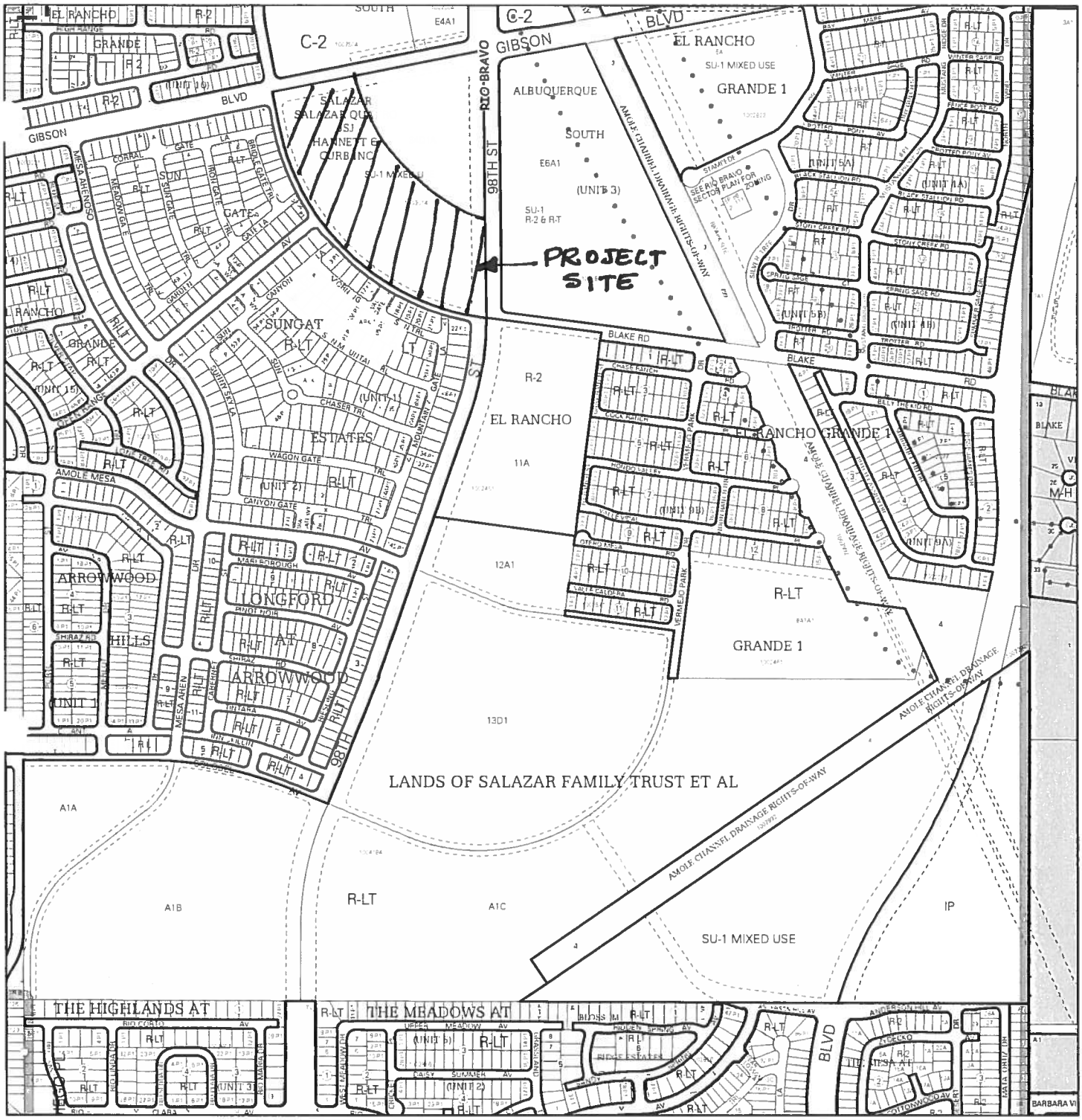
Los Diamantes Subdivision

Drainage Management Plan

MARK GOODWIN & ASSOCIATES, PA

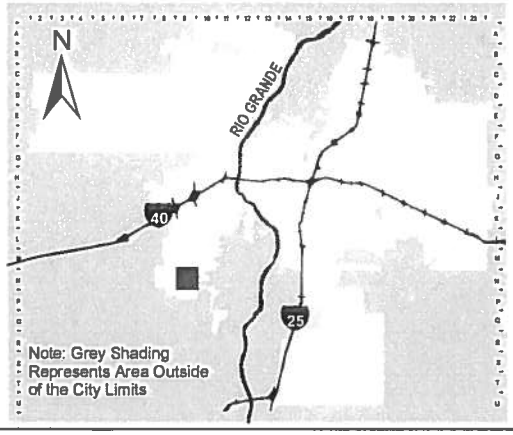
January 2015



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

Albuquerque Geographic Information System

Map amended through: 4/2/2012



Zone Atlas Page:

N-09-Z

Selected Symbols

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

0 750 1 500 Feet

Los Diamantes Drainage Management Plan

The property is bounded by Blake Road to the south and west, by Gibson Blvd. to the north and by 98th Street to the east. The residential portion of the property encompasses 14.52 acres. The residential portion makes up 73% of the total area and will consist of an 82 lot subdivision for single family homes. Since the site is surrounded by developed streets, no offsite flows come onto the project site.

According to the Amole Hubbell Drainage Master Plan Update (2013 Report), this site is identified as sub basin A221 as shown on the Figure 3-7 Proposed Basin Map (see attached). The calculated 100 year peak discharge from this sub basin is 118.26 cfs. The report and construction plans indicate that the runoff is intercepted by a storm drain in Blake Road. This project site will discharge into an existing storm pipe stub out located at the southeast corner of the project site. Refer to attached excerpts from the Amole Hubbell Drainage Master Plan for supporting design information.

There is an existing 72" storm drain in Blake Road, with a 30" storm drain stub out at the intersection of Blake and 98th street. Onsite runoff will be conveyed by surface street flow to the southeast corner of the property and into a detention pond that will also serve to retain the "first flush" from stormwater. A stand pipe configuration will be designed to discharge developed flows into the 72" storm drain in Blake through the connection 30 storm drain stub and retain the first flush. The maximum water depth for the first flush will be less than 1.0 feet. The 100 years discharge from the site is 51.61 cfs with a peak 100 year discharge from the pond calculated to be 49.45 cfs.

HYDROLOGY CALCULATIONS:

N-value = UNITS/ACRE = 82/14.525 = 5.64

For N-value less than 6 =} Treatment D = 7*((N)**2+(5*N))**0.5 = 54

Use Land treatment D = 54

Land treatment C = 23

Land treatment B = 23

AHYMO: Zone Atlas: N-9 =} P(60)=1.90", P(36)=2.25", P(24)= 2.70"

RESULTS: Q(100)= 51.61 cfs (100 year 6 hour)

FIRST FLUSH: (0.34 inches)(632,738 SF)(.54))/(12 inches per foot) = 9,681 cu.ft.

POND SIZE FOR FIRST FLUSH: Area Top = 11,177 sf, Area Bottom = 9,417 sf

Design Volume Retained = 10,145 cu.ft.

Volume Required = 9,681 cu.ft.

DLH 1-14-15 (dmg project 14031)

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

PROJECT Las Diamantes
SUBJECT
BY DATE
CHECKED DATE
SHEET OF

232,685.5 commercial TOTAL

AREA = 632,738.8 SF = 14.525 ACRES = .022695 sq mi

N = UNITS/ACRE = 82/14.525 = 5.64

FOR $N \leq 6 \Rightarrow$ TREATMENT D = $7\sqrt{(N)^2+(5\cdot N)}$

$\Rightarrow$ TR. D = 54.0

ASSUME TR. B = 23.0

TR. C = 23.0

ZONE ATLAS: N-9

P(60) = 1.90"
P(6hr) = 2.25"
P(24hr) = 2.70"

Q = 51.61 cfs.

FIRST FLUSH RETAINAGE

$$\frac{(0.34\ IN)(632,738.8\ SF)(.54)}{(12"/_1)} = 9,681\ CF$$

98'x98'(x 1' deep)

TOP = 101 x 101
BOTTOM = 96'x96'

10,201 = AT
9216 = AB

$A = \pi r^2 = 10,201$

R = 57 FT

11177 = AT
9147 = AB

4% slope, 28'FF $\Rightarrow$ Q = 9cfs WSEL = 0.29' EG = .53'
4% slope 28'FF $\Rightarrow$ Q = 25cfs WSEL = 0.39' EG = .82'

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606; ALBUQUERQUE,NM 87199
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PROJECT Los Diamontes
SUBJECT OUTFALL CALCS
BY DLH DATE 10-30-14
CHECKED ____ DATE ____
SHEET ____ OF ____

ELEV.	STORAGE	OUTFLOW
100.0	0.0	0
101.42	0.2222	.01
102.0	0.3369	35.77
103.0	0.5698	160.87

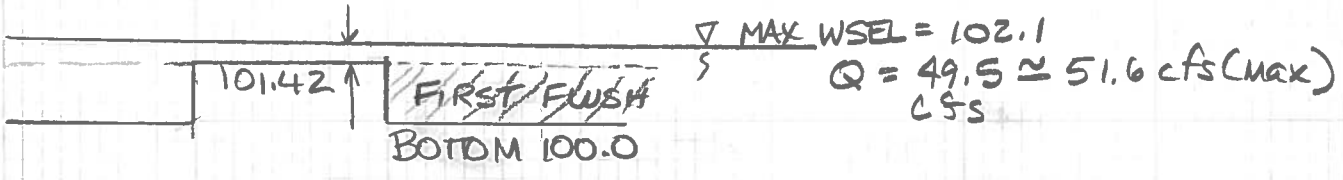
FIRST FLUSH VOL.

$Q = CLH^{3/2}$

$Q = 3(27)(\Delta H)^{3/2}$

@ H = 0.58' ⇒ Q = 35.77 cfs

@ H = 1.58' ⇒ Q = 160.87 cfs



Q = 49.5 ≃ 51.6 cfs (max)
cfs

$2\pi R = 27$

$R = 4.29'$

$D = 8.59'$

FINAL
10-30-14

```
    AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02d
         RUN DATE (MON/DAY/YR) = 10/30/2014
         START TIME (HR:MIN:SEC) = 14:41:31     USER NO.= AHYMO-I-9702dGoodwinM-AH
         INPUT FILE = diamont6.dat

*S**********************************************************
*S
*S                   Los DIAMONTES
*S                   100 YEAR 6 HOUR STORM EVENT
*S
*S                   FILE: DIAMONT6.DAT
*S                   LAST REVISED: 10-27-14
*S                   NOAA ATLAS 2, VOL IV ZONE N 9
START               TIME=0.0 HR PUNCH CODE=0 PRINT LINES=-6
LOCATION            NEW MEXICO
     State of New Mexico 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

RAINFALL            TYPE=1 RAIN QUARTER=0.0
                    RAIN ONE=1.90 IN RAIN SIX=2.25 IN
                    RAIN DAY=2.70 IN DT=0.0333 HRS

               COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
               DT =     .033300 HOURS       END TIME =     5.994000 HOURS
                  .0000   .0018   .0036   .0055   .0074   .0094   .0114
                  .0134   .0155   .0177   .0199   .0221   .0245   .0268
                  .0293   .0318   .0344   .0371   .0399   .0428   .0457
                  .0488   .0520   .0553   .0588   .0624   .0662   .0702
                  .0744   .0788   .0834   .0887   .0943   .1003   .1126
                  .1410   .1848   .2477   .3338   .4470   .5915   .7714
                  .9912  1.2021  1.2887  1.3615  1.4262  1.4850  1.5392
                 1.5894  1.6364  1.6804  1.7218  1.7609  1.7978  1.8327
                 1.8658  1.8971  1.9269  1.9552  1.9820  1.9895  1.9955
                 2.0011  2.0065  2.0117  2.0166  2.0214  2.0259  2.0304
                 2.0346  2.0387  2.0427  2.0466  2.0504  2.0541  2.0576
                 2.0611  2.0645  2.0678  2.0711  2.0743  2.0774  2.0804
                 2.0834  2.0863  2.0891  2.0920  2.0947  2.0974  2.1001
                 2.1027  2.1053  2.1078  2.1103  2.1127  2.1151  2.1175
                 2.1199  2.1222  2.1245  2.1267  2.1289  2.1311  2.1333
                 2.1354  2.1375  2.1396  2.1416  2.1437  2.1457  2.1476
                 2.1496  2.1515  2.1535  2.1554  2.1572  2.1591  2.1609
                 2.1627  2.1645  2.1663  2.1681  2.1698  2.1716  2.1733
                 2.1750  2.1767  2.1783  2.1800  2.1816  2.1832  2.1849
                 2.1865  2.1880  2.1896  2.1912  2.1927  2.1942  2.1958
                 2.1973  2.1988  2.2002  2.2017  2.2032  2.2046  2.2061
                 2.2075  2.2089  2.2103  2.2117  2.2131  2.2145  2.2159
                 2.2172  2.2186  2.2199  2.2213  2.2226  2.2239  2.2252
                 2.2265  2.2278  2.2291  2.2304  2.2316  2.2329  2.2342
                 2.2354  2.2366  2.2379  2.2391  2.2403  2.2415  2.2427
                 2.2439  2.2451  2.2463  2.2475  2.2486  2.2498

*S**********************************************************
*** ******************
*S  LOS DIAMONTES SUBDIVISION
```

```
*** ******************
*** AREA = 14.525 ACRES
*** AREA = 632,738.8 SF
*** ******************
COMPUTE NM HYD       ID=1  HYD NO=100 AREA= 0.022695 SQ MI
                     PER A=0  PER B=23  PER C=23  PER D=54
                     TP=-.1333 HR  MASS RAIN=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   48.385    CFS   UNIT VOLUME =    .9991       B =   526.28      P60 = 1.9000
     AREA =      .012255 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


     K =   .118483HR    TP =   .133300HR    K/TP RATIO =   .888844     SHAPE CONSTANT, N =  3.990548
     UNIT PEAK =   27.767    CFS   UNIT VOLUME =    1.000       B =   354.54      P60 = 1.9000
     AREA =      .010440 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD            ID=1 CODE=1

                                  PARTIAL HYDROGRAPH   100.00


    RUNOFF VOLUME =     1.47740 INCHES     =       1.7882 ACRE-FEET
    PEAK DISCHARGE RATE =     51.61 CFS  AT   1.499 HOURS   BASIN AREA =   .0227 SQ. MI.



*s*******************
*s* ROUTE THRU SE POND
*s*********************************************************************
ROUTE RESERVOIR      ID=12  HYD=POND.12   INFLOW=1   CODE=5
                     OUTFLOW(CFS)   STORAGE(ACFT)     ELEV(FT)
                     0.00        0.0000          100.00
                     0.01        0.22225         101.42
                     35.77               0.33692         102.00
                    160.87               0.5698          103.00

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

    TIME      INFLOW    ELEV      VOLUME    OUTFLOW
    (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

      .00        .00    100.00       .000       .00
      .17        .00    100.00       .000       .00
      .33        .00    100.00       .000       .00
      .50        .00    100.00       .000       .00
      .67        .00    100.00       .000       .00
      .83        .00    100.00       .000       .00
     1.00        .00    100.00       .000       .00
     1.17        .20    100.00       .000       .00
     1.33      11.42    100.36       .057       .00
     1.50      51.61    102.05       .349     42.04
     1.67      26.94    101.93       .324     31.68
     1.83      15.45    101.70       .278     17.47
     2.00      10.35    101.60       .259     11.35
     2.16       4.93    101.52       .243      6.34
     2.33       2.43    101.47       .231      2.81
```

2.50	1.52	101.45	.228	1.70
2.66	1.01	101.44	.226	1.11
2.83	.71	101.43	.225	.77
3.00	.52	101.43	.224	.56
3.16	.40	101.43	.224	.43
3.33	.33	101.43	.223	.35
3.50	.29	101.42	.223	.30
3.66	.26	101.42	.223	.27
3.83	.24	101.42	.223	.24
4.00	.22	101.42	.223	.23
4.16	.22	101.42	.223	.22
4.33	.21	101.42	.223	.22
4.50	.22	101.42	.223	.22
4.66	.21	101.42	.223	.21
4.83	.22	101.42	.223	.22
5.00	.22	101.42	.223	.22
5.16	.23	101.42	.223	.23
5.33	.23	101.42	.223	.23
5.49	.24	101.42	.223	.24
5.66	.25	101.42	.223	.25
5.83	.26	101.42	.223	.25
5.99	.27	101.42	.223	.26
6.16	.11	101.42	.223	.16
6.33	.03	101.42	.222	.04
6.49	.01	101.42	.222	.02
6.66	.01	101.42	.222	.01
6.83	.00	101.42	.222	.01
6.99	.00	101.42	.222	.01
7.16	.00	101.42	.222	.01
7.33	.00	101.42	.222	.01
7.49	.00	101.42	.222	.01
7.66	.00	101.42	.222	.01
7.83	.00	101.41	.221	.01
7.99	.00	101.41	.221	.01
8.16	.00	101.41	.221	.01
8.33	.00	101.41	.221	.01
8.49	.00	101.41	.221	.01
8.66	.00	101.41	.221	.01
8.82	.00	101.41	.221	.01
8.99	.00	101.41	.220	.01
9.16	.00	101.41	.220	.01

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
9.32	.00	101.41	.220	.01
9.49	.00	101.41	.220	.01
9.66	.00	101.40	.220	.01
9.82	.00	101.40	.220	.01
9.99	.00	101.40	.220	.01
10.16	.00	101.40	.219	.01
10.32	.00	101.40	.219	.01
10.49	.00	101.40	.219	.01
10.66	.00	101.40	.219	.01
10.82	.00	101.40	.219	.01
10.99	.00	101.40	.219	.01
11.16	.00	101.40	.219	.01
11.32	.00	101.40	.219	.01
11.49	.00	101.40	.218	.01

```
    11.66        .00    101.39       .218       .01
    11.82        .00    101.39       .218       .01
    11.99        .00    101.39       .218       .01
    12.15        .00    101.39       .218       .01
    12.32        .00    101.39       .218       .01
    12.49        .00    101.39       .218       .01
    12.65        .00    101.39       .217       .01
    12.82        .00    101.39       .217       .01
    12.99        .00    101.39       .217       .01
    13.15        .00    101.39       .217       .01
    13.32        .00    101.39       .217       .01
    13.49        .00    101.38       .217       .01
    13.65        .00    101.38       .217       .01
    13.82        .00    101.38       .216       .01
    13.99        .00    101.38       .216       .01
    14.15        .00    101.38       .216       .01
    14.32        .00    101.38       .216       .01
    14.49        .00    101.38       .216       .01
    14.65        .00    101.38       .216       .01
    14.82        .00    101.38       .216       .01
    14.99        .00    101.38       .216       .01
    15.15        .00    101.38       .215       .01
    15.32        .00    101.38       .215       .01
    15.48        .00    101.37       .215       .01
    15.65        .00    101.37       .215       .01
    15.82        .00    101.37       .215       .01
    15.98        .00    101.37       .215       .01
    16.15        .00    101.37       .215       .01
    16.32        .00    101.37       .214       .01
    16.48        .00    101.37       .214       .01
    16.65        .00    101.37       .214       .01
    16.82        .00    101.37       .214       .01
    16.98        .00    101.37       .214       .01
    17.15        .00    101.37       .214       .01
    17.32        .00    101.37       .214       .01
    17.48        .00    101.36       .214       .01
    17.65        .00    101.36       .213       .01
    17.82        .00    101.36       .213       .01
    17.98        .00    101.36       .213       .01
    18.15        .00    101.36       .213       .01
    18.32        .00    101.36       .213       .01
    18.48        .00    101.36       .213       .01

    TIME       INFLOW    ELEV       VOLUME    OUTFLOW
    (HRS)      (CFS)     (FEET)     (AC-FT)   (CFS)

    18.65        .00    101.36       .213       .01
    18.81        .00    101.36       .213       .01
    18.98        .00    101.36       .212       .01
    19.15        .00    101.36       .212       .01
    19.31        .00    101.36       .212       .01
    19.48        .00    101.35       .212       .01
    19.65        .00    101.35       .212       .01
    19.81        .00    101.35       .212       .01
 PEAK DISCHARGE =       49.452 CFS - PEAK OCCURS AT HOUR    1.53
 MAXIMUM WATER SURFACE ELEVATION =      102.109
 MAXIMUM STORAGE =          .3624 AC-FT      INCREMENTAL TIME=     .033300HRS

PRINT HYD            ID=12 CODE=50
```

HYDROGRAPH FROM AREA POND.12

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	3.996	.2	7.992	.0	11.988	.0	15.984	.0
.666	.0	4.662	.2	8.658	.0	12.654	.0	16.650	.0
1.332	.0	5.328	.2	9.324	.0	13.320	.0	17.316	.0
1.998	11.3	5.994	.3	9.990	.0	13.986	.0	17.982	.0
2.664	1.1	6.660	.0	10.656	.0	14.652	.0	18.648	.0
3.330	.3	7.326	.0	11.322	.0	15.318	.0	19.314	.0

RUNOFF VOLUME = 1.30257 INCHES = 1.5766 ACRE-FEET
PEAK DISCHARGE RATE = 49.45 CFS AT 1.532 HOURS BASIN AREA = .0227 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 14:41:31

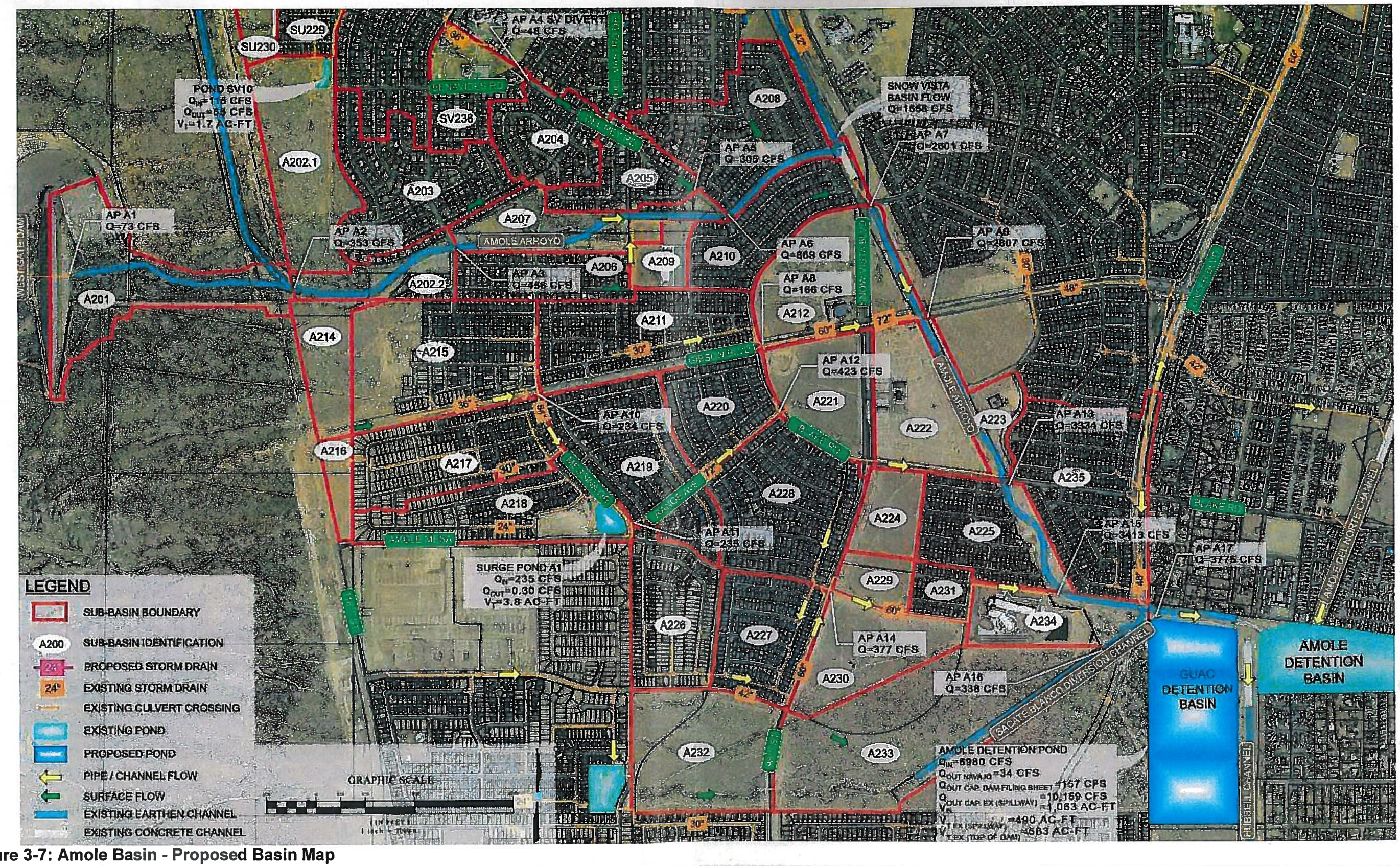


Figure 3-7: Amole Basin - Proposed Basin Map

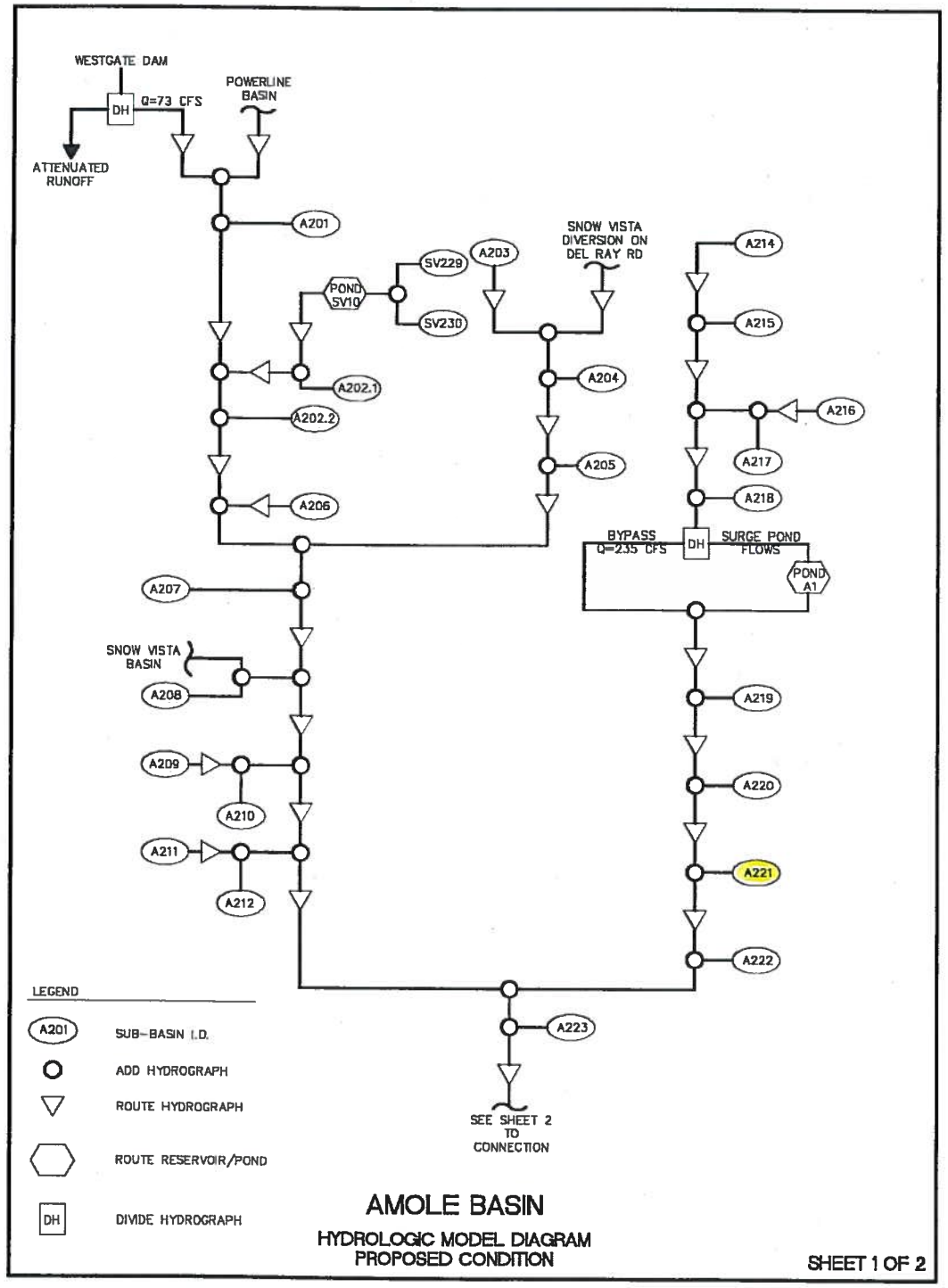


Figure 3-8: Amole Basin - Proposed Hydrologic Model Diagram

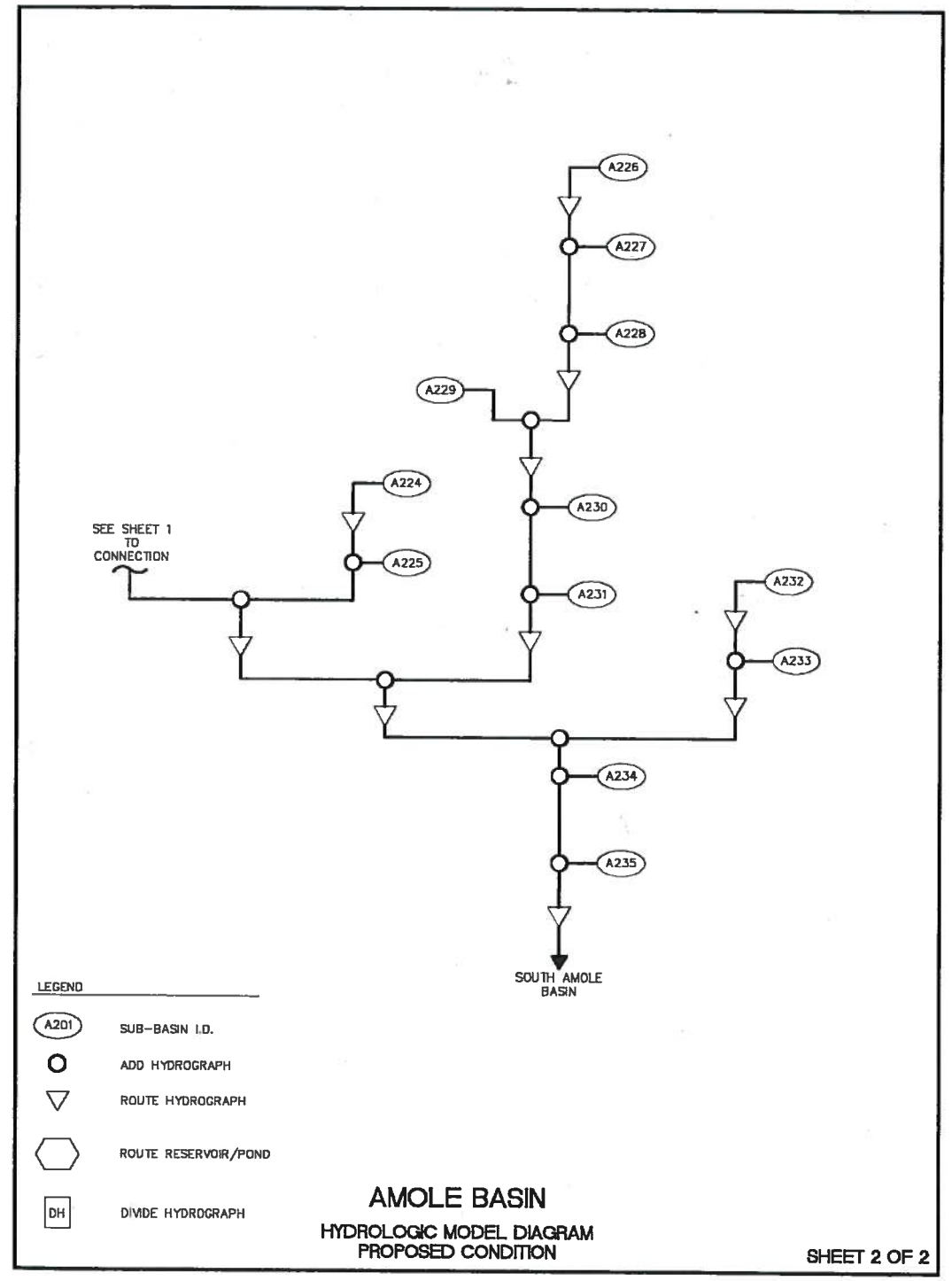


Figure 3-8 Continued: Amole Basin - Proposed Hydrologic Model Diagram

Table 3-8: Amole Basin - Proposed Sub-Basin Peak Discharge and Volumes			
Sub-Basin	Area (ac)	$Q_{100yr\text{-}6hr}$ (cfs)	$V_{100yr\text{-}24hr}$ (ac-ft)
A201	46	122.09	4.373
A202.1	38	60.67	3.969
A202.2	17	53.58	1.938
A203	40	143.75	5.299
A204	22	78.99	2.908
A205	18	61.77	2.435
A206	20	74.47	2.828
A207	26	60.01	1.945
A208	43	164.52	6.375
A209	8	18.08	0.571
A210	28	111.71	4.491
A211	42	165.76	6.637
A212	40	174.78	7.656
A214	16	61.49	2.335
A215	51	191.61	7.261
A216	6	21.87	0.830
A217	37	133.19	4.615
A218	36	128.79	4.429
A219	41	159.68	6.256
A220	23	89.59	3.514
A221	27	118.26	5.098
A222	29	128.19	5.539
A223	13	57.77	2.479
A224	13	48.08	1.826
A225	30	119.33	4.782
A226	31	122.90	4.929
A227	28	104.57	4.474
A228	45	167.59	6.379
A229	9	33.43	1.269
A230	28	112.97	4.625
A231	8	30.23	1.209
A232	42	171.36	7.021
A233	73	245.20	12.206
A234	23	89.40	3.501
A235	52	194.03	7.857

3.5 Amole Del Norte

3.5.1 98th & Central Basin

Existing Conditions

The 98th & Central Basin is approximately 0.81 sq. mi. This sub-area is generally bounded on the east by 98th Street and north by I-40, while on the south by Central Avenue and the west by the Powerline Channel. A two cell pond made up of Pond NE2 and Pond NE3 receives the area's runoff. The land uses in 98th & Central Area are platted undeveloped, industrial, commercial, and low density residential. Cross-lot drainage is the sub-area's main drainage issue due to the large undeveloped land. No off-site runoff enters the sub-area north of I-40.

Pond NE1 was designed to retain Sub-Basin NE105; however, hydrologic analyses concludes this pond is close to overtopping during the 100-year, 24-hour storm event; therefore, runoff will overflow the pond onto Avalon Road. This sub-area lacks drainage conveyance infrastructure. Without the conveyance infrastructure in place, developed and undeveloped lots experience large amounts of cross-lot drainage. There is only one storm drain system in the sub-area, beginning near the intersection of Volcano Road and 98th Street and runs through Pond NE2 outletting into Pond NE3. Since the majority of the sub-area is not conveyed via a sub-surface drainage system, large amounts of runoff spill into the pond. The two-cell pond outlets into a storm drain system located in the Tierra Bayita Area, which ultimately connects to the Tierra Bayita Channel. Refer to Appendix A for hydrologic data and existing hydrologic model diagram.

Proposed Conditions

The proposed land uses in 98th & Central Area are platted mass graded, industrial, commercial, high and low dense residential, and school. Proposed conditions and development have added a sub-surface storm drainage system to collect runoff and convey it to basin ponds to prevent excessive street flow. No off-site runoff enters the sub-area north of I-40.

The proposed conditions assume that the pond NE1 is abandoned and proposed storm drainage is allowed to collect and flow along the surface to Pond NE2 and NE3. As stated above, this surface flow shall be addressed with the residential development plans. A drainage conveyance system shall be installed to collect runoff from the area and convey it to Pond NE2 and NE3. To help alleviate flows to the Coors N-S pond, we recommend the use of an 18" orifice plate at the outlet structures of these ponds. Shallow cross-lot drainage will remain in upstream portions of this basin, although it is the intent of the plan to eliminateas much of the cross-lot drainage as possible with the proposed system. After development, the runoff from the area will be conveyed through drainage conveyance systems eliminating excess flow to the pond. Refer to Table 3-9 for hydrologic data and Figure 3-10 for proposed hydrologic model diagram.

Recommendations:

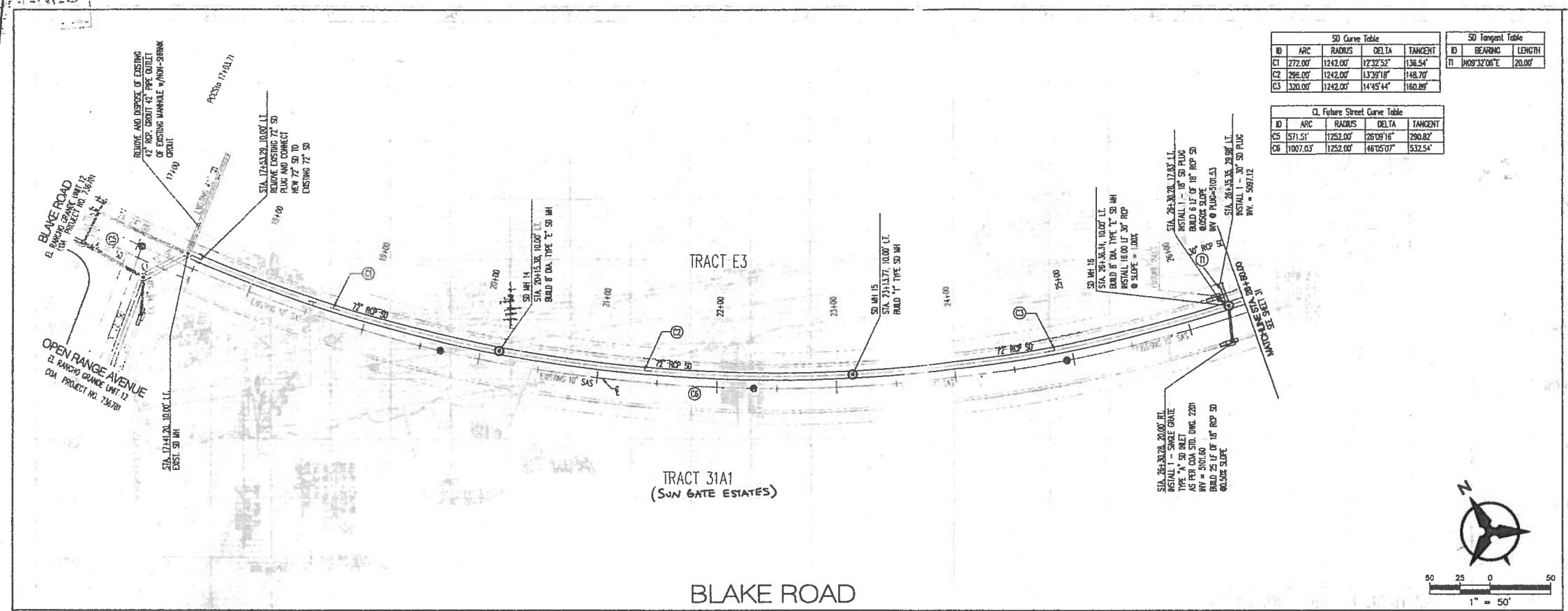
Below are the recommendations from 1999 Amole-Hubbell DMP for the basin along with the status of the recommendation.

- *Project AD1: Tower Sage Detention Basin and Outfall* – COMPLETED

Additional Recommendations for the basin based on updated basin analysis are below:

- Relocate the spillway for Pond NE2 to discharge to the south onto Central Avenue. Cost $222,800.
- Install storm drain system proposed in 98th & Central Basin per this DMP.
- Install 18" orifice in the outlet structures of ponds NE2 and NE3.

SCANNED BY



SD Curve Table				
ID	ARC	RADIUS	DELTA	TANGENT
C1	272.00'	1242.00'	12°32'52"	136.54'
C2	296.00'	1242.00'	13°39'18"	148.70'
C3	320.00'	1242.00'	14°45'44"	160.89'

SD Tangent Table		
ID	BEARING	LENGTH
T1	N09°32'06"E	20.00'

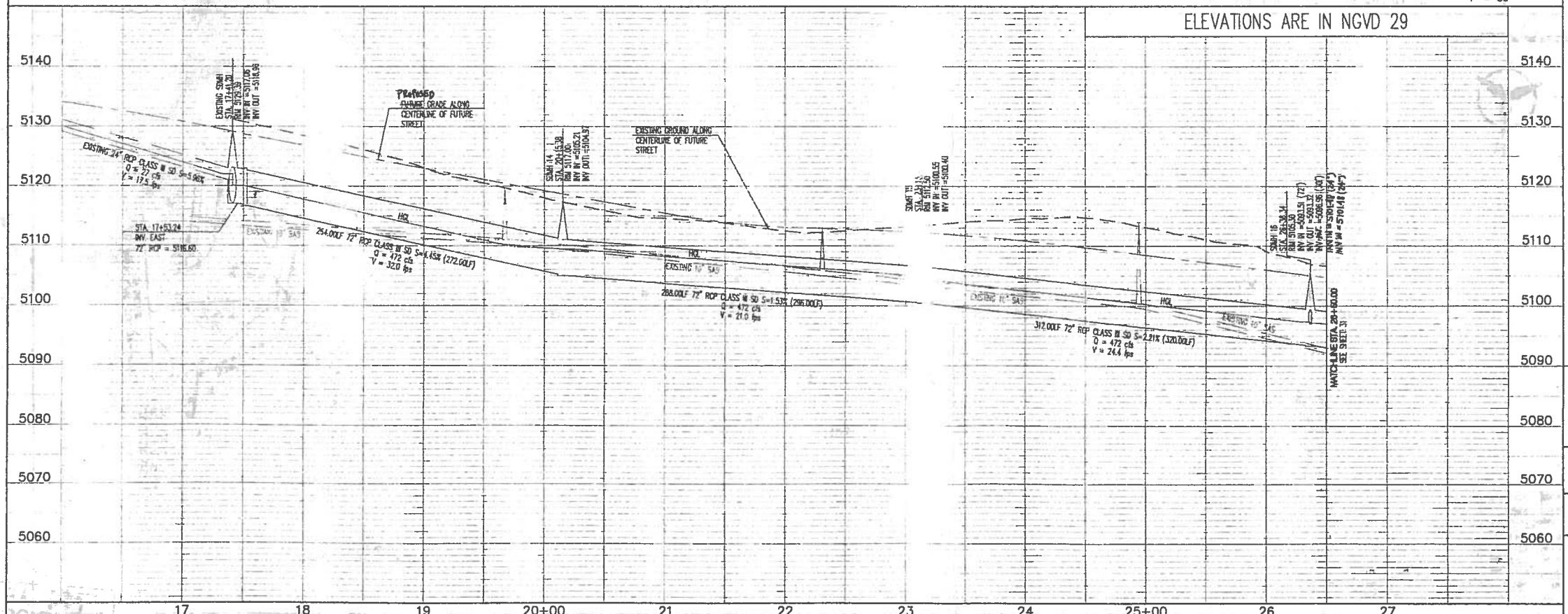
CL Future Street Curve Table				
ID	ARC	RADIUS	DELTA	TANGENT
C5	571.51'	1252.00'	26°09'16"	290.82'
C6	1007.03'	1252.00'	46°05'07"	532.54'

GENERAL NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. ALL CURVE DATA AND DIMENSIONS ARE CALCULATED FROM CENTERLINE OF PIPE OR MANHOLE. ALL SAS & SD SLOPES ARE CALCULATED TO TRUE PIPE DIMENSIONS FROM INVERT TO INVERT. (PAY ITEMS ARE SHOWN IN PARENTHESES)
3. GRADE ELEVATIONS, WHERE NOTED, ARE FOR FLOWLINE OF STANDARD CURB UNLESS OTHERWISE SPECIFIED.
4. CONTRACTOR IS TO INSTALL A 4" X 4" X 5' POST AND END AT THE END OF EACH SANITARY SEWER SERVICE.
5. CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ALL UTILITY CONDUITS AND EXISTING LINES.
6. CONTRACTOR SHALL PROVIDE THE INSPECTORS WITH THE PROPOSED TESTING PLAN. THE PLAN MUST BE APPROVED BEFORE TESTING OPERATIONS BEGIN.
7. CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES AS NOT TO INTERFERE WITH NORMAL ACTIVITIES OF RESIDENTS OR OTHER CONTRACTORS ON SITE.
8. ANY DAMAGE TO THE EXISTING FACILITIES (CURB & GUTTER, PAVEMENT, CONDUITS, LANDSCAPING, UTILITY LINES, ETC.) DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS' EXPENSE.
9. MH RIMS & CATCH BASIN INLET ELEVATIONS, FIRE HYDRANT & FLANGE ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY AND ADJUST TO FINAL PAVEMENT GRADES.
10. SAS STATIONING FOLLOWS CL OF ROAD UNLESS OTHERWISE NOTED.
11. STATIONING OF DROP INLET IS TO MIDDLE OF DOWN HILL GRATE AT FACE OF CURB.
12. FLOWLINE ELEVATIONS FOR DROP INLETS ARE PROJECTED FROM FLOWLINE OF STANDARD CURB TO MIDDLE OF DOWNHILL GRATE.
13. FOR STORM DRAIN CONSTRUCTION: ALL RCP JOINTS SHALL NOT BE GROUTED PRIOR TO FINAL INSPECTION. FINAL INSPECTION SHALL DETERMINE WHICH JOINTS ARE TO BE GROUTED FOR FINAL ACCEPTANCE OF THE CONSTRUCTION.

BLAKE ROAD

ELEVATIONS ARE IN NGVD 29



SCALE: 1" = 50' (HORIZ.) 1" = 10' (VERT.)

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LEGEND

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

Bohannan ▲ Huston Inc.
Courtyard 1 7500 Jefferson St. NE · Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

SUN GATE ESTATES PHASE I
UTILITY PLAN AND PROFILE
BLAKE ROAD

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.
APPROVED DESIGN REVIEW COMMITTEE	APPROVED MAY - 1 2005 CITY ENGINEER			

City Project No.	Zone Map No.	Sheet	Of
736782	N-9-Z	30	37

37
31

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

BENCH MARKS
AS-BUILT INFORMATION

CONTRACTOR: Nasa Construction
STAKED BY: DATE:
ACCEPTANCE BY: DATE:
FIELD VERIFICATION BY: DATE:
DRAWINGS COMPLETED BY: DATE:

AGS BRASS TABLET STAMPED "TRANS"	
Geographic Position (NAD 1927)	
N.M. State Plane Coordinates (Central Zone)	
X= 354,869.45 Y= 1,471,822.67	
Ground-to-Grid Factor= 0.99967921(As Published)	
ΔCC = --00°16'42"	
SLD 1929 Elevation = 5118.370	

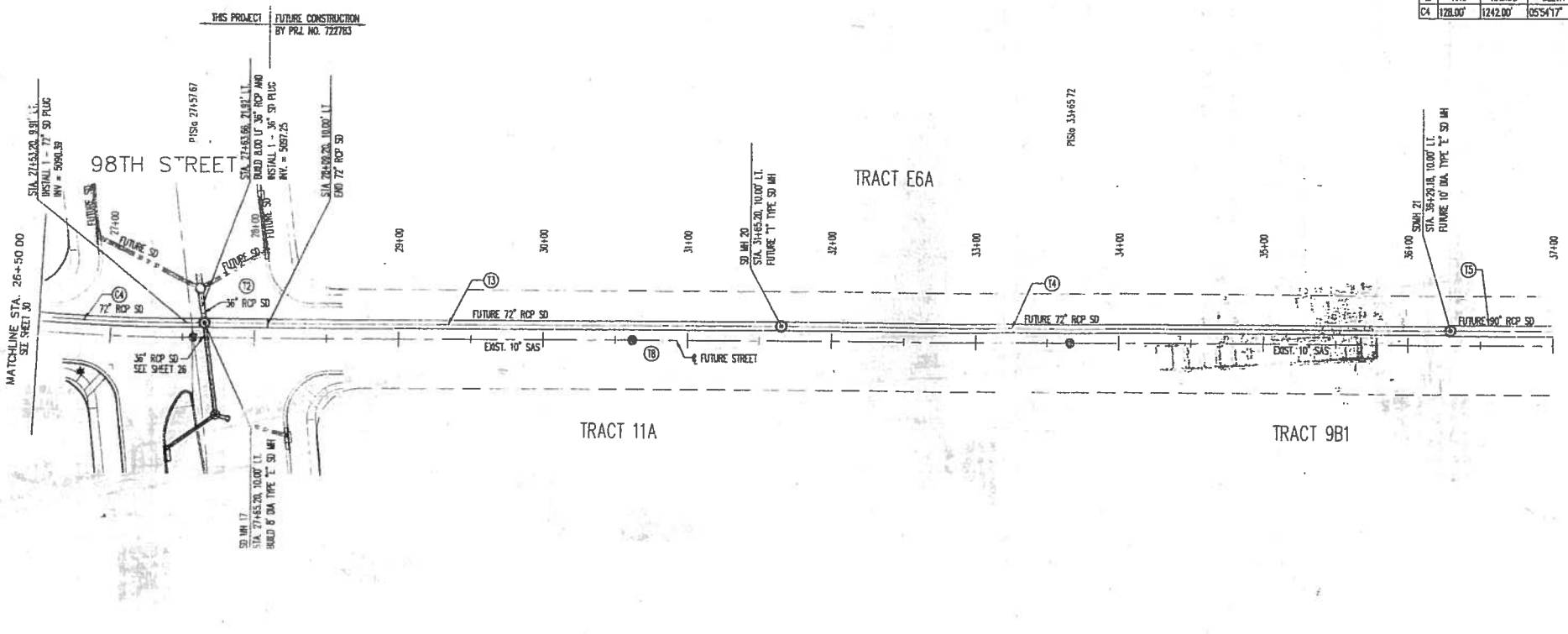
MICRO-FILM INFORMATION
RECORDED BY: DATE:
NO.:

ENGINEER'S SEAL
CHRISTIAN J. SMITH
NEW MEXICO
16344
REGISTERED PROFESSIONAL ENGINEER
2-9-05

No.	Date	REMARKS / REVISIONS / DESIGN	BY
	DATE: 07/27/04		
	DATE: 07/27/04		
	DATE: 08/19/04		

Designed By: CJS
Drawn By: BJG
Checked By: CJS

SCANNED BY PW

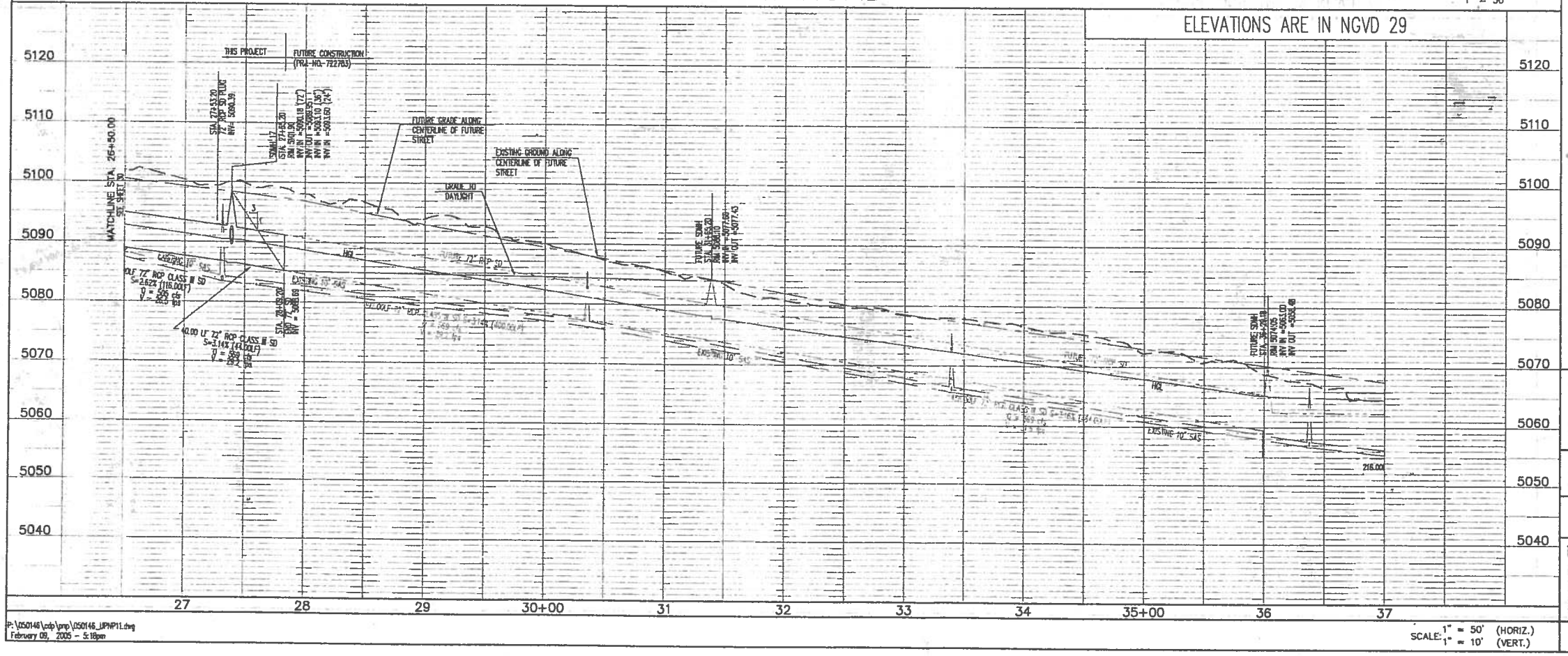


SD Curve Table				
ID	ARC	RADIUS	DELTA	TANGENT
C4	128.00'	1242.00'	05°54'17"	64.05'

SD Tangent Table		
ID	BEARING	LENGTH
T2	N00°00'49"W	12.07'
T3	N82°39'16"W	400.00'
T4	N81°33'53"W	464.00'
T5	N82°29'47"W	724.00'

CL Future Street Tangent Table		
ID	BEARING	LENGTH
T8	S82°39'16"E	608.10'

BLAKE ROAD



N

50 25 0 50
1" = 50'

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- SINGLE WATER METER
- WATER LINE SHUTOFF VALVE
- WATER LINE TEE
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- STORM DRAIN INLET
- PROPOSED FIRE HYDRANT
- EXISTING WATER VALVE
- PROPOSED STREET LIGHT

AS-BUILT INFORMATION
CONTRACTOR — DATE
STAKED BY — DATE
INSPECTOR'S — DATE
FIELD OPERATION BY — DATE
DRAWING CORRECTED BY — DATE
RECORDED BY — DATE

BENCH MARKS
ACS BRASS TABLET STAMPED "TRANS"
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ΔC = -00°16'42"
SLD 1929 Elevation = 5118.370

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
CHRISTIAN J. LIKE
NEW MEXICO
16344
REGISTERED PROFESSIONAL ENGINEER
2-9-05

No.	Date	By
REMARKS		
REVISIONS		
DESIGN	- DATE: 07/27/04	
Designed By: CJS	DATE: 07/27/04	
Drawn By: BJG	DATE: 08/19/04	
Checked By: CJS		

Bohannan ▲ Huston
Courtyard I 7500 Jefferson St. NE / Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

SUN GATE ESTATES PHASE I
UTILITY PLAN AND PROFILE
BLAKE ROAD

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.
APPROVED MAR - 9 2005 DESIGN REVIEW COMMITTEE	APPROVED MAR - 9 2005 CITY ENGINEER			

City Project No. 736782 | Zone Map No. N-9-Z | Sheet 31 Of ~~37~~ 37

SCALE: 1" = 50' (HORIZ.) 1" = 10' (VERT.)

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February 09, 2005 - 5:18pm

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