

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director



Mayor Timothy M. Keller

August 20, 2018

David Soule, P.E.
Rio Grande Engineering
PO Box 93924
Albuquerque, NM 87199

RE: **Jefferson Hotel**
Restaurant Ln NE
Grading Plan Stamp Date: 8/15/18
Drainage Report Stamp Date: 8/15/18
Drainage File: F17D044C

Dear Mr. Soule:

PO Box 1293

Based on the submittal received on 8/16/18, the grading plan and drainage report cannot be approved for building permit until the following are corrected:

Prior to Building Permit:

Albuquerque

1. Payment of the Fee in Lieu (Amount = \$1,952, per Appendix A of the drainage report) for the required first flush volume must be made.
2. This project requires an ESC Plan, submitted to the Stormwater Quality Engineer (Curtis Cherne PE, ccherne@cabq.gov or 924-3420).

NM 87103

Prior to Certificate of Occupancy (For Information):

www.cabq.gov

3. Engineer's Certification, per the DPM Chapter 22.7: *Engineer's Certification Checklist For Non-Subdivision* is required.
4. Provide photographs of the installed orifice plate, including one showing its dimensions and include with the drainage certification.
5. A Bernalillo County Recorded [Drainage Covenant \(No Public Easement\)](#) is required for the stormwater control pond. The original notarized form, exhibit A (legible on 8.5x11 paper), and recording fee (\$25, payable to Bernalillo County) must be turned into DRC (4th, Plaza del Sol) for routing. Please contact Charlotte LaBadie (clabadie@cabq.gov, 924-3996) or Madeline Carruthers (mtafoya@cabq.gov, 924-3997) regarding the routing and recording process for covenants. The routing and recording process for covenants can take a month or longer; Hydrology recommends beginning this process as soon as possible as to not delay approval for certificate of occupancy.

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director



Mayor Timothy M. Keller

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

Sincerely,

A handwritten signature in dark ink, appearing to read 'D. Peterson'.

Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: JEFFERSON HOTEL Building Permit #: _____ Hydrology File #: F17D044C

DRB#: _____ EPC#: _____ Work Order#: _____

Legal Description: TRACT 2A3C1 AND 2A3C2 MCLEOD BUSINESS PARK

City Address: UNADDRESSED ON NW CORNER OF JEFFERSON AND HOTEL LANE

Applicant: SAMIR PATEL Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Other Contact: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924 ALB NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: david@riograndeengineering.com

TYPE OF DEVELOPMENT: PLAT RESIDENCE DRB SITE X ADMIN SITE

Check all that Apply:

DEPARTMENT:
X HYDROLOGY/ DRAINAGE
 TRAFFIC/ TRANSPORTATION

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

X BUILDING PERMIT APPROVAL
 CERTIFICATE OF OCCUPANCY

TYPE OF SUBMITTAL:
 ENGINEER/ARCHITECT CERTIFICATION
 PAD CERTIFICATION
 CONCEPTUAL G & D PLAN
X GRADING PLAN
X DRAINAGE REPORT
 DRAINAGE MASTER PLAN
 FLOODPLAIN DEVELOPMENT PERMIT APPLIC
 ELEVATION CERTIFICATE
 CLOMR/LOMR
 TRAFFIC CIRCULATION LAYOUT (TCL)
 TRAFFIC IMPACT STUDY (TIS)
 STREET LIGHT LAYOUT
 OTHER (SPECIFY) _____
 PRE-DESIGN MEETING?

PRELIMINARY PLAT APPROVAL
 SITE PLAN FOR SUB'D APPROVAL
 SITE PLAN FOR BLDG. PERMIT APPROVAL
 FINAL PLAT APPROVAL

SIA/ RELEASE OF FINANCIAL GUARANTEE
 FOUNDATION PERMIT APPROVAL
 GRADING PERMIT APPROVAL
 SO-19 APPROVAL
 PAVING PERMIT APPROVAL
 GRADING/ PAD CERTIFICATION
 WORK ORDER APPROVAL
 CLOMR/LOMR
 FLOODPLAIN DEVELOPMENT PERMIT
 OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: X Yes No

DATE SUBMITTED: _____ By: _____

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director



Mayor Timothy M. Keller

August 6, 2018

David Soule, P.E.
Rio Grande Engineering
PO Box 93924
Albuquerque, NM 87199

RE: **Jefferson Hotel**
Restaurant Ln NE
Grading Plan Stamp Date: 7/30/18
Drainage Report Stamp Date: 7/30/18
Drainage File: F17D044C

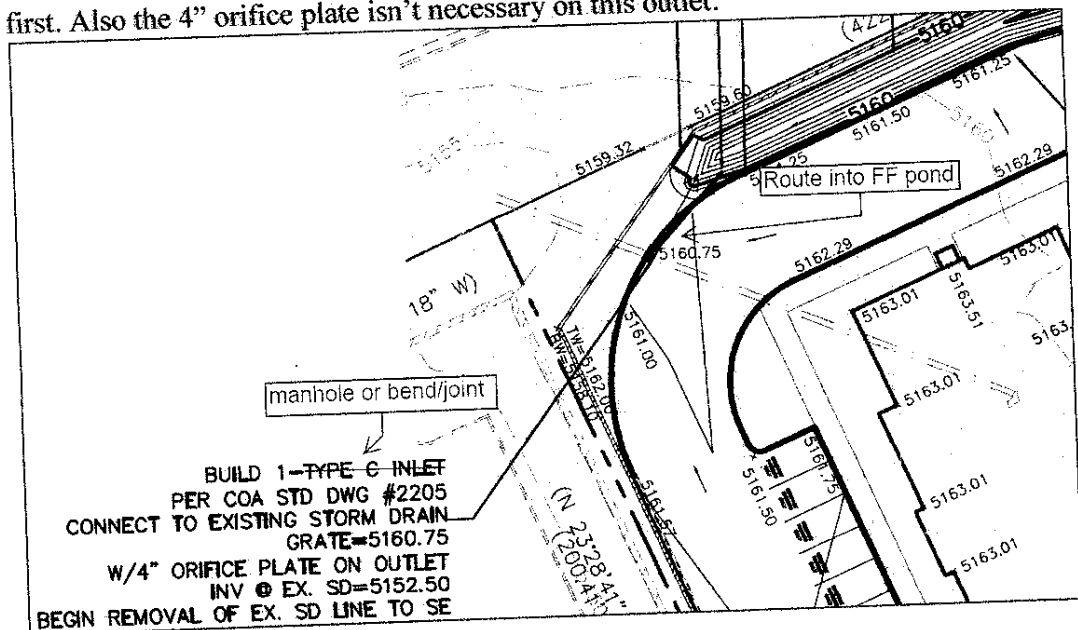
Dear Mr. Soule:

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

Based on the submittal received on 7/31/18, the grading plan and drainage report cannot be approved for building permit until the following are corrected:

Prior to Building Permit:

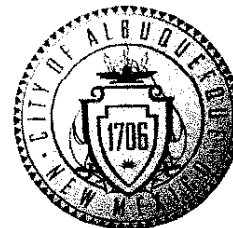
1. The Type C inlet at the NW corner should be removed as it allows surface flows to bypass the first flush pond. Stormwater draining to this low spot will need to be routed to the pond first. Also the 4" orifice plate isn't necessary on this outlet:



CORRECTED

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director



Mayor Timothy M. Keller

2. Correct the calculation error for the Fee-in Lieu amount in the narrative and in Appendix A; should be $244\text{cf} \times \$8/\text{cf} = \1952 . CORRECTED
3. Payment of the Fee in Lieu (Amount = \$1,952, per Appendix A of the drainage report) for the required first flush volume must be made. PENDING RECIEPT TO PAY
4. This project requires an ESC Plan, submitted to the Stormwater Quality Engineer (Curtis Cherne PE, ccherne@cabq.gov or 924-3420). SUBMITTED BY OTHERS

Prior to Certificate of Occupancy (For Information):

1. Engineer's Certification, per the DPM Chapter 22.7: *Engineer's Certification Checklist For Non-Subdivision* is required.
2. Provide photographs of the installed orifice plate, including one showing its dimensions and include with the drainage certification.
3. A Bernalillo County Recorded Drainage Covenant (No Public Easement) is required for the stormwater control pond. The original notarized form, exhibit A (legible on 8.5x11 paper), and recording fee (\$25, payable to Bernalillo County) must be turned into DRC (4th, Plaza del Sol) for routing. Please contact Charlotte LaBadie (clabadie@cabq.gov, 924-3996) or Madeline Carruthers (mtafoya@cabq.gov, 924-3997) regarding the routing and recording process for covenants. The routing and recording process for covenants can take a month or longer; Hydrology recommends beginning this process as soon as possible as to not delay approval for certificate of occupancy.

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Sincerely,

Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

DRAINAGE REPORT

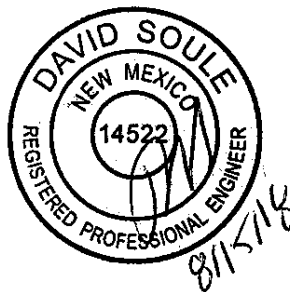
For

**TRU BY HILTON
TRACT 2-A-3-C-1 MCLEOD BUSINESS PARK
Albuquerque, New Mexico**

Prepared by

Rio Grande Engineering
~~PO Box 93924~~
Albuquerque, New Mexico 87199

April 17, 2018



David Soule P.E. No. 14522

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Appendix

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Hydraulic Model and calculations.....	B

Map

Site Grading and Drainage Plan

PURPOSE

The purpose of this report is to provide the Drainage Management Plan for the development of a 4.95 acre tract of land that is being redeveloped as a 4 story hotel. This plan was prepared in accordance with the City of Albuquerque design regulations, utilizing the City of Albuquerque's Development Process Manual drainage guidelines. This report will demonstrate that the grading does not adversely affect the surrounding properties, nor the upstream or downstream facilities.

INTRODUCTION

The subject of this report, as shown on the Exhibit A, is a 4.95 -acre parcel of land located on the west side of Jefferson Boulevard directly south of Interstate 25. The proposed legal description of this site is tract 2A3C1 and 2A3C2 of McLeod Business Park. The existing two lots are in the process of being lot line adjusted. As shown on FIRM map35001C0138H, the entire site is located within Flood Zone X. The site is bound on all sides by roadways, and is not impacted by upland flows. The site is an existing developed site, with a restaurant building and large parking field. The site currently discharges 7.74 cfs to the adjacent NMDOT right of way utilizing a detention pond. The site was developed utilizing (F17-D44C). The southern portion of the site is undeveloped and governed by F17-D69 and allowed to discharge 7.85 cfs or (4.33 cfs/acre). The proposed improvements include the redevelopment of the existing building and the construction of a new hotel with associated paved parking area. The site must conform to the master plan peak flow requirements and must retain the first flush volume onsite.

EXISTING CONDITIONS

The site is currently developed. The site currently discharges developed flow of 7.85 cfs to a swale along the NMDOT right of way, utilizing a detention pond. The remaining undeveloped southern portion sheet flows to Hotel Lane. The flows in this basin are all conveyed to 3-42" culverts located at McLeod and Interstate 25 where they are conveyed to the Vineyard channel and the Main North Diversion Channel. The site is not impacted by upland flows.

PROPOSED CONDITIONS

The proposed improvements consist of interior improvements to the existing building and the construction of a new hotel. The area between the buildings will be paved. The site contains 4 drainage basins. Basin A contains the northern portion of the new building and discharges 3.32 cfs to the existing outfall. The basin retains the first flush volume of 556 cubic feet. Basin B contains the existing building and the southern half of the new hotel as well as most of the parking area. This basin generates 12.61 cfs. This basin drains to a central pond that has an outlet control. As shown in appendix B, this pond will discharge 5.1 cfs and have a maximum water surface elevation of 5158.31. The first flush volume of 3010 cf is retained in the pond below the inlet grate. Basin C contains the southern portion of the lot and discharges 2.77 cfs to an inlet connected to the outfall of basin B. This basin does not capture the 699 cubic feet of first flush volume therefore generates a fee in lieu of \$5,707.00. The combined flow from basin B and C is 7.87 cfs, which is .02 cfs greater than allowed. The northeast corner of the site contains a large landscaped pond and does not discharge.

SUMMARY AND RECOMMENDATIONS

This project is a redevelopment of an existing site that allows 7.74 cfs to discharge to the NMDOT right of way via an existing outfall, and 7.85 cfs to discharge to Hotel Lane. The site discharges 3.32 cfs to the NMDOT right of way, a reduction of 4.42 cfs. The Southern portion of the site generates a flow greater than allowed, so the flow is metered by onsite detention ponding and an orifice controlled outlet. The resultant flow discharging to hotel lane is 7.87 cfs. The majority of the flow passes thru a first flush pond that retains the required volume. The portions of the site that can not be captured results in a fee in lieu to be paid. The onsite storm drain and outfalls were designed to convey the flow. The ponds will overflow in an emergency or clogging situation via the emergency spill way for basin a and thru the driveway for basin B. The development of this site will not negatively impact the upstream nor down stream facilities. Since the work area does exceed 1 acre, erosion and sediment Control Plan shall be required.

APPENDIX A
SITE HYDROLOGY

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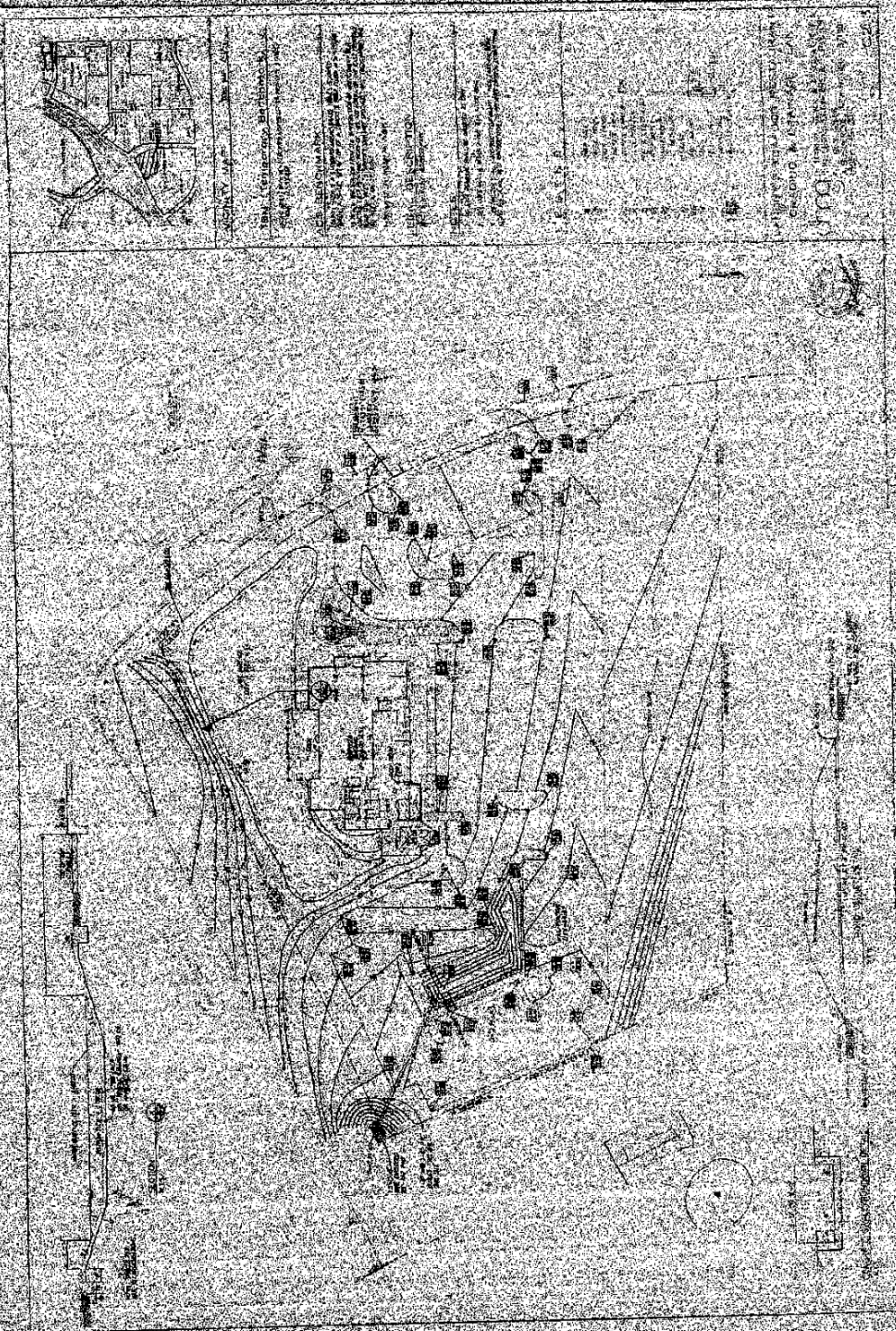
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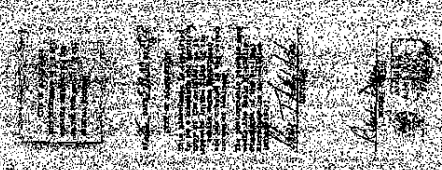
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1000 N. MIAMI AVE., SUITE 100
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Evolution Conditions Basin Map



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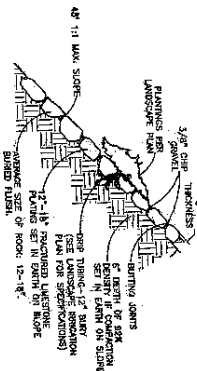


NOTICE TO CONTRACTORS

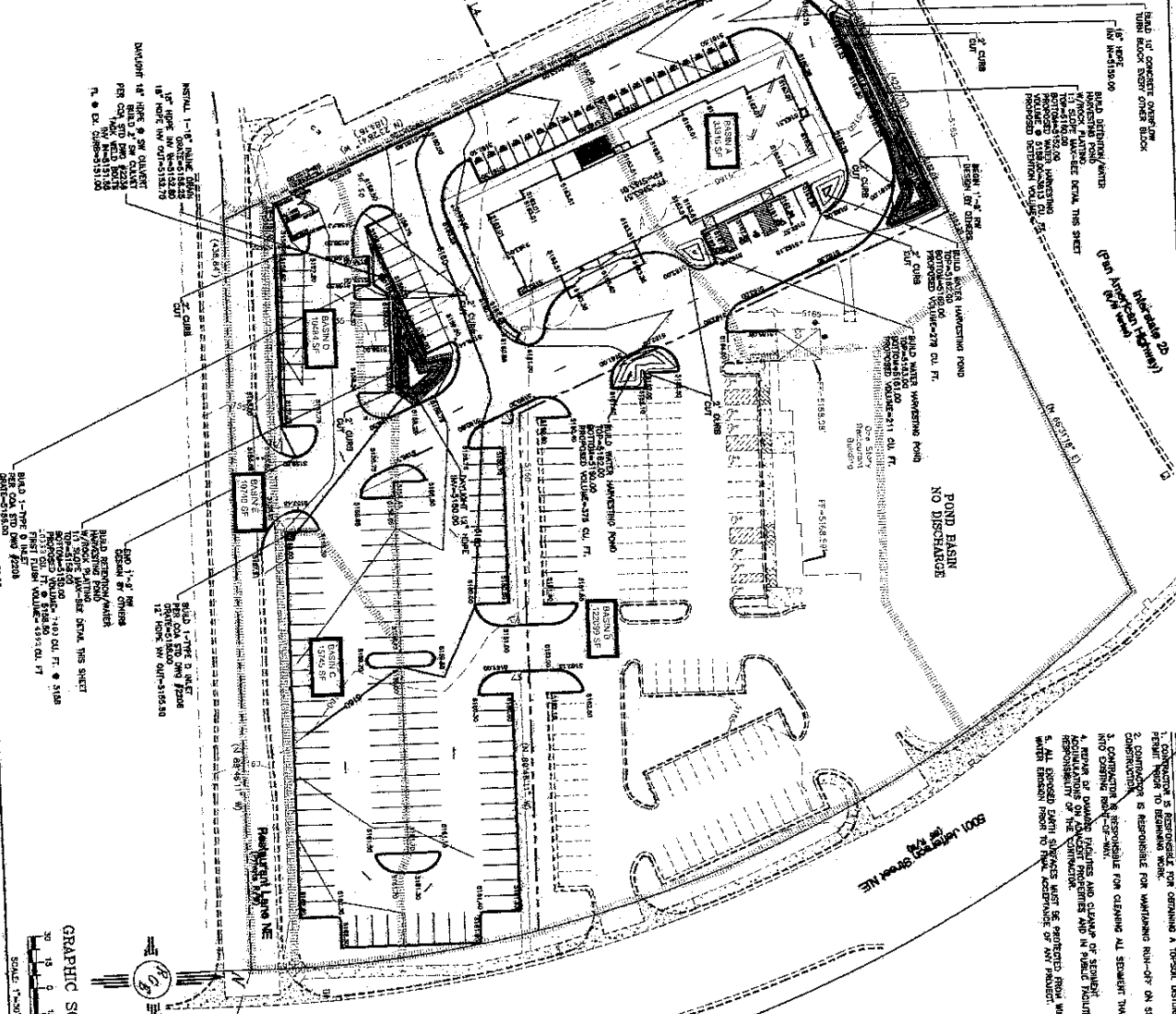
1. ALL EXISTING CONSTRUCTION SHALL BE TO BE REMOVED EXCEPT AS SHOWN ON THE PLANS.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND CONDITIONS OF THE CONTRACT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ALBUQUERQUE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES AND STRUCTURES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL DEBRIS AND WASTE MATERIAL.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL ACCESS ROADS AND DRIVEWAYS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL ADJACENT PROPERTIES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PUBLIC UTILITIES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL ENVIRONMENTAL FEATURES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL HISTORIC STRUCTURES.

APPROVAL: _____ NAME: _____ DATE: _____

ROCK PLATING DETAIL

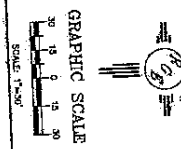


CAUTION:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES.



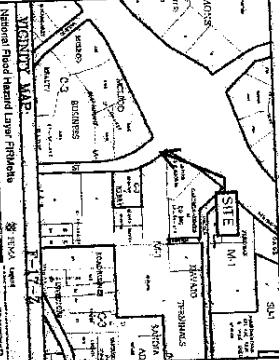
PROVISION CONTROL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOP-SOIL CERTIFICATE FROM THE CITY OF ALBUQUERQUE.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL ENVIRONMENTAL FEATURES.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL HISTORIC STRUCTURES.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL PUBLIC UTILITIES.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL ADJACENT PROPERTIES.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL ACCESS ROADS AND DRIVEWAYS.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL DEBRIS AND WASTE MATERIAL.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF ALL EXISTING UTILITIES AND STRUCTURES.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL ENVIRONMENTAL FEATURES.



LEGEND

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OWNER'S NAME: _____
PROJECT: _____
DATE: _____
DRAWN BY: _____
CHECKED BY: _____
APPROVED BY: _____
SCALE: _____
SHEET: _____

Weighted E Method

JEFFERSON HOTEL

Existing Developed Basins- not accounting for detention basin

Basin	Area (sf)	Treatment A				Treatment B				Treatment C				Treatment D				100-Year 6-hr		10-day
		Area (acres)	%	Area (acres)	%	Area (acres)	%	Area (acres)	%	Area (acres)	%	Area (acres)	%	Area (acres)	%	Area (acres)	%	Weighted E (ac-ft)	Volume (ac-ft)	
BASIN A	33316	0.765	0%	0	0.0%	0.000	23.0%	0.17591	77%	0.589	1.892	0.121	3.32	1.974	0.461	12.49	0.199			
BASIN B	122099	2.803	0%	0	5.0%	0.140	8.0%	0.22424	86%	0.311	1.941	0.058	1.58	1.914	0.038	1.05	0.065			
BASIN C	15745	0.361	0%	0	5.0%	0.018	10.0%	0.02407	82%	0.197	1.914	0.038	1.05	1.843	0.038	1.05	0.062			
BASIN D	10484	0.241	0%	0	0.0%	0.000	28.0%	0.06909	72%	0.178	1.843	0.038	1.05	1.970	0.520	14.07	0.889			
BASIN E	10749	0.247	0%	0	0.0%	0.000	7.9%	0.24954	87%	0.178	1.970	0.520	14.07							
COMBINED C+B	137844	3.164	0%	0	5.0%	0.158223	7.9%	0.24954	87%	0.178	1.970	0.520	14.07							

Equations:

Weighted E = $E_a A_a + E_b A_b + E_c A_c + E_d A_d / (\text{Total Area})$

Volume = Weighted E * Total Area

Flow = $Q_a A_a + Q_b A_b + Q_c A_c + Q_d A_d$

Where for 100-year, 6-hour storm (zone 3)

$E_a = 0.53$
 $E_b = 0.78$
 $E_c = 1.13$
 $E_d = 2.12$
 $Q_a = 1.57$
 $Q_b = 2.28$
 $Q_c = 3.14$
 $Q_d = 4.7$

DRAINS TO NIMDOT
 DRAINS TO HOTEL
 EXISTING PROPOSED AFTER ROUTING
 7.74 3.32 3.32
 16.17 7.88

First flush requirement (Redevelopment=impx 28/12- New development=impx 34/12)
 Area of site affected=7753 w/s/s impervious

BASIN A BASIN B+C BASIN D
 556 3393 243.5782667 CF
 first flush= 2303 0 CF
 volume retained= 4992
 fee in lieu \$1,952 DOLLARS

APPENDIX B

HYDRAULIC MODELING AND CALCULATIONS

DROP INLET CALCULATIONS

POND	TYPE OF INLET	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
	SINGLE D	3.84	1.58	0.0073	0.5

ORIFICE EQUATION

$$Q = CA \sqrt{2gH}$$

$$C = 0.6$$

$$g = 32.2$$

INLETS IN SUMP CONDITION. ONE INLET CAN HANDLE THE FLOW,

VOLUME CALCULATIONS

COMMONS POND

POND OUTLET

ACTUAL ELEV.	DEPTH (FT)		VOLUME CUMULATIVE	VOLUME AC-FT	Q (CFS)
50.00	0.00				
52.50	0.00		800	0.018	0.00
56.00	3.50		5120	0.118	4.43
57.00	4.50		6135	0.141	5.03
58.00	5.50		7403	0.170	5.56
58.50	6.00		10333	0.237	5.81

Orifice Equation

$$Q = CA \text{ SQRT}(2gH)$$

C = 0.6
 Diameter (in) 9.5
 Area (ft²)= 0.492237391
 g = 32.2
 H (Ft) = Depth of water above center of orifice
 Q (CFS)= Flow

pondrout031318.txt

*S AHYMO - DETENTION-JEFFERSON HOTEL
*S POND ROUTING

START TIME=0.0 PUNCH CODE=0

RAINFALL TYPE=2
QUARTER=0.0 ONE= 2.01 IN
SIX=2.35 IN DAY= 2.75 IN DT = 0.05 HR

COMPUTE NM HYD ID=1 HYD NO=101 DA= .00494 SQ MI
PER A=0 PER B=5 PER C=8 PER D=87
TP=-.142 MASSRAIN=-1

PRINT HYD ID=1 CODE=3

* ROUTE THE TOTAL FLOW THROUGH THE PROPOSED RESERVOIR
ROUTE RESERVOIR ID=2 HYD NO=102 INFLOW=1 CODE=3
OUTFLOW(CFS) STORAGE(AC-FT) ELEV(FT)
0.00 0.018 52.50
4.43 0.118 56.00
5.03 0.141 57.00
5.56 0.170 58.00
5.81 0.237 58.50

FINISH

AHYMO.OUT

AHYMO PROGRAM (AHYMO-S4)

- Version: S4.01a - Rel: 01a

RUN DATE (MON/DAY/YR) = 07/30/2018

START TIME (HR:MIN:SEC) = 16:53:40

USER NO. =

RioGrandeSing\ea41963517

INPUT FILE = ettings\Owner\Desktop\2018 JOBS\1813-jefferson
hotel\DRAINAGE\pondrout031318.txt

*S AHYMO - DETENTION-JEFFERSON HOTEL
*S POND ROUTING

START TIME=0.0 PUNCH CODE=0

RAINFALL TYPE=2
QUARTER=0.0 ONE= 2.01 IN
SIX=2.35 IN DAY= 2.75 IN DT = 0.05 HR

24-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE

AREAS (NM & AZ) - D1
DT = 0.050000 HOURS

0.050000 HOURS		END TIME =		24.000002 HOURS		
0.0000	0.0023	0.0046	0.0071	0.0099	0.0127	0.0159
0.0203	0.0272	0.0347	0.0424	0.0509	0.0595	0.0684
0.0776	0.0870	0.0974	0.1084	0.1204	0.1437	0.1728
0.2117	0.2559	0.3104	0.3831	0.4649	0.6062	0.8258
1.2021	1.4666	1.6752	1.7800	1.8719	1.9379	1.9905
2.0362	2.0697	2.1005	2.1259	2.1418	2.1530	2.1629
2.1722	2.1803	2.1879	2.1953	2.2025	2.2084	2.2118
2.2152	2.2186	2.2217	2.2247	2.2278	2.2307	2.2336
2.2363	2.2391	2.2417	2.2443	2.2469	2.2494	2.2518
2.2542	2.2565	2.2588	2.2611	2.2633	2.2654	2.2676
2.2697	2.2717	2.2738	2.2758	2.2778	2.2798	2.2817
2.2837	2.2856	2.2874	2.2893	2.2911	2.2930	2.2948
2.2965	2.2983	2.3000	2.3017	2.3034	2.3051	2.3068
2.3084	2.3100	2.3117	2.3133	2.3148	2.3164	2.3180
2.3195	2.3210	2.3225	2.3240	2.3255	2.3269	2.3284
2.3298	2.3313	2.3327	2.3341	2.3355	2.3368	2.3382
2.3396	2.3409	2.3422	2.3436	2.3449	2.3462	2.3474
2.3487	2.3500	2.3513	2.3525	2.3538	2.3551	2.3563
2.3576	2.3589	2.3601	2.3614	2.3627	2.3639	2.3652
2.3665	2.3677	2.3690	2.3702	2.3715	2.3728	2.3740
2.3753	2.3765	2.3778	2.3790	2.3803	2.3815	2.3828
2.3840	2.3853	2.3865	2.3878	2.3890	2.3903	2.3915
2.3927	2.3940	2.3952	2.3965	2.3977	2.3989	2.4002
2.4014	2.4027	2.4039	2.4051	2.4064	2.4076	2.4088
2.4101	2.4113	2.4125	2.4137	2.4150	2.4162	2.4174
2.4186	2.4199	2.4211	2.4223	2.4235	2.4247	2.4260
2.4272	2.4284	2.4296	2.4308	2.4320	2.4333	2.4345
2.4357	2.4369	2.4381	2.4393	2.4405	2.4417	2.4429
2.4441	2.4453	2.4465	2.4478	2.4490	2.4502	2.4514
2.4526	2.4538	2.4550	2.4561	2.4573	2.4585	2.4597
2.4609	2.4621	2.4633	2.4645	2.4657	2.4669	2.4681
2.4692	2.4704	2.4716	2.4728	2.4740	2.4752	2.4764
2.4775	2.4787	2.4799	2.4811	2.4822	2.4834	2.4846
2.4858	2.4869	2.4881	2.4893	2.4905	2.4916	2.4928
2.4940	2.4951	2.4963	2.4975	2.4986	2.4998	2.5010
2.5021	2.5033	2.5044	2.5056	2.5068	2.5079	2.5091
2.5102	2.5114	2.5125	2.5137	2.5148	2.5160	2.5171

AHYMO. OUT							
2.5183	2.5194	2.5206	2.5217	2.5229	2.5240	2.5252	
2.5263	2.5274	2.5286	2.5297	2.5309	2.5320	2.5331	
2.5343	2.5354	2.5365	2.5377	2.5388	2.5399	2.5411	
2.5422	2.5433	2.5445	2.5456	2.5467	2.5478	2.5490	
2.5501	2.5512	2.5523	2.5535	2.5546	2.5557	2.5568	
2.5579	2.5590	2.5602	2.5613	2.5624	2.5635	2.5646	
2.5657	2.5668	2.5679	2.5691	2.5702	2.5713	2.5724	
2.5735	2.5746	2.5757	2.5768	2.5779	2.5790	2.5801	
2.5812	2.5823	2.5834	2.5845	2.5856	2.5867	2.5878	
2.5889	2.5899	2.5910	2.5921	2.5932	2.5943	2.5954	
2.5965	2.5976	2.5986	2.5997	2.6008	2.6019	2.6030	
2.6040	2.6051	2.6062	2.6073	2.6084	2.6094	2.6105	
2.6116	2.6126	2.6137	2.6148	2.6159	2.6169	2.6180	
2.6191	2.6201	2.6212	2.6223	2.6233	2.6244	2.6254	
2.6265	2.6276	2.6286	2.6297	2.6307	2.6318	2.6328	
2.6339	2.6350	2.6360	2.6371	2.6381	2.6392	2.6402	
2.6413	2.6423	2.6433	2.6444	2.6454	2.6465	2.6475	
2.6486	2.6496	2.6506	2.6517	2.6527	2.6538	2.6548	
2.6558	2.6569	2.6579	2.6589	2.6600	2.6610	2.6620	
2.6630	2.6641	2.6651	2.6661	2.6672	2.6682	2.6692	
2.6702	2.6712	2.6723	2.6733	2.6743	2.6753	2.6763	
2.6774	2.6784	2.6794	2.6804	2.6814	2.6824	2.6834	
2.6844	2.6854	2.6865	2.6875	2.6885	2.6895	2.6905	
2.6915	2.6925	2.6935	2.6945	2.6955	2.6965	2.6975	
2.6985	2.6995	2.7005	2.7015	2.7025	2.7034	2.7044	
2.7054	2.7064	2.7074	2.7084	2.7094	2.7104	2.7114	
2.7123	2.7133	2.7143	2.7153	2.7163	2.7172	2.7182	
2.7192	2.7202	2.7211	2.7221	2.7231	2.7241	2.7250	
2.7260	2.7270	2.7280	2.7289	2.7299	2.7309	2.7318	
2.7328	2.7338	2.7347	2.7357	2.7366	2.7376	2.7386	
2.7395	2.7405	2.7414	2.7424	2.7433	2.7443	2.7452	
2.7462	2.7472	2.7481	2.7491	2.7500			

COMPUTE NM HYD

ID=1 HYD NO=101 DA= .00494 SQ MI
 PER A=0 PER B=5 PER C=8 PER D=87
 TP=-.142 MASSRAIN=-1

K = 0.077390HR TP = 0.142000HR K/TP RATIO = 0.545000 SHAPE
 CONSTANT, N = 7.106428
 UNIT PEAK = 15.928 CFS UNIT VOLUME = 0.9985 B = 526.28
 P60 = 2.0100
 AREA = 0.004298 SQ MI IA = 0.10000 INCHES INF = 0.04000
 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =
 0.050000

K = 0.124555HR TP = 0.142000HR K/TP RATIO = 0.877146 SHAPE
 CONSTANT, N = 4.047639
 UNIT PEAK = 1.6206 CFS UNIT VOLUME = 0.9931 B = 358.33
 P60 = 2.0100
 AREA = 0.000642 SQ MI IA = 0.40769 INCHES INF = 0.99154
 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =
 0.050000

PRINT HYD

ID=1 CODE=3

PARTIAL HYDROGRAPH 101.00

TIME	FLOW	TIME	FLOW	TIME	FLOW
Page 2					

AHYMO.OUT

TIME HRS	FLOW HRS CFS	CFS	TIME HRS	FLOW HRS CFS	CFS	HRS	CFS
	0.000	0.0		5.100	0.0	10.200	0.1
15.300	0.1	0.0	20.400	0.1	0.0	10.350	0.1
15.450	0.150	0.0	20.550	0.1	0.1	10.500	0.1
15.600	0.300	0.0	20.700	0.1	0.1	10.650	0.1
15.750	0.450	0.0	20.850	0.1	0.1	10.800	0.1
15.900	0.600	0.0	21.000	0.1	0.1	10.950	0.1
16.050	0.750	0.0	21.150	0.1	0.1	11.100	0.1
16.200	0.900	0.1	21.300	0.1	0.1	11.250	0.1
16.350	1.050	0.8	21.450	0.1	0.1	11.400	0.1
16.500	1.200	2.0	21.600	0.1	0.1	11.550	0.1
16.650	1.350	4.7	21.750	0.1	0.1	11.700	0.1
16.800	1.500	14.0	21.900	0.1	0.1	11.850	0.1
16.950	1.650	9.1	22.050	0.1	0.1	12.000	0.1
17.100	1.800	4.5	22.200	0.1	0.1	12.150	0.1
17.250	1.950	2.6	22.350	0.1	0.1	12.300	0.1
17.400	2.100	1.4	22.500	0.1	0.1	12.450	0.1
17.550	2.250	0.8	22.650	0.1	0.1	12.600	0.1
17.700	2.400	0.5	22.800	0.1	0.1	12.750	0.1
17.850	2.550	0.3	22.950	0.1	0.1	12.900	0.1
18.000	2.700	0.2	23.100	0.1	0.1	13.050	0.1
18.150	2.850	0.1	23.250	0.1	0.1	13.200	0.1
18.300	3.000	0.1	23.400	0.1	0.1	13.350	0.1
18.450	3.150	0.0	23.550	0.1	0.1	13.500	0.1
18.600	3.300	0.0	23.700	0.1	0.1	13.650	0.1
18.750	3.450	0.0	23.850	0.1	0.1	13.800	0.1
18.900	3.600	0.0	24.000	0.1	0.1	13.950	0.1
19.050	3.750	0.0	24.150	0.0	0.1	14.100	0.1
19.200	3.900	0.0	24.300	0.0	0.1	14.250	0.1
19.350	4.050	0.0	24.450	0.0	0.1	14.400	0.1
19.500	4.200	0.0	24.600	0.0	0.1	14.550	0.1
19.650	4.350	0.0	24.750	0.0			

			AHYMO,OUT		
	4.500	0.0	9.600	0.1	14.700
19.800	0.1				
	4.650	0.0	9.750	0.1	14.850
19.950	0.1				
	4.800	0.0	9.900	0.1	15.000
20.100	0.1				
	4.950	0.0	10.050	0.1	15.150
20.250	0.1				

RUNOFF VOLUME = 2.32270 INCHES = 0.6120 ACRE-FEET
 PEAK DISCHARGE RATE = 14.04 CFS AT 1.500 HOURS BASIN AREA =
 0.0049 SQ. MI.

* ROUTE THE TOTAL FLOW THROUGH THE PROPOSED RESERVOIR
 ROUTE RESERVOIR ID=2 HYD NO=102 INFLOW=1 CODE=3
 OUTFLOW(CFS) STORAGE(AC-FT) ELEV(FT)
 0.00 0.018 52.50
 4.43 0.118 56.00
 5.03 0.141 57.00
 5.56 0.170 58.00
 5.81 0.237 58.50

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	52.50	0.018	0.00
0.15	0.00	52.50	0.018	0.00
0.30	0.00	52.50	0.018	0.00
0.45	0.00	52.50	0.018	0.00
0.60	0.00	52.50	0.018	0.00
0.75	0.00	52.50	0.018	0.00
0.90	0.09	52.51	0.018	0.01
1.05	0.84	52.65	0.022	0.19
1.20	2.00	53.07	0.034	0.73
1.35	4.70	53.89	0.058	1.76
1.50	14.04	56.74	0.135	4.87
1.65	9.09	58.37	0.220	5.75
1.80	4.51	58.44	0.228	5.78
1.95	2.62	58.23	0.200	5.67
2.10	1.37	57.51	0.156	5.30
2.25	0.81	55.71	0.110	4.07
2.40	0.53	54.57	0.077	2.62
2.55	0.27	53.82	0.056	1.67
2.70	0.16	53.33	0.042	1.05
2.85	0.10	53.02	0.033	0.66
3.00	0.06	52.83	0.027	0.41
3.15	0.04	52.70	0.024	0.26
3.30	0.03	52.63	0.022	0.16

AHYMO.OUT				
3.45	0.03	52.59	0.020	0.11
3.60	0.03	52.56	0.020	0.07
3.75	0.03	52.54	0.019	0.05
3.90	0.03	52.53	0.019	0.04
4.05	0.03	52.53	0.019	0.04
4.20	0.03	52.53	0.019	0.03
4.35	0.03	52.53	0.019	0.03
4.50	0.04	52.53	0.019	0.03
4.65	0.04	52.53	0.019	0.04
4.80	0.04	52.53	0.019	0.04
4.95	0.04	52.53	0.019	0.04
5.10	0.05	52.53	0.019	0.04
5.25	0.05	52.54	0.019	0.04
5.40	0.05	52.54	0.019	0.05
5.55	0.06	52.54	0.019	0.05
5.70	0.06	52.54	0.019	0.05
5.85	0.06	52.55	0.019	0.06
6.00	0.07	52.55	0.019	0.06
6.15	0.07	52.55	0.019	0.06
6.30	0.07	52.55	0.020	0.07
6.45	0.07	52.55	0.020	0.07
6.60	0.07	52.55	0.020	0.07
6.75	0.07	52.55	0.020	0.07
6.90	0.07	52.55	0.020	0.07
7.05	0.07	52.56	0.020	0.07
7.20	0.07	52.56	0.020	0.07
7.35	0.07	52.55	0.020	0.07
7.50	0.07	52.55	0.020	0.07
7.65	0.07	52.55	0.020	0.07
7.80	0.07	52.55	0.020	0.07
7.95	0.07	52.55	0.020	0.07
8.10	0.07	52.55	0.020	0.07
8.25	0.07	52.55	0.020	0.07

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
8.40	0.07	52.55	0.020	0.07
8.55	0.07	52.55	0.020	0.07
8.70	0.07	52.55	0.020	0.07
8.85	0.07	52.55	0.020	0.07
9.00	0.07	52.55	0.020	0.07
9.15	0.07	52.55	0.020	0.07
9.30	0.07	52.55	0.020	0.07
9.45	0.07	52.55	0.020	0.07
9.60	0.07	52.55	0.020	0.07
9.75	0.07	52.55	0.020	0.07
9.90	0.07	52.55	0.020	0.07
10.05	0.07	52.55	0.020	0.07
10.20	0.07	52.55	0.020	0.07
10.35	0.07	52.55	0.019	0.07
10.50	0.07	52.55	0.019	0.07
10.65	0.07	52.55	0.019	0.07
10.80	0.07	52.55	0.019	0.07
10.95	0.06	52.55	0.019	0.07
11.10	0.07	52.55	0.019	0.07
11.25	0.07	52.55	0.019	0.07
11.40	0.07	52.55	0.019	0.07
11.55	0.07	52.55	0.019	0.07
11.70	0.06	52.55	0.019	0.07
11.85	0.06	52.55	0.019	0.07
12.00	0.06	52.55	0.019	0.07
12.15	0.06	52.55	0.019	0.06

			AHYMO.OUT	
12.30	0.06	52.55	0.019	0.06
12.45	0.06	52.55	0.019	0.06
12.60	0.06	52.55	0.019	0.06
12.75	0.06	52.55	0.019	0.06
12.90	0.06	52.55	0.019	0.06
13.05	0.06	52.55	0.019	0.06
13.20	0.06	52.55	0.019	0.06
13.35	0.06	52.55	0.019	0.06
13.50	0.06	52.55	0.019	0.06
13.65	0.06	52.55	0.019	0.06
13.80	0.06	52.55	0.019	0.06
13.95	0.06	52.55	0.019	0.06
14.10	0.06	52.55	0.019	0.06
14.25	0.06	52.55	0.019	0.06
14.40	0.06	52.55	0.019	0.06
14.55	0.06	52.55	0.019	0.06
14.70	0.06	52.55	0.019	0.06
14.85	0.06	52.55	0.019	0.06
15.00	0.06	52.55	0.019	0.06
15.15	0.06	52.55	0.019	0.06
15.30	0.06	52.55	0.019	0.06
15.45	0.06	52.55	0.019	0.06
15.60	0.06	52.55	0.019	0.06
15.75	0.06	52.55	0.019	0.06
15.90	0.06	52.55	0.019	0.06
16.05	0.06	52.55	0.019	0.06
16.20	0.06	52.55	0.019	0.06
16.35	0.06	52.55	0.019	0.06
16.50	0.06	52.55	0.019	0.06
16.65	0.06	52.55	0.019	0.06

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
16.80	0.06	52.55	0.019	0.06
16.95	0.06	52.55	0.019	0.06
17.10	0.06	52.55	0.019	0.06
17.25	0.06	52.55	0.019	0.06
17.40	0.06	52.55	0.019	0.06
17.55	0.06	52.55	0.019	0.06
17.70	0.06	52.55	0.019	0.06
17.85	0.06	52.55	0.019	0.06
18.00	0.06	52.55	0.019	0.06
18.15	0.06	52.55	0.019	0.06
18.30	0.06	52.55	0.019	0.06
18.45	0.06	52.55	0.019	0.06
18.60	0.06	52.55	0.019	0.06
18.75	0.06	52.55	0.019	0.06
18.90	0.06	52.55	0.019	0.06
19.05	0.06	52.55	0.019	0.06
19.20	0.06	52.55	0.019	0.06
19.35	0.06	52.55	0.019	0.06
19.50	0.06	52.55	0.019	0.06
19.65	0.06	52.55	0.019	0.06
19.80	0.06	52.55	0.019	0.06
19.95	0.06	52.55	0.019	0.06
20.10	0.06	52.54	0.019	0.06
20.25	0.06	52.54	0.019	0.06
20.40	0.06	52.54	0.019	0.06
20.55	0.06	52.54	0.019	0.06
20.70	0.06	52.54	0.019	0.06
20.85	0.06	52.54	0.019	0.06
21.00	0.06	52.54	0.019	0.06

			AHYMO.OUT	
21.15	0.06	52.54	0.019	0.06
21.30	0.06	52.54	0.019	0.06
21.45	0.06	52.54	0.019	0.06
21.60	0.06	52.54	0.019	0.06
21.75	0.05	52.54	0.019	0.06
21.90	0.06	52.54	0.019	0.05
22.05	0.06	52.54	0.019	0.06
22.20	0.05	52.54	0.019	0.05
22.35	0.05	52.54	0.019	0.05
22.50	0.05	52.54	0.019	0.05
22.65	0.05	52.54	0.019	0.05
22.80	0.05	52.54	0.019	0.05
22.95	0.05	52.54	0.019	0.05
23.10	0.05	52.54	0.019	0.05
23.25	0.05	52.54	0.019	0.05
23.40	0.05	52.54	0.019	0.05
23.55	0.05	52.54	0.019	0.05
23.70	0.05	52.54	0.019	0.05
23.85	0.05	52.54	0.019	0.05
24.00	0.05	52.54	0.019	0.05
24.15	0.03	52.54	0.019	0.05
24.30	0.01	52.53	0.019	0.03
24.45	0.00	52.52	0.018	0.02
24.60	0.00	52.51	0.018	0.01
24.75	0.00	52.51	0.018	0.01
24.90	0.00	52.50	0.018	0.00

PEAK DISCHARGE = 5.789 CFS - PEAK OCCURS AT HOUR 1.75
 MAXIMUM WATER SURFACE ELEVATION = 58.459
 MAXIMUM STORAGE = 0.2315 AC-FT INCREMENTAL TIME= 0.050000HRS

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 16:53:40

