

# CITY OF ALBUQUERQUE

Planning Department  
Brennon Williams, Director



Mayor Timothy M. Keller

January 22, 2020

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

RE: **House of Life Ministries**  
**Quaker Heights Rd NW**  
**Conceptual Grading Plan Stamp Date 1/20/20**  
**Drainage Report Stamp Date: 1/20/20**  
**Hydrology File: F11D020**

Dear Mr. Dourte:

PO Box 1293

Based on the submittal received on 1/21/20, this project is approved for Site Plan for Building Permit. A separate grading and drainage plan will be required prior to each phase of construction.

Albuquerque

If you have any questions, please contact me at 924-3695 or [dpeterson@cabq.gov](mailto:dpeterson@cabq.gov).

Sincerely,

NM 87103

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

[www.cabq.gov](http://www.cabq.gov)



# City of Albuquerque

Planning Department  
Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

**Project Title:** House of Life Ministries Building Permit #: \_\_\_\_\_ Hydrology File #: F11D020

DRB#: \_\_\_\_\_ EPC#: \_\_\_\_\_ Work Order#: \_\_\_\_\_

Legal Description: Tract 2, Coors Village Sub'd

City Address: Quaker Heights Road 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  ADMIN SITE

IS THIS A RESUBMITTAL?  Yes \_\_\_\_\_ No

**DEPARTMENT** \_\_\_\_\_ TRANSPORTATION  HYDROLOGY/DRAINAGE

Check all that Apply:

**TYPE OF SUBMITTAL:**

- ENGINEER/ARCHITECT CERTIFICATION
- PAD CERTIFICATION
- CONCEPTUAL G & D PLAN
- 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) \_\_\_\_\_
- PRE-DESIGN MEETING?

**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
- FLOODPLAIN DEVELOPMENT PERMIT
- OTHER (SPECIFY) \_\_\_\_\_

DATE SUBMITTED: January 20, 2020 By: Richard Dourte

COA STAFF: \_\_\_\_\_

ELECTRONIC SUBMITTAL RECEIVED: \_\_\_\_\_

FEE PAID: \_\_\_\_\_

January 20, 2020

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

RE: House of Life Ministries (F-11D020)

Dear Mr. Peterson,

Thank you for your comments dated Jan. 15, 2020 (attached). Please find attached the revised conceptual grading plan along with the report.

With respect to your comments dated Jan 15, 2020:

1. The sidewalk culverts are to be constructed with SO-19. I have noted this on the plan adjacent to the construction note. The SO-19 notes have not been added at this time, and will need to be done when the grading and drainage plan for each phase is submitted.
2. Rough finish floor elevations have been added, along with contour lines to provide better clarity to this conceptual plan. Since a subsequent grading and drainage plan will need to be submitted for each phase, more detail will need to be provided at that time. A note on the plan has been added to indicate this.
3. As you correctly indicated, the pond routing did reduce the outflow of this site so that it does conform with the approved master plan for this area. The outflow rate is 19.28cfs and the permitted flows are 19.40cfs. The allowable discharge per the master plan is .807ac-ft and the calculated amount is .80ac-ft.
4. The requested calculations have been added to the plan.
5. The ponding information has been added to the plan in a table format.

Thank you again for your time on this matter.

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

Sincerely,



Richard Dourte, PE  
RHD Engineering, LLC

# CITY OF ALBUQUERQUE

Planning Department  
Brennon Williams, Director



Mayor Timothy M. Keller

January 15, 2020

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

RE: **House of Life Ministries**  
**Quaker Heights Rd NW**  
**Conceptual Grading Plan Stamp Date 1/2/20**  
**Drainage Report Stamp Date: 1/2/20**  
**Hydrology File: F11D020**

Dear Mr. Dourte:

PO Box 1293  
Based on the submittal received on 1/7/20, this project cannot be approved until the following corrections are made:

Albuquerque  
NM 87103  
www.cabq.gov  
Prior to Site Plan:

1. Will the sidewalk culvert be built by SO-19 or Work Order? Please label/provide notes as appropriate.
2. Provide proposed grading, finished floors, and spot elevations throughout the site.
3. The site must discharge in accordance with the approved master plan. Accounting for pond routing and stormwater quality volume will probably get within the allowable discharge and volume, but this analysis needs to be presented.
4. Please provide the SWQV calculations for each basin draining to each pond. The stormwater quality ponds need to be sized for the areas draining to them.
5. Please number the ponds and include a label on each with the SWQV and elevation, the 100-year volume and elevation, and the peak 100 year inflow and outflow.

If you have any questions, please contact me at 924-3695 or [dpeterson@cabq.gov](mailto:dpeterson@cabq.gov).

Sincerely,

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

# Conceptual Drainage Report

For

Tract 2, Coors Village  
House of Life Ministries  
Albuquerque, New Mexico

Prepared by

RHD Engineering, LLC  
Albuquerque, New Mexico

January 2020



1-20-20

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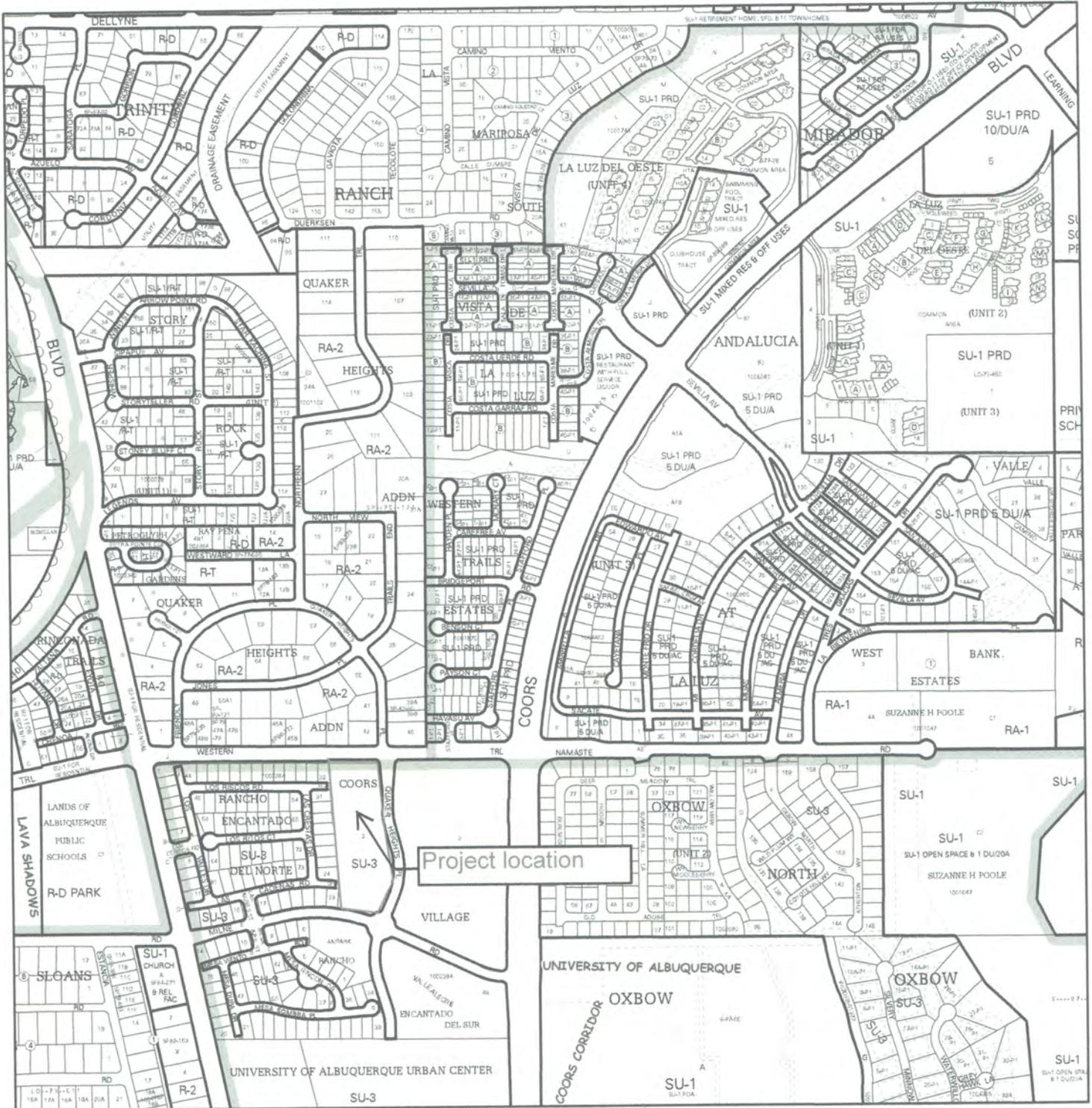
**Purpose:** To provide a drainage concept for Tract 2, Coors Village for the House of Life Ministries. This plan is prepared in accordance with the City of Albuquerque design regulations, utilizing the City of Albuquerque's Development Process Manual drainage guidelines. This report will demonstrate that this development will not adverse effect the adjacent site.

**Introduction:** The House of Life Ministries is proposing to develop Tract 2, Coors Village subdivision. On this property there are 3 planned phases at this time. The first phase consists of 2 buildings, the second consists of 1 building and the third consists of 1 building.

This site is approximately 5.07 acres, located south of Western Trail Blvd NW. The property is within a flood hazard zone "X" as indicated on FIRM Map 35001C0114H (shown on the grading sheet).

This site is part of the Drainage Master Plan, for the Coors Village Subdivision, Basin 160, by Thompson Engineering, Feb. 2000. This master plan identified this site as having a developed condition with 0%A, 20%B, 5%C and 75%D (excerpt from master drainage plan included).

**Existing Conditions:** Presently this site is undeveloped, the site to the west of this property is developed as a residential subdivision. The adjacent roads have been built, the sidewalks along Quaker Heights and Milne Road have been built, the sidewalk has not been constructed along Western Trail. The water lines, sanitary sewer lines and a storm drain system have also been constructed. A 30" storm sewer lateral has been constructed to this site (refer to project # 704281, page 13 of 23 asbuilts, copy included).



For more current information and details visit: <http://www.cabq.gov/gis>

Map amended through: 4/2/2012

Note: Grey Shading Represents Area Outside of the City Limits

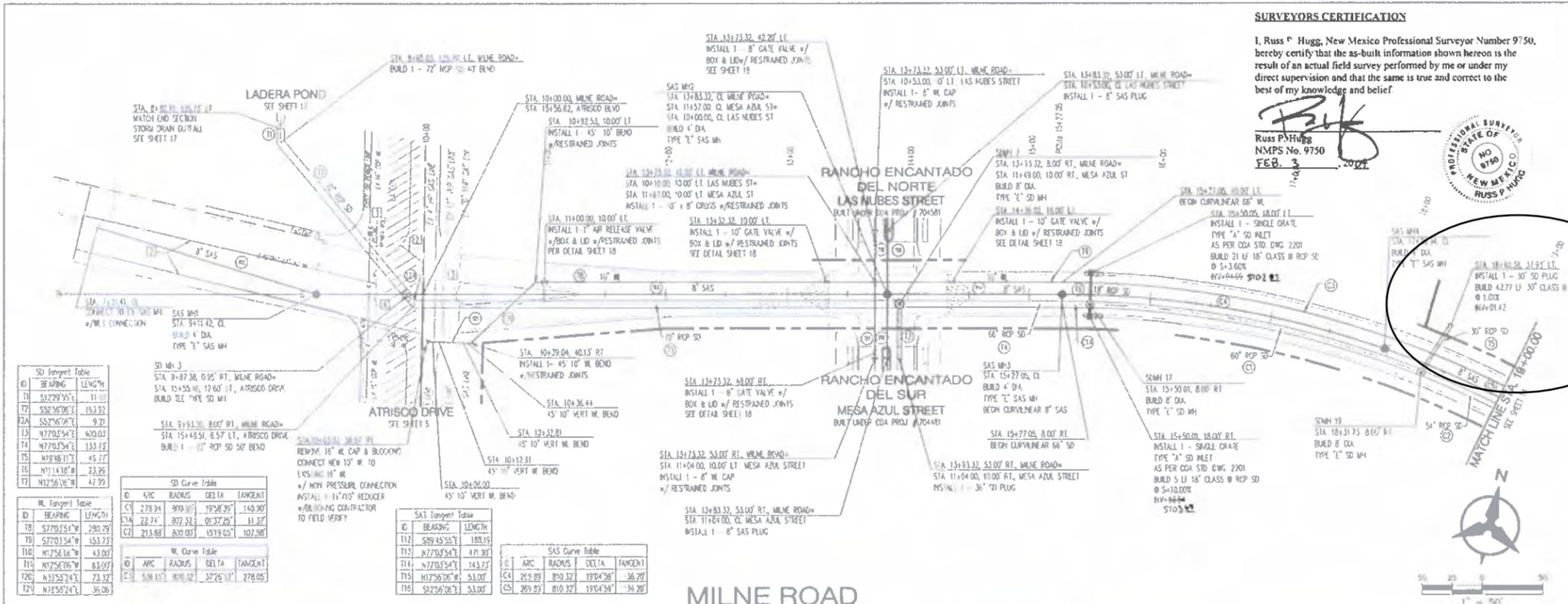
Zone Atlas Page:  
**F-11-Z**

Selected Symbols

	SECTOR PLANS		Escarpment
	Design Overlay Zones		2 Mile Airport Zone
	City Historic Zones		Airport Noise Contours
	H-1 Buffer Zone		Wall Overlay Zone
	Petroglyph Mon.		

**Proposed Conditions:** This site plans on utilizing the existing 30" rcp lateral that connects to the storm drain system that is in Milne Road. The hgl at the manhole for this lateral is 5109.65, per the summary of hydraulic calcs table (copy attached). There are three drainage basins for this site. The private storm drain will directly pick up the storm water from 3 ponds via a private storm drain. The private storm drain line computations are included in appendix A. There is a grate capacity of 7.6cfs for 0.5ft of head for each of the private catch basins (refer to the capacity chart in appendix A). There are 4 catch basins, thus  $7.6\text{cfs} \times 4 = 30.4\text{cfs}$ , thus greater than the 20.7cfs needed.

**Summary and Recommendations:** The proposed outflows are less than the design flows by 0.12cfs. The overall proposed volume from the site (100yr 24hr event, the master plan design volume) is 0.91ac-ft - 0.12ac-ft(water quality pond requirement) = .79ac-ft, this is less than the master plan design volume of .807ac-ft (see developed drainage conditions table 2 of master plan, attached).



**SURVEYORS CERTIFICATION**  
 I, Russ P. Hugg, New Mexico Professional Surveyor Number 9750, hereby certify that the as-built information shown hereon is the result of an actual field survey performed by me or under my direct supervision and that the same is true and correct to the best of my knowledge and belief.

*Russ P. Hugg*  
 Russ P. Hugg  
 NMPS No. 9750  
 FEB. 3 2007



- GENERAL NOTES**
- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
  - ALL CURVE DATA AND DIMENSIONS ARE CALCULATED FROM CENTERLINE OF PIPE OR MANHOLE. ALL SAS & SD SLOPES ARE CALCULATED TO TRUE PIPE DIMENSIONS FROM INVERT TO INVERT. (PAY ITEMS ARE SHOWN IN PARENTHESES)
  - GRADE ELEVATIONS, WHERE NOTED, ARE FOR FLOORLINE OF CURB UNLESS OTHERWISE SPECIFIED.
  - CONTRACTOR IS TO INSTALL A 4" x 4" x 5' POST AND END AT THE END OF EACH SANITARY SEWER SERVICE.
  - CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ALL UTILITY CONDUITS AND EXISTING LINES.
  - CONTRACTOR SHALL PROVIDE THE INSPECTORS WITH THE PROPOSED TESTING PLAN. THE PLAN MUST BE APPROVED BEFORE TESTING OPERATIONS BEGIN.
  - CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES AS NOT TO INTERFERE WITH NORMAL ACTIVITIES OF RESIDENTS OR OTHER CONTRACTORS ON SITE.
  - ANY DAMAGE TO THE EXISTING FACILITIES (CURB & GUTTER, PAVEMENT, CONDUITS, LANDSCAPING, UTILITY LINES, ETC) DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
  - MANHOLE & CATCH BASIN INLET ELEVATIONS, VALVE BODIES, HWY. FIRE HYDRANT & FLARE ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY AND ADJUST TO FINAL PAVEMENT GRADES.
  - SAS STANDING FOLLOWS CL OF ROAD UNLESS OTHERWISE NOTED.
  - PIPELINE ELEVATIONS FOR DROP INLETS ARE PROJECTED FROM FLOORLINE OF STANDARD CURB TO MIDDLE OF DOWNHILL GRATE.
  - ALL WATERLINE APPURTENANCES SHALL USE RESTRAINED JOINTS. REFER TO TABLES LISTED ON OVERALL UTILITY SHEET 12.
  - FOR STORM DRAIN CONSTRUCTION, ALL HOP JOINTS SHALL NOT BE GRATED. PRIOR TO FINAL INSPECTION FINAL INSPECTION SHALL DETERMINE WHICH JOINTS ARE TO BE GRATED FOR FINAL ACCEPTANCE OF THE CONSTRUCTION.

**SD Tangent Table**

ID	BEARING	LENGTH
01	S12°29'55"E	11.00
02	S52°56'00"E	153.33
03	S52°56'00"E	9.71
04	N72°05'54"E	420.03
05	N72°05'54"E	133.12
06	N09°06'11"E	45.77
07	N91°14'18"E	23.95
08	N12°56'16"E	47.99

**SD Curve Table**

ID	ARC	RADIUS	DELTA	TANGENT
01	278.24	950.00	19°58'39"	149.90
02	22.74	802.32	0°37'29"	11.37
03	213.88	802.00	15°19'05"	107.58

**M. Curve Table**

ID	ARC	RADIUS	DELTA	TANGENT
01	5.00	100.00	3°26'00"	278.05

**SAS Tangent Table**

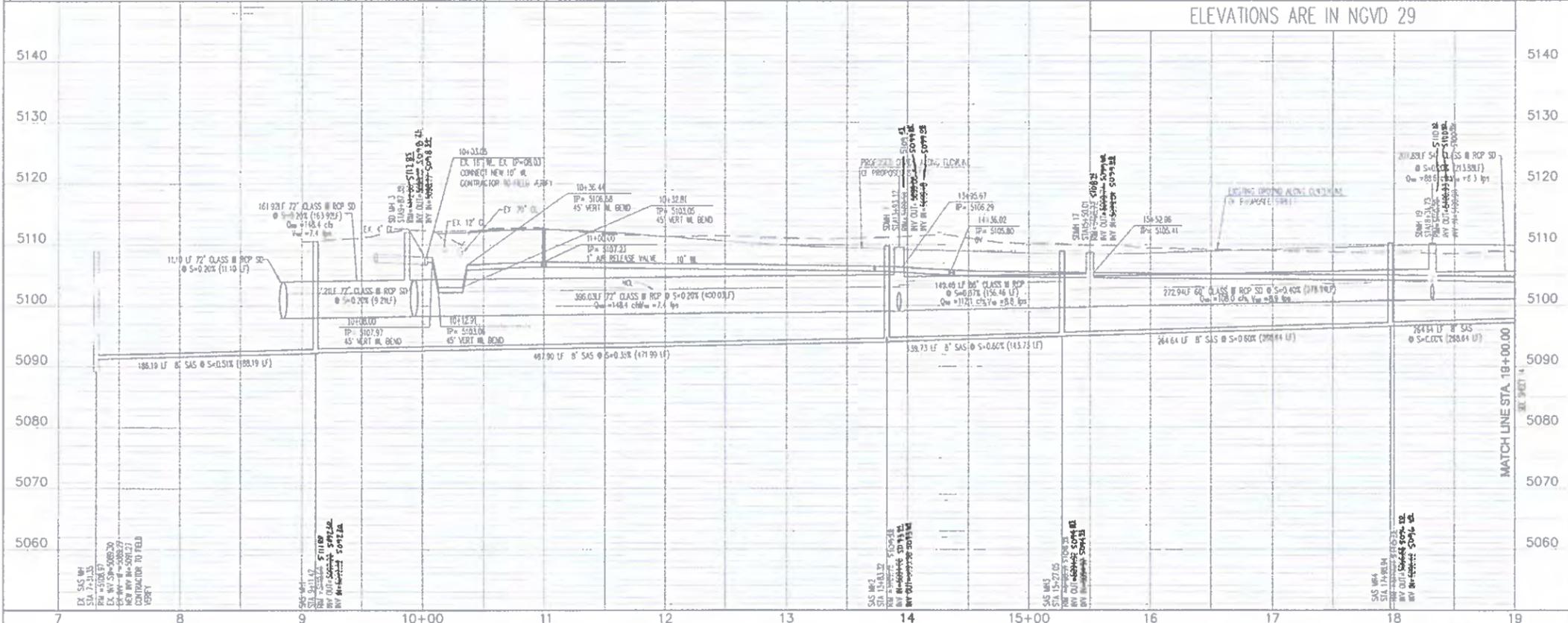
ID	BEARING	LENGTH
101	S89°43'55"E	188.19
102	N72°05'54"E	471.90
103	N72°05'54"E	143.72
104	N17°58'06"E	53.00
105	N17°58'06"E	36.29
106	S12°56'16"E	53.00
107	S29°02'00"E	139.54
108	S29°02'00"E	36.29

**SAS Curve Table**

ID	ARC	RADIUS	DELTA	TANGENT
101	269.89	810.32	19°04'58"	36.29
102	269.89	810.32	19°04'58"	36.29

- LEGEND**
- DOUBLE WATER METER
  - SINGLE WATER METER
  - WATER LINE SHUTOFF VALVE
  - WATER LINE TEE
  - SAS LATERAL
  - SAS MANHOLE
  - STORM DRAIN MANHOLE
  - STORM DRAIN INLET
  - PROPOSED FIRE HYDRANT
  - EXISTING WATER VALVE
  - PROPOSED STREET LIGHT

- KEYED NOTES:**
- COORDINATE WITH PNM ELECTRIC FOR REGULATION OR SUPPORT OF EXISTING POWER POLE.
  - REMOVE EXISTING AC PAVEMENT FROM SANITARY SEWER AND STORM DRAIN INSTALLATION PER CDA STD DWG 2465 MATCH EXISTING GRADES. CONTRACTOR SHALL COORDINATE WITH CITY OF ALBUQUERQUE WATER SYSTEMS (857-8200) AT LEAST (7) SEVEN WORKING DAYS PRIOR TO CONSTRUCTION FOR TRENCH DESIGN TO MAINTAIN PROPER DISTANCE FROM EXISTING 12" AC IN MILNE ROAD.
  - COORDINATE WITH PNM GAS (PALA PEDRONEZZI) 241-7757 OR ALBERT LANDVAZIO 241-7778) AT LEAST (10) TEN WORKING DAYS PRIOR TO CONSTRUCTION FOR SUPPORT OF 4" HP & 12" & 20" WP LINES.
  - COORDINATE WITH CITY OF ALBUQUERQUE WATER SYSTEMS (INVERSION (857-8200) AT LEAST (7) SEVEN WORKING DAYS PRIOR TO CONSTRUCTION FOR SUPPORT OF 18" COP WL.



**Bohannon & Huston**  
 Courtyard | 7500 Jefferson St. NE | Albuquerque, NM 87109-4336  
 ENGINEERING • SPATIAL DATA • ADVANCED TECHNOLOGIES

**CITY OF ALBUQUERQUE**  
**PUBLIC WORKS DEPARTMENT**

**RANCHO ENCANTADO OFF-SITE IMPROVEMENTS**  
**UTILITY PLAN AND PROFILE**  
**MILNE ROAD**

City Project No. 704281 | Zone Map No. F-11-Z | Sheet 13 of 23

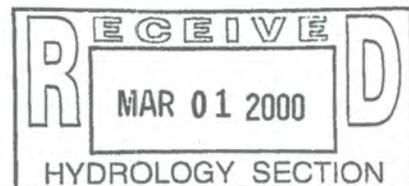
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 Mar 27, 2003 11:55am

**DRAINAGE MASTER PLAN**  
**FOR**  
**COORS VILLAGE**  
**SUBDIVISION**



**Prepared by:**  
**Thompson Engineering Consultants, Inc.**  
**2060 Main Street N.E., Suite E**  
**Los Lunas, NM 87031**

**February 2000**



## **INTRODUCTION AND SITE LOCATION**

The proposed Coors Village Subdivision is located on the west side of Albuquerque at the intersection of Coors Boulevard and Western Trail. The 58 acre tract is currently platted as Tract A-1-A, a portion of the University of Albuquerque Urban Center. The property will be subdivided into 4 large tracts. Tract 1 will be approximately 16.4 acres in size and will be further subdivided into single family residential lots. Tract 2, which has an area of 5 acres, will be developed as an office complex. Tract 3, which is 13.7 acres in size, will be a commercial development. Tract 4 will be for apartments. It has an area of 17 acres. This report will serve as the Drainage Master Plan for the development of these tracts. A drainage and grading plan for each tract will be required prior to development. This site was previously planned to have similar land uses.

On September 18, 1998, FEMA approved a LOMR request from the City of Albuquerque for the Unser Boulevard South, Rinconada Arroyo, and Ponds 16A and 16B, prepared by URS Greiner. This LOMR Request indicates that there is adequate volume in the Ladera Pond 16B to accept flows from the Coors Village Site.

## **METHODOLOGY**

The hydrologic and hydraulic criteria in Section 22 of the City of Albuquerque Development Process Manual (DPM), entitled "Drainage, Flood Control, and Erosion Control," was followed to perform the analyses given in this report. The design storm used for both the existing undeveloped and developed conditions of the Coors Village Subdivision is the 100-year, 24-hour storm event for peak flow and runoff volume computations.

A hydrologic computer model using AHYMO 97 was developed for both existing and developed conditions to determine the peak flows expected for the development. Finally, a hydraulic analysis of the storm sewer collection system was performed to assist in the sizing of the infrastructure.

## **EXISTING DRAINAGE CONDITIONS**

### **INTRODUCTION**

The site is located between Coors Boulevard and Atrisco Drive and is south of Western Trail. The average slope across the site is 1 to 2%. The site is sparsely vegetated.

The FEMA Flood Insurance Rate Map Number 35001C0114D, effective date September 20, 1996, and revised September 18, 1998 to reflect the LOMR previously mentioned shown in Figure 1, indicates that there is no flood hazard zone on the site.

There are two drainage systems adjacent to the site which eventually drain to the San Antonio Arroyo. The first is the Unser Boulevard/Rinconada Arroyo/Ladera Ponds 16A and 16B, mentioned previously and the Ladera Pond 15 outfall system located in Coors Boulevard. The Unser Boulevard system is maintained by the City of Albuquerque, while the Lader Pond 15 outfall system is maintained by AMAFCA.

### ***UNSER BOULEVARD/RINCONADA ARROYO/PONDS 16A AND 16B LOMR REQUEST TO FEMA***

On September 18, 1998, FEMA approved a LOMR request from the City of Albuquerque for the Unser Boulevard South, Rinconada Arroyo, and Ponds 16A and 16B, prepared by URS Greiner (see Appendix C). A review of this LOMR Request indicates that there is adequate volume in the Ladera Pond 16B to accept flows from the Coors Village Site. This LOMR reduced the Base Flood Elevation for Ladera Pond 16B from 5108 to 5102 and removed the 100-year flood hazard zone from the Coors Village Site.

The majority of the watershed for the LOMR is within the Petroglyph National Monument and therefore is assumed to be undeveloped. The remainder of the watershed was analyzed as future developed conditions. A HEC-1 model was developed in 1989 for the watershed. Ladera Pond 16B was regraded in the early 1990's increasing the capacity. A survey was performed to determine the increased capacity of the facility (see Plate 3). According to calculations performed by URS Greiner, the 100-year water surface elevation using the volume detained (18 acre-feet) in the HEC-1 analysis and the survey information is 5101.50, which is lower than the water surface of 5102.63 given in the HEC-1 analysis.

### ***MESA PRIETA SUBDIVISION DRAINAGE REPORT***

The Mesa Prieta Subdivision Drainage Report, prepared by Resource Technology, Inc. in September 1995, analyzed the hydraulic grade line of the Ladera Pond 15 outfall storm sewer located in Coors Village. An additional analysis of the Ladera Pond 15 outfall system was performed by Mr. Mark Burak, P.E. in May of 1995. Both of these analyses conclude that the Ladera Pond 15 Outfall storm sewer in Coors Boulevard is at capacity. The storm sewer at the intersection of Coors and Western Trail is flowing under pressure with a peak flow of 297 cfs. Since the storm sewer is flowing at capacity under pressure conditions, it cannot accept any additional flows from Coors Village.

### ***CHAPPARAL WEST SUBDIVISION DRAINAGE REPORT***

The Chapparal West Subdivision Drainage Report, prepared by Jeff Mortensen & Associates, Inc. in November 1999, indicates that the runoff from the subdivision will drain into Ladera Pond 16B via a storm drain that cross Chapparal Elementary School. The 17.1 acre Chapparal West Subdivision is located within the Basin P of the Unser

Boulevard South HEC-1 hydrologic model. The HEC-1 analysis computed excess runoff in Basin P to be 1.28 inches, whereas Mortensen calculated the excess runoff to be 1.51 inches. Therefore, the additional runoff reaching Pond 16B from Chapparral West Subdivision is 0.33 acre-feet. This additional runoff raises the 100-year water surface elevation of the pond by 0.05 feet.

According to the Chapparral West Subdivision Drainage Report, Ladera Pond 16B is owned by Albuquerque Public Schools. The property has an AMAFCA blanket drainage easement with a license agreement to the City of Albuquerque. Therefore, the City and AMAFCA are responsible for maintaining the pond.

### **OFF-SITE FLOWS**

The site is bounded on three sides by existing streets, which are Coors Boulevard, Western Trail, and Atrisco Drive. There are no offsite flows from surrounding streets or from the property to the south of the site (Tracts X-1-A-1 and X-1-A-2). According to the Altura West Drainage Report, Tracts X-1-A-1 and X-1-A-2 drain to the Altura West storm drain system that is located in St. Joseph's Drive, which eventually drains to the Rio Grande. Therefore, there are no offsite flows that reach the site.

### **ON-SITE FLOWS**

For the existing conditions hydrologic analysis, land treatment type A was used to determine peak flows and runoff volumes. The developed basin boundaries were used for existing basins. The site currently drains in three directions (See Plate 1). The majority of the north portion of the site (Basins 140, 160, 200 and a portion of 100) drains to Ladera Pond 16B located west of the site. The total volume reaching Ladera Pond 16B is about 0.94 acre-feet. Portions of Basins 100 drain to Coors Boulevard. The majority of the southern portion of the site (Basins 110, 120, 130, 170, and 180) drains to a depression located at the southeast corner of the site. The total volume reaching the depression is 0.74 acre-feet. Table 1 shows the results of the existing conditions modeling.

**Table 1 Existing Drainage Conditions**

<b>BASINS</b>	<b>Area (acres)</b>	<b>100yr-24hr Peak Flow (cfs)</b>	<b>100yr-24hr Runoff Volume (acre-ft)</b>	<b>Land Treatment</b>
100	13.87	18.42	0.519	100%A
110	6.04	8.03	0.226	100%A
120	0.83	1.11	0.031	100%A
130	0.72	0.97	0.027	100%A
140	1.03	1.37	0.039	100%A
150	1.83	2.44	0.069	100%A
160	5.00	6.64	0.187	100%A
170	1.57	2.09	0.059	100%A
180	10.60	14.08	0.397	100%A
200	16.37	21.74	0.613	100%A

## **DEVELOPED DRAINAGE CONDITIONS**

### ***DRAINAGE BASIN DELINEATION***

Plate 1 shows that the site is divided into ten drainage basins, basins 100-180 and 200. It is proposed that all of the peak flows from the site will be routed in a storm sewer to Ladera Pond 16B. The eventual outfall for the Ladera Pond 16B is the San Antonio Arroyo. The LOMR request from the City of Albuquerque for the Unser Boulevard South, Rinconada Arroyo, and Ponds 16A and 16B, prepared by URS Greiner (see Appendix C) indicates that the Ladera Pond 16B has the capacity to accept the runoff from Coors Village with minimal impact.

### ***HYDROLOGIC ANALYSIS***

To determine the peak flows of each basin a hydrologic analysis was performed in accordance to section 22.2 of the Development Process Manual (DPM) using AHYMO 97. The analysis included the 100-year 24-hour storm. The 100-year 24-hour storm was the basis for determining peak flows to size the storm sewer collection system and was used to determine the required capacity of the detention ponds. The design storm values are based on Tables C-1, C-2, and C-3 of the DPM's section 22.2. The Coors Village Subdivision is contained within section F-11-Z of the City of Albuquerque Zone Atlas Map. The location of the site results in the following design storms:

- 100-year 1-hour event -- 1.90 inches,
- 100-year 6-hour event -- 2.20 inches,
- 100-year 24-hour event -- 2.65 inches.

Basins were assigned land treatment values in accordance with Tables A-4 and A-5 of the DPM's section 22.2. Table 1 shows the land treatments and areas for each drainage basin.

The time of concentration for all basins was calculated using the SCS Upland Method Calculated outlined in subsection B.2 of DPM section 22.2 within the AHYMO 97 model.

Because the Unser HEC-1 model was not available, an AHYMO model of the inflows to the Ladera Pond 16B and the stage-storage relationship for the pond was developed following the hydrograph parameters given in the output of the HEC-1 model for the LOMR submittal. Some trial and error was required to match the peak flow of the incoming flows and the stage-storage characteristics of Ladera Pond 16B as shown in the HEC-1 output. The AHYMO model resulted in a 100-year water surface elevation of 5102.63 with a volume of 18.42 acre-feet and a peak flow out of 32.5 cfs. This compares favorably to the values given in the HEC-1 model, which are 5102.63 water surface elevation, a volume of 18.5 acre-feet, and a peak flow of 33 cfs. Then, the revised volumes of the pond for each stage as calculated by URS Greiner was input to the AHYMO model and run to determine the 100-year water surface elevation. With the revised volumes, the 100-year water surface elevation is 5101.76 and the detained volume and peak flow out are 19.85 acre-feet and 28.8 cfs, respectively.

**Table 2 Developed Drainage Conditions**

BASINS	Area (acres)	100yr-24hr Peak Flow (cfs)	100yr-24hr Runoff Volume (acre-ft)	Land Treatment
100	13.87	57.13	2.431	10%B,5%C,85%D
110	6.04	23.45	0.976	20%B,5%C,85%D
120	0.83	3.44	0.146	10%B,5%C,85%D
130	0.72	2.99	0.127	10%B,5%C,85%D
140	1.03	4.26	0.181	10%B,5%C,85%D
150	1.83	4.93	0.163	60%B,20%C,20%D
160	5.00	19.40	0.807	20%B,5%C,75%D
170	1.57	6.47	0.275	10%B,5%C,85%D
180	10.60	41.12	1.711	20%B,5%C,75%D
200	16.37	60.99	2.459	25%B,10%C,65%D



## APPENDIX A

Site Hydrology/hydraulic Calculations:

The total site is 220,801sf or 5.07ac.

Basin A= 76,700sf or 34.7% of the site.

Basin B= 110,360sf or 50% of the site.

Basin C= 33,741sf or 15.3% of the site.

The total Flow is 20.65cfs pond routing has reduced the flows to 19.28cfs

Basin A develops .347 x 20.65cfs = 7.17cfs pond routing flow 7.04cfs

Basin B develops .50 x 20.65cfs = 10.33cfs pond routing flow 9.16cfs

Basin C develops .153 x 20.65cfs = 3.16cfs pond routing flow 3.08cfs

The total Volume is 39492cf or 0.91ac-ft

Basin A develops .347 x 39492cf = 13,703cf

Basin B develops .50 x 39492cf = 19,746cf

Basin C develops .153 x 39492cf = 6,043cf

The storm water quality requirements are 5023cf.

Basin A

Pond 1 – 280cf

Pond 2 – 1471cf

Basin B

Pond 3 – 2,726cf

Basin C

Pond 4 – 997cf

Total ponding 5474cf, thus greater than 5023cf required.

**Project: House of Life Ministries**  
**Drainage Calculations - Zone 1**

Depth (inches) at 100yr Storm					
Zone	P60	P360	P1440	P4days	P10days
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 Precipitation, E(inches) - 6 HR				
Zone	Treatment			
	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 = ((EA*AA)+(EB*AB)+(EC*AC)+(ED*AD))/(AA+AB+AC+AD)
V360=(Weighted E *At)/12 in/ft
V1440= V360+AD*(P1440-P360)/12in/ft
V4days=V360+AD*(P4day-P360)/12in/ft
V10days=V360+AD*(P10days-P360)/12in/ft

Peak Discharge (CFS/ACRE) 100 YR				
Zone	Treatment			
	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

\*\*\*\*\*Developed Conditions per the Coors Village Master Drainage Plan\*\*\*\*\*

Area	SQ. FT	Acres	% Total
A=	0	0.000	0%
B=	44160	1.014	20%
C=	11040	0.253	5%
D=	162600	3.733	75%
Total	217800	5.000	100%
Weighted E=	1.657		

Design Flows (CFS)			
Area	SQ. FT	Acres	Peak Discharge (100 YR)
A=	0	0.000	0.00
B=	44160	1.014	2.06
C=	11040	0.253	0.73
D=	162600	3.733	16.31
Total (CFS)			19.10*

\*actual flow allowed per Master Plan, table 2 is 19.40cfs.

	V360	V1440	V4days	V10days
Cubic feet	30070	36303	42536	49988
Acre-ft	0.69	0.83	0.98	1.15

\*\*\*\*\*PROPOSED CONDITIONS\*\*\*\*\*

Area	SQ. FT	Acres	% Total
A=	0	0.000	0%
B=	0	0.000	0%
C=	43504	0.999	20%
D=	177297	4.070	80%
Total	220801	5.069	100%
Weighted E=	1.777		

Design Flows (CFS)			
Area	SQ. FT	Acres	Peak Discharge (100 YR)
A=	0	0.000	0.00
B=	0	0.000	0.00
C=	43504	0.999	2.87
D=	177297	4.070	17.79
Total (CFS)			20.65**

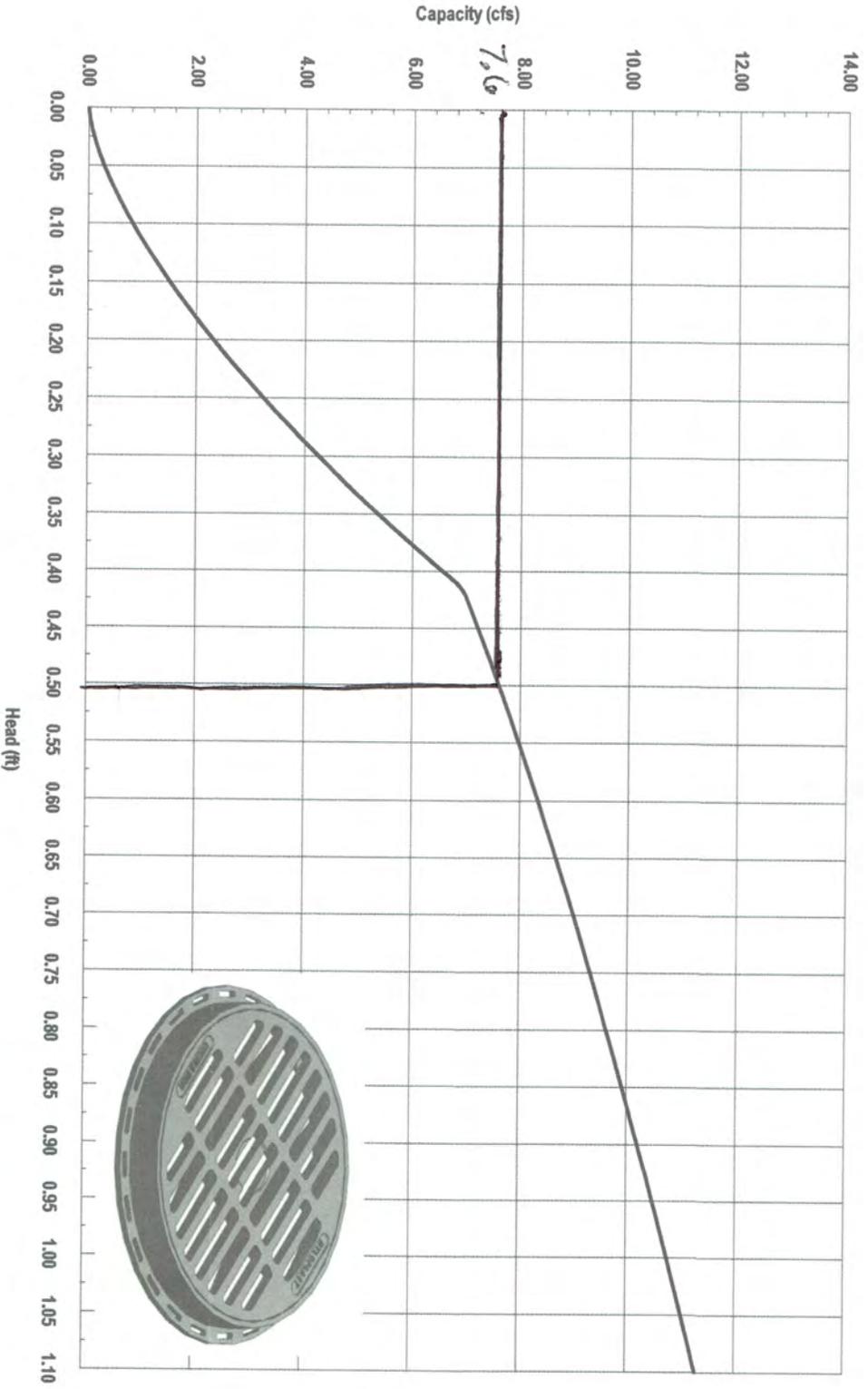
\*\* These flows are reduced to 19.28 cfs via pond routing, refer to the drainage report.

	V360	V1440	V4days	V10days
Cubic feet	32695	39492	46288	54414
Acre-ft	0.75	0.91	1.06	1.25

The 100 year peak flows for the developed site is 19.28 CFS and the allowable master plan design flow is 19.40 CFS. The 100 year 24 hr volume for the developed flows are (0.91ac-ft -0.12ac-ft (swqp))=0.79ac-ft, and the allowable master plan volume is 0.807ac-ft,. Thus both the flow and the volume are less than that allowed.

Storm Water Quality Ponding Requirement = Ad \*0.34 in/12in/ft = 5023 CF

### Nyloplast 30" Standard Grate Inlet Capacity Chart



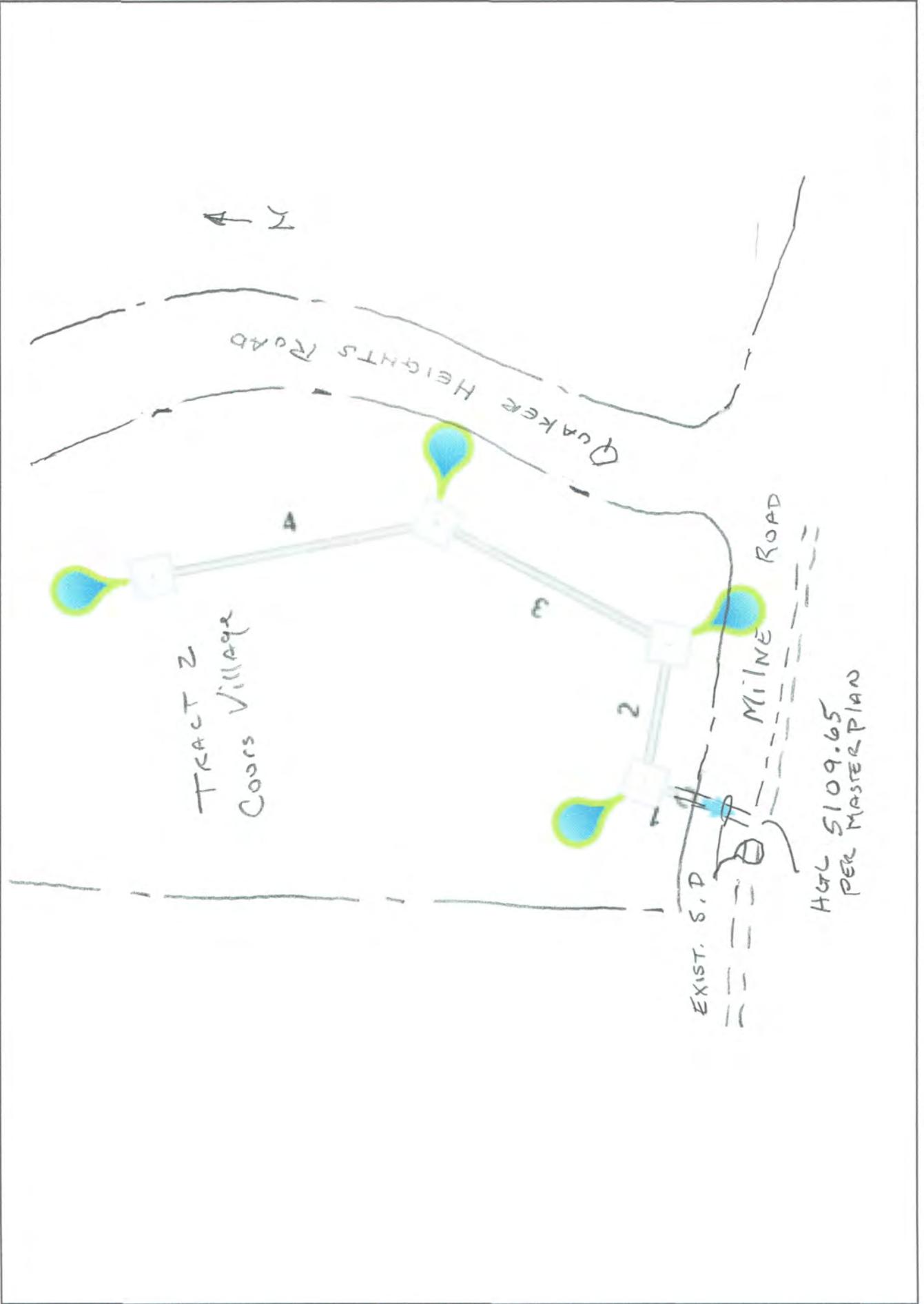
3130 Verona Avenue • Buford, GA 30518  
 (866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490  
 © Nyloplast Inlet Capacity Charts June 2012

# Plan View

Stormwater Studio 2019 v 3.0.0.15

Project Name: House of life ministries

12-28-2019



# Storm Sewer Tabulation

Stormwater Studio 2019 v 3.0.0.15

Project Name: House of life ministries

12-28-2019

Line ID	Length (ft)	Drng Area (ac)		Rational (C)	C x A		Tc (min)		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev (ft)		HGL Elev (ft)		Surface Elev (ft)		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Size (in)	Slope (%)	Up	Dn	Up	Dn	Up	Dn	
Line 1	45.17	0.000	0.000	0.00	0.00	0.00	0.00	4.29	6.37	20.70	40.93	4.22	3.77	9.65	9.77	13.50	13.60	1			
Line 2	148.54	0.000	0.000	0.00	0.00	0.00	0.00	3.45	6.37	20.70	38.77	2.93	4.20	10.18	10.26	11.90	13.50	2			
Line 3	272.50	0.000	0.000	0.00	0.00	0.00	0.00	2.17	6.37	17.50	23.78	3.57	4.50	10.36	10.66	10.70	11.90	3			
Line 4	298.60	0.000	0.000	0.00	0.00	0.00	0.00	0.00	6.37	7.20	13.17	2.29	5.04	10.87	11.05	13.60	10.70	4			

Notes: IDF File = SampleIDF.idf, Return Period = 2-yrs.

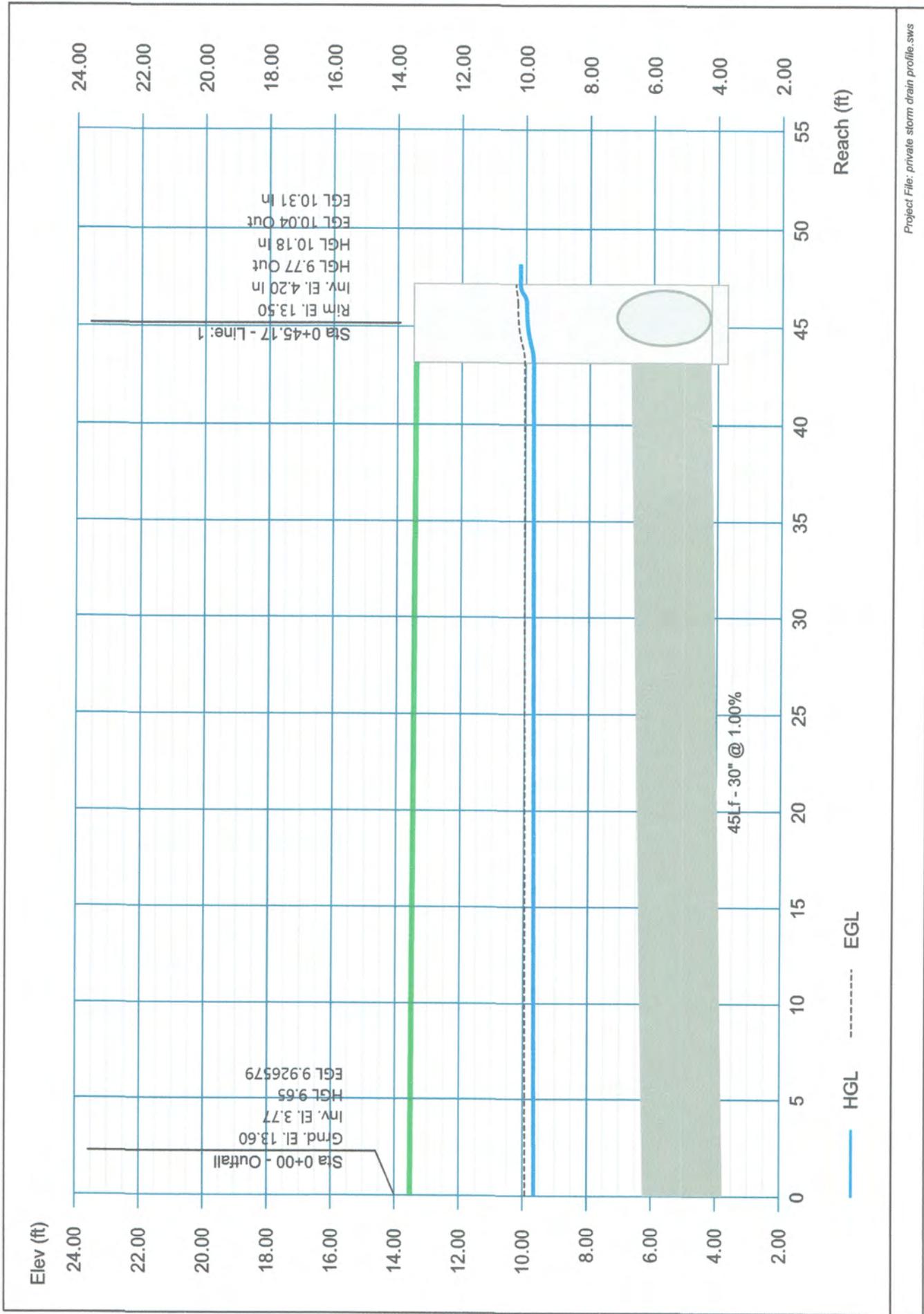
Project File: private storm drain profile.sws

# Line 1

Stormwater Studio 2019 v 3.0.0.15

Project Name: House of life ministries

12-28-2019

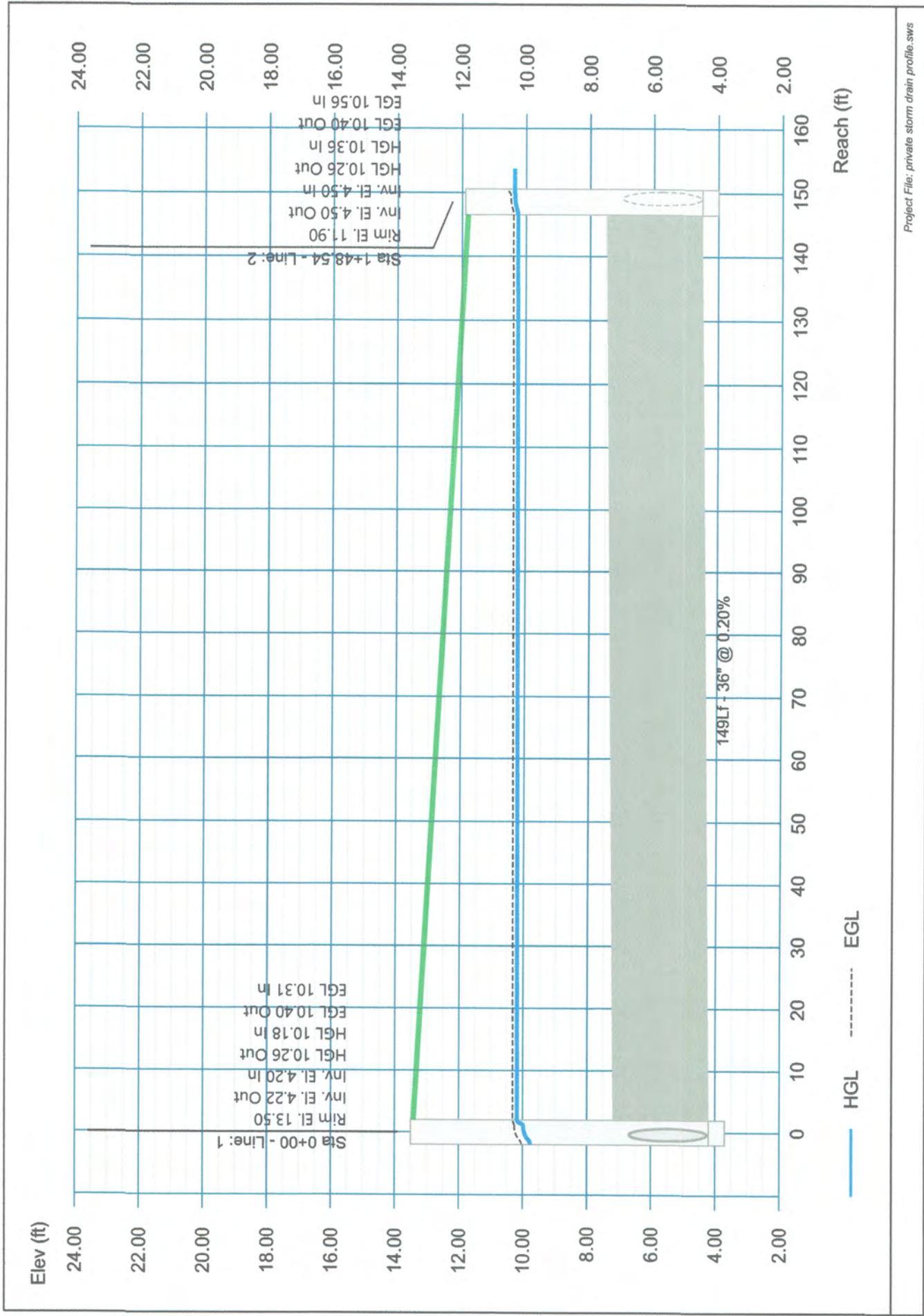


# Line 2

Stormwater Studio 2019 v 3.0.0.15

Project Name: House of life ministries

12-28-2019



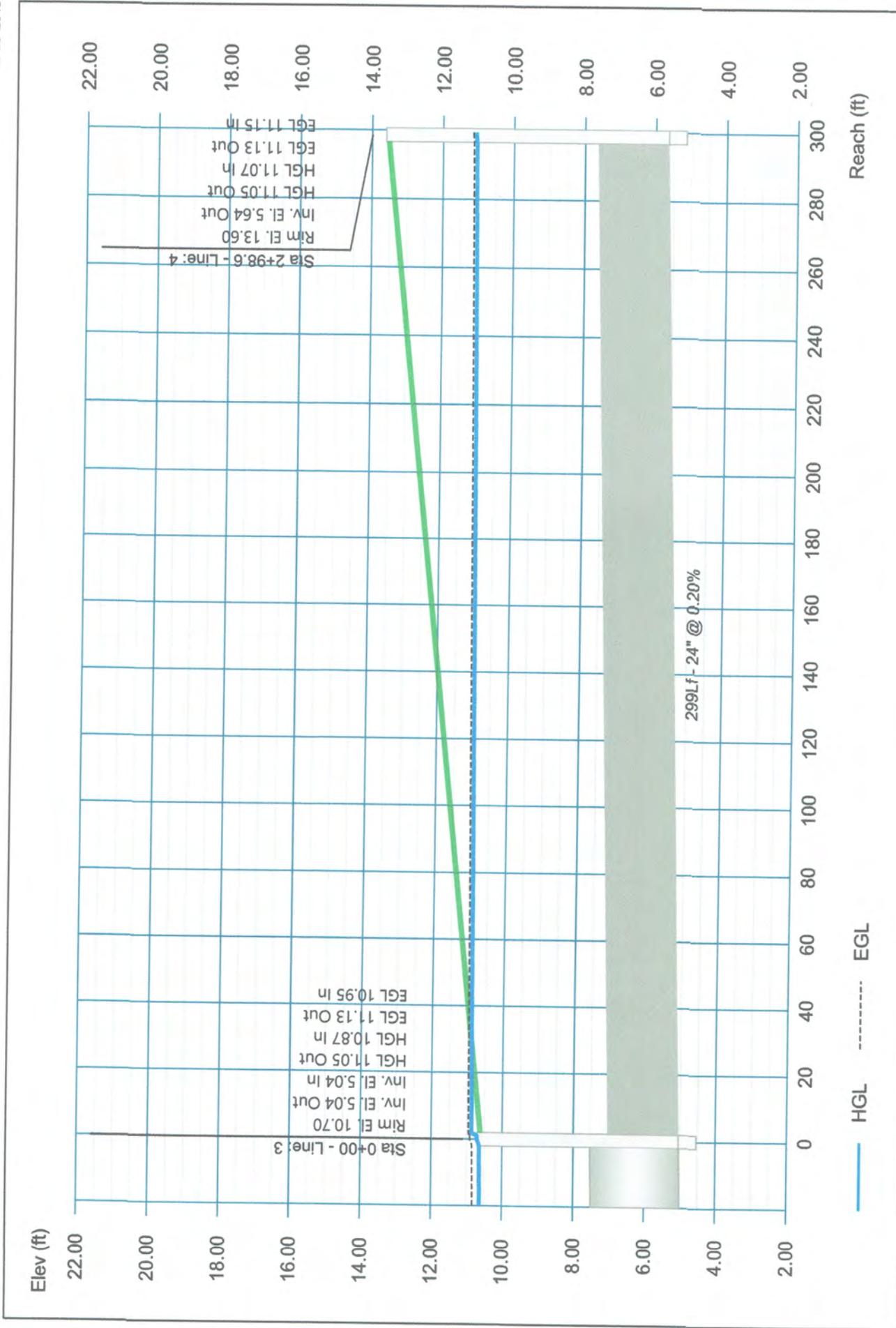


# Line 4

Stormwater Studio 2019 v 3.0.0.15

Project Name: House of life ministries

12-28-2019



Basin A  
pondrouteA.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

\*\*\*\*\*

\*\*\*\*\*FIRST LOOK AT EXISTING CONDITIONS

\*\*\*\*\*

COMPUTE NM HYD

ID=1 HYD NO=102 AREA=0.0028 SQ MI  
PER A=0 PER B=0 PER C=20 PER D=80  
TP=0.1500 HR MASS RAINFALL =-1

PRINT HYD

ID=1 CODE=1

\* ROUTE THE TOTAL FLOW THROUGH THE PROPOSED RESERVOIR

ROUTE RESERVOIR

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
0.0	0.00	13.0
0.1	.04	13.6
7.6	.06	14.1

PRINT HYD  
FINISH

ID=1 CODE=1

AHYMO PROGRAM SUMMARY TABLE (AHYMO-S4) AHYMO-SUM-basin A.txt  
 (MON/DAY/YR) = 01/17/2020 - Ver. S4.01a, Rel: 01a RUN DATE

INPUT FILE = ments\Richard\RHD Engineering\5 Simons Arch\120 Coors Village\pondroutea.txt USER NO. =  
 RHD-Engmwsing1ea58820657

COMMAND NOTATION	HYDROGRAPH IDENTIFICATION	ID NO.	ID NO.	AREA (SQ MI)	DISCHARGE (CFS)	VOLUME (AC-FT)	RUNOFF (INCHES)	PEAK (HOURS)	PER ACRE
		FROM	TO		PEAK	RUNOFF		TIME TO	CFS

PAGE = 1

START TIME = 0.00

RAINFALL TYPE = 1 NOAA 14

RAIN6 = 2.200

COMPUTE NM HYD		102.00	-	1	0.00280	7.34	0.266	1.78025	1.533	4.097
PER IMP =	80.00									
ROUTE RESERVOIR		106.02	1	3	0.00280	7.04	0.266	1.78013	1.567	3.930
AC-FT =	0.059									
FINISH										

*Keap*

2 of 6

BASIN B  
pondrouteB.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

\*\*\*\*\*

\*\*\*\*\*FIRST LOOK AT EXISTING CONDITIONS

\*\*\*\*\*

COMPUTE NM HYD

ID=1 HYD NO=102 AREA=0.0040 SQ MI

PER A=0 PER B=0 PER C=20 PER D=80

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	9.8
-----	------	-----

0.1	0.059	10.7
-----	-------	------

15.2	0.138	11.2
------	-------	------

PRINT HYD

ID=1 CODE=1

FINISH

AHYMO PROGRAM SUMMARY TABLE (AHYMO-S4) AHYMO-SUM-basin B.txt  
 (MON/DAY/YR) = 01/17/2020 - Ver. S4.01a, Rel: 01a RUN DATE

INPUT FILE = ments\Richard\RHD Engineering\5 Simons Arch\120 Coors Village\pondrouteb.txt USER NO. =  
 RHD-Engnmsing1ea58820657

COMMAND NOTATION	HYDROGRAPH IDENTIFICATION	ID NO.	ID NO.	AREA (SQ MI)	DISCHARGE (CFS)	VOLUME (AC-FT)	RUNOFF (INCHES)	PEAK (HOURS)	PER ACRE
		FROM	TO		PEAK	RUNOFF		TIME TO	CFS

PAGE = 1

START TIME = 0.00  
 RAINFALL TYPE = 1 NOAA 14  
 RAING = 2.200

COMPUTE NM HYD		102.00	-	1	0.00400	10.48	0.380	1.78024	1.533	4.094
PER IMP = 80.00										
ROUTE RESERVOIR		106.02	1	3	0.00400	9.16	0.380	1.78016	1.600	3.579
AC-FT = 0.106										
FINISH										

*Kearp*

4 of 6

BASIN C  
pondrouteC.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

\*\*\*\*\*

\*\*\*\*\*FIRST LOOK AT EXISTING CONDITIONS

\*\*\*\*\*

COMPUTE NM HYD

ID=1 HYD NO=102 AREA=0.0012 SQ MI  
PER A=0 PER B=0 PER C=20 PER D=80  
TP=0.1500 HR MASS RAINFALL =-1

PRINT HYD

ID=1 CODE=1

\* ROUTE THE TOTAL FLOW THROUGH THE PROPOSED RESERVOIR

ROUTE RESERVOIR

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEV(FT)
0.0	0.00	10.9
0.1	0.023	11.9
7.6	0.038	12.4

PRINT HYD

ID=1 CODE=1

FINISH

AHYMO PROGRAM SUMMARY TABLE (AHYMO-S4)  
 (MON/DAY/YR) = 01/17/2020

INPUT FILE = ments\Richard\RHD Engineering\5 Simons Arch\120 Coors Village\pondrouteC.txt USER NO. =  
 RHD-EngnMSingleA58820657

COMMAND NOTATION	HYDROGRAPH IDENTIFICATION	ID NO.	ID NO.	AREA (SQ MI)	DISCHARGE (CFS)	VOLUME (AC-FT)	RUNOFF (INCHES)	PEAK (HOURS)	PER ACRE
		FROM	TO		PEAK	RUNOFF		TIME TO	CFS

PAGE = 1

START TIME = 0.00  
 RAINFALL TYPE = 1 NOAA 14  
 RAIN6 = 2.200

COMPUTE NM HYD		102.00	-	1	0.00120	3.16	0.114	1.78024	1.533	4.112
PER IMP = 80.00										
ROUTE RESERVOIR		106.02	1	3	0.00120	3.08	0.114	1.77998	1.567	4.004
AC-FT = 0.029										
FINISH										

*keep*  
 6 of 6

**DRAINAGE NARRATIVE:**

**Summary-**

- The proposed flows are less than the masterplan design flows 19.28cfs vs 19.40cfs.
- The overall proposed volume from the site(100yr 24hr event, the masterplan design volume) is 0.91ac-ft - 0.12ac-ft(water quality pond) = 0.79ac-ft, this is less than the masterplan design volume for this site of 0.807ac-ft.
- Refer to the drainage report for more information.

Project: House of Life Ministries  
Drainage Calculations - Zone 1

Zone	P60	P80	P90	P95	P100
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

Zone	Excess Precipitation, E(inches) - 6 HR Treatment			
	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 <sub>A</sub> *A <sub>A</sub> )+(E <sub>B</sub> *A <sub>B</sub> )+(E <sub>C</sub> *A <sub>C</sub> )+(E <sub>D</sub> *A <sub>D</sub> ))/(A <sub>A</sub> +A <sub>B</sub> +A <sub>C</sub> +A <sub>D</sub> )	1.657
V <sub>360</sub> =(Weighted E *A <sub>T</sub> )/12 in/ft	30070
V <sub>1440</sub> =V <sub>360</sub> +A <sub>D</sub> *(P <sub>1440</sub> -P <sub>360</sub> )/12in/ft	36303
V <sub>440</sub> =V <sub>360</sub> +A <sub>D</sub> *(P <sub>440</sub> -P <sub>360</sub> )/12in/ft	42536
V <sub>100</sub> =V <sub>360</sub> +A <sub>D</sub> *(P <sub>100</sub> -P <sub>360</sub> )/12in/ft	49988

Zone	Peak Discharge (CFS/ACRE) 100 YR Treatment			
	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

\*\*\*\*\*Developed Conditions per the Coors Village Master Drainage Plan\*\*\*\*\*

Area	SQ. FT	Acres	% Total
A=	0	0.000	0%
B=	44160	1.014	20%
C=	11040	0.253	5%
D=	162600	3.733	75%
Total	217800	5.000	100%

Area	SQ. FT	Acres	Peak Discharge (100 YR)
A=	0	0.000	0.00
B=	44160	1.014	2.06
C=	11040	0.253	0.73
D=	162600	3.733	16.31
Total (CFS)			19.10*

\*actual flow allowed per Master Plan, table 2 is 19.40cfs.

	V <sub>360</sub>	V <sub>1440</sub>	V <sub>440</sub>	V <sub>100</sub>
Cubic feet	30070	36303	42536	49988
Acre-ft	0.69	0.83	0.98	1.15

\*\*\*\*\*PROPOSED CONDITIONS\*\*\*\*\*

Area	SQ. FT	Acres	% Total
A=	0	0.000	0%
B=	0	0.000	0%
C=	43504	0.999	20%
D=	177297	4.070	80%
Total	220801	5.069	100%

Area	SQ. FT	Acres	Peak Discharge (100 YR)
A=	0	0.000	0.00
B=	0	0.000	0.00
C=	43504	0.999	2.87
D=	177297	4.070	17.79
Total (CFS)			20.65**

\*\* These flows are reduced to 19.28 cfs via pond routing, refer to the drainage report.

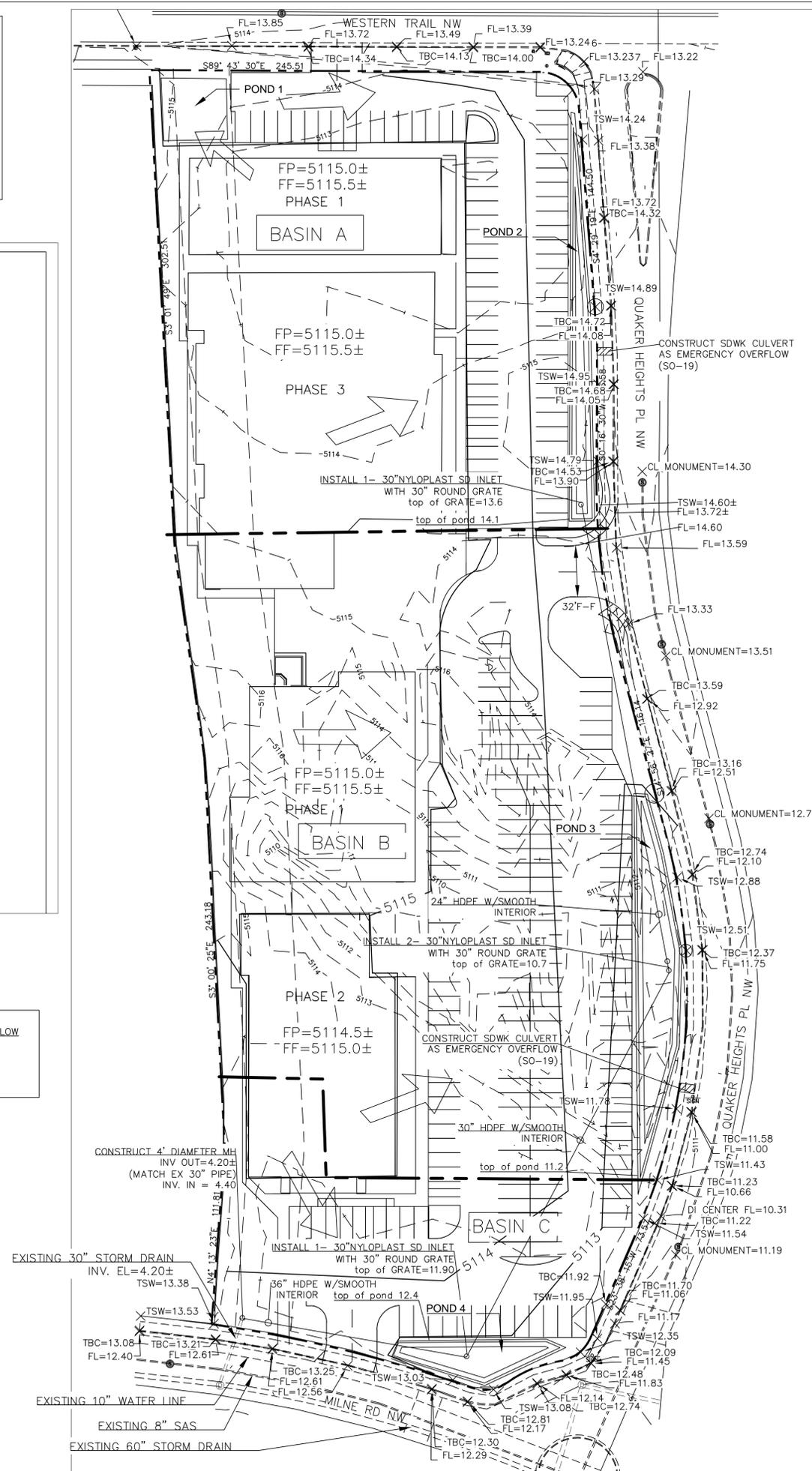
	V <sub>360</sub>	V <sub>1440</sub>	V <sub>440</sub>	V <sub>100</sub>
Cubic feet	32695	39492	46288	54414
Acre-ft	0.75	0.91	1.06	1.25

The 100 year peak flows for the developed site is 19.28 CFS and the allowable master plan design flow is 19.40 CFS. The 100 year 24 hr volume for the developed flows are (0.91ac-ft-0.12ac-ft(swq)=0.79ac-ft, and the allowable master plan volume is 0.807ac-ft. Thus both the flow and the volume are less than that allowed.

Storm Water Quality Ponding Requirement = A<sub>D</sub> \* 0.34 in/12in/ft = 5023 CF

BASIN	SIZE	VOLUME REQ'D	PROVIDED
A	34.7%	.347*5023=1743CF	1751CF
B	50.0%	.500*5023=2511CF	2726CF
C	15.3%	.153*5023=769CF	997CF
TOTAL			5474CF

POND NO.	SWQV	SWQ WSE	TOTAL VOL	100YR ELEV	PEAK INFLOW	PEAK OUTFLOW
1	280CF	14.9	.066AC-FT	14.1	7.34CFS	7.04CFS
2	1471CF	13.6	.060AC-FT	11.2	10.48CFS	9.16CFS
3	2726CF	10.7	.138AC-FT	12.4	3.08CFS	
4	997CF	11.9	.038AC-FT			
TOTAL	5474CF					19.28CFS



**EROSION CONTROL NOTES:**

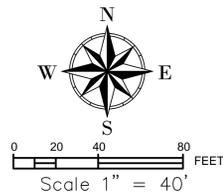
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
- REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
- 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.

**EROSION CONTROL NOTES:**

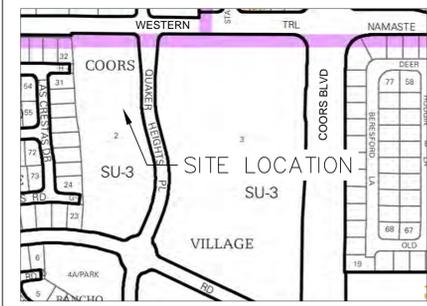
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
- REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.



**GENERAL NOTES:**

- THIS SITE IS NOT LOCATED IN A FEMA FLOOD HAZARD ZONE (REFER TO THE FIRM MAP 35001C0114H, EXCERPT ATTACHED).
- RHD ENGINEERING, LLC RECOMMENDS THAT THE OWNER OBTAIN A GEOTECHNICAL REPORT PRIOR TO DESIGN OF BUILDING FOOTING/FOUNDATION.
- SLOPE STABILIZATION SHALL BE USED ON SLOPES GREATER THAN A 3:1 SLOPE, PER MANUFACTURER RECOMMENDATIONS.
- MODIFICATIONS OR ADJUSTMENTS TO EXISTING DRAINAGE STRUCTURES/EROSION MITIGATION IMPROVEMENTS SHALL BE DONE IN THE SAME MANNER AS THE ORIGINAL IMPROVEMENT.
- ALL SWPPP REQUIREMENTS SHALL BE ADHERED TO.
- 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.
- ALL WORK IN THE RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARDS.
- 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.
- THE SURVEY INFORMATION WAS PROVIDED BY CONSTRUCTION SURVEYS TECHNOLOGIES, INC.
- FOR SITE DIMENSIONS, BUILDING AND INFRASTRUCTURE LOCATION REFER TO THE SITE PLAN.
- 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.

NOTE: THIS CONCEPTUAL GRADING PLAN IS NOT FOR BUILDING PERMIT, A SEPARATE SUBSEQUENT GRADING AND DRAIN PLAN FOR BUILDING PERMIT IS REQUIRED FOR EACH PHASE OF THIS SITE.



VICINITY MAP: F-11-Z



FIRM MAP: 35001C0114H

**LEGAL DESCRIPTION:**

TRACT 2, COORS VILLAGE  
CITY OF ALBUQUERQUE  
BERNALILLO COUNTY, NEW MEXICO

**NOTES:**

- ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.
- RETAIN THE FIRST .34' OF STORM RUNOFF FROM ENTIRE DEVELOPMENT TO CONFORM TO THE WATER QUALITY REQUIREMENTS

**LEGEND**

- 46.00 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
- PROPOSED BASIN BOUNDARY
- CONCEPTUAL DIRECTION OF FLOW

I HAVE PERSONALLY INSPECTED THE PROPERTY ON 12-31-19. NO EARTHWORK HAS BEEN PERFORMED, AND THE SITE IS CONSISTENT WITH THE TOPO SHOWN.  
*Richard Dourte*  
Richard Dourte P.E. #10854 DATE

ENGINEER'S SEAL	Title: House of Life Ministries Quaker Heights Pl. NW	DRAWN BY
	CONCEPTUAL GRADING AND DRAINAGE PLAN	DATE
	RHD Engineering, LLC 4305 Purple Sage Ave. NW ALBUQUERQUE, NM 87120 (505) 288-1621	SHEET # Appendix B
Richard Dourte P.E. #10854	1-20-20	JOB #