

# CITY OF ALBUQUERQUE

Planning Department  
Brennon Williams, Director



Mayor Timothy M. Keller

March 4, 2020

Benjamin Curry, AIA  
Living Designs Group Architects  
122A Dona Luz St.  
Taos, NM 87571

**RE: Albuquerque Central Care Center  
621 Columbia Dr. SE  
Grading and Drainage Plan  
Engineer's Stamp Date: 12/13/19  
Hydrology File: L16D042**

Dear Mr. Curry:

PO Box 1293

Based upon the information provided in your resubmittal received 03/03/2020, the Grading & Drainage Plan is approved for Building Permit.

Albuquerque

Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter. Prior to approval in support of Permanent Release of Occupancy by Hydrology, Engineer Certification per the DPM checklist will be required.

NM 87103

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](mailto:jhughes@cabq.gov), 924-3420) 14 days prior to any earth disturbance.

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

Also as a reminder, please provide a Drainage Covenant for the proposed stormwater quality pond per Chapter 17 of the DPM prior to Permanent Release of Occupancy. Please submit this on the 4th floor of Plaza de Sol. A \$25 fee will be required.

If you have any questions, please contact me at 924-3995 or [rbrissette@cabq.gov](mailto:rbrissette@cabq.gov).

Sincerely,

Renée C. Brissette, P.E. CFM  
Senior Engineer, Hydrology  
Planning Department

**ACCC****Total Roof Runoff** (used to size drain pipes)

Given:

100-year 6-hour storm

Zone 2

|                                  |   |      |        |
|----------------------------------|---|------|--------|
| Excess Precipitation Treatment A | = | 0.62 | inches |
| Excess Precipitation Treatment B | = | 0.80 | inches |
| Excess Precipitation Treatment C | = | 1.03 | inches |
| Excess Precipitation Treatment D | = | 2.33 | inches |

|                            |   |      |        |
|----------------------------|---|------|--------|
| Peak Discharge Treatment A | = | 1.71 | cfs/ac |
| Peak Discharge Treatment B | = | 2.36 | cfs/ac |
| Peak Discharge Treatment C | = | 3.05 | cfs/ac |
| Peak Discharge Treatment D | = | 4.34 | cfs/ac |

P<sub>360</sub> = 2.28 inchesP<sub>1440</sub> = 2.64 inchesP<sub>4days</sub> = 3.01 inchesP<sub>10days</sub> = 3.71 inches**Proposed Development**

A Undeveloped 0 sqft

B Landscaped 0 sqft

C Gravel Drive 0 sqft

D Impervious 5585 sqft

**Existing**Area of Treatment A = 5585.000 ft<sup>2</sup>  
0.12821396 acArea of Treatment B = 0.00 ft<sup>2</sup>  
0.000 acArea of Treatment C = 0.00 ft<sup>2</sup>  
0.000 acArea of Treatment D = 0.00 ft<sup>2</sup>  
0.000 acTotal Area = 5585.00 ft<sup>2</sup>  
0.128 ac*Volumetric Flow*

Weighted E = 0.620 inches

Volume (6hr) = 0.007 acre-ft

Volume (24hr) = 0.007 acre-ft

Volume (4days) = 0.007 acre-ft

Volume (10days) = 0.007 acre-ft

*Peak Rate of Discharge*Q<sub>100</sub> = 0.219 cfs**Proposed**Area of Treatment A = 0.000 ft<sup>2</sup>  
0.00 acArea of Treatment B = 0.00 ft<sup>2</sup>  
0.000 acArea of Treatment C = 0.00 ft<sup>2</sup>  
0.000 acArea of Treatment D = 5585.00 ft<sup>2</sup>  
0.128 acTotal Area = 5585.00 ft<sup>2</sup>  
0.128 ac*Volumetric Flow*

Weighted E = 2.330 inches

Volume (6hr) = 0.025 acre-ft

Volume (24hr) = 0.029 acre-ft

Volume (4days) = 0.033 acre-ft

Volume (10days) = 0.040 acre-ft

*Peak Rate of Discharge*Q<sub>100</sub> = 0.556 cfs

Water Quality Volume = .34" x Impervious area = 158 cuft

Retained Volume = Pro. 6h Vol - Ex. 6h Vol = 796 cuft

**ACCC****Drainage consideration area** 0.619 ac

Given:

100-year 6-hour storm

Zone 2

|                                  |   |      |        |
|----------------------------------|---|------|--------|
| Excess Precipitation Treatment A | = | 0.62 | inches |
| Excess Precipitation Treatment B | = | 0.80 | inches |
| Excess Precipitation Treatment C | = | 1.03 | inches |
| Excess Precipitation Treatment D | = | 2.33 | inches |

|                            |   |      |        |
|----------------------------|---|------|--------|
| Peak Discharge Treatment A | = | 1.71 | cfs/ac |
| Peak Discharge Treatment B | = | 2.36 | cfs/ac |
| Peak Discharge Treatment C | = | 3.05 | cfs/ac |
| Peak Discharge Treatment D | = | 4.34 | cfs/ac |

P<sub>360</sub> = 2.28 inchesP<sub>1440</sub> = 2.64 inchesP<sub>4days</sub> = 3.01 inchesP<sub>10days</sub> = 3.71 inches**Existing Drainage**

|                |            |
|----------------|------------|
| A Undeveloped  | 0 sqft     |
| B Landscaped   | 15196 sqft |
| C Gravel drive | 10250 sqft |
| D Impervious   | 1514 sqft  |
| total area     | 26960 sqft |

**Proposed Development**

|                |            |
|----------------|------------|
| A Undeveloped  | 0 sqft     |
| B Landscaped   | 8850 sqft  |
| C Gravel Drive | 7260 sqft  |
| D Impervious   | 10850 sqft |

**Existing**

|                       |           |                 |
|-----------------------|-----------|-----------------|
| Area of Treatment A = | 0         | ft <sup>2</sup> |
|                       | 0         | ac              |
| Area of Treatment B = | 15196.000 | ft <sup>2</sup> |
|                       | 0.349     | ac              |
| Area of Treatment C = | 10250.00  | ft <sup>2</sup> |
|                       | 0.235     | ac              |
| Area of Treatment D = | 1514.00   | ft <sup>2</sup> |
|                       | 0.035     | ac              |
| Total Area =          | 26960.00  | ft <sup>2</sup> |
|                       | 0.619     | ac              |

*Volumetric Flow*

Weighted E = 0.973 inches

Volume (6hr) = 0.050 acre-ft

Volume (24hr) = 0.051 acre-ft

Volume (4days) = 0.052 acre-ft

Volume (10days) = 0.054 acre-ft

*Peak Rate of Discharge*Q<sub>100</sub> = 1.692 cfs**Proposed**

|                       |          |                 |
|-----------------------|----------|-----------------|
| Area of Treatment A = | 0.000    | ft <sup>2</sup> |
|                       | 0.00     | ac              |
| Area of Treatment B = | 8850.00  | ft <sup>2</sup> |
|                       | 0.203    | ac              |
| Area of Treatment C = | 7260.00  | ft <sup>2</sup> |
|                       | 0.167    | ac              |
| Area of Treatment D = | 10850.00 | ft <sup>2</sup> |
|                       | 0.249    | ac              |
| Total Area =          | 26960.00 | ft <sup>2</sup> |
|                       | 0.619    | ac              |

*Volumetric Flow*

Weighted E = 1.478 inches

Volume (6hr) = 0.076 acre-ft

Volume (24hr) = 0.084 acre-ft

Volume (4days) = 0.091 acre-ft

Volume (10days) = 0.106 acre-ft

*Peak Rate of Discharge*Q<sub>100</sub> = 2.069 cfs

Water Quality Volume = .34" x Impervious area = 307.4167 cuft

Retained Volume = Pro. 6h Vol - Ex. 6h Vol = 1133 cuft

# Culvert Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Wednesday, Dec 11 2019

## ACCC Site drainage pipe 68ft

Invert Elev Dn (ft) = 5177.67  
Pipe Length (ft) = 68.00  
Slope (%) = 5.40  
Invert Elev Up (ft) = 5181.34  
Rise (in) = 8.0  
Shape = Circular  
Span (in) = 8.0  
No. Barrels = 1  
n-Value = 0.012  
Culvert Type = Circular Culvert  
Culvert Entrance = Smooth tapered inlet throat  
Coeff. K,M,c,Y,k = 0.534, 0.555, 0.0196, 0.9, 0.2

### Calculations

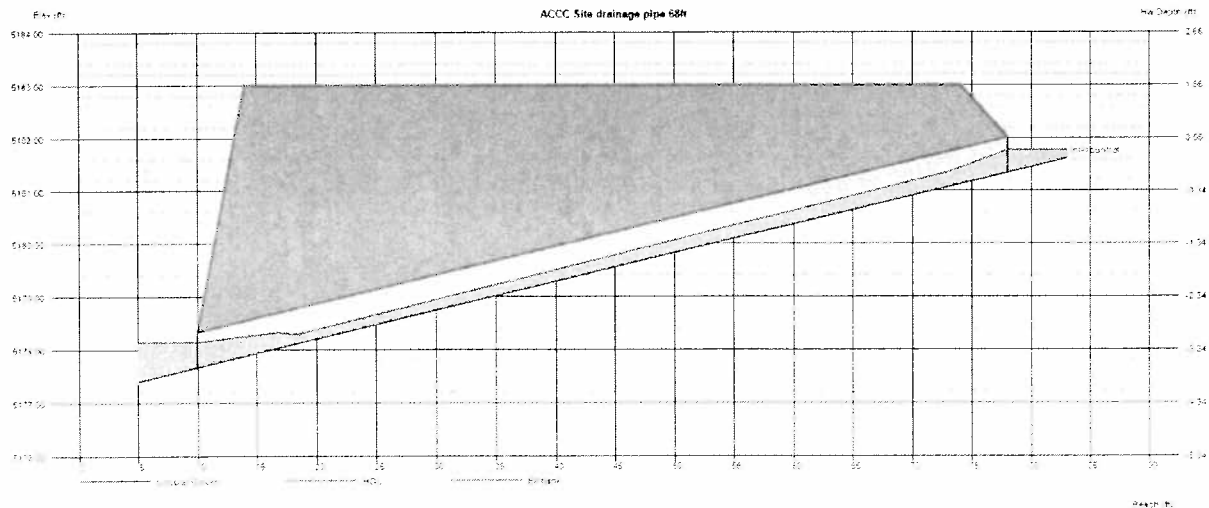
Qmin (cfs) = 0.30  
Qmax (cfs) = 0.41  
Tailwater Elev (ft) = (dc+D)/2

### Highlighted

Qtotal (cfs) = 0.40  
Qpipe (cfs) = 0.40  
Qovertop (cfs) = 0.00  
Veloc Dn (ft/s) = 1.49  
Veloc Up (ft/s) = 2.69  
HGL Dn (ft) = 5178.15  
HGL Up (ft) = 5181.63  
Hw Elev (ft) = 5181.77  
Hw/D (ft) = 0.64  
Flow Regime = Inlet Control

### Embankment

Top Elevation (ft) = 5183.00  
Top Width (ft) = 60.00  
Crest Width (ft) = 5.00



# Culvert Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Wednesday, Dec 11 2019

## ACCC Site Drainage Pipe, 93ft

Invert Elev Dn (ft) = 5177.67  
 Pipe Length (ft) = 93.00  
 Slope (%) = 4.74  
 Invert Elev Up (ft) = 5182.08  
 Rise (in) = 8.0  
 Shape = Circular  
 Span (in) = 8.0  
 No. Barrels = 1  
 n-Value = 0.012  
 Culvert Type = Circular Culvert  
 Culvert Entrance = Smooth tapered inlet throat  
 Coeff. K,M,c,Y,k = 0.534, 0.555, 0.0196, 0.9, 0.2

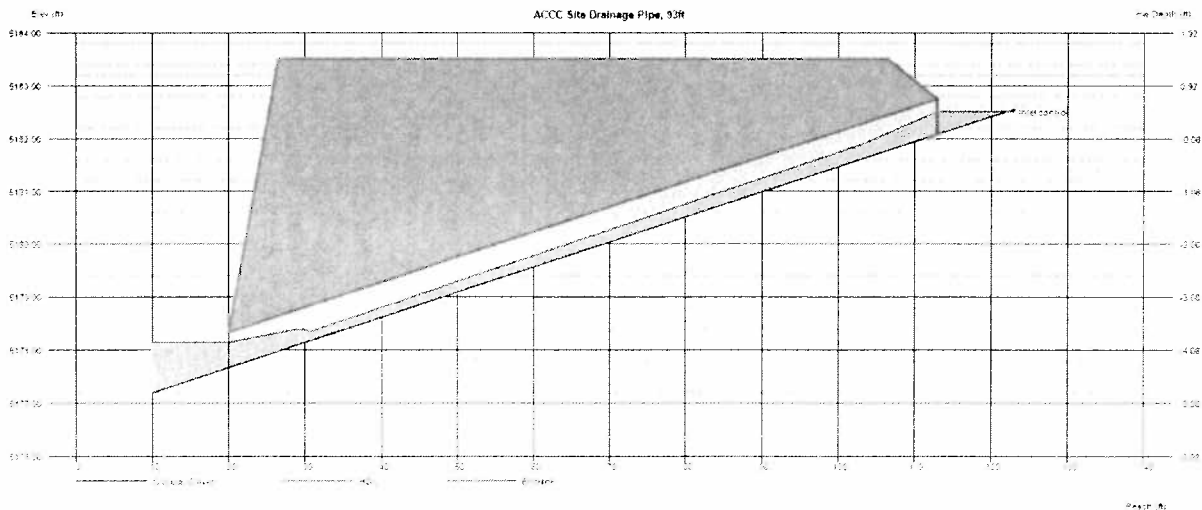
**Embankment**  
 Top Elevation (ft) = 5183.50  
 Top Width (ft) = 80.00  
 Crest Width (ft) = 200.00

### Calculations

Qmin (cfs) = 0.30  
 Qmax (cfs) = 0.40  
 Tailwater Elev (ft) = (dc+D)/2

### Highlighted

Qtotal (cfs) = 0.40  
 Qpipe (cfs) = 0.40  
 Qovertop (cfs) = 0.00  
 Veloc Dn (ft/s) = 1.49  
 Veloc Up (ft/s) = 2.69  
 HGL Dn (ft) = 5178.15  
 HGL Up (ft) = 5182.38  
 Hw Elev (ft) = 5182.51  
 Hw/D (ft) = 0.64  
 Flow Regime = Inlet Control



# Weir Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Tuesday, Aug 6 2019

## AAAC Pond outlet

### Trapezoidal Weir

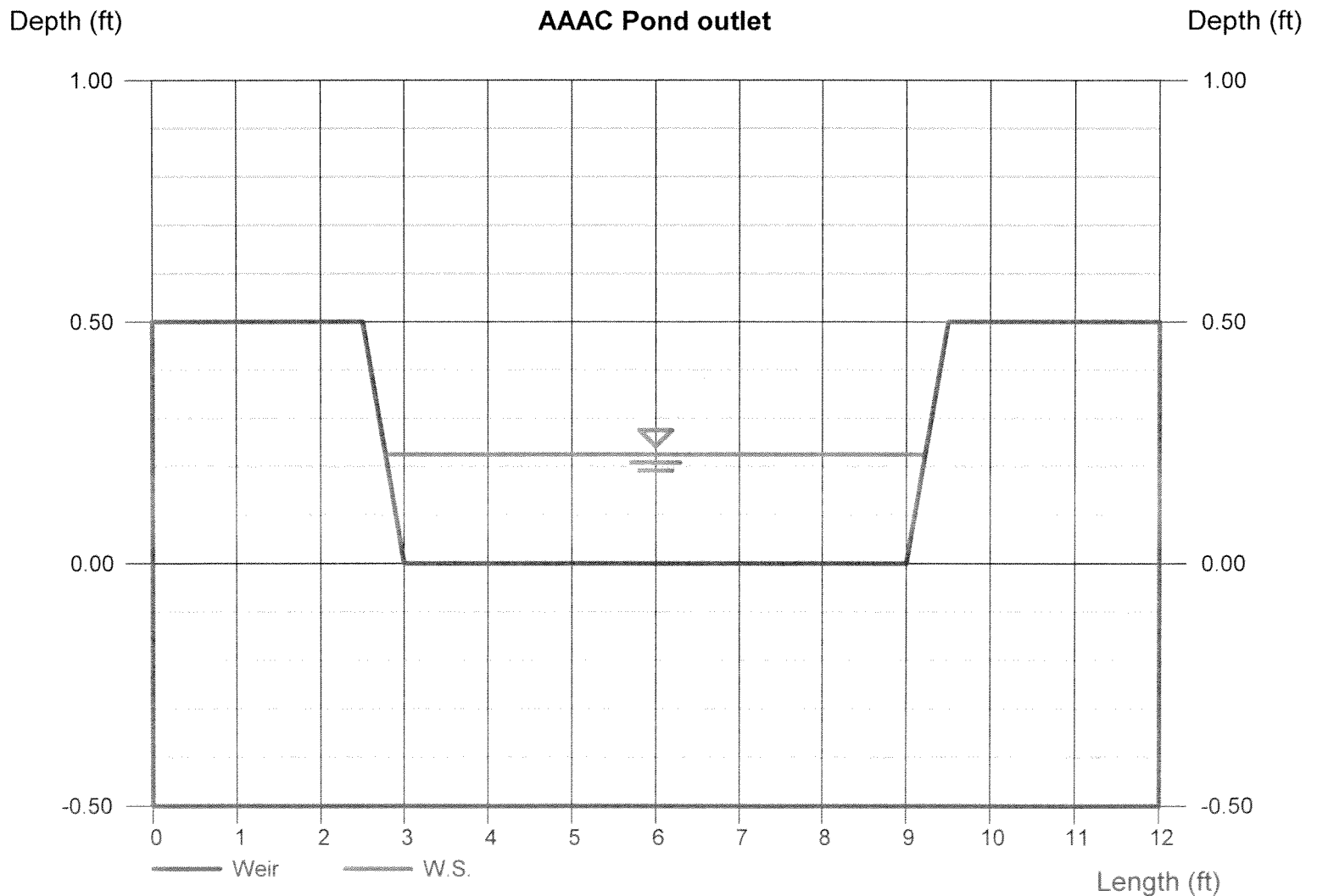
Crest = Sharp  
Bottom Length (ft) = 6.00  
Total Depth (ft) = 0.50  
Side Slope (z:1) = 1.00

### Highlighted

Depth (ft) = 0.23  
Q (cfs) = 2.045  
Area (sqft) = 1.40  
Velocity (ft/s) = 1.46  
Top Width (ft) = 6.45

### Calculations

Weir Coeff. Cw = 3.10  
Compute by: Q vs Depth  
No. Increments = 40



GENERAL NOTES

1. ALL SITE & UTILITY WORK SHALL CONFORM WITH THE "NM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2006 EDITION", AND ALL SUBSEQUENT AMENDMENTS AND PROVISIONS UNLESS OTHERWISE APPROVED IN WRITING BY THE ENGINEER.

2. THE CONTRACTOR SHALL NOTIFY THE CITY PLANNING DEPARTMENT OF THE PROPOSED COMMENCEMENT OF CONSTRUCTION AND PROPOSED WORK SCHEDULE AT LEAST 24 HOURS PRIOR TO THE ACTUAL COMMENCEMENT OF CONSTRUCTION. A COPY OF THE APPROVED PLANS SHALL BE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES DURING WORKING HOURS.

3. THE OWNER SHALL BE RESPONSIBLE, THROUGH HIS ENGINEER, FOR MAKING ALL ENGINEERING PLAN CHANGES AND REVISIONS TO THE ORIGINAL APPROVED ENGINEERING DRAWINGS. ALL CHANGES SHALL BE APPROVED BY THE CITY PRIOR TO CONSTRUCTION. FINAL SEALED "RECORD DRAWINGS" SHALL BE FILED WITH THE NM CID BEFORE PROJECT ACCEPTANCE.

4. PARALLEL WATER AND SEWER LINES SHALL BE AT LEAST TEN FEET APART HORIZONTALLY. SEPARATE TRENCHES WILL BE REQUIRED IN ALL CASES; WHEN WATER AND SEWER LINES CROSS EACH OTHER, THE WATER LINE SHALL BE AT LEAST 18 INCHES ABOVE THE SEWER LINE. OTHERWISE THE SEWER SHALL BE OF PRESSURE CLASS PIPE EXTENDING BETWEEN MANHOLES OR CONCRETE ENCASED FOR TEN FEET ON EACH SIDE OF THE WATER LINE.

5. THE CONTRACTOR MUST OBTAIN ALL SEWER PERMITS BEFORE COMMENCING ANY SEWER LINE CONSTRUCTION WITHIN THE CITY RIGHT-OF-WAY. A COPY OF THE PERMIT MUST BE AT THE CONSTRUCTION SITE TO BE SHOWN TO THE TOWN INSPECTOR UPON REQUEST.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES AND SHOULD NOT RELY SOLELY ON THESE PLANS FOR EXISTING UTILITY LOCATIONS.

7. THE CONTRACTOR SHALL PROVIDE AN AREA TO STORE CONSTRUCTION DEBRIS WHERE IT WILL NOT BE A NUISANCE TO THE SURROUNDING NEIGHBORHOOD. ALL DEBRIS SHALL BE CONTAINED IN SUCH A MANNER THAT WILL PREVENT SCATTERING. ALL DEBRIS INCLUDING TREES AND UNDERGROWTH SHALL BE DISPOSED OF PROPERLY WITHIN THE CITY LANDFILL. ALL DEBRIS SHALL BE REMOVED FROM THE SITE PRIOR TO FINAL SITE INSPECTION.

8. THE CONTRACTOR SHALL CONFINE HIS OPERATIONS TO THE CONSTRUCTION LIMITS OF THE PROJECT AND IN NO WAY SHALL ENCROACHMENT OCCUR ONTO ADJACENT PROPERTIES UNLESS LEGAL EASEMENTS ARE OBTAINED. ALL FILL AND CUT SLOPES SHALL BE SETBACK FROM THE PROPERTY LINE IN ACCORDANCE WITH CHAPTER 70 OF THE UNIFORM BUILDING CODE. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY AGREEMENTS NECESSARY OR DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES TO PUBLIC OR PRIVATE PROPERTY INCLUDING UTILITIES.

9. ALL CHANGE ORDERS SHALL BE CERTIFIED BY A NEW MEXICO PROFESSIONAL ENGINEER AND RECEIVE TOWN APPROVAL PRIOR TO IMPLEMENTING CHANGE ORDER CONSTRUCTION.

10. FOR ALL CONCRETE USED, THE DESIGN COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 3000 PSI, 6 BAG MIX AND MAXIMUM AGGREGATE SIZE OF 3/4 INCH. PERCENTAGE OF AIR ENTRAINMENT IN THE CONCRETE AT THE PROJECT SITE SHALL BE IN THE RANGE OF 4 TO 7 PERCENT.

11. ONE SET OF CONCRETE SAMPLING (THREE CONCRETE CYLINDERS) TO BE TAKEN FOR EACH 500 LINEAR FEET OR 50 CUBIC YARDS PLACED OR A MINIMUM OF ONE SAMPLE PER DAY WHICHEVER IS THE GREATEST. CONCRETE CYLINDERS ARE TO BE TEST BROKEN AT 7-DAY, 28-DAY AND 45-DAY (IF NEEDED) INTERVALS WITH TEST RESULTS SUBMITTED DIRECTLY TO THE ENGINEER.

12. THE DEVELOPER/CONTRACTOR DURING CONSTRUCTION SHALL MAINTAIN THE PROPER TRAFFIC CONTROL DEVICES IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND AS APPROVED BY THE CITY.

13. THE MAXIMUM DEVIATION OF THE TOP SURFACE OF THE CURB AND GUTTER SHALL NOT EXCEED 1/8 INCH IN 10 FEET NOR SHALL THE INSIDE FACE DEViate MORE THAN 1/4 INCH IN 10 FEET FROM A STRAIGHT LINE. ALL AREAS WITH STANDING WATER SHALL BE REJECTED.

14. THE CONTRACTOR SHALL IMPLEMENT THE NECESSARY SITE EROSION CONTROL DEVICES FOR INHIBITING DUST, WIND AND AIR SEDIMENT MOVEMENT OFFSITE DURING ALL PHASES OR STAGES OF CONSTRUCTION.

15. UTILITY LINES MUST BE BORED UNDER ALL EXISTING STREET CONCRETE APPURTENANCES. A MINIMUM OF 12 INCHES OF SEPARATION MUST BE MAINTAINED BETWEEN UTILITY LINES. ALL CURB AND GUTTER DAMAGE MUST BE REPAIRED BEFORE FINAL INSPECTION.

16. SUBGRADE, BASE MATERIAL, ASPHALT TREATED BASE AND ASPHALT SURFACE COURSE REQUIRE COMPACTION TESTS FOR EACH 220 LINEAR FEET OF TRENCHING, AND 30 SQUARE YARDS OF EXTERIOR PAVING/CONCRETE WALK SUBBASE. ASPHALT SAMPLES FOR EACH 500 TONS INSTALLED OR ONE SAMPLE PER DAY IS REQUIRED TO BE ANALYZED WITH TEST RESULTS SENT TO THE ENGINEER. ALL BUILDING SUBGRADE COMPACTION TESTING PER ARCHITECTURAL SPECIFICATIONS

17. ALL UTILITY APPURTENANCES SUCH AS TELEPHONE PEDESTALS, ELECTRICAL BOXES, GAS AND CABLE TELEVISION, SHALL BE PLACED OUTSIDE THE PUBLIC RIGHT-OF-WAY AND WITHIN UTILITY EASEMENTS. THE DEVELOPER WILL BE RESPONSIBLE FOR RELOCATION OF MISLOCATED UTILITY STRUCTURES PRIOR TO PROJECT ACCEPTANCE.

18. ALL TURNOUT LOCATIONS SHALL BE APPROVED BY THE CITY OF ALBUQUERQUE PRIOR TO CONSTRUCTION OF THE SAME.

19. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS FROM THE NM CID, THE EPA (SWPPP), AND ANY OTHER REQUIRED PERMITS.
- 
- ASPHALT PAVEMENT SECTION  
N.T.S.
- 
- BASECOURSE SURFACE SECTION  
N.T.S.
- 
- STAND-UP CURB, 6 INCH  
N.T.S.
- 
- STANDARD CURB & GUTTER  
N.T.S.
- 
- REINFORCED SLAB DETAIL  
N.T.S.
- 
- CONCRETE SIDEWALK DETAILS  
N.T.S.
- 
- CURB RAMP DETAIL  
N.T.S.
- 
- STORMWATER QUALITY POND DETAIL  
N.T.S.
- 
- VICINITY MAP  
N.T.S.
- SITE, GRADING & DRAINAGE NOTES
1. RADII AND NEZ COORDINATES ALONG CURB LINE ARE AT THE TOP BACK OF CURB, UNLESS OTHERWISE NOTED. (N = NORTHING, E= EASTING, Z= ELEVATION, TBC = TOP BACK OF CURB, AND FL = FLOWLINE AS REFERENCED FROM BENCHMARK)

2. CURB RAMPS SHALL MEET THE FOLLOWING CRITERIA: A) RAMP CLEAR WIDTHS OF 36" MIN., OR AS SHOWN B) MAXIMUM SLOPE OF 1:12 FOR CURB RAMP AND 10:1 FLARED SIDE SLOPES C) PROVIDE TEXTURE BY HEAVY BROOMING TRANSVERSE TO RAMP (0.035" DEPTH). CONTRACTOR SHALL VERIFY COMPLIANCE WITH THE DETAILS ON THIS SHEET AND THE ANSI A117.1-2003

3. ALL SIDEWALKS WITHIN THIS PROJECT SHALL QUALIFY AS AN ADA 'ACCESSIBLE ROUTE'. THE MAXIMUM LONGITUDINAL SLOPE SHALL BE 5%, AND THE MAXIMUM LATERAL SLOPE SHALL BE 2%. CONTRACTOR SHALL VERIFY RESULTING SLOPES OF ALL ACCESSIBLE ROUTES PRIOR TO POURING CONCRETE. CONCRETE SIDEWALKS EXCEEDING THESE GIVEN SLOPES WILL BE REJECTED.

4. MAXIMUM CUT AND FILL SLOPES SHALL BE 2:1. STEEPER SLOPES SHALL REQUIRE 6" THICK, 4" MINUS RIPRAP PROTECTION.

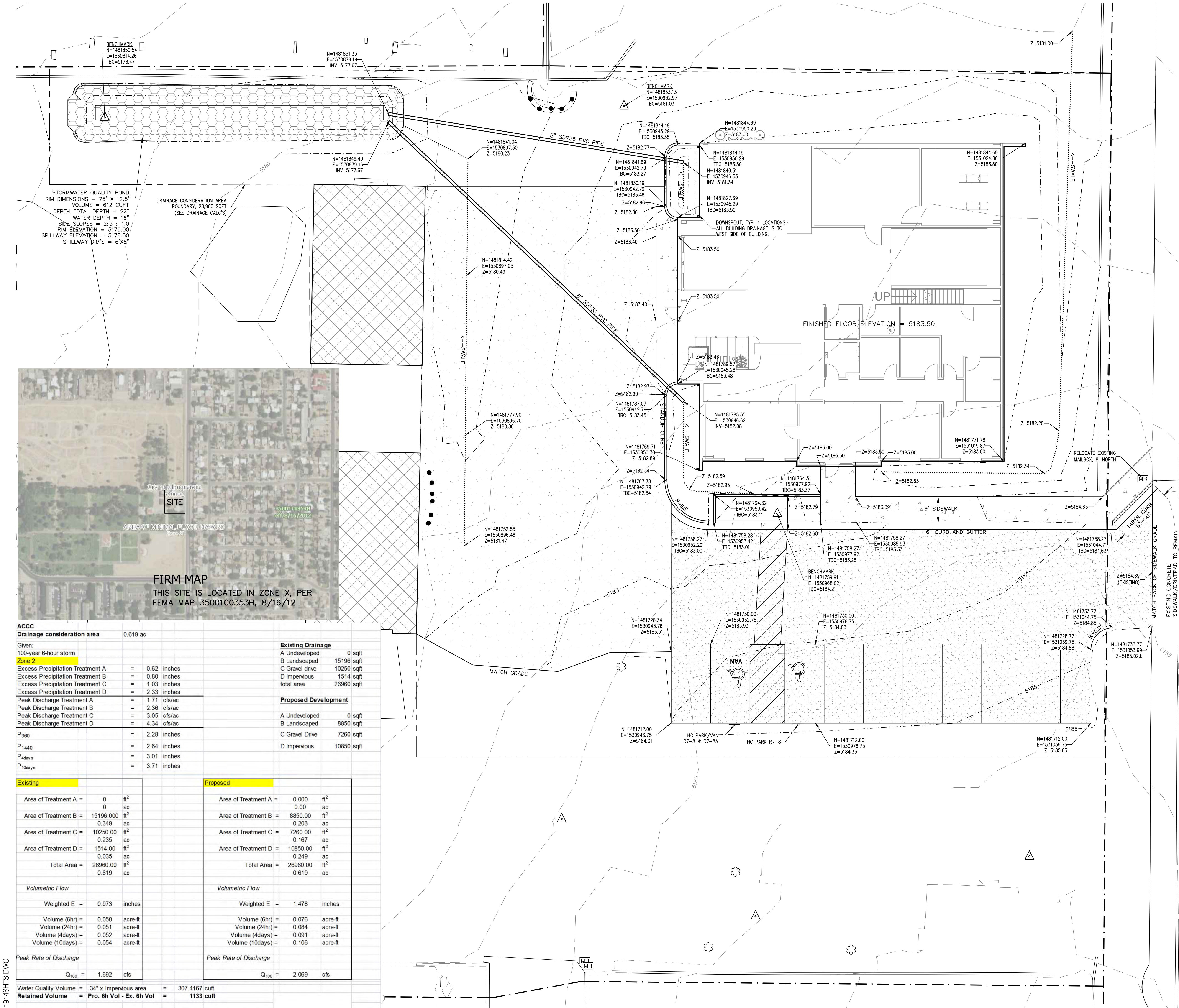
5. COORDINATES GIVEN AT CORNERS OF ALL BUILDINGS ARE APPROXIMATE, EXACT DIMENSIONS OF BUILDINGS PER ARCHITECTURAL DRAWINGS. ELEVATIONS AT THESE COORDINATES ARE GIVEN AT ADJACENT GRADES.

6. ALL SITE CONSTRUCTION AND MATERIALS SHALL MEET OR EXCEED THE NM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION 2006 EDITION.

7. LAYOUT OF CONTRACTION/EXPANSION JOINTS IN EXTERIOR WALKWAYS PER CONTRACTOR/ARCHITECT. CONTRACTION JOINTS SHALL BE 5' O.C. MAX, AND EXPANSION JOINTS SHALL BE 30' O.C. MAX. CONTRACTION/EXPANSION JOINTS IN CURB AND GUTTER PER PUBLIC WORKS STANDARD SPECIFICATIONS.

8. ALL TRAFFIC SIGNAGE AND STRIPING SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 EDITION. (DOWNLOAD FREE AT MUTCD.FHWA.DOT.GOV). HANDICAP PARKING STALLS SHALL BE STRIPED IN 4" WIDE BLUE PAINT, WITH A CLEARLY VISIBLE, WHITE, INTERNATIONAL SYMBOL OF ACCESSIBILITY (28"x24") PAINTED ON A BLUE BACKGROUND. HANDICAP AISLES SHALL BE INFILLED WITH 4" BLUE STRIPES AT 2' ON CENTER. ALL STRIPING SHALL BE IN ACCORDANCE WITH MUTCD SECTION 3B.19.

9. FIRE LANE SIGNAGE SHALL BE IN ACCORDANCE WITH NFPA D103.6.1. SIGNS SHALL READ "NO PARKING - FIRE LANE (DIRECTIONAL ARROW)". SIGNS SHALL HAVE A DIMENSION OF 12" X 18" TALL AND HAVE RED LETTERS ON A WHITE REFLECTIVE BACKGROUND.
- LIVING DESIGNS GROUP  
ARCHITECTS
- 122A Dona Luz  
Taos, NM 87571  
t: 575.751.9481 | www.ltg-arch.com
- 
- ACCC
- c/o Mark Shalz  
700 YALE BLVD. SE  
Albuquerque, NM 87106
- PROJ. NO:  
2019-350
- ISSUE DATE:  
10/11/19
- ISSUED FOR:  
PERMIT
- REVISIONS:  
NO DATE DESCRIPTION
- DRAFTED BY: ABH  
APPROVED BY: ARA
- SCALE:
- CIVIL  
NOTES &  
DETAILS
- C-1
- Abeyta Engineering, Inc.
- 1914SHTS.DWG



**LEGEND**

- PROPERTY BOUNDARY
- EXISTING CONTOUR
- DESIGN CONTOUR
- GRADE BREAK / FLOWLINE
- DRAINAGE CONSIDERATION BOUNDARY

- ASPHALT SURFACING
- BASECOURSE SURFACING
- CONCRETE SLAB/SIDEWALK
- BUILDING AREA
- STORMWATER RETENTION AREA

**DRAINAGE MANAGEMENT PLAN**

- DUE TO THE LARGE AMOUNTS OF OPEN SPACE DOWNSTREAM FROM THIS SITE, WE ARE ASSUMING THE INCREASE IN RUNOFF TO BE ALLOWED AS FREE DISCHARGE. NO CHANGE TO THE SITE IS ANTICIPATED.
- SEE DRAINAGE CALCULATIONS ON THIS SHEET, WATER QUALITY VOLUME=307CUFT.

**PLAN**

SCALE: 1" = 10'

**ABEYTA ENGINEERING, INC.**

122A Dona Luz  
Taos, NM 87571  
t: 575.751.9481 | www.abeyta-engineering.com

|                                                                      |                             |
|----------------------------------------------------------------------|-----------------------------|
| <b>ACCC</b>                                                          |                             |
| <b>Drainage consideration area</b> 0.619 ac                          |                             |
| Given:                                                               |                             |
| 100-year 6-hour storm                                                |                             |
| <b>Zone 2</b>                                                        |                             |
| Excess Precipitation Treatment A                                     | = 0.62 inches               |
| Excess Precipitation Treatment B                                     | = 0.80 inches               |
| Excess Precipitation Treatment C                                     | = 1.03 inches               |
| Excess Precipitation Treatment D                                     | = 2.33 inches               |
| Peak Discharge Treatment A                                           | = 1.71 cfs/ac               |
| Peak Discharge Treatment B                                           | = 2.36 cfs/ac               |
| Peak Discharge Treatment C                                           | = 3.05 cfs/ac               |
| Peak Discharge Treatment D                                           | = 4.34 cfs/ac               |
| P <sub>360</sub>                                                     | = 2.28 inches               |
| P <sub>1440</sub>                                                    | = 2.64 inches               |
| P <sub>4day</sub>                                                    | = 3.01 inches               |
| P <sub>10day</sub>                                                   | = 3.71 inches               |
| <b>Existing</b>                                                      |                             |
| Area of Treatment A                                                  | = 0 ft <sup>2</sup>         |
| Area of Treatment B                                                  | = 15196.000 ft <sup>2</sup> |
| Area of Treatment C                                                  | = 10250.00 ft <sup>2</sup>  |
| Area of Treatment D                                                  | = 1514.00 ft <sup>2</sup>   |
| Total Area                                                           | = 26960.00 ft <sup>2</sup>  |
| <b>Volumetric Flow</b>                                               |                             |
| Weighted E                                                           | = 0.973 inches              |
| Volume (6hr)                                                         | = 0.050 acre-ft             |
| Volume (24hr)                                                        | = 0.051 acre-ft             |
| Volume (4days)                                                       | = 0.052 acre-ft             |
| Volume (10days)                                                      | = 0.054 acre-ft             |
| <b>Peak Rate of Discharge</b>                                        |                             |
| Q <sub>100</sub>                                                     | = 1.692 cfs                 |
| <b>Proposed</b>                                                      |                             |
| Area of Treatment A                                                  | = 0.000 ft <sup>2</sup>     |
| Area of Treatment B                                                  | = 8850.00 ft <sup>2</sup>   |
| Area of Treatment C                                                  | = 7260.00 ft <sup>2</sup>   |
| Area of Treatment D                                                  | = 10850.00 ft <sup>2</sup>  |
| Total Area                                                           | = 26960.00 ft <sup>2</sup>  |
| <b>Volumetric Flow</b>                                               |                             |
| Weighted E                                                           | = 1.478 inches              |
| Volume (6hr)                                                         | = 0.076 acre-ft             |
| Volume (24hr)                                                        | = 0.084 acre-ft             |
| Volume (4days)                                                       | = 0.091 acre-ft             |
| Volume (10days)                                                      | = 0.106 acre-ft             |
| <b>Peak Rate of Discharge</b>                                        |                             |
| Q <sub>100</sub>                                                     | = 2.069 cfs                 |
| <b>Water Quality Volume</b> = .34" x Impervious area = 307.4167 cuft |                             |
| <b>Retained Volume</b> = Pro. 6h Vol - Ex. 6h Vol = 1133 cuft        |                             |

**LIVING DESIGNS GROUP**

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|    |      |             |
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|    |      |             |

DRAFTED BY: ABH

APPROVED BY: ARA

SCALE: 1"=10'

**GRADING & DRAINAGE PLAN**

**C-2**