

CITY OF ALBUQUERQUE



May 1, 2018

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

RE: **Jefferson Hotel**
Restaurant Ln NE
Conceptual Grading Plan Stamp Date: 4/13/18
Drainage Report Stamp Date: 4/17/18
Drainage File: F17D044C

Dear Mr. Soule:

Based on the information provided in your submittal received 4/17/18, the conceptual grading plan and drainage report are approved for final plat. Prior to grading or building permit the following are required:

1. A Private Drainage Covenant (No Public Easement) is required for the stormwater detention ponds. The original notarized form, exhibit A (legible on 8.5x11 paper), and recording fee (\$25, payable to City of Albuquerque) 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.
2. This project requires an ESC Plan, submitted to the Stormwater Quality Engineer (Curtis Cherne PE, ccherne@cabq.gov or 924-3420).
3. Discharge to the SW corner of this site (Restaurant Ln) needs to be limited to 7.85 cfs (4.33cfs/ac x 1.8ac) per the approved management plan by JMA (2005). Increasing the area draining to Restaurant Ln is acceptable, but the flow does need to be restricted to 7.85cfs.
4. Delineate and determine the runoff from the Restaurant Ln half street and frontage; this area is within the subject property, free discharges to the west, and counts against the subject property's allowable discharge.
5. The proposed contours and spot elevations do not support the waterblock between the center rows of parking in the SE corner. Please adjust, or update the subbasins accordingly.

CITY OF ALBUQUERQUE



6. Payment of the Fee in Lieu (Estimate Amount = \$5707, per Appendix A of the drainage report) for the required first flush volume must be made. This amount will need to be reconfirmed at the time of grading/building permit approval, to ensure the volume didn't change as a result of the above comments
7. "Conceptual" markings will need to be removed from the grading plan.
8. Additional comments may be provided at Building Permit, based on the outcome of the above remarks and level of detail shown on plans.

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

Sincerely,

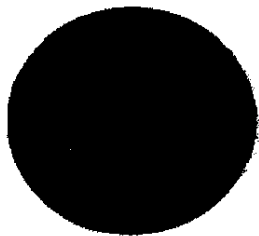
Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: JEFFERSON HOTEL Building Permit #: _____ City Drainage #: _____

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

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

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

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: SAMIR PATAL Contact: _____

Address: _____

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

Architect: NA Contact: _____

Address: _____

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

Other Contact: _____ Contact: _____

Address: _____

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

Check all that Apply:

DEPARTMENT:

- ☒ HYDROLOGY/ DRAINAGE
☐ TRAFFIC/ TRANSPORTATION
☐ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

- ☐ ENGINEER/ ARCHITECT CERTIFICATION
- ☐ CONCEPTUAL G & D PLAN
☒ GRADING PLAN
☐ DRAINAGE MASTER PLAN
☐ DRAINAGE REPORT
☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ TRAFFIC IMPACT STUDY (TIS)
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ☐ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: ☐ Yes ☒ No

DATE SUBMITTED: 4/16/18 By: _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☐ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY
- ☐ 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
- ☐ PRE-DESIGN MEETING
☐ OTHER (SPECIFY) _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

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



4/17/18

David Soule P.E. No. 14522

TABLE OF CONTENTS

Purpose	3
Introduction.....	3
Existing Conditions.....	3
Exhibit A-Vicinity Map	4
Proposed Conditions	5
Summary	5

Appendix

Site Hydrology	A
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.

Exhibit A- Vicinity Map

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

Weighted E Method

enchantment carpet

Existing Developed Basins- not accounting for detention basin

Basin	Area (sf)	Area (acres)	Treatment A		Treatment B		Treatment C		Treatment D		100-Year, 6-hr.		10-day	
			%	(acres)	%	(acres)	%	(acres)	%	(acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Volume (ac-ft)
BASIN A	33316	0.765	0%	0	0.0%	0.000	23.0%	0.17591	77%	0.569	1.892	0.121	3.32	0.199
BASIN B	122099	2.803	0%	0	0.0%	0.000	13.0%	0.36439	87%	2.439	1.991	0.465	12.61	0.790
BASIN C	28229	0.602	0%	0	0.0%	0.000	6.0%	0.03613	94%	0.566	2.061	0.103	2.77	0.179

Equations:

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

$$\text{Volume} = \text{Weighted D} \cdot \text{Total Area}$$

$$\text{Flow} = Q_a \cdot A_a + Q_b \cdot A_b + Q_c \cdot A_c + Q_d \cdot A_d$$

Where for 180-year, 6-hour storm (zone 3)

$$E_a = 0.53$$

$$E_b = 0.78$$

$$E_c = 1.13$$

$$E_d = 2.12$$

$$Q_a = 1.57$$

$$Q_b = 2.28$$

$$Q_c = 3.14$$

$$Q_d = 4.7$$

First flush requirement (Redevelopment=impx.26/12— New development=impx.34/12)
Area of site affected=18498 sf- of

first flush= BASIN A BASIN B BASIN C
volume retained= 566 3010 698 5857 CF
fee in lieu 2303 3420 0 CF
\$707 DOLLARS

THE SUBJECT PROPERTY IS A REDEVELOPMENT OF AND EXISTING SITE. THE SITE IS COVERED BY F17D44C. THE SITE IS NOT IMPACTED BY UPLAND FLOWS. THE SITE CURRENTLY DISCHARGES 7.12 CFS TO A SWALE WITHIN THE NMDOT RIGHT OF WAY. THE REMAINING SITE IS ALLOWED TO DISCHARGE 7.88 CFS TO HOTEL LANE PER F17D069



SMITH & MURPHY
10000 W. 100th Ave., Suite 100
Overland Park, KS 66213
Tel: 913-241-1100
Fax: 913-241-1101
www.smithandmurphy.com

Existing Conditions Basin Map

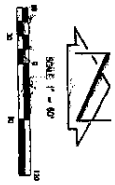
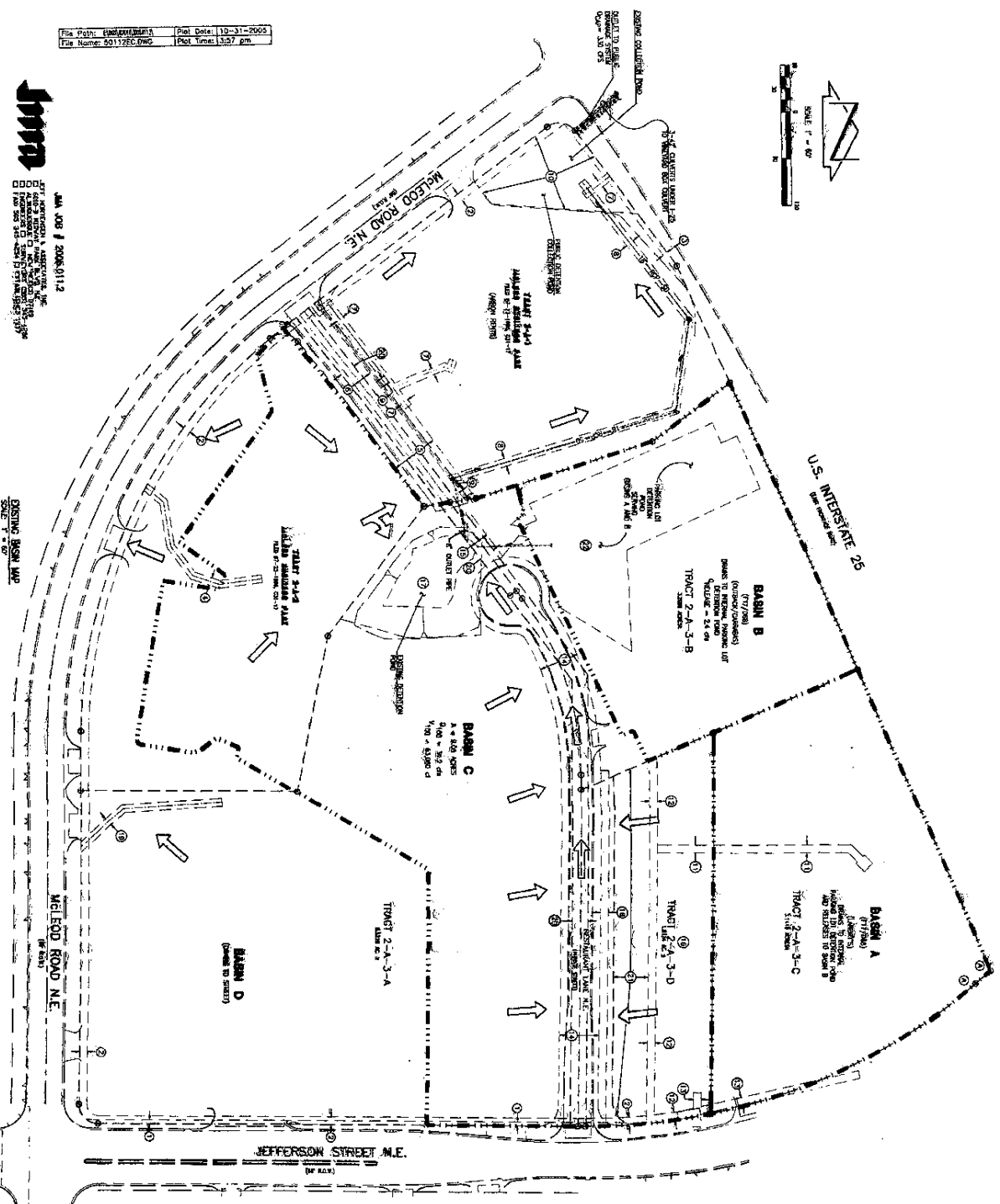
EXISTING BASIN MAP
SCALE: 1" = 50'

SCALE: 1" = 50'

Bruce H. Hickey, P.E.
Professional Engineer
State of Kansas
No. 10000
Exp. 12/31/2008

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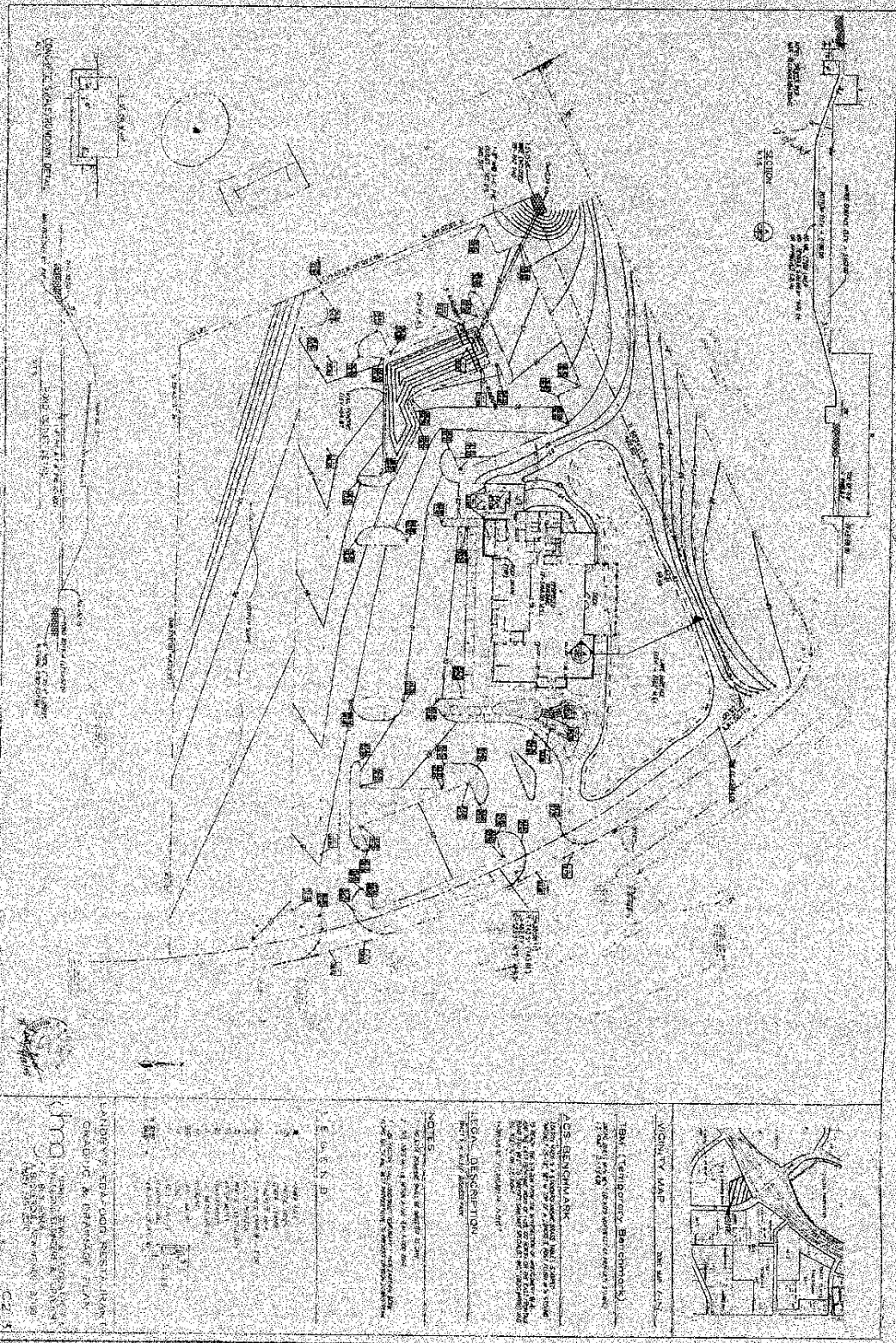


KEYED NOTES

1. 9' TELEPHONE EASEMENT GRANTED BY PLAT C16-154
2. 10' PMA AND TELEPHONE EASEMENT GRANTED BY PLAT C16-17
3. 10' TELEPHONE EASEMENT GRANTED BY PLAT C16-154
4. 10' PMA AND UTILITY EASEMENT GRANTED BY DOCUMENT FILED 14-02-1804, BOOK 2574, PAGE 752, DOC. #85 2800
5. 8' PUBLIC UTILITY AND PRIVATE ACCESS AND EGRESS EASEMENT GRANTED BY PLAT C16-15
6. 10' PMA AND UTILITY EASEMENT GRANTED BY DOCUMENT FILED 04-15-1804, BOOK 2574, PAGE 752, DOC. #85 2800
7. 10' PRIVATE STORM DRAINAGE EASEMENT GRANTED BY PLAT C16-17
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CITY OF ALBUQUERQUE



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APPENDIX B

HYDRAULIC MODELING AND CALCULATIONS

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 WYD NO=101 DA= .00386 SQ MI
PER A=0 PER B=0 PER C=13 PER D=87
TP=-.100 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 0.001 52.50
3.01 0.079 54.50
4.99 0.128 58.00
5.21 0.187 58.50

FINISH

AHYMO.OUT

AHYMO PROGRAM (AHYMO-S4) - Version: S4.01a - Rel: 01a
 RUN DATE (MON/DAY/YR) = 04/17/2018
 START TIME (HR:MIN:SEC) = 08:33:48 USER NO.=
 RioGrandeSingleA4I963517
 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				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= .00386 SQ MI
 PER A=0 PER B=0 PER C=13 PER D=87
 TP=-.100 MASSRAIN=-1

K = 0.054500HR TP = 0.100000HR K/TP RATIO = 0.545000 SHAPE
 CONSTANT, N = 7.106428
 UNIT PEAK = 17.673 CFS UNIT VOLUME = 0.9954 B = 526.28
 P60 = 2.0100
 AREA = 0.003358 SQ MI IA = 0.10000 INCHES INF = 0.04000
 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =
 0.050000

K = 0.080605HR TP = 0.100000HR K/TP RATIO = 0.806046 SHAPE
 CONSTANT, N = 4.440407
 UNIT PEAK = 1.9246 CFS UNIT VOLUME = 0.9989 B = 383.54
 P60 = 2.0100
 AREA = 0.000502 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=3

PARTIAL HYDROGRAPH 101.00

TIME	FLOW	TIME	FLOW	TIME	FLOW
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TIME	FLOW		TIME	FLOW	AHYMO.OUT		
HRS	HRS	CFS	HRS	HRS	CFS	HRS	CFS
14.850	0.000	0.0	19.800	4.950	0.0	9.900	0.1
	0.150	0.0		5.100	0.0	10.050	0.1
15.000	0.0	0.0	19.950	0.0	0.0	10.200	0.1
15.150	0.300	0.0	20.100	5.250	0.0	10.350	0.1
	0.450	0.0		5.400	0.0	10.500	0.1
15.300	0.0	0.0	20.250	0.0	0.0	10.650	0.1
	0.600	0.0		5.550	0.0	10.800	0.1
15.450	0.0	0.0	20.400	0.0	0.0	10.950	0.1
15.600	0.750	0.0	20.550	5.700	0.1	11.100	0.1
	0.900	0.2		5.850	0.1	11.250	0.1
15.750	0.0	0.9	20.700	0.0	0.1	11.400	0.1
15.900	1.050	2.0	20.850	6.000	0.1	11.550	0.1
	1.200	5.4		6.150	0.1	11.700	0.1
16.050	0.0	12.1	21.000	0.0	0.1	11.850	0.0
	1.350	5.6		6.300	0.1	12.000	0.0
16.200	0.0	2.8	21.150	0.0	0.1	12.150	0.0
	1.500	1.6		6.450	0.1	12.300	0.0
16.350	0.0	0.7	21.300	0.0	0.1	12.450	0.1
	1.650	0.4		6.600	0.1	12.600	0.1
16.500	0.0	0.2	21.450	0.0	0.1	12.750	0.0
	1.800	0.1		6.750	0.1	12.900	0.1
16.650	0.0	0.1	21.600	0.0	0.1	13.050	0.0
	1.950	0.0		6.900	0.1	13.200	0.1
16.800	0.0	0.0	21.750	0.0	0.1	13.350	0.0
	2.100	0.0		7.050	0.1	13.500	0.0
16.950	0.0	0.0	21.900	0.0	0.1	13.650	0.0
	2.250	0.0		7.200	0.1	13.800	0.0
17.100	0.0	0.0	22.050	0.0	0.1	13.950	0.0
	2.400	0.0		7.350	0.1	14.100	0.0
17.250	0.0	0.0	22.200	0.0	0.1	14.250	0.0
	2.550	0.0		7.500	0.1		
17.400	0.0	0.0	22.350	0.0	0.1		
	2.700	0.0		7.650	0.1		
17.550	0.0	0.0	22.500	0.0	0.1		
	2.850	0.0		7.800	0.1		
17.700	0.0	0.0	22.650	0.0	0.1		
	3.000	0.0		7.950	0.1		
17.850	0.0	0.0	22.800	0.0	0.1		
	3.150	0.0		8.100	0.1		
18.000	0.0	0.0	22.950	0.0	0.1		
	3.300	0.0		8.250	0.1		
18.150	0.0	0.0	23.100	0.0	0.1		
	3.450	0.0		8.400	0.1		
18.300	0.0	0.0	23.250	0.0	0.1		
	3.600	0.0		8.550	0.1		
18.450	0.0	0.0	23.400	0.0	0.1		
	3.750	0.0		8.700	0.1		
18.600	0.0	0.0	23.550	0.0	0.1		
	3.900	0.0		8.850	0.1		
18.750	0.0	0.0	23.700	0.0	0.1		
	4.050	0.0		9.000	0.1		
18.900	0.0	0.0	23.850	0.0	0.1		
	4.200	0.0		9.150	0.1		
19.050	0.0	0.0	24.000	0.0	0.1		
	4.350	0.0		9.300	0.1		
19.200	0.0		24.150	0.0			

				AHYMO.OUT		
19.350	4.500	0.0	24.300	9.450	0.1	14.400
	0.0			0.0		0.0
19.500	4.650	0.0	24.450	9.600	0.1	14.550
	0.0			0.0		0.0
19.650	4.800	0.0		9.750	0.1	14.700
	0.0					0.0

RUNOFF VOLUME = 2.33685 INCHES = 0.4811 ACRE-FEET
 PEAK DISCHARGE RATE = 12.35 CFS AT 1.450 HOURS BASIN AREA =
 0.0039 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 0.001 52.50
 3.01 0.079 54.50
 5.21 0.187 58.50

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	52.50	0.001	0.00
0.15	0.00	52.50	0.001	0.00
0.30	0.00	52.50	0.001	0.00
0.45	0.00	52.50	0.001	0.00
0.60	0.00	52.50	0.001	0.00
0.75	0.00	52.50	0.001	0.00
0.90	0.18	52.51	0.001	0.02
1.05	0.95	52.65	0.007	0.22
1.20	1.99	52.96	0.019	0.70
1.35	5.38	53.63	0.045	1.71
1.50	12.12	56.47	0.132	4.09
1.65	5.59	58.31	0.182	5.11
1.80	2.84	57.85	0.169	4.85
1.95	1.55	56.74	0.139	4.24
2.10	0.70	55.44	0.104	3.53
2.25	0.41	54.31	0.072	2.73
2.40	0.25	53.71	0.048	1.82
2.55	0.10	53.29	0.032	1.18
2.70	0.06	53.01	0.021	0.76
2.85	0.04	52.83	0.014	0.49
3.00	0.03	52.71	0.009	0.32
3.15	0.03	52.64	0.006	0.21
3.30	0.02	52.59	0.005	0.14
3.45	0.02	52.56	0.003	0.09
3.60	0.02	52.54	0.003	0.07
3.75	0.02	52.53	0.002	0.05
3.90	0.02	52.53	0.002	0.04

			AHYMO.OUT	
4.05	0.02	52.52	0.002	0.03
4.20	0.03	52.52	0.002	0.03
4.35	0.03	52.52	0.002	0.03
4.50	0.03	52.52	0.002	0.03
4.65	0.03	52.52	0.002	0.03
4.80	0.03	52.52	0.002	0.03
4.95	0.04	52.52	0.002	0.03
5.10	0.04	52.52	0.002	0.03
5.25	0.04	52.52	0.002	0.04
5.40	0.04	52.53	0.002	0.04
5.55	0.04	52.53	0.002	0.04
5.70	0.05	52.53	0.002	0.04
5.85	0.05	52.53	0.002	0.05
6.00	0.05	52.53	0.002	0.05
6.15	0.05	52.53	0.002	0.05
6.30	0.05	52.53	0.002	0.05
6.45	0.05	52.54	0.002	0.05
6.60	0.05	52.54	0.002	0.05
6.75	0.05	52.54	0.002	0.05
6.90	0.06	52.54	0.002	0.05
7.05	0.05	52.54	0.002	0.05
7.20	0.05	52.54	0.002	0.05
7.35	0.05	52.54	0.002	0.05
7.50	0.05	52.54	0.002	0.05
7.65	0.05	52.54	0.002	0.05
7.80	0.05	52.54	0.002	0.05
7.95	0.05	52.54	0.002	0.05
8.10	0.05	52.54	0.002	0.05
8.25	0.05	52.54	0.002	0.05

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
8.40	0.05	52.54	0.002	0.05
8.55	0.05	52.54	0.002	0.05
8.70	0.05	52.54	0.002	0.05
8.85	0.05	52.54	0.002	0.05
9.00	0.05	52.54	0.002	0.05
9.15	0.05	52.54	0.002	0.05
9.30	0.05	52.54	0.002	0.05
9.45	0.05	52.54	0.002	0.05
9.60	0.05	52.54	0.002	0.05
9.75	0.05	52.53	0.002	0.05
9.90	0.05	52.53	0.002	0.05
10.05	0.05	52.53	0.002	0.05
10.20	0.05	52.53	0.002	0.05
10.35	0.05	52.53	0.002	0.05
10.50	0.05	52.53	0.002	0.05
10.65	0.05	52.53	0.002	0.05
10.80	0.05	52.53	0.002	0.05
10.95	0.05	52.53	0.002	0.05
11.10	0.05	52.53	0.002	0.05
11.25	0.05	52.53	0.002	0.05
11.40	0.05	52.53	0.002	0.05
11.55	0.05	52.53	0.002	0.05
11.70	0.05	52.53	0.002	0.05
11.85	0.05	52.53	0.002	0.05
12.00	0.05	52.53	0.002	0.05
12.15	0.05	52.53	0.002	0.05
12.30	0.05	52.53	0.002	0.05
12.45	0.05	52.53	0.002	0.05
12.60	0.05	52.53	0.002	0.05
12.75	0.05	52.53	0.002	0.05

			AHYMO. OUT	
12.90	0.05	52.53	0.002	0.05
13.05	0.05	52.53	0.002	0.05
13.20	0.05	52.53	0.002	0.05
13.35	0.05	52.53	0.002	0.05
13.50	0.05	52.53	0.002	0.05
13.65	0.05	52.53	0.002	0.05
13.80	0.05	52.53	0.002	0.05
13.95	0.05	52.53	0.002	0.05
14.10	0.05	52.53	0.002	0.05
14.25	0.05	52.53	0.002	0.05
14.40	0.05	52.53	0.002	0.05
14.55	0.05	52.53	0.002	0.05
14.70	0.05	52.53	0.002	0.05
14.85	0.05	52.53	0.002	0.05
15.00	0.05	52.53	0.002	0.05
15.15	0.05	52.53	0.002	0.05
15.30	0.05	52.53	0.002	0.05
15.45	0.05	52.53	0.002	0.05
15.60	0.05	52.53	0.002	0.05
15.75	0.05	52.53	0.002	0.05
15.90	0.05	52.53	0.002	0.05
16.05	0.05	52.53	0.002	0.05
16.20	0.05	52.53	0.002	0.05
16.35	0.05	52.53	0.002	0.05
16.50	0.05	52.53	0.002	0.05
16.65	0.05	52.53	0.002	0.05

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
16.80	0.05	52.53	0.002	0.05
16.95	0.05	52.53	0.002	0.05
17.10	0.05	52.53	0.002	0.05
17.25	0.05	52.53	0.002	0.05
17.40	0.05	52.53	0.002	0.05
17.55	0.05	52.53	0.002	0.05
17.70	0.05	52.53	0.002	0.05
17.85	0.05	52.53	0.002	0.05
18.00	0.05	52.53	0.002	0.05
18.15	0.05	52.53	0.002	0.05
18.30	0.05	52.53	0.002	0.05
18.45	0.05	52.53	0.002	0.05
18.60	0.05	52.53	0.002	0.05
18.75	0.05	52.53	0.002	0.05
18.90	0.05	52.53	0.002	0.05
19.05	0.04	52.53	0.002	0.05
19.20	0.05	52.53	0.002	0.05
19.35	0.05	52.53	0.002	0.05
19.50	0.05	52.53	0.002	0.04
19.65	0.04	52.53	0.002	0.04
19.80	0.04	52.53	0.002	0.04
19.95	0.04	52.53	0.002	0.04
20.10	0.05	52.53	0.002	0.04
20.25	0.04	52.53	0.002	0.04
20.40	0.04	52.53	0.002	0.04
20.55	0.04	52.53	0.002	0.04
20.70	0.04	52.53	0.002	0.04
20.85	0.04	52.53	0.002	0.04
21.00	0.04	52.53	0.002	0.04
21.15	0.04	52.53	0.002	0.04
21.30	0.04	52.53	0.002	0.04
21.45	0.04	52.53	0.002	0.04
21.60	0.04	52.53	0.002	0.04

			AHYMO.OUT	
21.75	0.04	52.53	0.002	0.04
21.90	0.04	52.53	0.002	0.04
22.05	0.04	52.53	0.002	0.04
22.20	0.04	52.53	0.002	0.04
22.35	0.04	52.53	0.002	0.04
22.50	0.04	52.53	0.002	0.04
22.65	0.04	52.53	0.002	0.04
22.80	0.04	52.53	0.002	0.04
22.95	0.04	52.53	0.002	0.04
23.10	0.04	52.53	0.002	0.04
23.25	0.04	52.53	0.002	0.04
23.40	0.04	52.53	0.002	0.04
23.55	0.04	52.53	0.002	0.04
23.70	0.04	52.53	0.002	0.04
23.85	0.04	52.53	0.002	0.04
24.00	0.04	52.53	0.002	0.04
24.15	0.01	52.52	0.002	0.04
24.30	0.00	52.52	0.002	0.02
24.45	0.00	52.51	0.001	0.02
24.60	0.00	52.51	0.001	0.01
24.75	0.00	52.50	0.001	0.01
24.90	0.00	52.50	0.001	0.00

PEAK DISCHARGE = 5.107 CFS - PEAK OCCURS AT HOUR 1.65
 MAXIMUM WATER SURFACE ELEVATION = 58.313
 MAXIMUM STORAGE = 0.1819 AC-FT INCREMENTAL TIME= 0.050000HRS

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 08:33:48

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

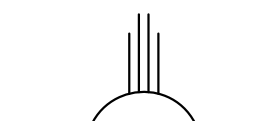
Diagram illustrating a rockfall protection system on a slope. The system consists of a 12"-18" fractured limestone plating set in earth on the slope, covered by 3/8" chip gravel. The plating is 6" thick and has a 6" depth of 92% density if compaction is set in earth on the slope. The gravel is 6" deep. The system is designed for a 45' 1:1 max. slope. The average size of rock is 12"-18". The system is buried flush. The diagram also shows the planting per landscape plan and the butting joints of the plating.

Labels in the diagram include:

- 3/8" CHIP GRAVEL
- 6" THICKNESS
- PLANTINGS PER LANDSCAPE PLAN
- BUTTING JOINTS
- 6" DEPTH OF 92% DENSITY IF COMPACTION SET IN EARTH ON SLOPE
- 45' 1:1 MAX. SLOPE
- DRIP TUBING-12" BURY (SEE LANDSCAPE IRRIGATION PLAN FOR SPECIFICATIONS)
- 12"-18" FRACTURED LIMESTONE PLATING SET IN EARTH ON SLOPE
- AVERAGE SIZE OF ROCK: 12"-18". BURIED FLUSH.

CAUTION:
EXISTING UTILITIES ARE NOT SHOWN.
IT SHALL BE THE SOLE RESPONSIBILITY
OF THE CONTRACTOR TO CONDUCT ALL
NECESSARY FIELD INVESTIGATIONS PRIOR
TO ANY EXCAVATION TO DETERMINE THE
ACTUAL LOCATION OF UTILITIES & OTHER
IMPROVEMENTS.

SCALE: 1"=30'

ENGINEER'S SEAL	JEFFERSON HOTEL	DRAWN BY WCVJ
	CONCEPTUAL GRADING PLAN	DATE 4-03-18
4/13/18		21882-LAYOUT-3-30-18
DAVID SOULE P.E. #14522	<i>Rio Grande Engineering</i> 1606 CENTRAL AVENUE SE SUITE 201 ALBUQUERQUE, NM 87106 (505) 872-0399	SHEET #
		JOB # 21882