CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Interim Director

Mayor Timothy M. Keller

August 22, 2019

Mark Goodwin, P.E.
Mark Goodwin & Associates
PO Box 90606
Albuquerque, NM 87199

RE: **Swim Labs**
8110 Holly Ave NE
Grading Plan Stamp Date: 8/13/19
Drainage Report Stamp Date: 8/13/19
Hydrology File: C20D082

Dear Mr. Goodwin:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based on the submittal received on 8/13/19, the grading plan and drainage report cannot be approved until the following are corrected:

1. Provide written and signed permission from the owner of Tract B for the grading, paving and pond construction on their property. Unfortunately the cross-lot drainage easement does not grant the right to perform work on their property, only to discharge to it. (A permanent pond covenant will also be needed from this owner prior to CO; you may want to get it now). Permissive discharges from the two sites need to be coordinated and included in the agreement as well (1.86cfs max combined).

2. Rainfall amounts need to be input as: 0.0, 1.82, 2.45, 2.86, per the Atlas 14 printout and the AHYMO user manual. Rainfall Type needs to be 2, for a 24-hr storm. You cannot just reduce the rainfall for the 100-yr storm; the pond discharge tables need to include the dead storage for the SWQ volume so the entire 100-yr storm may be modeled and routed.

3. For Information. Hydrology recommends against using the parking lot as dead storage for ponding water (Pond 2).

4. 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 (Curtis Cherne, PE, ccherne@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

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

Sincerely,

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

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: Swim Labs Building Permit #: _____ Hydrology File #: _____

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

Legal Description: Tract C Block 19 Plat of Tracts A,B,C,D,E and F, Block 19 Tract 3 Unit 3 North Albuquerque Acres Cont. .7576 AC

City Address: 8110 Holly Ave, Albuquerque, NM 87122

Applicant: Mullen Heller Architecture Contact: Doug Heller

Address: 1718 Central Avenue

Phone#: 505-268-4144 Fax# _____ E-mail: doug@mullenheller.com

Other Contact: Mark Goodwin & Associates, PA Contact: Cory Pierce

Address: PO BOX 90606, Albuquerque, NM 87199

Phone#: 828.2200 Fax#: _____ E-mail: cory@goodwinengineers.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
X DRAINAGE REPORT
____ DRAINAGE MASTER PLAN
____ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
____ ELEVATION CERTIFICATE
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ STREET LIGHT LAYOUT
____ OTHER (SPECIFY) _____
____ PRE-DESIGN MEETING?

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
X FOUNDATION PERMIT APPROVAL
X GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
X PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR
____ FLOODPLAIN DEVELOPMENT PERMIT
____ OTHER (SPECIFY) _____

DATE SUBMITTED: August 13, 2019 By: Cory Pierce

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE, NM 87199
(505) 828-2200 FAX 797-9539

~ 2012 ACEC/NM Award Winner for Engineering Excellence ~
~ 2008 ACEC/NM Award Winner for Engineering Excellence ~
~ 2017 ENR Landscape/Urban Development Award of Merit~
~ 2018 ENR Residential/Hospitality Award of Merit~

August 13, 2019

Dana Peterson, PE
City of Albuquerque
600 2nd Street SW
Albuquerque, NM 87102

RE: Swim Labs
Grading and Drainage Plan
Hydrology File: C20D082

Dear Mr. Peterson,

In response to correspondence dated Aug 2, 2019, please find enclosed submittal. Comments are addressed as follows:

1. A retaining wall section is provided with the proposed retaining wall and property line, with proposed and existing grades.
2. It is noted on the plans that the Contractor is to provide written permission from the adjacent property Owner for any disturbance required for construction.
3. The retaining wall layout was adjusted to parallel the existing storm drain and not cross it. A detail demonstrating the worst-case proximity to the existing storm drain is provided.
4. Written and signed permission from the Owner of Tract B for the grading, paving, and pond construction on their property, and for both property discharges to be treated as one, is being coordinated and will be provided as soon as possible.
5. The existing survey and proposed work is shifted (2.48' higher) to NAVD88 datum. The prior survey to the As-Built survey provided an elevation benchmark of 5476.70 for Albuquerque Control Station "6-C19". Per the COA website the "6-C19" control station NAVD88 elevation is 5479.18. A site specific Horizontal datum may be established in the field utilizing a benchmark such as a property corner.
6. The proposed contours are cleaned up and shifted 2.48' higher.
7. It is noted that Hydrology recommends against using the parking lot as dead storage for ponding water.
8. The sidewalk culvert is changed to a drain line through curb with the SO-19 notes on the Grading and Drainage plan.
9. The design is being coordinated with the property Owners. Per design of both Tracts B and C, there are three discharge locations as indicated. The total discharge of both lots (1.86 cfs) was distributed to each discharge location. Distributed discharge proportional to tributary area to

each discharge location was evaluated and targeted. However; as the permanent north Tract B pond receives flow from both Tract B and C and has plan area constraints, a higher discharge than proportional to tributary area is calculated. The conceptual southwest Tract B pond is shown for information only with an allowable discharge of 0.66 cfs as the remainder from the total of 1.86 cfs. By area proportion, the allowable discharge was evaluated at 0.69 cfs, quite close to the allowable discharge evaluated (0.66 cfs). Agreement for the allocated discharge for both properties to be treated as one (1.86 cfs) will be coordinated and will be included in the agreement for the grading, paving, and pond construction.

10. The open channel and the non-standard plate detail is removed. The through curb drain is extended 1' offset the sidewalk edge to a concrete weir box for the detention pond design.
11. Weir calcs are provided in the discharge tables in the supplemental information. A weir coefficient of 2.7 is utilized. Both weirs and ponds were re-evaluated and the weirs were changed. The discharge is distributed as aforementioned (item #9).
12. Rainfall was changed to Type 2. The rainfall amounts are revised and mitigated to deduct the spread of the stormwater quality retention over the whole basin area, both impervious and pervious. The storm water quality retention is the capture of the 90% rainfall event and is significant to mitigation of 100yr discharge.
13. The bulking factor was removed for the developed site.
14. The storage discharge tables for both ponds reflect zero discharge until the outfall elevation is reached. In order to account for storm water quality treatment retention, either mitigation of rainfall (this analysis) or a discharge table with minimal increasing discharge modeled over the retention elevations due to infiltration is needed in the AHYMO analysis.
15. The pond outfalls are sized using weir calculations with a weir coefficient of 2.7 and are included in the supplemental information.
16. A foundation permit for this project is desired at this time.
17. With this swim labs project, the area of disturbance is estimated at 0.80 acres as delineated on the plan.

Please review and approve the submittal for the requested permits.

Sincerely,
MARK GOODWIN & ASSOCIATES, PA

Cory D. Pierce, PE

Cory D. Pierce, PE
Staff Engineer

Enclosures: -Revised Grading and Drainage Plan and
-Bound AHYMO information with Furrs/ Paseo del Norte drainage report
-Boundary Survey and ALTA/ NSPS Land Title Survey for Tracts B and C

Ventura Swim Labs
AHYMO ANALYSIS
COA Hydrology File: C20D082

Prepared For:

Mullen Heller Architecture
1718 Central Avenue, SW, Ste D
Albuquerque, NM 87104
(505) 268-4144

Prepared By:

Mark Goodwin & Associates, PA
PO BOX 90606
Albuquerque, NM 87199
(505) 828-2200

8/13/19

Ventura Swim Labs
AHYMO ANALYSIS
COA Hydrology File: C10D082

Table of Contents

Table of Contents

CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Interim Director

Mayor Timothy M. Keller

August 2, 2019

Mark Goodwin, P.E.
Mark Goodwin & Associates
PO Box 90606
Albuquerque, NM 87199

RE: **Swim Labs**
8110 Holly Ave NE
Grading Plan Stamp Date: 7/19/19 & 7/24/19
Drainage Report Stamp Date: 7/25/19
Hydrology File: C20D082

Dear Mr. Goodwin:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based on the submittal received on 7/25/19, the grading plan and drainage report cannot be approved until the following are corrected:

1. Provide sections through the east boundary showing the proposed retaining wall, property lines, existing and proposed grades. In accordance with DPM Ch.22, section 5 part B, grading and wall construction near the property line may not endanger adjacent property or constrain its use.

2. Any private encroachment into neighboring private property will require written and signed permission from both property owners.

3. Include a detail where the retaining wall crosses over the private storm drain; ensure adequate clearance.

4. Provide written and signed permission from the owner of Tract B for the grading, paving and pond construction on their property. Unfortunately the cross-lot drainage easement does not grant the right to perform work on their property, only to discharge to it. (A permanent pond covenant will also be needed from this owner prior to CO; you may want to get it now)

5. Provide project datum. This needs to be on the plan where the benchmark is cited. The benchmark, existing survey, and proposed work all need to be converted to NAVD88 and NAD 83.

6. The proposed contours need to be cleaned up. For instance, the 54' contour cuts through the building (FF=55'), the 53' contour seems to be missing, and there appear to be different contours used for the ponds that don't tie-in to anything.

7. Hydrology recommends against using the parking lot as dead storage for ponding water (Pond 2).

8. An SO-19 Permit will be required for the sidewalk culvert and should be included on the request. Please include the standard SO-19 notes on the grading plan.

9. Discharge from this site needs to be limited to 0.93cfs per the approved master plan; do not rob capacity from the adjoiner (Pad 1).

10. Remove the open channel and extend the plate to the curb and 1' beyond back of sidewalk; also remove the non-standard plate detail and build per Std Dwg 2236.

11. Please provide the weir calculations, per DPM Chapter 22.3.A.1, for the sidewalk culvert. A coefficient of 2.7 is typically used for the weir equation $Q = CLH^{2/3}$. Be sure to size for future developed flow (1.16cfs).

12. Rainfall amounts need to be input as: 0.0, 1.82, 2.45, 2.86, per the Atlas 14 printout and the AHYMO user manual. Rainfall Type needs to be 2, for a 24-hr storm.

13. You don't need to bulk for sediment in a developed site.

14. The storage-discharge tables for all ponds need to reflect zero discharge until the outfall elevation is reached. The City does not accept infiltration as an outfall or credit it in pond sizing.

15. All pond outfalls need to be sized using the appropriate hydraulic calculations (weir, orifice equations) and those elevation-discharge tables and calculations need to be included.

16. Do you need Building Permit approval at this time? Or just Site-Plan and Grading/Paving?

17. 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 (Curtis Cherne, PE, ccherne@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Interim Director

Mayor Timothy M. Keller

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

Sincerely,

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

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE, NM 87199
(505) 828-2200 FAX 797-9539

~ 2012 ACEC/NM Award Winner for Engineering Excellence ~
~ 2008 ACEC/NM Award Winner for Engineering Excellence ~
~ 2017 ENR Landscape/Urban Development Award of Merit~
~ 2018 ENR Residential/Hospitality Award of Merit~

July 25, 2019

Dana Peterson, PE
City of Albuquerque
600 2nd Street SW
Albuquerque, NM 87102

RE: Swim Labs
Grading and Drainage Plan
Hydrology File: C20D082

Dear Mr. Peterson,

In response to correspondence dated July 10, 2019, please find enclosed submittal. Comments are addressed as follows:

1. Proposed contours, water blocks, and spot elevations are included to establish finish drainage of the site.
2. A water block is included at the north driveway.
3. AHYMO sub basins are delineated and additionally labeled with the AHYMO ID number.
4. The drainage plan addresses onsite and upstream offsite drainage. Offsite drainage is addressed with more references to the Furrs/ Paseo drainage report.
5. The Tract B storm water quality pond is revised to be the permanent pond to serve Tract B development.
6. There already exists an existing blanket easement for ingress, egress, drainage and pedestrian. Please see the enclosed ALTA Survey.
7. The project datum is NAD27 horizontal and NAVD29 vertical.
8. The complete, bound, AHYMO input and output files are provided with the NOAA atlas 14 rainfall data and the Furrs/ Paseo drainage report.
9. NOAA atlas 14 precipitation data was used with AHYMO-S4.
10. The outfall for the pond on Tract B is revised to go through a weir plate, into a sidewalk culvert, into Holly Avenue.
11. The site downstream capacity is referenced from the Furrs/ Paseo drainage report.
12. The Furrs/ Paseo drainage report is provided in the bound information.
13. There already exists an existing blanket easement for ingress, egress, drainage, and pedestrian. Please see the enclosed ALTA Survey.
14. The total area of disturbance is estimated and delineated on the plan to be about 0.80 AC.

Please review and approve the submittal for the requested permits.

Sincerely,
MARK GOODWIN & ASSOCIATES, PA

Cory D. Pierce, PE

Cory D. Pierce, PE
Staff Engineer

Enclosures: -Revised Grading and Drainage Plan
-Bound AHYMO information with Furrs/ Paseo del Norte drainage report
-Boundary Survey and ALTA/ NSPS Land Title Survey for Tracts B and C

CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Acting Director

Mayor Timothy M. Keller

July 10, 2019

Mark Goodwin, P.E.
Mark Goodwin & Associates
PO Box 90606
Albuquerque, NM 87199

RE: **Swim Labs**
8110 Holly Ave NE
Grading Plan Stamp Date: 6/24/19
Hydrology File: C20D082

Dear Mr. Goodwin:

Based on the submittal received on 6/25/19, the grading and drainage plan cannot be approved until the following are corrected:

1. Provide proposed contours and proposed spot elevation in sufficient density to ascertain the proposed drainage pattern of the site.
2. A waterblock is likely required near the north driveway to ensure flows are routed to the tract B pond.
3. Subbasins need to be delineated and modeled in AHYMO or with the 40-acres-or-less method and must include all onsite drainage and upstream offsite flows.
4. The drainage plan must address all onsite drainage and upstream offsite drainage, not just the parking lot and building.
5. Remove the temporary markings from the tract B stormwater quality pond; these features are permanent and will need to be protected with a drainage covenant, signed by the underlying property owner.
6. Provide written and signed permission from the owner of Tract B for the grading, paving and pond construction on their property.
7. Provide project datum.
8. The complete AHYMO input and output files need to be provided, not just the summary. If you provide these separately, they must be bound and stamped by the engineer.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

9. With AHYMO S4, be sure to use NOAA Atlas 14 precipitation depths in conjunction with the NOAA Atlas 14 distribution. Include the location map and tables obtained from the NOAA website. Using the NOAA Atlas 2 Precipitation depths (Found in the DPM), with the NOAA Atlas 14 Distributions results in an over-prediction of peak runoff (Q_{100}). See AHYMO AppNote-01, and the Hydrology website for more information regarding this.

10. The outfall for pond B is unclear. The AHYMO run seems to indicate a continuous outflow, but the obvious outfall is the drive entrance that has a crest elevation at 54.12'. The City does not accept infiltration as an outfall or credit it in pond sizing as pond bottoms generally silt-in and reduce the infiltration rate to nearly nothing.

11. The site must demonstrate adequate downstream capacity per § 14-5-2-12(G) of the Albuquerque Code of Ordinances.

12. Provide the Furrs Paseo del Norte drainage report and Hydrology approval letter. This report is missing in our database and needs to be recovered if it is to be used as the basis for this development.

13. Provide a cross lot drainage easement (paper or Plat) between the two tracts.

14. 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 (Curtis Cherne, PE, ccherne@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

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

Sincerely,

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

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

```
←(s16.66H
   AHYMO PROGRAM SUMMARY TABLE (AHYMO-S4)                    - Ver. S4.01a, Rel: 01a      RUN DATE (MON/DAY/YR) =08/12/2019
   INPUT FILE = 19\A19003 - Ventura Swim Labs\Drainage\ahymo_SwimLabs_Pad2_TOPDETEN-E_IN.txt USER NO.= M-GoodwinNMSiteA90075759

                                FROM  TO                  PEAK        RUNOFF              TIME TO    CFS      PAGE =   1
                      HYDROGRAPH  ID   ID        AREA     DISCHARGE   VOLUME     RUNOFF     PEAK      PER
   COMMAND       IDENTIFICATION   NO.  NO.     (SQ MI)    (CFS)      (AC-FT)   (INCHES)   (HOURS)   ACRE     NOTATION

   START                                                                                              TIME=      0.00
   LOCATION                      ALBUQUERQUE
   *S SWIM LABS 19003
   *S ONSITE PAD 2
   *S By Cory Pierce
   RAINFALL  TYPE= 2 NOAA 14                                                                          RAIN24=    2.600
   *S BASIN #2 (Pad #2_South Detention Pond)
   COMPUTE NM HYD        202.00   -     2      0.00086      1.70       0.082     1.78433    1.530     3.084 PER IMP=  70.00
   ROUTE RESERVOIR      POND.OT    2     4      0.00086      0.84       0.082     1.78399    1.700     1.533 AC-FT=     0.024
   *S BASIN #1 (Pad #1_North Detention Pond)
   COMPUTE NM HYD        203.00   -     1      0.00023      0.52       0.025     2.06285    1.530     3.513 PER IMP=  85.00
   ROUTE RESERVOIR      POND.OT    1     5      0.00023      0.36       0.025     2.06200    1.640     2.443 AC-FT=     0.006
   FINISH
←(s10H
```

```
←(s16.66H

        AHYMO PROGRAM (AHYMO-S4)                    - Version: S4.01a - Rel: 01a
             RUN DATE (MON/DAY/YR) = 08/12/2019
             START TIME (HR:MIN:SEC) = 16:03:42     USER NO.= M-GoodwinNMSiteA90075759
             INPUT FILE = s\2019\A19003 - Ventura Swim Labs\Drainage\ahymo_SwimLabs_Pad2_TOPDETEN-E_IN.txt

    START               0.0 HOURS   PC=0  PL=-1
    LOCATION                ALBUQUERQUE
         City of Albuquerque soil infiltration values (LAND FACTORS) used for computations.
         Land Treatment     Initial Abstr.(in)    Unif. Infilt.(in/hour)
               A            0.65                  1.67
               B            0.50                  1.25
               C            0.35                  0.83
               D            0.10                  0.04

    *S SWIM LABS 19003
    *S ONSITE PAD 2
    *S By Cory Pierce
    RAINFALL                TYPE=2  0.0  1.56  2.19  2.60   DT=0.01

                  24-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1
                  DT =    0.010000 HOURS       END TIME =    24.000002 HOURS
                    0.0000  0.0008  0.0017  0.0025  0.0033  0.0042  0.0050
                    0.0059  0.0067  0.0076  0.0085  0.0094  0.0103  0.0113
                    0.0122  0.0131  0.0140  0.0150  0.0160  0.0170  0.0180
                    0.0191  0.0201  0.0211  0.0221  0.0232  0.0243  0.0255
                    0.0266  0.0278  0.0289  0.0301  0.0312  0.0324  0.0346
                    0.0372  0.0399  0.0426  0.0453  0.0479  0.0506  0.0533
                    0.0561  0.0590  0.0620  0.0649  0.0679  0.0708  0.0738
                    0.0767  0.0797  0.0828  0.0860  0.0892  0.0924  0.0956
                    0.0987  0.1019  0.1051  0.1084  0.1117  0.1150  0.1183
                    0.1216  0.1249  0.1282  0.1315  0.1349  0.1383  0.1418
                    0.1452  0.1487  0.1521  0.1556  0.1590  0.1625  0.1663
                    0.1701  0.1738  0.1776  0.1814  0.1852  0.1890  0.1928
                    0.1969  0.2011  0.2053  0.2095  0.2137  0.2180  0.2222
                    0.2264  0.2307  0.2352  0.2397  0.2442  0.2488  0.2533
                    0.2578  0.2623  0.2668  0.2728  0.2789  0.2849  0.2910
                    0.2970  0.3031  0.3091  0.3152  0.3228  0.3313  0.3397
                    0.3482  0.3567  0.3651  0.3736  0.3820  0.3919  0.4046
                    0.4173  0.4300  0.4427  0.4554  0.4681  0.4808  0.4935
                    0.5155  0.5374  0.5593  0.5812  0.6032  0.6251  0.6470
                    0.6689  0.7152  0.7736  0.8320  0.8904  0.9488  1.0073
                    1.0657  1.1241  1.1738  1.2062  1.2386  1.2710  1.3033
                    1.3357  1.3681  1.4005  1.4329  1.4491  1.4654  1.4817
                    1.4979  1.5142  1.5305  1.5468  1.5630  1.5753  1.5855
                    1.5958  1.6060  1.6163  1.6265  1.6368  1.6470  1.6562
                    1.6633  1.6704  1.6775  1.6846  1.6917  1.6988  1.7059
                    1.7131  1.7183  1.7235  1.7287  1.7339  1.7391  1.7443
```

1.7495	1.7547	1.7590	1.7630	1.7669	1.7708	1.7748
1.7787	1.7826	1.7866	1.7905	1.7945	1.7985	1.8025
1.8065	1.8105	1.8145	1.8185	1.8225	1.8261	1.8297
1.8333	1.8369	1.8405	1.8441	1.8477	1.8513	1.8546
1.8576	1.8607	1.8638	1.8668	1.8699	1.8729	1.8760
1.8790	1.8818	1.8847	1.8876	1.8904	1.8933	1.8961
1.8990	1.9018	1.9046	1.9073	1.9101	1.9128	1.9156
1.9184	1.9211	1.9239	1.9256	1.9269	1.9281	1.9293
1.9306	1.9318	1.9330	1.9343	1.9355	1.9367	1.9379
1.9391	1.9403	1.9415	1.9427	1.9439	1.9451	1.9462
1.9473	1.9484	1.9495	1.9507	1.9518	1.9529	1.9540
1.9551	1.9562	1.9573	1.9584	1.9595	1.9605	1.9616
1.9627	1.9638	1.9648	1.9659	1.9670	1.9680	1.9691
1.9701	1.9712	1.9722	1.9732	1.9742	1.9752	1.9762
1.9772	1.9782	1.9792	1.9802	1.9812	1.9821	1.9831
1.9841	1.9850	1.9860	1.9870	1.9879	1.9889	1.9898
1.9908	1.9917	1.9927	1.9936	1.9946	1.9955	1.9964
1.9973	1.9982	1.9991	2.0000	2.0009	2.0018	2.0027
2.0036	2.0045	2.0054	2.0063	2.0071	2.0080	2.0089
2.0098	2.0106	2.0115	2.0124	2.0132	2.0141	2.0149
2.0158	2.0166	2.0175	2.0183	2.0192	2.0200	2.0208
2.0216	2.0224	2.0232	2.0241	2.0249	2.0257	2.0265
2.0273	2.0281	2.0289	2.0297	2.0305	2.0313	2.0321
2.0329	2.0337	2.0344	2.0352	2.0360	2.0368	2.0376
2.0384	2.0391	2.0399	2.0407	2.0414	2.0422	2.0430
2.0437	2.0445	2.0453	2.0460	2.0468	2.0475	2.0483
2.0490	2.0498	2.0505	2.0513	2.0520	2.0527	2.0535
2.0542	2.0550	2.0557	2.0564	2.0572	2.0579	2.0586
2.0593	2.0601	2.0608	2.0615	2.0622	2.0630	2.0637
2.0644	2.0651	2.0658	2.0665	2.0672	2.0679	2.0686
2.0693	2.0700	2.0707	2.0714	2.0721	2.0728	2.0735
2.0742	2.0749	2.0756	2.0763	2.0770	2.0777	2.0783
2.0790	2.0797	2.0804	2.0811	2.0817	2.0824	2.0831
2.0838	2.0844	2.0851	2.0858	2.0864	2.0871	2.0878
2.0884	2.0891	2.0897	2.0904	2.0911	2.0917	2.0924
2.0930	2.0937	2.0943	2.0950	2.0956	2.0963	2.0969
2.0976	2.0982	2.0988	2.0995	2.1001	2.1008	2.1014
2.1020	2.1027	2.1033	2.1039	2.1046	2.1052	2.1058
2.1065	2.1071	2.1077	2.1083	2.1089	2.1096	2.1102
2.1108	2.1114	2.1120	2.1127	2.1133	2.1139	2.1145
2.1151	2.1157	2.1163	2.1169	2.1175	2.1181	2.1187
2.1193	2.1199	2.1205	2.1211	2.1217	2.1223	2.1229
2.1235	2.1241	2.1247	2.1253	2.1259	2.1265	2.1271
2.1277	2.1282	2.1288	2.1294	2.1300	2.1306	2.1312
2.1317	2.1323	2.1329	2.1335	2.1340	2.1346	2.1352
2.1358	2.1363	2.1369	2.1375	2.1380	2.1386	2.1392
2.1397	2.1403	2.1409	2.1414	2.1420	2.1426	2.1431
2.1437	2.1442	2.1448	2.1453	2.1459	2.1465	2.1470
2.1476	2.1481	2.1487	2.1492	2.1498	2.1503	2.1509
2.1514	2.1520	2.1525	2.1530	2.1536	2.1541	2.1547

2.1552	2.1557	2.1563	2.1568	2.1574	2.1579	2.1584
2.1590	2.1595	2.1600	2.1606	2.1611	2.1616	2.1621
2.1627	2.1632	2.1637	2.1642	2.1648	2.1653	2.1658
2.1663	2.1669	2.1674	2.1679	2.1684	2.1689	2.1695
2.1700	2.1705	2.1710	2.1715	2.1720	2.1725	2.1731
2.1736	2.1741	2.1746	2.1751	2.1756	2.1761	2.1766
2.1771	2.1776	2.1781	2.1786	2.1791	2.1796	2.1801
2.1806	2.1811	2.1816	2.1821	2.1826	2.1831	2.1836
2.1841	2.1846	2.1851	2.1856	2.1861	2.1866	2.1871
2.1876	2.1880	2.1885	2.1890	2.1895	2.1900	2.1902
2.1905	2.1907	2.1909	2.1911	2.1914	2.1916	2.1918
2.1920	2.1923	2.1925	2.1927	2.1930	2.1932	2.1934
2.1936	2.1939	2.1941	2.1943	2.1946	2.1948	2.1950
2.1952	2.1955	2.1957	2.1959	2.1961	2.1964	2.1966
2.1968	2.1971	2.1973	2.1975	2.1977	2.1980	2.1982
2.1984	2.1987	2.1989	2.1991	2.1993	2.1996	2.1998
2.2000	2.2002	2.2005	2.2007	2.2009	2.2012	2.2014
2.2016	2.2018	2.2021	2.2023	2.2025	2.2028	2.2030
2.2032	2.2034	2.2037	2.2039	2.2041	2.2043	2.2046
2.2048	2.2050	2.2053	2.2055	2.2057	2.2059	2.2062
2.2064	2.2066	2.2069	2.2071	2.2073	2.2075	2.2078
2.2080	2.2082	2.2084	2.2087	2.2089	2.2091	2.2094
2.2096	2.2098	2.2100	2.2103	2.2105	2.2107	2.2110
2.2112	2.2114	2.2116	2.2119	2.2121	2.2123	2.2125
2.2128	2.2130	2.2132	2.2135	2.2137	2.2139	2.2141
2.2144	2.2146	2.2148	2.2151	2.2153	2.2155	2.2157
2.2160	2.2162	2.2164	2.2166	2.2169	2.2171	2.2173
2.2176	2.2178	2.2180	2.2182	2.2185	2.2187	2.2189
2.2192	2.2194	2.2196	2.2198	2.2201	2.2203	2.2205
2.2207	2.2210	2.2212	2.2214	2.2217	2.2219	2.2221
2.2223	2.2226	2.2228	2.2230	2.2233	2.2235	2.2237
2.2239	2.2242	2.2244	2.2246	2.2248	2.2251	2.2253
2.2255	2.2258	2.2260	2.2262	2.2264	2.2267	2.2269
2.2271	2.2274	2.2276	2.2278	2.2280	2.2283	2.2285
2.2287	2.2289	2.2292	2.2294	2.2296	2.2299	2.2301
2.2303	2.2305	2.2308	2.2310	2.2312	2.2315	2.2317
2.2319	2.2321	2.2324	2.2326	2.2328	2.2330	2.2333
2.2335	2.2337	2.2340	2.2342	2.2344	2.2346	2.2349
2.2351	2.2353	2.2356	2.2358	2.2360	2.2362	2.2365
2.2367	2.2369	2.2371	2.2374	2.2376	2.2378	2.2381
2.2383	2.2385	2.2387	2.2390	2.2392	2.2394	2.2397
2.2399	2.2401	2.2403	2.2406	2.2408	2.2410	2.2412
2.2415	2.2417	2.2419	2.2422	2.2424	2.2426	2.2428
2.2431	2.2433	2.2435	2.2438	2.2440	2.2442	2.2444
2.2447	2.2449	2.2451	2.2453	2.2456	2.2458	2.2460
2.2463	2.2465	2.2467	2.2469	2.2472	2.2474	2.2476
2.2479	2.2481	2.2483	2.2485	2.2488	2.2490	2.2492
2.2494	2.2497	2.2499	2.2501	2.2504	2.2506	2.2508
2.2510	2.2513	2.2515	2.2517	2.2520	2.2522	2.2524
2.2526	2.2529	2.2531	2.2533	2.2535	2.2538	2.2540

2.2542	2.2545	2.2547	2.2549	2.2551	2.2554	2.2556
2.2558	2.2561	2.2563	2.2565	2.2567	2.2570	2.2572
2.2574	2.2576	2.2579	2.2581	2.2583	2.2586	2.2588
2.2590	2.2592	2.2595	2.2597	2.2599	2.2602	2.2604
2.2606	2.2608	2.2611	2.2613	2.2615	2.2617	2.2620
2.2622	2.2624	2.2627	2.2629	2.2631	2.2633	2.2636
2.2638	2.2640	2.2643	2.2645	2.2647	2.2649	2.2652
2.2654	2.2656	2.2658	2.2661	2.2663	2.2665	2.2668
2.2670	2.2672	2.2674	2.2677	2.2679	2.2681	2.2684
2.2686	2.2688	2.2690	2.2693	2.2695	2.2697	2.2699
2.2702	2.2704	2.2706	2.2709	2.2711	2.2713	2.2715
2.2718	2.2720	2.2722	2.2725	2.2727	2.2729	2.2731
2.2734	2.2736	2.2738	2.2740	2.2743	2.2745	2.2747
2.2750	2.2752	2.2754	2.2756	2.2759	2.2761	2.2763
2.2766	2.2768	2.2770	2.2772	2.2775	2.2777	2.2779
2.2781	2.2784	2.2786	2.2788	2.2791	2.2793	2.2795
2.2797	2.2800	2.2802	2.2804	2.2807	2.2809	2.2811
2.2813	2.2816	2.2818	2.2820	2.2822	2.2825	2.2827
2.2829	2.2832	2.2834	2.2836	2.2838	2.2841	2.2843
2.2845	2.2848	2.2850	2.2852	2.2854	2.2857	2.2859
2.2861	2.2863	2.2866	2.2868	2.2870	2.2873	2.2875
2.2877	2.2879	2.2882	2.2884	2.2886	2.2889	2.2891
2.2893	2.2895	2.2898	2.2900	2.2902	2.2904	2.2907
2.2909	2.2911	2.2914	2.2916	2.2918	2.2920	2.2923
2.2925	2.2927	2.2930	2.2932	2.2934	2.2936	2.2939
2.2941	2.2943	2.2945	2.2948	2.2950	2.2952	2.2955
2.2957	2.2959	2.2961	2.2964	2.2966	2.2968	2.2970
2.2973	2.2975	2.2977	2.2980	2.2982	2.2984	2.2986
2.2989	2.2991	2.2993	2.2996	2.2998	2.3000	2.3002
2.3005	2.3007	2.3009	2.3011	2.3014	2.3016	2.3018
2.3021	2.3023	2.3025	2.3027	2.3030	2.3032	2.3034
2.3037	2.3039	2.3041	2.3043	2.3046	2.3048	2.3050
2.3052	2.3055	2.3057	2.3059	2.3062	2.3064	2.3066
2.3068	2.3071	2.3073	2.3075	2.3078	2.3080	2.3082
2.3084	2.3087	2.3089	2.3091	2.3093	2.3096	2.3098
2.3100	2.3103	2.3105	2.3107	2.3109	2.3112	2.3114
2.3116	2.3119	2.3121	2.3123	2.3125	2.3128	2.3130
2.3132	2.3134	2.3137	2.3139	2.3141	2.3144	2.3146
2.3148	2.3150	2.3153	2.3155	2.3157	2.3160	2.3162
2.3164	2.3166	2.3169	2.3171	2.3173	2.3175	2.3178
2.3180	2.3182	2.3185	2.3187	2.3189	2.3191	2.3194
2.3196	2.3198	2.3201	2.3203	2.3205	2.3207	2.3210
2.3212	2.3214	2.3216	2.3219	2.3221	2.3223	2.3226
2.3228	2.3230	2.3232	2.3235	2.3237	2.3239	2.3242
2.3244	2.3246	2.3248	2.3251	2.3253	2.3255	2.3257
2.3260	2.3262	2.3264	2.3267	2.3269	2.3271	2.3273
2.3276	2.3278	2.3280	2.3283	2.3285	2.3287	2.3289
2.3292	2.3294	2.3296	2.3298	2.3301	2.3303	2.3305
2.3308	2.3310	2.3312	2.3314	2.3317	2.3319	2.3321
2.3324	2.3326	2.3328	2.3330	2.3333	2.3335	2.3337

2.3339	2.3342	2.3344	2.3346	2.3349	2.3351	2.3353
2.3355	2.3358	2.3360	2.3362	2.3365	2.3367	2.3369
2.3371	2.3374	2.3376	2.3378	2.3380	2.3383	2.3385
2.3387	2.3390	2.3392	2.3394	2.3396	2.3399	2.3401
2.3403	2.3406	2.3408	2.3410	2.3412	2.3415	2.3417
2.3419	2.3421	2.3424	2.3426	2.3428	2.3431	2.3433
2.3435	2.3437	2.3440	2.3442	2.3444	2.3447	2.3449
2.3451	2.3453	2.3456	2.3458	2.3460	2.3462	2.3465
2.3467	2.3469	2.3472	2.3474	2.3476	2.3478	2.3481
2.3483	2.3485	2.3488	2.3490	2.3492	2.3494	2.3497
2.3499	2.3501	2.3503	2.3506	2.3508	2.3510	2.3513
2.3515	2.3517	2.3519	2.3522	2.3524	2.3526	2.3529
2.3531	2.3533	2.3535	2.3538	2.3540	2.3542	2.3544
2.3547	2.3549	2.3551	2.3554	2.3556	2.3558	2.3560
2.3563	2.3565	2.3567	2.3570	2.3572	2.3574	2.3576
2.3579	2.3581	2.3583	2.3585	2.3588	2.3590	2.3592
2.3595	2.3597	2.3599	2.3601	2.3604	2.3606	2.3608
2.3611	2.3613	2.3615	2.3617	2.3620	2.3622	2.3624
2.3626	2.3629	2.3631	2.3633	2.3636	2.3638	2.3640
2.3642	2.3645	2.3647	2.3649	2.3652	2.3654	2.3656
2.3658	2.3661	2.3663	2.3665	2.3667	2.3670	2.3672
2.3674	2.3677	2.3679	2.3681	2.3683	2.3686	2.3688
2.3690	2.3693	2.3695	2.3697	2.3699	2.3702	2.3704
2.3706	2.3708	2.3711	2.3713	2.3715	2.3718	2.3720
2.3722	2.3724	2.3727	2.3729	2.3731	2.3734	2.3736
2.3738	2.3740	2.3743	2.3745	2.3747	2.3749	2.3752
2.3754	2.3756	2.3759	2.3761	2.3763	2.3765	2.3768
2.3770	2.3772	2.3775	2.3777	2.3779	2.3781	2.3784
2.3786	2.3788	2.3790	2.3793	2.3795	2.3797	2.3800
2.3802	2.3804	2.3806	2.3809	2.3811	2.3813	2.3816
2.3818	2.3820	2.3822	2.3825	2.3827	2.3829	2.3831
2.3834	2.3836	2.3838	2.3841	2.3843	2.3845	2.3847
2.3850	2.3852	2.3854	2.3857	2.3859	2.3861	2.3863
2.3866	2.3868	2.3870	2.3872	2.3875	2.3877	2.3879
2.3882	2.3884	2.3886	2.3888	2.3891	2.3893	2.3895
2.3898	2.3900	2.3902	2.3904	2.3907	2.3909	2.3911
2.3913	2.3916	2.3918	2.3920	2.3923	2.3925	2.3927
2.3929	2.3932	2.3934	2.3936	2.3939	2.3941	2.3943
2.3945	2.3948	2.3950	2.3952	2.3954	2.3957	2.3959
2.3961	2.3964	2.3966	2.3968	2.3970	2.3973	2.3975
2.3977	2.3980	2.3982	2.3984	2.3986	2.3989	2.3991
2.3993	2.3995	2.3998	2.4000	2.4002	2.4005	2.4007
2.4009	2.4011	2.4014	2.4016	2.4018	2.4021	2.4023
2.4025	2.4027	2.4030	2.4032	2.4034	2.4036	2.4039
2.4041	2.4043	2.4046	2.4048	2.4050	2.4052	2.4055
2.4057	2.4059	2.4062	2.4064	2.4066	2.4068	2.4071
2.4073	2.4075	2.4077	2.4080	2.4082	2.4084	2.4087
2.4089	2.4091	2.4093	2.4096	2.4098	2.4100	2.4102
2.4105	2.4107	2.4109	2.4112	2.4114	2.4116	2.4118
2.4121	2.4123	2.4125	2.4128	2.4130	2.4132	2.4134

2.4137	2.4139	2.4141	2.4143	2.4146	2.4148	2.4150
2.4153	2.4155	2.4157	2.4159	2.4162	2.4164	2.4166
2.4169	2.4171	2.4173	2.4175	2.4178	2.4180	2.4182
2.4184	2.4187	2.4189	2.4191	2.4194	2.4196	2.4198
2.4200	2.4203	2.4205	2.4207	2.4210	2.4212	2.4214
2.4216	2.4219	2.4221	2.4223	2.4225	2.4228	2.4230
2.4232	2.4235	2.4237	2.4239	2.4241	2.4244	2.4246
2.4248	2.4251	2.4253	2.4255	2.4257	2.4260	2.4262
2.4264	2.4266	2.4269	2.4271	2.4273	2.4276	2.4278
2.4280	2.4282	2.4285	2.4287	2.4289	2.4292	2.4294
2.4296	2.4298	2.4301	2.4303	2.4305	2.4307	2.4310
2.4312	2.4314	2.4317	2.4319	2.4321	2.4323	2.4326
2.4328	2.4330	2.4333	2.4335	2.4337	2.4339	2.4342
2.4344	2.4346	2.4348	2.4351	2.4353	2.4355	2.4358
2.4360	2.4362	2.4364	2.4367	2.4369	2.4371	2.4374
2.4376	2.4378	2.4380	2.4383	2.4385	2.4387	2.4389
2.4392	2.4394	2.4396	2.4399	2.4401	2.4403	2.4405
2.4408	2.4410	2.4412	2.4415	2.4417	2.4419	2.4421
2.4424	2.4426	2.4428	2.4430	2.4433	2.4435	2.4437
2.4440	2.4442	2.4444	2.4446	2.4449	2.4451	2.4453
2.4456	2.4458	2.4460	2.4462	2.4465	2.4467	2.4469
2.4471	2.4474	2.4476	2.4478	2.4481	2.4483	2.4485
2.4487	2.4490	2.4492	2.4494	2.4497	2.4499	2.4501
2.4503	2.4506	2.4508	2.4510	2.4512	2.4515	2.4517
2.4519	2.4522	2.4524	2.4526	2.4528	2.4531	2.4533
2.4535	2.4538	2.4540	2.4542	2.4544	2.4547	2.4549
2.4551	2.4553	2.4556	2.4558	2.4560	2.4563	2.4565
2.4567	2.4569	2.4572	2.4574	2.4576	2.4579	2.4581
2.4583	2.4585	2.4588	2.4590	2.4592	2.4594	2.4597
2.4599	2.4601	2.4604	2.4606	2.4608	2.4610	2.4613
2.4615	2.4617	2.4620	2.4622	2.4624	2.4626	2.4629
2.4631	2.4633	2.4635	2.4638	2.4640	2.4642	2.4645
2.4647	2.4649	2.4651	2.4654	2.4656	2.4658	2.4661
2.4663	2.4665	2.4667	2.4670	2.4672	2.4674	2.4676
2.4679	2.4681	2.4683	2.4686	2.4688	2.4690	2.4692
2.4695	2.4697	2.4699	2.4702	2.4704	2.4706	2.4708
2.4711	2.4713	2.4715	2.4717	2.4720	2.4722	2.4724
2.4727	2.4729	2.4731	2.4733	2.4736	2.4738	2.4740
2.4743	2.4745	2.4747	2.4749	2.4752	2.4754	2.4756
2.4758	2.4761	2.4763	2.4765	2.4768	2.4770	2.4772
2.4774	2.4777	2.4779	2.4781	2.4784	2.4786	2.4788
2.4790	2.4793	2.4795	2.4797	2.4799	2.4802	2.4804
2.4806	2.4809	2.4811	2.4813	2.4815	2.4818	2.4820
2.4822	2.4825	2.4827	2.4829	2.4831	2.4834	2.4836
2.4838	2.4840	2.4843	2.4845	2.4847	2.4850	2.4852
2.4854	2.4856	2.4859	2.4861	2.4863	2.4866	2.4868
2.4870	2.4872	2.4875	2.4877	2.4879	2.4881	2.4884
2.4886	2.4888	2.4891	2.4893	2.4895	2.4897	2.4900
2.4902	2.4904	2.4907	2.4909	2.4911	2.4913	2.4916
2.4918	2.4920	2.4922	2.4925	2.4927	2.4929	2.4932

2.4934	2.4936	2.4938	2.4941	2.4943	2.4945	2.4948
2.4950	2.4952	2.4954	2.4957	2.4959	2.4961	2.4963
2.4966	2.4968	2.4970	2.4973	2.4975	2.4977	2.4979
2.4982	2.4984	2.4986	2.4989	2.4991	2.4993	2.4995
2.4998	2.5000	2.5002	2.5004	2.5007	2.5009	2.5011
2.5014	2.5016	2.5018	2.5020	2.5023	2.5025	2.5027
2.5030	2.5032	2.5034	2.5036	2.5039	2.5041	2.5043
2.5045	2.5048	2.5050	2.5052	2.5055	2.5057	2.5059
2.5061	2.5064	2.5066	2.5068	2.5071	2.5073	2.5075
2.5077	2.5080	2.5082	2.5084	2.5086	2.5089	2.5091
2.5093	2.5096	2.5098	2.5100	2.5102	2.5105	2.5107
2.5109	2.5111	2.5114	2.5116	2.5118	2.5121	2.5123
2.5125	2.5127	2.5130	2.5132	2.5134	2.5137	2.5139
2.5141	2.5143	2.5146	2.5148	2.5150	2.5152	2.5155
2.5157	2.5159	2.5162	2.5164	2.5166	2.5168	2.5171
2.5173	2.5175	2.5178	2.5180	2.5182	2.5184	2.5187
2.5189	2.5191	2.5193	2.5196	2.5198	2.5200	2.5203
2.5205	2.5207	2.5209	2.5212	2.5214	2.5216	2.5219
2.5221	2.5223	2.5225	2.5228	2.5230	2.5232	2.5234
2.5237	2.5239	2.5241	2.5244	2.5246	2.5248	2.5250
2.5253	2.5255	2.5257	2.5260	2.5262	2.5264	2.5266
2.5269	2.5271	2.5273	2.5275	2.5278	2.5280	2.5282
2.5285	2.5287	2.5289	2.5291	2.5294	2.5296	2.5298
2.5301	2.5303	2.5305	2.5307	2.5310	2.5312	2.5314
2.5316	2.5319	2.5321	2.5323	2.5326	2.5328	2.5330
2.5332	2.5335	2.5337	2.5339	2.5342	2.5344	2.5346
2.5348	2.5351	2.5353	2.5355	2.5357	2.5360	2.5362
2.5364	2.5367	2.5369	2.5371	2.5373	2.5376	2.5378
2.5380	2.5383	2.5385	2.5387	2.5389	2.5392	2.5394
2.5396	2.5398	2.5401	2.5403	2.5405	2.5408	2.5410
2.5412	2.5414	2.5417	2.5419	2.5421	2.5424	2.5426
2.5428	2.5430	2.5433	2.5435	2.5437	2.5439	2.5442
2.5444	2.5446	2.5449	2.5451	2.5453	2.5455	2.5458
2.5460	2.5462	2.5465	2.5467	2.5469	2.5471	2.5474
2.5476	2.5478	2.5480	2.5483	2.5485	2.5487	2.5490
2.5492	2.5494	2.5496	2.5499	2.5501	2.5503	2.5506
2.5508	2.5510	2.5512	2.5515	2.5517	2.5519	2.5521
2.5524	2.5526	2.5528	2.5531	2.5533	2.5535	2.5537
2.5540	2.5542	2.5544	2.5547	2.5549	2.5551	2.5553
2.5556	2.5558	2.5560	2.5562	2.5565	2.5567	2.5569
2.5572	2.5574	2.5576	2.5578	2.5581	2.5583	2.5585
2.5588	2.5590	2.5592	2.5594	2.5597	2.5599	2.5601
2.5603	2.5606	2.5608	2.5610	2.5613	2.5615	2.5617
2.5619	2.5622	2.5624	2.5626	2.5629	2.5631	2.5633
2.5635	2.5638	2.5640	2.5642	2.5644	2.5647	2.5649
2.5651	2.5654	2.5656	2.5658	2.5660	2.5663	2.5665
2.5667	2.5670	2.5672	2.5674	2.5676	2.5679	2.5681
2.5683	2.5685	2.5688	2.5690	2.5692	2.5695	2.5697
2.5699	2.5701	2.5704	2.5706	2.5708	2.5711	2.5713
2.5715	2.5717	2.5720	2.5722	2.5724	2.5726	2.5729

```
2.5731  2.5733  2.5736  2.5738  2.5740  2.5742  2.5745
2.5747  2.5749  2.5752  2.5754  2.5756  2.5758  2.5761
2.5763  2.5765  2.5767  2.5770  2.5772  2.5774  2.5777
2.5779  2.5781  2.5783  2.5786  2.5788  2.5790  2.5793
2.5795  2.5797  2.5799  2.5802  2.5804  2.5806  2.5808
2.5811  2.5813  2.5815  2.5818  2.5820  2.5822  2.5824
2.5827  2.5829  2.5831  2.5834  2.5836  2.5838  2.5840
2.5843  2.5845  2.5847  2.5849  2.5852  2.5854  2.5856
2.5859  2.5861  2.5863  2.5865  2.5868  2.5870  2.5872
2.5875  2.5877  2.5879  2.5881  2.5884  2.5886  2.5888
2.5890  2.5893  2.5895  2.5897  2.5900  2.5902  2.5904
2.5906  2.5909  2.5911  2.5913  2.5916  2.5918  2.5920
2.5922  2.5925  2.5927  2.5929  2.5931  2.5934  2.5936
2.5938  2.5941  2.5943  2.5945  2.5947  2.5950  2.5952
2.5954  2.5957  2.5959  2.5961  2.5963  2.5966  2.5968
2.5970  2.5972  2.5975  2.5977  2.5979  2.5982  2.5984
2.5986  2.5988  2.5991  2.5993  2.5995  2.5998  2.6000

*S BASIN #2 (Pad #2_South Detention Pond)
COMPUTE NM HYD          ID=2  HYD=202 AREA=0.00086 SQ MI
                        A B C D 30 0 0 70
                        TP=0.13333  MASSRAIN=-1

     K =  0.072665HR    TP =  0.133330HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N =  7.106428
     UNIT PEAK =   2.3762    CFS   UNIT VOLUME =   0.9947       B =   526.28      P60 = 1.5600
     AREA =     0.000602 SQ MI    IA =   0.10000 INCHES    INF =   0.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.010000


     K =  0.171537HR    TP =  0.133330HR    K/TP RATIO =  1.286563     SHAPE CONSTANT, N =  2.781350
     UNIT PEAK =  0.50986    CFS   UNIT VOLUME =   0.9696       B =   263.49      P60 = 1.5600
     AREA =     0.000258 SQ MI    IA =   0.65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.010000

PRINT HYD               ID=2  CODE=1

                                PARTIAL HYDROGRAPH   202.00


    RUNOFF VOLUME =     1.78433 INCHES     =       0.0818 ACRE-FEET
    PEAK DISCHARGE RATE =       1.70 CFS  AT   1.530 HOURS   BASIN AREA =  0.0009 SQ. MI.


ROUTE RESERVOIR         ID=4  HYD NO=POND.OT  INFLOW=2 CODE=24
                                OUTFLOW (CFS)     STORAGE(AF)     ELEV(FT)
                                0.00                  0.0000                5556.21
                                0.10          0.0028         5556.28
                                0.22          0.0063                5556.33
                                0.41          0.0117         5556.39
```

0.68	0.0194	5556.46
1.07	0.0312	5556.55
1.37	0.0403	5556.61
1.91	0.0575	5556.71

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	5556.21	0.000	0.00
0.24	0.00	5556.21	0.000	0.00
0.48	0.00	5556.21	0.000	0.00
0.72	0.06	5556.21	0.000	0.01
0.96	0.12	5556.25	0.002	0.05
1.20	0.22	5556.28	0.003	0.11
1.44	1.09	5556.36	0.009	0.30
1.68	0.95	5556.50	0.024	0.84
1.92	0.34	5556.46	0.020	0.70
2.16	0.19	5556.40	0.013	0.47
2.40	0.12	5556.36	0.009	0.31
2.64	0.05	5556.32	0.005	0.19
2.88	0.03	5556.29	0.003	0.11
3.12	0.02	5556.26	0.002	0.07
3.36	0.02	5556.24	0.001	0.04
3.60	0.02	5556.23	0.001	0.03
3.84	0.02	5556.23	0.001	0.02
4.08	0.02	5556.22	0.001	0.02
4.32	0.02	5556.22	0.001	0.02
4.56	0.02	5556.22	0.000	0.02
4.80	0.02	5556.22	0.000	0.02
5.04	0.02	5556.22	0.000	0.02
5.28	0.02	5556.22	0.000	0.02
5.52	0.02	5556.22	0.000	0.02
5.76	0.02	5556.22	0.000	0.02
6.00	0.02	5556.22	0.001	0.02
6.24	0.01	5556.22	0.000	0.02
6.48	0.01	5556.22	0.000	0.01
6.72	0.01	5556.22	0.000	0.01
6.96	0.01	5556.22	0.000	0.01
7.20	0.01	5556.22	0.000	0.01
7.44	0.01	5556.22	0.000	0.01
7.68	0.01	5556.22	0.000	0.01
7.92	0.01	5556.22	0.000	0.01
8.16	0.01	5556.22	0.000	0.01
8.40	0.01	5556.22	0.000	0.01
8.64	0.01	5556.22	0.000	0.01
8.88	0.01	5556.22	0.000	0.01
9.12	0.01	5556.22	0.000	0.01
9.36	0.01	5556.22	0.000	0.01

9.60	0.01	5556.22	0.000	0.01
9.84	0.01	5556.22	0.000	0.01
10.08	0.01	5556.22	0.000	0.01
10.32	0.01	5556.22	0.000	0.01
10.56	0.01	5556.22	0.000	0.01
10.80	0.01	5556.22	0.000	0.01
11.04	0.01	5556.22	0.000	0.01
11.28	0.01	5556.22	0.000	0.01
11.52	0.01	5556.22	0.000	0.01
11.76	0.01	5556.22	0.000	0.01
12.00	0.01	5556.22	0.000	0.01
12.24	0.01	5556.22	0.000	0.01
12.48	0.01	5556.22	0.000	0.01
12.72	0.01	5556.22	0.000	0.01
12.96	0.01	5556.22	0.000	0.01
13.20	0.01	5556.22	0.000	0.01

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
13.44	0.01	5556.22	0.000	0.01
13.68	0.01	5556.22	0.000	0.01
13.92	0.01	5556.22	0.000	0.01
14.16	0.01	5556.22	0.000	0.01
14.40	0.01	5556.22	0.000	0.01
14.64	0.01	5556.22	0.000	0.01
14.88	0.01	5556.22	0.000	0.01
15.12	0.01	5556.22	0.000	0.01
15.36	0.01	5556.22	0.000	0.01
15.60	0.01	5556.22	0.000	0.01
15.84	0.01	5556.22	0.000	0.01
16.08	0.01	5556.22	0.000	0.01
16.32	0.01	5556.22	0.000	0.01
16.56	0.01	5556.22	0.000	0.01
16.80	0.01	5556.22	0.000	0.01
17.04	0.01	5556.22	0.000	0.01
17.28	0.01	5556.22	0.000	0.01
17.52	0.01	5556.22	0.000	0.01
17.76	0.01	5556.22	0.000	0.01
18.00	0.01	5556.22	0.000	0.01
18.24	0.01	5556.22	0.000	0.01
18.48	0.01	5556.22	0.000	0.01
18.72	0.01	5556.22	0.000	0.01
18.96	0.01	5556.22	0.000	0.01
19.20	0.01	5556.22	0.000	0.01
19.44	0.01	5556.22	0.000	0.01
19.68	0.01	5556.22	0.000	0.01
19.92	0.01	5556.22	0.000	0.01
20.16	0.01	5556.22	0.000	0.01
20.40	0.01	5556.22	0.000	0.01

```
    20.64       0.01    5556.22       0.000       0.01
    20.88       0.01    5556.22       0.000       0.01
    21.12       0.01    5556.22       0.000       0.01
    21.36       0.01    5556.22       0.000       0.01
    21.60       0.01    5556.22       0.000       0.01
    21.84       0.01    5556.22       0.000       0.01
    22.08       0.01    5556.22       0.000       0.01
    22.32       0.01    5556.22       0.000       0.01
    22.56       0.01    5556.22       0.000       0.01
    22.80       0.01    5556.22       0.000       0.01
    23.04       0.01    5556.22       0.000       0.01
    23.28       0.01    5556.22       0.000       0.01
    23.52       0.01    5556.22       0.000       0.01
    23.76       0.01    5556.22       0.000       0.01
    24.00       0.01    5556.22       0.000       0.01
    24.24       0.00    5556.21       0.000       0.01
    24.48       0.00    5556.21       0.000       0.00
 PEAK DISCHARGE =         0.844 CFS - PEAK OCCURS AT HOUR    1.70
 MAXIMUM WATER SURFACE ELEVATION =      5556.498
 MAXIMUM STORAGE =         0.0244 AC-FT      INCREMENTAL TIME=    0.010000HRS

PRINT HYD                      ID=4 CODE 1

                                      HYDROGRAPH FROM AREA POND.OT


    RUNOFF VOLUME =     1.78399 INCHES     =       0.0818 ACRE-FEET
    PEAK DISCHARGE RATE =       0.84 CFS  AT   1.700 HOURS   BASIN AREA =  0.0009 SQ. MI.



*S BASIN #1 (Pad #1_North Detention Pond)
COMPUTE NM HYD          ID=1  HYD=203 AREA=0.00023 SQ MI
                        A B C D 15 0 0 85
                        TP=0.13333  MASSRAIN=-1

     K =  0.072665HR    TP =  0.133330HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N =  7.106428
     UNIT PEAK =  0.77167    CFS   UNIT VOLUME =   0.9833       B =   526.28      P60 = 1.5600
     AREA =     0.000196 SQ MI    IA =   0.10000 INCHES    INF =   0.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.010000


     K =  0.171537HR    TP =  0.133330HR    K/TP RATIO =  1.286563     SHAPE CONSTANT, N =  2.781350
     UNIT PEAK =  0.68180E-01CFS   UNIT VOLUME =   0.8505       B =   263.49      P60 = 1.5600
     AREA =     0.000035 SQ MI    IA =   0.65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.010000

PRINT HYD               ID=1  CODE=1

                                  PARTIAL HYDROGRAPH   203.00
```

RUNOFF VOLUME = 2.06285 INCHES = 0.0253 ACRE-FEET
PEAK DISCHARGE RATE = 0.52 CFS AT 1.530 HOURS BASIN AREA = 0.0002 SQ. MI.

ROUTE RESERVOIR ID=5 HYD NO=POND.OT INFLOW=1 CODE=24

OUTFLOW (CFS)	STORAGE(AF)	ELEV(FT)
0.00	0.0000	5551.23
0.03	0.0009	5551.34
0.07	0.0019	5551.45
0.14	0.0029	5551.57
0.21	0.0039	5551.68
0.29	0.0050	5551.79
0.38	0.0060	5551.90

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

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	5551.23	0.000	0.00
0.24	0.00	5551.23	0.000	0.00
0.48	0.00	5551.23	0.000	0.00
0.72	0.02	5551.24	0.000	0.00
0.96	0.04	5551.29	0.001	0.02
1.20	0.07	5551.35	0.001	0.04
1.44	0.33	5551.55	0.003	0.13
1.68	0.29	5551.86	0.006	0.35
1.92	0.10	5551.66	0.004	0.20
2.16	0.05	5551.50	0.002	0.10
2.40	0.03	5551.42	0.002	0.06
2.64	0.01	5551.36	0.001	0.04
2.88	0.01	5551.32	0.001	0.02
3.12	0.01	5551.29	0.000	0.02
3.36	0.01	5551.27	0.000	0.01
3.60	0.01	5551.26	0.000	0.01
3.84	0.01	5551.26	0.000	0.01
4.08	0.01	5551.25	0.000	0.01
4.32	0.01	5551.25	0.000	0.01
4.56	0.01	5551.25	0.000	0.01
4.80	0.01	5551.25	0.000	0.01
5.04	0.01	5551.25	0.000	0.01
5.28	0.01	5551.25	0.000	0.01
5.52	0.01	5551.25	0.000	0.01
5.76	0.01	5551.25	0.000	0.01
6.00	0.01	5551.25	0.000	0.01
6.24	0.00	5551.25	0.000	0.01
6.48	0.00	5551.25	0.000	0.00

```
 PEAK DISCHARGE =        0.360 CFS - PEAK OCCURS AT HOUR    1.64
 MAXIMUM WATER SURFACE ELEVATION =     5551.875
 MAXIMUM STORAGE =        0.0058 AC-FT      INCREMENTAL TIME=    0.010000HRS

PRINT HYD                      ID=5 CODE 1

                                       HYDROGRAPH FROM AREA POND.OT


    RUNOFF VOLUME =     2.06200 INCHES     =       0.0253 ACRE-FEET
    PEAK DISCHARGE RATE =       0.36 CFS  AT   1.640 HOURS   BASIN AREA =  0.0002 SQ. MI.


FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 16:03:42
←[s1ØH
```

Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Friday, Aug 9 2019

4 inch PVC Pipe

Circular

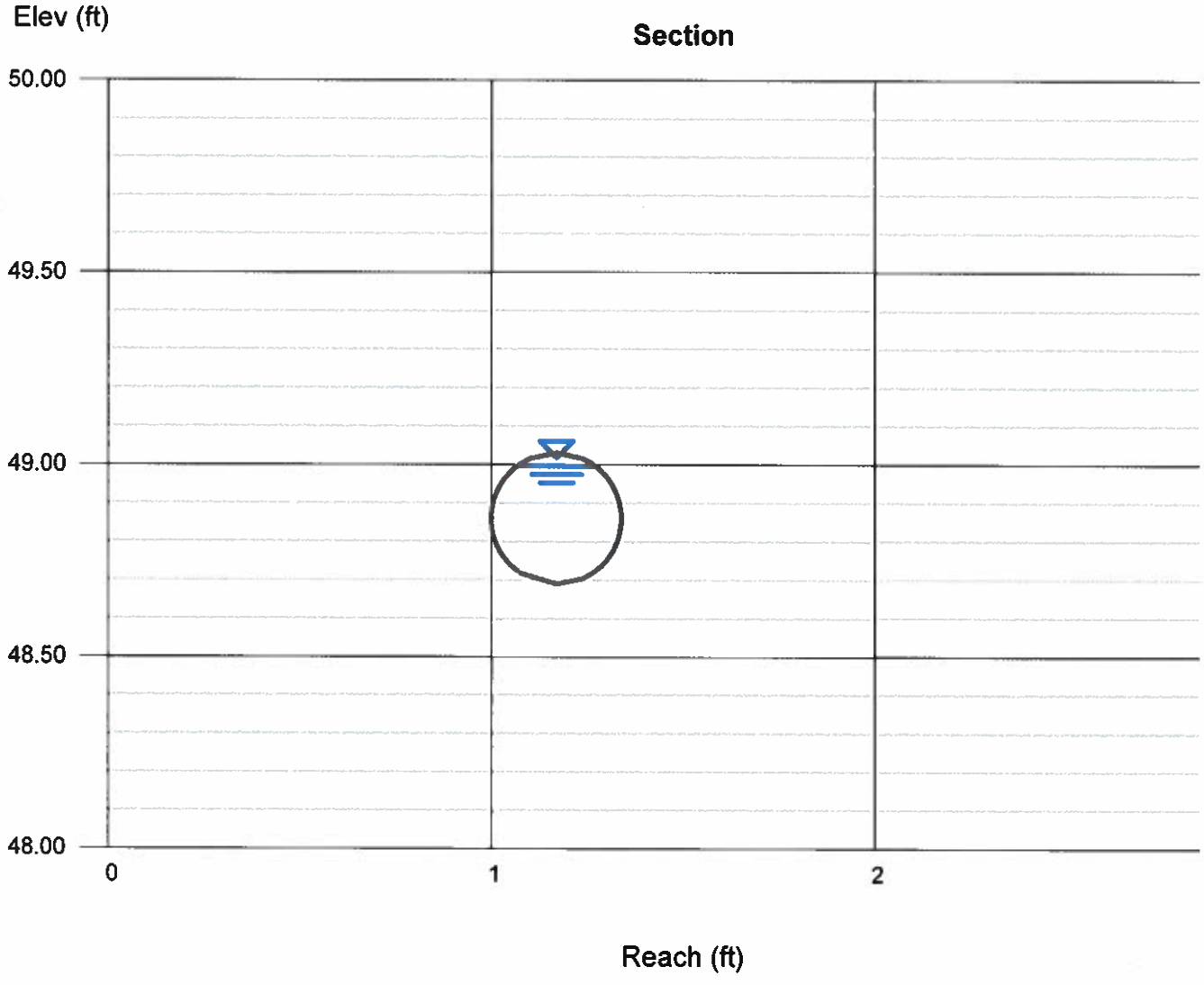
Diameter (ft)	= 0.34
Invert Elev (ft)	= 48.69
Slope (%)	= 0.70
N-Value	= 0.012

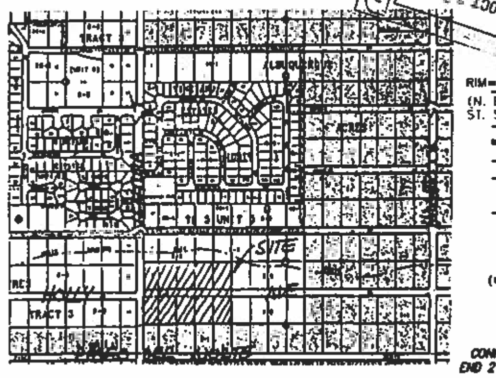
Calculations

Compute by:	Q vs Depth
No. Increments	= 10

Highlighted

Depth (ft)	= 0.31
Q (cfs)	= 0.194
Area (sqft)	= 0.09
Velocity (ft/s)	= 2.25
Wetted Perim (ft)	= 0.85
Crit Depth, Yc (ft)	= 0.25
Top Width (ft)	= 0.20
EGL (ft)	= 0.38





VICINITY MAP ZONE MAP: C-20-Z

TBM (TEMPORARY BENCHMARK)

TOP OF TELEPHONE MANHOLE LOCATED AT THE INTERSECTION OF PASEO DEL NORTE AND VENTURA STREET N.E.
RIM ELEV.= 5542.41

ACS BENCHMARK

THE STATION MARK IS A STANDARD ACS BRASS TABLET STAMPED "-C21A-1978" SET IN TOP OF A CONCRETE POST FLUSH WITH GROUND.

TO REACH THE STATION FROM THE INTERCHANGE AT I-25 AND SAN MATEO BLVD. N.E., GO NORTH ON THE EAST FRONTAGE ROAD FOR 1.5 MILES TO PASEO DEL NORTE. TURN RIGHT, GO EAST ON PASEO DEL NORTE 2.8 MILES TO THE STATION ON THE LEFT.

X=415,503.35 Y=1,518,787.29 Z=5634.65

LEGAL DESCRIPTION

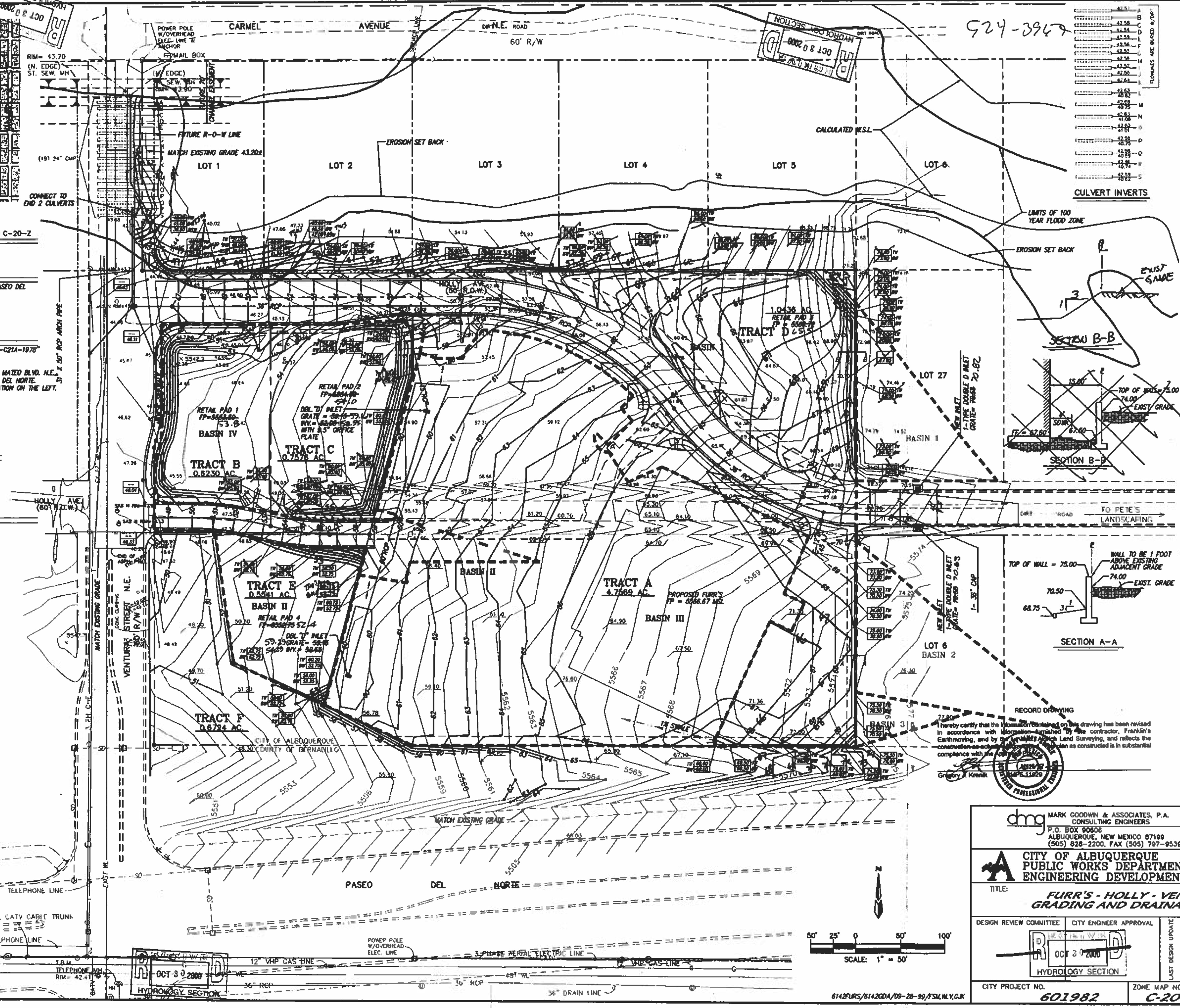
LOTS 28 THRU 32 OF BLOCK 19 AND LOTS 3, 4, AND 5 OF BLOCK 20 OF NORTH ALBUQUERQUE ACERS TRACT 3, UNIT 3.

LEGEND

- 48.20 — EXISTING SPOT ELEVATION
- PROPERTY LINE
- 5553 — EXISTING CONTOUR
- ~~NEW~~ AS-BUILT CONTOUR
- 67.90 TW / 67.40 (AS-BUILT) / 67.00 BSW — ~~PROPOSED~~ AS-BUILT SPOT ELEVATION
- ROOF DRAIN (TYP)
- WATER BLOCK / HIGHPOINT
- NEW RETAINING WALL
- NEW SCOUR WALL
- BASIN BOUNDARY
- TALL CURB

NOTES

1. SITE IS ALLOWED FLOW DISCHARGE TO VENTURA WHERE FLOWS WILL CONTINUE NORTH TO THE ARROYO.
2. OFFSITE FLOWS WILL BE ROUTED ALONG THE RETAINING WALL ON THE PROPERTY LINE TO THE R.O.W. OR ARROYO.
3. CONTRACTOR MUST OBTAIN A TOPSOIL DISTURBANCE PERMIT FROM THE ENVIRONMENTAL HEALTH DIVISION PRIOR TO CONSTRUCTION.
4. CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION SHALL GOVERN ALL WORK.
5. THE CONTRACTOR SHALL CONFORM TO ALL CITY, COUNTY, STATE AND FEDERAL DUST CONTROL MEASURES AND REQUIREMENTS AND WILL BE RESPONSIBLE FOR PREPARING AND OBTAINING ALL NECESSARY APPLICATIONS AND APPROVALS.
6. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE LOTS INTO PUBLIC RIGHT-OF-WAY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
7. CONTRACTOR TO STAKE 0.25' BELOW CONTOUR. PADS ARE TO BE GRADEDAS SHOWN.



RECORD DRAWING

I hereby certify that the information contained on this drawing has been revised in accordance with information furnished by the contractor, Franklin's Earthmoving, and by the ... Land Surveying, and reflects the construction as constructed is in substantial compliance with the ... plan as constructed.

Gregory J. Krenik

924-3947

SURVEY INFORMATION		
FIELD NOTES		
NO.	BY	DATE

BENCH MARKS

THE STATION MARK IS A STANDARD ACS BRASS TABLET STAMPED "-C21A-1978" SET IN TOP OF A CONCRETE POST FLUSH WITH GROUND. TO REACH THE STATION FROM THE INTERCHANGE AT I-25 AND SAN MATEO BLVD. N.E., GO NORTH ON THE EAST FRONTAGE ROAD FOR 1.5 MILES TO PASEO DEL NORTE. TURN RIGHT, GO EAST ON PASEO DEL NORTE 2.8 MILES TO THE STATION ON THE LEFT.
X=415,503.35 Y=1,518,787.29 Z=5634.65

AS BUILT INFORMATION		
CONTRACTOR	FRANKLINS	
WORK STAKED BY	ALS	DATE 00
INSPECTOR'S ACCEPTANCE BY		DATE
FIELD VERIFICATION BY	ALS	DATE 00
DRAWINGS CORRECTED BY	ALS	DATE 10/00
MICRO-FILM INFORMATION		
RECORDED BY		DATE
NO.		

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
DESIGNED BY	G/K	DATE	7/99
DRAWN BY	WLV	DATE	7/99
CHECKED BY	DMG	DATE	7/99

dmg MARK GOODWIN & ASSOCIATES, P.A. CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505) 828-2200, FAX (505) 797-9539

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: FURR'S - HOLLY - VENTURA GRADING AND DRAINAGE PLAN

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	MO./DAY/YR.	MO./DAY/YR.

LAST DESIGN UPDATE

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
601982	C-20-Z	3	11

6142FURS/6142GDA/09-28-99/FSM,WLV,GJK

CITY OF ALBUQUERQUE

March 27, 2008

Gregory J. Krenik, PE
Mark Goodwin & Associates
P.O. 90606
Albuquerque, NM 87199

Re: Shoppes at Ventura Grading and Drainage Plan
Engineer's Stamp dated 2-22-08 (C20/D16)

Dear Mr. Krenik,

Based upon the information provided in your submittal dated 2-25-08, the above referenced report is approved for Building Permit and Final Plat. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer Certification of the grading plan per the DPM checklist will be required.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Bradley L. Bingham, PE
Principal Engineer, Planning Dept
Development and Building Services

C: file

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 30, 2001

Gregory J. Krenik, P.E.
Mark Goodwin & Assoc.
P.O. Box 90606
Albuquerque, New Mexico 87199

RE: **Grading and Drainage Certification**
Furr's Supermarket- Ventura & Paseo Del Norte (C-20/D16)
Submitted for Release of Financial Guarantees
Engineers Stamp dated 11/11/1999
Engineer's Certification dated 12/11/2000
Engineers Letter dated March 27, 2001

Dear Mr. Krenik:

Based upon the information provided in your submittal dated 12/12/2000 and your letter dated 3/27/2001, the above referenced plan is adequate to satisfy the Grading and Drainage Certification and Letter of Map Revision (LOMR) requirements for Release of the remaining Financial Guaranty.

This will satisfy the conditions for release of the remaining financial guaranty for $20,000.00 being held as per City Hydrology's letter dated December 18, 2000.

If you have any questions, please call me at 924-3986.

Sincerely,

Bradley L. Bingham, P.E.
Senior Civil Engineer, Hydrology
Public Works Dept., C.O.A.

C: Arlene Portillo, PWD – #601981
File

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 23, 2000

Gregory j. Krenik, P.E.
Mark Goodwin & Associates, PA
P.O. Box 90606
Albuquerque, NM 87199

RE: FURR'S, PASEO DEL NORTE & VENTURA (C20-D16). ENGINEER'S CERTIFICATION FOR CERTIFICATE OF OCCUPANCY APPROVAL. ENGINEER'S STAMP DATED OCTOBER 16, 2000.

Dear Mr.Krenik:

Based on the information provided on your October 16, 2000 submittal, the above referenced project is approved for Certificate of Occupancy.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

John P. Murray, P.E.
Hydrology

c: Whitney Reierson
File

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 20, 1999

Gregory J. Krenik, P.E.
Mark Goodwin & Associates, PA
P. O. Box 90606
Albuquerque, New Mexico 87199

RE: ***Revised Drainage Report and Grading and Drainage Plan for Furr's-East Paseo del Norte, (C20/D16) Submitted for Building Permit Approval, Engineer's Stamp Dated 6/23/99.***

Dear Mr. Krenik:

Based on the information provided, the above referenced plan, dated June 23, 1999, is approved for Building Permit release.

As you are aware, the Engineer's Certification is required prior to release of the Certificate of Occupancy for this site.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Fred Katz, The FHK Company
File

ADDENDUM TO THE

DRAINAGE CALCULATIONS

for

FURR'S
Paseo del Norte

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE, NM 87199
(505) 828-2200 FAX 797-9539
e-mail: dmg@swcp.com

PROJECT Furr's - Paseo Del Norte
SUBJECT Revised Ponds
BY GSK DATE 11-27-00
CHECKED ____ DATE ____
SHEET 1 OF ____

- THIS REVISES THE DRAINAGE REPORT FOR FURR'S PASEO DEL NORTE PREPARED BY MARK GOODWIN AND ASSOCIATES 12-11-98 APPENDIX "A"

- THE BUILDING WAS DESIGNED WITH DOWN SPOUTS ON THE NORTH AND SOUTH SIDES INSTEAD OF THE WEST AND SOUTH SIDES.

- WE WILL PLACE A SMALLER ORIFICE ON THE UNDERGROUND POND. IT WILL BE REDUCED FROM 9.5 in TO 8.5 in.

  THE AREA TO THE UNDERGROUND POND GETS REDUCED FROM 0.005812 SM TO 0.004851 SM.

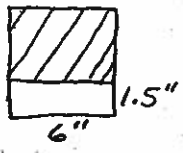
  THE TYPE "B" AREA INCREASED FROM 9.27 % TO 10.88 % AND THE TYPE "D" AREA DECREASED FROM 90.73 % TO 89.12 %

- TOTAL ALLOWABLE Q FROM FURR'S = 6.09 cfs (sheet 7 of ORIGINAL REPORT)

  PER THE AHYMO OUTPUT FOR THE REVISED POND Q = 4.80 cfs SEE SHEETS 2-5

  THIS LEAVES 6.09 - 4.80 = 1.29 cfs TO BE DISCHARGED FROM THE NORTH SIDE OF BUILDING

  USING 6 - 1.5" x 6" ORIFICES OVER THE 6" x 6" OPENING TO THE DOWNSPOUTS

  ROOF SLOPE = 1/4" PER FOOT
  SIDE OF BLDG = 180'
  AREA OF BLDG = 0.000861 SM
  100 % TYPE "D"

  FROM AHYMO OUTPUT SHEETS 6-9
  Q = 1.23 cfs < 1.29 cfs OK

- DOWN SPOUTS WILL DISCHARGE THROUGH 4" PVC PIPES THROUGH CURB INTO HOLLY.

D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

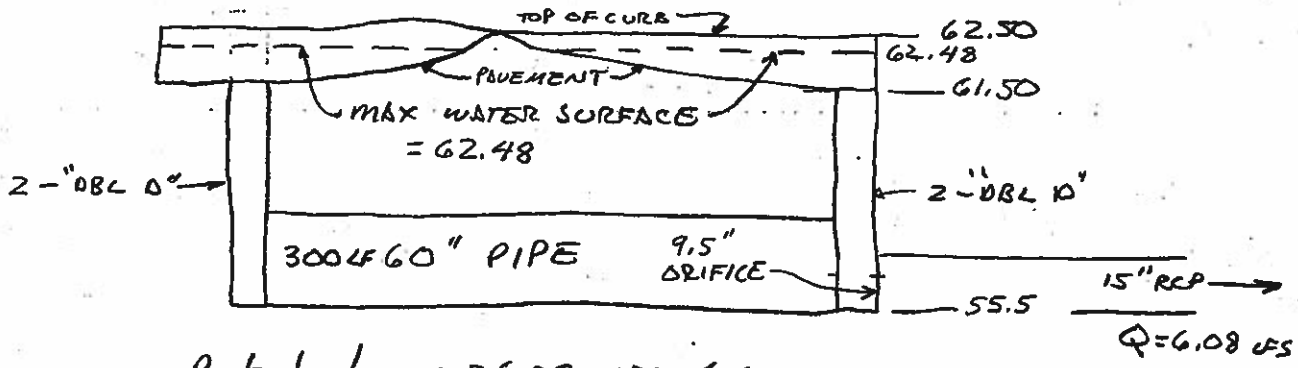
PROJECT FURRS - Pasco Del Norte
SUBJECT DRAINAGE CALCS
BY GSK DATE 10-2-98
CHECKED _____ DATE _____
SHEET 8 OF _____
Revised 12-11-98

- USE IN COMBINATION PARKING LOT PONDING AND UNDERGROUND STORAGE

ELEV	VOLUME (AC-FT)	OUTFLOW (9.5" ORIFICE)
55.5	0.0	0.0
56.5	0.021	1.84
57.5	0.053	3.00
58.5	0.089	3.82
59.5	0.122	4.50
60.5	0.142	5.09
61.5	0.143	5.61
62.5	0.273	6.09

$Q = 0.6A\sqrt{2gh}$

POND WILL CONSIST OF 2 DBL "D" INLETS AT EACH END CONNECTED BY 300 LF OF 60" PIPE ALONG WITH PARKING LOT



Peak discharge = 6.08 CFS < 6.09 CFS OK
FROM AHYMO OUTPUT SHEETS 46-48

D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT Fulks - Paseo Del Norte
SUBJECT Drainage Calcs
BY GJK DATE 10-7-98
CHECKED _____ DATE _____
SHEET 7 OF ____
Revised 12-11-98

- FIND UNDEVELOPED RUNOFF OF EXISTING SITE

  AREA = 8.7900 AC

  USE 90% B AND 10% C

  FROM AHYMO SHEETS 43-45
  Q = 23.81 CFS

  THIS IS THE ALLOWABLE RUNOFF FOR THE SITE

- FIND RUNOFF FROM DIRECT DISCHARGE AREAS.
  BASINS I + II
  Q = 13.28 + 2.58
  = 15.86 CFS

- ALLOWABLE DISCHARGE FROM PADS 1+2 (BASIN IV) AND FURR'S (BASIN III)
  Q = 23.81 - 15.86
  = 7.95 CFS

- ALLOWABLE DISCHARGE FOR THESE 3 LOTS
  RETAIL PAD 1 = 0.93 CFS
  RETAIL PAD 2 = 0.93 CFS
  FURR'S = 6.09 CFS

- RETAIL PADS 1+2 WILL BE A TEMP. RETENTION POND FOR ITS RUNOFF UNTIL THEY ARE DEVELOPED THEN THEY WILL HAVE A CONTROLLED DISCHARGE FROM THEIR PONDS. SEE ABOVE.

- SIZE TEMP POND FOR 2-100yr 6HR STORMS
  V = 2 x 0.2425 AC-FT = 21,127 CF

  160'x200' = 32,000
  154'x194' = 29,876
  > 1 FOOT DEEP VOLUME = 30,938 CF > 21,127 OK

- SIZE FURRS POND

  Q ALLOWABLE = 5.95 CFS

  USE 2 - DBL "D" INLETS AT EACH SUMP LOCATION

D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT FURRS - PASEO DEL NORTE
SUBJECT DRAINAGE CALCS
BY GJK DATE 9-1-98
CHECKED ____ DATE ____
SHEET 6 OF ____

REVISE 12-11-98

- DETERMINE FLOWS FOR ENTIRE BASIN 921.2 AND COMPARE WITH ORIGINAL REPORT.

- TOTAL AREA PER ORIGINAL REPORT = 0.085 SM
  PER SHEETS 1, 3 & 4 OF THIS REPORT THE AREA THAT DRAINS TO THE STORMDRAIN IN HOLLY

  $A = 21.2925 + 8.79 + 1.98$

  $= 32.0625$ AC $= 0.050$ SM

  - THIS LEAVES $0.085 - 0.050 = 0.035$ SM THAT DRAIN IN THE BASIN. THESE FLOWS WILL COME DOWN CARMEL WHICH IS THE STREET NORTH OF HOLLY.

  - THIS IS ZONED R-D SO THE LAND TREATMENTS OF 50% B & 50% D WILL BE USED.

  FROM AHYMO OUTPUT SHEETS 40-42

  $Q = 86.67$ CFS

  ADD THIS TO TOTAL Q ON SHEET 4 (114.87 CFS)

  TOTAL $Q = 119.03 + 91.62$

  $= 210.65$ CFS $<$ 254 PER ORIGINAL REPORT

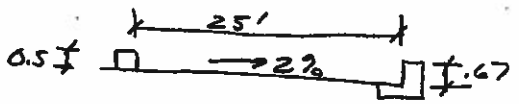
  OK

* SINCE THE FLOWS FOR THE BASIN ARE ACTUALLY LESS THAN ORIGINALLY ESTIMATED THE PUND'S DESIGN IS ADEQUATE.

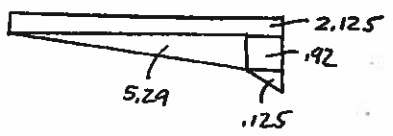
WHEN CARMEL IS DEVELOPED A STORMDRAIN WILL NEED TO BE DESIGNED.

- VERIFY STREET CAPACITY OF VENTURA

  $S = 1\%$ $n = 0.017$



  $d = 0.67$
  $WP = 25.76$
  $A = 8.46$
  $V = 4.16$ F/S
  $Q = 35.20$ CFS



- TOTAL Q IN VENTURA SOUTH OF INLETS

  $Q = 14.76$ (BASIN II) $+ 7.80$ (UNDEV) $+ 1.98$ (VENTURA) $= 24.54$ CFS $<$ 35.20 CFS OK

D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT FURRS - PASEO DEL NORTE
SUBJECT DRAINAGE CALCS
BY GSK DATE 6-15-98
CHECKED _____ DATE _____
SHEET 5 OF ____

Revised 9-1-98 12-11-98

SINCE WE DO NOT KNOW HOW THE AREA EAST OF US WILL BE DEVELOPED WE WILL ONLY DESIGN FROM THE ARROYO TO OUR EAST PROPERTY LINE.

FOR FUTURE DEVELOPMENT THE FLOW AND SIZES ON SHEET 4 WILL DIRECT THE DESIGN.

- Q AT OUR EAST PROP. LINE IN STORM DRAIN = 73.05 CFS
  36" RCP
- AT THE ENTRANCE 300' EAST OF VENTURA ON HOLLY BASIN I ENTERS THE STORM DRAIN

  Q = 73.05 + 13.28 = 86.33 CFS USE 36" RCP

- AT INTERSECTION OF HOLLY AND VENTURA THE REMAINING 14.76 CFS + 7.80 CFS ENTERS THE STORM DRAIN

  USE 42" RCP

- DETERMINE EROSION SETBACK

  WE WILL USE 6 FEET per 100 CFS

  FROM THE DRAINAGE REPORT C20/05 Lots 26 & 27 (Pete's Landscaping) "APPENDIX B"
  WE SHOW THE ESB FOR 756 CFS. = 45.36 FEET.

  FROM THE PLOT ON THE G+D PLAN WE WILL NEED A SCOUR WALL FOR 190' ALONG HOLLY FROM VENTURA, THIS WALL WILL BE INCORPORATED INTO THE RETAINING WALL ALONG THE NORTH PROP. LINE.

- DETERMINE SCOUR

  USE SECTION 60 FROM Pete's Landscaping

  TOTAL SCOUR = $Y_s + \frac{1}{2} h_a$

  $Y_s = D h (4)(F_r)^{0.33}$
  $= \frac{122.81}{150.29}(4)(1.22)^{0.33}$
  $= 5.74$

  $\frac{1}{2} h_a = 0.07(2)(\pi)\frac{V^2}{g}$
  $= 0.07(2)\pi\left(\frac{6.16^2}{32.2}\right)$
  $= 0.52$

  TOTAL SCOUR = 5.74 + 0.52
  = 6.26'

  WE WILL USE a 6.5' SCOUR WALL

- WE WILL SUBMIT A LOMR TO FEMA AND VERIFY THE ABOVE HEC RAS

D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT FURRS- PASEO DEL NORTE
SUBJECT DRAINAGE CALCS
BY C.S.K. DATE 6-15-98
CHECKED _____ DATE _____
SHEET 4 OF ____
REVISED 12-11-98

FROM AHYMO SHEETS 28-36

BASIN	Q (CFS)	SLOPE
1	0.67	5.00% FOR LAST 15' OTHERWISE FLAT
2	0.90	3.33%
3	0.20	2.00%

ALL OF THESE BASINS HAVE THE ADJACENT PROPERTY HIGHER THAN THE FURRS AND RETAIL PAD SITE.

THEREFORE UNDERCUTTING OF THE FOOTING IS NOT A CONCERN.

- DESIGN REQUIRED STORMDRAIN IN HOLLY TO ARROYO

TOTAL AREA IS THE ROW OF LOTS NORTH & SOUTH OF HOLLY FROM VENTURA TO HOCBROOK.

WE WILL USE OPTION E/J OF THE NORTH & SOUTH DOMINGO BACA ARROYO AND PDN CORRIDOR DRAINAGE MANAGEMENT PLAN. SEE "APPENDIX A"

THIS IS IN BASIN 921.2
PER THE REPORT THE AREA IS 0.085 SQ. MI.
THIS ACCOUNTS FOR AREA ON BOTH THE NORTH AND SOUTH SIDE OF THE ARROYO.

THE AREA THAT DRAINS TO HOLLY EAST OF OUR SITE IS
21.2925 AC = 0.033275 SQ. MI, ZONED R-D
WE WILL USE 50% TYPE "D" AND 50% TYPE "B"
PER AHYMO OUTPUT SHEETS 37-39
Q = 73.05 CFS
WE WILL USE A 2.3% SLOPE PER THE REPORT.
FROM PIPE SIZE NOMO SHEET 9
AT 2.3%

18"	CARRIES	16 CFS
24"	"	34 CFS
30"	"	60 CFS
36"	"	100 CFS
42"	"	140 CFS

TOTAL Q INCLUDING OUR SITE 73.05+13.28+3.97+18.17+6.40=114.87 CFS

D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT FURRS - PASEO DEL NORTE
SUBJECT DRAINAGE CALCS
BY GJK DATE 4-21-98
CHECKED _____ DATE _____
SHEET 3 OF _____

REVISED: 6-15-98 9-1-98 12-11-98

- FIND AREA AND Q OF VENTURA SOUTH OF NEW HOLLY.

  1/2 (86 x 450) = 19,350 ft² = 0.4442 AC 28% B 72% D

  FROM AHYMO OUT PUT SHEETS 25-27

  Q = 1.98 CFS

- THE OFFSITE FLOWS ARE NEGLIGIBLE AND DO NOT HAVE AN IMPACT.

  THESE BASINS ARE DIVIDED INTO FOUR.

OFFSITE BASIN 1 – DRAINS SOUTH ALONG RET. WALL ALONG THE RETAIL PAD TO HOLLY.

OFFSITE BASIN 2 – DRAINS NORTH ALONG RET. WALL ALONG FURRS TO HOLLY.

OFFSITE BASIN 3 – DRAINS SOUTH ALONG RET. WALL ALONG FURRS TO POND ROW.

FOR THIS DESIGN 100% TYPE "A" LAND TREATMENT WAS USED. WHEN THESE SITES DEVELOP, RUNOFF WILL HAVE TO BE DIRECTED TO HOLLY AND AS A DEVELOPED SITE ARE NOT ALLOWED TO DISCHARGE ONTO ADJACENT PROPERTY.

D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT FURRS - PASEO DEL NORTE
SUBJECT DRAINAGE CALCS
BY GJK DATE 4-21-98
CHECKED _____ DATE _____
SHEET 2 OF ____

REVISED; 6-15-98 12-11-98

- FURR'S PAD SITE

AREA = 4.7843 AC

THIS SITE IS SPLIT INTO ALL 3 BASINS

BASIN	AREA	B	D
I	0.9287 AC	0.2308 AC	0.6979 AC
II	0.1358 AC	0.0102 AC	0.1256 AC
III	3.7198 AC	0.3448 AC	3.3750 AC

- TOTAL SITE BREAKDOWN

BASIN	AREA (AC)	"B" AREA / %	"D" AREA / %
I	2.9573	0.7458 AC / 25.22	2.2115 AC / 74.78
II	0.8010	0.0594 AC / 7.42	0.7416 AC / 92.58
III	3.7198	0.3448 AC / 9.27	3.3750 AC / 90.73
IV	1.3119	0.1312 AC / 10.00	1.1807 AC / 90.00
	8.7900		

FROM ATHYMO OUTPUT SHEETS 10-21

BASIN	Q (CFS)
I	13.28
II	3.97
III	18.17
IV	6.40

$P_1 = 2.18$ in
$P_6 = 2.60$ in
$P_{24} = 3.10$ in
DT = 0.03333 HR
TP = 0.1333 HR

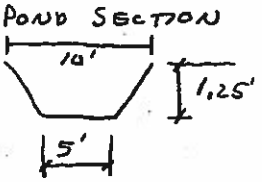
- POND PAD 4

7" ORIFICE TO INTERIOR ROAD FROM POND

FROM ATHYMO OUTPUT SHEETS 22-24
Q OF PAD = 2.41 CFS
PEAK Q FROM POND = 1.02 CFS
MAX WATER SURFACE = 54.95

170 LF

POND SECTION



- REVISE BASIN II RUNOFF

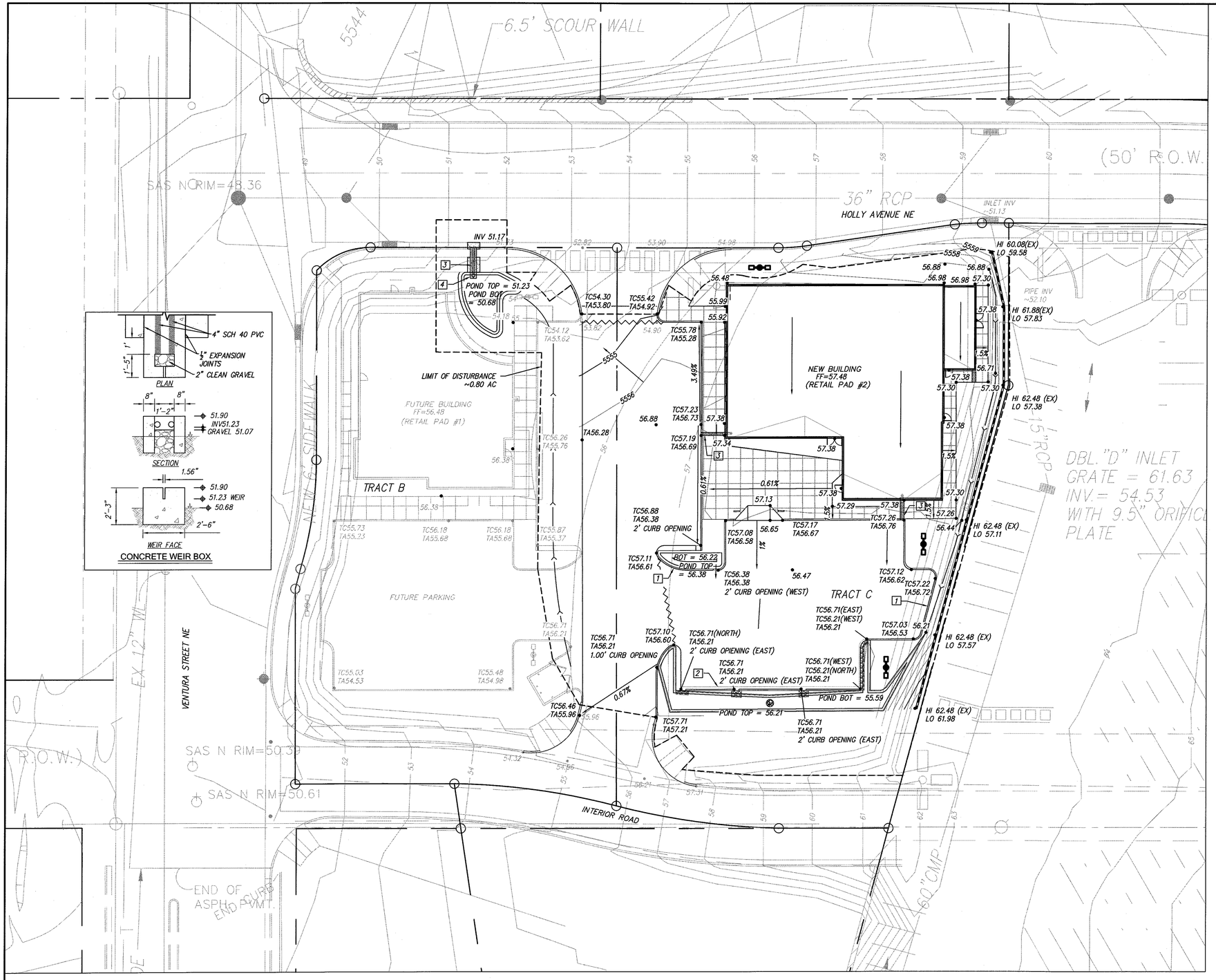
Q = 3.97 - (2.41 - 1.02)
= 2.58 CFS

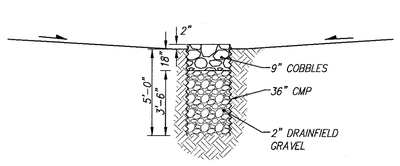
D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT Furrs - Paseo Del Norte
SUBJECT Drainage Calcs
BY GJK DATE 4-21-98
CHECKED _____ DATE _____
SHEET 1 OF ____

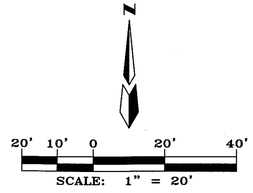
REVISED: 6-15-98 12-11-98

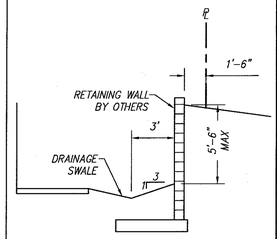
- SITE DOES NOT LIE IN A 100 YEAR FLOOD ZONE
- EXISTING OFFSITE FLOWS WILL NOT BE ALLOWED TO ENTER THE SITE BUT INSTEAD WILL BE ROUTED DOWN ALONG THE WALLS ON THE PROPERTY LINE TO EITHER THE ARROYO OR RIGHT OF WAY.
- THE SITE FOR THIS REPORT WILL BE DIVIDED INTO FOUR BASINS: I - DRAINS TO HOLLY THEN TO VENTURA
  II - DRAINS TO INTERIOR ROAD THEN TO VENTURA
  III - DRAINS TO ONSITE STORM DRAIN THEN TO HOLLY
  IV - DRAINS TO ONSITE STORM DRAIN THEN TO HOLLY
- DIRECT DISCHARGE WILL BE ALLOWED TO THE NEW STORMDRAIN IN THE ROAD ROW
- RETAIL PAD 1 = 0.6220 AC — BASINS III & II
  RETAIL PAD 2 = 0.7725 AC — BASINS IV & II
  RETAIL PAD 3 = 0.9955 AC — BASIN I
  RETAIL PAD 4 = 0.5826 AC — BASIN II
  HOLLY ROW = 1.0331 AC — BASIN I
  FURR'S PAD = 4.7843 AC — BASINS I, II & III
  8.7900 AC
- RETAIL PAD 3 (BASIN I) DIRECT RUNOFF
  AREA = 0.9955 AC
  TYPE B THAT DRAINS TO HOLLY = 0.2567 AC
  TYPE D THAT DRAINS TO HOLLY = 0.7388 AC
- RETAIL PADS 1 + 2 (BASIN IV) NEEDS TO POND
  TOTAL AREA = 1.3945 AC
  ASSUME 90/10
  TYPE D = 1.1807 AC
  TYPE B = 0.1312 AC
  0.0826 AC IS THE 30' INTERIOR ROAD THIS WILL BE DIRECT DISCHARGE (BASIN II)
  AREA TO POND = 1.3119 AC
- RETAIL PAD 4 (BASIN II) DIRECT RUNOFF AND PONDING
  AREA = 0.5826 AC
  ASSUME 90/10
  TYPE B = 0.0492 AC
  TYPE D = 0.4427 AC
  0.0907 AC IS THE 30' INTERIOR ROAD THIS WILL BE DIRECT DISCHARGE (BASIN II)
  AREA AT 90/10 = 0.4919 AC TO BE PONDED
- HOLLY ROW (BASIN I) DIRECT DISCHARGE
  AREA = 1.0331 AC
  TYPE B = 25% = 0.2583 AC
  TYPE D = 75% = 0.7748 AC

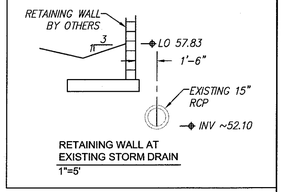




FRENCH DRAIN DETAIL
N.T.S







KEY NOTES

1. HEADER CURB PER COA STD DWG 2415B
2. MEDIAN CURB & GUTTER PER COA STD DWG 2415B
3. DRAIN LINE THROUGH CURB ((2) 4" SCH 40 PVC) PER COA STD DWG 2235
4. CONCRETE WEIR BOX PER DETAIL THIS SHEET

LEGAL DESCRIPTION

TRACT C BLOCK 19 NORTH ALBUQUERQUE ACRES
TRACT 3, UNIT 3
CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO

BENCHMARK

ELEVATIONS SHOWN ARE BASED ON CITY OF ALBUQUERQUE CONTROL STATION "6-C19"(NOT ACTIVE), HAVING AN ELEVATION OF 5479.18 (NAVD88) FEET ABOVE SEA LEVEL.

GENERAL NOTES

1. CONTRACTOR MUST OBTAIN A TOPSOIL DISTURBANCE PERMIT FROM THE ENVIRONMENTAL HEALTH DIVISION PRIOR TO CONSTRUCTION.
2. CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION SHALL GOVERN ALL WORK.
3. THE CONTRACTOR SHALL CONFORM TO ALL CITY, COUNTY, STATE AND FEDERAL DUST CONTROL MEASURES AND REQUIREMENTS AND WILL BE RESPONSIBLE FOR PREPARING AND OBTAINING ALL NECESSARY APPLICATIONS AND APPROVALS.
4. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE LOTS INTO PUBLIC RIGHT-OF-WAY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND WETTING THE SOIL TO KEEP IT FROM BLOWING
5. THE EARTHWORK CONTRACTOR SHALL STOCKPILE ENOUGH MATERIAL ADJACENT TO RETAINING WALL LOCATIONS TO BE UTILIZED FOR WALL BACKFILL.
6. NO WORK ALLOWED IN THE PUBLIC RIGHT OF WAY WITHOUT AN APPROVED WORK ORDER.
7. CONTRACTOR TO PROVIDE WRITTEN PERMISSION FROM ADJACENT PROPERTY OWNER FOR ANY DISTRURBANCE REQUIRED FOR CONSTRUCTION

LEGEND

- RETAINING WALL
- DRAINAGE SWALE
- 54.90 — SPOT ELEVATION
- HI 61.00 (EX) LO 53.60 — HIGH SIDE, LOW SIDE OF RETAINING WALL SPOT
- TC54.78 TA54.28 — TOP OF CURB, TOP OF ASPHALT SPOT
- FRENCH DRAIN -SEE DETAIL
- 4" MINUS CLEAN GRAVEL
- 12" SIDEWALK CULVERT PER COA STD DWG 2236
- WATER BLOCK (1")

PRIVATE DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY
NOTICE TO CONTRACTOR (SPECIAL ORDER 19 ~ "SO-19")

1. AN EXCAVATION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL, DIAL "811"[OR (505) 260-1990] FOR THE LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THE FACILITY SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY BEING SERVED.
7. WORK ON ARTERIAL STREETS MAY BE REQUIRED ON A 24-HOUR BASIS.
8. CONTRACTOR MUST CONTACT AUGIE ARMIJO AT (505) 857-8607 AND CONSTRUCTION COORDINATION AT 924-3416 TO SCHEDULE AN INSPECTION.

D. MARK GOODWIN NEW MEXICO 8948 LICENSED PROFESSIONAL ENGINEER
8/13/19

UNDERGROUND UTILITIES CAUTION:
NOTE THAT ALL EXISTING UTILITIES MAY NOT BE SHOWN. ALL EXISTING SERVICE CONNECTIONS ARE NOT SHOWN. ANY EXISTING UTILITIES THAT ARE SHOWN ARE APPROXIMATE LOCATION ONLY. IT SHALL BE THE SOLE RESPONSIBILTY OF THE CONTRACTOR TO CONTACT ALL THE UTILITY OWNERS AND TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATIONS TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS.

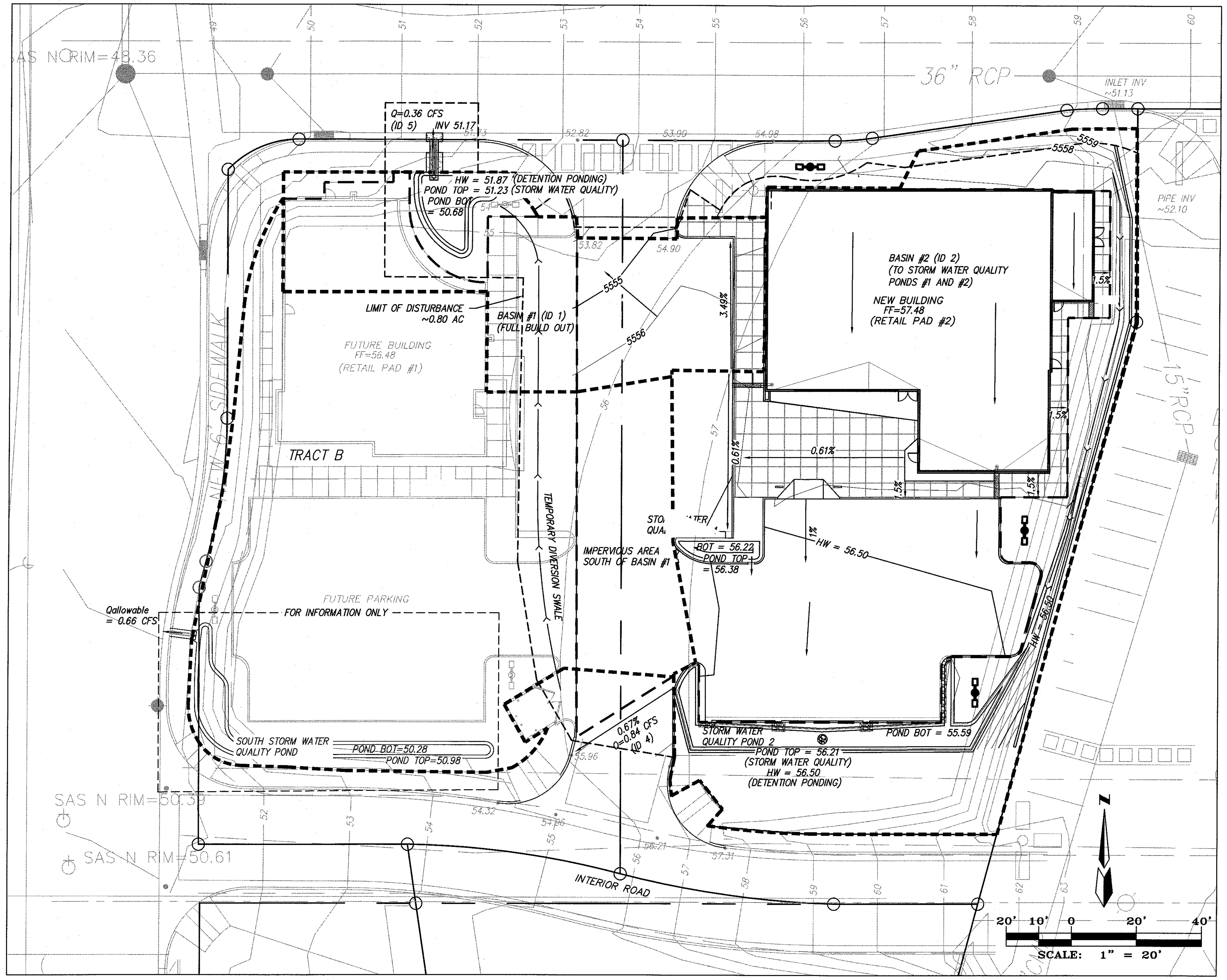
SWIM LABS

GRADING & DRAINAGE PLAN

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828-2200, FAX (505)797-9539

Designed: CP/DMG	Drawn: CP	Checked: DMG	Sheet C1
Scale: 1" = 20'	Date: 8/12/2019	Job: A19003	

F:\A19JOBS\A19003 Ventura Swim Labs\GRADE & DRAIN\19003_G&D_DATUMSHIFT.dwg, Last saved by: Cory



DRAINAGE REPORT

THE SITE IS WITHIN THE FURRS PASEO DEL NORTE PROJECT (ADDENDUM STAMP DATE 11/27/00, GREGORY JAMES KRENIK, D. MARK GOODWIN & ASSOCIATES). THE FURRS PASEO DEL NORTE PROJECT HAS FOUR BASINS. BASIN IX INCLUDES RETAIL PAD #1 AND RETAIL PAD #2. THIS PROJECT (SWIM LABS) IS RETAIL PAD #2. THE FURRS PASEO PROJECT INCLUDES A STORM DRAIN SYSTEM TO THE EAST THAT PONDS AND CONVEYS FLOWS INTO THE STORM DRAIN SYSTEM IN HOLLY AVENUE, THEREBY DIVERTING THE OFFSITE FLOW FROM THE EAST. THE SUBJECT SITE IS BOUNDED BY 8" CURBED ROADWAYS WITH STEEP SLOPES TO THE WEST ON THE NORTH AND SOUTH SIDES.

THE FURRS PASEO PROJECT ALLOCATES 0.93 CFS FOR PAD #2, AND 0.93 CFS FOR PAD #1 (WEST OF PAD #2) OF ALLOWABLE DISCHARGE. BOTH PROPERTIES (RETAIL PAD #1 AND #2) INCLUDE A PORTION OF THE INTERIOR ROAD WHICH IS INCLUDED IN BASIN II (IN THE FURRS PASEO DEL NORTE ANALYSIS) AND IS NOT INCLUDED IN THE ALLOWABLE DISCHARGE OF EACH PAD. AS A PORTION OF RETAIL PAD #2 DRAINS INTO RETAIL PAD #1 (BASIN #1 EAST OF THE PROPERTY LINE) AND BOTH PADS #1 AND #2, AS PROPOSED, DISCHARGE AT THREE LOCATIONS; THE ALLOWABLE DISCHARGES ARE COMBINED FOR A TOTAL OF 1.86 CFS, AND REDISTRIBUTED TO EACH DISCHARGE LOCATION: 0.84 CFS FOR SOUTHWEST CORNER OF PAD #2, 0.36 CFS FOR MID NORTH SIDE OF PAD #1, AND 0.66 CFS FOR SOUTHWEST CORNER OF PAD #1 (FOR INFORMATION ONLY). THE DISTRIBUTED DISCHARGE AMOUNTS ARE SOMEWHAT PROPORTIONAL TO THE AREA TRIBUTARIES; HOWEVER, THE NORTH MID DISCHARGE LOCATION, WHICH RECIEVES FLOW FROM BOTH PADS, IS PROPORTIONATELY A BIT HIGHER BECAUSE OF SPACIAL CONSTRAINTS ON THE POND SIZE.

THE PROPOSED DESIGN FOR RETAIL PAD #2 INCLUDES CAPTURE OF 0.34" ON IMPERVIOUS AREAS TO MEET STORM WATER QUALITY REQUIREMENTS. AS SUCH THE POND ON THE SOUTH PORTION OF THE SITE RETAINS THIS VOLUME REQUIREMENT FROM ELEVATION 55.59' TO 56.21'. FROM ELEVATION 56.21' TO 56.50', THE POND FUNCTIONS AS A DETENTION POND DURING THE 100YR, 6HR STORM WITH A PEAK DISCHARGE OF 0.84 CFS. DISCHARGE BEGINS AFTER STORM WATER QUALITY CAPTURE AT ELEVATION 56.21' THROUGH A 1.00' WIDE CURB OPENING AT THE WEST END OF POND #2. THE DISHCHARGE FLOWS INTO THE INTERIOR ROAD (SOUTH OF SUBJECT SITE) THEN INTO VENTURA AVENUE. THE FURRS PASEO PROJECT EVALUATES A CAPACITY OF 35.2 CFS OF VENTURA AND A FLOW OF 24.54 CFS WITH FLOW RETAINED ON RETAIL PADS #1 AND #2. DISCHARGE OF 0.84 CFS INTO THE INTERIOR ROAD WILL ADD TO THE 24.54 FOR TOTAL OF 25.38 CFS OF 35.2 CFS CAPACITY IN VENTURA.

THE PROPOSED DESIGN FOR RETAIL PAD #1 WILL INCLUDE CAPTURE OF 0.34" ON IMPERVIOUS AREAS TO MEET STORM WATER QUALITY REQUIREMENTS. IN THE TEMPORARY STATE, BEFORE RETAIL PAD #1 (TRACT B) IS DEVELOPED, THE NORTH POND WILL RECEIVE RUNOFF FROM IMPERVIOUS SURFACES FROM THE EAST PORTION OF BASIN #1 AND FROM THE SOUTH SIDE OF BASIN #1 AS DELINIATED. THE RUNOFF WILL BE DIVERTED TO THE NORTH POND VIA A TEMPORARY DIVERSION SWALE AS INDICATED. THE TEMPORARY IMPERVIOUS TRIBUTARY TO THE NORTH POND IS APPROXIMATELY 6074 SF. ONCE TRACT B IS DEVELOPED, THE PORTION SOUTH OF BASIN #1 OF IMPERVIOUS AREA WILL BE ACCOMODATED BY ANOTHER POND IN THE SOUTHWEST CORNER OF TRACT B (SHOWN FOR INFORMATION ONLY); HOWEVER, NEW IMPERVIOUS SURFACES WITHIN TRACT B WILL ADDITIONALLY SHED TO THE NORTH POND. UNDER FULL DEVELOPEMENT (RETAIL PAD #1 AND RETAIL PAD #2), THE IMPERVIOUS TRIBUTARY TO THE NORTH STORM WATER QUALITY POND IS ANTICIPATED TO BE APPROXIMATELY 5547 SF.

THE NORTH POND RETAINS THE STORM WATER QUALITY VOLUME REQUIREMENT OF 6074 SF FROM ELEVATION 50.68' TO 51.23'. FROM ELEVATION 51.23' TO 51.85', THE NORTH POND FUNCTIONS AS A DETENTION POND DURING THE 100YR, 6HR STORM WITH A PEAK DISCHARGE OF 0.36 CFS. DISCHARGE BEGINS AFTER STORM WATER QUALITY CAPTURE AT ELEVATION 51.23' THROUGH A 0.13' WIDE OPENING INTO THE SIDEWALK THROUGH PIPES, INTO HOLLY AVENUE. AS THE NORTH DETENTION POND IS CONSTRUCTED IN ANTICIPATION OF A 100 YR EVENT, THE DETENTION POND DESIGN IS FOR FULL BUILD OUT CONDITIONS, INSTEAD OF THE TEMPORARY STATE, ABOVE ELEVATION 51.23.

RAINFALL WAS TAKEN FROM NOAA ATLAS 14 DATA AT THE LOCATION OF THE SITE. THE RAINFALL IS MITIGATED BY 0.26" (STORM WATER QUALITY CAPTURE OVER BASIN AREA (IMPERVIOUS AND PERVIOUS LAND TREATMENTS)) FOR INPUT INTO AHYMO TO ACCOUNT FOR STORM WATER QUALITY RETENTION. THE DISCHARGE TABLES ARE BASED ON A 0.13' WIDE WEIR FOR THE TRACT B NORTH DETENTION POND AND A 1.00' WIDE WEIR FOR THE TRACT C SOUTH DETENTION POND.

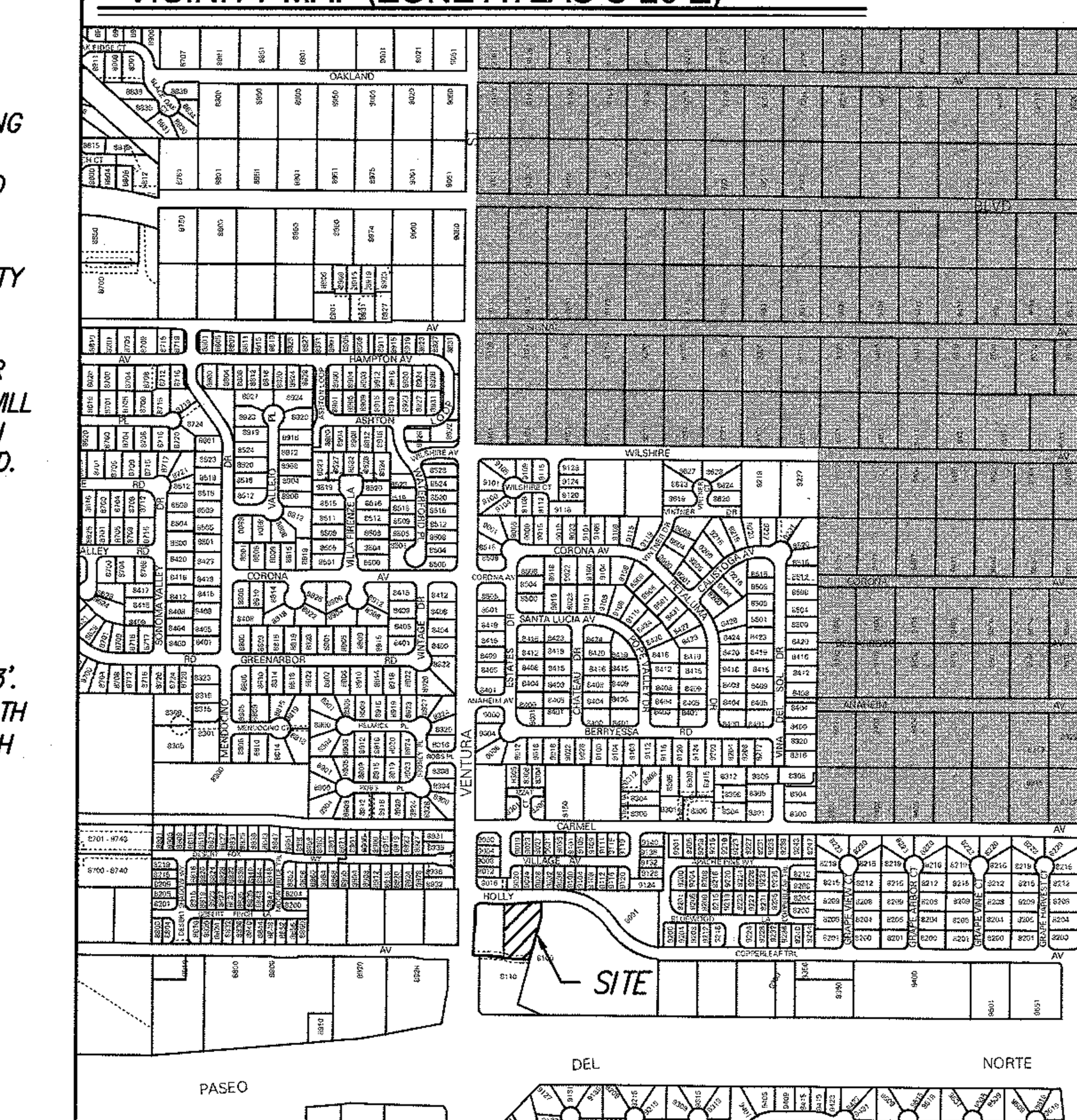
LEGAL DESCRIPTION

TRACT C BLOCK 19 NORTH ALBUQUERQUE ACRES
TRACT 3, UNIT 3
CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO

BENCHMARK

ELEVATIONS SHOWN ARE BASED ON CITY OF ALBUQUERQUE CONTROL STATION "6-C19"(NOT ACTIVE), HAVING AN ELEVATION OF 5479.18 (NAVD88) FEET ABOVE SEA LEVEL.

VICINITY MAP (ZONE ATLAS C-20-Z)



LEGEND (LINE TYPES)

AHYMO BASIN DELINEATION

IMPERVIOUS SURFACE DELINEATION

TRACT B:
STORM WATER QUALITY POND

Proposed Impervious Area (SF)	6074
Storm Water Quality retention depth (inches):	0.34
Required Storm Water Quality Volume (CF):	172

Proposed Storm Water Quality Retention Capacity:

Temporary Retention Pond	
Depth (FT):	**0.55**
Bottom (SF)	276
Top (SF)	354
Volume (CF)	173

STORM WATER QUALITY:

RECENT STORM WATER QUALITY REQUIREMENTS OF THE CITY OF ALBUQUERQUE RESULT IN CAPTURE OF 0.34 INCHES OF RAINFALL OVER IMPERVIOUS SURFACES.

THE REQUIRED STORM WATER QUALITY VOLUME IS FULLY CAPTURED WITHIN THE TRACT B STORM WATER QUALITY NORTH POND, AND THE TWO TRACT C STORM WATER QUALITY PONDS. ON TRACT C, WATER SHED FLOWS TO STORM WATER QUALITY POND #1 AND OVERFLOWS TO THE SIGNIFICANTLY LARGER STORM WATER QUALITY SOUTH POND #2.

THE FRENCH DRAIN IS A FEATURE OF THE DESIGN TO HASTEN INFILTRATION WITHIN TRACT C STORM WATER QUALITY SOUTH POND #2 WHEN RUNOFF IS CAPTURED FROM STORM EVENTS.

THE STORM WATER QUALITY PONDS ARE TO BE PERMANENT WITH THIS DEVELOPMENT. THE CONTRIBUTING BASIN OF IMPERVIOUS AREA TO TRACT B STORM WATER QUALITY POND OCCUPIES PORTIONS OF BOTH TRACT B AND TRACT C.

TRACT C:
PONDS 1 AND 2

Proposed Impervious Area (SF)	17101
Storm Water Quality retention depth (inches):	0.34
Required Storm Water Quality Volume (CF):	485

POND 1	
Depth (FT):	**0.16**
Bottom (SF)	24
Top (SF)	121
Volume (CF)	12
POND 2	
Depth (FT):	**0.62**
Bottom (SF)	619
Top (SF)	926
Volume (CF)	479
Total Storm Water Quality Capture (CF) (Ponds 1 and 2)	491

```
□(s16.66H
  AHYMO PROGRAM SUMMARY TABLE (AHYMO-S4)                    - Ver. S4.01a, Rel: 01a      RUN DATE (MON/DAY/YR) =08/12/2019
  INPUT FILE = 19\A19003 - Ventura Swim Labs\Drainage\ahymo_SwimLabs_Pad2_TOPDETEN-E_IN.txt USER NO.= M-GoodwinNMSiteA90075759

                                 FROM  TO                   PEAK       RUNOFF               TIME TO   CFS     PAGE =   1
                     HYDROGRAPH  ID    ID      AREA       DISCHARGE    VOLUME     RUNOFF     PEAK     PER
  COMMAND        IDENTIFICATION  NO.   NO.    (SQ MI)      (CFS)      (AC-FT)    (INCHES)   (HOURS)   ACRE      NOTATION

  START                                                                                                       TIME=      0.00
  LOCATION                       ALBUQUERQUE
  *S SWIM LABS 19003
  *S ONSITE PAD 2
  *S By Cory Pierce
  RAINFALL  TYPE= 2 NOAA 14                                                                                  RAIN24=    2.600
  *S BASIN #2 (Pad #2_South Detention Pond)
  COMPUTE NM HYD         202.00   -     2    0.00086       1.70      0.082     1.78433    1.530    3.084 PER IMP=   70.00
  ROUTE RESERVOIR        POND.OT  2     4    0.00086       0.84      0.082     1.78399    1.700    1.533 AC-FT=     0.024
  *S BASIN #1 (Pad #1_North Detention Pond)
  COMPUTE NM HYD         203.00   -     1    0.00023       0.52      0.025     2.06285    1.530    3.513 PER IMP=   85.00
  ROUTE RESERVOIR        POND.OT  1     5    0.00023       0.36      0.025     2.06200    1.640    2.443 AC-FT=     0.006
  FINISH
□(s10H
```

SWIM LABS
GRADING & DRAINAGE PLAN

dmg MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828-2200, FAX (505)797-9539

Designed: CP/DMG	Drawn: CP	Checked: DMG	Sheet C2
Scale: 1" = 20'	Date: 8/12/2019	Job: A19003	

F:\A19JOBS\A19003 Ventura Swim Labs\GRADE & DRAIN\19003_G&D_DATUMSHIFT.dwg, Last saved by: Cory