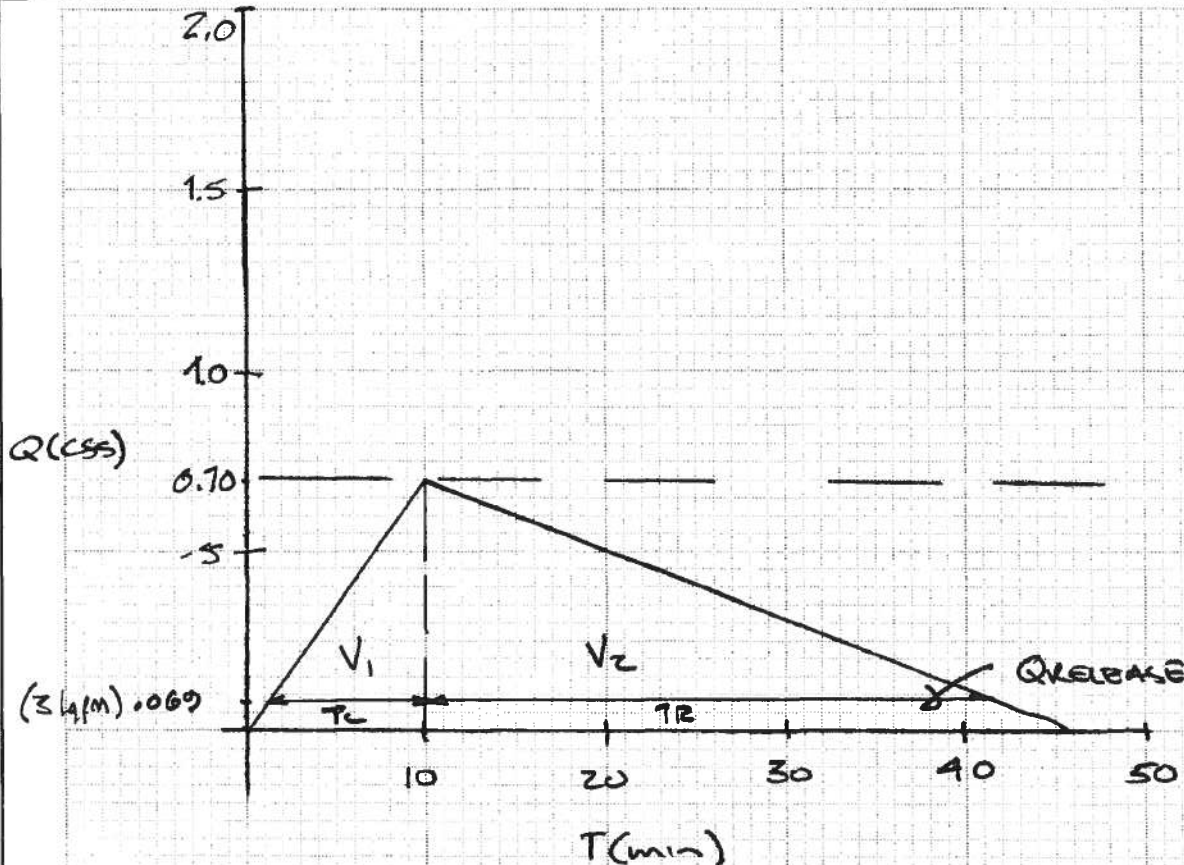
9.0 ATTACHMENTS

REVISION #

SUPERSEDES CALC TITLE

CHECKED BY:

DATED:



Hydrograph Calculations for storage (Basin 2)

$$Q_{100} = 0.70 \text{ cfs}$$

$$V_{100} = 1172 \text{ cfs}$$

$$V_1 = \frac{1}{2} Q_{100} T_c = \frac{1}{2} (0.70) 10 \text{ min} (60) = 210 \text{ cfs}$$

$$V_2 = V_{100} - V_1 = 1172 - 210 = 962 \text{ cfs}$$

$$V_2 = \frac{1}{2} (Q_{100}) T_r (60) \Rightarrow T_r = \frac{2V_2}{Q_{100}(60)} = \frac{2(962)}{0.70(60)} = \frac{1924}{42} = 45.8 \text{ min}$$

$$Q_{release} = 31 \text{ gpm} (1/448.83 \text{ gpm/cfs}) = 0.069 \text{ cfs} \quad \text{via hydraulic pump}$$

$$V_{req} = \frac{1}{2} (Q_{100} - Q_R)^2 \frac{(T_r + T_c)}{Q_{100}} (60)$$

$$\frac{1}{2} (0.70 - 0.069)^2 \frac{(45.8 + 10)}{0.70} (60) = 0.199 (4792.86) = 952 \text{ cfs}$$

$$V_{provided} = V_1 + V_2 = 1133 \text{ cfs (see next page)}$$

$$1133 \text{ cfs} \times 7.48 \text{ gal/cfs} = 8475 \text{ gal} \div 31 \text{ gal/min} = 273 \text{ min}$$

WHPacific

NAME OF PROJECT / CALCULATION

OLD TOWN GALLERY

SHEET NO.

OF 2/2

COMPUTED BY:

CHECKED BY:

JOB/TASK NO.

DATE:

10/31/11

IDENTIFY/ADDRESS
THESE ELEMENTS

1.0 SUBJECT

2.0 PURPOSE

3.0 REFERENCES

4.0 ASSUMPTIONS

5.0 CRITERIA / REQUIREMENTS

6.0 SKETCHES

7.0 CALCULATIONS

8.0 CONCLUSIONS

9.0 ATTACHMENTS

REVISION #

SUPERSEDES CALC TITLE

CHECKED BY:

DATED:

POND VOLUME CALCS

EL	AREA	VOL	ΣVOL
58.0	0	0	0
58.5	1818	$V_1 = 303 \text{ cfs}$	303 cfs
58.85	2924	$V_2 = 830 \text{ cfs}$	1133 cfs

$$V_1 = \frac{Bh}{3} = \frac{1818(1.5)}{3} = 303 \text{ cfs}$$

$$V_2 = \frac{1}{2}(A_1 + A_2)h = \frac{1}{2}(1818 + 2924)(1.35) = 830 \text{ cfs}$$

TOTAL volume available: $V_1 + V_2 = 1133 \text{ cfs}$

AREA = 952 cfs (see hydrograph calcs)

WSEL

$$\frac{1133 - 303}{1.35} = \frac{1133 - 952}{d}$$

$$d = 0.076$$

$$\text{WSEL} = 58.85 - 0.076 = 58.77'$$

Performance Data

W/D/V-A1

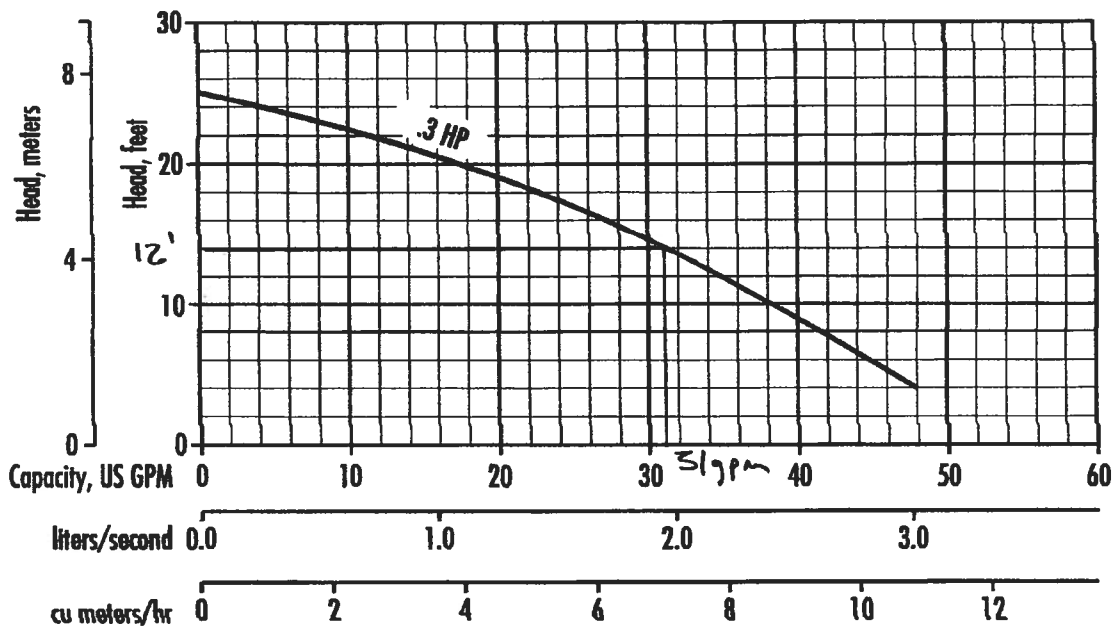
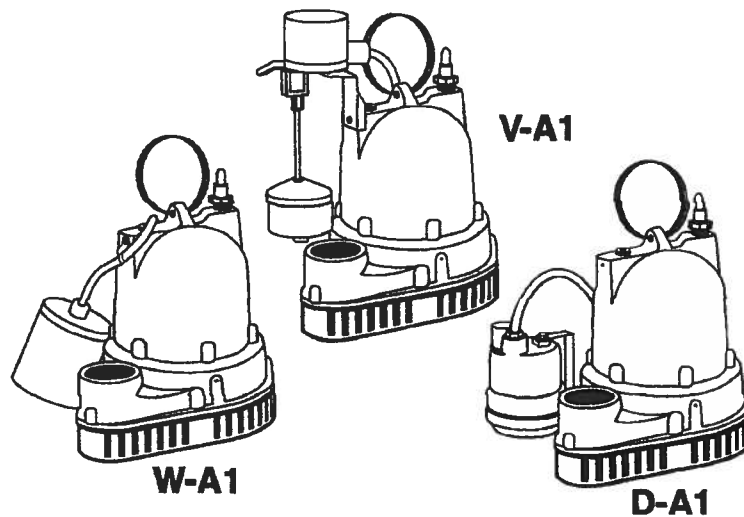
Wholesale Products Page: 6570-1

Section: Performance Data

Dated: January 2001

RPM: 1550

Discharge: 1-1/2" Solids: 1/2"



HEAD LOSSES: $H_{EL} = 5'$
 $H_{PIPE} = 9.0'$
 $\underline{14'}$ (135' - 1 1/2" PE)

The curves reflect maximum performance characteristics without exceeding full load (Nameplate) horsepower. All pumps have a service factor of 1.2. Operation is recommended in the bounded area with operational point within the curve limit. Performance curves are based on actual tests with clear water at 70° F. and 1280 feet site elevation.

Conditions of Service:

GPM: 31 TDH: 14'
 min

HYDROMATIC®

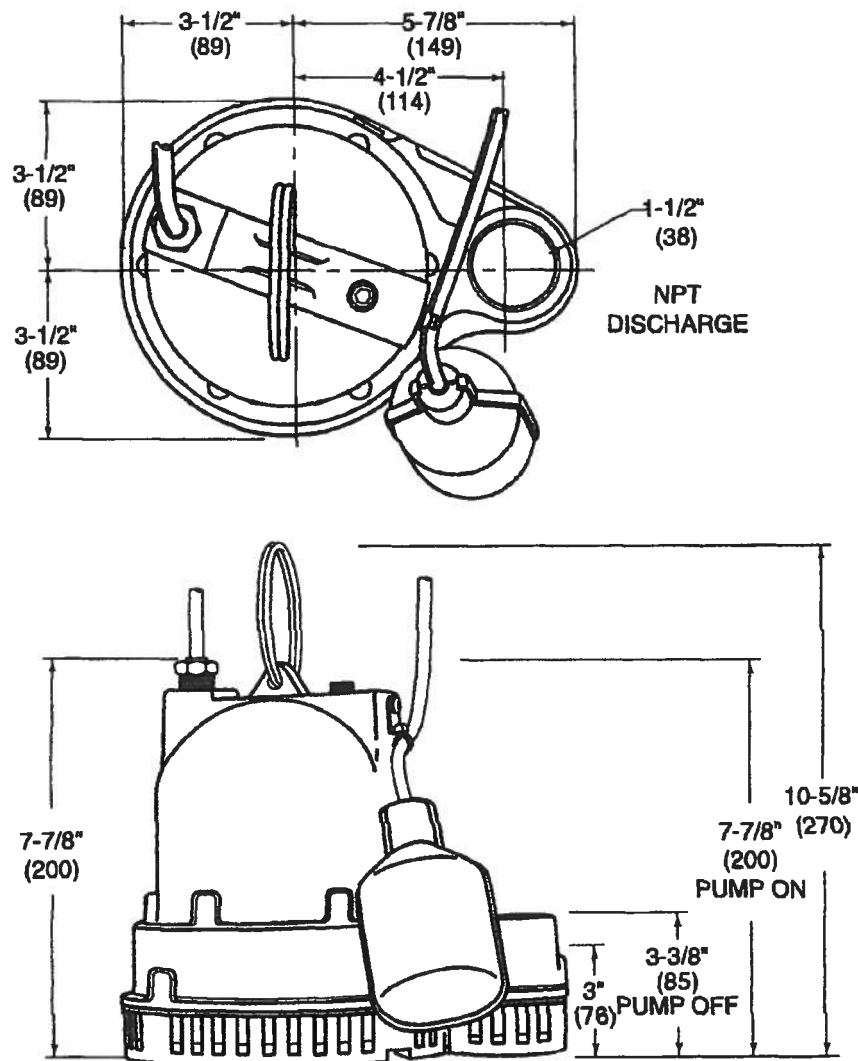
Dimensional Data

W/D/V-A1

Wholesale Products Page: 6570-2

Section: Dimensional Data

Dated: January 2001



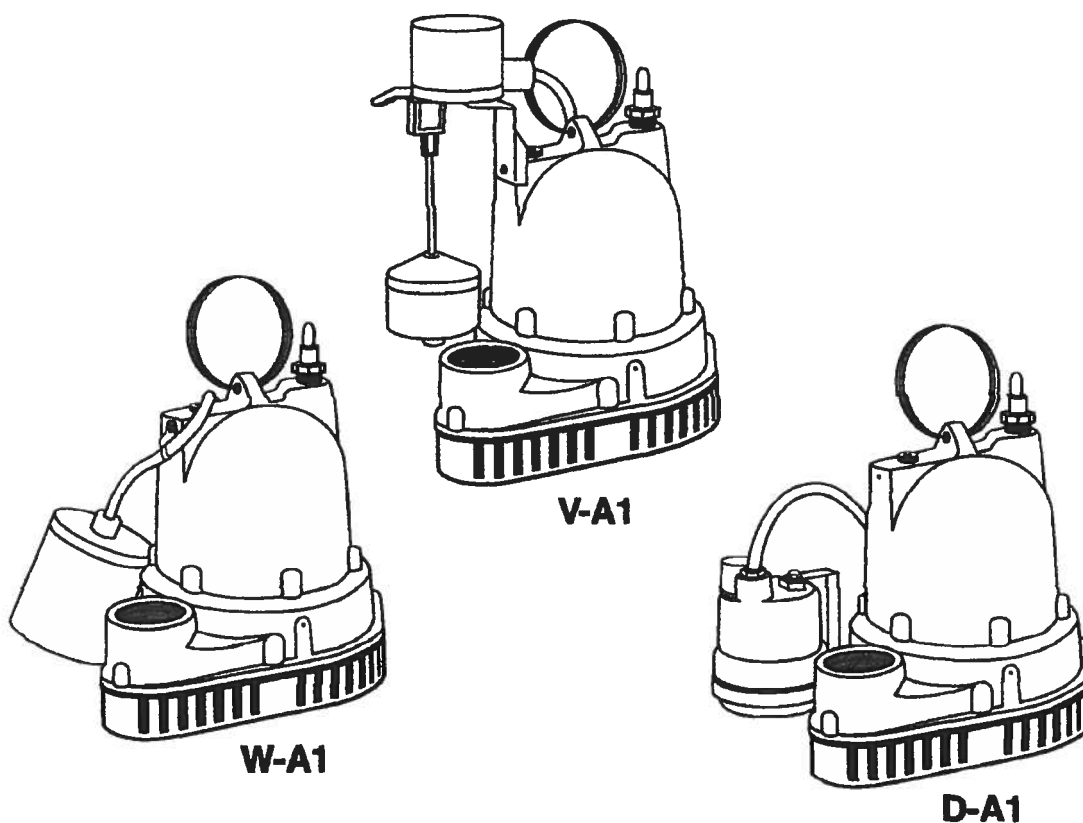
All dimensions in inches. Metric for international use. Component dimensions may vary $\pm 1/8$ inch. Dimensional data not for construction purpose unless certified. Dimensions and weights are approximate. On/Off level adjustable. We reserve the right to make revisions to our product (s) and the product (s) specifications without notice.

HYDROMATIC®

MODEL: D/V/W-A1 Professional Series Sump Pump

R.P.M.	1550
MOTOR TYPE	SHADED POLE WITH THERMAL OVERLOAD, OIL FILLED
MOTOR PROTECTION	AUTOMATIC RESET / OVERLOAD PROTECTED

HP	VOLTAGE	PHASE	NEC CODE	SERVICE FACTOR	FULL LOAD AMPS
1/3	115	1	-	1	8.0



MODEL: D/V/W-A1 Professional Series Sump Pump**Physical Data:**

DISCHARGE SIZE	1-1/2" NPT
SOLIDS SIZE	1/2"
IMPELLER TYPE	VORTEX
CABLE LENGTH	10' STANDARD 20' OPTIONAL
PAINT	PAINTED DARK GREEN, WATER REDUCIBLE ENAMEL, ONE COAT, AIR DRIED.

Temperature:

MAXIMUM LIQUID	140°F
MAXIMUM STATOR	
OIL FLASH POINT	

Technical Data:

POWER CORD TYPE		SJTW
MATERIALS OF CONSTRUCTION	MOTOR HOUSING	CAST IRON
	CASING	CAST IRON
	IMPELLER	THERMOPLASTIC
	MOTOR SHAFT	STEEL
	HARDWARE	STAINLESS STEEL
	"O" RINGS	BUNA - N
MECHANICAL SEALS		
Standard:		CARBON / CERAMIC
UPPER BEARING		N/A
LOWER BEARING		SINGLE ROW-BALL

**SUBMERSIBLE SUMP/EFFLUENT MODELS:
V-A1, W-A1, and D-A1****1.01 GENERAL**

Contractor shall furnish all labor, materials, equipment and incidentals required to provide _____ (Qty.) submersible centrifugal sump/effluent pump(s) as specified herein. The pump models covered in this specification are the V-A1, W-A1, and D-A1. The pump furnished for this application shall be MODEL W-A1 as manufactured by Hydromatic Pumps.

2.01 DESIGN CONDITIONS

Each pump shall be rated 1/3 H.P., 115 volts, 1 phase, 60 hertz and operate at 1550 RPM.

3.01 OPERATING CONDITIONS

The pump shall deliver 31 (min) U.S. GPM/LPS at feet/meters TDK, and handle a 1/2 inch solid. The curve submitted for approval shall state, in addition to head and capacity performance, solid handling capability, amp rating, and design impeller diameter.

4.01 CONSTRUCTION

Each pump shall be of the sealed submersible type incorporating features normally found in pumps furnished for the residential market.

These features include:

1. The pump volute and motor housing shall be high quality gray cast iron, ASTM A-48, Class 30.
2. The pump shall feature a multiple strainer inlet that prevents clogging from foreign objects and provides optimum operation and reduced maintenance.
3. All external mating parts shall be machined and Buna N, O-Ring sealed.
4. All fasteners exposed to the pumped liquid shall be 300 series stainless steel.
5. All power cords shall be water resistant UL or CSA approved, with double insulation and sized as a function of Amp. draw.

5.01 MOTOR AND SHAFT

The stator, rotor and bearings shall be mounted in a sealed submersible type housing. Single phase motors shall be Shaded Pole, with automatic reset thermal overload protection. Full Load and Locked Rotor Amps as well as Run winding resistance shall be tabulated for each pump.

6.01 BEARINGS, SHAFT AND MECHANICAL SEAL

A heavy duty single row ball bearing shall be required. It is permanently, continuously lubricated and cooled by the dielectric oil, which fills the motor housing. The motor shaft shall be corrosion resistant steel and sealed from the pumped liquid with a carbon ceramic mechanical seal.

7.01 IMPELLER

The Impeller shall be a thermoplastic, eight vane, vortex design with three pump out vanes on the back side. These vanes wash out grit and stringy material that will damage the shaft and mechanical seal.

8.01 AUTOMATIC CONTROL

All pumps should be capable of automatic operation.

9.01 PRESSURE SWITCH

The D-A1 Single Phase pump is furnished with a pressure diaphragm switch that is UL listed for water and sewage and GSA certified. The diaphragm switch cord shall be fitted with a piggy-back plug that allows the pump to be operated manually without removal from the sump.

10.01 FLOAT SWITCH

The W-A1 Single Phase pump is supplied with a tilt-sensitive wide-angle float switch which is sealed in a non-corrosive PVC enclosure. The switch is UL listed for water and sewage and QSA certified. The float switch cord shall also be fitted with a piggy-back plug that allows the pump to be operated manually without removal from the sump.

11.01 VERTICAL MECHANICAL SWITCH

The V-A1 single phase pump is furnished with a magnetic mechanical switch which is sealed in a non-corrosive PVC enclosure. The switch will be activated by a PVC float sliding up and down a non-corrosive rod. The mechanical switch cord shall also be fitted with a piggy-back plug that allows the pump to be operated manually without removal from the sump.

12.01 PAINTING

All cast iron parts shall be painted before assembly with a water reducible alkyd air dried enamel. The paint shall be applied in one coat with a minimum thickness of 3 to 4 mils.

13.01 TESTING

All pumps shall be individually tested to include the following:

1. The pump and power cord shall be visually inspected for imperfections, cuts or nicks.
2. The pump shall have a ground continuity check and the motor chamber shall be Hi-potted to test for moisture content and/or insulation defects.
3. The motor and volute housing shall be pressurized and a 10 second air leak decay test run.
4. A specific amount of oil is now added. The pump is run in a fully automated, sequenced, control console, which monitors voltage, current and watts visually and electronically. The tester listens for any noise or malfunction.

CITY OF ALBUQUERQUE



September 8, 2011

Guy C. Jackson, P.E.
Guy Jackson & Associates, LLC.
10522 Florence Ave NE.
Albuquerque, NM 87122

**Re: Old Town Gallery/Retail & Living Space, Grading and Drainage Plan
Engineer's Stamp dated 9-1-2011 (J13/D091)**

Dear Mr. Jackson,

Based upon the information provided in your submittal received 9-02-11, the above referenced plan can not be approved for Grading Permit and Building Permit until the following comments are addressed.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

- Note number 2 under the "Notice To The Contractors", should be based on update number 8. Please include signature block as shown on the attached exhibit.
- Provide pond volume calculations for the proposed ponding area.
- Show the 100-year WSEL for the proposed ponding area. Will the runoff backup against the wall to the east in case of an emergency?
- Provide pond routing calculations.
- The pond will be discharging via 2" pipe, where is the transition from 2" to 4" pipe before it drains out to the street?

If you have any questions, you can contact me at 924-3695.

Sincerely,

Shahab Biazar, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

C: File

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(Rev. 12/05)

PROJECT TITLE: **Old Town Gallery,**
ZONE MAP/DRG. FILE # J-13
DRB#: NA EPC#: NA WORK ORDER#: NA

J-13/D091

LEGAL DESCRIPTION: Tract 206 MRGCD Map No. 38
CITY ADDRESS: 424 San Felipe St. NW

ENGINEERING FIRM: GUY JACKSON & ASSOCIATES, LLC
ADDRESS: 10522 FLORENCE AVE. NE
CITY, STATE: Albuquerque, NM

CONTACT: GUY JACKSON, PE
PHONE: 235-1426
ZIP CODE: 87122

OWNER: Rumi Joe Muenala
ADDRESS: P.O. Box 67
CITY, STATE: Pacific, MO

CONTACT: Rumi Joe Muenala
PHONE: 504-319-6448
ZIP CODE: 63069

ARCHITECT: Studio Southwest Architects, Inc.
ADDRESS: 2101 Mountain Rd. NW
CITY, STATE: Albuquerque

CONTACT: Clint Wilsey
PHONE: 342-6200
ZIP CODE: 87104

SURVEYOR: High Mesa Consulting Group.
ADDRESS: 6010 Midway Park NE
CITY, STATE: ALBUQUERQUE, NM

CONTACT: Chuck Cala
PHONE: 345-4250
ZIP CODE: 87109

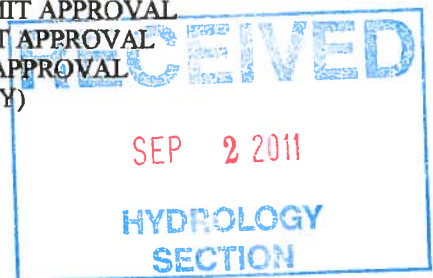
CONTRACTOR: SEE Architect
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

TYPE OF SUBMITTAL:
☐ DRAINAGE REPORT
☐ DRAINAGE PLAN 1st SUBMITTAL
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL G & D PLAN
☒ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERT (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT
☐ ENGINEER/ARCHITECT CERT (TCL)
☐ ENGINEER/ARCHITECT CERT (DRB S.P.)
☐ ENGINEER/ARCHITECT CERT (AA)
☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL SOUGHT:
☐ SIA/FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY (PERM)
☐ CERTIFICATE OF OCCUPANCY (TEMP)
☒ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ OTHER (SPECIFY) _____

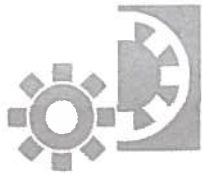
WAS A PRE-DESIGN CONFERENCE ATTENDED:
☒ YES
☐ NO
☐ COPY PROVIDED



SUBMITTED BY: GUY JACKSON, PE DATE: 9-2-11

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.



GUY JACKSON
AND ASSOCIATES, LLC
CIVIL ENGINEERING

September 2, 2011

Paul Olson, PE
Senior Engineer, Planning Dept.
Development & Building Services
PO Box 1293
Albuquerque, New Mexico 87103

**Re: Our Old Town Gallery -424 San Felipe NW, Albuquerque, NM
(Zone Atlas Map J-13)**

Dear Paul:

Attached for building permit approval are the following:

- One (1) drainage information sheet
- One (1) copy of the overall grading plan
- One (1) copy of the utility plan (showing pump)
- One (1) copy of the drainage calcs/spreadsheet
- One (1) copy of the pump selection data & supporting pond calcs.

The project is located at 424 San Felipe NW. The proposed improvements include the construction of a 2544sf building north of the existing building as shown on the attached plan. This is an infill site.

I've addressed your comments listed in your May 27, 2011 letter as follows:

Comment 1): The historic flows are at below historic values with the use of a retention pond within the gravel parking lot.

Comment 2): Flows leave the site to the west from Basin 1 via sheet flow from the existing and proposed roofs and hardscapes. Flows from Basin 2 are collected in the gravel parking lot pond (6" depth), flow into a proposed 4' manhole and are pumped into San Felipe to the west via a 2" pipe.

Comment 3): Calcs are shown using Zone 2.

Comment 4): Pump selection data and cut sheets are provided.

Comment 5) Storage basin & pump flow calcs are provided (see hydrograph)

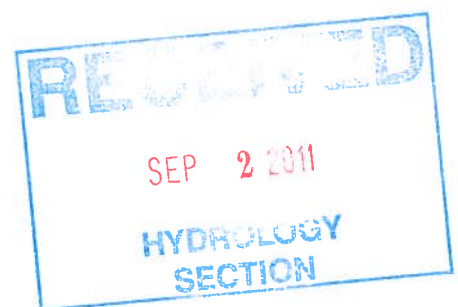
Comment 6): The gravel parking lot is depressed as shown. Adjacent landscape areas are not depressed as they are next to the proposed building foundations.

Please contact me if you have any questions or comments.

Sincerely,

GUY JACKSON & ASSOCIATES, LLC

Guy C. Jackson, PE
President
10522 Florence Ave. NE
Albuquerque, NM 87122
505-235-1426



GJA, LLC

Civil Engineering

PROJECT Old Town Gallery
PROJECT NO.
DATE 08/25/11
BY GJA

DPM Section 22.2 - Hydrology

Part A-Watersheds less than 40 acres.
January, 1993

INSTRUCTIONS

- * Spread sheet requires three input areas (dark cells):
 - Location
 - >A.1 Precipitation Zone
 - >A.3 Land Treatments
- * Values from the tables are automatically placed using "if" statements.
- * Table values should be checked for correctness for each use.

SUMMARY

Location	0	Basin1	2	Basin2	2	2	TOTALS	2
Precipitation Zone		0.10	0.27	0.03	0.00	0.00	0.37	acres
Land Area								
Excess Precipitation Volume								
>>> 100-year 6-hour (design)		0.02	0.02	#DIV/0!	#DIV/0!	#DIV/0!	0.05	acre-ft.
10-year 6-hour		0.01	0.02	#DIV/0!	#DIV/0!	#DIV/0!	0.03	acre-ft.
2-year 6-hour		0.01	0.01	#DIV/0!	#DIV/0!	#DIV/0!	0.01	acre-ft.
100-year 24-hour		0.02	0.04	#DIV/0!	#DIV/0!	#DIV/0!	0.06	acre-ft.
Peak Discharge Rates (DPM)								cfs
>>> Q100 (design)		0.48	0.99	0.00	0.00	0.00	1.47	cfs
Q10		0.32	0.59	0.00	0.00	0.00	0.91	cfs
Q2		0.19	0.27	0.00	0.00	0.00	0.46	cfs

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS

CALCULATIONS FOLLOW

Existing hyd.

INPUT AND CALCULATIONS (CONT)

>A.5 EXCESS PRECIPITATION 6 HOUR AND 24 HOUR (EI)

from Table A-8

100-year 6-hour										TOTALS	
Treatment A	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	inches	0.53
Treatment B	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	inches	0.78
Treatment C	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	inches	1.13
Treatment D	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	inches	2.12
WEIGHTED E (Sum Ei*A/A)										inches	1.64
VOLUME V100:6h (E*A)										acre-ft.	0.05
	783.41	1,431.20	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	ft^3	2,214.61
										=====	
10-year 6-hour											
Treatment A	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	inches	0.13
Treatment B	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	inches	0.28
Treatment C	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	inches	0.52
Treatment D	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	inches	1.34
WEIGHTED E (Sum Ei*A/A)										inches	0.94
VOLUME V10:6h (E*A)										acre-ft.	0.03
	495.18	775.94	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	ft^3	1,271.12
										=====	
2-year 6-hour											
Treatment A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches	0.00
Treatment B	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	inches	0.02
Treatment C	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	inches	0.15
Treatment D	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	inches	0.79
WEIGHTED E (Sum Ei*A/A)										inches	0.48
VOLUME V2:6h (E*A)										acre-ft.	0.01
	291.93	353.74	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	ft^3	645.67
										=====	
100-year 24-hour											
VOLUME V100:24h										acre-ft.	0.06
(V100-6h+Ad*P1440-P360)/12										ft^3	2,491.21
	931.23	1,559.99	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	=====	

CALCULATIONS FOLLOW

Existing hyd.

INPUT AND CALCULATIONS (CONT)

>A.6 PEAK DISCHARGE RATE FOR SMALL WATERSHEDS (QI) from Table A-9									
100-year							TOTALS		
Treatment A	1.56	1.56	1.56	1.56	1.56	1.56	cfs/acre	1.56	
Treatment B	2.28	2.28	2.28	2.28	2.28	2.28	cfs/acre	2.28	
Treatment C	3.14	3.14	3.14	3.14	3.14	3.14	cfs/acre	3.14	
Treatment D	4.70	4.70	4.70	4.70	4.70	4.70	cfs/acre	4.70	
Q100 (Sum Qi*Ai)							0.48	0.99	0.00
							=====	=====	=====
									1.47
							=====	=====	=====
10-year									
Treatment A	0.38	0.38	0.38	0.38	0.38	0.38	cfs/acre	0.38	
Treatment B	0.95	0.95	0.95	0.95	0.95	0.95	cfs/acre	0.95	
Treatment C	1.71	1.71	1.71	1.71	1.71	1.71	cfs/acre	1.71	
Treatment D	3.14	3.14	3.14	3.14	3.14	3.14	cfs/acre	3.14	
Q10 (Sum Qi*Ai)							0.32	0.59	0.00
							=====	=====	=====
									0.91
							=====	=====	=====
2-year									
Treatment A	0.00	0.00	0.00	0.00	0.00	0.00	cfs/acre	0.00	
Treatment B	0.08	0.08	0.08	0.08	0.08	0.08	cfs/acre	0.08	
Treatment C	0.60	0.60	0.60	0.60	0.60	0.60	cfs/acre	0.60	
Treatment D	1.86	1.86	1.86	1.86	1.86	1.86	cfs/acre	1.86	
Q2 (Sum Qi*Ai)							0.19	0.27	0.00
							=====	=====	=====
									0.46
							=====	=====	=====

CALCULATIONS FOLLOW

GJA,LLC

Civil Engineering

PROJECT Old Town Gallery
 PROJECT NO.
 DATE 08/25/11
 BY GJA

DPM Section 22.2 - Hydrology

Part A-Watersheds less than 40 acres.
 January, 1993

INSTRUCTIONS

- * Spread sheet requires three input areas (dark cells):
 Location
 >A.1 Precipitation Zone
 >A.3 Land Treatments
- * Values from the tables are automatically placed using "if" statements.
- * Table values should be checked for correctness for each use.

SUMMARY

Location	Basin1Dev	Basin2Dev	TOTALS	
Precipitation Zone	2	2	2	acres
Land Area	0.19	0.18	0.00	
Excess Precipitation Volume				
>>> 100-year 6-hour (design)	0.03	0.0241	#DIV/0!	acre-ft.
10-year 6-hour	0.02	0.01	#DIV/0!	acre-ft.
2-year 6-hour	0.01	0.01	#DIV/0!	acre-ft.
100-year 24-hour	0.04	0.03	#DIV/0!	acre-ft.
Peak Discharge Rates (DPM)				cfs
>>> Q100 (design)	0.89	0.70	0.00	cfs
Q10	0.60	0.43	0.00	cfs
Q2	0.35	0.22	0.00	cfs

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS (CONT)

>A.5 EXCESS PRECIPITATION 6 HOUR AND 24 HOUR (EI)

from Table A-8

TOTALS

100-year 6-hour									
Treatment A	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	inches
Treatment B	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	inches
Treatment C	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	inches
Treatment D	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	inches
WEIGHTED E (Sum EI*AI/A)	2.12	1.59	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.86	inches
VOLUME V100:6h (E*A)	0.03	0.0241	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.06	acre-ft.
	1,462.16	1,049.90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	2,512.07	ft^3
=====									
10-year 6-hour									
Treatment A	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	inches
Treatment B	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	inches
Treatment C	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	inches
Treatment D	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	inches
WEIGHTED E (Sum EI*AI/A)	1.34	0.90	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.12	inches
VOLUME V10:6h (E*A)	0.02	0.01	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.03	acre-ft.
	924.20	594.66	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1,518.86	ft^3
=====									
2-year 6-hour									
Treatment A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	inches
Treatment B	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	inches
Treatment C	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	inches
Treatment D	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	inches
WEIGHTED E (Sum EI*AI/A)	0.79	0.45	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.62	inches
VOLUME V2:6h (E*A)	0.01	0.01	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.02	acre-ft.
	544.86	295.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	839.86	ft^3
=====									
100-year 24-hour									
VOLUME V100:24h	0.04	0.03	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.07	acre-ft.
(V100-6h+Ad*P1440-P360)/12	1,738.04	1,172.31	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	2,910.35	ft^3
=====									

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS (CONT)

>A.6 PEAK DISCHARGE RATE FOR SMALL WATERSHEDS (QI)

from Table A-9

TOTALS									
100-year									
Treatment A	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	cfs/acre
Treatment B	2.28	2.28	2.28	2.28	2.28	2.28	2.28	2.28	cfs/acre
Treatment C	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	cfs/acre
Treatment D	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	cfs/acre
Q100 (Sum Qi*Ai)	0.89	0.70	0.00	0.00	0.00	0.00	0.00	1.60	cfs
=====									
10-year									
Treatment A	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	cfs/acre
Treatment B	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	cfs/acre
Treatment C	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	cfs/acre
Treatment D	3.14	3.14	3.14	3.14	3.14	3.14	3.14	3.14	cfs/acre
Q10 (Sum Qi*Ai)	0.60	0.43	0.00	0.00	0.00	0.00	0.00	1.03	cfs
=====									
2-year									
Treatment A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	cfs/acre
Treatment B	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	cfs/acre
Treatment C	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	cfs/acre
Treatment D	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	cfs/acre
Q2 (Sum Qi*Ai)	0.35	0.22	0.00	0.00	0.00	0.00	0.00	0.57	cfs
=====									

CALCULATIONS FOLLOW

IDENTIFY/ADDRESS THESE ELEMENTS

1.0 SUBJECT

2.0 PURPOSE

3.0 REFERENCES

4.0 ASSUMPTIONS

5.0 CRITERIA/REQUIREMENTS

6.0 SKETCHES

7.0 CALCULATIONS

8.0 CONCLUSIONS

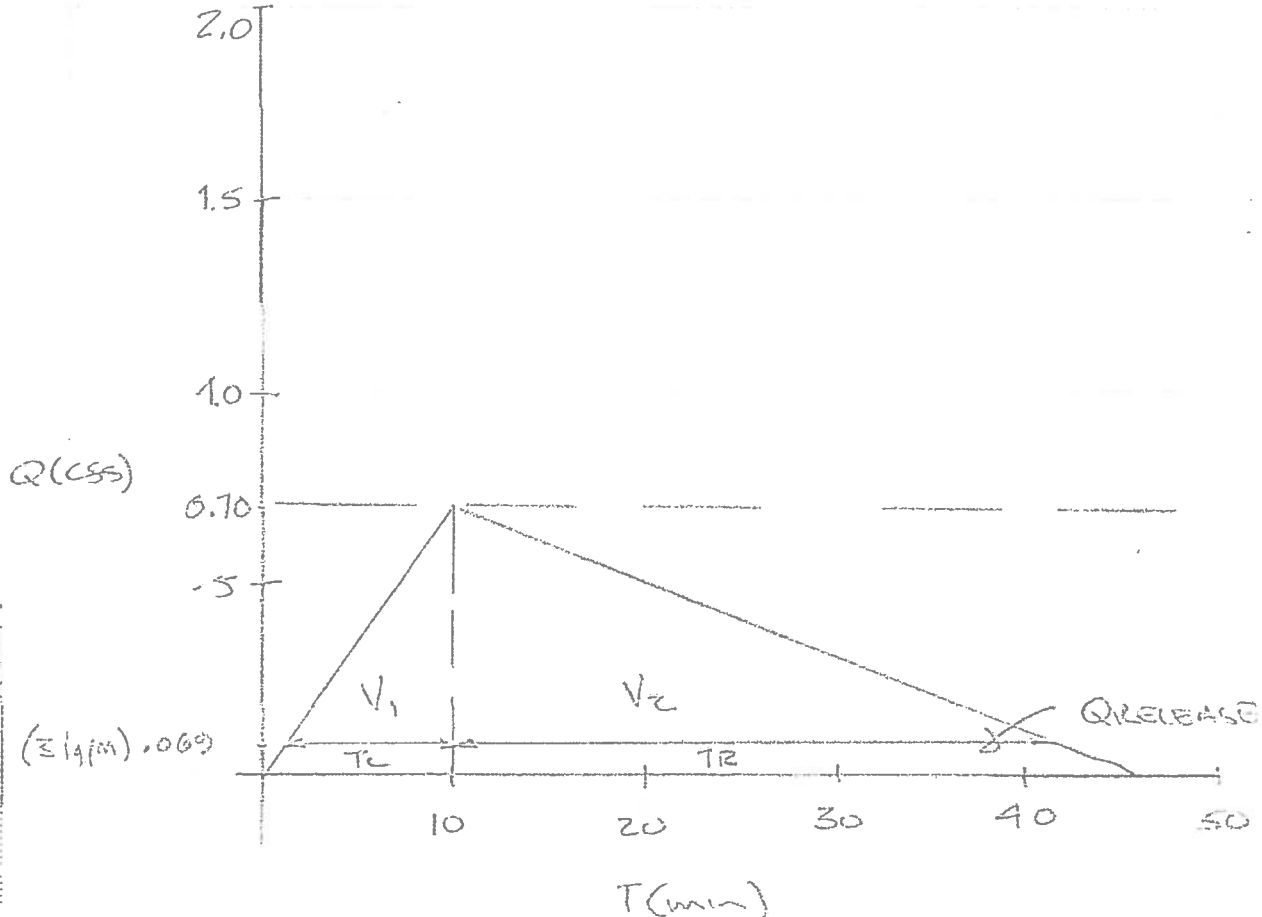
9.0 ATTACHMENTS

REVISION #

SUPERSEDES CALC TITLE

CHECKED BY

DATED



Hydrograph Calculations for storage (Basin 2)

$$Q_{100} = 0.70 \text{ cfs}$$

$$V_{100} = 1172 \text{ cfs}$$

$$V_1 = \frac{1}{2} Q_{100} T_c = \frac{1}{2} (0.70) 10 \text{ min} (60) = 210 \text{ cfs}$$

$$V_2 = V_{100} - V_1 = 1172 - 210 = 962 \text{ cfs}$$

$$V_2 = \frac{1}{2} (Q_{100} - Q_{\text{release}}) T_R (60) \Rightarrow T_R = \frac{2V_2}{Q_{100} - Q_{\text{release}}} = \frac{2(962)}{0.70 - 0.069} = \frac{1924}{0.631} = 3049 \text{ min} = 50.8 \text{ min}$$

$$Q_{\text{release}} = 31 \text{ gpm} (1/448.83 \text{ gpm/cfs}) = 0.069 \text{ cfs} \text{ via Hydraulic pump}$$

$$V_{\text{req}} = \frac{1}{2} (Q_{100} - Q_{\text{release}})^2 \frac{(T_R + T_c) (60)}{Q_{100}}$$

$$\frac{1}{2} (0.70 - 0.069)^2 \frac{(45.8 + 10) (60)}{0.70} = 0.199 (4782.86) = 952 \text{ cfs}$$

$$V_{\text{provided}} = 2142 \text{ cfs} (0.3) = 1071 \text{ cfs}$$

$$1071 \text{ cfs} \times 7.48 \text{ gal/cfs} = 8000 \text{ gal} \div 31 \text{ gal/min} = 258 \text{ min}$$

Performance Data

W/D/V-A1

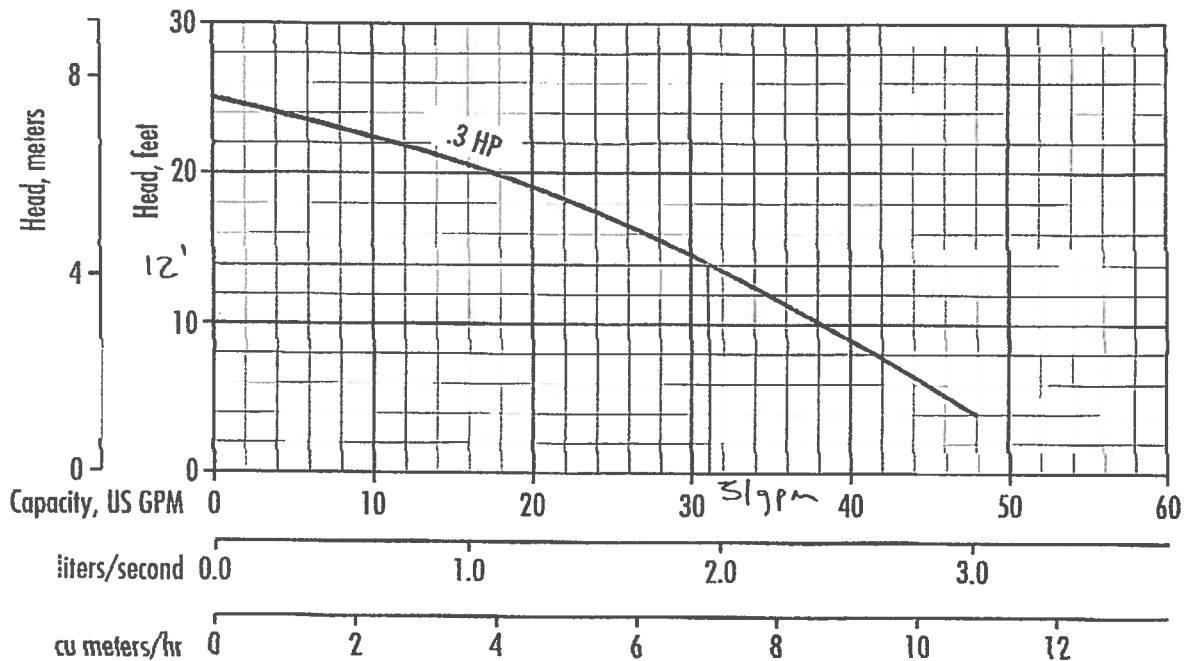
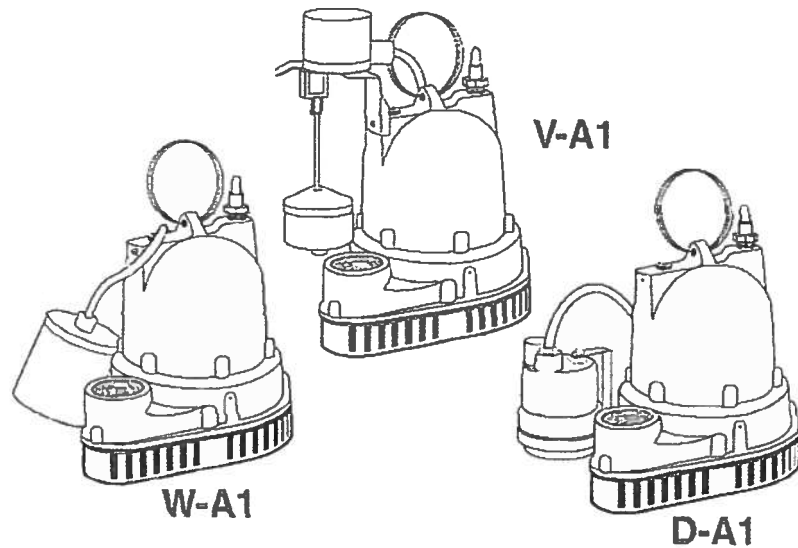
Wholesale Products Page: 6570-1

Section: Performance Data

Dated: January 2001

RPM: 1550

Discharge: 1-1/2" Solids: 1/2"



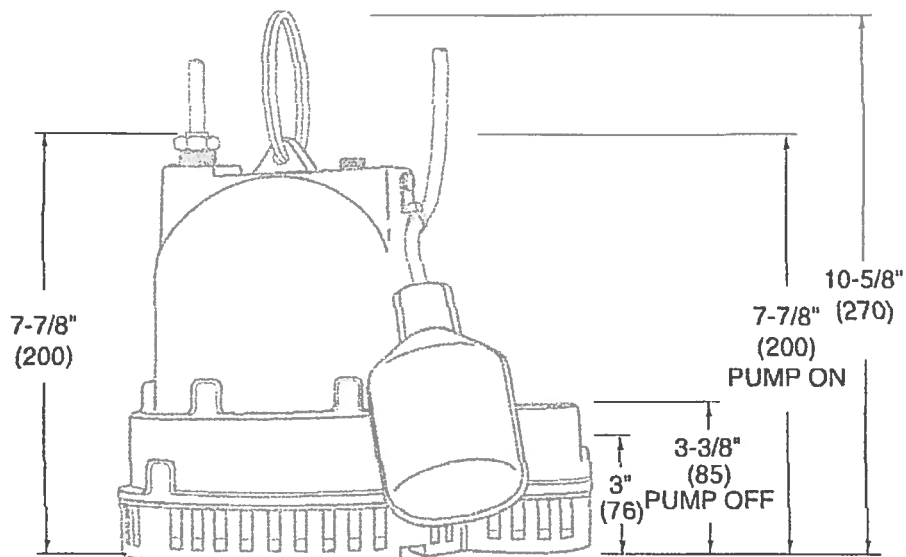
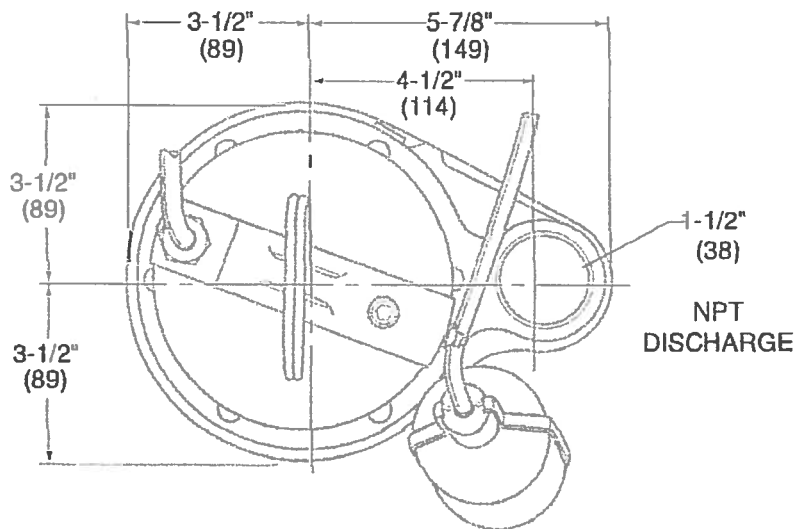
HEAD LOSSES: $H_{EL} = 5'$
 $H_{PIPE} = 7'$
12' (100' - 1 1/2" PE)

The curves reflect maximum performance characteristics without exceeding full load (Nameplate) horsepower. All pumps have a service factor of 1.2. Operation is recommended in the bounded area with operational point within the curve limit. Performance curves are based on actual tests with clear water at 70° F. and 1280 feet site elevation.

Conditions of Service:

GPM: 31 TDH: 12'

HYDROMATIC

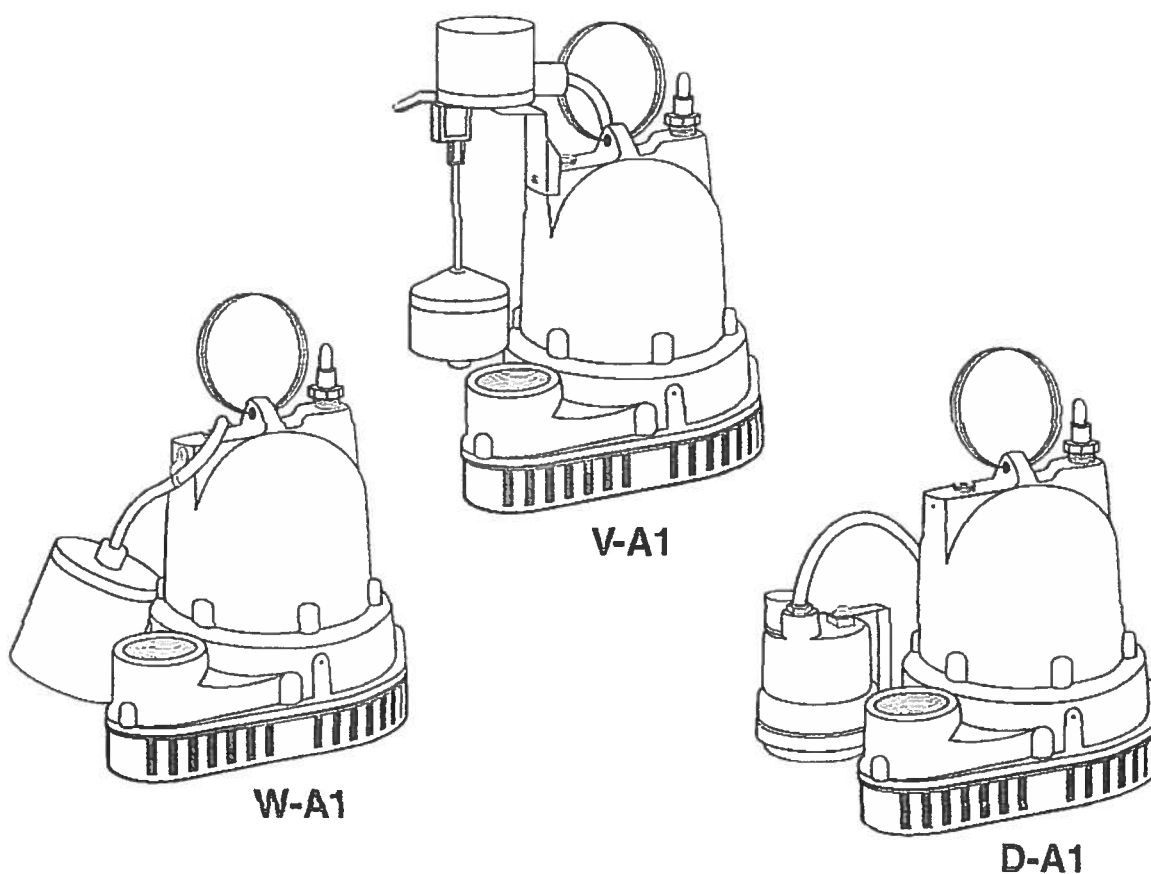


All dimensions in inches. Metric for international use. Component dimensions may vary $\pm 1/8$ inch. Dimensional data not for construction purpose unless certified. Dimensions and weights are approximate. On/Off level adjustable. We reserve the right to make revisions to our product (s) and the product (s) specifications without notice.

MODEL: D/V/W-A1 Professional Series Sump Pump

R.P.M.	1550
MOTOR TYPE	SHADED POLE WITH THERMAL OVERLOAD, OIL FILLED
MOTOR PROTECTION	AUTOMATIC RESET / OVERLOAD PROTECTED

HP	VOLTAGE	PHASE	NEC CODE	SERVICE FACTOR	FULL LOAD AMPS
1/3	115	1	-	1	8.0



MODEL: D/V/W-A1 Professional Series Sump Pump**Physical Data:**

DISCHARGE SIZE	1-1/2" NPT
SOLIDS SIZE	1/2"
IMPELLER TYPE	VORTEX
CABLE LENGTH	10' STANDARD 20' OPTIONAL
PAINT	PAINTED DARK GREEN, WATER REDUCIBLE ENAMEL, ONE COAT, AIR DRIED.

Temperature:

MAXIMUM LIQUID	140°F
MAXIMUM STATOR	
OIL FLASH POINT	

Technical Data:

POWER CORD TYPE		SJTW
MATERIALS OF CONSTRUCTION	MOTOR HOUSING	CAST IRON
	CASING	CAST IRON
	IMPELLER	THERMOPLASTIC
	MOTOR SHAFT	STEEL
	HARDWARE	STAINLESS STEEL
	O RINGS	BUNA - N
MECHANICAL SEALS		
Standard:		CARBON / CERAMIC
UPPER BEARING		N/A
LOWER BEARING		SINGLE ROW-BALL

**SUBMERSIBLE SUMP/EFFLUENT MODELS:
V-A1, W-A1, and D-A1****1.01 GENERAL**

Contractor shall furnish all labor, materials, equipment and incidentals required to provide _____ (Qty.) submersible centrifugal sump/effluent pump(s) as specified herein. The pump models covered in this specification are the V-A1, W-A1, and D-A1. The pump furnished for this application shall be MODEL W-A1 as manufactured by Hydromatic Pumps.

2.01 DESIGN CONDITIONS

Each pump shall be rated 1/3 H.P., 115 volts, 1 phase, 60 hertz and operate at 1550 RPM.

3.01 OPERATING CONDITIONS

The pump shall deliver 31 (min) U.S. GPM/LPS at feet/meters TDK, and handle a 1/2 inch solid. The curve submitted for approval shall state, in addition to head and capacity performance, solid handling capability, amp rating, and design impeller diameter.

4.01 CONSTRUCTION

Each pump shall be of the sealed submersible type incorporating features normally found in pumps furnished for the residential market.

These features include:

1. The pump volute and motor housing shall be high quality gray cast iron, ASTM A-48, Class 30.
2. The pump shall feature a multiple strainer inlet that prevents clogging from foreign objects and provides optimum operation and reduced maintenance.
3. All external mating parts shall be machined and Buna N, O-Ring sealed.
4. All fasteners exposed to the pumped liquid shall be 300 series stainless steel.
5. All power cords shall be water resistant UL or CSA approved, with double insulation and sized as a function of Amp. draw.

5.01 MOTOR AND SHAFT

The stator, rotor and bearings shall be mounted in a sealed submersible type housing. Single phase motors shall be Shaded Pole, with automatic reset thermal overload protection. Full Load and Locked Rotor Amps as well as Run winding resistance shall be tabulated for each pump.

6.01 BEARINGS, SHAFT AND MECHANICAL SEAL

A heavy duty single row ball bearing shall be required. It is permanently, continuously lubricated and cooled by the dielectric oil, which fills the motor housing. The motor shaft shall be corrosion resistant steel and sealed from the pumped liquid with a carbon ceramic mechanical seal.

7.01 IMPELLER

The Impeller shall be a thermoplastic, eight vane, vortex design with three pump out vanes on the back side. These vanes wash out grit and stringy material that will damage the shaft and mechanical seal.

8.01 AUTOMATIC CONTROL

All pumps should be capable of automatic operation.

9.01 PRESSURE SWITCH

The D-A1 Single Phase pump is furnished with a pressure diaphragm switch that is UL listed for water and sewage and GSA certified. The diaphragm switch cord shall be fitted with a piggy-back plug that allows the pump to be operated manually without removal from the sump.

10.01 FLOAT SWITCH

The W-A1 Single Phase pump is supplied with a tilt-sensitive wide-angle float switch which is sealed in a non-corrosive PVC enclosure. The switch is UL listed for water and sewage and QSA certified. The float switch cord shall also be fitted with a piggy-back plug that allows the pump to be operated manually without removal from the sump.

11.01 VERTICAL MECHANICAL SWITCH

The V-A1 single phase pump is furnished with a magnetic mechanical switch which is sealed in a non-corrosive PVC enclosure. The switch will be activated by a PVC float sliding up and down a non-corrosive rod. The mechanical switch cord shall also be fitted with a piggy-back plug that allows the pump to be operated manually without removal from the sump.

12.01 PAINTING

All cast iron parts shall be painted before assembly with a water reducible alkyd air dried enamel. The paint shall be applied in one coat with a minimum thickness of 3 to 4 mils.

13.01 TESTING

All pumps shall be individually tested to include the following:

1. The pump and power cord shall be visually inspected for imperfections, cuts or nicks.
2. The pump shall have a ground continuity check and the motor chamber shall be Hi-potted to test for moisture content and/or insulation defects.
3. The motor and volute housing shall be pressurized and a 10 second air leak decay test run.
4. A specific amount of oil is now added. The pump is run in a fully automated, sequenced, control console, which monitors voltage, current and watts visually and electronically. The tester listens for any noise or malfunction.

CITY OF ALBUQUERQUE



May 27, 2011

Guy C. Jackson, P.E.
Guy Jackson & Associates, LLC.
10522 Florence Ave NE.
Albuquerque, NM 87122

**Re: Old Town Gallery/Retail & Living Space
Grading and Drainage Plan
Engineer's Stamp dated 3-3-2011 (J13/D091)**

Dear Mr. Jackson,

Based upon the information provided in your submittal received 5-18-11, the above referenced plan can not be approved for Grading Permit and Building Permit until the following comments are addressed.

- The flows leaving the site must be at historic values or below. We are no longer accepting sidewalk culverts. I believe that the pipe leaving the sump pump can be extended out the curb under the sidewalk.
- Flows are shown leaving the property to the west. How is this being accomplished?
- The calculations should be for zone 2 not zone 1.
- What are the pump calculations and what is the operating capacity.
- Include the storage basin and pump flow calculations.

Hydrology is requesting that all proposed landscape areas are depressed to retain/infiltrate the moisture that falls on them.

If you have any questions, you can contact me at 924-3421.

Sincerely,

Paul Olson, P.E., CFM.
Senior Engineer, Planning Dept.
Development and Building Services

PLO/RER
C: File



May 18, 2011

Curtis Cheme, PE
Section Head, Hydrology
Development Services
PO Box 1293
Albuquerque, New Mexico 87103

Re: *Our Old Town Gallery - 424 San Felipe NW, Albuquerque, NM*
(Zone Atlas Map J-13)

Dear Curtis:

Attached for building permit approval are the following:

- One (1) drainage information sheet
- One (1) copy of the overall grading plan
- One (1) copy of the drainage calcs/spreadsheet

The project is located at 424 San Felipe NW. The proposed improvements include the construction of a 2544sf building north of the existing building as shown on the attached plan. This is an infill site.

Please contact me if you have any questions or comments.

Sincerely,

GUY JACKSON & ASSOCIATES, LLC



Guy C. Jackson, PE
President
10522 Florence Ave. NE
Albuquerque, NM 87122
505-235-1426

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(Rev. 12/05)

PROJECT TITLE: Old Town Gallery,
ZONE MAP/DRG. FILE # J-13/0691
DRB#: NA EPC#: NA WORK ORDER#: NA

LEGAL DESCRIPTION: Tract 206 MRGCD Map No. 38
CITY ADDRESS: 424 San Felipe St. NW

ENGINEERING FIRM: GUY JACKSON & ASSOCIATES, LLC
ADDRESS: 10522 FLORENCE AVE. NE
CITY, STATE: Albuquerque, NM

CONTACT: GUY JACKSON, PE
PHONE: 235-1426
ZIP CODE: 87122

OWNER: Rumi Joe Muenala
ADDRESS: P.O. Box 67
CITY, STATE: Pacific, MO

CONTACT: Rumi Joe Muenala
PHONE: 504-319-6448
ZIP CODE: 63069

ARCHITECT: Studio Southwest Architects, Inc.
ADDRESS: 2101 Mountain Rd. NW
CITY, STATE: Albuquerque

CONTACT: Clint Wilsey
PHONE: 342-6200
ZIP CODE: 87104

SURVEYOR: High Mesa Consulting Group.
ADDRESS: 6010 Midway Park NE
CITY, STATE: ALBUQUERQUE, NM

CONTACT: Chuck Cala
PHONE: 345-4250
ZIP CODE: 87109

CONTRACTOR: SEE Architect
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
☒ DRAINAGE PLAN 1st SUBMITTAL
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL G & D PLAN
☒ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERT (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT
☐ ENGINEER/ARCHITECT CERT (TCL)
☐ ENGINEER/ARCHITECT CERT (DRB S.P.)
☐ ENGINEER/ARCHITECT CERT (AA)
☐ OTHER (SPECIFY) _____

WAS A PRE-DESIGN CONFERENCE ATTENDED:
☒ YES
☐ NO
☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA/FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY (PERM)
☐ CERTIFICATE OF OCCUPANCY (TEMP)
☒ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ OTHER (SPECIFY) _____

MAY 18 2011

HYDROLOGY
SECTION

paid \$50 ✓

SUBMITTED BY: GUY JACKSON, PE DATE: 5-18-11

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

Drainage Summary

Drainage Summary

Project: Old Town Gallery
 Project Number:
 Date: 05/18/11
 By: GJA

Site Location

Precipitation Zone

1 Per Table A-1 COA DPM Section 22.2

Existing summary

Basin Name	Basin1	Basin2				TOTAL
Soil Treatment (acres)						
Area "A"	0.00	0.00	0.00	0.00	0.00	0.00
Area "B"	0.00	0.00	0.00	0.00	0.00	0.00
Area "C"	0.00	0.18	0.00	0.00	0.00	0.18
Area "D"	0.10	0.09	0.00	0.00	0.00	0.19
TOTAL	0.10	0.27	0.00	0.00	0.00	0.37
Excess Runoff (acre-feet)						
100yr. 6hr.	0.02	0.03	#DIV/0!	#DIV/0!	#DIV/0!	0.02
10yr. 6hr.	0.01	0.02	#DIV/0!	#DIV/0!	#DIV/0!	0.01
2yr. 6hr.	0.01	0.01	#DIV/0!	#DIV/0!	#DIV/0!	0.01
100yr. 24hr.	0.02	0.03	#DIV/0!	#DIV/0!	#DIV/0!	0.02
TOTAL	0.05	0.09	#DIV/0!	#DIV/0!	#DIV/0!	0.05
Peak Discharge (cfs)						
100 yr.	0.44	0.91	0.00	0.00	0.00	1.36
10yr.	0.29	0.53	0.00	0.00	0.00	0.82
2yr.	0.17	0.24	0.00	0.00	0.00	0.41
TOTAL	0.91	1.68	0.00	0.00	0.00	2.59

Proposed summary

Basin Name	Basin1Dev	Basin2Dev				TOTAL
Soil Treatment (acres)						
Area "A"	0.00	0.00	0.00	0.00	0.00	0.00
Area "B"	0.00	0.00	0.00	0.00	0.00	0.00
Area "C"	0.00	0.10	0.00	0.00	0.00	0.10
Area "D"	0.19	0.08	0.00	0.00	0.00	0.27
TOTAL	0.19	0.18	0.00	0.00	0.00	0.37
Excess Runoff (acre-feet)						
100yr. 6hr.	0.03	0.02	#DIV/0!	#DIV/0!	#DIV/0!	0.05
10yr. 6hr.	0.02	0.01	#DIV/0!	#DIV/0!	#DIV/0!	0.03
2yr. 6hr.	0.01	0.01	#DIV/0!	#DIV/0!	#DIV/0!	0.02
100yr. 24hr.	0.04	0.03	#DIV/0!	#DIV/0!	#DIV/0!	0.06
TOTAL	0.10	0.07	#DIV/0!	#DIV/0!	#DIV/0!	0.17
Peak Discharge (cfs)						
ps	0.83	0.65	0.00	0.00	0.00	1.48
10yr.	0.55	0.39	0.00	0.00	0.00	0.94
2yr.	0.32	0.19	0.00	0.00	0.00	0.51
TOTAL	1.70	1.23	0.00	0.00	0.00	2.93

GJA,LLC

Civil Engineering

PROJECT Old Town Gallery
PROJECT NO.
DATE 05/18/11
BY GJA

DPM Section 22.2 - Hydrology

Part A-Watersheds less than 40 acres.
January, 1993

INSTRUCTIONS

- * Spread sheet requires three input areas (dark cells):
Location
>A.1 Precipitation Zone
>A.3 Land Treatments
- * Values from the tables are automatically placed using "ip" statements.
- * Table values should be checked for correctness for each use.

SUMMARY

Location	Basin1Dev	Basin2Dev	TOTALS
Precipitation Zone	1	1	1
Land Area	0.19	0.18	0.37
Excess Precipitation Volume			
>>> 100-year 6-hour (design)	0.03	0.02	0.05
10-year 6-hour	0.02	0.01	0.03
2-year 6-hour	0.01	0.01	0.02
100-year 24-hour	0.04	0.03	0.06
Peak Discharge Rates (DPM)			
>>> Q100 (design)	0.83	0.65	1.48
Q10	0.55	0.39	0.94
Q2	0.32	0.19	0.51

CALCULATIONS FOLLOW

>A.4 ABSTRACTIONS

INPUT AND CALCULATIONS (CONT)

>A.5 EXCESS PRECIPITATION 6 HOUR AND 24 HOUR (EI)

from Table A-8

TOTALS

100-year 6-hour									
Treatment A	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Treatment B	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Treatment C	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Treatment D	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97
WEIGHTED E (Sum EI*A/A)	1.97	1.44	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.71
VOLUME V100:6h (E*A)	0.03	0.0219	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.05
	1,358.71	954.30	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	2,313.01
10-year 6-hour									
Treatment A	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Treatment B	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Treatment C	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
Treatment D	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24
WEIGHTED E (Sum EI*A/A)	1.24	0.81	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1.03
VOLUME V10:6h (E*A)	0.02	0.01	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.03
	855.23	535.66	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	1,390.89
2-year 6-hour									
Treatment A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Treatment B	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Treatment C	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Treatment D	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
WEIGHTED E (Sum EI*A/A)	0.72	0.40	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.56
VOLUME V2:6h (E*A)	0.01	0.01	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.02
	496.58	262.93	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	759.51
100-year 24-hour									
VOLUME V100:24h									
(V100-6h*Ad*P1440-P360)/12)	0.04	0.03	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.06
	1,675.97	1,095.07	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	2,771.04

CALCULATIONS FOLLOW

INPUT AND CALCULATIONS (CONT')

>A.6 PEAK DISCHARGE RATE FOR SMALL WATERSHEDS (Q1)
from Table A-9

					TOTALS				
100-year									
Treatment A	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	cfs/acre
Treatment B	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	cfs/acre
Treatment C	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87	cfs/acre
Treatment D	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	cfs/acre
Q100 (sum Q1*AI)					0.83	0.65	0.00	1.48	cfs
10-year									
Treatment A	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	cfs/acre
Treatment B	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	cfs/acre
Treatment C	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	cfs/acre
Treatment D	2.89	2.89	2.89	2.89	2.89	2.89	2.89	2.89	cfs/acre
Q10 (sum Q1*AI)					0.55	0.39	0.00	0.94	cfs
2-year									
Treatment A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	cfs/acre
Treatment B	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	cfs/acre
Treatment C	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	cfs/acre
Treatment D	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	cfs/acre
Q2 (sum Q1*AI)					0.32	0.19	0.00	0.51	cfs

CALCULATIONS FOLLOW

Existing hyd.

GJA,LLC

Civil Engineering

PROJECT Old Town Gallery
PROJECT NO.
DATE 05/18/11
BY GJA

DPM Section 22.2 - Hydrology

Part A-Watersheds less than 40 acres.
January, 1993

INSTRUCTIONS

- * Spread sheet requires three input areas (dark cells):
Location
>A.1 Precipitation Zone
>A.3 Land Treatments
- * Values from the tables are automatically placed using "if" statements.
- * Table values should be checked for correctness for each use.

SUMMARY

Location	0	Basin1	Basin2	1	TOTALS
Precipitation Zone		1	1	1	1
Land Area		0.10	0.27	0.00	0.37
Excess Precipitation Volume					
>>> 100-year 6-hour (design)		0.02	0.03	#DIV/0!	0.05
10-year 6-hour		0.01	0.02	#DIV/0!	0.03
2-year 6-hour		0.01	0.01	#DIV/0!	0.01
100-year 24-hour		0.02	0.03	#DIV/0!	0.05
Peak Discharge Rates (DPM)					
>>> Q100 (design)		0.44	0.91	0.00	1.36
Q10		0.29	0.53	0.00	0.82
Q2		0.17	0.24	0.00	0.41
					cfs
					cfs
					cfs

CALCULATIONS FOLLOW

Existing hyd.

INPUT AND CALCULATIONS

LOCATION	Basin1	Basin2	Basin1	Basin2	Basin1	Basin2
>A.1 PRECIPITATION ZONE (from Table A-1)	1	1	1	1	1	1
>A.2 DEPTHS						
(from Table A-2)						
100-YEAR STORM (P60)	1.87	1.87	1.87	1.87	1.87	1.87
100-YEAR STORM (P360)	2.20	2.20	2.20	2.20	2.20	2.20
100-YEAR STORM (P1440)	2.66	2.66	2.66	2.66	2.66	2.66
10-YEAR (P360) (Calculated: P360*RPF10)	1.47	1.47	1.47	1.47	1.47	1.47
2-YEAR (P360) (Calculated: P360*RPF2)	0.95	0.95	0.95	0.95	0.95	0.95
TOTALS						
	1.87	1.87	1.87	1.87	1.87	1.87
	2.20	2.20	2.20	2.20	2.20	2.20
	2.66	2.66	2.66	2.66	2.66	2.66
	1.47	1.47	1.47	1.47	1.47	1.47
	0.95	0.95	0.95	0.95	0.95	0.95
>A.3 LAND TREATMENTS (AI)						
Treatment A	0.00	0.00	0.00	0.00	0.00	0.00
Treatment B	0.00	0.00	0.00	0.00	0.00	0.00
Treatment C	0.00	0.18	0.00	0.00	0.00	0.18
Treatment D	0.10	0.09	0.00	0.00	0.00	0.19
Total Area	0.10	0.27	0.00	0.00	0.00	0.37
>A.4 ABSTRACTIONS						

CALCULATIONS FOLLOW

See A.5 See A.5 See A.5 See A.5 See A.5

Existing hyd.

INPUT AND CALCULATIONS (CONT)

>A.6 PEAK DISCHARGE RATE FOR SMALL WATERSHEDS (QI)

from Table A-9

				TOTALS			
100-year							
Treatment A	1.29	1.29	1.29	1.29	1.29	cfs/acre	1.29
Treatment B	2.03	2.03	2.03	2.03	2.03	cfs/acre	2.03
Treatment C	2.87	2.87	2.87	2.87	2.87	cfs/acre	2.87
Treatment D	4.37	4.37	4.37	4.37	4.37	cfs/acre	4.37
Q100 (Sum Qi*Ai)				0.44	0.91	0.00	1.36
10-year							
Treatment A	0.24	0.24	0.24	0.24	0.24	cfs/acre	0.24
Treatment B	0.76	0.76	0.76	0.76	0.76	cfs/acre	0.76
Treatment C	1.49	1.49	1.49	1.49	1.49	cfs/acre	1.49
Treatment D	2.89	2.89	2.89	2.89	2.89	cfs/acre	2.89
Q10 (Sum Qi*Ai)				0.29	0.53	0.00	0.82
2-year							
Treatment A	0.00	0.00	0.00	0.00	0.00	cfs/acre	0.00
Treatment B	0.03	0.03	0.03	0.03	0.03	cfs/acre	0.03
Treatment C	0.47	0.47	0.47	0.47	0.47	cfs/acre	0.47
Treatment D	1.69	1.69	1.69	1.69	1.69	cfs/acre	1.69
Q2 (Sum Qi*Ai)				0.17	0.24	0.00	0.41

CALCULATIONS FOLLOW