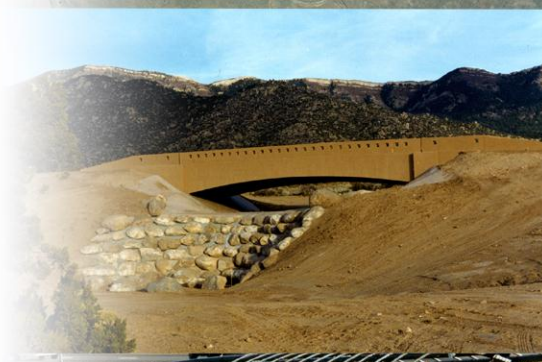
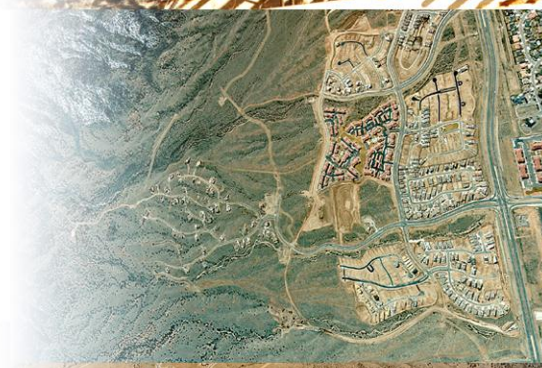
DRAINAGE REPORT FOR VALLE PRADO UNIT 3 AT THE TRAILS UNITS 3A SUBDIVISION



OCTOBER 2014

Prepared for:

Woodmont Paseo, LLC

6300 Riverside Plaza Lane, Suite 160

Bohannan Huston

Engineering

Spatial Data

Advanced Technologies

DRAINAGE REPORT
FOR
VALLE PRADO UNIT 3 AT THE TRAILS UNIT 3A
SUBDIVISION

OCTOBER 24, 2014

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TABLE OF CONTENTS

APPENDICES

EXHIBITS

I. PURPOSE

This report establishes a drainage management plan for Valle Prado Unit 3 at the Trails Unit 3A. The proposed development consists of 24 single family detached residential lots on approximately 14.5 acres. This project is located within the Volcano Trails Sector Plan area, in northwest Albuquerque, east of Rainbow Blvd and north of Woodmont Avenue. Valle Prado Unit 3 is in the Trails Units 1-3 Drainage Master Plan (DMP) area and has discharge of developed flows to an existing storm drain system in Tree Line Avenue in the Santa Fe at the Trails Subdivision, just east of this proposed subdivision. The Trails drainage outfall is to the Boca Negra Dam through a storm drain in Universe Boulevard. Discharge to the Boca Negra Dam is limited by the Trails Universe storm drain capacity. Flows in excess of the storm drain capacity surge to detention ponds east of Universe Boulevard. This report is submitted in support of grading approval and preliminary plat approval by the DRB.

II. CONCEPTS AND METHODOLOGIES

Drainage conditions were analyzed utilizing the 100-year, 24-hour storm event (P_{60}=1.84 in, P_{360}=2.20 in, P_{1440}=2.66 in), in accordance with the City of Albuquerque DPM. The use of the 24-hour storm event is consistent with the Trails Units 1-3 DMP. The Arid-lands Hydrologic Model (AHYMO) was utilized to determine peak flow rates for design of the storm drainage improvements within the project. The results are included in **Appendix A**. The storm drain inlets were sized using the 24-hour storm event (the 24-hour and 6-hour storm event produced the same Q). Street capacity and storm drain inlet calculations supporting this study are located in **Appendix B**.

The following document was referenced in the preparation of this report:

- *Amendment to the Drainage Master Plan for the Trails Units 1, 2, and 3*, prepared by Thompson Engineering Consultants, dated April 2014.

This amendment to the Drainage Management Plan (DMP) for the Trails “is to update the land use of the undeveloped parcels to match the density identified in the recently approved Volcano Trails Sector Development Plan (VTSDP) and to update the Developed Conditions Drainage Master Plan to adhere to the peak flow discharge from the previously approved Trails DMP”. The DMP allows a discharge of 24.36 cfs from Valle Prado Unit 3.

III. SITE LOCATION AND CHARACTERISTICS

Valle Prado Unit 3 is currently undeveloped with grades ranging from one percent to three percent. The site generally slopes from west to east. It is bounded by Open Space Tract OS-2 to the north and west, Valle Prado Unit 2 to the south, and the Santa Fe at the Trails Subdivision to the east. Access to Valle Prado Unit 3 will be from Tree Line Avenue and Woodmont Avenue through Valle Prado Units 1 and 2.

IV. DEVELOPED HYDRAULIC AND HYDROLOGIC CONDITIONS

Valle Prado Unit 3 is a proposed single-family residential development with 24 lots on 14.5 acres. Proposed street and lot configurations are shown on the *Preliminary Plat*, **Exhibit 1.** Valle Prado Unit 3 is encompassed by Tract 10 at the Trails Unit 3A and labeled as Basin C with Q=24.36 cfs in the Trails Units 1-3 DMP. The DMP allows for full discharge of developed flows from Valle Prado Unit 3 to enter the existing storm drain in Tree Line Avenue.

The percent impervious land treatment for the proposed conditions is determined from Table A-5 of the DPM, Section 22.2. The Basin C percent impervious land treatment value used in the Trails DMP AHYMO analysis is 50 percent. The Valle Prado Unit 3 percent impervious land treatment calculated for this report has a cumulative impervious land treatment value of 28 percent.

A. OFFSITE FLOWS

No offsite flows reach Valle Prado Unit 3. Offsite flows from the west (Offsite Basin 1) are captured by Future Pond A6 as described in the DMP. Plates (exhibits) from the DMP have been included in this submittal as supplemental information, see **Exhibit 5**. For detailed analysis of the offsite flows and future ponds, please see the DMP. Valle Prado Unit 3 is higher in elevation than the undeveloped land to the north, and the Santa Fe at the Trails and Valle Prado Unit 2 Subdivisions to the east. Undeveloped land to the south (future phase of the Valle Prado development shown as Future Basin 3 in the Valle Prado Unit 1 and 2 Drainage Report) drains toward South Sky Street in the Valle Prado Unit 2 Subdivision.

B. ONSITE FLOWS

Developed flows from Valle Prado Unit 3 will be directed to the existing 36 in. storm drain in Tree Line Avenue that was constructed with the Santa Fe at the Trails Subdivision. DMP Basin C is 8.18 acres and follows the Tract 10, Unit 3A boundary. The Unit 3 lot/street

layout does not follow the Tract 10 boundary, which results in Basins 1-3 containing 9.1 acres. However, the lower percent impervious land in Unit 3 results in a total runoff that is less than the allowable runoff in the DMP. For reference, see **Exhibit 2** for Unit 3 basin locations and **Exhibits 3 and 4** for the storm drain and inlet locations.

Basins 1 (4.8 cfs) and 2 (11.6 cfs) drain to two Type A single grate inlets (Inlets #19 and 20) at a low point in Tree Line Avenue east of Longwalk Street. Inlets #19 and 20 are in a sump condition and there is no emergency spill way present, therefore the inlets have been sized to capture two times the 100-year storm event as shown in **Appendix B**. Runoff from Basin 3 (4.4 cfs) is intercepted by two Type A single grate inlets (Inlets #17 and 18) in Two Rock Road. Flow from these inlets is conveyed via storm drain to Tree Line Avenue where they combine with flows from Basins 1 and 2. The total runoff from Valle Prado Unit 3, 20.8 cfs, is less than the runoff, 24.36 cfs, allowed in the DMP.

C. FIRST FLUSH REQUIREMENTS

Valle Prado Unit 3 is required to meet the first flush requirements of the new City Drainage Ordinance. The Tree Line Avenue storm drain system passes through Ponds F and G. However, Ponds F and G are both surge ponds and have no storage capacity to hold the first flush from Valle Prado Unit 3. Therefore the first flush requirement for Valle Prado Unit 3 will be met with on lot ponding and is calculated as 0.34 in. (0.44 in. - 0.1 in. initial abstraction) times the roof area that can drain to the on lot pond (taken as one half the pad area). There are two pad sizes, 45 ft. x75 ft. and 50 ft. x75 ft., in Valle Prado Unit 3, with a first flush requirement of 48 and 53 cubic feet, respectively. See the first flush pond detail for the typical lot location in the *Grading Plan Details*, **Exhibit 4**.

D. OFFSITE STORM DRAIN IMPROVEMENTS

The Amended Trails Units 1-3 DMP, April 2014, requires modifications to the Pond F and G inlet and outlet structures to meet the revised inflow and outflow flow rates. The Pond F and G modifications will be constructed as part of the Valle Prado Unit 3 development to include the following:

- Provide outlet control (orifice) to limit the pond bypass flow plus routed discharge through the pond to a maximum of 23.9 and 24.6 cfs, for Ponds F and G, respectively, when the pond water surface is at the 100-year pond volume elevation.
- Provide pond inflow capacity to match the DMP inflow (bypass plus surge) of 261.9 and 111.3 cfs, for Ponds F and G, respectively.

V. CONCLUSION

This report provides a detailed study of the developed runoff and street capacities for the proposed Valle Prado Unit 3 at the Trails Unit 3A Subdivision. Included are the preliminary plat, basin map, grading plan, and all necessary hydrologic and hydraulic analyses. The proposed drainage plan for Valle Prado Unit 3 can be safely conveyed by the existing and proposed improvements in this drainage plan. This drainage plan maintains the overall drainage pattern of the area, is consistent with the Trails Units 1-3 DMP and allows for the safe management of storm runoff in the fully developed condition as well as interim conditions.

APPENDICES

APPENDIX A: DEVELOPED CONDITIONS AHYMO SUMMARY, OUTPUT, AND INPUT FILES

APPENDIX B: STREET HYDRAULICS AND STORM DRAIN INLET ANALYSIS

APPENDIX C: INROADS STORM DRAIN NETWORK FILE

APPENDIX A

DEVELOPED CONDITIONS AHYMO SUMMARY, OUTPUT, AND INPUT FILES

DEVELOPED CONDITIONS AHYMO SUMMARY FILE

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - - VERSION: 1997.02c RUN DATE (MON/DAY/YR) =10/06/2014
INPUT FILE = DEV_Cond.HYM USER NO.= AHYMO-S-9702c1BohanHu-AH

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
*S VALLE PRADO UNIT 3 SUBDIVISION DRAINAGE BASIN (D) PROPOSED										
*S 100 YEAR - 24 HOUR STORM										
*S										
START										TIME= .00
LOCATION	DEFAULT									
RAINFALL TYPE= 2										RAIN24= 2.660
*S										
*S	**********									
*S	*COMPUTE ONSITE BASINS*									
*s	**********									
*S										
*S										
*S										
*S COMPUTE BASIN 1 **********										
COMPUTE NM HYD	1.00	-	1	.00457	4.78	.192	.78776	1.500	1.634	PER IMP= 10.00
*S COMPUTE BASIN 2 **********										
COMPUTE NM HYD	2.00	-	2	.00709	11.57	.536	1.41777	1.500	2.550	PER IMP= 38.00
*S COMPUTE BASIN 3 **********										
COMPUTE NM HYD	3.00	-	3	.00252	4.35	.208	1.54813	1.500	2.691	PER IMP= 46.00
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COMPUTE NM HYD	OFF.1	-	10	.00228	1.71	.063	.51355	1.500	1.170	PER IMP= .00
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*S ADD BASINS TEMP A AND 3 TO CREATE AP 1**********										
ADD HYD	AP	1&20	21	.01623	21.13	.920	1.06283	1.500	2.034	
FINISH										

A-1

DEVELOPED CONDITIONS AHYMO OUTPUT FILE

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         START TIME (HR:MIN:SEC) = 09:47:01     USER NO.= AHYMO-S-9702c1BohanHu-AH
         INPUT FILE = DEV_Cond.HYM

*S  VALLE PRADO UNIT 3 SUBDIVISION DRAINAGE BASIN (D) PROPOSED
*S  100 YEAR - 24 HOUR STORM
*S
*  CREATED OCTOBER 6, 2014
*
*
*CONVERT TO NMHYMO
START                TIME=0.0 HR  PUNCH CODE=0
**********************************************************
LOCATION            NM
     Soil infiltration values (LAND FACTORS) for this location are not available.
     The following default values were used.
     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

*
**********************************************************
*
**********************************************************
*100 YEAR - 24 HOUR
RAINFALL             TYPE=2  RAIN QUARTER=0
                         RAIN ONE=1.84 IN  RAIN SIX=2.20 IN
                         RAIN DAY=2.66 IN  DT=0.10 HRS


               COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
               DT =    .100000 HOURS       END TIME =    24.000000 HOURS
                  .0000   .0060   .0124   .0193   .0266   .0347   .0435
                  .0532   .0640   .0764   .0908   .1071   .1906   .4476
                  .9796  1.3314  1.5028  1.6393  1.7527  1.8488  1.9308
                 1.9485  1.9639  1.9776  1.9899  2.0013  2.0117  2.0215
                 2.0306  2.0393  2.0475  2.0553  2.0627  2.0698  2.0766
                 2.0832  2.0895  2.0956  2.1015  2.1072  2.1128  2.1182
                 2.1234  2.1285  2.1335  2.1383  2.1431  2.1477  2.1522
                 2.1566  2.1610  2.1652  2.1694  2.1734  2.1774  2.1814
                 2.1852  2.1890  2.1927  2.1964  2.2000  2.2039  2.2078
                 2.2117  2.2155  2.2193  2.2231  2.2268  2.2305  2.2342
                 2.2379  2.2416  2.2452  2.2488  2.2524  2.2559  2.2595
                 2.2630  2.2665  2.2700  2.2734  2.2768  2.2802  2.2836
                 2.2870  2.2903  2.2937  2.2970  2.3002  2.3035  2.3068
                 2.3100  2.3132  2.3164  2.3196  2.3227  2.3259  2.3290
                 2.3321  2.3352  2.3383  2.3413  2.3444  2.3474  2.3504
                 2.3534  2.3563  2.3593  2.3622  2.3652  2.3681  2.3710
                 2.3739  2.3767  2.3796  2.3824  2.3853  2.3881  2.3909
                 2.3937  2.3965  2.3992  2.4020  2.4047  2.4074  2.4101
                 2.4128  2.4155  2.4182  2.4208  2.4235  2.4261  2.4287
                 2.4314  2.4340  2.4365  2.4391  2.4417  2.4442  2.4468
                 2.4493  2.4518  2.4543  2.4568  2.4593  2.4618  2.4643
                 2.4667  2.4692  2.4716  2.4740  2.4765  2.4789  2.4813
                 2.4837  2.4860  2.4884  2.4908  2.4931  2.4955  2.4978
                 2.5001  2.5024  2.5047  2.5070  2.5093  2.5116  2.5139
                 2.5161  2.5184  2.5206  2.5229  2.5251  2.5273  2.5295
                 2.5317  2.5339  2.5361  2.5383  2.5404  2.5426  2.5448
                 2.5469  2.5490  2.5512  2.5533  2.5554  2.5575  2.5596
                 2.5617  2.5638  2.5659  2.5680  2.5700  2.5721  2.5741
                 2.5762  2.5782  2.5803  2.5823  2.5843  2.5863  2.5883
                 2.5903  2.5923  2.5943  2.5963  2.5982  2.6002  2.6022
                 2.6041  2.6061  2.6080  2.6099  2.6119  2.6138  2.6157
                 2.6176  2.6195  2.6214  2.6233  2.6252  2.6271  2.6290
                 2.6308  2.6327  2.6346  2.6364  2.6383  2.6401  2.6419
                 2.6438  2.6456  2.6474  2.6492  2.6510  2.6528  2.6546
                 2.6564  2.6582  2.6600
```

```
*S                    **********************
*S                    *COMPUTE ONSITE BASINS*
*s                    **********************
*S
*S
*S
*S COMPUTE BASIN 1 ****************************************************
*
COMPUTE NM HYD       ID=1 HYD=1  AREA=0.004571 PER A=40 PER B=25
                          PER C=25 PER D=10  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   1.4027    CFS   UNIT VOLUME =    .9993       B =   526.28      P60 = 1.8400
     AREA =      .000457 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .178745HR    TP =   .171500HR    K/TP RATIO =  1.042245     SHAPE CONSTANT, N =  3.387178
     UNIT PEAK =   7.4842    CFS   UNIT VOLUME =    .9975       B =   312.00      P60 = 1.8400
     AREA =      .004114 SQ MI    IA =    .52500 INCHES    INF =   1.32000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=1   CODE=1

                                   OUTFLOW HYDROGRAPH REACH     1.00


    RUNOFF VOLUME =      .78776 INCHES     =        .1920 ACRE-FEET
    PEAK DISCHARGE RATE =       4.78 CFS  AT   1.500 HOURS   BASIN AREA =   .0046 SQ. MI.


*
*S COMPUTE BASIN 2 ****************************************************
COMPUTE NM HYD       ID=2 HYD=2  AREA=0.007088  PER A=0 PER B=31
                          PER C=31 PER D=38  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   8.2653    CFS   UNIT VOLUME =    1.005       B =   526.28      P60 = 1.8400
     AREA =      .002693 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   9.0823    CFS   UNIT VOLUME =    1.003       B =   354.44      P60 = 1.8400
     AREA =      .004395 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=2   CODE=1

                                   OUTFLOW HYDROGRAPH REACH     2.00


    RUNOFF VOLUME =     1.41777 INCHES     =        .5360 ACRE-FEET
    PEAK DISCHARGE RATE =      11.57 CFS  AT   1.500 HOURS   BASIN AREA =   .0071 SQ. MI.


*
*S COMPUTE BASIN 3 ****************************************************
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                          PER C=27 PER D=46  TP=-0.1715  RAINFALL=-1

     K =   .093468HR    TP =   .171500HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   3.5628    CFS   UNIT VOLUME =    1.004       B =   526.28      P60 = 1.8400
     AREA =      .001161 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000


     K =   .152490HR    TP =   .171500HR    K/TP RATIO =   .889153     SHAPE CONSTANT, N =  3.989068
     UNIT PEAK =   2.8168    CFS   UNIT VOLUME =    .9998       B =   354.44      P60 = 1.8400
     AREA =      .001363 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=3   CODE=1

                                   OUTFLOW HYDROGRAPH REACH     3.00


    RUNOFF VOLUME =     1.54813 INCHES     =        .2084 ACRE-FEET
    PEAK DISCHARGE RATE =       4.35 CFS  AT   1.500 HOURS   BASIN AREA =   .0025 SQ. MI.
```

```
*
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                          PER C=15 PER D=0  TP=-0.1715  RAINFALL=-1

     K =   .193842HR    TP =   .171500HR    K/TP RATIO =  1.130272     SHAPE CONSTANT, N =  3.131237
     UNIT PEAK =   3.8901    CFS   UNIT VOLUME =    .9924       B =   292.35      P60 = 1.8400
     AREA =      .002282 SQ MI    IA =    .58250 INCHES    INF =   1.48100 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .100000

PRINT HYD            ID=10   CODE=1

                                        HYDROGRAPH FROM AREA OFF.1

    RUNOFF VOLUME =      .51355 INCHES     =        .0625 ACRE-FEET
    PEAK DISCHARGE RATE =       1.71 CFS  AT   1.500 HOURS   BASIN AREA =   .0023 SQ. MI.


*
*S ADD BASINS 1 AND 2 TO CREATE TEMP A ***********************************
ADD HYD              ID=20 HYD=TEMP.A ID I=1 II=2
PRINT HYD             ID=20 CODE=0

                                        HYDROGRAPH FROM AREA TEMP.A
```

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	5.000	.1	10.000	.1	15.000	.0	20.000	.0
.100	.0	5.100	.1	10.100	.1	15.100	.0	20.100	.0
.200	.0	5.200	.1	10.200	.1	15.200	.0	20.200	.0
.300	.0	5.300	.1	10.300	.1	15.300	.0	20.300	.0
.400	.0	5.400	.1	10.400	.1	15.400	.0	20.400	.0
.500	.0	5.500	.1	10.500	.1	15.500	.0	20.500	.0
.600	.0	5.600	.1	10.600	.1	15.600	.0	20.600	.0
.700	.0	5.700	.1	10.700	.1	15.700	.0	20.700	.0
.800	.0	5.800	.1	10.800	.1	15.800	.0	20.800	.0
.900	.0	5.900	.1	10.900	.1	15.900	.0	20.900	.0
1.000	.0	6.000	.1	11.000	.1	16.000	.0	21.000	.0
1.100	.0	6.100	.1	11.100	.1	16.100	.0	21.100	.0
1.200	.4	6.200	.1	11.200	.1	16.200	.0	21.200	.0
1.300	2.0	6.300	.1	11.300	.1	16.300	.0	21.300	.0
1.400	9.7	6.400	.1	11.400	.1	16.400	.0	21.400	.0
1.500	16.3	6.500	.1	11.500	.1	16.500	.0	21.500	.0
1.600	14.3	6.600	.1	11.600	.1	16.600	.0	21.600	.0
1.700	9.7	6.700	.1	11.700	.1	16.700	.0	21.700	.0
1.800	6.5	6.800	.1	11.800	.1	16.800	.0	21.800	.0
1.900	4.5	6.900	.1	11.900	.1	16.900	.0	21.900	.0
2.000	3.4	7.000	.1	12.000	.1	17.000	.0	22.000	.0
2.100	2.5	7.100	.1	12.100	.1	17.100	.0	22.100	.0
2.200	1.6	7.200	.1	12.200	.1	17.200	.0	22.200	.0
2.300	1.2	7.300	.1	12.300	.1	17.300	.0	22.300	.0
2.400	.9	7.400	.1	12.400	.1	17.400	.0	22.400	.0
2.500	.7	7.500	.1	12.500	.1	17.500	.0	22.500	.0
2.600	.6	7.600	.1	12.600	.1	17.600	.0	22.600	.0
2.700	.5	7.700	.1	12.700	.1	17.700	.0	22.700	.0
2.800	.4	7.800	.1	12.800	.1	17.800	.0	22.800	.0
2.900	.3	7.900	.1	12.900	.1	17.900	.0	22.900	.0
3.000	.3	8.000	.1	13.000	.1	18.000	.0	23.000	.0
3.100	.2	8.100	.1	13.100	.1	18.100	.0	23.100	.0
3.200	.2	8.200	.1	13.200	.1	18.200	.0	23.200	.0
3.300	.2	8.300	.1	13.300	.1	18.300	.0	23.300	.0
3.400	.1	8.400	.1	13.400	.1	18.400	.0	23.400	.0
3.500	.1	8.500	.1	13.500	.1	18.500	.0	23.500	.0
3.600	.1	8.600	.1	13.600	.1	18.600	.0	23.600	.0
3.700	.1	8.700	.1	13.700	.1	18.700	.0	23.700	.0
3.800	.1	8.800	.1	13.800	.1	18.800	.0	23.800	.0
3.900	.1	8.900	.1	13.900	.1	18.900	.0	23.900	.0
4.000	.1	9.000	.1	14.000	.1	19.000	.0	24.000	.0
4.100	.1	9.100	.1	14.100	.1	19.100	.0	24.100	.0
4.200	.1	9.200	.1	14.200	.1	19.200	.0	24.200	.0
4.300	.1	9.300	.1	14.300	.1	19.300	.0	24.300	.0
4.400	.1	9.400	.1	14.400	.1	19.400	.0	24.400	.0
4.500	.1	9.500	.1	14.500	.1	19.500	.0	24.500	.0
4.600	.1	9.600	.1	14.600	.1	19.600	.0	24.600	.0
4.700	.1	9.700	.1	14.700	.1	19.700	.0	24.700	.0
4.800	.1	9.800	.1	14.800	.0	19.800	.0		
4.900	.1	9.900	.1	14.900	.1	19.900	.0		

```
   RUNOFF VOLUME =     1.17071 INCHES     =        .7280 ACRE-FEET
   PEAK DISCHARGE RATE =      16.35 CFS  AT   1.500 HOURS   BASIN AREA =   .0117 SQ. MI.
```

```
*
*S ADD BASINS TEMP A AND 3 TO CREATE AP 1**********************************
ADD HYD            ID=21 HYD=AP 1 ID I=20 II=3
PRINT HYD           ID=21 CODE=0
```

HYDROGRAPH FROM AREA AP

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	5.000	.1	10.000	.1	15.000	.1	20.000	.0
.100	.0	5.100	.1	10.100	.1	15.100	.1	20.100	.0
.200	.0	5.200	.1	10.200	.1	15.200	.1	20.200	.0
.300	.0	5.300	.1	10.300	.1	15.300	.1	20.300	.0
.400	.0	5.400	.1	10.400	.1	15.400	.1	20.400	.0
.500	.0	5.500	.1	10.500	.1	15.500	.1	20.500	.0
.600	.0	5.600	.1	10.600	.1	15.600	.1	20.600	.0
.700	.0	5.700	.1	10.700	.1	15.700	.1	20.700	.0
.800	.0	5.800	.1	10.800	.1	15.800	.1	20.800	.0
.900	.0	5.900	.1	10.900	.1	15.900	.1	20.900	.0
1.000	.0	6.000	.1	11.000	.1	16.000	.1	21.000	.0
1.100	.0	6.100	.1	11.100	.1	16.100	.1	21.100	.0
1.200	.5	6.200	.1	11.200	.1	16.200	.1	21.200	.0
1.300	2.2	6.300	.1	11.300	.1	16.300	.1	21.300	.0
1.400	12.3	6.400	.1	11.400	.1	16.400	.1	21.400	.0
1.500	21.1	6.500	.1	11.500	.1	16.500	.1	21.500	.0
1.600	18.7	6.600	.1	11.600	.1	16.600	.1	21.600	.0
1.700	12.6	6.700	.1	11.700	.1	16.700	.1	21.700	.0
1.800	8.3	6.800	.1	11.800	.1	16.800	.1	21.800	.0
1.900	5.7	6.900	.1	11.900	.1	16.900	.1	21.900	.0
2.000	4.3	7.000	.1	12.000	.1	17.000	.1	22.000	.0
2.100	3.1	7.100	.1	12.100	.1	17.100	.1	22.100	.0
2.200	2.1	7.200	.1	12.200	.1	17.200	.1	22.200	.0
2.300	1.5	7.300	.1	12.300	.1	17.300	.1	22.300	.0
2.400	1.2	7.400	.1	12.400	.1	17.400	.1	22.400	.0
2.500	1.0	7.500	.1	12.500	.1	17.500	.1	22.500	.0
2.600	.8	7.600	.1	12.600	.1	17.600	.1	22.600	.0
2.700	.6	7.700	.1	12.700	.1	17.700	.1	22.700	.0
2.800	.5	7.800	.1	12.800	.1	17.800	.1	22.800	.0
2.900	.4	7.900	.1	12.900	.1	17.900	.1	22.900	.0
3.000	.3	8.000	.1	13.000	.1	18.000	.1	23.000	.0
3.100	.3	8.100	.1	13.100	.1	18.100	.1	23.100	.0
3.200	.2	8.200	.1	13.200	.1	18.200	.1	23.200	.0
3.300	.2	8.300	.1	13.300	.1	18.300	.0	23.300	.0
3.400	.2	8.400	.1	13.400	.1	18.400	.0	23.400	.0
3.500	.2	8.500	.1	13.500	.1	18.500	.1	23.500	.0
3.600	.1	8.600	.1	13.600	.1	18.600	.0	23.600	.0
3.700	.1	8.700	.1	13.700	.1	18.700	.0	23.700	.0
3.800	.1	8.800	.1	13.800	.1	18.800	.0	23.800	.0
3.900	.1	8.900	.1	13.900	.1	18.900	.0	23.900	.0
4.000	.1	9.000	.1	14.000	.1	19.000	.0	24.000	.0
4.100	.1	9.100	.1	14.100	.1	19.100	.0	24.100	.0
4.200	.1	9.200	.1	14.200	.1	19.200	.0	24.200	.0
4.300	.1	9.300	.1	14.300	.1	19.300	.0	24.300	.0
4.400	.1	9.400	.1	14.400	.1	19.400	.0	24.400	.0
4.500	.1	9.500	.1	14.500	.1	19.500	.0	24.500	.0
4.600	.1	9.600	.1	14.600	.1	19.600	.0	24.600	.0
4.700	.1	9.700	.1	14.700	.1	19.700	.0	24.700	.0
4.800	.1	9.800	.1	14.800	.1	19.800	.0		
4.900	.1	9.900	.1	14.900	.1	19.900	.0		

```
    RUNOFF VOLUME =     1.06283 INCHES     =        .9200 ACRE-FEET
    PEAK DISCHARGE RATE =      21.13 CFS  AT   1.500 HOURS   BASIN AREA =    .0162 SQ. MI.


*
*
*
FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 09:47:01
```

DEVELOPED CONDITIONS AHYMO INPUT FILE

```
*S  VALLE PRADO UNIT 3 SUBDIVISION DRAINAGE BASIN (D) PROPOSED
*S  100 YEAR - 24 HOUR STORM
*S
*  CREATED OCTOBER 6, 2014
*
*
*CONVERT TO NMHYMO
START                 TIME=0.0 HR  PUNCH CODE=0
*****************************************************
LOCATION       NM
*
*****************************************************
*
*****************************************************
*100 YEAR - 24 HOUR
RAINFALL               TYPE=2  RAIN QUARTER=0
                      RAIN ONE=1.84 IN  RAIN SIX=2.20 IN
                      RAIN DAY=2.66 IN  DT=0.10 HRS

*S
*S                     **********************
*S                     *COMPUTE ONSITE BASINS*
*s                     **********************
*S
*S
*S
*S COMPUTE BASIN 1 ***************************************************
*
COMPUTE NM HYD        ID=1 HYD=1  AREA=0.004571 PER A=40 PER B=25
                     PER C=25 PER D=10  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=1   CODE=1
*
*S COMPUTE BASIN 2 ***************************************************
COMPUTE NM HYD        ID=2 HYD=2  AREA=0.007088  PER A=0 PER B=31
                     PER C=31 PER D=38  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=2   CODE=1
*
*S COMPUTE BASIN 3 ***************************************************
COMPUTE NM HYD        ID=3 HYD=3  AREA=0.002524  PER A=0 PER B=27
                     PER C=27 PER D=46  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=3   CODE=1
*
*S COMPUTE OFFSITE BASIN 1 *******************************************
COMPUTE NM HYD        ID=10 HYD=OFF.1  AREA=0.002282  PER A=70 PER B=15
                     PER C=15 PER D=0  TP=-0.1715  RAINFALL=-1
PRINT HYD               ID=10   CODE=1
*
*S ADD BASINS 1 AND 2 TO CREATE TEMP A ********************************
ADD HYD              ID=20 HYD=TEMP.A ID I=1 II=2
PRINT HYD             ID=20 CODE=0
*
*S ADD BASINS TEMP A AND 3 TO CREATE AP 1*****************************
ADD HYD              ID=21 HYD=AP 1 ID I=20 II=3
PRINT HYD             ID=21 CODE=0
*
*
*
FINISH
```

APPENDIX B

STREET HYDRAULICS AND STORM DRAIN INLET ANALYSIS

Two Rock_sta 19+00.txt

MANNING'S N = 0.017 SLOPE = 0.053

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1.0	0.0	0.9	5.0	11.5	0.1	9.0	37.7	0.7
2.0	8.9	0.7	6.0	23.5	0.4	10.0	38.1	0.7
3.0	9.3	0.7	7.0	35.5	0.1	11.0	47.0	0.9
4.0	9.5	0.0	8.0	37.5	0.0			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS	TOTAL ENERGY (FT)
0.050	0.050	0.039	0.065	1.645	1.668	2.484	0.093
0.100	0.100	0.156	0.414	3.290	2.648	4.048	0.209
0.150	0.150	0.366	1.104	6.318	3.020	6.996	0.292
0.200	0.200	0.795	2.715	11.423	3.415	12.021	0.381
0.250	0.250	1.476	5.950	16.527	4.032	17.047	0.503
0.300	0.300	2.408	11.244	21.631	4.670	22.072	0.639
0.350	0.350	3.591	19.007	26.735	5.293	27.098	0.786
0.400	0.400	4.981	31.171	28.839	6.259	29.123	1.009
0.450	0.450	6.391	47.124	28.942	7.373	29.148	1.296
0.500	0.500	7.803	65.569	29.045	8.403	29.174	1.598
0.550	0.550	9.217	86.329	29.148	9.367	29.199	1.915
0.600	0.600	10.631	109.266	29.251	10.278	29.224	2.243
0.650	0.650	12.047	134.265	29.354	11.145	29.250	2.582
0.700	0.700	13.536	149.977	33.273	11.080	32.217	2.609
0.750	0.750	15.270	167.217	38.202	10.951	37.144	2.615
0.800	0.800	17.250	188.979	43.131	10.955	42.072	2.667

CAPACITY

BASIN 3 4.4 cfs < 31.2 cfs CAPACITY ∴ OK

FLOW DEPTH @ 4.4 cfs ≈ 0.23'

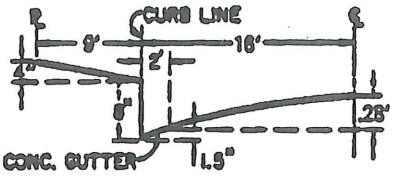
INLET CAPACITY: SINGLE A INLET = 2.7 cfs
(SEE NOMOGRAPH)

TWO A INLETS = 5.4 cfs > 4.4 cfs

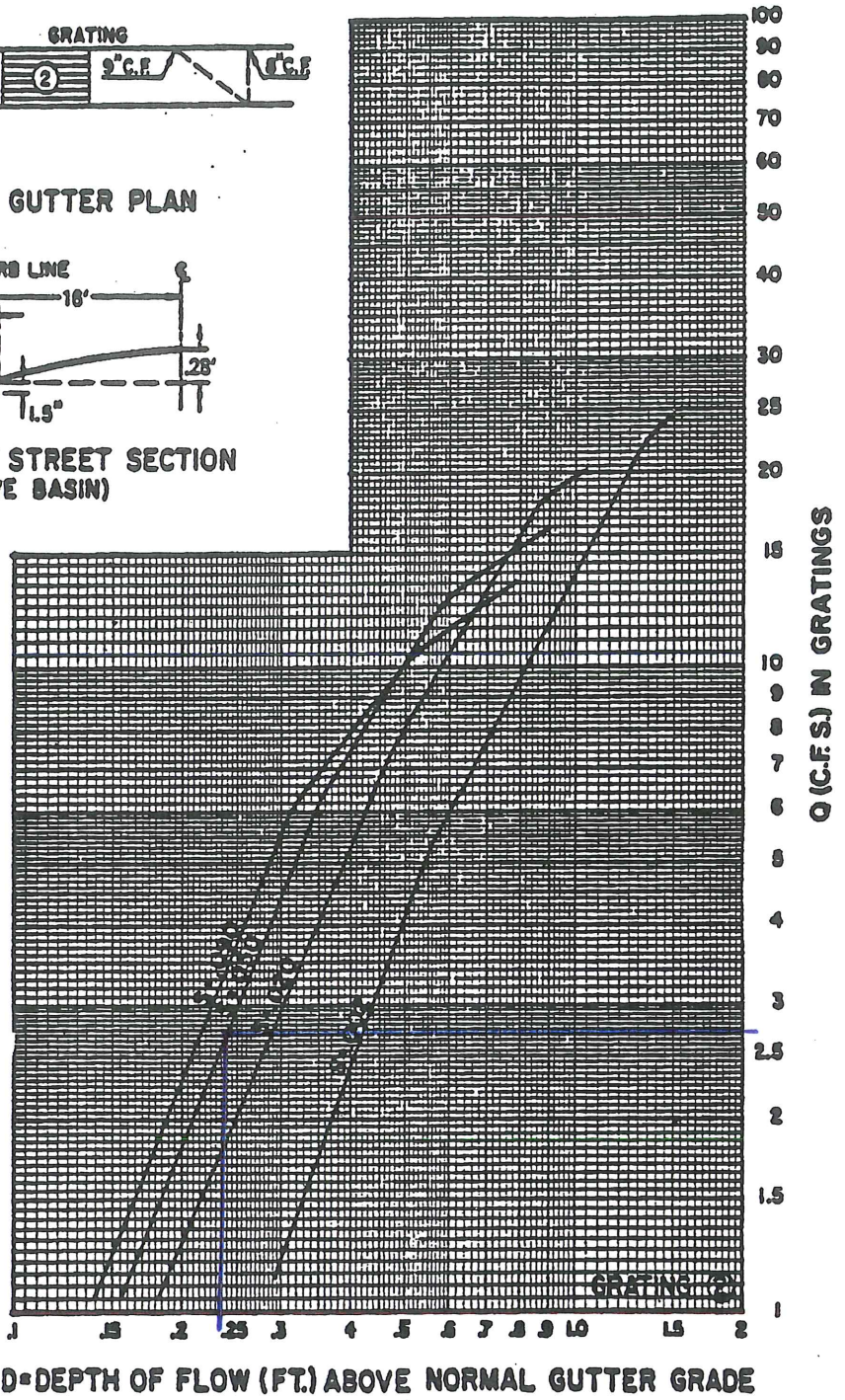
NO BY PASS FLOW

GRATING CAPACITIES FOR TYPE "A" , "C" and "D"

GRATING & GUTTER PLAN



TYPICAL HALF STREET SECTION
(ABOVE BASIN)



D = 0.23'
S = 5.3%
Q = 2.7 cfs

PLATE 22.3 D-5

B-2

Tree Line Ave Sta 13+00.txt

MANNING'S N = 0.017 SLOPE = 0.013

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1.0	0.0	0.5	5.0	11.5	0.1	9.0	37.7	0.3
2.0	8.9	0.3	6.0	23.5	0.4	10.0	38.1	0.3
3.0	9.3	0.3	7.0	35.5	0.1	11.0	47.0	0.5
4.0	9.5	0.0	8.0	37.5	0.0			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS	TOTAL ENERGY (FT)
0.050	0.050	0.040	0.033	1.654	0.839	2.510	0.061
0.100	0.100	0.159	0.212	3.308	1.333	4.100	0.128
0.150	0.150	0.372	0.565	6.346	1.520	7.075	0.186
0.200	0.200	0.806	1.383	11.460	1.717	12.126	0.246
0.250	0.250	1.492	3.022	16.573	2.025	17.178	0.314
0.300	0.300	2.431	5.699	21.687	2.344	22.229	0.385
0.350	0.350	3.643	9.268	28.727	2.544	29.231	0.451
0.400	0.400	5.326	14.859	36.576	2.790	36.159	0.521
0.450	0.450	7.257	22.874	41.505	3.152	41.087	0.605
0.500	0.500	9.434	32.870	46.434	3.484	46.014	0.689

ROLL CURB CAPACITY ≈ 7.8 cfs

FLOW @ LOT 12/13 ≈ 5.0 cfs

∴ ROLL CURB OK

NO INLETS REQUIRED

Tree Line Ave Sta sump.txt

MANNING'S N = 0.017 SLOPE = 0.016

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1.0	0.0	0.9	5.0	11.5	0.1	9.0	37.7	0.7
2.0	8.9	0.7	6.0	23.5	0.4	10.0	38.1	0.7
3.0	9.3	0.7	7.0	35.5	0.1	11.0	47.0	0.9
4.0	9.5	0.0	8.0	37.5	0.0			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS	TOTAL ENERGY (FT)
0.050	0.050	0.039	0.035	1.645	0.905	2.484	0.063
0.100	0.100	0.156	0.225	3.290	1.437	4.048	0.132
0.150	0.150	0.366	0.599	6.318	1.639	6.996	0.192
0.200	0.200	0.795	1.474	11.423	1.853	12.021	0.253
0.250	0.250	1.476	3.230	16.527	2.188	17.047	0.324
0.300	0.300	2.408	6.103	21.631	2.534	22.072	0.400
0.350	0.350	3.591	10.316	26.735	2.873	27.098	0.478
0.400	0.400	4.981	16.918	28.839	3.397	29.123	0.579
0.450	0.450	6.391	25.576	28.942	4.002	29.148	0.699
0.500	0.500	7.803	35.586	29.045	4.560	29.174	0.823
0.550	0.550	9.217	46.854	29.148	5.084	29.199	0.952
0.600	0.600	10.631	59.302	29.251	5.578	29.224	1.084
0.650	0.650	12.047	72.870	29.354	6.049	29.250	1.219
0.700	0.700	13.536	81.398	33.273	6.013	32.217	1.262
0.750	0.750	15.270	90.754	38.202	5.943	37.144	1.299
0.800	0.800	17.250	102.565	43.131	5.946	42.072	1.350

CAPACITY

BASINS 1 & 2: 16.4 cfs < 46.8 cfs ∴ OK

INLET ANALYSIS:

FLOW DEPTH @ 16.4 cfs = 0.4'

SINGLE A INLET IN SUMP @ d = 0.4': Q = 7.7 cfs

2 INLETS = 15.4 cfs < 16.4 cfs

∴ WATER WILL POND TO ≈ d = 0.43'

FOR Q = 16.4 cfs ∴ OK

INLET CAPACITY:

@ TOP OF CURB (d = 0.83') Q ≈ 17.2 cfs

2 INLETS = 34.4 cfs > 32.8 cfs (2 × 100YR)

∴ USE SINGLE A INLET

LOW PT TREE LINE AVE

Single A inlet, in sump condition with curb openings on both sides:

Open Area (for orifice calc in sq. ft.): 3.93

Length of Weir (feet): 11.35

Head (ft)	Head (in)	Weir Q	Orifice Q	Control Q
0.05	0.6	0.34	4.23	0.34
0.1	1.2	0.96	5.99	0.96
0.15	1.8	1.77	7.33	1.77
0.2	2.4	2.72	8.47	2.72
0.25	3	3.80	9.46	3.80
0.3	3.6	5.00	10.37	5.00
0.35	4.2	6.30	11.20	6.30
0.4	4.8	7.70	11.97	7.70
0.45	5.4	9.19	12.70	9.19
0.5	6	10.76	13.39	10.76
0.55	6.6	12.41	14.04	12.41
0.6	7.2	14.14	14.66	14.14
0.65	7.8	15.95	15.26	15.26
0.7	8.4	17.82	15.84	15.84
0.75	9	19.76	16.39	16.39
0.8	9.6	21.77	16.93	16.93
0.85	10.2	23.85	17.45	17.45
0.9	10.8	25.98	17.96	17.96
0.95	11.4	28.18	18.45	18.45
1	12	30.43	18.93	18.93
1.05	12.6	32.74	19.40	19.40
1.1	13.2	35.11	19.85	19.85
1.15	13.8	37.53	20.30	20.30
1.2	14.4	40.00	20.74	20.74

Calculation of open area:

	(in^2)	(ft^2)
Total Grate Area	1000	6.9444444
Cross Bar Area	-366	-2.541667
Supports (ends)	-115.625	-0.802951
Areas Counted Twice	47.75	0.3315972
	566.125	3.9314236

Calculation of Length of Weir:

	(in)	(ft)
Total Perimeter of Grate	90	7.5
Short Cross Bars	-3.5	-0.291667
End Supports	-9.25	-0.770833
Bearing Bars	-13	-1.083333
Curb Openings	72	6
	136.25	11.354167

BASINS 1 & 2 = 16.4 cfs

B-5

APPENDIX C

INROADS STORM DRAIN NEWTOWRK FILE

==========

InRoads Storm & Sanitary Design Log

Drainage File: P:\20150013\CDP\Control\Utility\20150013_SD.sdb

Design File: P:\20150013\CDP\HYDRO\DRAWING1.DWG

Display Log: P:\20150013\CDP\HYDRO\design.log

Date: Wednesday, October 22, 2014 2:36:19 PM

==========

HGL/EGL Computations:

Table A:

Struct_ID	D (in)	Q (cfs)	L (ft)	V (ft/s)	d (ft)	dc (ft)	V^2/2g (ft)	Sf (ft/ft)	Dn_Soffit (ft)	EGLdn (ft)	HGLdn (ft)	Tot_Loss (ft)	EGLup (ft)	HGLup (ft)	Rim_Elev. (ft)
Outfall	-	-	-	-	-	-	-	-	-	-	-	-	-	5482.15	-
SDP44	36	20.80	153.53	5.89	1.50	1.46	0.54	0.0529	5483.65	5482.69	5482.15	8.12	5490.81	5490.27	-
SDMH20	-	-	-	-	-	-	-	-	-	5490.81	5490.27	0.15	5490.96	5490.42	5494.77
(Alternate HGL and EGL Used)													5491.73	5491.40	
SDP43	18	8.20	14.81	4.64	-	-	0.33	0.0061	5491.60	5491.73	5491.40	0.09	5491.82	5491.49	-
IN20	-	-	-	-	-	-	-	-	-	5491.82	5491.49	-	5491.82	5491.49	5494.41
New Branch	-	-	-	-	-	-	-	-	-	-	-	-	5490.81	5490.27	-
SDMH20	-	-	-	-	-	-	-	-	-	5490.81	5490.27	0.14	5490.95	5490.41	5494.77
(Alternate HGL and EGL Used)													5491.73	5491.40	
SDP42	18	8.20	16.19	4.64	-	-	0.33	0.0061	5491.60	5491.73	5491.40	0.10	5491.83	5491.50	-
IN19	-	-	-	-	-	-	-	-	-	5491.83	5491.50	-	5491.83	5491.50	5494.41
New Branch	-	-	-	-	-	-	-	-	-	-	-	-	5490.81	5490.27	-
SDMH20	-	-	-	-	-	-	-	-	-	5490.81	5490.27	0.08	5490.89	5490.35	5494.77
SDP41	24	4.40	45.12	7.89	0.47	0.73	0.97	-	5490.70	5491.32	5490.35	-	5491.20	5490.23	-
SDMH19	-	-	-	-	-	-	-	-	-	5491.20	5490.23	-	5491.20	5490.23	5494.98
SDP15	24	4.40	66.88	5.36	0.61	0.73	0.45	-	5491.86	5490.93	5490.48	-	5491.51	5491.06	-
Junction	-	-	-	5.36	-	-	0.45	-	-	-	-	-	5491.51	5491.06	-
SDP19	24	4.40	63.33	5.36	0.61	0.73	0.45	-	5492.45	5491.51	5491.06	-	5492.06	5491.61	-
SDMH8	-	-	-	-	-	-	-	-	-	5492.06	5491.61	-	5492.06	5491.61	5495.76
SDP10	24	4.40	41.90	10.09	0.39	0.73	1.58	-	5493.10	5493.20	5491.61	-	5495.09	5493.50	-
SDMH1	-	-	-	-	-	-	-	-	-	5495.09	5493.50	-	5495.09	5493.50	5497.68
SDP9	18	2.20	17.98	10.92	0.26	0.56	1.85	-	5494.69	5495.36	5493.50	-	5497.02	5495.17	-
IN17	-	-	-	-	-	-	-	-	-	5497.02	5495.17	-	5497.02	5495.17	5498.74
New Branch	-	-	-	-	-	-	-	-	-	-	-	-	5495.09	5493.50	-
SDMH1	-	-	-	-	-	-	-	-	-	5495.09	5493.50	-	5495.73	5494.15	5497.68
(Alternate HGL and EGL Used)													5495.02	5494.81	
SDP13	18	2.20	21.99	3.64	0.56	0.56	0.21	0.0049	5495.28	5495.02	5494.81	0.11	5495.13	5494.92	-
IN18	-	-	-	-	-	-	-	-	-	5495.13	5494.92	-	5495.13	5494.92	5497.71

C-1

Table B:

LOSSES Str_ID	Hf	Hb	Hstr	Hc	He	Hj	Total	LOSS_COEFFICENTS Dstr	Ko	CD	Cd	Cq	Cp	Cb	K
Outfall	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SDP44	8.12	-	-	-	-	-	8.12	-	-	-	-	-	-	-	-
SDMH20	-	-	0.15	-	-	-	0.15	1.67	1.234	1.000	0.352	0.638	1.000	1.000	0.277
SDP43	0.09	-	-	-	-	-	0.09	-	-	-	-	-	-	-	-
IN20	-	-	-	-	-	-	-	0.91	-	-	-	-	-	-	-
New Branch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SDMH20	-	-	0.14	-	-	-	0.14	1.67	1.318	1.000	0.352	0.552	1.000	1.000	0.256
SDP42	0.10	-	-	-	-	-	0.10	-	-	-	-	-	-	-	-
IN19	-	-	-	-	-	-	-	0.92	-	-	-	-	-	-	-
New Branch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SDMH20	-	-	0.08	-	-	-	0.08	1.67	0.234	1.000	0.352	1.795	1.000	1.000	0.148
SDP41	-	-	-	-	-	-	SuperCrt	-	-	-	-	-	-	-	-
SDMH19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SDP15	-	-	-	-	-	-	SuperCrt	-	-	-	-	-	-	-	-
Junction	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SDP19	-	-	-	-	-	-	SuperCrt	-	-	-	-	-	-	-	-
SDMH8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SDP10	-	-	-	-	-	-	SuperCrt	-	-	-	-	-	-	-	-
SDMH1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SDP9	-	-	-	-	-	-	SuperCrt	-	-	-	-	-	-	-	-
IN17	-	-	-	-	-	-	-	0.26	-	-	-	-	-	-	-
New Branch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SDMH1	-	-	-	-	-	-	-	1.04	-	-	-	-	-	-	-
SDP13	0.11	-	-	-	-	-	0.11	-	-	-	-	-	-	-	-
IN18	-	-	-	-	-	-	-	1.04	-	-	-	-	-	-	-

C-2

EXHIBITS

EXHIBIT 1: PRELIMINARY PLAT

EXHIBIT 2: UNIT 3 BASIN MAP

EXHIBIT 3: INLET AND STORM DRAIN NETWORK MAP

EXHIBIT 4: GRADING PLAN

EXHIBIT 5: SUPPLEMENTAL EXHIBITS FROM DMP

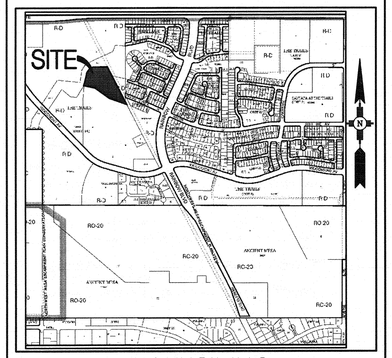
EXHIBIT 1

PRELIMINARY PLAT

PRELIMINARY PLAT FOR
VALLE PRADO UNIT 3
at the TRAILS UNIT 3A

BEING A REPLAT OF
TRACT F, VALLE PRADO
UNIT 1 AND TRACT A,
VALLE PRADO UNIT 2

NOVEMBER, 2014



VICINITY MAP

NOT TO SCALE ZONE ATLAS C-09-Z

KEYED NOTES

(A) 10' PUBLIC UTILITY EASEMENT. GRANTED BY THIS PLAT.

(B) EXISTING 50' SOUTHERN UNION GAS COMPANY RIGHT OF WAY EASEMENT FILED SEPTEMBER 16, 1930 IN BOOK 112, PAGE 515 AND FILED MARCH 29, 1956 IN BOOK D346, PAGE 356 AS DOCUMENT NO. 90568 AND N.M. STATE LAND OFFICE DEED OF RIGHT OF WAY AND EASEMENT NO. 646, DATED OCTOBER 3, 1930.

(C) EXISTING PUBLIC ROADWAY EASEMENT GRANTED TO THE CITY OF ALBUQUERQUE BY PLAT FILED DECEMBER 21, 2007 IN PLAT BOOK 2007C, PAGE 352. A PORTION TO BE VACATED WITH THIS PLAT

(D) EXISTING 10'X 20' QWEST UNDERGROUND UTILITY EASEMENT GRANTED BY PLAT FILED MARCH 16, 2006 IN BOOK 2006C, PAGE 85

(E) PRIVATE ACCESS EASEMENT FOR THE USE AND BENEFIT OF LOT 24 GRANTED WITH THIS PLAT.

Boundary Curve Table

ID	ARC	RADIUS	DELTA	TANGENT
C1	49.83'	651.00'	04°23'10"	24.93'
C2	50.66'	30.00'	96°45'03"	33.76'
C3	36.29'	25.00'	83°09'38"	22.18'
C4	8.58'	499.00'	00°59'06"	4.29'
C5	36.33'	394.00'	05°16'57"	18.18'
C6	39.27'	25.00'	90°00'00"	25.00'
C7	39.27'	25.00'	90°00'00"	25.00'
C8	39.27'	25.00'	90°00'00"	25.00'
C9	64.63'	326.50'	11°20'31"	32.42'
C10	45.61'	25.00'	104°31'52"	32.31'
C11	33.46'	25.00'	76°41'22"	19.78'
C12	98.55'	373.50'	15°07'05"	49.56'

Boundary Tangent Table

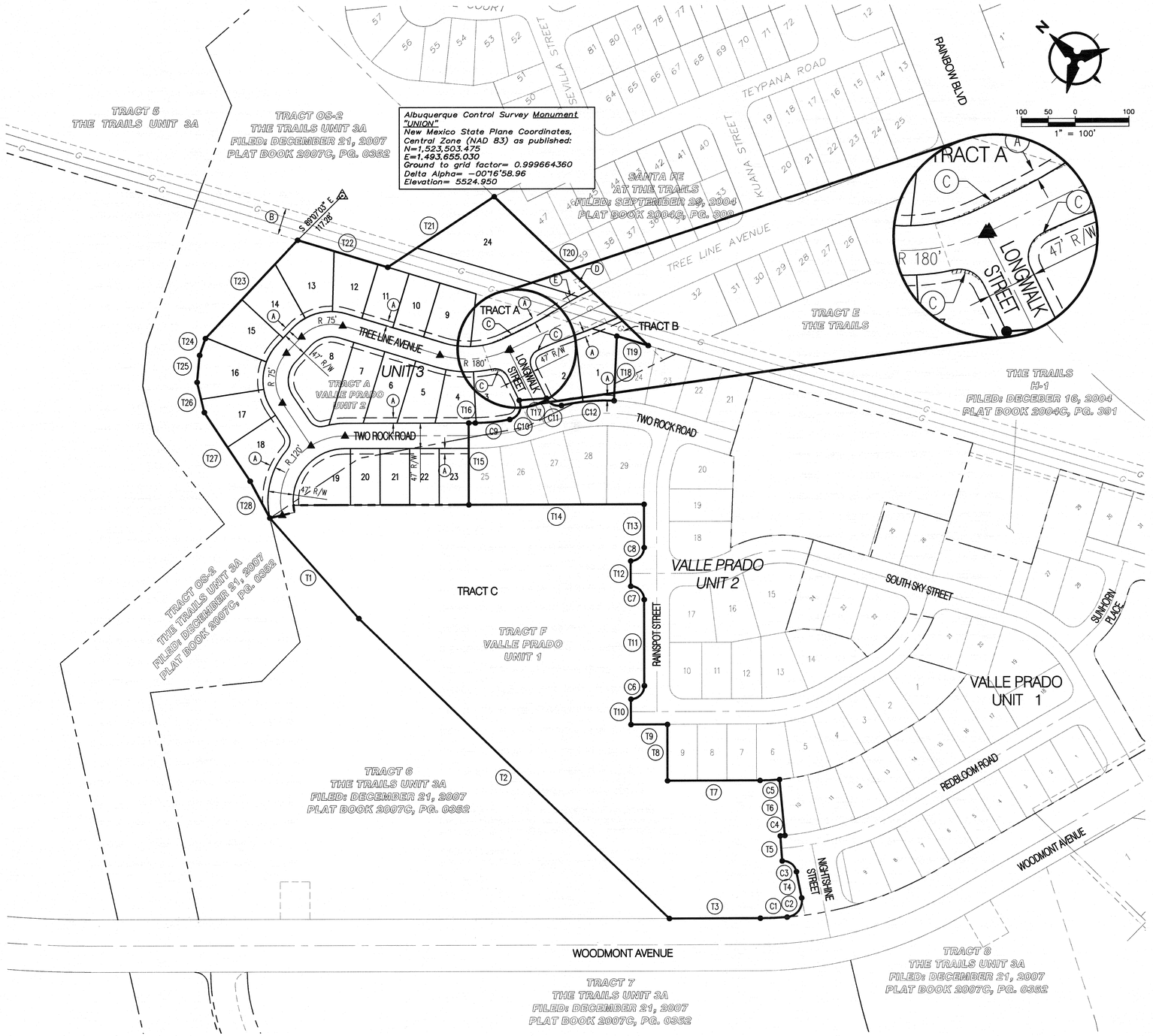
ID	BEARING	LENGTH
T1	S04°25'48"W	249.53'
T2	S00°00'00"E	803.67'
T3	S44°10'54"E	169.01'
T4	N34°40'53"E	49.76'
T5	N41°31'15"E	47.00'
T6	N40°32'09"E	105.00'
T7	N44°10'54"W	172.00'
T8	N45°49'06"E	105.00'
T9	N44°10'54"W	67.71'
T10	N45°49'06"E	47.00'
T11	N45°49'06"E	160.00'
T12	N45°49'06"E	47.00'
T13	N45°49'06"E	80.00'
T14	N44°10'54"W	325.79'

Boundary Tangent Table

ID	BEARING	LENGTH
T15	N45°49'06"E	152.00'
T16	S44°10'54"E	12.24'
T17	S48°19'15"E	50.60'
T18	N48°22'25"E	120.42'
T19	S27°16'28"E	60.99'
T20	N00°05'44"E	399.19'
T21	N77°45'21"W	237.91'
T22	N27°16'30"W	174.90'
T23	S89°01'47"W	250.90'
T24	S64°57'37"W	33.00'
T25	S51°14'55"W	50.59'
T26	S32°26'33"W	57.66'
T27	S12°11'46"W	153.58'
T28	S17°42'46"W	77.52'

LEGEND

- SUBDIVISION BOUNDARY LINE
- TRACT BOUNDARY
- NEW LOT LINE
- ADJOINING PROPERTY LINE
- ▲ CENTERLINE MONUMENT TO BE INSTALLED
- △ CITY OF ALBUQUERQUE SURVEY CONTROL MONUMENT



LEGAL DESCRIPTION

Tract F, Valle Prado Unit 1 City of Albuquerque, Bernalillo County, New Mexico, as the same is shown and designated on the plat entitled "SUBDIVISION PLAT OF VALLE PRADO UNIT 1 (LOTS 1-32 & TRACTS A-F & OS-3A), CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO", filed in the office of the County Clerk of Bernalillo County, New Mexico, on _____, in Plat Book _____, Page _____, as Documnet No. _____, and Tract A, Valle Prado Unit 2 City of Albuquerque, Bernalillo County, New Mexico, as the same is shown and designated on the plat entitled "SUBDIVISION PLAT OF VALLE PRADO UNIT 2 (LOTS 1-29 & TRACT A), CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO", filed in the office of the County Clerk of Bernalillo County, New Mexico, on _____, in Plat Book _____, Page _____, as Documnet No. _____.

GENERAL NOTES

1. EXISTING ZONING: SU-2, VTSL, VOLCANO TRAILS/SUBURBAN RESIDENTIAL SMALL LOT
   PROPOSED ZONING: SU-2, VTSL, VOLCANO TRAILS/SUBURBAN RESIDENTIAL SMALL LOT
2. PROPOSED ACREAGE: 14.50 AC
   NUMBER OF LOTS: 24
   PROPOSED DENSITY: 1.66 DU/AC
3. MIN. LOT DIMENSIONS: 55' X 105'
   MINIMUM LOT AREA: 5,775 SQFT
4. SEWER AND WATER ARE PUBLIC TO BE OWNED AND MAINTAINED BY THE ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY. STREET AND STORM DRAIN IMPROVEMENTS ARE PUBLIC TO BE OWNED AND MAINTAINED BY THE CITY OF ALBUQUERQUE.
5. LOT SETBACKS SHALL CONFORM TO THE VOLCANO TRAILS SECTOR DEVELOPMENT PLAN.
6. WOODMONT AVENUE IMPROVEMENTS ACROSS TRACT C FRONTAGE FINANCIALLY GUARANTEED WITH VALLE PRADO UNIT 1.

SITE DATA

ZONE ATLAS NO.	C-09-Z
ZONING	SU-2, VTSL
MILES OF FULL WIDTH STREETS CREATED	0.26 MILES
NO. OF EXISTING TRACTS	2
NO. OF LOTS CREATED	24
NO. OF HOA TRACTS CREATED	2
NO. OF REMAINDER TRACTS CREATED	1

SURVEY NOTES:

1. ALL BOUNDARY CORNERS SHOWN (●) ARE FOUND REBAR W\CAP.
2. ALL STREET CENTERLINE MONUMENTATION SHALL BE INSTALLED AT ALL CENTERLINE PC'S, PTS, ANGLE POINTS, AND STREET INTERSECTIONS AND SHOWN THUS (▲) AND WILL BE MARKED BY (4") ALUMINUM CAP STAMPED "CITY OF ALBUQUERQUE CENTERLINE MONUMENTATION MARKED, DO NOT DISTURB PLS 9750".
3. THE SUBDIVISION BOUNDARY WILL BE TIED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM AS SHOWN.
4. BASIS OF BEARINGS WILL BE NEW MEXICO STATE PLANE BEARINGS.
5. DISTANCES SHALL BE GROUND DISTANCES.
6. MANHOLES WILL BE OFFSET AT ALL POINTS OF CURVATURE, TANGENCY STREET INTERSECTIONS, AND ALL OTHER ANGLE POINTS TO ALLOW USE OF CENTERLINE MONUMENTATION.

APPROVED

(Acting) CITY SURVEYOR — DATE 10/23/14

KELLY CALHOUN
MANAGER, WOODMONT-PASEO, LLC — DATE 10-24-14

Bohannan Huston
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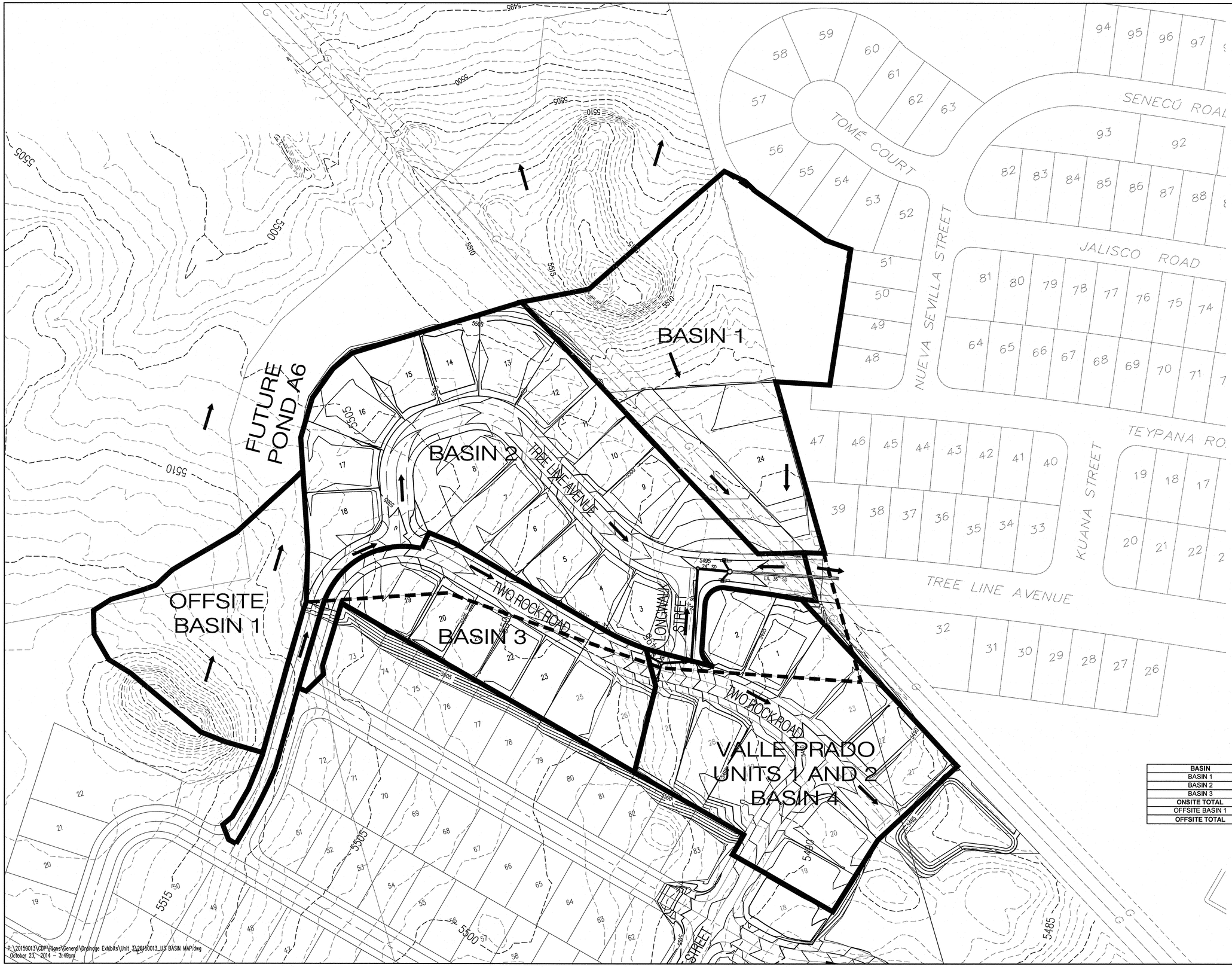
October 21, 2014 - 1:36pm

EXHIBIT 2

UNIT 3 BASIN MAP

VALLE PRADO
UNIT 3 BASIN MAP



N

60 30 0 60
1" = 60'

LEGEND

- BASIN BOUNDARY
- FLOW ARROW
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN

BASIN	AREA	% LAND TREATMENT				Q (100YR-24HR)
BASIN 1	2.9	40.0%	25.0%	25.0%	10.0%	4.8
BASIN 2	4.5	0.0%	31.0%	31.0%	38.0%	11.6
BASIN 3	1.6	0.0%	27.0%	27.0%	46.0%	4.4
ONSITE TOTAL	**9.1**					**20.8**
OFFSITE BASIN 1	0.6	70.0%	15.0%	15.0%	0.0%	1.7
OFFSITE TOTAL	**0.6**					**1.7**

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EXHIBIT 3

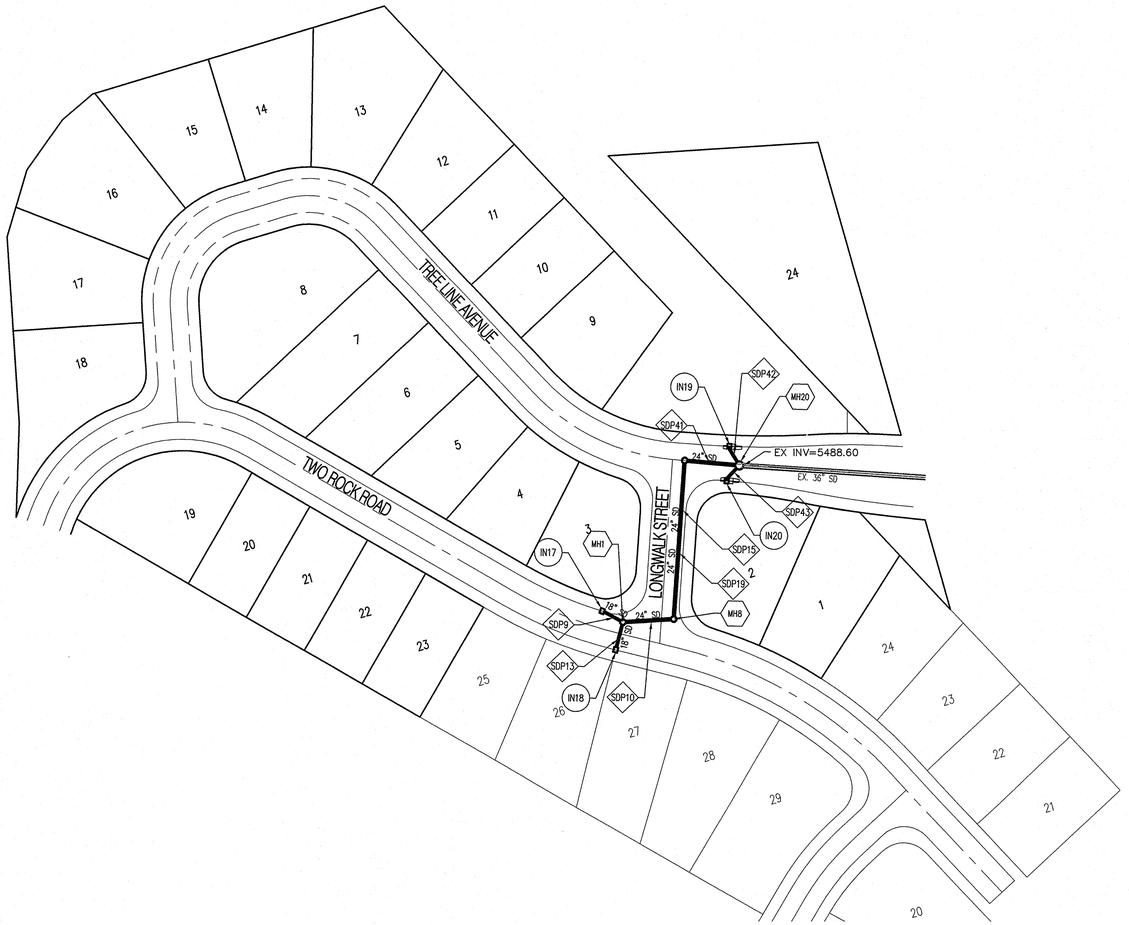
INLET AND STORM DRAIN NETWORK MAP

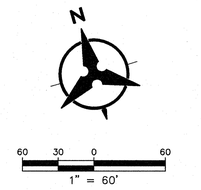
VALLE PRADO
UNIT 3
INLET AND STORM DRAIN NETWORK MAP

SUMMARY OF PIPE FLOWS				
ID	SIZE	SLOPE (%)	Q (cfs) ALLOWABLE	Q (cfs) ACTUAL
SDP9	18"	10.8%	34.5	2.2
SDP10	24"	5.3%	52.2	4.4
SDP13	18"	0.5%	7.4	2.2
SDP15	24"	0.9%	21.5	4.4
SDP19	24"	0.9%	21.5	4.4
SDP41	24"	2.7%	36.8	4.4
SDP42	18"	3.6%	20.1	8.2
SDP43	18"	4.1%	21.2	8.2

SUMMARY OF INLET FLOWS					
ID	STREET SLOPE	WATER DEPTH (ft)	STREET FLOW UPSTREAM OF INLET (cfs)	FLOW CAPTURED BY INLET (cfs)	STREET FLOW BYPASSING INLET (cfs)
IN17	5.00%	0.23	2.2	2.2	0.0
IN18	5.00%	0.23	2.2	2.2	0.0
IN19	1.50%	0.43	8.2	8.2	0.0
IN20	1.50%	0.43	8.2	8.2	0.0

SUMMARY OF MANHOLES FLOWS	
ID	STORM DRAIN FLOWRATE (cfs)
MH1	4.4
MH8	4.4
MH19	4.4
MH20	20.8





LEGEND

- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN INLET

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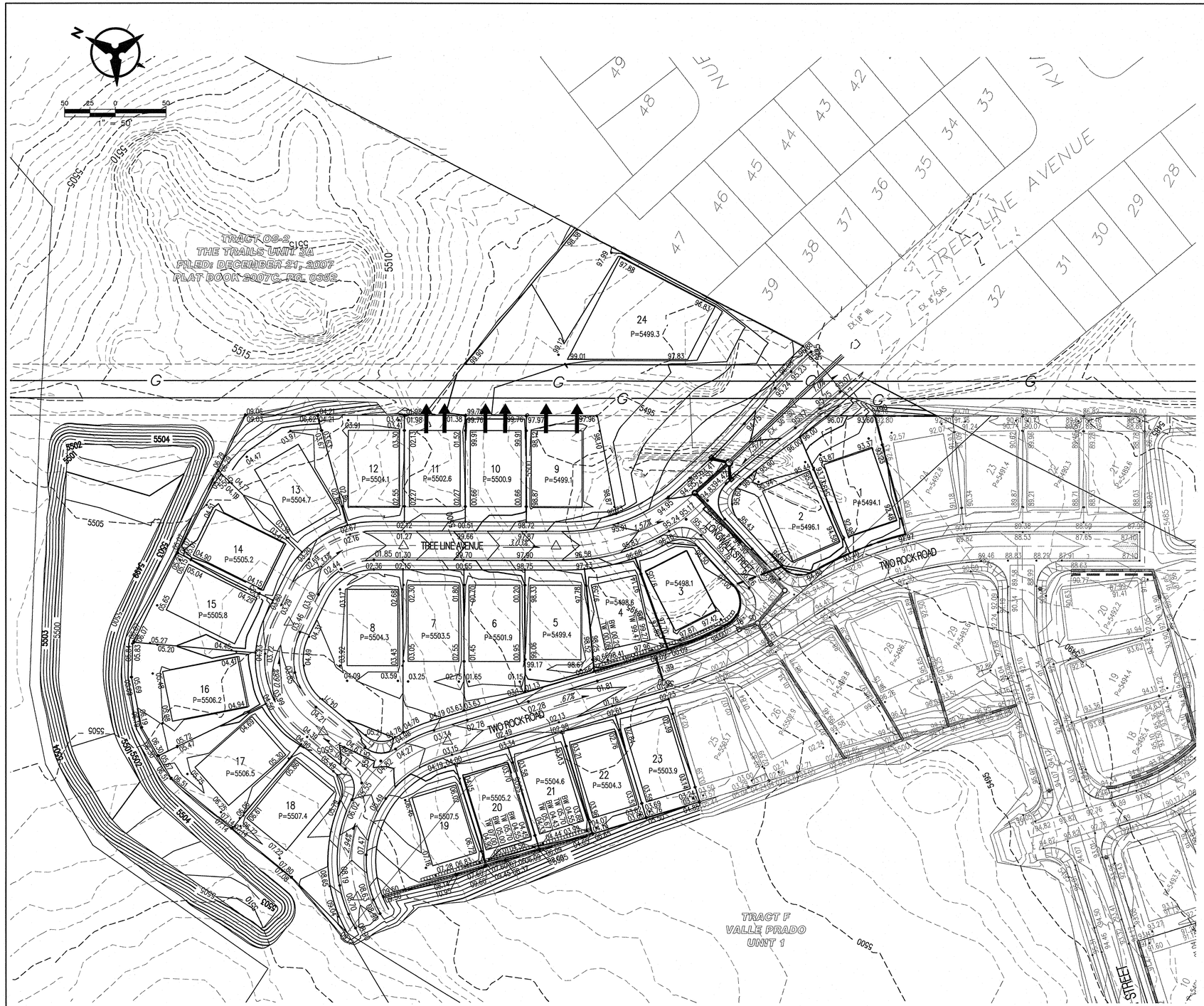
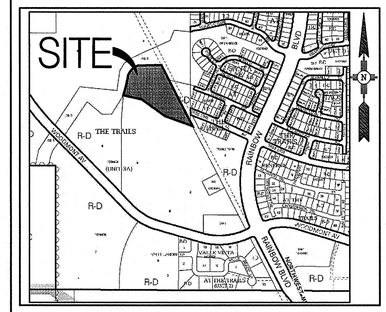
EXHIBIT 4

GRADING PLAN





VICINITY MAP

NOT TO SCALE ZONE ATLAS C-09-Z

GENERAL NOTES

1. CONTRACTOR MUST OBTAIN A TOPSOIL DISTURBANCE PERMIT FROM THE ENVIRONMENTAL HEALTH DIVISION PRIOR TO CONSTRUCTION.

2. THE CONTRACTOR IS TO REFER TO EARTHWORK SPECIFICATION AS NOTED IN THE SOILS REPORT.

3. THE CONTRACTOR SHALL CONFORM TO ALL CITY, COUNTY, STATE, AND FEDERAL DUST CONTROL MEASURES & 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 AS PER DETAIL, SHEET 3B, AND WETTING THE SOIL TO KEEP IT FROM BLOWING.

5. ALL SPOT ELEVATIONS ARE TO FLOWLINE UNLESS OTHERWISE NOTED.

6. BOULDERS GREATER THAN 3 FEET IN DIAMETER EXCAVATED DURING GRADING ACTIVITIES SHALL BE STOCKPILED AND DISPOSED OF AT THE DISCRETION OF THE OWNER.

7. ALL WALLS SHOWN ARE TO BE PLACED ALONG PROPERTY LINE. WALLS ARE SHOWN OFFSET FOR VISUAL PURPOSE ONLY.

LEGEND

- 91.62 — PROPOSED SPOT ELEVATION
- × 92.46 — EXISTING SPOT ELEVATION (GRND & TC)
- EXISTING CURB & GUTTER
- PROPOSED MOUNTABLE CURB & GUTTER
- PROPOSED STANDARD CURB & GUTTER
- 5470 — EXISTING CONTOUR W/ INDEX ELEVATION
- FLOW ARROW
- PROPOSED RETAINING WALL
- PROPOSED GARDEN WALL
- PROPOSED SLOPE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN INLET
- WALL DRAIN

AS-BUILT INFORMATION

CONTRACTOR	DATE
STAKED BY	DATE
INSPECTION BY	DATE
ACCEPTANCE BY	
FIELD VERIFICATION BY	DATE
DRAWING BY	DATE
CORRECTED BY	DATE

BENCH MARKS

ACS MONUMENT STAMPED "UNION"	
GEOGRAPHIC POSITION (NAD 83)	
N.M. STATE PLANE COORDINATES (CENTRAL ZONE)	
N = 1,523,503.475 E = 1,493,655.030	
GROUND-TO-GRID FACTOR = 0.999664360	
$\Delta\alpha$ = -00°16'56.96"	
NAVD 1988 ELEVATION = 5524.950	

MICROFILM INFORMATION

RECORDED BY:	DATE
NO.	

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

SCOTT J. SHELTON 10098 NEW MEXICO PROFESSIONAL ENGINEER 10/22/14

No.	Date	By
REMARKS		
REVISIONS		
DESIGN	DATE:10/14	
Designed By: SJS	DATE:10/14	
Drawn By: DTH	DATE:10/14	
Checked By: SJS		

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CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

VALLE PRADO
UNIT 3
GRADING AND DRAINAGE PLAN

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
XXXXXX	C-09-Z	1	2

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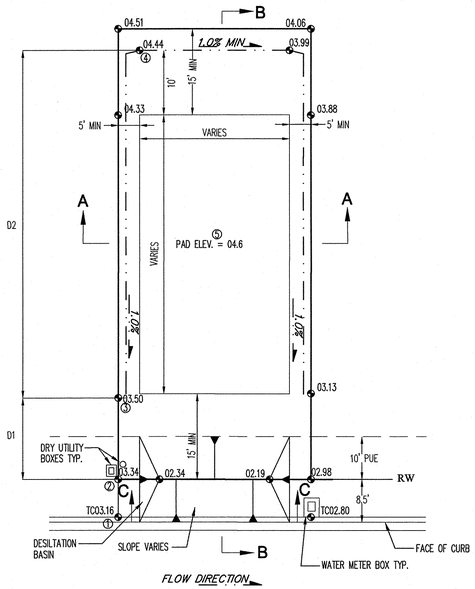
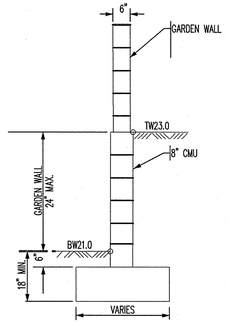


TYPICAL LOT GRADE DETAIL
WITH DESILTATION BASIN FOR SEDIMENTATION CONTROL

NOT TO SCALE

TO SET SPOT② – ADD 0.17' TO SPOT①
TO SET SPOT③ – MULTIPLY D1 BY 1.0% AND ADD TO SPOT②
TO SET SPOT④ – MULTIPLY D2 BY 1.0% AND ADD TO SPOT④
TO SET SPOT⑤ – ADD 0.2' TO SPOT④

BOTTOM OF BASIN IS 1' BELOW PROPERTY LINE ELEVATION.
SEE GRADING PLANS FOR EXACT ELEVATIONS.
CONTRACTOR SHALL CONSTRUCT TEMPORARY DESILTATION BASIN AT EACH LOT.

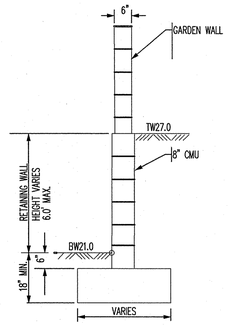


TW=FINISHED GRADE ELEVATION AT TOP OF RETAINING WALL
BW=FINISHED GRADE ELEVATION AT BOTTOM OF RETAINING WALL

TYPICAL GARDEN WALL NOMENCLATURE

NOT TO SCALE

(RETAINING HEIGHT IS TAKEN TO BE DIFFERENCE IN FINISHED GRADES ON LEFT AND RIGHT SIDE OF WALL.)

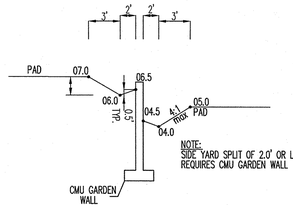


TW=FINISHED GRADE ELEVATION AT TOP OF RETAINING WALL
BW=FINISHED GRADE ELEVATION AT BOTTOM OF RETAINING WALL

TYPICAL RETAINING WALL NOMENCLATURE

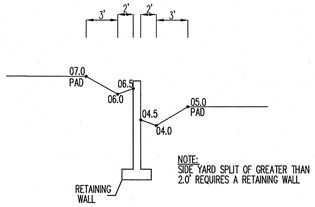
NOT TO SCALE

(RETAINING HEIGHT IS TAKEN TO BE DIFFERENCE IN FINISHED GRADES ON LEFT AND RIGHT SIDE OF WALL.)



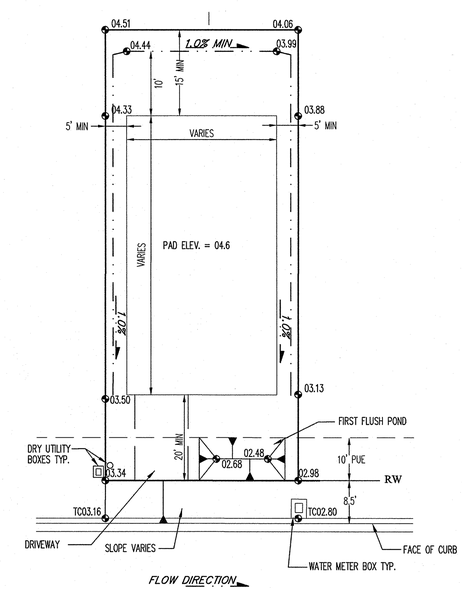
SIDE YARD GARDEN WALL DETAIL

NOT TO SCALE



SIDE YARD RETAINING WALL DETAIL

NOT TO SCALE

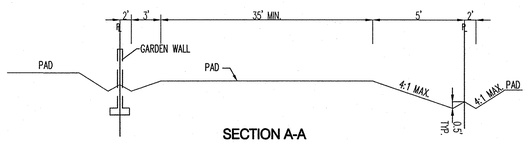


TYPICAL LOT GRADE DETAIL
WITH FIRST FLUSH POND

NOT TO SCALE

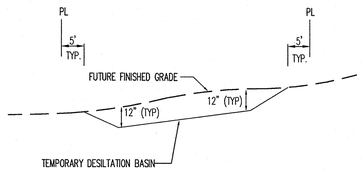
FIRST FLUSH VOLUME REQUIRED:
45'x75' PAD – 47 CUBIC FEET
50'x75' PAD – 53 CUBIC FEET

HOMEBUILDER SHALL CONSTRUCT FIRST FLUSH POND PRIOR TO LANDSCAPING FRONT YARD



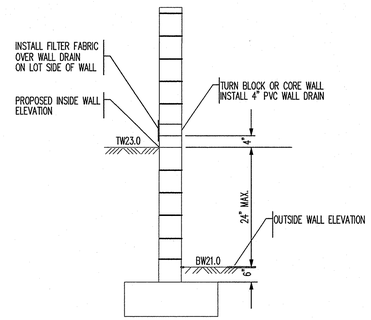
SECTION A-A
TYPICAL SIDE YARD SWALE

NOT TO SCALE



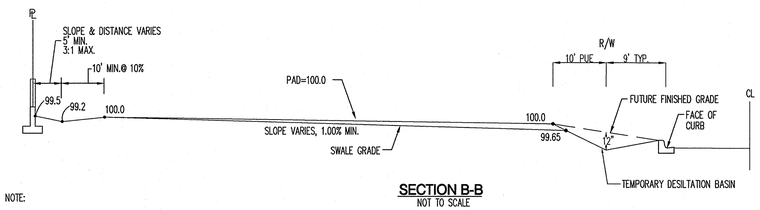
SECTION C-C

NOT TO SCALE



WALL DRAIN DETAIL

NOT TO SCALE



SECTION B-B

NOT TO SCALE

NOTE:

1. CONTRACTOR IS TO MASS GRADE ROADS TO 2' BEYOND FUTURE CURB. EXCESS FROM DRY UTILITY TRENCH IS TO BE USED TO BACK FILL BEHIND CURB.

2. FRONT YARDS ARE TO BE GRADED AS SHOWN ON THIS DETAIL FOR FINAL GRADING AND CERTIFICATION THIS DETAIL TO BE COORDINATED WITH.

3. HOME BUILDER TO BRING FRONT YARD TO ULTIMATE FRONT YARD GRADES AFTER HOME CONSTRUCTION IS COMPLETED. SEE ULTIMATE FRONT YARD GRADING DETAIL ON THIS SHEET.

P:\20150013\CDP\Plans\General\U3\20150013_U3_GP_Details.dwg
October 23, 2014 – 3:20pm

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

BENCH MARKS

ACS MONUMENT STAMPED "UNION"
GEOGRAPHIC POSITION (NAD 83)
N.M. STATE PLANE COORDINATES (CENTRAL ZONE)
N = 1,523,503.475 E = 1,493,655.030
GROUND-TO-GRID FACTOR = 0.999664360
Δα = -00°16'58.96"
NAVD 1988 ELEVATION = 5524.950

AS-BUILT INFORMATION

CONTRACTOR DATE
STAKED BY DATE
INSPECTOR'S MARKINGS BY DATE
FIELD VERIFICATION BY DATE
DRAWING CORRECTED BY DATE

MICROFILM INFORMATION

RECORDED BY DATE
NO.

ENGINEER'S SEAL

SCOTT D. SELLERS
NEW MEXICO
14685
PROFESSIONAL ENGINEER
10/24/14

No.	Date	By
	DESIGN	DATE: 05/2011
	REVISIONS	DATE: 05/2011
	REMARKS	DATE: 05/2011

Designed By: SJS
Drawn By: BJG
Checked By: SJS

Bohannan Huston
www.bhinc.com 800.877.5332

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

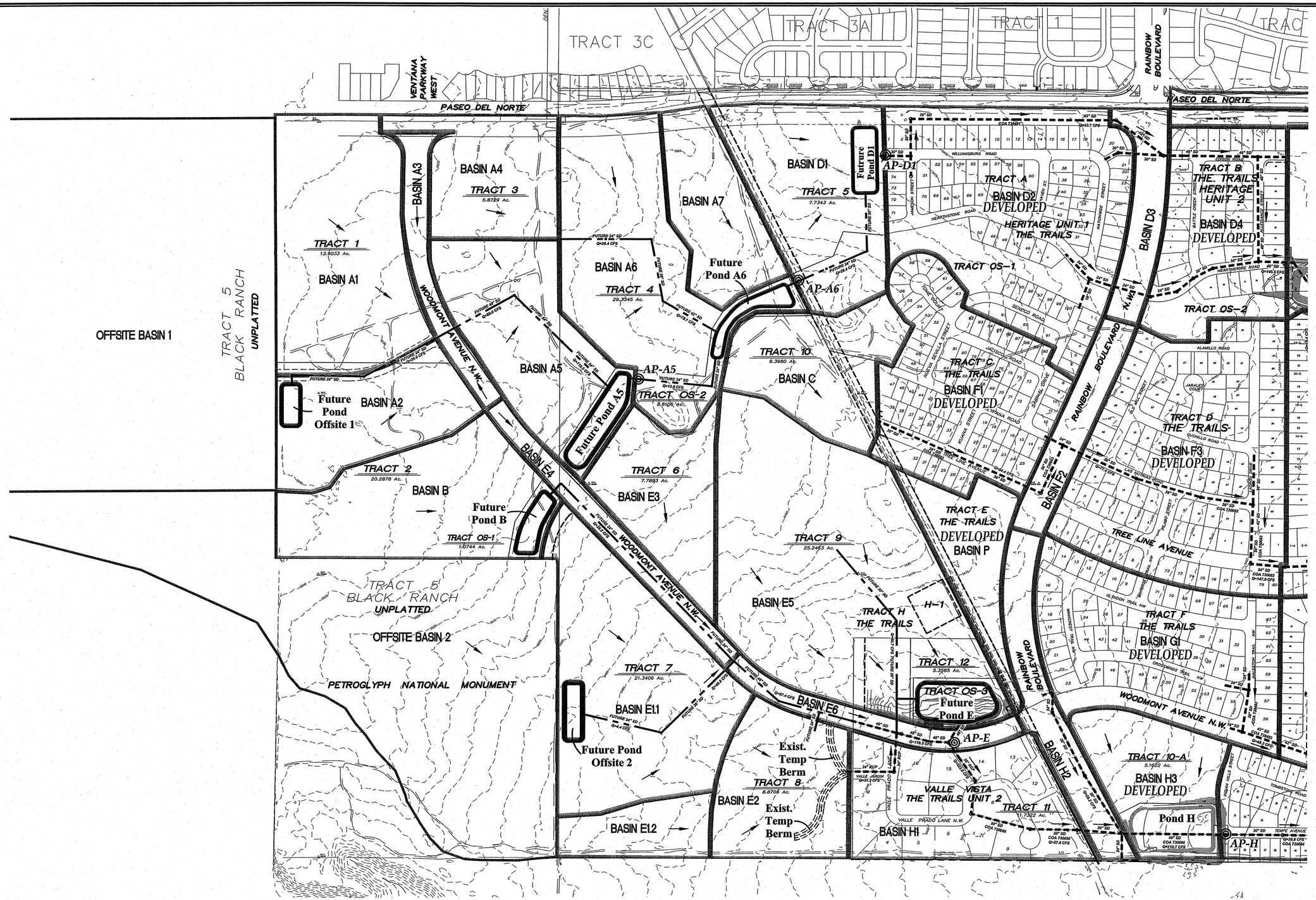
VALLE PRADO
UNIT 3
GRADING AND DRAINAGE DETAILS

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No. XXXXXX | Zone Map No. C-09-Z | Sheet 2 Of 2

EXHIBIT 5

SUPPLEMENTAL EXHIBITS FROM DMP



NOTES:

1. *STORM DRAIN SIZES BASED ON 100-YR, 24-HR STORM FLOWS. FUTURE PROJECTS MAY BE REQUIRED TO INCREASE STORM DRAIN SIZE BASED ON 100-YR, 6-HR STORM FLOWS.*
2. *THE INTENDED FUTURE CONTRIBUTION FROM THE TRAILS UNIT 4 IS 20 CFS TO THE MAXIMUM DOWNSTREAM DISCHARGE OF 62 CFS IN UNIVERSE BLVD.*

LEGEND

- *ANALYSIS POINT*
- *EXISTING STORM DRAIN*
- *FLOW DIRECTION*
- *FUTURE DEVELOPED STORM DRAIN*

N

200' 100' 0 200' 400'

SCALE: 200'

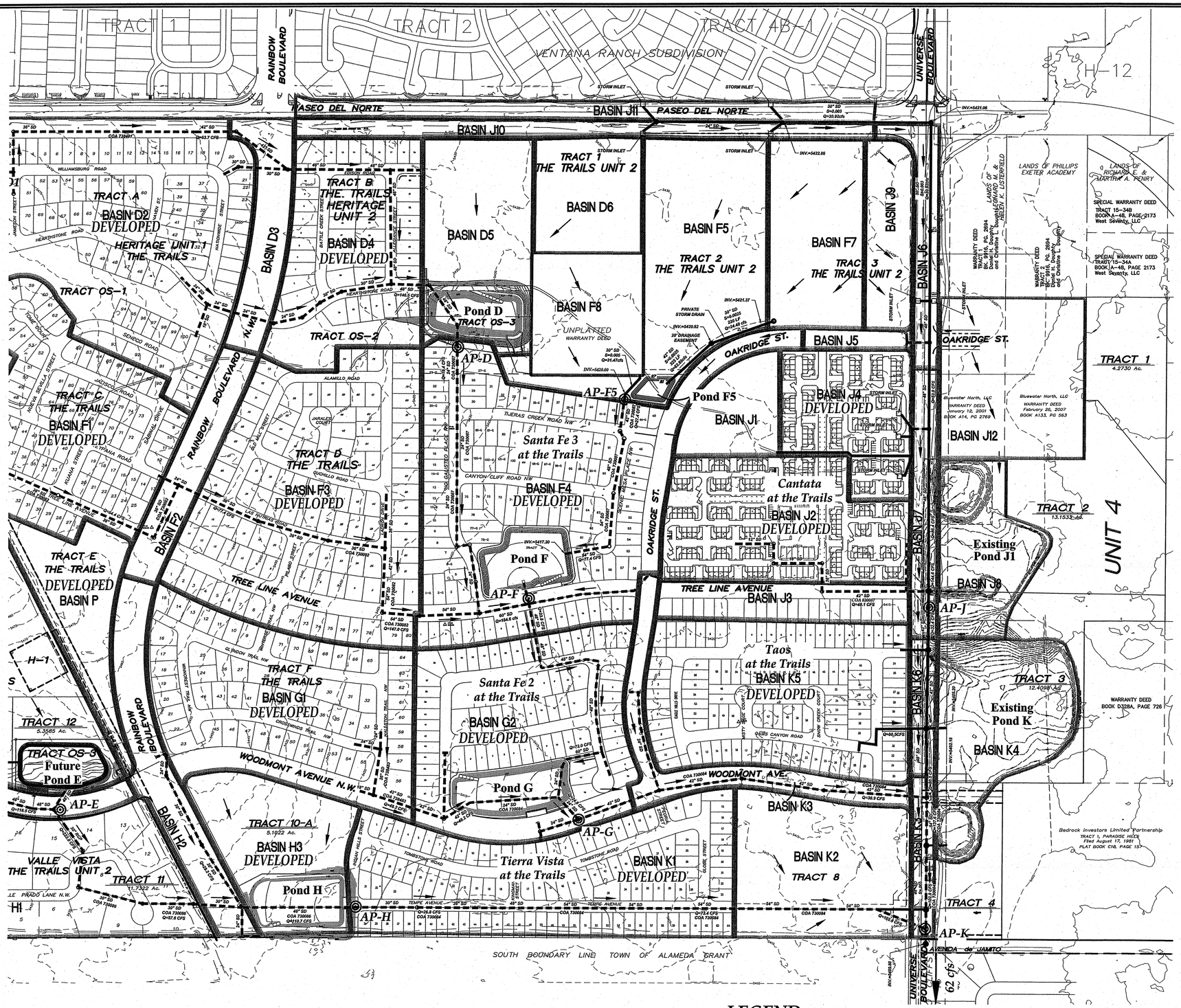
DATUM NAVD 1929

Thompson Engineering Consultants, Inc.
tecnm@yahoo.com
P.O. BOX 65760
ALBUQUERQUE, NM 87193
PHONE: (505) 271-2199
FAX: (505) 830-9248

AMENDMENT TO DMP FOR THE TRAILS UNITS 1,2 AND 3

PLATE 1

DAVID A. THOMPSON 9677 LICENSED PROFESSIONAL ENGINEER 4-14-14



DETENTION POND CHARACTERISTICS

POND	DRAIN AREA (AC)	Q100 IN (CFS)	Q100 OUT (CFS)	BYPASS Q (CFS)	MAX VOL (ac-ft)	V100 (ac-ft)	TOP ELEV	BOTTOM ELEV	WSEL
OFF 1	127.9	37.00	9.25		2.44	2.302	6	0	5.80
A5	166.8	110.22	15.56		4.61	4.004	5516	5511	5515.59
A6	191.4	81.87	15.81		4.72	3.114	5506	5500	5504.64
D1	209.8	60.24	13.41		6.06	5.111	5475	5471	5474.29
D	261.9	154.87	5.93	13.77	6.24	4.035	5436.9	5429.5	5435.03
F5	18.9	62.89	19.84		1.40	1.386	5426	5421	5425.97
F	359.4	255.89	17.66	6.20	11.76	10.383	5424.3	5415.08	5423.56
G	391.8	93.49	7.00	17.61	7.21	2.955	5422.5	5415.67	5419.84
OFF 2	51.5	13.87	4.43		1.08	0.813	5	0	4.19
B	12.8	34.80	3.36		0.99	0.950	5519	5515	5518.86
E	137.0	198.83	6.80	15.30	7.52	6.098	5448	5441.6	5447.02
H	167.0	89.12	5.20	21.60	3.02	2.870	5422	5418.65	5421.89
J	57.9	141.18	6.05	26.34	7.94	3.771	5417	5414	5415.66
K	672.6	189.53	15.81	44.91	14.84	8.391	5409	5404.85	5407.79

ANALYSIS POINT PEAK FLOWS

ANALYSIS POINT	PEAK FLOW
AP-A5	15.56 CFS
AP-A6	15.81 CFS
AP-D1	13.41 CFS
AP-D	19.70 CFS
AP-F5	27.40 CFS
AP-F	23.86 CFS
AP-G	24.61 CFS
AP-E	22.30 CFS
AP-H	26.80 CFS
AP-J	32.39 CFS
AP-K	60.72 CFS

DEVELOPED DRAINAGE BASIN CHARACTERISTICS

BASIN	AREA	LAND TREATMENT				Q	VOL
	ACRES	A	B	C	D	CFS	AC-FT
OFFSITE 1	127.87	100	0	0	0	37.00	4.426
A1	13.50	0	12.5	12.5	75	31.68	2.610
A2	8.52	0	33	33	34	23.43	0.960
A3	3.21	0	5	5	90	11.41	0.606
A4	7.59	0	7.5	7.5	85	26.39	1.381
A5	11.71	0	17	17	66	37.55	1.829
A6	16.97	0	19	19	62	53.44	2.558
A7	6.75	0	12.5	12.5	75	22.52	1.137
C	8.18	0	25	25	50	24.36	1.100
D1	11.62	0	19	19	62	36.60	1.752
D2	22.12	0	28.5	28.5	43	63.65	2.763
D3	3.71	0	5	5	90	13.18	0.701
D4	12.55	0	28.5	28.5	43	36.12	1.568
D5	8.75	0	23	23	54	26.55	1.224
D6	5.00	0	18	18	64	15.89	0.764
F1	14.13	0	21.7	21.8	56.5	43.39	2.025
F2	3.67	0	5	5	90	13.02	0.692
F3	22.80	0	21.7	21.8	56.5	70.02	3.267
F4	24.91	0	25	25	50	74.16	3.349
F5	11.85	0	12.5	12.5	75	39.52	1.996
F7	7.02	0	7.5	7.5	85	24.42	1.278
F8	5.00	0	18	18	64	15.89	0.764
G1	16.20	0	25	25	50	48.23	2.178
G2	16.19	0	25	25	50	48.22	2.177
OFFSITE 2	51.52	100	0	0	0	13.87	1.783
B	12.79	0	34	34	32	34.80	1.407
E1.1	17.62	0	33	33	34	48.45	1.986
E1.2	3.76	0	33	33	34	10.36	0.424
E2	8.63	0	18	18	64	27.42	1.324
E3	7.66	0	25	25	50	22.82	1.030
E4	3.69	0	5	5	90	13.11	0.697
E5	28.17	0	29	29	42	80.67	3.482
E6	3.12	0	5	5	90	11.09	0.590
P	3.41	43	25	25	7	10.08	0.327
H1	11.68	0	16	16	68	37.78	1.856
H2	5.35	0	5	5	90	19.16	1.018
H3	7.62	0	50	20	60	23.79	1.128
J1	3.31	0	12.5	12.5	75	11.04	0.557
J2	10.92	0	12.5	12.5	75	36.40	1.839
J3	3.71	0	19	19	62	11.70	0.560
J4	6.44	0	12.5	12.5	75	21.47	1.084
J5	0.86	0	5	5	90	3.05	0.162
J6	2.70	0	5	5	90	9.59	0.510
J7	2.84	0	5	5	90	10.09	0.536
J8	5.78	0	70	30	0	12.31	0.355
J9	3.51	0	7.5	7.5	85	12.20	0.638
J10	4.02	0	5	5	90	14.27	0.759
J11	4.79	0	5	5	90	16.65	0.886
J12	9.08	100	0	0	0	10.65	0.314
K1	17.11	0	19	19	62	50.54	2.579
K2	9.51	0	15	15	70	29.39	1.537
K3	5.83	0	5	5	90	20.76	1.104
K4	8.58	0	70	30	0	18.28	0.527
K5	15.13	0	19	19	62	47.63	2.281
K6	1.41	0	5	5	90	5.01	0.266

NOTES:

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- EXISTING STORM DRAIN
- FLOW DIRECTION
- FUTURE DEVELOPED STORM DRAIN

N

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DATUM NAVD 1929

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AMENDMENT TO DMP FOR THE TRAILS UNITS 1, 2 AND 3

PLATE 2

NEW MEXICO 9677 REGISTERED PROFESSIONAL ENGINEER 4-14-14