CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director

Mayor Timothy M. Keller

March 19, 2020

Richard Dourte, P.E.
RHD Engineering, LLC.
4305 Purple Sage Ave. NW
Albuquerque, NM 87120

RE: **Community Baptist Church**
3030 Todo Santos NW
Grading Plan Stamp Date 3/6/20
Hydrology File: G10D029J

Dear Mr. Dourte:

Based on the re-submittal received on 3/6/20, this project is approved for Building Permit. As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

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. A Bernalillo County Recorded Private Facility Drainage Covenant is required for the stormwater quality 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) 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 924-3986 or earmijo@cabq.gov.

Sincerely,

Ernest Armijo, P.E.
Principal Engineer, Planning Dept.
Development Review Services

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: Community Baptist Church Building Permit #: _____ Hydrology File #: G10D029J

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

Legal Description: Lot 3, Volcano Business Park

City Address: 3030 Todo Santos St. NW

Applicant: RHD Engineering, LLC Contact: Richard Dourte

Address: 4305 Purple Sage Ave. NW, Alb. NM, 87120

Phone#: 505.288.1621 Fax#: _____ E-mail: rhdengineering@outlook.com

Other Contact: Simons Architecture PC Contact: Joe Simons

Address: _____

Phone#: _____ Fax#: _____ E-mail: joe@simonsarchitecture.com

TYPE OF DEVELOPMENT: _____ PLAT (# of lots) _____ RESIDENCE _____ DRB SITE X ADMIN SITE

IS THIS A RESUBMITTAL? X Yes _____ No

DEPARTMENT _____ TRANSPORTATION X HYDROLOGY/DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

____ ENGINEER/ARCHITECT CERTIFICATION
____ PAD CERTIFICATION
____ CONCEPTUAL G & D PLAN
X GRADING PLAN
____ 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) _____
no PRE-DESIGN MEETING?

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

X 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
____ FLOODPLAIN DEVELOPMENT PERMIT
____ OTHER (SPECIFY) _____

DATE SUBMITTED: March 9, 2020 By: Richard Dourte

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

RHD Engineering, LLC

Richard H. Dourte
4305 Purple Sage Ave. NW
Albuquerque, NM 87120
(505)288-1621
rhdengineering@outlook.com

March 6, 2020

Mr. Dana Peterson, PE
Senior Engineer, Planning Department
Development Review Services
600 Second Street
City of Albuquerque, NM 87102

RE: Community Baptist Church, G10D029J

Dear Mr. Peterson,

Thank you for your call regarding this site and the existing 40' Private Drainage Easement a few weeks ago. Pursuant to that conversation, the parking lot layout has been altered and the pond has been moved to the west, outside of the existing private drainage easement. I also revised the AHYMO -Appendix A for the new pond, this is also included in this submittal. The outfall for this site per our conversation was determined to be 0.43cfs per acre, with the new pond configuration this was achived.

If you have any questions, please feel free to call me at 288-1621.

Sincerely,

Richard Dourte

Richard Dourte, PE
RHD Engineering, LLC

pondroutereconfig.txt

```
START               TIME=0.0
*****               TEST
**********************************************
RAINFALL            TYPE=1 RAIN QUARTER=0.0IN
                    RAIN ONE=1.87 IN RAIN SIX=2.2 IN
                    RAIN DAY=2.66 IN DT=0.03333 HR
**********************************************
*****Developed Conditions
**********************************************
COMPUTE NM HYD      ID=1 HYD NO=102 AREA=0.0016 SQ MI
                    PER A=0 PER B=0 PER C=31 PER D=69
                    TP=0.1500 HR MASS RAINFALL =-1
PRINT HYD           ID=1   CODE=1
* ROUTE THE TOTAL FLOW THROUGH THE PROPOSED RESERVOIR
ROUTE RESERVOIR     ID=3   HYD NO=106.02   INFLOW=1   CODE=1
                    OUTFLOW(CFS)    STORAGE(AC-FT)    ELEV(FT)
                       0.0              0.00          29.00
                       0.1               .021         29.75
                       0.43              .125          32.0


PRINT HYD           ID=1   CODE=1
FINISH
```


APPENDIX A
SHEET 1 OF 15

AHYMO PROGRAM SUMMARY TABLE (AHYMO-S4) - Ver. S4.01a, Rel: 01a RUN DATE (MON/DAY/YR) =02/08/2020

INPUT FILE = Richard\RHD Engineering\5 Simons Arch\125 Todos Santos\pondroutereconfig.txt USER NO.= RHD-EngNMSingleA58820657

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										
TIME= 0.00										
RAINFALL TYPE= 1 NOAA 14										
RAIN6= 2.200										
COMPUTE NM HYD	102.00	-	1	0.00160	4.05	0.144	1.68482	1.533	3.957	PER IMP= 69.00
ROUTE RESERVOIR	106.02	1	3	0.00160	0.39	0.144	1.68462	2.100	0.384	AC-FT= 0.113
FINISH										

```
        AHYMO PROGRAM (AHYMO-S4)                        - Version:
S4.01a - Rel: 01a
             RUN DATE (MON/DAY/YR) = 02/08/2020
             START TIME (HR:MIN:SEC) = 08:49:48     USER NO.=
RHD-EngNMSingleA58820657
             INPUT FILE = nts\Richard\RHD Engineering\5 Simons
Arch\125 Todos Santos\pondroutereconfig.txt

    START                TIME=0.0
    *****                TEST
    ********************************************
    RAINFALL             TYPE=1 RAIN QUARTER=0.0IN
                         RAIN ONE=1.87 IN RAIN SIX=2.2 IN
                         RAIN DAY=2.66 IN DT=0.03333 HR

                    6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14
FOR CONVECTIVE AREAS (NM & AZ) - D1
                    DT =   0.033330 HOURS       END TIME =
5.999400 HOURS
                      0.0000  0.0015  0.0029  0.0045  0.0061
0.0077  0.0096
                      0.0114  0.0133  0.0154  0.0175  0.0219
0.0264  0.0311
                      0.0361  0.0412  0.0466  0.0521  0.0577
0.0635  0.0693
                      0.0753  0.0814  0.0878  0.0946  0.1014
0.1091  0.1168
                      0.1296  0.1477  0.1657  0.1898  0.2140
0.2429  0.2767
                      0.3105  0.3612  0.4120  0.4810  0.5686
0.6562  0.8890
                      1.1224  1.3042  1.4336  1.5629  1.6282
1.6932  1.7463
                      1.7873  1.8282  1.8567  1.8850  1.9097
1.9304  1.9512
                      1.9670  1.9827  1.9942  2.0015  2.0087
2.0151  2.0215
                      2.0273  2.0326  2.0378  2.0426  2.0474
2.0521  2.0568
                      2.0614  2.0636  2.0659  2.0681  2.0702
2.0724  2.0744
                      2.0764  2.0784  2.0803  2.0823  2.0842
2.0860  2.0879
                      2.0896  2.0914  2.0931  2.0948  2.0965
2.0982  2.0999
                      2.1015  2.1030  2.1046  2.1062  2.1077
2.1092  2.1107
                      2.1122  2.1136  2.1150  2.1164  2.1178
2.1192  2.1206
                      2.1220  2.1233  2.1246  2.1260  2.1273
2.1286  2.1299
```

```
                    2.1312  2.1324  2.1337  2.1349  2.1362
2.1374  2.1386
                    2.1398  2.1410  2.1422  2.1434  2.1446
2.1457  2.1469
                    2.1480  2.1492  2.1503  2.1514  2.1525
2.1536  2.1547
                    2.1558  2.1569  2.1580  2.1591  2.1601
2.1612  2.1622
                    2.1633  2.1643  2.1653  2.1663  2.1673
2.1684  2.1693
                    2.1703  2.1713  2.1723  2.1733  2.1742
2.1752  2.1762
                    2.1771  2.1781  2.1790  2.1799  2.1809
2.1818  2.1827
                    2.1836  2.1845  2.1854  2.1863  2.1872
2.1881  2.1890
                    2.1898  2.1907  2.1916  2.1924  2.1933
2.1941  2.1950
                    2.1958  2.1967  2.1975  2.1983  2.1992
2.2000

    ************************************************
    *****Developed Conditions
    ************************************************
    COMPUTE NM HYD      ID=1 HYD NO=102 AREA=0.0016 SQ MI
                        PER A=0 PER B=0 PER C=31 PER D=69
                        TP=0.1500 HR MASS RAINFALL =-1

         K =  0.081750HR    TP =  0.150000HR    K/TP RATIO =
0.545000     SHAPE CONSTANT, N =  7.106428
         UNIT PEAK =   3.8734    CFS   UNIT VOLUME =   0.9971
B =   526.28      P60 = 1.8700
         AREA =     0.001104 SQ MI    IA =   0.10000 INCHES
INF =   0.04000 INCHES PER HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION
NUMBER METHOD - DT =  0.033330


         K =  0.119130HR    TP =  0.150000HR    K/TP RATIO =
0.794199     SHAPE CONSTANT, N =  4.514592
         UNIT PEAK =   1.2834    CFS   UNIT VOLUME =   0.9897
B =   388.14      P60 = 1.8700
         AREA =     0.000496 SQ MI    IA =   0.35000 INCHES
INF =   0.83000 INCHES PER HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION
NUMBER METHOD - DT =  0.033330

    PRINT HYD           ID=1   CODE=1

                                        PARTIAL HYDROGRAPH
102.00
```

RUNOFF VOLUME = 1.68482 INCHES = 0.1438 ACRE-FEET
PEAK DISCHARGE RATE = 4.05 CFS AT 1.533 HOURS
BASIN AREA = 0.0016 SQ. MI.

* ROUTE THE TOTAL FLOW THROUGH THE PROPOSED RESERVOIR
ROUTE RESERVOIR ID=3 HYD NO=106.02 INFLOW=1 CODE=1

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
0.0	0.00	29.00
0.1	.021	29.75
0.43	.125	32.0

* * * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	29.00	0.000	0.00
0.03	0.00	29.00	0.000	0.00
0.07	0.00	29.00	0.000	0.00
0.10	0.00	29.00	0.000	0.00
0.13	0.00	29.00	0.000	0.00
0.17	0.00	29.00	0.000	0.00
0.20	0.00	29.00	0.000	0.00
0.23	0.00	29.00	0.000	0.00
0.27	0.00	29.00	0.000	0.00
0.30	0.00	29.00	0.000	0.00
0.33	0.00	29.00	0.000	0.00
0.37	0.00	29.00	0.000	0.00
0.40	0.00	29.00	0.000	0.00
0.43	0.00	29.00	0.000	0.00
0.47	0.00	29.00	0.000	0.00
0.50	0.00	29.00	0.000	0.00
0.53	0.00	29.00	0.000	0.00
0.57	0.00	29.00	0.000	0.00
0.60	0.00	29.00	0.000	0.00
0.63	0.00	29.00	0.000	0.00
0.67	0.00	29.00	0.000	0.00
0.70	0.00	29.00	0.000	0.00
0.73	0.00	29.00	0.000	0.00
0.77	0.00	29.00	0.000	0.00
0.80	0.00	29.00	0.000	0.00
0.83	0.00	29.00	0.000	0.00
0.87	0.00	29.00	0.000	0.00
0.90	0.01	29.00	0.000	0.00
0.93	0.03	29.00	0.000	0.00

0.97	0.05	29.01	0.000	0.00
1.00	0.09	29.01	0.000	0.00
1.03	0.14	29.02	0.001	0.00
1.07	0.20	29.04	0.001	0.01
1.10	0.26	29.06	0.002	0.01
1.13	0.32	29.09	0.003	0.01
1.17	0.37	29.12	0.003	0.02
1.20	0.44	29.16	0.005	0.02
1.23	0.51	29.21	0.006	0.03
1.27	0.62	29.26	0.007	0.03
1.30	0.77	29.32	0.009	0.04
1.33	0.98	29.40	0.011	0.05
1.37	1.25	29.51	0.014	0.07
1.40	1.70	29.64	0.018	0.09
1.43	2.42	29.80	0.023	0.11
1.47	3.23	29.96	0.031	0.13
1.50	3.83	30.17	0.040	0.16
1.53	4.05	30.39	0.051	0.19
1.57	3.92	30.62	0.061	0.23
1.60	3.55	30.82	0.071	0.26
1.63	3.09	31.01	0.079	0.28
1.67	2.63	31.16	0.086	0.31
1.70	2.21	31.28	0.092	0.32
1.73	1.86	31.39	0.097	0.34
1.77	1.58	31.47	0.100	0.35
1.80	1.35	31.53	0.103	0.36
1.83	1.16	31.59	0.106	0.37

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
1.87	1.01	31.63	0.108	0.38
1.90	0.89	31.66	0.109	0.38
1.93	0.79	31.69	0.111	0.38
1.97	0.71	31.71	0.112	0.39
2.00	0.62	31.73	0.112	0.39
2.03	0.55	31.74	0.113	0.39
2.07	0.47	31.75	0.113	0.39
2.10	0.41	31.75	0.113	0.39
2.13	0.36	31.75	0.113	0.39
2.17	0.32	31.75	0.113	0.39
2.20	0.29	31.74	0.113	0.39
2.23	0.26	31.73	0.113	0.39
2.27	0.23	31.73	0.112	0.39
2.30	0.21	31.72	0.112	0.39
2.33	0.19	31.70	0.111	0.39
2.37	0.18	31.69	0.111	0.38
2.40	0.16	31.68	0.110	0.38
2.43	0.14	31.67	0.110	0.38
2.47	0.12	31.65	0.109	0.38
2.50	0.11	31.64	0.108	0.38
2.53	0.09	31.62	0.107	0.37

2.57	0.08	31.60	0.107	0.37
2.60	0.07	31.58	0.106	0.37
2.63	0.06	31.57	0.105	0.37
2.67	0.05	31.55	0.104	0.36
2.70	0.04	31.53	0.103	0.36
2.73	0.04	31.51	0.102	0.36
2.77	0.03	31.49	0.101	0.36
2.80	0.03	31.47	0.101	0.35
2.83	0.02	31.45	0.100	0.35
2.87	0.02	31.43	0.099	0.35
2.90	0.02	31.41	0.098	0.34
2.93	0.02	31.39	0.097	0.34
2.97	0.01	31.37	0.096	0.34
3.00	0.01	31.36	0.095	0.34
3.03	0.01	31.34	0.094	0.33
3.07	0.01	31.32	0.093	0.33
3.10	0.01	31.30	0.093	0.33
3.13	0.01	31.28	0.092	0.32
3.17	0.01	31.26	0.091	0.32
3.20	0.01	31.24	0.090	0.32
3.23	0.01	31.22	0.089	0.32
3.27	0.01	31.20	0.088	0.31
3.30	0.01	31.19	0.087	0.31
3.33	0.01	31.17	0.087	0.31
3.37	0.01	31.15	0.086	0.31
3.40	0.01	31.13	0.085	0.30
3.43	0.01	31.12	0.084	0.30
3.47	0.01	31.10	0.083	0.30
3.50	0.01	31.08	0.083	0.30
3.53	0.01	31.06	0.082	0.29
3.57	0.01	31.05	0.081	0.29
3.60	0.01	31.03	0.080	0.29
3.63	0.01	31.01	0.079	0.29
3.67	0.01	31.00	0.079	0.28
3.70	0.01	30.98	0.078	0.28

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
3.73	0.01	30.96	0.077	0.28
3.77	0.01	30.95	0.076	0.28
3.80	0.01	30.93	0.076	0.27
3.83	0.01	30.92	0.075	0.27
3.87	0.01	30.90	0.074	0.27
3.90	0.01	30.88	0.073	0.27
3.93	0.01	30.87	0.073	0.26
3.97	0.01	30.85	0.072	0.26
4.00	0.01	30.84	0.071	0.26
4.03	0.01	30.82	0.071	0.26
4.07	0.01	30.81	0.070	0.26
4.10	0.01	30.79	0.069	0.25
4.13	0.01	30.78	0.069	0.25

4.17	0.01	30.76	0.068	0.25
4.20	0.01	30.75	0.067	0.25
4.23	0.01	30.74	0.067	0.24
4.27	0.01	30.72	0.066	0.24
4.30	0.01	30.71	0.065	0.24
4.33	0.01	30.69	0.065	0.24
4.37	0.01	30.68	0.064	0.24
4.40	0.01	30.67	0.063	0.23
4.43	0.01	30.65	0.063	0.23
4.47	0.01	30.64	0.062	0.23
4.50	0.01	30.63	0.062	0.23
4.53	0.01	30.61	0.061	0.23
4.57	0.01	30.60	0.060	0.22
4.60	0.01	30.59	0.060	0.22
4.63	0.01	30.57	0.059	0.22
4.67	0.01	30.56	0.059	0.22
4.70	0.01	30.55	0.058	0.22
4.73	0.01	30.54	0.057	0.22
4.77	0.01	30.53	0.057	0.21
4.80	0.01	30.51	0.056	0.21
4.83	0.01	30.50	0.056	0.21
4.87	0.01	30.49	0.055	0.21
4.90	0.01	30.48	0.055	0.21
4.93	0.01	30.47	0.054	0.20
4.97	0.01	30.45	0.054	0.20
5.00	0.01	30.44	0.053	0.20
5.03	0.01	30.43	0.052	0.20
5.07	0.01	30.42	0.052	0.20
5.10	0.01	30.41	0.051	0.20
5.13	0.01	30.40	0.051	0.20
5.17	0.01	30.39	0.050	0.19
5.20	0.01	30.38	0.050	0.19
5.23	0.01	30.37	0.049	0.19
5.27	0.01	30.35	0.049	0.19
5.30	0.01	30.34	0.048	0.19
5.33	0.01	30.33	0.048	0.19
5.37	0.01	30.32	0.048	0.18
5.40	0.01	30.31	0.047	0.18
5.43	0.01	30.30	0.047	0.18
5.47	0.01	30.29	0.046	0.18
5.50	0.01	30.28	0.046	0.18
5.53	0.01	30.27	0.045	0.18
5.57	0.01	30.26	0.045	0.18

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
5.60	0.01	30.25	0.044	0.17
5.63	0.01	30.24	0.044	0.17
5.67	0.01	30.24	0.043	0.17
5.70	0.01	30.23	0.043	0.17
5.73	0.01	30.22	0.043	0.17

5.77	0.01	30.21	0.042	0.17
5.80	0.01	30.20	0.042	0.17
5.83	0.02	30.19	0.041	0.16
5.87	0.02	30.18	0.041	0.16
5.90	0.02	30.17	0.041	0.16
5.93	0.02	30.16	0.040	0.16
5.97	0.02	30.15	0.040	0.16
6.00	0.02	30.15	0.039	0.16
6.03	0.02	30.14	0.039	0.16
6.07	0.02	30.13	0.039	0.16
6.10	0.01	30.12	0.038	0.15
6.13	0.01	30.11	0.038	0.15
6.17	0.01	30.10	0.037	0.15
6.20	0.01	30.10	0.037	0.15
6.23	0.00	30.09	0.037	0.15
6.27	0.00	30.08	0.036	0.15
6.30	0.00	30.07	0.036	0.15
6.33	0.00	30.06	0.035	0.15
6.37	0.00	30.05	0.035	0.14
6.40	0.00	30.04	0.035	0.14
6.43	0.00	30.04	0.034	0.14
6.47	0.00	30.03	0.034	0.14
6.50	0.00	30.02	0.033	0.14
6.53	0.00	30.01	0.033	0.14
6.57	0.00	30.00	0.033	0.14
6.60	0.00	29.99	0.032	0.14
6.63	0.00	29.99	0.032	0.13
6.67	0.00	29.98	0.032	0.13
6.70	0.00	29.97	0.031	0.13
6.73	0.00	29.96	0.031	0.13
6.77	0.00	29.96	0.030	0.13
6.80	0.00	29.95	0.030	0.13
6.83	0.00	29.94	0.030	0.13
6.87	0.00	29.93	0.029	0.13
6.90	0.00	29.92	0.029	0.13
6.93	0.00	29.92	0.029	0.12
6.97	0.00	29.91	0.028	0.12
7.00	0.00	29.90	0.028	0.12
7.03	0.00	29.90	0.028	0.12
7.07	0.00	29.89	0.027	0.12
7.10	0.00	29.88	0.027	0.12
7.13	0.00	29.87	0.027	0.12
7.17	0.00	29.87	0.026	0.12
7.20	0.00	29.86	0.026	0.12
7.23	0.00	29.85	0.026	0.12
7.27	0.00	29.85	0.025	0.11
7.30	0.00	29.84	0.025	0.11
7.33	0.00	29.83	0.025	0.11
7.37	0.00	29.83	0.025	0.11
7.40	0.00	29.82	0.024	0.11
7.43	0.00	29.81	0.024	0.11

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
7.47	0.00	29.81	0.024	0.11
7.50	0.00	29.80	0.023	0.11
7.53	0.00	29.79	0.023	0.11
7.57	0.00	29.79	0.023	0.11
7.60	0.00	29.78	0.022	0.10
7.63	0.00	29.77	0.022	0.10
7.67	0.00	29.77	0.022	0.10
7.70	0.00	29.76	0.022	0.10
7.73	0.00	29.76	0.021	0.10
7.77	0.00	29.75	0.021	0.10
7.80	0.00	29.74	0.021	0.10
7.83	0.00	29.73	0.020	0.10
7.87	0.00	29.72	0.020	0.10
7.90	0.00	29.71	0.020	0.10
7.93	0.00	29.70	0.020	0.09
7.97	0.00	29.69	0.019	0.09
8.00	0.00	29.69	0.019	0.09
8.03	0.00	29.68	0.019	0.09
8.07	0.00	29.67	0.019	0.09
8.10	0.00	29.66	0.018	0.09
8.13	0.00	29.65	0.018	0.09
8.17	0.00	29.64	0.018	0.09
8.20	0.00	29.63	0.018	0.08
8.23	0.00	29.62	0.017	0.08
8.27	0.00	29.62	0.017	0.08
8.30	0.00	29.61	0.017	0.08
8.33	0.00	29.60	0.017	0.08
8.37	0.00	29.59	0.017	0.08
8.40	0.00	29.59	0.016	0.08
8.43	0.00	29.58	0.016	0.08
8.47	0.00	29.57	0.016	0.08
8.50	0.00	29.56	0.016	0.08
8.53	0.00	29.56	0.016	0.07
8.57	0.00	29.55	0.015	0.07
8.60	0.00	29.54	0.015	0.07
8.63	0.00	29.53	0.015	0.07
8.67	0.00	29.53	0.015	0.07
8.70	0.00	29.52	0.015	0.07
8.73	0.00	29.51	0.014	0.07
8.77	0.00	29.51	0.014	0.07
8.80	0.00	29.50	0.014	0.07
8.83	0.00	29.49	0.014	0.07
8.87	0.00	29.49	0.014	0.06
8.90	0.00	29.48	0.013	0.06
8.93	0.00	29.47	0.013	0.06
8.97	0.00	29.47	0.013	0.06
9.00	0.00	29.46	0.013	0.06
9.03	0.00	29.46	0.013	0.06
9.07	0.00	29.45	0.013	0.06

9.10	0.00	29.44	0.012	0.06
9.13	0.00	29.44	0.012	0.06
9.17	0.00	29.43	0.012	0.06
9.20	0.00	29.43	0.012	0.06
9.23	0.00	29.42	0.012	0.06
9.27	0.00	29.42	0.012	0.06
9.30	0.00	29.41	0.012	0.05

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
9.33	0.00	29.41	0.011	0.05
9.37	0.00	29.40	0.011	0.05
9.40	0.00	29.39	0.011	0.05
9.43	0.00	29.39	0.011	0.05
9.47	0.00	29.38	0.011	0.05
9.50	0.00	29.38	0.011	0.05
9.53	0.00	29.37	0.010	0.05
9.57	0.00	29.37	0.010	0.05
9.60	0.00	29.36	0.010	0.05
9.63	0.00	29.36	0.010	0.05
9.67	0.00	29.36	0.010	0.05
9.70	0.00	29.35	0.010	0.05
9.73	0.00	29.35	0.010	0.05
9.77	0.00	29.34	0.010	0.05
9.80	0.00	29.34	0.009	0.04
9.83	0.00	29.33	0.009	0.04
9.87	0.00	29.33	0.009	0.04
9.90	0.00	29.32	0.009	0.04
9.93	0.00	29.32	0.009	0.04
9.97	0.00	29.32	0.009	0.04
10.00	0.00	29.31	0.009	0.04
10.03	0.00	29.31	0.009	0.04
10.07	0.00	29.30	0.009	0.04
10.10	0.00	29.30	0.008	0.04
10.13	0.00	29.30	0.008	0.04
10.17	0.00	29.29	0.008	0.04
10.20	0.00	29.29	0.008	0.04
10.23	0.00	29.28	0.008	0.04
10.27	0.00	29.28	0.008	0.04
10.30	0.00	29.28	0.008	0.04
10.33	0.00	29.27	0.008	0.04
10.37	0.00	29.27	0.008	0.04
10.40	0.00	29.27	0.007	0.04
10.43	0.00	29.26	0.007	0.04
10.47	0.00	29.26	0.007	0.03
10.50	0.00	29.26	0.007	0.03
10.53	0.00	29.25	0.007	0.03
10.57	0.00	29.25	0.007	0.03
10.60	0.00	29.25	0.007	0.03
10.63	0.00	29.24	0.007	0.03
10.67	0.00	29.24	0.007	0.03

10.70	0.00	29.24	0.007	0.03
10.73	0.00	29.23	0.007	0.03
10.77	0.00	29.23	0.006	0.03
10.80	0.00	29.23	0.006	0.03
10.83	0.00	29.22	0.006	0.03
10.87	0.00	29.22	0.006	0.03
10.90	0.00	29.22	0.006	0.03
10.93	0.00	29.22	0.006	0.03
10.97	0.00	29.21	0.006	0.03
11.00	0.00	29.21	0.006	0.03
11.03	0.00	29.21	0.006	0.03
11.07	0.00	29.20	0.006	0.03
11.10	0.00	29.20	0.006	0.03
11.13	0.00	29.20	0.006	0.03
11.17	0.00	29.20	0.006	0.03

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
11.20	0.00	29.19	0.005	0.03
11.23	0.00	29.19	0.005	0.03
11.27	0.00	29.19	0.005	0.03
11.30	0.00	29.19	0.005	0.02
11.33	0.00	29.18	0.005	0.02
11.37	0.00	29.18	0.005	0.02
11.40	0.00	29.18	0.005	0.02
11.43	0.00	29.18	0.005	0.02
11.47	0.00	29.18	0.005	0.02
11.50	0.00	29.17	0.005	0.02
11.53	0.00	29.17	0.005	0.02
11.57	0.00	29.17	0.005	0.02
11.60	0.00	29.17	0.005	0.02
11.63	0.00	29.16	0.005	0.02
11.67	0.00	29.16	0.005	0.02
11.70	0.00	29.16	0.004	0.02
11.73	0.00	29.16	0.004	0.02
11.77	0.00	29.16	0.004	0.02
11.80	0.00	29.15	0.004	0.02
11.83	0.00	29.15	0.004	0.02
11.87	0.00	29.15	0.004	0.02
11.90	0.00	29.15	0.004	0.02
11.93	0.00	29.15	0.004	0.02
11.97	0.00	29.14	0.004	0.02
12.00	0.00	29.14	0.004	0.02
12.03	0.00	29.14	0.004	0.02
12.07	0.00	29.14	0.004	0.02
12.10	0.00	29.14	0.004	0.02
12.13	0.00	29.13	0.004	0.02
12.17	0.00	29.13	0.004	0.02
12.20	0.00	29.13	0.004	0.02
12.23	0.00	29.13	0.004	0.02
12.27	0.00	29.13	0.004	0.02

12.30	0.00	29.13	0.004	0.02
12.33	0.00	29.12	0.003	0.02
12.37	0.00	29.12	0.003	0.02
12.40	0.00	29.12	0.003	0.02
12.43	0.00	29.12	0.003	0.02
12.47	0.00	29.12	0.003	0.02
12.50	0.00	29.12	0.003	0.02
12.53	0.00	29.12	0.003	0.02
12.57	0.00	29.11	0.003	0.02
12.60	0.00	29.11	0.003	0.01
12.63	0.00	29.11	0.003	0.01
12.67	0.00	29.11	0.003	0.01
12.70	0.00	29.11	0.003	0.01
12.73	0.00	29.11	0.003	0.01
12.77	0.00	29.10	0.003	0.01
12.80	0.00	29.10	0.003	0.01
12.83	0.00	29.10	0.003	0.01
12.87	0.00	29.10	0.003	0.01
12.90	0.00	29.10	0.003	0.01
12.93	0.00	29.10	0.003	0.01
12.97	0.00	29.10	0.003	0.01
13.00	0.00	29.10	0.003	0.01
13.03	0.00	29.09	0.003	0.01

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
13.07	0.00	29.09	0.003	0.01
13.10	0.00	29.09	0.003	0.01
13.13	0.00	29.09	0.003	0.01
13.17	0.00	29.09	0.003	0.01
13.20	0.00	29.09	0.002	0.01
13.23	0.00	29.09	0.002	0.01
13.27	0.00	29.09	0.002	0.01
13.30	0.00	29.09	0.002	0.01
13.33	0.00	29.08	0.002	0.01
13.37	0.00	29.08	0.002	0.01
13.40	0.00	29.08	0.002	0.01
13.43	0.00	29.08	0.002	0.01
13.47	0.00	29.08	0.002	0.01
13.50	0.00	29.08	0.002	0.01
13.53	0.00	29.08	0.002	0.01
13.57	0.00	29.08	0.002	0.01
13.60	0.00	29.08	0.002	0.01
13.63	0.00	29.07	0.002	0.01
13.67	0.00	29.07	0.002	0.01
13.70	0.00	29.07	0.002	0.01
13.73	0.00	29.07	0.002	0.01
13.77	0.00	29.07	0.002	0.01
13.80	0.00	29.07	0.002	0.01
13.83	0.00	29.07	0.002	0.01
13.87	0.00	29.07	0.002	0.01

13.90	0.00	29.07	0.002	0.01
13.93	0.00	29.07	0.002	0.01
13.97	0.00	29.07	0.002	0.01
14.00	0.00	29.06	0.002	0.01
14.03	0.00	29.06	0.002	0.01
14.07	0.00	29.06	0.002	0.01
14.10	0.00	29.06	0.002	0.01
14.13	0.00	29.06	0.002	0.01
14.17	0.00	29.06	0.002	0.01
14.20	0.00	29.06	0.002	0.01
14.23	0.00	29.06	0.002	0.01
14.27	0.00	29.06	0.002	0.01
14.30	0.00	29.06	0.002	0.01
14.33	0.00	29.06	0.002	0.01
14.37	0.00	29.06	0.002	0.01
14.40	0.00	29.06	0.002	0.01
14.43	0.00	29.05	0.002	0.01
14.47	0.00	29.05	0.002	0.01
14.50	0.00	29.05	0.001	0.01
14.53	0.00	29.05	0.001	0.01
14.57	0.00	29.05	0.001	0.01
14.60	0.00	29.05	0.001	0.01
14.63	0.00	29.05	0.001	0.01
14.67	0.00	29.05	0.001	0.01
14.70	0.00	29.05	0.001	0.01
14.73	0.00	29.05	0.001	0.01
14.77	0.00	29.05	0.001	0.01
14.80	0.00	29.05	0.001	0.01
14.83	0.00	29.05	0.001	0.01
14.87	0.00	29.05	0.001	0.01
14.90	0.00	29.05	0.001	0.01

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
14.93	0.00	29.04	0.001	0.01
14.97	0.00	29.04	0.001	0.01
15.00	0.00	29.04	0.001	0.01
15.03	0.00	29.04	0.001	0.01
15.07	0.00	29.04	0.001	0.01
15.10	0.00	29.04	0.001	0.01
15.13	0.00	29.04	0.001	0.01
15.17	0.00	29.04	0.001	0.01
15.20	0.00	29.04	0.001	0.01
15.23	0.00	29.04	0.001	0.01
15.27	0.00	29.04	0.001	0.01
15.30	0.00	29.04	0.001	0.01
15.33	0.00	29.04	0.001	0.01
15.37	0.00	29.04	0.001	0.01
15.40	0.00	29.04	0.001	0.00

PEAK DISCHARGE = 0.393 CFS - PEAK OCCURS AT HOUR 2.10

```
     MAXIMUM WATER SURFACE ELEVATION =          31.750
     MAXIMUM STORAGE =        0.1134 AC-FT      INCREMENTAL TIME=
0.033330HRS

    PRINT HYD           ID=1   CODE=1

                                          PARTIAL HYDROGRAPH
102.00


        RUNOFF VOLUME =     1.68482 INCHES     =       0.1438
ACRE-FEET
        PEAK DISCHARGE RATE =       4.05 CFS  AT   1.533 HOURS
BASIN AREA =  0.0016 SQ. MI.


    FINISH

        NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) =
08:49:48
```

DRAINAGE NARRATIVE:

1. THE MASTER DRAINGAGE PLAN FOR THIS AREA ALLOTS 0.43CFS PER ACRE DISCHARGE TO THE REAR OF THE LOT. THE EASTERNMOST 40' OF THIS LOT CONTAINS A DRAINAGE EASEMENT FOR THIS DISCHARGE. THE SITE IS 1.01ac, THUS THE SITE IS PERMITTED 0.43x1.01=0.43CFS DISCHARGE. THE PEAK DISCHARGE IS 0.393CFS (REFER TO SHEET 14 OF 15 – APPENDIX A).

2. THE STORM WATER QUALITY DISCHARGE REQUIREMENT IS 860CF, THE STORM WATER QUALITY POND PROVIDED IS 908CF, THE THE POND PROVIDED IS GREATER THAN THAT REQUIRED.

3. THE OUTFALL FOR THIS SITE WILL BE VIA A PIPE,
THUS Q=CAsqrt(2GH),
WHERE Q=0.43CFS
C=0.60
G=32.2FT/S^2
H=2.0FT
THUS A=0.0619SF OR D=3.4", USE A 4" PIPE.

4. THE MAXIMUM WSE FOR THIS DISCHARGE FOR THIS SITE IS 31.75 (REFER TO SHEET 15 OF 15 – APPENDIX A).

5. APPENDIX A CONTAINS THE COMPUTATIONS FOR THE STORMWATER DISCHARGE WITH RESPECT TO THIS SITE.

Project: Community Baptist Church - 3030 Todos Santos NW
Drainage Calculations - Zone 1

Depth (inches) at 100yr Storm

Zone	P_{60}	P_{360}	P_{1440}	P_{4days}	P_{10days}
1	1.87	2.20	2.66	3.12	3.67
2	2.01	2.35	2.75	3.30	3.95
3	2.14	2.60	3.10	3.95	4.90
4	2.23	2.90	3.65	4.70	5.95

Excess Precipiation, E(inches) - 6 HR

	Treatment			
Zone	A	B	C	D
1	0.44	0.67	0.99	1.97
2	0.53	0.78	1.13	2.12
3	0.66	0.92	1.29	2.36
4	0.80	1.08	1.46	2.64

Weighted E= $((E_A*A_A)+(E_B*A_B)+(E_C*A_C)+(E_D*A_D))/(A_A+A_B+A_C+A_D)$
V_{360}=(Weighted E *P_{360})/12 in/ft
V_{1440}= V_{360}+A_D*(P_{1440}-P_{360})/12in/ft
V_{4days}=V_{360}+A_D*(P_{4day}-P_{360})/12in/ft
V_{10days}=V_{360}+A_D*(P_{10days}-P_{360})/12in/ft

Peak Discharge (CFS/ACRE) 100 YR

	Treatment			
Zone	A	B	C	D
1	1.29	2.03	2.87	4.37
2	1.56	2.28	3.14	4.70
3	1.87	2.60	3.45	5.02
4	2.20	2.92	3.73	5.25

**********EXISTING CONDITIONS**********

Area	SQ. FT	Acres	% Total
A=	0	0.000	0%
B=	43780	1.005	100%
C=	0	0.000	0%
D=	0	0.000	0%
Total	43780	1.005	100%
Weighted E=	0.670		

Design Flows (CFS)

Area	SQ. FT	Acres	Peak Discharge (100 YR)
A=	0	0.000	0.00
B=	43780	1.005	2.04
C=	0	0.000	0.00
D=	0	0.000	0.00
Total (CFS)			2.04

	V_{360}	V_{1440}	V_{4days}	V_{10days}
Cubic feet	2444	2444	2444	2444
Acre-ft	0.06	0.06	0.06	0.06

**********PROPOSED CONDITIONS**********

Area	SQ. FT	Acres	% Total
A=	0	0.000	0%
B=	0	0.000	0%
C=	13417	0.308	31%
D=	30363	0.697	69%
Total	43780	1.005	100%
Weighted E=	1.670		

Design Flows (CFS)

Area	SQ. FT	Acres	Peak Discharge (100 YR)
A=	0	0.000	0.00
B=	0	0.000	0.00
C=	13417	0.308	0.88
D=	30363	0.697	3.05
Total (CFS)			3.93

	V_{360}	V_{1440}	V_{4days}	V_{10days}
Cubic feet	6091	7255	8419	9811
Acre-ft	0.14	0.17	0.19	0.23

The 100 year peak flows for this developed site is 3.9 CFS and the existing flows are 2 CFS for an increase of 1.9 CFS. The 100 year 6 hr volume increase is 6091-2444 = 3647CF.

Storm Water Quality Ponding Requirement = A_D *0.34 in/12in/ft = 860 CF

GENERAL NOTES:

1. THIS SITE IS NOT LOCATED IN A FEMA FLOOD HAZARD ZONE (REFER TO THE FIRM MAP 35001C0326J, EXCERPT ATTACHED).

2. RHD ENGINEERING, LLC RECOMMENDS THAT THE OWNER OBTAIN A GEOTECHNICAL REPORT PRIOR TO DESIGN OF BUILDING FOOTING/FOUNDATION.

3. SLOPE STABILAZATION SHALL BE USED ON SLOPES GREATER THAN A 3:1 SLOPE, PER MANUFACTURER RECOMMENDATIONS.

4. MODIFICATIONS OR ADJUSTMENTS TO EXISTING DRAINAGE STRUCTURES/EROSION MITIGIATION IMPROVEMENTS SHALL BE DONE IN THE SAME MANNER AS THE ORIGINAL IMPROVEMENT.

5. ALL SWPPP REQUIREMENTS SHALL BE ADHERED TO.

6. ALL WORK ON THIS PLAN SHALL BE DONE IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARDS. ALL APPLICABLE PERMITS SHALL BE OBTAINED PRIOR TO WORK COMMENCING.

7. ALL WORK IN THE RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARDS.

8. THIS GRADING PLAN IS TO BE UTILIZED AND A COPY PROVIDED TO THE CITY WHEN APPLYING FOR THE CONSTRUCTION OF ANY GARDEN OR RETAINING WALLS, WITH RESPECT TO THIS SITE.

9. THE SURVEY INFORMATION WAS PROVIDED BYCONSTRUCTION SURVEYS TECHNOLOGIES, INC.

10. FOR SITE DIMENSIONS, BUILDING AND INFRASTRUCTURE LOCATION REFER TO THE SITE PLAN.

11. DO NOT PLACE ADDITIONAL FILL OR LOADING ON ADJACENT WALLS WITHOUT APPROVAL OF A STRUCTURAL ENGINEER. CONTACT A STRUCTURAL ENGINEER FOR ADEQUACY OF THE EXISTING PERIMETER WALLS W/RESPECT TO THIS GRADING PLAN.

EROSION CONTROL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.

3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.

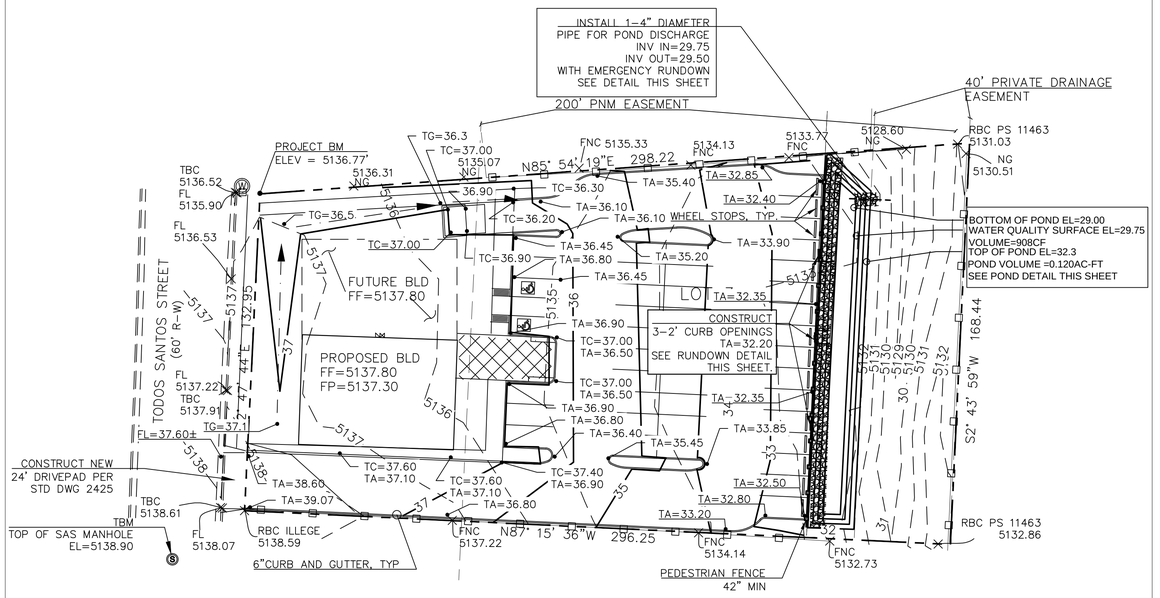
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

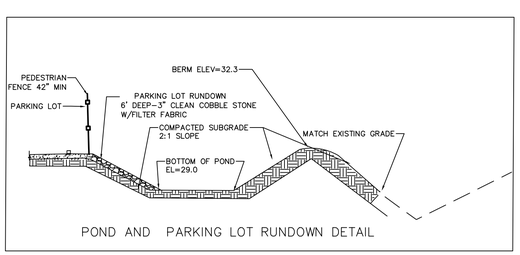
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.

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.

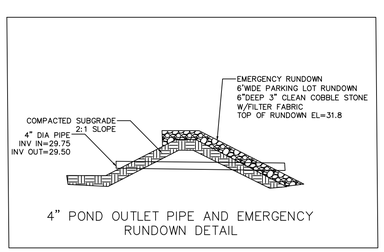
N W E S

0 30 60 FEET
Scale 1" = 30'



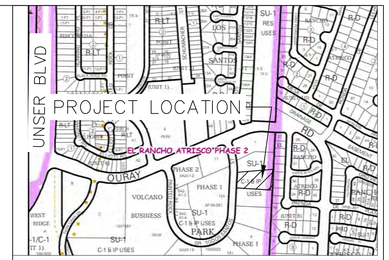


POND AND PARKING LOT RUNDOWN DETAIL



4" POND OUTLET PIPE AND EMERGENCY RUNDOWN DETAIL

TEMPORARY BENCH MARK
1-NW PROPERTY CORNER EL=5136.77
2-EXISTING SAS MANHOLE EL=5138.90



VICINITY MAP: G-10-Z

FIRM MAP: 35001C0326J

LEGAL DESCRIPTION:

LOT 3, VOLCANO BUSINESS PARK
CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO

NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.

2. RETAIN THE FIRST .34" OF STORM RUNOFF FROM ENTIRE DEVELOPMENT TO CONFORM TO THE WATER QUALITY REQURIEMENTS

LEGEND

- 36.00 — PROPOSED SPOT ELEVATION
- NG=44.00 — EXISTING SPOT ELEVATION
- 5601 — EXISTING CONTOUR EXISTING
- 5600 — INDEX CONTOUR PROPOSED
- 5601 — CONTOUR PROPOSED INDEX
- 5600 — CONTOUR
- LOT LINE
- EXISTING WALL
- EXISTING CURB AND GUTTER
- PROPOSED RETAINING WALL
- PROPOSED WALL
- PROPOSED EDGE OF CONCRETE
- PROPOSED FLOWLINE (.5'± SWALE)
- PROPOSED BASIN BOUNDARY
- 6" DEEP – 3"CLEAN COBBLE STONE W/FILTER FABRIC
- PEDESTRIAN FENCE-42"MIN.

I HAVE PERSONALLY INSPECTED THE PROPERTY ON 1-3-20. NO EARTHWORK HAS BEEN PERFORMED AND THE SITE IS CONSISTENT WITH THE TOPO SHOWN.
Richard Dourte P.E. #10854 DATE

ENGINEER'S SEAL
RICHARD H. DOURTE NEW MEXICO 10854 REGISTERED PROFESSIONAL ENGINEER
3-06-20
Richard Dourte P.E. #10854

Title:
COMMUNITY BAPTIST CHURCH
3030 TODOS SANTOS NW

GRADING AND DRAINAGE PLAN

DRAWN BY
DATE
D.dwg

RHD Engineering, LLC
4305 Purple Sage Ave. NW
Albuquerque, NM 87120
(505) 288-1621

SHEET # 1 of 1
JOB #