****

[redacted]

DRAINAGE REPORT

FOR

LOS PRADOS DEL NORTE SUBDIVISION

VISTA DEL NORTE MASTER PLAN COMMUNITY

MARCH 1999

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PROJECT DESCRIPTION

The proposed Los Prados del Norte subdivision, comprised of approximately 18.5 acres is a single family residential home project consisting of 106 detached homes. This project is part of the Vista Del Norte Unit 1 Master Planned Community located adjacent to the north side of Osuna Road and west of the AMAFCA North Diversion Channel. The site is identified as Tract I on the Bulk Land Plat.

A master grading and drainage plan (D16/D1) and construction plans (Project No. 597081) have been approved for Vista Del Norte Unit 1 of which this site is part of and will tie into their offsite infrastructure which includes a storm drain system in Vista Monte Drive.

DRAINAGE CRITERIA

The design criteria used in this report was in accordance with Section 22.2 Hydrology of the Development Process Manual, Volume 2, Design Criteria, January 1993 edition. The AHYMO model was used to analyze the 100-year 6-hour storm event for developed conditions using a Type 1 rainfall distribution to determine street capacities ans sizing the internal storm drain system using the following precipitation depths: P60 = 2.05" and P360 = 2.30" and P1440 = 2.60"

The Land Treatment values used for the site was Treatment D = 55 with the remaining split between Treatment B and C (22.5 each).

EXISTING DRAINAGE CONDITIONS

In accordance with the approved master Grading and Drainage Plan for Vista Del Norte Unit 1, this project site, Los Prados Del Norte has been rough graded to an approximate slope of 1.0 percent toward the northwest corner of the site.

DEVELOPED DRAINAGE CONDITIONS

Q - master plan ?

The maximum "developed conditions" 100 year discharge from the site was determined to be 70.16 cfs. Runoff from the site flows in a general northwest direction as street flow toward three storm drain sump inlets located in the knuckle intersecting Casa Maria and Casa Tomas Drive. An internal storm drain sized for two times the 100 year discharge conveys the runoff to the storm drain in Vista Monte Drive being built as part of the Vista Del Norte Unit 1 Infrastructure Construction (Project No. 597081). Three Double "C" sump inlet in the knuckle and one Double "C" located on the interior radius of Casa Maria and Casa Tomas Drive together have capacity for 86.23 cfs.

private streets ?

The two culdesacs located in the center of the site discharge through a private 6 foot wide channel which discharges into Casa Maria. This channel is to be privately maintained by the homeowners associations.

Refer to Appendix C Storm Drain for calculations. Refer to Exhibit 2 for sub basin boundaries and summary of the hydrology results.

grading looks ok — need to verify Q from master plan

need inf. list

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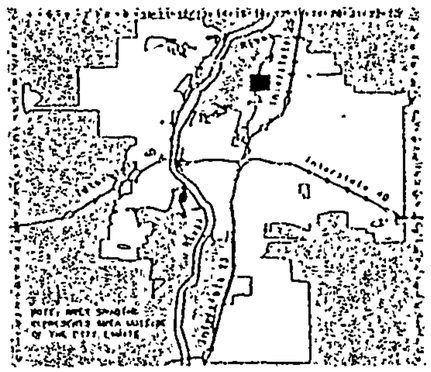
SU-1

FOR SAND & GRAVEL EXTRACTION & RELATED ACTIVITIES & USES PERMISSIVE IN THE M-1 ZONE

Los Prados Del Norte

SU-1 FOR SAND & GRAVEL EXTRACTION & RELATED ACTIVITIES & USES PERMISSIVE IN THE M-1 ZONE

SU-1 FOR SAND & GRAVEL EXTRACTION & RELATED ACTIVITIES & USES PERMISSIVE IN THE M-1 ZONE & A SEPTIC DISCHARGE FACILITY



LEGAL DESCRIPTION

T11N

R3E

SEC 22

UNIFORM PROPERTY CODE

1018 083

E/D-16-Z

GRAPHIC SCALE IN FEET

250 0 500 1000

CITY OF Albuquerque

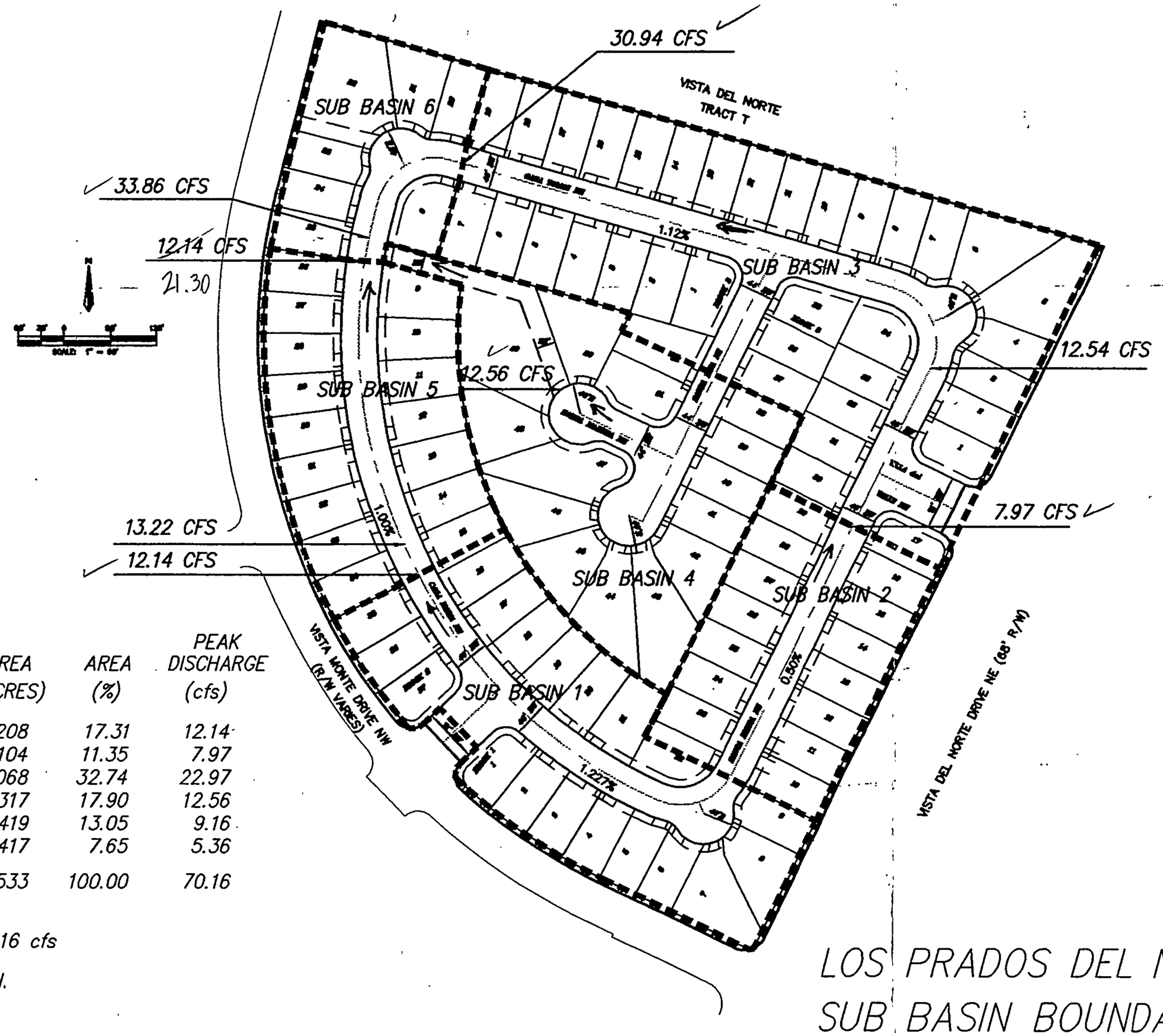
A G I S

PLANNING DEPARTMENT

©Copyright 1997

Map Amended through February 13, 1997

VICINITY MAP



SUB BASIN ID	AREA (SF)	AREA (ACRES)	AREA (%)	PEAK DISCHARGE (cfs)
1	139719.7	3.208	17.31	12.14
2	91631.8	2.104	11.35	7.97
3	264347.0	6.068	32.74	22.97
4	144479.4	3.317	17.90	12.56
5	105368.7	2.419	13.05	9.16
6	61729.2	1.417	7.65	5.36
TOTAL	807,275.7	18.533	100.00	70.16

PEAK DISCHARGE ENTIRE SITE = 70.16 cfs

TOTAL AREA = .02883 SQ. MI.
LAND TR. D = 55.0
LAND TR. C = 22.5
LAND TR. B = 22.5

LOS PRADOS DEL NORTE
SUB BASIN BOUNDARIES
EXHIBIT 2

****

F:\DATA\DWGS\98JOBS\8048LPDN\SBEXHBIT.DWG Fri Mar 05 08:35:45 1999 plotted by staff

Los Prados Del Norte Subdivision

TABLE 2: SUMMARY OF STREET CAPACITY AND INLET CALCULATIONS

LOCATION	CURB	WIDTH ft.	CROWN/ CROSS SLOPE	SLOPE %	Q cfs	DEPTH ft	EG ft	Q INLET cfs	#/TYPE of INLETS	REMAIN Q (cfs)
SANTA ELENA DRIVE	MBL	28	CRN	0.50	8.0	0.33	0.38			
CASA MARIA	MBL	28	CRN	1.227	12.14	0.33	0.45			
SANTA ELENA	STD	28	CRN	0.50	12.54	0.43	0.50			
CASA TOMAS	STD	28	CRN	1.01	30.94	0.51	0.73			
CASA MARIA	STD	28	CRN	1.227	13.22	0.38	0.51			
CASA MARIA	STD	28	CRN	1.00	21.30	0.45	0.62			
NW KNUCKLE	STD	28	CRN	1.00	33.86	0.53	0.76			
SANTA MARTHA	MBL	26	CRN	0.92	10.00	0.33	0.42			
SANTA MARTHA	STD	26	CRN	1.00	12.56	.39	.50			
SANTA MARTHA	STD	26	CRN	0.60	12.56	.42	.50			

MTB = Mountable Curb
STD = Standard Curb

f\\prados\stcappra.dos

****

[***]

APPENDIX A
HYDROLOGY

```
START                   TIME=0.0
*****    LOS PRADOS DEL NORTE - SINGLE FAMILY HOMES
*****  PART OF IN VISTA DEL NORTE MASTER PLANNED COMMUNITY
*****    100-YEAR 6-HOUR STORM EVENT
*****    FILE: NORTE.DAT  FEB 1999 BY:DLH
RAINFALL                TYPE=1 RAIN QUARTER=0.0 IN
                        RAIN ONE=2.05 IN RAIN SIX=2.30 IN
                        RAIN DAY=2.60 IN DT=0:05 HR
***** DEVELOPED CONDITIONS
*****
***** TOTAL SITE
*****
COMPUTE NM HYD          ID=1 HYD NO=100.0 AREA=0.02883 SQ MI
                        PER A=0 PER B=22.5 PER C=22.5 PER D=55
                        TP=0.1333 HR MASS RAINFALL=-1
PRINT HYD               ID=1 CODE=1
FINISH
```

```
    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
          RUN DATE (MON/DAY/YR) = 02/15/1999
          START TIME (HR:MIN:SEC) = 14:39:18      USER NO.= M_GOODWN.I01
          INPUT FILE = prados.dat

START                   TIME=0.0
*****     LOS PRADOS DEL NORTE - SINGLE FAMILY HOMES
*****   PART OF IN VISTA DEL NORTE MASTER PLANNED COMMUNITY
*****     100-YEAR 6-HOUR STORM EVENT
*****     FILE: NORTE.DAT  FEB 1999 BY:DLH
RAINFALL                TYPE=1 RAIN QUARTER=0.0 IN
                        RAIN ONE=2.05 IN RAIN SIX=2.30 IN
                        RAIN DAY=2.60 IN DT=0.05 HR

                    COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                    DT =     .050000 HOURS        END TIME =     6.000000 HOURS
                       .0000   .0013   .0026   .0040   .0055   .0070   .0085
                       .0101   .0118   .0136   .0154   .0173   .0193   .0215
                       .0237   .0261   .0286   .0313   .0342   .0374   .0408
                       .0494   .0590   .0867   .1521   .2645   .4383   .6887
                      1.0310  1.3010  1.4229  1.5248  1.6140  1.6938  1.7660
                      1.8319  1.8924  1.9481  1.9994  2.0469  2.0908  2.0990
                      2.1064  2.1133  2.1197  2.1257  2.1314  2.1367  2.1417
                      2.1465  2.1510  2.1554  2.1596  2.1636  2.1675  2.1712
                      2.1748  2.1783  2.1816  2.1849  2.1880  2.1911  2.1941
                      2.1970  2.1999  2.2026  2.2053  2.2080  2.2105  2.2131
                      2.2155  2.2179  2.2203  2.2226  2.2249  2.2271  2.2293
                      2.2315  2.2336  2.2356  2.2377  2.2397  2.2416  2.2436
                      2.2455  2.2474  2.2492  2.2510  2.2528  2.2546  2.2564
                      2.2581  2.2598  2.2615  2.2631  2.2647  2.2663  2.2679
                      2.2695  2.2711  2.2726  2.2741  2.2756  2.2771  2.2786
                      2.2800  2.2814  2.2829  2.2843  2.2856  2.2870  2.2884
                      2.2897  2.2910  2.2924  2.2937  2.2950  2.2962  2.2975
                      2.2988  2.3000

***** DEVELOPED CONDITIONS
*****
***** TOTAL SITE
*****
COMPUTE NM HYD      ID=1 HYD NO=100.0 AREA=0.02883 SQ MI
```

****

PER A=0 PER B=22.5 PER C=22.5 PER D=55
TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 62.602 CFS UNIT VOLUME = .9989 B = 526.28 P60 = 2.0500
AREA = .015857 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

K = .120234HR TP = .133300HR K/TP RATIO = .901978 SHAPE CONSTANT, N = 3.928677
UNIT PEAK = 34.102 CFS UNIT VOLUME = 1.001 B = 350.39 P60 = 2.0500
AREA = .012974 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 100.00

RUNOFF VOLUME = 1.56438 INCHES = 2.4054 ACRE-FEET
PEAK DISCHARGE RATE = 70.16 CFS AT 1.500 HOURS BASIN AREA = .0288 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 14:39:18

****

[***]

APPENDIX B

HYDRAULICS

```
1*************************************************
 *  WATER SURFACE PROFILES                       *
 *  VERSION OF SEPTEMBER 1988                    *
 *  ERROR: 01,02                                 *
 *  UPDATED:   4 APRIL    1989                   *
 *  RUN DATE     3/ 5/99   TIME   10:10:47       *
 *************************************************
```

```
****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*  (916) 756-1104, (916) 551-1748      *
****************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X          XXXXX   XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
```

```
 END OF BANNER
1
     3/ 5/99       10:10:47                                                    PAGE     1

                                                THIS RUN EXECUTED  3/ 5/99     10:10:47

 ************************************************
   HEC2 RELEASE DATED SEP 88 UPDATED APR  1989
   ERROR CORR -  01,02
   MODIFICATION -
 ************************************************

 T1           LOS PRADOS DEL NORTE CONCRETE CHANNEL
 T2           RECTANGULAR 6' WIDE 8" DEEP
 T3           100-YEAR / 6-HOUR DESIGN STORM

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2         0         1       .010        0         0         0         0         0

 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

      43         1         2        26         4        68         3

 NC     .017      .017      .017       .1        .3
 QT        1     12.56
 X1        1         4         0      6.1         0         0         0         0         0         0
 GR      .67         0         0      .10        0.       6.0       .67       6.1
1
     3/ 5/99       10:10:47                                                    PAGE     2
```

****

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CCHV= .100 CEHV= .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED

	1.00	.45	.45	.52	.00	.79	.34	.00	.00	.67
	13.	0.	13.	0.	0.	3.	0.	0.	0.	.67
	.00	.00	4.68	.00	.000	.017	.000	.000	.00	.03
.009930		0.	0.	0.	0	14	5	.00	6.03	6.07

0
1

3/ 5/99 10:10:47

****
HEC2 RELEASE DATED SEP 88 UPDATED APR 1989
ERROR CORR - 01,02
MODIFICATION -
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

100-YEAR / 6-HOUR DE

SUMMARY PRINTOUT

Q	CWSEL	CRIWS	VCH	TOPWID	FRCH	EG
12.560	.45	.52	4.68	6.03	1.24	.79

1

3/ 5/99 10:10:47

SUMMARY OF ERRORS AND SPECIAL NOTES

****

```
1*************************************************
 *  WATER SURFACE PROFILES                       *
 *  VERSION OF SEPTEMBER 1988                    *
 *  ERROR: 01,02                                 *
 *  UPDATED:  4 APRIL    1989                    *
 *  RUN DATE     3/ 4/99   TIME   16:34: 9       *
 *************************************************
```

```
****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*  (916) 756-1104, (916) 551-1748      *
****************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
```

```
 END OF BANNER
1
     3/ 4/99       16:34: 9
```



```
                                                  THIS RUN EXECUTED  3/ 4/99     16:34: 9
************************************************
  HEC2 RELEASE DATED SEP 88 UPDATED APR  1989


  ERROR CORR -  01,02
  MODIFICATION -
************************************************

T1          LOS PRADOS DEL NORTE STREET CAPACITY (44' ROW)
T2          26'FF W/ MOUNTABLE CURB SUB-CRITICAL FLOW
T3          SANTA MARTHA

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         2         0         1      .0108        0         0         0         0         0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         2        26         4        68         3

NC     .017      .017      .017       .1        .3
```

****

```
QT         2       10.00       10.00
X1         1           9           0          44           0           0           0           0           0           0
GR       .51           0         .33         8.9           0           9        .083          11        .303          22
GR      .083          33           0          35         .33        35.1         .51          44
1
   3/ 4/99      16:34: 9                                                                                    PAGE     2

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 *PROF 1

 CCHV=      .100 CEHV=      .300
 *SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
      1.00       .32       .32       .34       .00       .42       .10       .00       .00       .51
       10.        0.       10.        0.        0.        4.        0.        0.        0.       .51
       .00       .00      2.54       .00      .000      .017      .000      .000       .00      8.90
   .010772        0.        0.        0.         0        11         7       .00     26.19     35.10
0
1
   3/ 4/99      16:34: 9                                                                                    PAGE     3

 T1 26' FF
 T2 100YR 6HR
 T3 SANTA MARTHA

 J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ

       0          3          0          1       .0092

 J2  NPROF      IPLOT      PRFVS      XSECV      XSECH      FN         ALLDC      IBW        CHNIM      ITRACE

       2          0         -1          0          0          0          0          0          0          0

1
   3/ 4/99      16:34: 9                                                                                    PAGE     4

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
```

****

*PROF 2

CCHV= .100 CEHV= .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED

1.00	.33	.33	.34	.00	.42	.09	.00	.00	.51
10.	0.	10.	0.	0.	4.	0.	0.	0.	.51
.00	.00	2.42	.00	.000	.017	.000	.000	.00	8.90
.009166	0.	0.	0.	0	11	7	.00	26.20	35.10

0
1

****
HEC2 RELEASE DATED SEP 88 UPDATED APR 1989

ERROR CORR - 01,02
MODIFICATION -
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SANTA MARTHA

SUMMARY PRINTOUT

SECNO	Q	CWSEL	CRIWS	VCH	TOPWID	FRCH	EG
1.000	10.00	.32	.34	2.54	26.19	1.15	.42
1.000	10.00	.33	.34	2.42	26.20	1.07	.42

1

SUMMARY OF ERRORS AND SPECIAL NOTES

****

```
1*****************************************************
 *  WATER SURFACE PROFILES                           *
 *  VERSION OF SEPTEMBER 1988                        *
 *  ERROR: 01,02                                     *
 *  UPDATED:  4 APRIL    1989                        *
 *  RUN DATE     3/ 4/99   TIME   16:41: 3           *
 *****************************************************
```

```
*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616-4687         *
*  (916) 756-1104, (916) 551-1748       *
*****************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X     X           X
X     X  XXXXXXX   XXXXX            XXXXXXX
```

END OF BANNER

1

3/ 4/99 16:41: 3

THIS RUN EXECUTED 3/ 4/99 16:41: 3

```
*************************************************
  HEC2 RELEASE DATED SEP 88 UPDATED APR  1989

  ERROR CORR -  01,02
  MODIFICATION -
*************************************************
```

```
T1          LOS PRADOS DEL NORTE STREET CAPACITY (44' ROW)
T2          26'FF W/ STANDARD CURB SUB-CRITICAL FLOW - 8" CURB
T3          SANTA MARTHA

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2         0         1     .0100         0         0         0         0         0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         2        26         4        68         3

NC     .017      .017      .017        .1        .3
```

****

```
QT         2       12.56       12.56
X1         1           9           0          44           0           0           0           0           0           0
GR       .85           0         .67         8.9           0           9        .125          11        .345          23
GR      .125          33           0          35         .67        35.1         .85          44
1
     3/ 4/99       16:41: 3                                                                              PAGE     2

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


 *PROF 1

 CCHV=      .100 CEHV=      .300
 *SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
      1.00       .39       .39       .40       .00       .50       .11       .00       .00       .85
       13.        0.       13.        0.        0.        5.        0.        0.        0.       .85
       .00       .00      2.71       .00      .000      .017      .000      .000       .00      8.94
    .009956        0.        0.        0.         0        12         5       .00     26.12     35.06
0
1
     3/ 4/99       16:41: 3                                                                              PAGE     3


 T1 28' FF
 T2 100YR 6HR
 T3 SANTA MARTHA

 J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ

       0          3          0          0        .006

 J2  NPROF      IPLOT      PRFVS      XSECV      XSECH      FN         ALLDC      IBW        CHNIM      ITRACE

       2          0         -1          0          0          0          0          0          0          0

1
     3/ 4/99       16:41: 3                                                                              PAGE     4

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


 *PROF 2
```

****

CCHV= .100 CEHV= .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED

1.00	.42	.42	.00	.00	.50	.08	.00	.00	.85
13.	0.	13.	0.	0.	5.	0.	0.	0.	.85
.00	.00	2.32	.00	.000	.017	.000	.000	.00	8.94
.005999	0.	0.	0.	0	0	5	.00	26.12	35.06

0
1

****
HEC2 RELEASE DATED SEP 88 UPDATED APR 1989

ERROR CORR - 01,02
MODIFICATION -
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SANTA MARTHA

SUMMARY PRINTOUT

SECNO	Q	CWSEL	CRIWS	VCH	TOPWID	FRCH	EG
1.000	12.56	.39	.40	2.71	26.12	1.13	.50
1.000	12.56	.42	.00	2.32	26.12	.90	.50

1

SUMMARY OF ERRORS AND SPECIAL NOTES

****

```
1*****************************************************
 *  WATER SURFACE PROFILES                           *
 *  VERSION OF SEPTEMBER 1988                        *
 *  ERROR: 01,02                                     *
 *  UPDATED:  4 APRIL    1989                        *
 *  RUN DATE     3/ 4/99   TIME   14:30:55            *
 *****************************************************
```

```
****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*  (916) 756-1104, (916) 551-1748      *
****************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                   X
X     X  X        X     X             X
X     X  XXXXXXX   XXXXX              XXXXXXX
```

```
 END OF BANNER
1
     3/ 4/99       14:30:55                                                    PAGE     1

                                                    THIS RUN EXECUTED  3/ 4/99     14:30:55

*****************************************************
  HEC2 RELEASE DATED SEP 88 UPDATED APR  1989


  ERROR CORR -  01,02
  MODIFICATION -
*****************************************************


T1          LOS PRADOS DEL NORTE STREET CAPACITY (46' ROW)
T2          28'FF W/ MOUNTABLE CURB SUPER/SUB-CRITICAL FLOW
T3          SANTA ELENA

J1  ICHECK    INQ      NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0        2         0         0      .005         0         0         0         0         0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         2        26         4        68         3

NC     .017      .017      .017        .1        .3
```

****

```
QT         2        8.00       12.14
X1         1           9          0          46           0           0           0           0           0           0
GR       .51           0         .33         8.9           0           9       .0625        10.3        .317          23
GR     .0625        35.7           0          37         .33        37.1         .51         .46
1
     3/ 4/99       14:30:55                                                                              PAGE     2

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


 *PROF 1

 CCHV=      .100 CEHV=      .300
 *SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
      1.00       .33       .33       .00       .00       .38       .05       .00       .00       .51
        8.        0.        8.        0.        0.        4.        0.        0.        0.       .51
       .00       .00      1.78       .00      .000      .017      .000      .000       .00      8.69
    .005009        0.        0.        0.         0         0         7       .00     28.63     37.31
0
1
     3/ 4/99       14:30:55                                                                              PAGE     3

 T1 28' MTBL FF
 T2 100YR 6HR
 T3 CASA MARIA

 J1   ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

        0          3         0         1      01227

 J2   NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      2          0         -1        0         0         0         0         0         0         0

1
     3/ 4/99       14:30:55                                                                              PAGE     4

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
```

****

*PROF 2

CCHV= .100 CEHV= .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED

1.00	.33	.33	.36	.00	.45	.12	.00	.00	.51
12.	0.	12.	0.	0.	4.	0.	0.	0.	.51
.00	.00	2.76	.00	.000	.017	.000	.000	.00	8.86
.012233	0.	0.	0.	0	14	7	.00	28.28	37.14

0
1

THIS RUN EXECUTED 3/ 4/99 14:30:55

****
HEC2 RELEASE DATED SEP 88 UPDATED APR 1989

ERROR CORR - 01,02
MODIFICATION -
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SANTA ELENA

SUMMARY PRINTOUT

SECNO	Q	CWSEL	CRIWS	VCH	TOPWID	FRCH	EG
1.000	8.00	.33	.00	1.78	28.63	.79	.38
1.000	12.14	.33	.36	2.76	28.28	1.23	.45

1

SUMMARY OF ERRORS AND SPECIAL NOTES

****

```
1**************************************************
 *  WATER SURFACE PROFILES                        *
 *  VERSION OF SEPTEMBER 1988                     *
 *  ERROR: 01,02                                  *
 *  UPDATED:  4 APRIL    1989                     *
 *  RUN DATE     3/ 4/99   TIME   16:29:43        *
 **************************************************
```

```
****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  THE HYDROLOGIC ENGINEERING CENTER   *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*  (916) 756-1104, (916) 551-1748      *
****************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
```

```
 END OF BANNER
1
     3/ 4/99       16:29:43
```



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                                                                THIS RUN EXECUTED  3/ 4/99    16:29:43
**************************************************
  HEC2 RELEASE DATED SEP 88 UPDATED APR  1989


  ERROR CORR -  01,02
  MODIFICATION -
**************************************************


T1           LOS PRADOS DEL NORTE STREET CAPACITY (46' ROW)
T2           28'FF W/ 8" STANDARD CURB SUPER/SUB-CRITICAL FLOW
T3           SANTA ELENA

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         2         0         0      .005         0         0         0         0         0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         2        26         4        68         3

NC     .017      .017      .017        .1         .3
```

****

```
QT          5       12.54       30.94       13.22       21.30       33.86
X1          1           9           0          46           0           0           0          11           0          23
GR       .85           0         .67         8.9           0           9        .125          11        .365          23
GR       .125         35           0          37         .67        37.1         .85          46
1
     3/ 4/99      16:29:43                                                                                    PAGE    2

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 *PROF 1

 CCHV=      .100 CEHV=      .300
 *SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
       1.00       .43       .43       .00       .00       .50       .07       .00       .00       .85
        13.        0.       13.        0.        0.        6.        0.        0.        0.       .85
        .00       .00      2.14       .00      .000      .017      .000      .000       .00      8.94
    .005000        0.        0.        0.         0         0         5       .00     28.13     37.06
0
1
     3/ 4/99      16:29:43                                                                                    PAGE    3

 T1 28' STD FF
 T2 100YR 6HR
 T3 CASA TOMAS

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         3         0         1      .0101

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      2         0        -1         0         0         0         0         0         0         0

1
     3/ 4/99      16:29:43                                                                                    PAGE    4

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 *PROF 2
```

****

```
 CCHV=      .100 CEHV=      .300
 *SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
      1.00       .51       .51       .55       .00       .73       .22       .00       .00       .85
       31.        0.       31.        0.        0.        8.        0.        0.        0.       .85
       .00       .00      3.78       .00      .000      .017      .000      .000       .00      8.92
    .010125        0.        0.        0.         0        11         6       .00     28.15     37.08
0
1
      3/ 4/99       16:29:43                                                                  PAGE     5


 T1 28' FF
 T2 100YR 6HR
 T3 CASA MARIA

 J1   ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ

        0          4          0          1      .01227

 J2   NPROF      IPLOT      PRFVS      XSECV      XSECH      FN         ALLDC      IBW        CHNIM      ITRACE

        3          0         -1          0          0          0          0          0          0          0
```

```
1
      3/ 4/99       16:29:43                                                                  PAGE     6

     SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
     Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
     TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN       SSTA
     SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST


 *PROF 3

 CCHV=      .100 CEHV=      .300
 *SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
      1.00       .38       .38       .42       .00       .51       .13       .00       .00       .85
       13.        0.       13.        0.        0.        5.        0.        0.        0.       .85
       .00       .00      2.85       .00      .000      .017      .000      .000       .00      8.94
    .012192        0.        0.        0.         0         6         5       .00     28.11     37.06
0
1
      3/ 4/99       16:29:43                                                                  PAGE     7


 T1 28' FF
 T2 100YR 6HR
```

****

T3 CASA MARIA

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	5	0	1	.010					

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	4	0	-1	0	0	0	0	0	0	0

1

3/ 4/99 16:29:43 PAGE 8

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 4

CCHV= .100 CEHV= .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED

1.00	.45	.45	.48	.00	.62	.16	.00	.00	.85
21.	0.	21.	0.	0.	7.	0.	0.	0.	.85
.00	.00	3.24	.00	.000	.017	.000	.000	.00	8.93
.009933	0.	0.	0.	0	8	5	.00	28.14	37.07

0
1

3/ 4/99 16:29:43 PAGE 9

T1 28' FF
T2 100YR 6HR
T3 NW KNUCKLE

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	6	0	1	.010					

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	5	0	-1	0	0	0	0	0	0	0

1

3/ 4/99 16:29:43 PAGE 10

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV

****

Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 5

CCHV= .100 CEHV= .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED

1.00	.53	.53	.57	.00	.76	.24	.00	.00	.85
34.	0.	34.	0.	0.	9.	0.	0.	0.	.85
.00	.00	3.91	.00	.000	.017	.000	.000	.00	8.92
.010035	0.	0.	0.	0	11	6	.00	28.16	37.08

0
1

****
HEC2 RELEASE DATED SEP 88 UPDATED APR 1989

ERROR CORR - 01,02
MODIFICATION -
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SANTA ELENA

SUMMARY PRINTOUT

SECNO	Q	CWSEL	CRIWS	VCH	TOPWID	FRCH	EG
1.000	12.54	.43	.00	2.14	28.13	.82	.50
1.000	30.94	.51	.55	3.78	28.15	1.24	.73
1.000	13.22	.38	.42	2.85	28.11	1.24	.51
1.000	21.30	.45	.48	3.24	28.14	1.18	.62
1.000	33.86	.53	.57	3.91	28.16	1.24	.76

1

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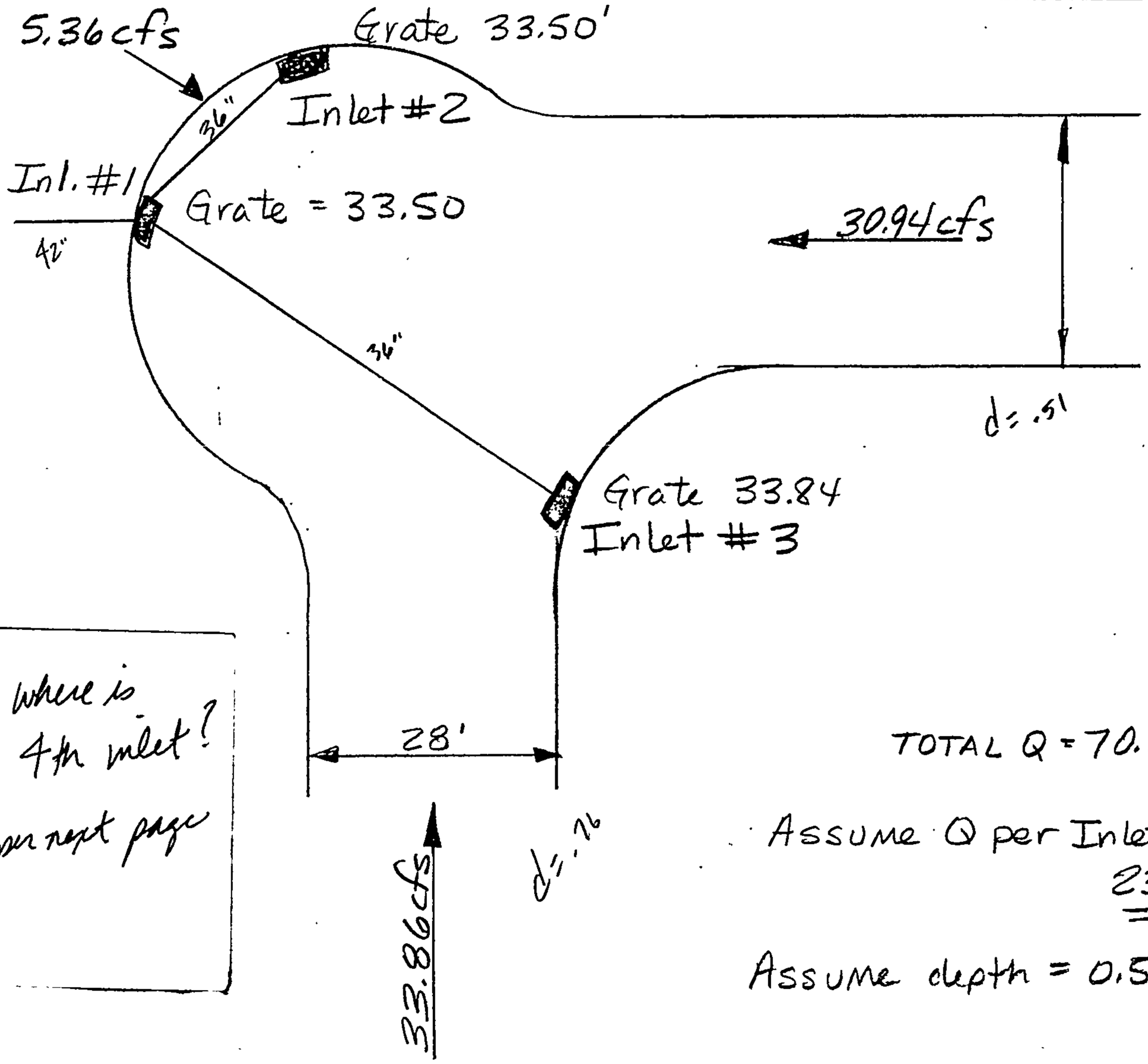
APPENDIX C

STORM DRAIN

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

PROJECT Los Prados del Norte
SUBJECT Sump Inlet Calcs
BY DLH DATE 3-5-99
CHECKED _____ DATE _____
SHEET 1 OF 2



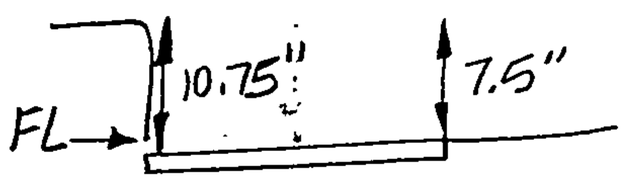
where is 4th inlet? per next page

TOTAL Q = 70.16

Assume Q per Inlet = 23.4cfs

Assume depth = 0.50'

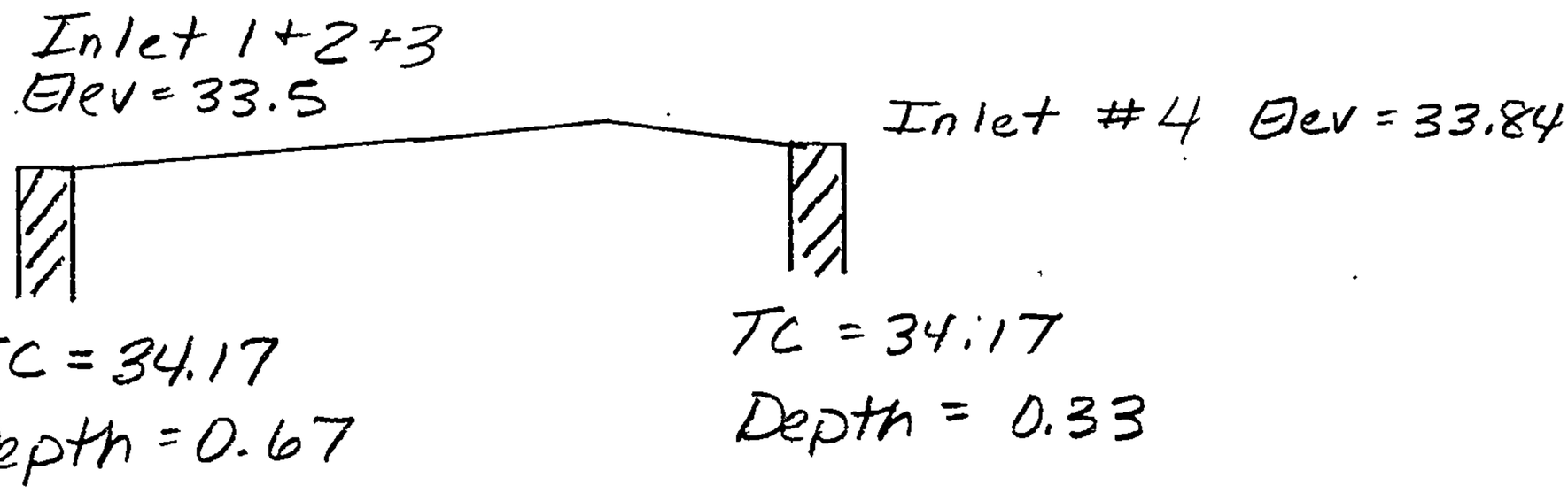
Capacity is measured by the weir Eqn. at the lip of the gutter assuming an allowable ponding elevation equal to the lowest adjacent right-of-way elevation.



Avg Depth = 0.76' (SIDE)
Avg Depth = 0.625' (FRONT)

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

PROJECT Los Pradosdel Norte
SUBJECT Sump Inlet Calcs
BY DLH DATE 3-5-99
CHECKED _____ DATE _____
SHEET 2 OF 2



Capacity Inlet 1+2+3 Q = 3.0(L) $H^{1.5}$ (WEIR EQN)

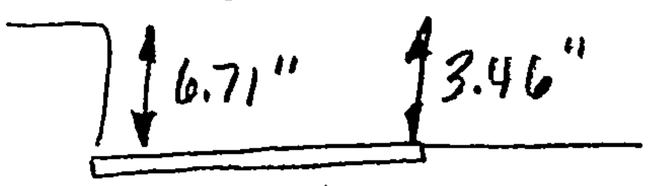
Q (FRONT) = 3 (6.5)(.625)$^{1.5}$ = 9.63 cfs

Q (SIDE) = 3 (2ea)(4.0)(0.76)$^{1.5}$ = 15.90 cfs

25.53 cfs (each inlet)

76.59 cfs (Three Inlets)

Capacity Inlet 4 (Depth = 0.33' = 3.96")



Avg Depth = 5.085" = .424' (SIDE)
Avg Depth = 3.46" = .288' (FRONT)

Q (FRONT) = 3(6.5)(.288')$^{1.5}$ = 3.01 cfs

Q (SIDE) = 3 (2ea)(4.0)(.424)$^{1.5}$ = 6.63 cfs

9.64 cfs

TOTAL CAPACITY = 86.23 cfs (76.59+9.64)

REQ'D CAPACITY = 70.16 cfs

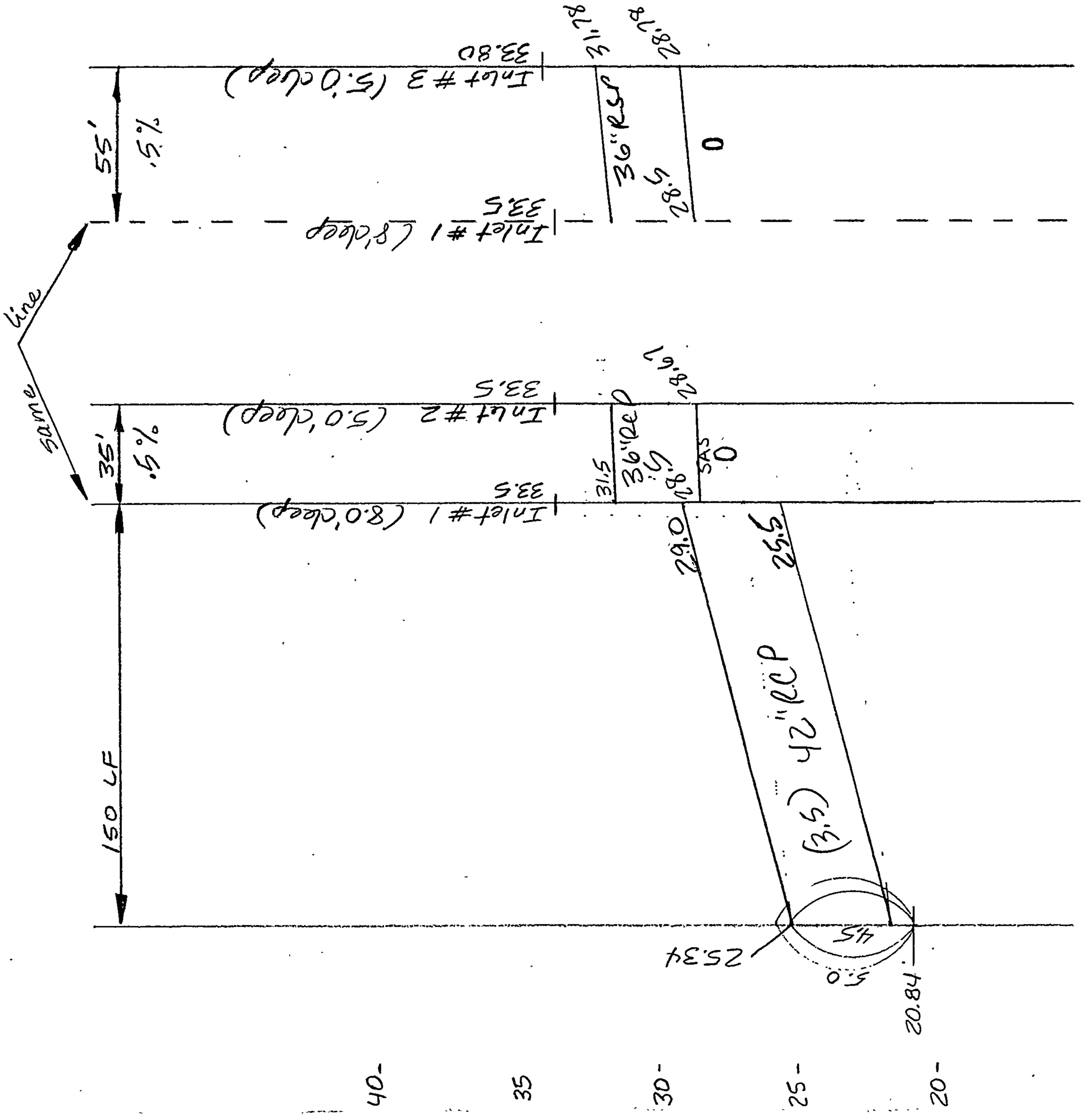
23% CLOGGING FACTOR,

NOTE: NO EMERGENCY OVERFLOW. STORM DRAIN SIZE HAS BEEN DESIGNED TO HANDLE 2 TIMES THE 100 YR. Q.

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

PROJECT Los Prados del Norte
SUBJECT Prel. Storm Drain Design
BY DLH DATE 3-5-99
CHECKED _____ DATE _____
SHEET ____ OF ____

Storm Drain Schematic
Casa Maria / Casa Tomas Knuckle



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HYDRAULIC REPORT FOR

LOS PRADOS DEL NORTE

STORM DRAIN ANAYSIS

FOR 2X Q CAPACITY

MARK GOODWIN & ASSOCIATES

DLH

MARCH 5, 1999

LINE 1 / Q = 140.5 / HT = 42 / WID = 42 / N = .013 / L = 150 / JLC = .1

EX MH - SUMP 1 / Outfall

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	30.00	42.00	21.84	14.61	33.31	0.00	9.65	9.62
UPSTRM	32.93	42.00	25.50	14.60	36.24	0.00	4.5	9.62

Drainage area (ac)	= 0	Slope of invert (%)	= 2.440
Runoff coefficient	= 0	Slope energy grade line (%)	= 1.951
Time of conc (min)	= 0	Critical depth (in)	= 40.79
Inlet time (min)	= 0	Req'd length curb inlet (ft)	= 0.0
Intensity (in/hr)	= 0.00	Req'd grate area (sf)	= 0.0
Cumulative C*A	= 0.0	Depth at inlet opening (in)	= 0
Flow contrib (cfs)	= 140.5	Confluence angle (deg)	= 90
Default Q (cfs)	= 140.5	Natural ground elev (ft)	= 33.5
Line capac. (cfs)	= 157.2	Line storage (cuft)	= 1443

2x100 yr

LINE 2 / Q = 47.0 / HT = 36 / WID = 36 / N = .013 / L = 35 / JLC = .05

SUMP1- SUMP2 / DNLN = 1

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	33.26	36.00	28.50	6.65	33.95	0.00	2	7.07
UPSTRM	33.47	36.00	28.67	6.65	34.15	0.00	1.82	7.07

Drainage area (ac)	= 0	Slope of invert (%)	= 0.486
Runoff coefficient	= 0	Slope energy grade line (%)	= 0.595
Time of conc (min)	= 0	Critical depth (in)	= 26.21
Inlet time (min)	= 0	Req'd length curb inlet (ft)	= 0.0
Intensity (in/hr)	= 0.00	Req'd grate area (sf)	= 0.0
Cumulative C*A	= 0.0	Depth at inlet opening (in)	= 0
Flow contrib (cfs)	= 47	Confluence angle (deg)	= 30
Default Q (cfs)	= 47	Natural ground elev (ft)	= 33.5
Line capac. (cfs)	= 46.5	Line storage (cuft)	= 247

24hour

*

*

*

*

*

LINE 3 / Q = 47.0 / HT = 36 / WID = 36 / N = .013 / L = 55 / JLC = .05

SUMP 1-SUMP 3 / DNLN = 1

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	33.26	36.00	28.50	6.65	33.95	0.00	2	7.07
UPSTRM	33.57	36.00	28.78	6.65	34.25	0.00	2.05	7.07

Drainage area (ac)	= 0	Slope of invert (%)	= 0.509
Runoff coefficient	= 0	Slope energy grade line (%)	= 0.497
Time of conc (min)	= 0	Critical depth (in)	= 26.21
Inlet time (min)	= 0	Req'd length curb inlet (ft)	= 0.0
Intensity (in/hr)	= 0.00	Req'd grate area (sf)	= 0.0
Cumulative C*A	= 0.0	Depth at inlet opening (in)	= 0
Flow contrib (cfs)	= 47	Confluence angle (deg)	= 45
Default Q (cfs)	= 47	Natural ground elev (ft)	= 33.84
Line capac. (cfs)	= 47.6	Line storage (cuft)	= 389

1

0

HYDRAULIC REPORT FOR

LOS PRADOS DEL NORTE

STORM DRAIN ANALYSIS

MARK GOODWIN & ASSICIATES

DLH

MARCH 5, 1999

LINE 1 / Q = 70.2 / HT = 42 / WID = 42 / N = .013 / L = 150 / JLC = .1

EX MH - SUMP 1 / Outfall

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	30.00	42.00	20.84	7.29	30.83	0.00	10.65	9.62
UPSTRM	30.73	42.00	22.34	7.29	31.56	0.00	7.65	9.62

Drainage area (ac)	= 0	Slope of invert (%)	= 1.000
Runoff coefficient	= 0	Slope energy grade line (%)	= 0.486
Time of conc (min)	= 0	Critical depth (in)	= 30.77
Inlet time (min)	= 0	Req'd length curb inlet (ft)	= 0.0
Intensity (in/hr)	= 0.00	Req'd grate area (sf)	= 0.0
Cumulative C*A	= 0.0	Depth at inlet opening (in)	= 0
Flow contrib (cfs)	= 70.1	Confluence angle (deg)	= 90
Default Q (cfs)	= 70.16	Natural ground elev (ft)	= 33.5
Line capac. (cfs)	= 100.6	Line storage (cuft)	= 1443

LINE 2 / Q = 23.5 / HT = 36 / WID = 36 / N = .013 / L = 35 / JLC = .05

SUMP1- SUMP2 / DNLN = 1

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	30.81	21.75	29.00	5.17	31.23	35.06	1.5	4.55
UPSTRM	30.93	18.62	29.35	6.37	31.56	35.98	1.14	3.69

Drainage area (ac)	= 0	Slope of invert (%)	= 1.000
Runoff coefficient	= 0	Slope energy grade line (%)	= 0.960
Time of conc (min)	= 0	Critical depth (in)	= 18.54
Inlet time (min)	= 0	Req'd length curb inlet (ft)	= 0.0
Intensity (in/hr)	= 0.00	Req'd grate area (sf)	= 0.0
Cumulative C*A	= 0.0	Depth at inlet opening (in)	= 0
Flow contrib (cfs)	= 23.5	Confluence angle (deg)	= 30
Default Q (cfs)	= 23.5	Natural ground elev (ft)	= 33.5
Line capac. (cfs)	= 66.7	Line storage (cuft)	= 144

LINE 3 / Q = 23.5 / HT = 36 / WID = 36 / N = .013 / L = 55 / JLC = .05

SUMP 1-SUMP 3 / DNLN = 1

	HGL	DEPTH	INVERT	VEL	EGL	T WID	COVER	AREA
DNSTRM	30.81	21.75	29.00	5.17	31.23	35.06	1.5	4.55
UPSTRM	31.13	18.62	29.55	6.37	31.76	35.98	1.29	3.69

Drainage area (ac)	= 0	Slope of invert (%)	= 1.000
Runoff coefficient	= 0	Slope energy grade line (%)	= 0.917
Time of conc (min)	= 0	Critical depth (in)	= 18.54
Inlet time (min)	= 0	Req'd length curb inlet (ft)	= 0.0
Intensity (in/hr)	= 0.00	Req'd grate area (sf)	= 0.0
Cumulative C*A	= 0.0	Depth at inlet opening (in)	= 0
Flow contrib (cfs)	= 23.5	Confluence angle (deg)	= 45
Default Q (cfs)	= 23.5	Natural ground elev (ft)	= 33.84
Line capac. (cfs)	= 66.7	Line storage (cuft)	= 226

Parsons
Brinckerhoff

5801 Osuna Road NE
Suite 200
Albuquerque, NM 87109

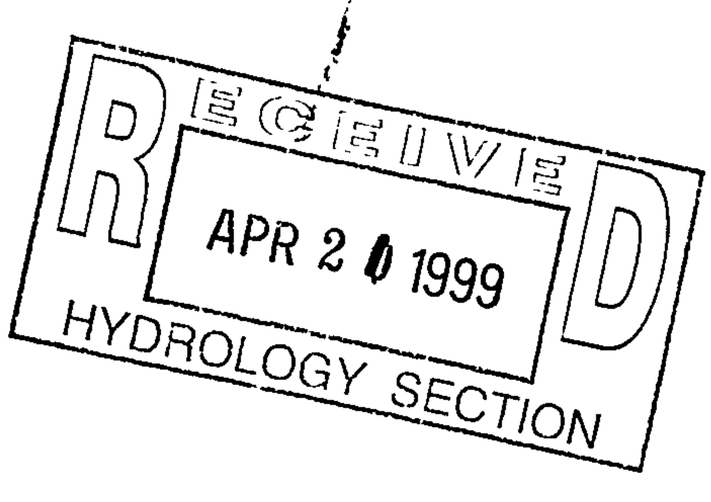
FRED AGUIRRE, PE
DEVELOPMENT REVIEW
HYDROLOGY
[HAND DELIVERED]

Over a Century of Engineering Excellence

****

Parsons Brinckerhoff
5801 Osuna Road NE
Suite 200
Albuquerque, NM 87109
505-881-5357
Fax: 505-881-7602

April 21, 1999



Fred Aguirre, Drainage Review
Development Review Board
City of Albuquerque, Planning Department
Plaza Del Sol Building, 2nd Floor
Albuquerque, NM

Re: Vista Del Norte, DRB 98-78

Mr. Aguirre,

Attached please find the revised Hydraulic Grade Line calculation sheets and a display showing the manhole locations and numbers in relation to the properties being developed by Mark Goodwin and Associates. The outfall for Tract I, Los Prados Del Norte Subdivision, has been relocated from manhole #19 to manhole #32, see display. The other change reflected in the revision is the addition of three additional stubs to Tract W, Villa Del Valle Subdivision. Originally, one stub collected flows from Tract W. At the request of Mark Goodwin's office we added stubs at locations that worked for their design and sized the stubs to handle their flows. No additional flows were added nor removed from this segment. These changes will be reflected in a revised grading and drainage submittal to your office.

If you have any questions regarding this submittal please contact Elias Archuleta or me at 881-5357. Thank you for your time.

Sincerely,

James Domenick, P.E.

Cc: File
Diane Hoelzer, P.E., D. Mark Goodwin & Assoc.
Jerry Sundt, Sundt Corp.
Ron Brown, Brown and Assoc.

RECEIVED
APR 21 1999
HYDROLOGY SECTION

PROPOSED 30'
STORM DRAIN
EASEMENT

SD #31
30" RCP
SD #30
SD #29
SD #28
30" RCP
SD #27a
MIDDLE DETENTION POND
SD #25
SD #24
60" RCP
BOSQUE
SD #23
TRACT K
TRACT F
60" RCP
PROPOSED 30'
STORM DRAIN
EASEMENT
SD #32
SD #21
SD #22
VISTA MONTE DRIVE
54" RCP
48"
RCP
STUB & PLUG
SD #33
SD #20
60" RCP
SD #19
SD #18
60" RCP
42" RCP STUB
To Los Rancos
Subdivision
TRACT I
SD #20
SD #11
54" RCP
60" RCP
E DRIVE
SD #12
48" RCP
48" RCP
SD #13
SD #14
48" RCP
SD #15
48" RCP
SD #16
54" RCP STUB
24" RCP STUB
24" RCP STUB
24" RCP STUB
24" RCP STUB
24" RCP STUB
Tract V
SD #17
30" RCP

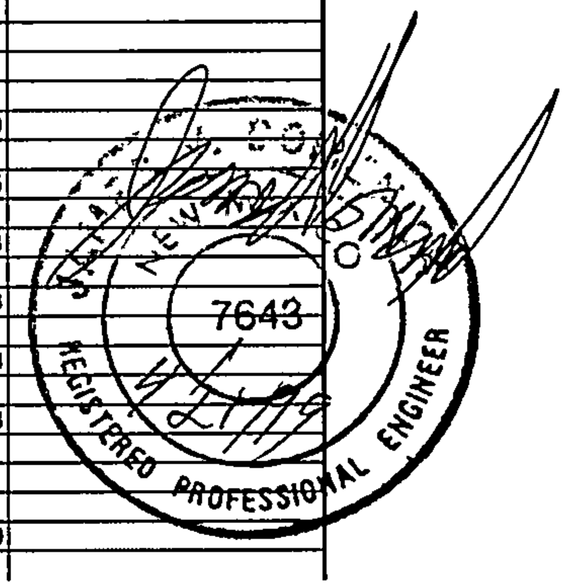
JAMES V. DOMENICI
NEW MEXICO
7643
REGISTERED PROFESSIONAL ENGINEER

* * * *

SUMMARY OF HYDRAULIC CALCULATIONS
CLOSED CONDUIT 2/22/99

n = 0 013

1	2	3	4	5	6	7	8	9	10		11	12	13	14		15	16	17	18	19	20	21	22	23	24
											JUNCTION		LOSSES												
STATION	STRUCT	D	Q	A	V	K	Sf	L	DELTA	Q	D	ANGLE	hf	hb	Aavg	hj	hmh	ht	hmisc	SUM	E G.	hv	H.G.	GROUND ELEV.	COMMENT
SOUTH	POND																						5021 00		
	OUTFALL																			0.00	5026 81	5 81	5021.00	5040 00	
		48 00	243	12 57	19 34	1437 2	0 0286	100					2 86							2.86	5029 67	5 81	5023 86		
	MH									0				0 00	12.57	0 00	0.29	0.00		0 29	5029 96	5 81	5024 15	5045 22	
		48 00	243	12 57	19 34	1437 2	0 0286	570					16 29							16 29	5046.25	5 81	5040 44		
	MH/B/J								90	84				0.50	12 57	0 00	0.12	0.00		0 62	5046 87	2 49	5044 39	5054 47	18+48 77
		48 00	159	12.57	12 65	1437 2	0 0122	395					4 83							4 83	5051.71	2 49	5049 22		
	MH/B/J													0.00	11.09	0 00	0 18	0 21		0 38	5052 09	3.53	5048 56	5055 16	14+55 85
		42 00	145	9 62	15 07	1006 6	0 0208	105					2.18							2 18	5054 27	3.53	5050.74		
	MH									99				0 00	9 62	0 00	0 02	0.00		0 02	5054 29	0 35	5053 93	5055 44	13+50 00
		42 00	46	9 62	4 78	1006 6	0 0021	400					0 84							0 84	5055.12	0 35	5054.77		
	MH/J													0.00	8.34	0 00	0.03	0.06		0 09	5055.22	0 66	5054.56	5057 41	9+51.05
		36 00	46	7.07	6 51	667 28	0 0048	450					2.14							2.14	5057.35	0 66	5056.70		
	MH/B									0				0.00	7.07	0.00	0.03	0 00		0 03	5057.39	0 66	5056 73	5059 65	5+01 85
		36.00	46	7 07	6 51	667.28	0 0048	108					0 51							0 51	5057 90	0 66	5057 24		
	INLET									48				0.00	3 53	0.00	0 00	-0.13		-0.13	5057.77	0 00	5057.77	5061 00	
																							5044 39		
	TIE-IN									-110				0 00	6 28	0.00	0 06	0 24		0 30	5045 87	1.19	5044 68	5050 00	
		48 00	110	12.57	8.75	1437.2	0 0059	108					0 63							0 63	5046.51	1.19	5045 32		
	MH/B													0 00	12.57	0 00	0 00	0.00		0 00	5046.51	0.00	5046 51	5048 00	
		48 00	0	12.57	0 00	1437 2	0 0000	0					0 00							0 00	5046 51	0 00	5046 51		
																							5021.00		
	OUTFALL																			0 00	5025.77	4 77	5021.00	5040.00	
		30 00	86	4 91	17.52	410 33	0.0439	550					24.16							24.16	5049 93	4 77	5045.16		
	INLET													0 00	4.91	0.00	0 24	0 00		0 24	5050.16	4 77	5045 40	#REF!	
		30 00	86	4.91	17.52	410 33	0 0439	0																	
																							5026.50		
MIDDLE	POND																								
BOSQUE	OUTFALL																			0 00	5028 94	2.44	5026 50	5032 00	
RD		60 00	246	19 64	12.53	2606	0.0089	70					0 62							0 62	5029 56	2 44	5027.12		
	MH/J #25													0.00	19 64	0.00	0 12	0.00		0.12	5029 68	2 44	5027 25	5035 09	
		60 00	246	19 64	12 53	2606	0.0089	143					1.27							1.27	5030 96	2 44	5028.52		
	MH/J #24													0.00	19.64	0.00	0 12	0.00		0.12	5031 08	2 44	5028.64	5036 23	
		60 00	246	19 64	12.53	2606	0 0089	135					1.20							1 20	5032.28	2 44	5029 84		
	MH #23													0.00	19 64	0.00	0.12	0.00		0 12	5032 40	2.44	5029 97	5037.19	
		60 00	246	19 64	12 53	2606	0 0089	110					0.98							0 98	5033.38	2 44	5030 95		
	MH #22								90					0 49	19.64	0 00	0.12	0 00		0 61	5033 99	2 44	5031 56	5037 98	
		60 00	246	19 64	12 53	2606	0.0089	350					3.12							3 12	5037.11	2.44	5034 67		
	MH #19													0.00	19.64	0 00	0 09	0 00		0 09	5037.20	1 79	5035 41	5047.60	
		60 00	211	19 64	10 75	2606	0 0066	560					3 67							3 67	5040 87	1.79	5039 08		
	MH #12													0.00	19.64	0.00	0 09	0 00		0 09	5040 96	1.79	5039.17	5047 60	
		60 00	211	19 64	10.75	2606	0 0066	0					0.00							0 00	5040.96	1.79	5039 17		
																							5039 17		
VISTA DEL NORTE DRIVE																				0 00	5039 52	0 35	5039 17	5047 60	
	MH #12																			0 42	5039 95	0 35	5039 59		
		48 00	60	12 57	4.77	1437.2	0 0017	243					0 42							0.01	5039 96	0 24	5039.72	5046 25	
	MH/J #13													0.00	12.57	0 00	0.01	0.00		0 13	5040 08	0 24	5039 85		
		48.00	49	12 57	3 90	1437 2	0 0012	108			24	90	0 13							0 01	5040 09	0 17	5039 92	5044 33	
	MH/J #14													0 00	12.57	0 00	0 01	0.00		0.16	5040.25	0 17	5040 08		
		48 00	41.5	12.57	3 30	1437 2	0.0008	188			24	90	0 16							0 01	5040 26	0.11	5040 14	5044 03	
	MH #15													0 00	12.57	0 00	0 01	0 00		0 07	5040 33	0 11	5040 21		
		48 00	34	12 57	2.71	1437 2	0 0006	130			24	90	0 07							0 04	5040 36	0 23	5040.13	5042 68	
	MH #16													0 00	8.74	0.00	0 01	0 02		0 51	5040 88	0 23	5040 64		
		30 00	19	4 91	3 87	410 33	0 0021	239			24	90	0 51							0 10	5040 97	0 57	5040 40	5042 68	
	MH #17													0.00	4.03	0.00	0.03	0.07							
		24.00	19	3.14	6 05	226 29	0 0070	0			30	90	0 00												
																							5039.17		
VISTA DEL NORTE DRIVE																				0 00	5040 59	1.42	5039.17	5047 60	
	MH #12																			1.28	5041.87	1.42	5040.45		
		54.00	152	15.90	9.56	1967.6	0.0060	215					1.28												



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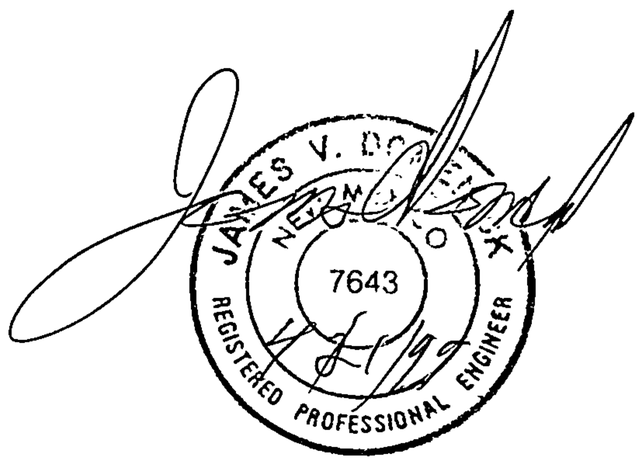
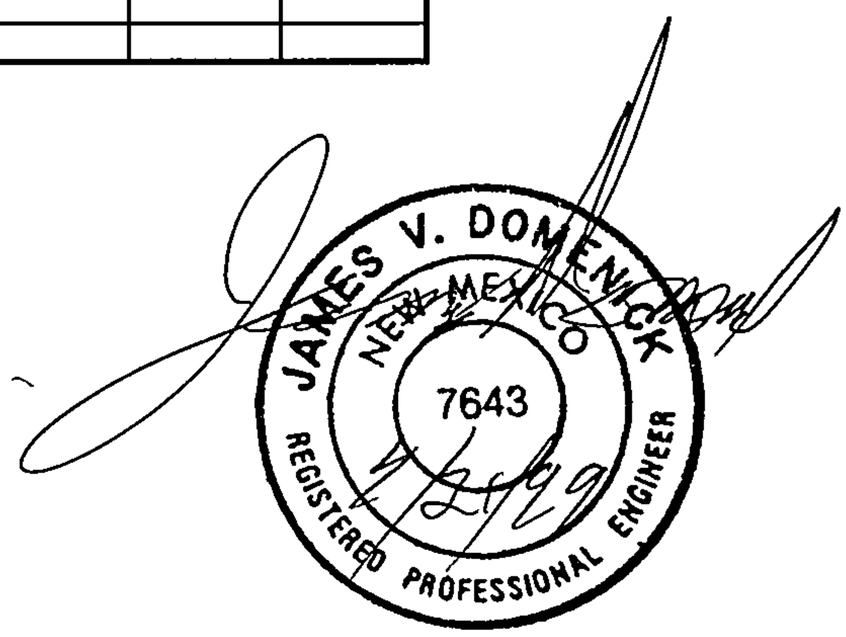
	MH/J #11													0 00	15.90	0 00	0 07	0 00		0 07	5041 94	1 42	5040 52	5048 69	
		54 00	152	15.90	9.56	1967.6	0 0060	450					2 69							2.69	5044 63	1.42	5043 21		
	MH/J #10													0 00	15 90	0 00	0 07	0 00		0 07	5044 70	1 42	5043 28	5051 33	
		54 00	152	15 90	9 56	1967.6	0.0060	0					0 00							0.00	5044 70	1 42	5043 28		
VISTA DEL NORTE DRIVE - TIE INTO 42" RCP																							5048.56		
	MH #6								90											0 00	5048 66	0 10	5048 56	5055 16	
		24 00	8	3 14	2 55	226 29	0 0012	190					0 24							0 24	5048.90	0.10	5048 80		
	MH/J #2													0 00	3 14	0 00	0 01	0 00		0.01	5048 91	0 10	5048 81	5057 89	
		24 00	8	3.14	2.55	226 29	0 0012	332					0.41							0 41	5049.32	0.10	5049 22		
	MH/J #1													0 00	3.14	0 00	0 01	0 00		0 01	5049 33	0 10	5049 23	5061 76	
		24 00	8	3.14	2 55	226 29	0 0012	0					0 00							0 00	5049.33	0 10	5049 23		
VISTA	POND	(INCLUDES STUB TO GOODWIN'S PROPERTY)																					5026 50		
MONTE	OUTFALL																			0 00	5028 34	1 84	5026 50	5039 00	
DRIVE		60.00	214	19 64	10.90	2606	0 0067	300					2 02							2 02	5030 37	1.84	5028 52		
	MH/B/J #52								90		42	10		0 25	17 77	1.80	0 00	0 00		2 05	5032 42	1 27	5031 15	5035 00	
		54 00	144	15.90	9 05	1967.6	0 0054	350					1 87							1 87	5034 29	1 27	5033 02		
	MH/B 33													0 00	14 24	0 00	0 03	-0 15		-0 12	5034 17	0 54	5033 64	5035 00	
		48.00	74	12 57	5 89	1437.2	0 0027	450					1.19							1.19	5035.37	0 54	5034 83		
	INLET													0 00	12 57	0 00	0 03	0 00		0 03	5035 39	0 54	5034 86		
		48 00	74	12 57	5 89	1437.2	0 0027	0																	
PIPE BETWEEN PONDS																							5021.00		
	OUTFALL																			0 00	5021 23	0 23	5021.00	#REF!	
		24 00	12	3.14	3 82	226 29	0 0028	####					#REF!							#REF!	#REF!	0 23	#REF!		
	MH/B													0 00	3.14	0.00	0 01	0 00		0 01	#REF!	0 23	#REF!	5037.00	
		24 00	12	3 14	3 82	226 29	0 0028	450					1 27							1 27	#REF!	0 23	#REF!		
	INLET													0.00	3 14	0 00	0 00	0.00		0 00	#REF!	0 00	#REF!	5038 50	
		24 00	0	3.14	0 00	226 29	0 0000	####																	



STORM SEWER LAYOUT
VISTA DEL NORTE
HYDRAULIC GRADE LINE ANALYSIS

#	GROUND ELEV.	HGL (FT)	PIPE DIAM. (IN)	FLOW (CFS)	REQUIRED INVERT	PIPE LENGTH (FT)	CALCULATED SLOPE (%)	SLOPE USED (%)	PIPE INVERT
25	5035.09	5027.25			5019.22				5019.22
			60.00	246.00		143.00	4.90	1.24	
24	5036.23	5028.64			5026.23				5020.99
			60.00	246.00		135.00	4.59	1.24	
23	5037.19	5029.97			5027.19				5022.67
			60.00	246.00		110.00	4.80	1.29	
22	5037.95	5031.56			5027.95				5024.09
			60.00	246.00		350.00	2.07	0.29	
19	5041.33	5053.93			5031.33				5025.08
			60.00	211.00		560.00	2.17	0.25	
12	5047.25	5054.56			5037.25				5026.50
			48.00	56.00		243.00	4.97	2.00	
13	5047.50	5039.72			5038.58				5031.36
			48.00	49.00		108.00	4.84	0.20	
14	5045.50	5039.92			5036.58				5031.68
			48.00	41.50		188.00	3.14	0.20	
15	5046.50	5040.14			5037.58				5032.15
			48.00	34.00		130.00	4.18	0.20	
16	5046.50	5040.13			5037.58				5032.51
			30.00	19.00		239.00	2.80	0.61	
17	5046.50	5040.40			5039.21				5033.97
12	5047.25	5054.56			5037.25				5026.50
			48.00	56.00	0.00	215.00	4.97	4.29	
11	5048.69	5040.52			5039.23				5035.82
			54.00	152.00		517.00	1.17	0.50	
10	5051.33	5043.28			5041.87				5038.41



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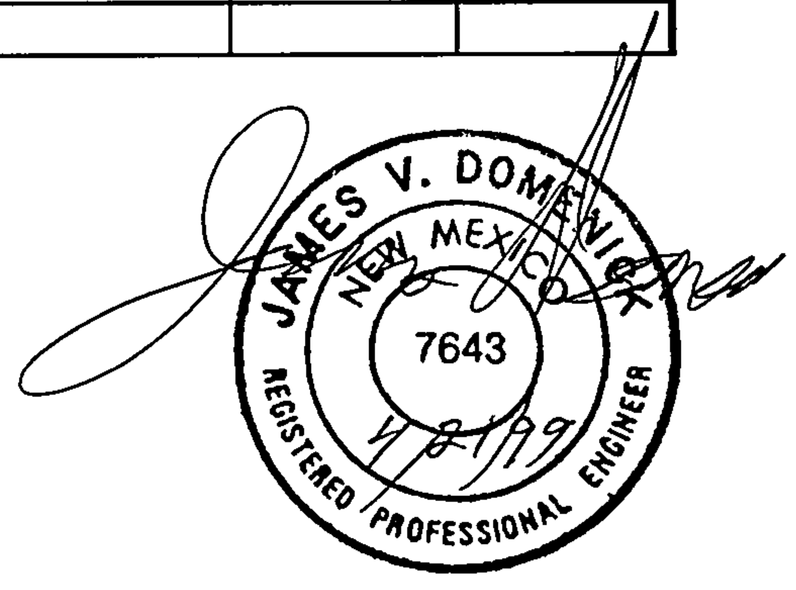
STORM SEWER LAYOUT
VISTA DEL NORTE
HYDRAULIC GRADE LINE ANALYSIS

#	GROUND ELEV.	HGL (FT)	PIPE DIAM. (IN)	FLOW (CFS)	REQUIRED INVERT	PIPE LENGTH (FT)	CALCULATED SLOPE (%)	SLOPE USED (%)	PIPE INVERT
middle pond	5039.00	5026.50			5018.50	*			5018.50
			60.00	214.00		433.00	1.50	0.50	
MH/B/J	5035.00	5031.15			5025.00				5020.67
			54.00	117.21		119.00	2.42	0.50	
MH/B	5033.00	5033.64			5023.54				5021.26
			54.00	117.21		450.00	1.17	0.50	
INLET	5036.00	5034.86			5026.54				5023.51



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 29, 1999

APR 01 REC'D

Diane Hoelzer, P.E.
Mark Goodwin & Associates
P.O. Box 90606
Albuquerque, New Mexico 87199

RE: Drainage Report and Grading and Drainage Plan for Los Prados Del Norte Subdivision (D16/D8) Submitted for Preliminary Plat Approval and Grading Permit Approval, Engineer's Stamp Dated 3/5/99.

Dear Ms Hoelzer:

Prior to approval of the above referenced plan for Preliminary Plat action, the following comments must be addressed:

1. This subdivision is part of the Vista Del Norte development. Please provide documentation from the Vista Del Norte master drainage plan to verify the allowable runoff rate from your site.

2. The master plan shows half of your site draining to the 60" storm drain on Vista Monte Drive, then draining west on Bosque Drive, and the other half draining to the northwest corner of your site. Your plan shows the entire site draining to the northwest corner. Please demonstrate that the storm drains designed by the Vista Del Norte master plan can handle this change. Have the off-site storm drains been constructed?

3. The plan uses a 6' wide channel in the subdivision to convey street flows. If the streets are public, then the channel should be built to City standards (10' wide) for City maintenance.

4. With respect to the sump inlet calculations, please show the location of inlet # 4 on the storm drain layout (sheet 1 of 2). The grading plan must show that the proposed inlets don't conflict with the driveways.

It has been brought to my attention that approval from the State Engineer's Office has not yet been obtained for the construction of the ponds for the Vista Del Norte development. There are also geotechnical issues regarding the ponds which have not been addressed. Therefore, Final Plat approval cannot be granted for this subdivision, or any other subdivision within Vista Del Norte, until State Engineer's concurrence is obtained and the geotechnical issues have been resolved.

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

Please provide a copy of the Infrastructure List for my file. If you have any questions regarding these comments, please call me at 924-3982.

Sincerely,

Susan Calongne

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

c: Fred Aguirre, DRB-98-241
James Domenick, Parsons Brinkerhoff, Inc.
Sundt Corporation
File

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 29, 1999

Diane Hoelzer, P.E.
Mark Goodwin & Associates
P.O. Box 90606
Albuquerque, New Mexico 87199

RE: Drainage Report and Grading and Drainage Plan for Los Prados Del Norte Subdivision (D16/D8) Submitted for Preliminary Plat Approval and Grading Permit Approval, Engineer's Stamp Dated 3/5/99.

Dear Ms Hoelzer:

Prior to approval of the above referenced plan for Preliminary Plat action, the following comments must be addressed:

1. This subdivision is part of the Vista Del Norte development. Please provide documentation from the Vista Del Norte master drainage plan to verify the allowable runoff rate from your site.

2. The master plan shows half of your site draining to the 60" storm drain on Vista Monte Drive, then draining west on Bosque Drive, and the other half draining to the northwest corner of your site. Your plan shows the entire site draining to the northwest corner. Please demonstrate that the storm drains designed by the Vista Del Norte master plan can handle this change. Have the off-site storm drains been constructed?

3. The plan uses a 6' wide channel in the subdivision to convey street flows. If the streets are public, then the channel should be built to City standards (10' wide) for City maintenance. Grading approved

4. With respect to the sump inlet calculations, please show the location of inlet # 4 on the storm drain layout (sheet 1 of 2). The grading plan must show that the proposed inlets don't conflict with the driveways. OK

It has been brought to my attention that approval from the State Engineer's Office has not yet been obtained for the construction of the ponds for the Vista Del Norte development. There are also geotechnical issues regarding the ponds which have not been addressed. Therefore, Final Plat approval cannot be granted for this subdivision, or any other subdivision within Vista Del Norte, until State Engineer's concurrence is obtained and the geotechnical issues have been resolved.

Please provide a copy of the Infrastructure List for my file. If you have any questions regarding these comments, please call me at 924-3982.

Sincerely,

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

c: Fred Aguirre, DRB-98-241
James Domenick, Parsons Brinkerhoff, Inc.
Sundt Corporation
File

N80°09'03"W

934.88'

N39°12'56"W

36" 100' S=0.50%

TRACT B
32.51 Ac.±

24" 75' S=0.50%

24" 75' S=0.50%

24" 75' S=0.50%

30" 1000' S=0.50%

48" 300'

48" 300'

1/2 of TRACT K
12.99 Ac.±

60" 275'

BOSQUE D

60" 225'

TRACT F
6.50 Ac.±

60" 325'

1/2 of TRACT K
13.76 Ac.±

46' R.O.W.

60" 400'

54" 350'

50' R.O.W.

48" 450'

1/2 of TF
20.86

1/2 of TRACT I
9.92 Ac.±

50' RADIUS
CUL-DE-SAC

86' R.O.W.

54" 700'

60" 500'

1/2 of TRACT I
10.82 Ac.±

1/2 of TRACT E
20.86 Ac.±

MIDDLE BASIN

VISTA DEL NORTE DRIVE

48" 700' S=0.75%

TRACT J-2
2.50 Ac.±

68' R.O.W.

50' RADIUS
CUL-DE-SAC

48" 160'

48" 450'

TRACT J-1
33.28 Ac.±

TRACT J-3
13.18 Ac.±

TRACT H

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Los Prados Del Norte Subdivision ZONE ATLAS/DRNG,FILE#: D-16/

DRB #: 98-241 EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Tract I, Vista Del Norte Unit 1

CITY ADDRESS: North of Osuna Road between AMAFCA North Diversion Channel and Edith Blvd.

ENGINEERING FIRM: Mark Goodwin & Associates, PA CONTACT: Diane Hoelzer, PE

ADDRESS: PO Box 90606 ABQ NM 87199 PHONE: 828-2200

OWNER: Sundt Corporation CONTACT: _____

ADDRESS: PO Box 3671 Albuquerque NM 87190 PHONE: 883-1674

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: ALS, Inc. CONTACT: Tim Aldrich

ADDRESS: PO Box 30701 ABQ NM 87190 PHONE: 884-1990

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- _____ DRAINAGE PLAN
- _____ CONCEPTUAL GRADING & DRAINAGE PLAN
- X GRADING PLAN
- _____ EROSION CONTROL PLAN
- _____ ENGINEER'S CERTIFICATION
- _____ OTHER

PRE-DESIGN MEETING:

- _____ YES
- X NO
- _____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- _____ SKETCH PLAT APPROVAL
- X PRELIMINARY PLAT APPROVAL
- _____ S. DEV. PLAN FOR SUB'D APPROVAL
- _____ S. DEV. PLAN FOR BLDG PERMIT APPROVAL
- _____ SECTOR PLAN APPROVAL
- _____ FINAL PLAT APPROVAL
- _____ FOUNDATION PERMIT APPROVAL
- _____ BUILDING PERMIT APPROVAL
- _____ CERTIFICATION OF OCCUPANCY APPROVAL
- X GRADING PERMIT APPROVAL
- _____ PAVING PERMIT APPROVAL
- _____ S.A.D. DRAINAGE REPORT
- _____ DRAINAGE REQUIREMENTS
- _____ OTHER _____ (Specify)

DATE SUBMITTED: 3-5-99

BY: Diane Hoelzer
Diane Hoelzer, PE

RECEIVED
MAR 05 1999
HYDROLOGY SECTION

Transmittal

Parsons Brinckerhoff
5801 Osuna Road NE
Suite 200
Albuquerque, NM 87109
505-881-5357
Fax: 505-881-7602

to: Susan Calongne
City/County Floodplain Admin
City of Alb. - Planning Dept.
Plaza del Sol - 2nd Flor

from: Sabino Archuleta
date: 4/22/99 **time:**
project: Vista del Norte
project number: 33445TM.3.1

via:
- ☐ mail
- ☒ messenger
- ☐ overnight

for your:
- ☒ information/use
- ☐ approval
- ☐ review/comment

the following:
- ☐ shop drawings
- ☐ copy of letter
- ☐ prints
- ☐ change order
- ☐ plans
- ☐ samples
- ☐ specifications
- ☑ other

drawing	rev. no.	description	copies	date
		Revised Hydraulic Grade Line Calc. Sheets	1	
		Display showing NH locations and numbers	1	

If enclosures are not as noted, kindly notify us at once

RECEIVED
APR 22 1999
HYDROLOGY SECTION

comments

copies to:

signature:

Over a Century of Engineering Excellence

Parsons Brinckerhoff
5801 Osuna Road NE
Suite 200
Albuquerque, NM 87109
505-881-5357
Fax: 505-881-7602

April 21, 1999

Fred Aguirre, Drainage Review
Development Review Board
City of Albuquerque, Planning Department
Plaza Del Sol Building, 2nd Floor
Albuquerque, NM

Re: Vista Del Norte, DRB 98-78

Mr. Aguirre,

Attached please find the revised Hydraulic Grade Line calculation sheets and a display showing the manhole locations and numbers in relation to the properties being developed by Mark Goodwin and Associates. The outfall for Tract I, Los Prados Del Norte Subdivision, has been relocated from manhole #19 to manhole #32, see display. The other change reflected in the revision is the addition of three additional stubs to Tract W, Villa Del Valle Subdivision. Originally, one stub collected flows from Tract W. At the request of Mark Goodwin's office we added stubs at locations that worked for their design and sized the stubs to handle their flows. No additional flows were added nor removed from this segment. These changes will be reflected in a revised grading and drainage submittal to your office.

If you have any questions regarding this submittal please contact Elias Archuleta or me at 881-5357. Thank you for your time.

Sincerely,

James Domenick, P.E.

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APR 22 1999
HYDROLOGY SECTION

JAMES V. DOMENICK
NEW MEXICO
7643
REGISTERED PROFESSIONAL ENGINEER

Cc: File
Diane Hoelzer, P.E., D. Mark Goodwin & Assoc.
Jerry Sundt, Sundt Corp.
Ron Brown, Brown and Assoc.

PROPOSED 30'
STORM DRAIN
EASEMENT

SD #29

30" RCP

SD #28

SD #30

SD #31

30" RCP

SD #27a

MIDDLE DETENTION POND

SD #25

BOSQUE RD.

60" RCP

SD #24

PROPOSED 30'
STORM DRAIN
EASEMENT

TRACT K

SD #23

TRACT F

60" RCP

SD #32

SD #21

VISTA MONTE DRIVE

SD #22

STUB & PLUG

54" RCP

48" RCP

SD #33

SD #20

60" RCP

SD #19

SD #18

60" RCP

42" RCP STUB
To Los Ranchos
Subdivision

TRACT I

SD #20

60" RCP

SD #11

54" RCP

TE DRIVE

SD #12

48" RCP

54" RCP STUB

48" RCP

SD #13

48" RCP

SD #14

48" RCP

SD #15

48" RCP

SD #16

24" RCP STUB

24" RCP STUB

24" RCP STUB

24" RCP STUB

30" RCP

SD #17

24" RCP STUB

Tract V

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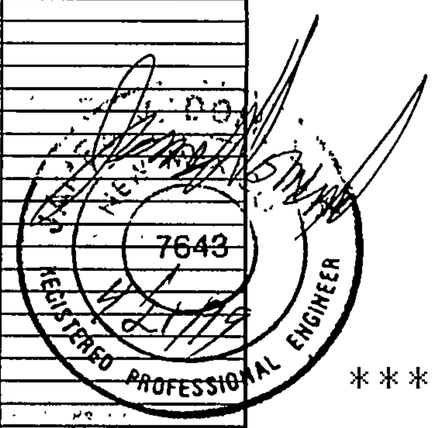
APR 22 1999
HYDROLOGY SECTION

JAMES V. DOMENICI
NEW MEXICO
7643
REGISTERED PROFESSIONAL ENGINEER

SUMMARY OF HYDRAULIC CALCULATIONS
CLOSED CONDUIT 2/22/99

n = 0 013

1	2	3	4	5	6	7	8	9	10		11	12	13	14		15	16	17	18	19	20	21	22	23	24
											JUNCTION		LOSSES												
STATION	STRUCT	D	Q	A	V	K	Sf	L	DELTA	Q	D	ANGLE	hf	hb	Aavg	hj	hmh	ht	hmisc	SUM	E G	hv	H G	GROUND ELEV	COMMENT
SOUTH	POND																						5021 00		
	OUTFALL																			0 00	5026 81	5 81	5021 00	5040 00	
		48 00	243	12 57	19 34	1437 2	0 0286	100					2 86							2 86	5029 67	5 81	5023 86		
	MH									0				0 00	12.57	0 00	0 29	0 00		0.29	5029 96	5.81	5024 15	5045 22	
		48 00	243	12 57	19 34	1437 2	0 0286	570					16 29							16 29	5046 25	5 81	5040 44		
	MH/B/J								90	84				0.50	12.57	0.00	0.12	0 00		0 62	5046 87	2.49	5044 39	5054 47	18+48 77
		48 00	159	12 57	12 65	1437 2	0 0122	395					4 83							4 83	5051 71	2 49	5049 22		
	MH/B/J													0 00	11.09	0.00	0.18	0 21		0 38	5052 09	3 53	5048 56	5055.16	14+55 85
		42 00	145	9 62	15 07	1006 6	0 0208	105					2 18							2 18	5054 27	3 53	5050 74		
	MH									99				0 00	9.62	0 00	0 02	0 00		0 02	5054 29	0 35	5053.93	5055.44	13+50 00
		42 00	46	9 62	4 78	1006 6	0 0021	400					0 84							0 84	5055 12	0 35	5054 77		
	MH/J													0 00	8.34	0.00	0 03	0.08		0.09	5055 22	0 66	5054.56	5057.41	9+51 05
		36 00	46	7 07	6 51	667 28	0 0048	450					2 14							2 14	5057 35	0 66	5056 70		
	MH/B									0				0 00	7.07	0.00	0 03	0 00		0 03	5057.39	0 68	5056.73	5059 65	5+01.85
		36 00	46	7 07	6 51	667 28	0 0048	108					0 51							0 51	5057 90	0 66	5057 24		
	INLET									46				0 00	3.53	0.00	0 00	-0.13		-0.13	5057.77	0.00	5057.77	5061.00	
																							5044 39		
	TIE-IN									-110				0 00	6 28	0 00	0 06	0 24		0 30	5045 87	1 19	5044 68	5050 00	
		48 00	110	12 57	8 75	1437 2	0 0059	108					0 63							0 63	5046 51	1 19	5045 32		
	MH/B													0 00	12 57	0 00	0 00	0 00		0 00	5046 51	0 00	5046 51	5048 00	
		48 00	0	12 57	0 00	1437 2	0 0000	0					0 00							0 00	5046 51	0 00	5046 51		
																							5021 00		
	OUTFALL																			0 00	5025 77	4 77	5021 00	5040 00	
		30 00	86	4 91	17 52	410 33	0 0439	550					24 16							24 16	5049 93	4 77	5045 16		
	INLET													0 00	4 91	0 00	0 24	0 00		0 24	5050 16	4 77	5045 40	#REF!	
		30 00	86	4 91	17 52	410 33	0 0439	0																	
MIDDLE	POND																						5026 50		
BOSQUE	OUTFALL																			0.00	5028 94	2 44	5026.50	5032.00	
RD		60 00	246	19 64	12 53	2606	0 0089	70					0 62							0 62	5029 56	2 44	5027 12		
	MH/J #25													0 00	19.64	0.00	0.12	0 00		0.12	5029 68	2.44	5027.25	5035 09	
		60 00	246	19 64	12 53	2606	0 0089	143					1 27							1 27	5030 96	2 44	5028 52		
	MH/J #24													0 00	19.64	0.00	0.12	0.00		0.12	5031.08	2.44	5028 64	5036 23	
		60 00	246	19 64	12 53	2606	0 0089	135					1 20							1 20	5032 28	2 44	5029 84		
	MH #23													0 00	19 64	0 00	0.12	0.00		0 12	5032.40	2 44	5029 97	5037.19	
		60 00	246	19 64	12 53	2606	0 0089	110					0 98							0 98	5033 38	2 44	5030 95		
	MH #22								90					0.49	19.64	0 00	0 12	0 00		0 61	5033 99	2.44	5031.56	5037.98	
		60 00	246	19 64	12 53	2606	0 0089	350					3 12							3 12	5037 11	2 44	5034 67		
	MH #19													0.00	19 64	0 00	0.09	0.00		0 09	5037.20	1.79	5035 41	5047 60	
		60 00	211	19 64	10 75	2606	0 0066	560					3 67							3 67	5040 87	1 79	5039 08		
	MH #12													0 00	19.64	0.00	0 09	0.00		0.09	5040.96	1.79	5039.17	5047.60	
		60 00	211	19 64	10 75	2606	0 0066	0					0 00							0 00	5040 96	1 79	5039 17		
VISTA DEL NORTE DRIVE																							5039 17		
	MH #12																			0 00	5039 52	0 35	5039.17	5047.60	
		48 00	60	12 57	4 77	1437 2	0 0017	243					0 42							0 42	5039 95	0 35	5039 59		
	MH/J #13													0 00	12.57	0.00	0 01	0 00		0.01	5039 96	0 24	5039.72	5046 25	
		48 00	49	12 57	3 90	1437 2	0 0012	108			24	90	0 13							0 13	5040 08	0 24	5039 85		
	MH/J #14													0.00	12.57	0.00	0 01	0 00		0 01	5040.09	0 17	5039 92	5044.33	
		48 00	41 5	12 57	3 30	1437 2	0 0008	188			24	90	0 16							0 16	5040 25	0 17	5040 08		
	MH #15													0 00	12.57	0.00	0 01	0 00		0.01	5040 26	0.11	5040.14	5044.03	
		48 00	34	12 57	2 71	1437 2	0 0006	130			24	90	0 07							0 07	5040 33	0 11	5040 21		
	MH #16													0 00	8.74	0 00	0 01	0 02		0 04	5040.36	0 23	5040.13	5042 68	
		30 00	19	4 91	3 87	410 33	0 0021	239			24	90	0 51							0 51	5040 88	0 23	5040 64		
	MH #17													0.00	4 03	0.00	0.03	0.07		0.10	5040 97	0 57	5040.40	5042.68	
		24 00	19	3 14	6 05	226 29	0 0070	0			30	90	0 00												
VISTA DEL NORTE DRIVE																							5039 17		
	MH #12																			0.00	5040 59	1.42	5039.17	5047.60	
		54 00	152	15 90	9 56	1967 6	0 0060	215					1 28							1 28	5041 87	1 42	5040 45		



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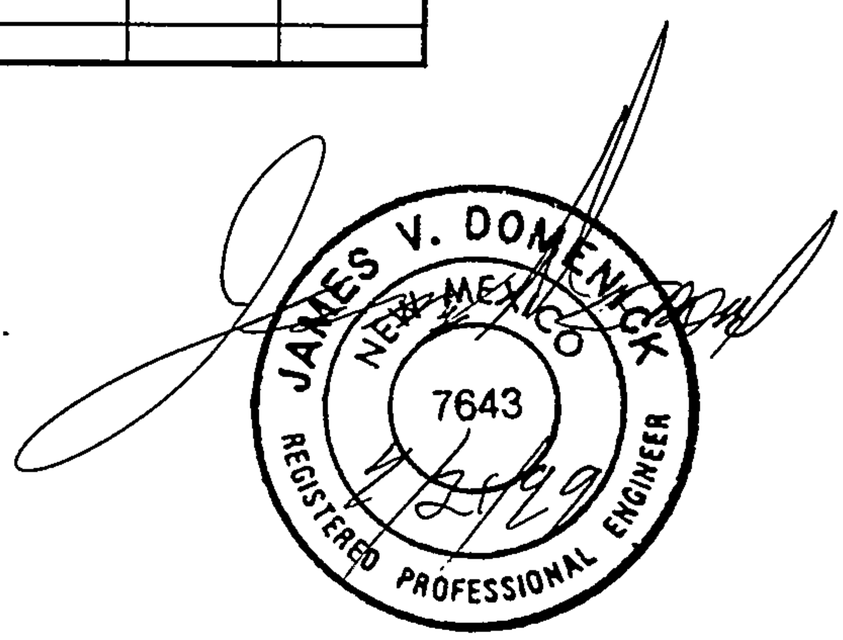
	MH/J #11													0 00	15.90	0.00	0.07	0 00		0.07	5041.94	1.42	5040 52	5048.69	
		54 00	152	15 90	9 56	1967 6	0 0060	450					2 69							2 69	5044 63	1 42	5043 21		
	MH/J #10													0 00	15.90	0.00	0 07	0 00		0.07	5044.70	1.42	5043 28	5051.33	
		54 00	152	15 90	9 56	1967 6	0 0060	0					0 00							0 00	5044 70	1 42	5043 28		
VISTA DEL NORTE DRIVE - TIE INTO 42" RCP																							5048 56		
	MH #6								90											0.00	5048 66	0.10	5048 56	5055.16	
		24 00	8	3 14	2 55	226 29	0 0012	190					0 24							0 24	5048 90	0 10	5048 80		
	MH/J #2													0 00	3.14	0.00	0 01	0.00		0 01	5048 91	0.10	5048 81	5057.89	
		24 00	8	3 14	2 55	226 29	0 0012	332					0 41							0 41	5049 32	0 10	5049 22		
	MH/J #1													0 00	3.14	0.00	0 01	0 00		0 01	5049.33	0.10	5049 23	5061.76	
		24 00	8	3 14	2 55	226 29	0 0012	0					0 00							0 00	5049 33	0 10	5049 23		
VISTA	POND	(INCLUDES STUB TO GOODWIN'S PROPERTY)																					5026 50		
MONTE	OUTFALL																			0.00	5028 34	1.84	5026.50	5039 00	
DRIVE		60 00	214	19 64	10 90	2606	0 0067	300					2 02							2 02	5030 37	1 84	5028 52		
	MH/B/J #52								90		42	10		0 25	17.77	1.80	0 00	0.00		2 05	5032.42	1 27	5031.15	5035 00	
		54 00	144	15 90	9 05	1967 6	0 0054	350					1 87							1 87	5034 29	1 27	5033 02		
	MH/B 33													0.00	14.24	0.00	0 03	-0 15		-0.12	5034.17	0.54	5033.64	5035.00	
		48 00	74	12 57	5 89	1437 2	0 0027	450					1 19							1 19	5035 37	0 54	5034 83		
	INLET													0 00	12 57	0.00	0 03	0.00		0.03	5035.39	0 54	5034 86		
		48 00	74	12 57	5 89	1437 2	0 0027	0																	
PIPE BETWEEN PONDS																							5021 00		
	OUTFALL																			0 00	5021 23	0 23	5021 00	#REF!	
		24 00	12	3 14	3 82	226 29	0 0028	####					#REF!							#REF!	#REF!	0 23	#REF!		
	MH/B													0 00	3 14	0 00	0 01	0 00		0 01	#REF!	0 23	#REF!	5037 00	
		24 00	12	3 14	3 82	226 29	0 0028	450					1 27							1 27	#REF!	0 23	#REF!		
	INLET													0 00	3 14	0 00	0 00	0 00		0 00	#REF!	0 00	#REF!	5038 50	
		24 00	0	3 14	0 00	226 29	0 0000	####																	

****

STORM SEWER LAYOUT
VISTA DEL NORTE
HYDRAULIC GRADE LINE ANALYSIS

#	GROUND ELEV.	HGL (FT)	PIPE DIAM. (IN)	FLOW (CFS)	REQUIRED INVERT	PIPE LENGTH (FT)	CALCULATED SLOPE (%)	SLOPE USED (%)	PIPE INVERT
25	5035.09	5027.25			5019.22				5019.22
			60.00	246.00		143.00	4.90	1.24	
24	5036.23	5028.64			5026.23				5020.99
			60.00	246.00		135.00	4.59	1.24	
23	5037.19	5029.97			5027.19				5022.67
			60.00	246.00		110.00	4.80	1.29	
22	5037.95	5031.56			5027.95				5024.09
			60.00	246.00		350.00	2.07	0.29	
19	5041.33	5053.93			5031.33				5025.08
			60.00	211.00		560.00	2.17	0.25	
12	5047.25	5054.56			5037.25				5026.50
			48.00	56.00		243.00	4.97	2.00	
13	5047.50	5039.72			5038.58				5031.36
			48.00	49.00		108.00	4.84	0.20	
14	5045.50	5039.92			5036.58				5031.68
			48.00	41.50		188.00	3.14	0.20	
15	5046.50	5040.14			5037.58				5032.15
			48.00	34.00		130.00	4.18	0.20	
16	5046.50	5040.13			5037.58				5032.51
			30.00	19.00		239.00	2.80	0.61	
17	5046.50	5040.40			5039.21				5033.97
12	5047.25	5054.56			5037.25				5026.50
			48.00	56.00	0.00	215.00	4.97	4.29	
11	5048.69	5040.52			5039.23				5035.82
			54.00	152.00		517.00	1.17	0.50	
10	5051.33	5043.28			5041.87				5038.41



STORM SEWER LAYOUT
VISTA DEL NORTE
HYDRAULIC GRADE LINE ANALYSIS

#	GROUND ELEV.	HGL (FT)	PIPE DIAM. (IN)	FLOW (CFS)	REQUIRED INVERT	PIPE LENGTH (FT)	CALCULATED SLOPE (%)	SLOPE USED (%)	PIPE INVERT
middle pond	5039.00	5026.50			5018.50	*			5018.50
			60.00	214.00		433.00	1.50	0.50	
MH/B/J	5035.00	5031.15			5025.00				5020.67
			54.00	117.21		119.00	2.42	0.50	
MH/B	5033.00	5033.64			5023.54				5021.26
			54.00	117.21		450.00	1.17	0.50	
INLET	5036.00	5034.86			5026.54				5023.51

JAMES V. DOMENICK
NEW MEXICO
7643
REGISTERED PROFESSIONAL ENGINEER

****

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 29, 1999

APR 01 REC'D

Diane Hoelzer, P.E.
Mark Goodwin & Associates
P.O. Box 90606
Albuquerque, New Mexico 87199

RE: Drainage Report and Grading and Drainage Plan for Los Prados Del Norte Subdivision (D16/D8) Submitted for Preliminary Plat Approval and Grading Permit Approval, Engineer's Stamp Dated 3/5/99.

Dear Ms Hoelzer:

Prior to approval of the above referenced plan for Preliminary Plat action, the following comments must be addressed:

1. This subdivision is part of the Vista Del Norte development. Please provide documentation from the Vista Del Norte master drainage plan to verify the allowable runoff rate from your site.

2. The master plan shows half of your site draining to the 60" storm drain on Vista Monte Drive, then draining west on Bosque Drive, and the other half draining to the northwest corner of your site. Your plan shows the entire site draining to the northwest corner. Please demonstrate that the storm drains designed by the Vista Del Norte master plan can handle this change. Have the off-site storm drains been constructed?

3. The plan uses a 6' wide channel in the subdivision to convey street flows. If the streets are public, then the channel should be built to City standards (10' wide) for City maintenance.

4. With respect to the sump inlet calculations, please show the location of inlet # 4 on the storm drain layout (sheet 1 of 2). The grading plan must show that the proposed inlets don't conflict with the driveways.

It has been brought to my attention that approval from the State Engineer's Office has not yet been obtained for the construction of the ponds for the Vista Del Norte development. There are also geotechnical issues regarding the ponds which have not been addressed. Therefore, Final Plat approval cannot be granted for this subdivision, or any other subdivision within Vista Del Norte, until State Engineer's concurrence is obtained and the geotechnical issues have been resolved.

Please provide a copy of the Infrastructure List for my file. If you have any questions regarding these comments, please call me at 924-3982.

Sincerely,

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

c: Fred Aguirre, DRB-98-241
James Domenick, Parsons Brinkerhoff, Inc.
Sundt Corporation
File

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

LETTER OF TRANSMITTAL

DATE 4-30-99 JOB NO.

ATTENTION Fred Aguirre - DRB

RE: Los Prados Del Norte
DRB 98-241

TO One Stop

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1			Revised Infrastructure List

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19_____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS This case to be heard 5-5-99 for Preliminary Plat approval.

Only changes to I.L. are:

① Santa Martha Pavement width 28" → 26"

② inclusion of words "May be" Financially Guaranteed With ...

COPY TO Ed Stang, R. Green, R. Dourte, F. Aguirre, J. Stephens

SIGNED: Diane Hawley

If enclosures are not as noted, kindly notify us at once.

D.R.B. Case No. 98-241
D.R.C. Project No. _____
Date Submitted 3-5-99
Prelim. Plat Approved _____
Prelim. Plat Expires _____

Figure 12

EXHIBIT "A"

To Subdivision Improvements Agreement
DEVELOPMENT REVIEW BOARD (DRB) REQUIRED INFRASTRUCTURE LISTING
for Los Prados Del Norte Subdivision
(Preliminary Plat)

Following is a summary of Public/Private Infrastructure required to be constructed or financially guaranteed to be constructed for the above development. This summary is not necessarily a complete listing. During the design process, if the City determines that appurtenant items have not been included in the summary, those items will be included in the listing and related financial guarantee, if the items normally are the Subdivider responsibility. In addition, any unforseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility are the responsibility of the Subdivider and will be included in the financial guarantee provided to the City.

Size	Type Improvement	Location	From	To
PAVEMENT				
53' 9' 4'	Res Pvmt Median Sidewalk Mtb C & G	Villa Del Valle	Vista Del Norte Dr	Casa Elena Dr
53' 9' 4'	Res Pvmt Median Sidewalk Mtb C & G	Via Chamisa	Vista Monte Dr	Casa Maria Rd
28' 4' (*)	Res Pvmt Sidewalk C & G	Casa Maria Rd	Casa Tomas Rd	Casa Elena Dr
28' 4' (*)	Res Pvmt Sidewalk C & G	Casa Tomas Rd	Casa Elena Dr	Casa Maria Rd
28' 4' (*)	Res Pvmt Sidewalk C & G	Casa Elena Dr	Casa Maria Rd	Casa Tomas Rd
26' 4' (*)	Res Pvmt Sidewalk C & G	Santa Rita Pl	Casa Tomas Rd	End of cul-de-sac
26' 4' (*)	Res Pvmt Sidewalk C & G	Santa Martha Ct	Santa Rita Pl	End of cul-de-sac

D.R.B. Case No. 98-241
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Size	Type Improvement	Location	From	To
66'FF	***Art Pvmt	Vista Del Norte Dr	Osuna Road	Vista Monte Dr
	***Std C & G			
16'	***Median			
46'FF	***Art Pvmt	Vista Del Norte Dr	Vista Monte Dr	N. Prop Line of Tract I
	***Std C & G			
14'	***Median			
10'	***Bike/Pedestrian Trail (west side)			
36'FF	***Res Pvmt	Vista Monte Dr	Vista Del Norte Dr	150' West of Vista Del Norte Drive
	***Std C & G			
4'	***Sidewalk (East Side)			
32'FF	***Res Pvmt	Vista Monte Dr	150' West of Vista Del Norte Dr	N.Prop Line of Tract I
	***Std C & G			
4'	***Sidewalk (East Side)			
N/A	Street Lights Per DPM			

WATER

6"	Waterline	Villa Del Valle	Vista Del Norte Dr	Casa Elena Dr
6"	Waterline	Via Chamisa	Vista Monte Dr	Casa Maria Rd
6"	Waterline	Casa Maria Rd	Casa Tomas Rd	Casa Elena Dr
6"	Waterline	Casa Tomas Rd	Casa Elena Dr	Casa Maria Rd
6"	Waterline	Casa Elena Dr	Casa Maria Rd	Casa Tomas Rd
6"	Waterline	Santa Rita Pl	Casa Tomas Rd	End of cul-de-sac
6"	Waterline	Santa Martha Ct	Santa Rita Pl	End of cul-de-sac
6"	Waterline	Tract A	Santa Martha Ct	Casa Maria Rd
16"	***Waterline	Vista Del Norte Dr	Osuna Road	N. Prop Line of Tract I
12"	***Waterline	Osuna Road	Exsit. 10" WL at Tokay Court	Vista Del Norte Dr
8"	***Waterline	Vista Monte Dr	Vista Del Norte Dr	N.Prop Line of Tract I
8"	***Waterline	Bosque Road	Vista Monte Dr	Exist waterline E. Prop Line Tract A

SANITARY SEWER

8"	Sanitary Sewer	Casa Maria Rd	Casa Tomas Rd	Villa Chamisa
8"	Sanitary Sewer	Casa Tomas Rd	Casa Elena Dr	Casa Maria Rd

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Size	Type Improvement	Location	From	To
8"	Sanitary Sewer	Casa Elena Dr	Villa Del Valle	Casa Tomas Rd
8"	Sanitary Sewer	Santa Rita Pl	Casa Tomas Rd	End of cul-de-sac
8"	Sanitary Sewer	Santa Martha Ct	Santa Rita Pl	End of cul-de-sac
8"	Sanitary Sewer	25' SAS & Drainage Easement	Casa Tomas Rd	Vista Monte Dr
8"	**Sanitary Sewer	Villa Del Valle	Vista Del Norte Dr	Casa Elena
8"	**Sanitary Sewer	Casa Elena Dr.	Ville Del Valle	Casa Maria
8"	**Sanitary Sewer	Casa Maria	Casa Elena	Via Chamisa
8"	**Sanitary Sewer	Via Chamisa	Casa Maria	Vista Monte Dr
8"	***Sanitary Sewer	Vista Monte Dr	Vista Del Norte Dr	N.Prop Line of Tract I
8"	***Sanitary Sewer	Bosque Road	Monte Vista Dr	E.Prop Line of Tract A
8"	***Sanitary Sewer	20' SAS Ease. in Tract A	Bosque Road	W. Prop Line of Tract A (Exist 36"SAS)
STORM DRAIN				
30"-42"	Storm Drain & Appurtenances	25' SAS & Drainage Easement	Casa Tomas Rd	Vista Monte Dr
Per Design	Private Drainage Channel	Tract A	Santa Martha Ct	Casa Maria Rd
18"-60"	***Storm Drain & Appurtenances	Vista Del Norte Dr	N. Prop Line of Tract I	Vista Monte Dr
18"-60"	***Storm Drain & Appurtenances	Vista Monte Dr	Vista Del Norte Dr	North Prop Line of Tract I
(*)	**Sidewalks to be deferred**			

(**) Items may be FINANCIALLY GUARANTEED and built with Villa Del Norte (DRB 98-374)

(***) Items may be FINANCIALLY GUARANTEED with Vista Del Norte Unit 1 DRB 98-71 and built with Project No 5970.81.

D.R.B. Case No. 98-241
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1. Storm Drain to include manholes and inlets.
2. Engineer's Certification for Grading and Drainage per DPM including Perimeter Walls as shown on the Grading Plan for Release of SIA and Financial Guarantees.
3. Water infrastructure to include valves, fittings, valve boxes and fire hydrants.
4. Sanitary sewer to include manholes and service connections.
5. Sidewalks and curb & gutter are on both sides unless otherwise noted.

Prepared By: Diane Hoelzer

Print Name: Diane Hoelzer, PE

Firm: Mark Goodwin & Associates, PA

* * * *

Parsons Brinckerhoff
5801 Osuna Road NE
Suite 200
Albuquerque, NM 87109
505-881-5357
Fax: 505-881-7602

April 7, 1999

Fred Aguirre, Drainage Review
Development Review Board
City of Albuquerque, Planning Department
Plaza Del Sol Building, 2nd Floor
Albuquerque, NM

Re: Vista Del Norte, DRB 98-78

Mr. Aguirre,

At the request of Diane Hoelzer I am writing you to let you know we have coordinated in regards to the storm drain outfall for Tract I, Vista Del Norte Subdivision. I have provided her with a revised hydraulic grade line worksheet showing the re-routing of the entire flow from Tract I to a single outfall on Vista Monte Drive. The stub was included in you planset and is currently under construction. The analysis shows that the flows can be accommodated in the downstream system. The storm drain system that the flows were removed from will not have any changes in pipe size from the original design.

If you have any questions regarding this submittal please contact me at 881-5357. Thank you for your time.

Sincerely,

Elias E. Archuleta, E.I.

Cc: File
Diane Hoelzer, P.E., D. Mark Goodwin & Assoc.
Jerry Sundt, Sundt Corp.
Ron Brown, Brown and Assoc.

Parsons Brinckerhoff
5801 Osuna Road NE
Suite 200
Albuquerque, NM 87109
505-881-5357
Fax: 505-881-7602

April 21, 1999

Fred Aguirre, Drainage Review
Development Review Board
City of Albuquerque, Planning Department
Plaza Del Sol Building, 2nd Floor
Albuquerque, NM

Re: Vista Del Norte, DRB 98-78

Mr. Aguirre,

Attached please find the revised Hydraulic Grade Line calculation sheets and a display showing the manhole locations and numbers in relation to the properties being developed by Mark Goodwin and Associates. The outfall for Tract I, Los Prados Del Norte Subdivision, has been relocated from manhole #19 to manhole #32, see display. The other change reflected in the revision is the addition of three additional stubs to Tract W, Villa Del Valle Subdivision. Originally, one stub collected flows from Tract W. At the request of Mark Goodwin's office we added stubs at locations that worked for their design and sized the stubs to handle their flows. No additional flows were added nor removed from this segment. These changes will be reflected in a revised grading and drainage submittal to your office.

If you have any questions regarding this submittal please contact Elias Archuleta or me at 881-5357. Thank you for your time.

Sincerely,

James Domenick, P.E.

JAMES V. DOMENICK
NEW MEXICO
7643
REGISTERED PROFESSIONAL ENGINEER

Cc: File
Diane Hoelzer, P.E., D. Mark Goodwin & Assoc.
Jerry Sundt, Sundt Corp.
Ron Brown, Brown and Assoc.

RECEIVED
MAY 11 2000
HYDROLOGY SECTION

RECEIVED
MAY 11 2000
HYDROLOGY SECTION

PROPOSED 30' STORM DRAIN EASEMENT

SD #31

30" RCP

SD #30

SD #29

SD #28

30" RCP

SD #27a

MIDDLE DETENTION POND

SD #25

SD #24

BOSQUE RIDGE

60" RCP

SD #23

TRACT K

TRACT F

60" RCP

SD #32

PROPOSED 30' STORM DRAIN EASEMENT

STUB & PLUG

SD #21

SD #22

VISTA MONTE DRIVE

54" RCP

48" RCP

SD #33

SD #20

60" RCP

SD #19

SD #18

60" RCP

42" RCP STUB To Los Rados Subdivision

TRACT I

SD #20

SD #11

54" RCP

TE DRIVE

SD #12

48" RCP

48" RCP

SD #13

SD #14

54" RCP STUB

24" RCP STUB

24" RCP STUB

48" RCP

SD #15

48" RCP

SD #16

24" RCP STUB

24" RCP STUB

30" RCP

SD #17

24" RCP STUB

Tract V

JAMES V. DOMENICI
NEW MEXICO
7643
REGISTERED PROFESSIONAL ENGINEER

SUMMARY OF HYDRAULIC CALCULATIONS
CLOSED CONDUIT 2/22/99

n = 0 013

1	2	3	4	5	6	7	8	9	10		11	12	13	14		15	16	17	18	19	20	21	22	23	24
											JUNCTION		LOSSES												
STATION	STRUCT	D	Q	A	V	K	Sf	L	DELTA	Q	D	ANGLE	hf	hb	Aavg	hj	hmh	ht	hmisc	SUM	E G	hv	H G	GROUND ELEV	COMMENT
SOUTH	POND																						5021 00		
	OUTFALL																			0 00	5026 81	5 81	5021 00	5040 00	
		48 00	243	12 57	19 34	1437 2	0 0286	100					2 86							2 86	5029 67	5 81	5023 86		
	MH									0				0.00	12.57	0 00	0.29	0 00		0 29	5029 96	5 81	5024.15	5045 22	
		48 00	243	12 57	19 34	1437 2	0 0286	570					16 29							16 29	5046 25	5 81	5040 44		
	MH/B/J								90	84				0.50	12.57	0 00	0.12	0 00		0 62	5046.87	2 49	5044 39	5054.47	18+48 77
		48 00	159	12 57	12 65	1437 2	0 0122	395					4 83							4 83	5051 71	2 49	5049 22		
	MH/B/J													0.00	11.09	0.00	0.18	0 21		0 38	5052.09	3 53	5048 56	5055.16	14+55 85
		42 00	145	9 62	15 07	1006 6	0 0208	105					2 18							2 18	5054 27	3 53	5050 74		
	MH									99				0 00	9.62	0 00	0 02	0 00		0 02	5054 29	0 35	5053 93	5055 44	13+50 00
		42 00	46	9 62	4 78	1006 6	0 0021	400					0 84							0 84	5055.12	0 35	5054 77		
	MH/J													0.00	8.34	0.00	0 03	0 06		0 09	5055 22	0 66	5054.56	5057.41	9+51.05
		36 00	46	7 07	6 51	667 28	0 0048	450					2 14							2 14	5057 35	0 66	5056 70		
	MH/B									0				0.00	7.07	0 00	0 03	0.00		0 03	5057.39	0 66	5056.73	5059 65	5+01.85
		36 00	46	7.07	6 51	667 28	0 0048	108					0 51							0 51	5057 90	0 66	5057 24		
	INLET									46				0.00	3 53	0 00	0 00	0 13		-0.13	5057.77	0 00	5057.77	5061.00	
																							5044 39		
	TIE-IN									-110				0 00	6 28	0 00	0 06	0 24		0 30	5045 87	1.19	5044 68	5050 00	
		48 00	110	12 57	8 75	1437 2	0 0059	108					0 63							0 63	5046 51	1.19	5045 32		
	MH/B													0 00	12 57	0 00	0 00	0 00		0 00	5046 51	0 00	5046 51	5048 00	
		48 00	0	12 57	0 00	1437 2	0 0000	0					0 00							0 00	5046 51	0 00	5046 51		
																							5021 00		
	OUTFALL																			0 00	5025 77	4 77	5021 00	5040 00	
		30 00	86	4 91	17 52	410 33	0 0439	550					24 16							24 16	5049 93	4 77	5045 16		
	INLET													0 00	4 91	0 00	0 24	0 00		0 24	5050 16	4 77	5045 40	#REF!	
		30 00	86	4 91	17 52	410 33	0 0439	0																	
MIDDLE	POND																						5026 50		
BOSQUE	OUTFALL																			0 00	5028 94	2 44	5026 50	5032 00	
RD		60 00	246	19 64	12 53	2606	0 0089	70					0 62							0 62	5029 56	2 44	5027.12		
	MH/J #25													0.00	19 64	0 00	0.12	0 00		0 12	5029 68	2.44	5027 25	5035 09	
		60 00	246	19 64	12 53	2606	0 0089	143					1 27							1 27	5030 96	2 44	5028 52		
	MH/J #24													0.00	19.64	0.00	0.12	0 00		0.12	5031 08	2 44	5028 64	5036 23	
		60 00	246	19 64	12 53	2606	0 0089	135					1 20							1 20	5032 28	2 44	5029 84		
	MH #23													0.00	19.64	0.00	0.12	0.00		0 12	5032.40	2.44	5029 97	5037.19	
		60 00	246	19 64	12 53	2606	0 0089	110					0 98							0 98	5033 38	2 44	5030 95		
	MH #22								90				0 49	19.64	0.00	0 12	0 00			0 61	5033 99	2.44	5031 56	5037.98	
		60 00	246	19 64	12 53	2606	0 0089	350					3 12							3.12	5037.11	2 44	5034 67		
	MH #19													0.00	19 64	0.00	0 09	0.00		0 09	5037.20	1.79	5035 41	5047 60	
		60 00	211	19 64	10 75	2606	0 0066	560					3 67							3 67	5040 87	1 79	5039 08		
	MH #12													0.00	19 64	0 00	0.09	0 00		0 09	5040 96	1.79	5039.17	5047 60	
		60 00	211	19 64	10 75	2606	0 0066	0					0.00							0 00	5040 96	1 79	5039 17		
VISTA DEL NORTE DRIVE																							5039 17		
	MH #12																			0 00	5039 52	0.35	5039.17	5047 60	
		48 00	60	12 57	4 77	1437 2	0 0017	243					0 42							0 42	5039 95	0 35	5039 59		
	MH/J #13													0 00	12.67	0.00	0 01	0 00		0 01	5039 96	0 24	5039 72	5046 25	
		48 00	49	12 57	3 90	1437 2	0 0012	108			24	90	0 13							0 13	5040 08	0 24	5039 85		
	MH/J #14													0 00	12.57	0 00	0 01	0 00		0.01	5040.09	0.17	5039 92	5044.33	
		48 00	41 5	12 57	3 30	1437 2	0 0008	188			24	90	0 16							0 16	5040 25	0 17	5040 08		
	MH #15													0 00	12.57	0 00	0.01	0 00		0 01	5040 26	0 11	5040 14	5044 03	
		48 00	34	12 57	2 71	1437 2	0 0006	130			24	90	0 07							0 07	5040 33	0 11	5040 21		
	MH #16													0 00	8.74	0 00	0 01	0 02		0 04	5040 36	0 23	5040.13	5042.68	
		30 00	19	4 91	3 87	410 33	0 0021	239			24	90	0 51							0 51	5040 88	0 23	5040 64		
	MH #17													0 00	4 03	0.00	0.03	0.07		0.10	5040 97	0.57	5040.40	5042 68	
		24 00	19	3 14	6 05	226 29	0 0070	0			30	90	0 00												
VISTA DEL NORTE DRIVE																							5039 17		
	MH #12																			0.00	5040 59	1.42	5039.17	5047 60	
		54 00	152	15 90	9 56	1967 6	0 0060	215					1 28							1 28	5041 87	1 42	5040 45		

REGISTERED PROFESSIONAL ENGINEER 7643

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	MH/J #11												0.00	-15.90	0.00	0.07	0 00		0.07	5041 94		1.42	5040.52	5048 69
		54 00	152	15 90	9 56	1967 6	0 0060	450					2 69						2 69	5044 63		1 42	5043 21	
	MH/J #10												0.00	-15 90	0.00	0 07	0 00		0 07	5044.70		1 42	5043 28	5051.33
		54 00	152	15.90	9 56	1967 6	0 0060	0					0 00						0 00	5044 70		1 42	5043 28	
VISTA DEL NORTE DRIVE - TIE INTO 42" RCP																							5048 56	
	MH #6																		0.00	5048 66		0.10	5048.56	5055 16
		24 00	8	3 14	2 55	226 29	0 0012	190					0 24						0 24	5048 90		0 10	5048 80	
	MH/J #2												0 00	3.14	0.00	0.01	0 00		0 01	5048 91		0.10	5048.81	5057.89
		24 00	8	3 14	2 55	226 29	0 0012	332					0 41						0 41	5049 32		0 10	5049 22	
	MH/J #1												0 00	3.14	0 00	0.01	0.00		0.01	5049 33		0.10	5049 23	5061.76
		24 00	8	3 14	2 55	226 29	0 0012	0					0 00						0 00	5049 33		0 10	5049 23	
VISTA	POND	(INCLUDES STUB TO GOODWIN'S PROPERTY)																					5026 50	
MONTE	OUTFALL																		0 00	5028 34		1.84	5026 50	5039 00
DRIVE		60 00	214	19 64	10 90	2606	0 0067	300					2 02						2 02	5030 37		1 84	5028 52	
	MH/B/J#52								90		42	10		0.25	17.77	1.80	0.00	0 00	2 05	5032.42		1.27	5031.15	5035.00
		54 00	144	15 90	9 05	1967 6	0 0054	350					1 87						1 87	5034 29		1 27	5033 02	
	MH/B 33												0.00	14 24	0.00	0.03	-0.15		-0.12	5034.17		0 54	5033 64	5035 00
		48 00	74	12 57	5 89	1437 2	0 0027	450					1 19						1 19	5035.37		0 54	5034 83	
	INLET												0.00	12.57	0.00	0 03	0 00		0.03	5035 39		0 54	5034 86	
		48 00	74	12 57	5 89	1437 2	0 0027	0																
PIPE BETWEEN PONDS																							5021 00	
	OUTFALL																		0 00	5021 23		0 23	5021 00	#REF!
		24 00	12	3 14	3 82	226 29	0 0028	####					#REF!						#REF!	#REF!		0.23	#REF!	
	MH/B													0 00	3.14	0 00	0 01	0 00	0.01	#REF!		0 23	#REF!	5037 00
		24 00	12	3.14	3 82	226 29	0 0028	450					1 27						1 27	#REF!		0 23	#REF!	
	INLET													0 00	3 14	0 00	0 00	0 00	0 00	#REF!		0 00	#REF!	5038 50
		24 00	0	3 14	0 00	226 29	0 0000	####																

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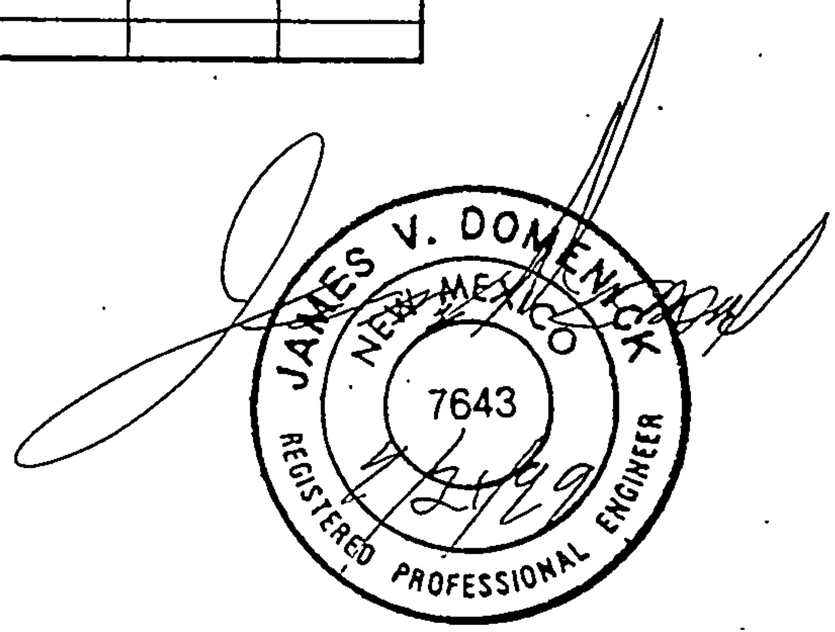
STORM SEWER LAYOUT
VISTA DEL NORTE
HYDRAULIC GRADE LINE ANALYSIS

#	GROUND ELEV.	HGL (FT)	PIPE DIAM. (IN)	FLOW (CFS)	REQUIRED INVERT	PIPE LENGTH (FT)	CALCULATED SLOPE (%)	SLOPE USED (%)	PIPE INVERT
25	5035.09	5027.25			5019.22				5019.22
			60.00	246.00		143.00	4.90	1.24	
24	5036.23	5028.64			5026.23				5020.99
			60.00	246.00		135.00	4.59	1.24	
23	5037.19	5029.97			5027.19				5022.67
			60.00	246.00		110.00	4.80	1.29	
22	5037.95	5031.56			5027.95				5024.09
			60.00	246.00		350.00	2.07	0.29	
19	5041.33	5053.93			5031.33				5025.08
			60.00	211.00		560 00	2.17	0.25	
12	5047.25	5054.56			5037.25				5026.50
			48.00	56.00		243.00	4.97	2.00	
13	5047.50	5039.72			5038.58				5031.36
			48.00	49.00		108.00	4.84	0.20	
14	5045.50	5039.92			5036.58				5031.68
			48.00	41.50		188.00	3.14	0.20	
15	5046.50	5040.14			5037.58				5032.15
			48.00	34 00		130.00	4.18	0.20	
16	5046.50	5040.13			5037.58				5032.51
			30.00	19.00		239.00	2.80	0.61	
17	5046.50	5040.40			5039 21				5033 97
12	5047.25	5054.56			5037.25				5026.50
			48.00	56.00	0.00	215.00	4 97	4.29	
11	5048.69	5040.52			5039.23				5035.82
			54.00	152.00		517.00	1.17	0.50	
10	5051.33	5043.28			5041.87				5038.41



STORM SEWER LAYOUT
VISTA DEL NORTE
HYDRAULIC GRADE LINE ANALYSIS

#	GROUND ELEV.	HGL (FT)	PIPE DIAM. (IN)	FLOW (CFS)	REQUIRED INVERT	PIPE LENGTH (FT)	CALCULATED SLOPE (%)	SLOPE USED (%)	PIPE INVERT
middle pond	5039.00	5026.50			5018.50	*			5018.50
			60.00	214.00		433.00	1.50	0.50	
MH/B/J32	5035.00	5031.15			5025.00				5020.67
			54.00	117.21		119.00	2.42	0:50	
MH/B33	5033.00	5033.64			5023.54				5021.26
			54.00	117.21		450.00	1.17	0.50	
INLET	5036.00	5034.86			5026.54				5023.51

JAMES V. DOMENICI
NEW MEXICO
7643
REGISTERED PROFESSIONAL ENGINEER
11/8/99

****

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 28, 2000

Mark Goodwin, P.E.
Mark Goodwin & Associates
P.O. Box 90606
Albuquerque, New Mexico 87199

RE: Grading and Drainage Certification Plan for Los Prados Del Norte Subdivision (D16/D8) Submitted for Release of Financial Guarantees, Engineer's Certification Stamp Dated 4/26/00.

Dear Mr. Goodwin:

In Fred Aguirre's letter of May 10, 1999 to Diane Hoelzer, it was noted that some of the off-site storm drain pipes were to be upsized due to the development of the Los Prados Del Norte Subdivision. It is not clear whether a change order was ever processed to increase the sizes of the off-site storm drains in the vicinity of this site. Therefore, please provide the documentation to verify that these changes took place.

Although the above referenced plan is adequate to satisfy the Grading and Drainage Certification requirement per the approved Infrastructure List dated May 5, 1999, the supplemental information requested above must be provided prior to release of the SIA or Financial Guarantees for this subdivision.

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: Terri Martin, DRB-98-241, City Project No. 616081
Ron Brown, Vista Del Norte LLC
File

10-31-02

Sale office 345 5923

Mark Pogels
797 7057

Doug Huth
890-3766

Fax 890-3794

D16-D8
Los Prados Rd Norte

1005 Casa Maria Rd NE

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Los Prados del Norte — ZONE ATLAS#: D-16 / D8

DRB#: 99-241 — 5-5-99 — EPC# — WORKORDER#: 616081

LEGAL DESCRIPTION: Tract I, Vista del Norte

CITY ADDRESS: Vista Monte Drive

ENGINEERING FIRM:	Mark Goodwin & Associates, PA	CONTACT:	Mark Goodwin, PE
ADDRESS:	P.O. Box 90606, Albuquerque, NM 87199	PHONE:	828-2200
OWNER:	Vista del Norte LLC	CONTACT:	Ron Brown
ADDRESS:	P.O. Box 3671, Albuquerque, NM 87190	PHONE:	883-1674
ARCHITECT:	N/A	CONTACT:	
ADDRESS:		PHONE:	
SURVEYOR:	Aldrich Land Surveying	CONTACT:	Tim Aldrich
ADDRESS:	P.O. Box 30701, Albuquerque, NM 87190	PHONE:	884-1990
CONTRACTOR:	Sundt Corporation	CONTACT:	Jerry Sundt
ADDRESS:	P.O. Box 3671, Albuquerque, NM 87190	PHONE:	883-1674

TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL
- X ENGINEER'S CERTIFICATION
- ____ OTHER
- ____ EASEMENT VACATION

PRE-DESIGN MEETING:

- ____ YES
- X NO
- ____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SKETCH PLAT APRROVAL
- ____ PRELIMINARY PLAT APRROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- ____ S. DEV. PLAN FOR BLDG PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- ____ BUILDING PERMIT APPROVAL
- ____ CERTIFICATION OF OCCUPANCY APPROVAL
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ S.A.D. DRAINAGE REPORT
- ____ DRAINAGE REQUIREMENTS
- ____ OTHER
- X RELEASE OF FINANCIAL GUARANTY
- ____ TRAFFIC CIRCULATION LAYOUT

DATE SUBMITTED: 4/26/00

BY: Mark Goodwin

Mark Goodwin, PE

RECEIVED
APR 26 2000
PWD/DESIGN REVIEW

City of Albuquerque

May 18, 2000

Mark Goodwin, P.E.
Mark Goodwin & Associates
P.O. Box 90606
Albuquerque, New Mexico 87199

RE: ***Grading and Drainage Certification Plan for Los Prados Del Norte Subdivision (D16/D8) Submitted for Release of Financial Guarantees, Engineer's Certification Stamp Dated 4/26/00.***

Dear Mr. Goodwin:

The above referenced plan is adequate to satisfy the Grading and Drainage Certification requirement per the approved Infrastructure List dated May 5, 1999, for the release of Financial Guarantees for the Los Prados Del Norte Subdivision.

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: Terri Martin, DRB-98-241, City Project No. 616081
Ron Brown, Vista Del Norte LLC
≤File⊃

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

May 11, 2000

Ms. Susan Calongne
Hydrology Division
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Grading & Drainage Plan for Los Prados del Norte; D16/D8

Dear Ms. Calongne:

Attached, please find the following:

- *Correspondence of 4/21/99 from Parsons indicating change to 42" would be required.*
- *Sheet 36a of construction drawings showing 42" stub-out to Los Prados. Please note that this sheet has been stamped and certified as "As-Built".*

With this response we hereby request our certification dated 4/26/00 be accepted for release of the SIA.

Please call if you have any questions or concerns.

Sincerely,

MARK GOODWIN & ASSOCIATES, PA

Mark Goodwin, PE
President

f:\\prados.nor\release.ltr

RECEIVED
MAY 11 2000
HYDROLOGY SECTION

FORM DRWS: DRAINAGE REPORT / WATER & SEWER AVAILABILITY

THIS FORM IS REQUIRED WITH THE DEVELOPMENT REVIEW BOARD APPLICATION FOR MAJOR SUBDIVISIONS AND SITE DEVELOPMENT PLANS.

PROJECT NAME Los Prados Del Norte

AGIS MAP # D16/E16

LEGAL DESCRIPTION Tract I, Vista Del Norte

1

____ **DRAINAGE REPORT**

A drainage report, as per the Drainage Ordinance, was submitted to the City of Albuquerque Public Works Department, Hydrology Division (2nd floor Plaza del Sol) on _____ [date].

Diane Hoelzer — 3-5-99

Applicant / Agent — Date

Eileen Rivera — 3-5-99

Hydrology Division Representative — Date

X **WATER AND SEWER AVAILABILITY STATEMENT**

A Water and Sewer Availability Statement for this project was requested from the City of Albuquerque Utilities Development Division (2nd floor Plaza del Sol) on _____ [date].

Diane Hoelzer — 3-4-99

Applicant / Agent — Date

Roger Green — 3-4-99

Utilities Division Representative — Date

RECEIVED
MAR 05 1999
HYDROLOGY SECTION

DRB# 98-241

LETTER OF TRANSMITTAL

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

DATE 4-22-99 JOB NO.

ATTENTION Susan Calongne

RE: Los Prados Del Norte

TO One Stop

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1			Supplemental Information

RECEIVED
APR 22 1999
HYDROLOGY SECTION

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☒ Per our conversation 4-13-99

☐ FOR BIDS DUE _____ 19_____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS Here is the offsite storm drain analysis from Parsons Brinkerhoff. We are on the agenda for Tuesday April 27. Please call me if you need additional information

COPY TO _____

SIGNED: Diane Hoelzer

If enclosures are not as noted, kindly notify us at once.

Parsons Brinckerhoff
5801 Osuna Road NE
Suite 200
Albuquerque, NM 87109
505-881-5357
Fax: 505-881-7602

April 21, 1999

Fred.Aguirre, Drainage Review
Development Review Board
City of Albuquerque, Planning Department
Plaza Del Sol Building, 2nd Floor
Albuquerque, NM

Re: Vista Del Norte, DRB 98-78

Mr. Aguirre,

Attached please find the revised Hydraulic Grade Line calculation sheets and a display showing the manhole locations and numbers in relation to the properties being developed by Mark Goodwin and Associates. The outfall for Tract I, Los Prados Del Norte Subdivision, has been relocated from manhole #19 to manhole #32, see display. The other change reflected in the revision is the addition of three additional stubs to Tract W, Villa Del Valle Subdivision. Originally, one stub collected flows from Tract W. At the request of Mark Goodwin's office we added stubs at locations that worked for their design and sized the stubs to handle their flows. No additional flows were added nor removed from this segment. These changes will be reflected in a revised grading and drainage submittal to your office.

If you have any questions regarding this submittal please contact Elias Archuleta or me at 881-5357. Thank you for your time.

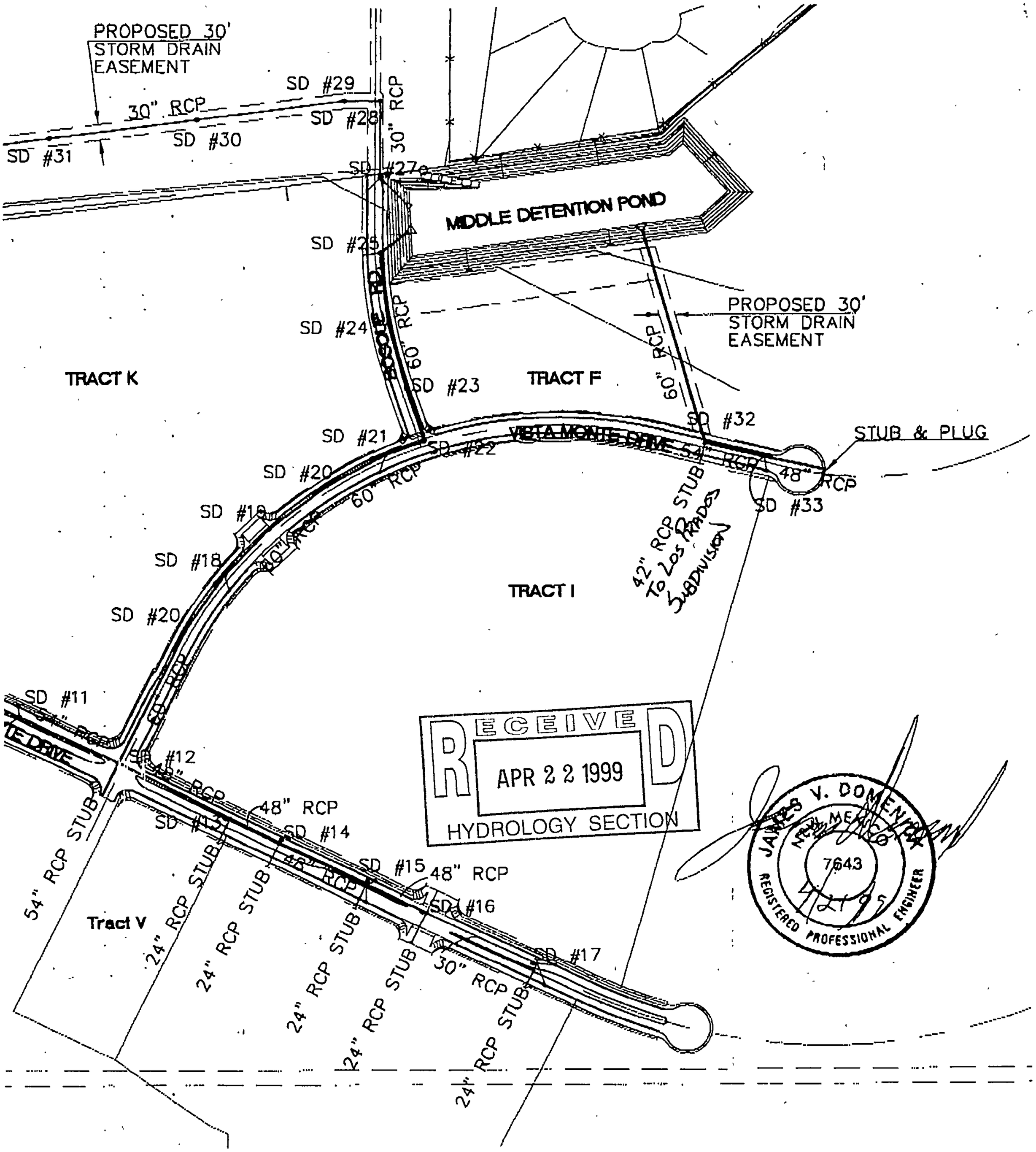
Sincerely,

James Domenick, P.E.

RECEIVED
APR 22 1999
HYDROLOGY SECTION

JAMES V. DOMENICK
NEW MEXICO
7643
REGISTERED PROFESSIONAL ENGINEER

Cc: File
Diane Hoelzer, P.E., D. Mark Goodwin & Assoc.
Jerry Sundt, Sundt Corp.
Ron Brown, Brown and Assoc.



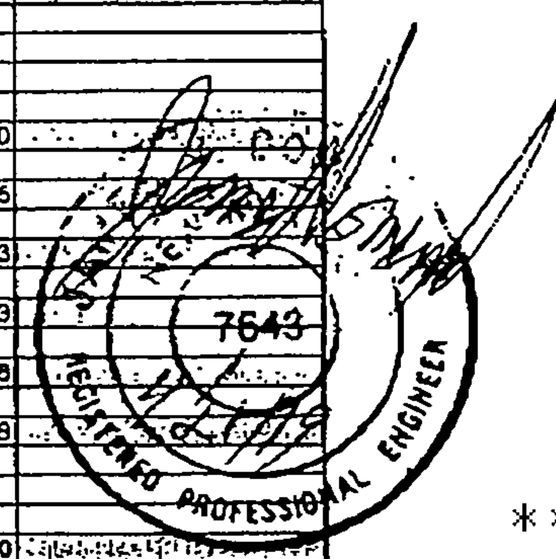
RECEIVED
APR 22 1999
HYDROLOGY SECTION

JAMES V. DOMENICI
NEW MEXICO
7643
REGISTERED PROFESSIONAL ENGINEER

SUMMARY OF HYDRAULIC CALCULATIONS
CLOSED CONDUIT 2/22/99

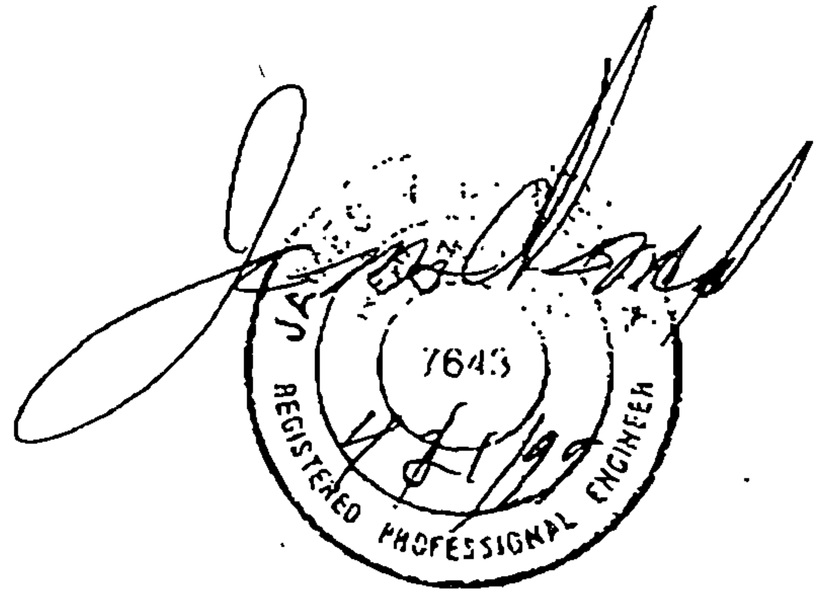
n = 0013

1	2	3	4	5	6	7	8	9	10		11	12	13	14		15	16	17	18	19	20	21	22	23	24
											JUNCTION		LOSSES												
STATION	STRUCT	D	Q	A	V	K	Sf	L	DELTA	Q	D	ANGLE	hf	hb	Δang	hj	hmh	hl	hmisc	SUM	E.G.	hv	HG	GROUND ELEV.	COMMENT
SOUTH	POND																						5021.00		
	OUTFALL																			0.00	5026.81	5.81	5021.00	5040.00	
		48.00	243	12.57	19.34	1437.2	0.0286	100					2.86							2.86	5029.67	5.81	5023.86		
	MH									0				0.00	12.57	0.00	0.29	0.00		0.29	5029.96	5.81	5024.15	5045.22	
		48.00	243	12.57	19.34	1437.2	0.0286	570					16.29							16.29	5046.25	5.81	5040.44		
	MH/BJ								90	84				0.50	12.57	0.00	-0.12	0.00		0.62	5046.87	2.43	5044.38	5054.47	15+48.77
		48.00	159	12.57	12.65	1437.2	0.0122	395					4.83							4.83	5051.71	2.43	5049.22		
	MH/BJ													0.00	11.09	0.00	0.18	-0.21		0.33	5052.09	3.53	5048.56	5055.15	14+55.85
		42.00	145	9.62	15.07	1005.6	0.0206	105					2.18							2.18	5054.27	3.53	5050.74		
	MH									99				0.00	9.62	0.00	0.02	0.00		0.02	5054.29	0.36	5053.93	5055.44	13+50.00
		42.00	46	9.62	4.76	1005.6	0.0021	400					0.84							0.84	5055.12	0.36	5054.77		
	MH/J													0.00	8.34	0.00	0.03	0.06		0.09	5055.22	0.66	5054.56	5057.41	9+51.06
		36.00	46	7.07	6.51	667.26	0.0043	450					2.14							2.14	5057.35	0.66	5056.70		
	MH/B									0				0.00	7.07	0.00	0.03	0.00		0.03	5057.39	0.66	5056.73	5059.65	5+01.86
		36.00	46	7.07	6.51	667.26	0.0048	108					0.51							0.51	5057.90	0.66	5057.24		
	INLET									1.48				0.00	-3.63	0.00	0.00	-0.13		-0.13	5057.77	0.00	5057.77	5061.00	
																							5044.39		
	TIE-IN								-110					0.00	6.23	0.00	0.06	0.24		0.30	5045.87	1.19	5044.68	5050.00	
		48.00	110	12.57	8.75	1437.2	0.0059	108					0.63							0.63	5046.51	1.19	5045.32		
	MH/6													0.00	12.57	0.00	0.00	0.00		0.00	5046.51	0.00	5046.51	5048.00	
		48.00	0	12.57	0.00	1437.2	0.0000	0					0.00							0.00	5046.51	0.00	5046.51		
																							5021.00		
	OUTFALL																			0.00	5025.77	4.77	5021.00	5040.00	
		30.00	86	4.91	17.52	410.33	0.0436	550					24.16							24.16	5049.93	4.77	5045.16		
	INLET													0.00	4.91	0.00	0.24	0.00		0.24	5050.16	4.77	5045.40	#REF!	
		30.00	86	4.91	17.52	410.33	0.0439	0																	
MIDDLE	POND																						5028.50		
BOSQUE	OUTFALL																			0.00	5028.94	2.44	5026.50	5032.00	
RD		60.90	246	19.64	12.53	2606	0.0069	70					0.62							0.62	5029.56	2.44	5027.12		
	MH/J #25													0.00	18.84	0.00	0.12	0.00		0.12	5029.68	2.44	5027.25	5035.09	
		60.00	246	19.64	12.53	2606	0.0069	143					1.27							1.27	5030.96	2.44	5028.52		
	MH/J #24													0.00	19.54	0.00	0.12	0.00		0.12	5031.08	2.44	5028.64	5036.23	
		60.00	246	19.64	12.53	2606	0.0069	135					1.20							1.20	5032.28	2.44	5029.84		
	MH #23													0.00	19.64	0.00	0.12	0.00		0.12	5032.40	2.44	5029.97	5037.19	
		60.00	246	19.64	12.53	2606	0.0069	110					0.98							0.98	5033.38	2.44	5030.95		
	MH #22								90					0.49	19.64	0.00	0.12	0.00		0.61	5033.99	2.44	5031.56	5037.98	
		60.00	246	19.64	12.53	2606	0.0069	350					3.12							3.12	5037.11	2.44	5034.67		
	MH #19													0.00	19.64	0.00	0.09	0.00		0.09	5037.20	1.79	5035.41	5047.60	
		60.00	211	19.64	10.75	2605	0.0056	560					3.67							3.67	5040.87	1.79	5039.08		
	MH #12													0.00	19.64	0.00	0.09	0.00		0.09	5040.96	1.79	5039.17	5047.60	
		60.00	211	19.64	10.75	2605	0.0056	0					0.00							0.00	5040.96	1.79	5039.17		
																							5039.17		
VISTA DEL NORTE DRIVE																									
	MH #12																			0.00	5038.52	0.35	5039.17	5047.60	
		48.00	60	12.57	4.77	1437.2	0.0017	243					0.42							0.42	5038.96	0.35	5039.56		
	MH/J #13													0.00	12.57	0.00	0.01	0.00		0.01	5038.98	0.24	5039.72	5048.25	
		48.00	49	12.57	3.90	1437.2	0.0012	108			24	90	0.13							0.13	5040.08	0.24	5039.85		
	MH/J #14													0.00	12.57	0.00	0.01	0.00		0.01	5040.09	0.17	5039.92	5044.33	
		48.00	41.5	12.57	3.30	1437.2	0.0008	188			24	90	0.16							0.16	5040.25	0.17	5040.08		
	MH #15													0.00	12.57	0.00	0.01	0.00		0.01	5040.26	0.11	5040.14	5044.03	
		48.00	34	12.57	2.71	1437.2	0.0006	130			24	90	0.07							0.07	5040.33	0.11	5040.21		
	MH #16													0.00	18.74	0.00	0.01	0.02		0.04	5040.36	0.23	5040.13	5042.88	
		30.00	19	4.91	3.87	410.33	0.0021	235			24	90	0.51							0.51	5040.88	0.23	5040.64		
	MH #17													0.00	4.03	0.00	0.03	0.07		0.10	5040.97	0.57	5040.40	5042.68	
		24.00	19	3.14	6.05	226.29	0.0070	0			30	60	0.00												
VISTA DEL NORTE DRIVE																							5039.17		
	MH #12																			0.00	5040.59	1.42	5039.17	5047.60	
		54.00	152	15.90	9.56	1987.5	0.0060	215					1.28							1.28	5041.87	1.42	5040.45		



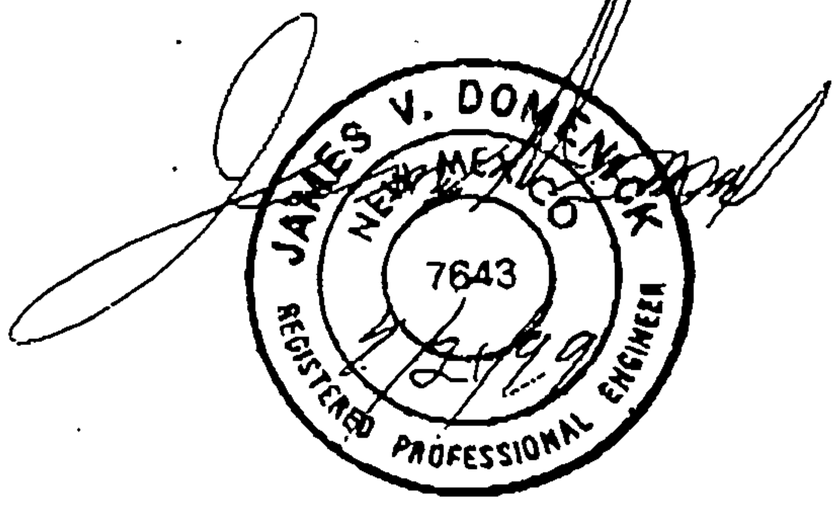
Sent By: parsons brinckerhoff; 505 881 7602; Apr-21-99 4:22PM; Page 4/9

	MHJ #11												0.00	15.90	10.00	0.07	0.00		0.07	5041.94	1.42	5040.52	5048.60
		54.00	152	15.90	9.56	1967.6	0.0060	450				2.69							2.69	5044.53	1.42	5043.21	
	MHJ #10												0.00	15.90	0.00	0.07	0.00		0.07	5044.70	1.42	5043.28	5051.33
		54.00	152	15.90	9.56	1967.6	0.0060	0				0.00							0.00	5044.70	1.42	5043.28	
																						5048.56	
VISTA DEL NORTE DRIVE - TIE INTO 42" RCP																							
	MH #6								90				0.00	3.14	0.00	0.00	0.00		0.00	5048.66	0.10	5048.56	5055.15
		24.00	8	3.14	2.56	226.29	0.0012	190				0.24							0.24	5048.90	0.10	5048.80	
	MHJ #2												0.00	3.14	0.00	0.01	0.00		0.01	5048.91	0.10	5048.81	5057.89
		24.00	8	3.14	2.55	226.29	0.0012	332				0.41							0.41	5049.32	0.10	5049.22	
	MHJ #1												0.00	3.14	0.00	0.01	0.00		0.01	5049.33	0.10	5049.23	5051.76
		24.00	8	3.14	2.55	226.29	0.0012	0				0.00							0.00	5049.33	0.10	5049.23	
																						5026.50	
VISTA	POND	(INCLUDES STUB TO GOODWINS PROPERTY)																					
NORTE	OUTFALL																		0.00	5028.34	1.84	5026.50	5039.00
DRIVE		60.00	214	19.64	10.90	2606	0.0067	300				2.02							2.02	5030.37	1.84	5028.52	
	MHVBJ #3								90		42		0.25	17.77	11.80	0.00	0.00		2.06	5032.42	1.27	5031.15	5035.00
		54.00	144	15.90	9.05	1967.6	0.0054	350				1.87							1.87	5034.29	1.27	5033.02	
	MHB #3												0.00	14.24	0.00	0.00	0.15		0.12	5034.17	0.54	5033.64	5025.00
		48.00	74	12.57	5.89	1437.2	0.0027	450				1.19							1.19	5035.37	0.54	5034.83	
	INLET												0.00	12.57	0.00	0.00	0.00		0.00	5035.39	0.54	5034.86	
		48.00	74	12.57	5.89	1437.2	0.0027	0															
																						5021.00	
PIPE BETWEEN PONDS																							
	OUTFALL																		0.00	5021.23	0.23	5021.00	#REF!
		24.00	12	3.14	3.82	226.29	0.0028	#####				#REF!							#REF!	#REF!	0.23	#REF!	
	MHB												0.00	3.14	0.00	0.01	0.00		0.01	#REF!	0.23	#REF!	5037.00
		24.00	12	3.14	3.82	226.29	0.0028	450				1.27							1.27	#REF!	0.23	#REF!	
	INLET												0.00	3.14	0.00	0.00	0.00		0.00	#REF!	0.00	#REF!	5038.50
		24.00	0	3.14	0.00	226.29	0.0000	#####															



STORM SEWER LAYOUT
VISTA DEL NORTE
HYDRAULIC GRADE LINE ANALYSIS

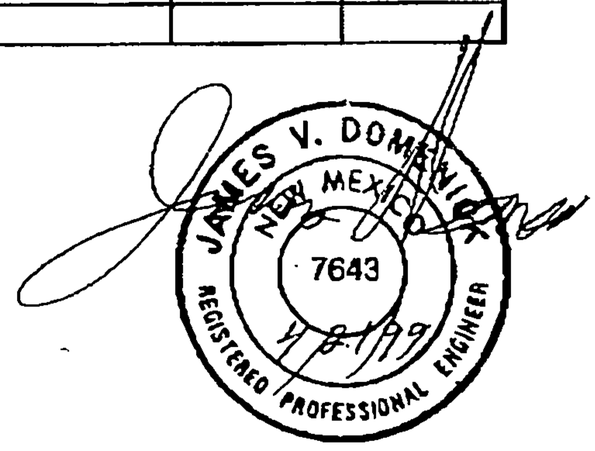
#	GROUND ELEV.	HGL (FT)	PIPE DIAM. (IN)	FLOW (CFS)	REQUIRED INVERT	PIPE LENGTH (FT)	CALCULATED SLOPE (%)	SLOPE USED (%)	PIPE INVERT
25	5035.09	5027.25			5019.22				5019.22
			60.00	246.00		143.00	4.90	1.24	
24	5036.23	5028.64			5026.23				5020.99
			60.00	246.00		135.00	4.59	1.24	
23	5037.19	5029.97			5027.19				5022.67
			60.00	246.00		110.00	4.80	1.29	
22	5037.95	5031.58			5027.95				5024.09
			60.00	246.00		350.00	2.07	0.29	
19	5041.33	5053.93			5031.33				5025.08
			60.00	211.00		560.00	2.17	0.25	
12	5047.25	5054.56			5037.25				5026.50
			48.00	56.00		243.00	4.97	2.00	
13	5047.50	5039.72			5036.58				5031.36
			48.00	49.00		108.00	4.84	0.20	
14	5045.50	5038.92			5036.58				5031.68
			48.00	41.56		188.00	3.14	0.20	
15	5046.50	5040.14			5037.58				5032.15
			48.00	34.00		130.00	4.18	0.20	
16	5046.50	5040.13			5037.58				5032.51
			30.00	19.00		239.00	2.80	0.81	
17	5046.50	5040.40			5039.21				5033.97
12	5047.25	5054.56			5037.25				5026.50
			48.00	56.00	0.00	215.00	4.97	4.29	
11	5048.69	5040.52			5039.23				5035.82
			54.00	152.00		517.00	1.17	0.50	
10	5051.33	5043.28			5041.67				5038.41



Sent By: parsons brinckerhoff; 505 881 7602; Apr-21-99 4:23PM; Page 7/9

STORM SEWER LAYOUT
VISTA DEL NORTE
HYDRAULIC GRADE LINE ANALYSIS

#	GROUND ELEV.	HGL (FT)	PIPE DIAM. (IN)	FLOW (CFS)	REQUIRED INVERT	PIPE LENGTH (FT)	CALCULATED SLOPE (%)	SLOPE USED (%)	PIPE INVERT
middle pond	5039.00	5026.50			5018.50	*			5018.50
			60.00	214.00		433.00	1.50	0.50	
MH/B/J	5035.00	5031.15			5025.00				5020.67
			54.00	117.21		119.00	2.42	0.50	
MH/B	5033.00	5033.64			5023.54				5021.26
			54.00	117.21		450.00	1.17	0.50	
INLET	5036.00	5034.86			5026.54				5023.51



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 29, 1999

APR 01 RECD

Diane Hoelzer, P.E.
Mark Goodwin & Associates
P.O. Box 90606
Albuquerque, New Mexico 87199

RE: Drainage Report and Grading and Drainage Plan for Los Prados Del Norte Subdivision (D16/D8) Submitted for Preliminary Plat Approval and Grading Permit Approval, Engineer's Stamp Dated 3/5/99.

Dear Ms Hoelzer:

Prior to approval of the above referenced plan for Preliminary Plat action, the following comments must be addressed:

1. This subdivision is part of the Vista Del Norte development. Please provide documentation from the Vista Del Norte master drainage plan to verify the allowable runoff rate from your site.

2. The master plan shows half of your site draining to the 60" storm drain on Vista Monte Drive, then draining west on Bosque Drive, and the other half draining to the northwest corner of your site. Your plan shows the entire site draining to the northwest corner. Please demonstrate that the storm drains designed by the Vista Del Norte master plan can handle this change. Have the off-site storm drains been constructed?

3. The plan uses a 6' wide channel in the subdivision to convey street flows. If the streets are public, then the channel should be built to City standards (10' wide) for City maintenance.

4. With respect to the sump inlet calculations, please show the location of inlet # 4 on the storm drain layout (sheet 1 of 2). The grading plan must show that the proposed inlets don't conflict with the driveways.

It has been brought to my attention that approval from the State Engineer's Office has not yet been obtained for the construction of the ponds for the Vista Del Norte development. There are also geotechnical issues regarding the ponds which have not been addressed. Therefore, Final Plat approval cannot be granted for this subdivision, or any other subdivision within Vista Del Norte, until State Engineer's concurrence is obtained and the geotechnical issues have been resolved.

Please provide a copy of the Infrastructure List for my file. If you have any questions regarding these comments, please call me at 924-3982.

Sincerely,

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

c: Fred Aguirre, DRB-98-241
James Domenick, Parsons Brinkerhoff, Inc.
Sundt Corporation
File

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

May 10, 1999

Ms. Diane Hoelzer, P.E.
Mark Goodwin & Associates
P.O. Box 90606
Albuquerque, NM 87199

Re: Los Prados del Norte - Unit 1, File No. D16/D8, engineer's stamp dated April 7, 1999.

Dear Ms. Hoelzer:

The revised drainage report and plan dated April 7, 1999 is approved for preliminary plat and rough grading. This approval is with the understanding that Storm Drain Maintenance will maintain the 6′ wide public channel. The Homeowner′ Association will maintain the walkway and the adjoining landscaping area.

It is not clear from your letter dated April 7, 199 what is considered the spillway that is to be maintained by the Homeowner's Association. Please provide a cross-section clearly indicating the 6′ public channel, water line, private access, spillway and landscaping proposed within the 25′ easement. Keep in mind that the 6′ channel must be in an exclusive drainage easement, no private access will be permitted within this easement. Storm Drain Maintenance signature will be required for DRC approval.

Regarding the proposed storm drains to be upsized off-site, it is understood that you will coordinate these changes with Parsons-Brinkerhoff. Prior to DRC approval the revised plan and profile sheets for the off-site storm drain must be submitted to this office to verify that the HGL is below the street grade. The required certification to release the SIA and financial guarantees will require documentation that these changes took place.

Sincerely,

Fred J. Aguirre, P.E.
City Hydrologist
Public Works Department

c: Glenn Jurgensen
file

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Los Prados Del Norte Subdivision ZONE ATLAS/DRNG,FILE#: D-16/D-8

DRB #: 98-241 EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Tract I, Vista Del Norte Unit 1

CITY ADDRESS: North of Osuna Road between AMAFCA North Diversion Channel and Edith Blvd.

ENGINEERING FIRM: Mark Goodwin & Associates, PA CONTACT: Diane Hoelzer, PE

ADDRESS: PO Box 90606 ABQ NM 87199 PHONE: 828-2200

OWNER: Sundt Corporation CONTACT: _____

ADDRESS: PO Box 3671 Albuquerque NM 87190 PHONE: 883-1674

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: ALS, Inc. CONTACT: Tim Aldrich

ADDRESS: PO Box 30701 ABQ NM 87190 PHONE: 884-1990

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT
_____ DRAINAGE PLAN
_____ CONCEPTUAL GRADING & DRAINAGE PLAN
__X__ GRADING PLAN
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERTIFICATION
__X__ OTHER (supplemental information)

PRE-DESIGN MEETING:

_____ YES
__X__ NO
_____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAT APPROVAL
__X__ PRELIMINARY PLAT APPROVAL
_____ S. DEV. PLAN FOR SUB'D APPROVAL
_____ S. DEV. PLAN FOR BLDG PERMIT APPROVAL
_____ SECTOR PLAN APPROVAL
_____ FINAL PLAT APPROVAL
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATION OF OCCUPANCY APPROVAL
__X__ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ S.A.D. DRAINAGE REPORT
_____ DRAINAGE REQUIREMENTS
_____ OTHER _____ (Specify)

DATE SUBMITTED: APRIL 12,1999

BY: Diane Hoelzer
Diane Hoelzer, PE

RECEIVED
APR 12 1999
HYDROLOGY SECTION

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

April 7, 1999

Ms. Susan Calongne
City of Albuquerque
One Stop - Hydrology Div.
P.O. Box 1293
Albuquerque, NM 87199

Re: Los Prados Del Norte Grading and Drainage Plan (D-16/D8), Engineer's stamp 4-7-99
Preliminary Plat and Rough Grading Permit Approval

Dear Ms. Calongne:

I am submitting a revised Grading and Drainage Plan, infrastructure list and supplemental drainage information for the above referenced project. In response to your comment letter dated March 29, 1999:

1. *Accompanying this letter is documentation from Parsons-Brinkerhoff for the revised hydrologic analysis of the Vista Del Norte storm drain for the section of storm drain accepting the flows from our site.*

2. *I have coordinated with Parsons-Brinkerhoff with regard to the storm drain outfall connection from our site at the southwest knuckle to the storm drain system in Vista Monte Drive. The offsite improvements adjacent to this site, including the storm drain has gone to work order but the storm drain system is not completed at the time of this latest submittal.*

3. *With regard to the use of a 6' wide spillway channel, Fred Aguirre assured me that if I could get Glenn Jurgenson to approve of the 6' wide channel / walkway he would allow it. I have spoken to Glenn and accompanying this letter is documentation on his agreement to allow a 6' wide spillway channel / walkway in Tract A.* OK

4. *Inlets have been identified on the revised grading and drainage plan and in the supplemental information.* OK

5. *I understand that Parsons-Brinkerhoff has made a submittal to the State Engineers Office.* OK

If you have any questions, please call me.

Sincerely,

MARK GOODWIN AND ASSOCIATES, P.A.

Diane Hoelzer, P.E.

DLH:dlh
f:\prados\drainage ltr

RECEIVED
APR 12 1999
HYDROLOGY SECTION

DRAINAGE REPORT

FOR

LOS PRADOS DEL NORTE SUBDIVISION

VISTA DEL NORTE MASTER PLAN COMMUNITY

DIANE HOELZER
NEW MEXICO
11967
REGISTERED PROFESSIONAL ENGINEER

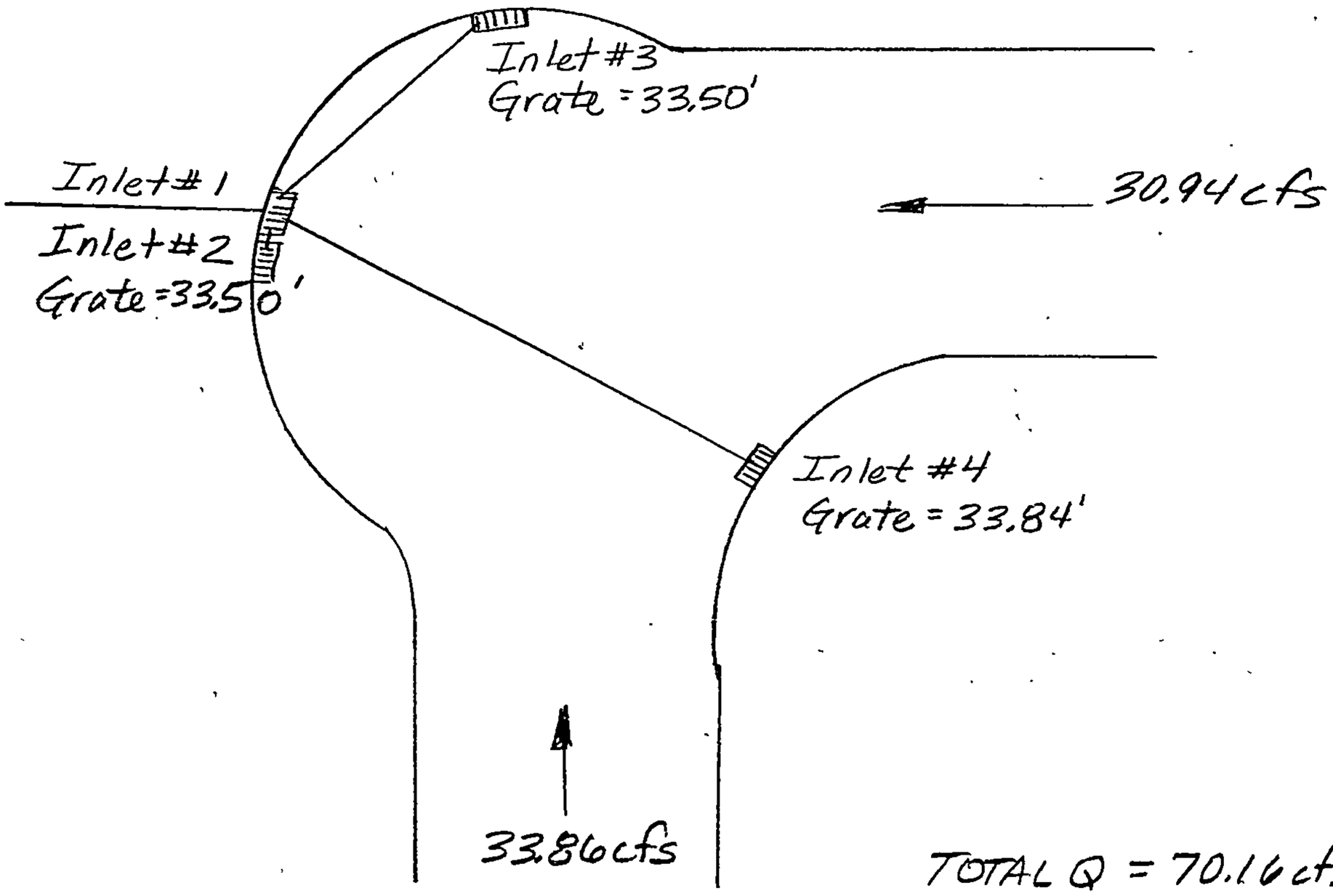
3-5-99 REV. 4-7-99

MARCH 1999

RECEIVED
APR 1 2 1999
HYDRO

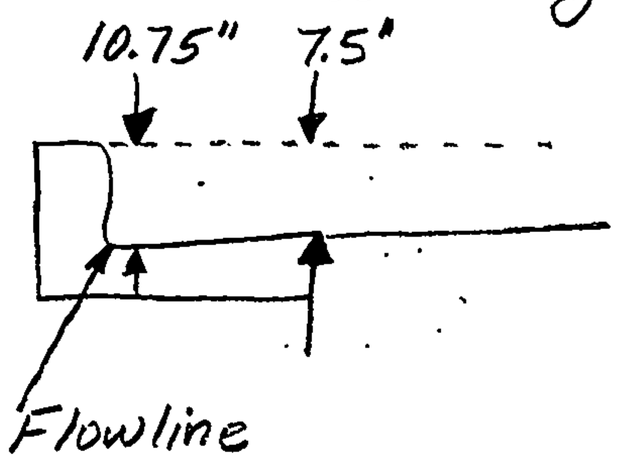
D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE, NM 87199
(505) 828-2200 FAX 797-9539
e-mail: dmg@swcp.com

PROJECT Los Prados Del Norte
SUBJECT Sump Inlet Calcs
BY DLH DATE 3-5-99
CHECKED _____ DATE 4-7-99 REV
SHEET 1 OF 2



TOTAL Q = 70.16 cfs
Assume Q per Inlet = 23.4 cfs
Approx. depth = 0.50'

Capacity is measured by the weir equation at the lip of the gutter assuming an allowable ponding elevation equal to the lowest adjacent right-of-way elevation



Avg Depth (side) = 0.76'
Avg Depth (Front) = 0.625'

Parsons Brinckerhoff
5801 Osuna Road NE
Suite 200
Albuquerque, NM 87109
505-881-5357
Fax: 505-881-7602

April 7, 1999

Fred Aguirre, Drainage Review
Development Review Board
City of Albuquerque, Planning Department
Plaza Del Sol Building, 2nd Floor
Albuquerque, NM

Re: Vista Del Norte DRB 98-78

Mr. Aguirre,

At the request of Diane Hoelzer I am writing you to let you know we have coordinated in regards to the storm drain outfall for Tract I, Vista Del Norte Subdivision. I have provided her with a revised hydraulic grade line worksheet showing the re-routing of the entire flow from Tract I to a single outfall on Vista Monte Drive. The stub was included in you planset and is currently under construction. The analysis shows that the flows can be accommodated in the downstream system. The storm drain system that the flows were removed from will not have any changes in pipe size from the original design.

If you have any questions regarding this submittal please contact me at 881-5357. Thank you for your time.

Sincerely,

Elias E. Archuleta, E.I.

Cc: File
Diane Hoelzer, P.E., D. Mark Goodwin & Assoc.
Jerry Sundt, Sundt Corp.
Ron Brown, Brown and Assoc.

Apr-7-99 2:18PM; 505 881 7602; Sent By: parsons brinckerhoff;

SUMMARY OF HYDRAULIC CALCULATIONS
CLOSED CONDUIT 6/15/98

n = 0.013

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
										JUNCTION		LOSSES											
STATION	STRUCT	D	Q	A	V	K	Sf	L	DELTA	D	ANGLE	hf	hb	hj	hmh	ht	hmisc	SUM	E.G	hv	H.G.	GROUND ELEV.	COMMENT
SOUTH	POND																				5021.00		
	OUTFALL																	0.00	5026.81	5.81	5021.00	5040.00	
		48.00	243	12.57	19.34	1437.2	0.0286	300				8.58						8.58	5035.38	5.81	5029.58		
	MH												0.00	0.00	0.29	0.00		0.29	5035.67	5.81	5029.87	5047.00	
		48.00	243	12.57	19.34	1437.2	0.0286	300				8.58						8.58	5044.25	5.81	5038.44		
	MH/B/J								90				0.85	0.00	0.21	-0.31		0.75	5045.00	4.24	5040.76	5053.00	
		42.00	159	9.62	16.53	1006.6	0.0250	400				9.98						9.98	5054.98	4.24	5050.74		
	MH/B/J												0.00	0.00	0.07	-0.58		-0.51	5054.47	1.36	5053.11	5054.00	
		30.00	46	4.91	9.37	410.33	0.0128	550				6.91						6.91	5061.38	1.36	5060.02		
	MH												0.00	0.00	0.07	0.00		0.07	5061.45	1.36	5060.09	5061.00	
		30.00	46	4.91	9.37	410.33	0.0126	550				6.91						6.91	5068.36	1.36	5067.00		
	MH/J												0.00	0.00	0.00	0.00		0.00	5068.36	0.00	5068.36	5068.00	
		30.00	0	4.91	0.00	410.33	0.0000	0				0.00						0.00	5068.36	0.00	5068.36		
MIDDLE	POND																				5028.50		
	OUTFALL																	0.00	5028.94	2.44	5026.50	5032.00	
		60.00	246	19.64	12.53	2606	0.0089	275				2.45						2.45	5031.39	2.44	5028.95		
	MH/J								90				0.49	0.00	0.12	0.49		1.10	5032.48	2.44	5030.05	5039.00	
		60.00	246	19.64	12.53	2606	0.0089	225				2.00						2.00	5034.49	2.44	5032.05		
	MH/J								90				0.49	0.00	0.12	0.00		0.61	5035.10	2.44	5032.66	5039.00	
		60.00	246	19.64	12.53	2606	0.0089	400				3.56						3.56	5038.66	2.44	5036.23		
	MH/J												0.00	0.00	0.09	0.00		0.09	5036.75	1.79	5036.96	5043.00	
		60.00	211	19.64	10.75	2606	0.0066	500				3.28						3.28	5042.03	1.79	5040.24		
	MH								90	48	90		0.09	3.70	0.00	0.00		3.79	5045.82	0.43	5045.39	5047.00	
		48.00	66	12.57	5.25	1437.2	0.0021	350				0.74						0.74	5046.56	0.43	5046.13		
	MH												0.00	0.00	0.02	0.00		0.02	5046.56	0.43	5046.15	5046.00	
		48.00	66	12.57	5.25	1437.2	0.0021	350				0.74						0.74	5047.32	0.43	5046.89		
	MH												0.00	0.00	0.00	-0.09		-0.09	5047.23	0.00	5047.23	5047.00	
		42.00	0	9.62	0.00	1006.6	0.0000	0				0.00						0.00	5047.23	0.00	5047.23		
	TIE-IN																				5045.39		
		54.00	152	15.90	9.56	1967.6	0.0050	700				4.18	0.00	0.00	0.07	0.28		0.35	5047.17	1.42	5045.75	5047.00	
	MH/B												0.00	0.00	0.00	0.00		0.00	5051.34	1.42	5049.92		
		54.00	0	15.90	0.00	1967.6	0.0000	0				0.00						0.00	5051.34	0.00	5051.34	5051.50	
																					5051.34		
	OUTFALL																				5026.50		
		36.00	115	7.07	16.27	667.28	0.0297	100				2.97						0.00	5030.61	4.11	5026.50	5032.00	
	MH/B												0.00	0.00	0.00	-0.82		2.97	5035.58	4.11	5029.47		
		42.00	0	9.62	0.00	1006.6	0.0000	0				0.00						-0.82	5032.76	0.00	5032.76	5033.00	
																		0.00	5032.76	0.00	5032.76		
	OUTFALL																				5026.50		
		60.00	214	19.64	10.90	2606	0.0057	300				2.02						0.00	5030.37	1.84	5028.52	5038.00	
	MH/B/J								90	42	90		0.25	1.80	0.00	0.00		2.02	5032.42	1.27	5031.15	5035.00	
		54.00	144	15.90	9.05	1967.6	0.0054	350				1.87						2.05	5034.20	1.27	5033.02		
	MH/B												0.00	0.00	0.03	-0.15		1.87	5034.17	0.54	5033.64	5035.00	
		48.00	74	12.57	5.89	1437.2	0.0027	450				1.19						-0.12	5035.37	0.54	5034.83		
	INLET												0.00	0.00	0.03	0.00		1.19	5035.39	0.54	5034.86	5032.00	
		48.00	74	12.57	5.89	1437.2	0.0027	0										0.03					
PIPE BETWEEN PONDS																					5021.00		
	OUTFALL																	0.00	5021.28	0.28	5021.00	#REF!	
		30.00	21	4.91	4.28	410.33	0.0026	500				1.31						1.31	5022.59	0.28	5022.31		
	MH/B												0.00	0.00	0.01	0.00		0.01	5022.61	0.28	5022.32	5037.00	
		30.00	21	4.91	4.28	410.33	0.0026	500				1.31						1.31	5023.92	0.28	5023.63		
	INLET												0.00	0.00	0.00	-0.06		-0.06	5023.86	0.00	5023.86	5033.50	
		24.00	0	3.14	0.00	226.29	0.0000	0															

UNDOCUMENTED OUTFALL

****

Apr-7-99 2:18PM; 505 881 7602; Sent By: parsons brinckerhoff;

SUMMARY OF HYDRAULIC CALCULATIONS
CLOSED CONDUIT 6/15/98

n = 0.013

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
										JUNCTION		LOSSES											
STATION	STRUCT	D	Q	A	V	K	Sf	L	DELTA	D	ANGLE	hf	hb	hj	hmh	ht	hmisc	SUM	E.G.	hv	H.G.	GROUND ELEV.	COMMENT
NORTH	POND																				5016.10		
	OUTFALL																	0.00	5016.14	2.04	5016.10	5030.00	
		84.00	442	33.48	11.47	6393	0.0048	250				1.19						1.19	5019.34	2.04	5017.29		
	MH/B/J/J								35	36	90		0.12	5.19	0.00	0.00		5.31	5024.65	0.99	5023.66	5030.00	
		48.00	100	12.57	7.99	1437.2	0.0049	450				2.20						2.20	5026.85	0.99	5025.86		
	MH												0.00	0.00	0.05	0.00		0.05	5026.90	0.99	5025.90	5030.00	
		48.00	100	12.57	7.99	1437.2	0.0049	195				0.95						0.95	5027.85	0.99	5026.86		
	INLET																						
		48.00	0	12.57	0.00	1437.2	0.0000	0		36	90		0.00	1.98	0.00	0.00		1.98	5029.83	0.00	5029.83	5030.00	
	TIE-IN																				5023.66		
		66.00	239	23.76	10.06	3360.3	0.0051	433					0.00	0.00	0.08	0.32		0.39	5025.83	1.58	5024.05	5030.00	
	MH											2.20						2.20	5027.83	1.58	5026.25		
		66.00	239	23.76	10.06	3360.3	0.0051	450					0.00	0.00	0.08	0.00		0.08	5027.91	1.57	5026.33	5035.00	
	MH/B											2.28						2.28	5030.18	1.57	5028.61		
									15	36	90		0.07	2.41	0.00	0.00		2.48	5032.66	0.84	5031.82	5033.00	
		54.00	117	15.90	7.37	1967.6	0.0035	450				1.60						1.60	5034.26	0.84	5033.42		
	MH/B								35				0.11	0.00	0.04	0.00		0.15	5034.41	0.84	5033.56	5038.00	
		54.00	117	15.90	7.37	1967.6	0.0035	450				1.60						1.60	5036.00	0.84	5035.16		
	MH/B								15				0.07	0.00	0.04	0.00		0.11	5036.11	0.84	5035.27	5037.50	
		54.00	117	15.90	7.37	1967.6	0.0035	172				0.61						0.61	5036.73	0.84	5035.88		
	MH/B/J								83	36	90		0.16	0.38	0.00	0.00		0.55	5037.27	0.85	5036.42	5037.50	
		48.00	93	12.57	7.40	1437.2	0.0042	450				1.88						1.88	5039.16	0.85	5038.31		
	MH/B								20				0.08	0.00	0.04	0.00		0.12	5039.28	0.85	5038.43	5040.00	
		48.00	93	12.57	7.40	1437.2	0.0042	160				0.67						0.67	5039.95	0.85	5039.10		
	INLET												0.00	0.00	0.00	0.00		0.00	5039.95	0.00	5039.95	5043.00	
		48.00	0	12.57	0.00	1437.2	0.0000	0															
																					5016.10		
	OUTFALL																	0.00	5018.88	2.78	5016.10	5030.00	
		42.00	129	9.62	13.38	1006.8	0.0184	135				2.21						2.21	5021.09	2.78	5018.31		
	INLET																						
		42.00	0	9.62	0.00	1006.8	0.0000	0		36	90		0.00	5.56	0.00	0.00		5.56	5026.65	0.00	5026.65	5030.00	
																					5016.10		
	OUTFALL																	0.00	5017.19	1.09	5016.10	5030.00	
		36.00	59.3	7.07	8.38	667.28	0.0079	100				0.79						0.79	5017.98	1.09	5016.89		
	MH/B								173				0.30	0.00	0.05	0.00		0.35	5018.33	1.09	5017.24	5030.00	
		36.00	59.3	7.07	8.38	667.28	0.0079	450				3.55						3.55	5021.88	1.09	5020.79		
	MH												0.00	0.00	0.05	0.00		0.05	5021.94	1.09	5020.85	5029.00	
		36.00	59.3	7.07	8.38	667.28	0.0079	450				3.55						3.55	5025.48	1.09	5024.39		
	INLET																						
		36.00	0	7.07	0.00	667.28	0.0000	0		36	90		0.00	2.18	0.00	0.00		2.18	5027.67	0.00	5027.67	5028.00	
																					5016.10		
	OUTFALL																	0.00	5017.74	1.64	5016.10	5030.00	
		24.00	32.3	3.14	10.27	226.29	0.0293	210				4.27						4.27	5022.01	1.64	5020.37		
	MH/B								35				0.20	0.00	0.08	0.00		0.28	5022.30	1.64	5020.66	5033.50	
		24.00	32.3	3.14	10.27	226.29	0.0293	300				6.10						6.10	5028.40	1.64	5026.76		
	MH/S/J									36	90		0.00	3.17	0.00	0.00		3.17	5031.57	0.05	5031.52	5037.50	
		24.00	5.75	3.14	1.83	226.29	0.0008	150				0.10						0.10	5031.67	0.05	5031.61		
	INLET									36	90		0.00	0.10	0.00	0.00		0.10	5031.77	0.00	5031.77	5039.00	
		24.00	0	3.14	0.00	226.29	0.0000	0															

STORM SEWER LAYOUT
VISTA DEL NORTE
HYDRAULIC GRADE LINE ANALYSIS

#	GROUND ELEV.	HGL (FT)	PIPE DIAM. (IN)	FLOW (CFS)	REQUIRED INVERT	PIPE LENGTH (FT)	CALCULATED SLOPE (%)	SLOPE USED (%)	PIPE INVERT
middle pond	5039.00	5026.50			5018.50	*			5018.50
			60.00	214.00		433.00	1.50	0.50	
MH/B/J	5035.00	5031.15			5025.00				5020.67
			54.00	117.21		119.00	2.42	0.50	
MH/B	5033.00	5033.64			5023.54				5021.26
			54.00	117.21		450.00	1.17	0.50	
INLET	5036.00	5034.86			5026.54				5023.51

****

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

April 7, 1999

Mr. Fred Aguirre
City of Albuquerque
One Stop - Hydrology Div.
P.O. Box 1293
Albuquerque, NM 87199

Re: 6' wide channel / walkway in Los Prados Del Norte Subdivision (DRB 98-241)

Dear Mr. Aguirre:

At the March 30 DRB hearing I made inquiry with regard to the use of a 6' wide spillway channel in Tract A of the Los Prados Del Norte Subdivision. It was my understanding that if Glen Jurgenson did not have a problem with the use of a 6' wide channel that the Hydrology Department would allow it.

I have spoken to Glen Jurgenson with regard to the use of a 6' wide channel / walkway located in Tract A of the Los Prados Del Norte Subdivision and he will allow a 6' wide channel / walkway as long as there is a statement on the plat and in the Homeowners Association Covenants that "the landscaping and concrete spillway / walkway located in Tract A will be maintained by the Vista Del Norte Homeowners Association" as shown on the accompanying exhibit.

I Glen Jurgenson, agree to the above statements and conditions.

Glenn Jurgenson 4-7-99
Signature Date

If you have any questions, please call me.

Sincerely,

MARK GOODWIN AND ASSOCIATES, P.A.

Diane Hoelzer

Diane Hoelzer, P.E.

DLH:dlh
f:\prados\drainchan ltr

N

D/E-16-Z

ALE: NONE

V.
18.9225 Ac
...D16/E16
.....1
.....106
.....1
.....0.6
3.7363 Ac.
MBER 1998

LEGAL DESCRIPTION

SEE SHEET 2

NOTES

1. *TRACT "A" IS FOR THE MUTUAL BENEFIT AND USE OF PROPERTY OWNERS AND TO PROVIDE A 25' PUBLIC WATER, PUBLIC DRAINAGE AND PRIVATE ACCESS EASEMENT. THE LANDSCAPING AND CONCRETE SPILLWAY/WALKWAY ARE TO BE MAINTAINED BY THE VISTA DEL NORTE HOMEOWNERS ASSOCIATION. TRACT "A" WILL BE CONVEYED TO THE HOMEOWNER'S ASSOCIATION.*

PURPOSE OF PLAT

1. TO SUBDIVIDE EXISTING TRACT INTO LOTS & 1 TRACT SUBDIVISION
2. TO DEDICATE NEW R/W AS SHOWN
3. TO GRANT NEW EASEMENTS AS SHOWN

****

CASA TOMAS ROAD NE

436.95'

N73°48'30"W

23' 23' 46' R/W

21 0.1668 AC
20 0.1221 AC
19 0.1205 AC
18 0.1205 AC
17 0.1205 AC
16 0.1205 AC
15 0.1205 AC
14 0.1205 AC
13 0.1205 AC
12 0.1205 A

105.00' | 50.00'

N07°18'42"W 118.12'
N16°11'30"E 110.35'
C56 C53 15.91'
C55 C54
C57 C17
L4 L5 C15
C58 C59 C16 C60 C61 C62 C63 C64 C65 C66
L3
C92 C93 C94 C95 C96 C127 C14
C91

19.32 | 52.00' | 52.00' | 52.00' | 52.00' | 52.00' | 52.00' | 52.00' | 49.53'

10' P.U.E.

8 0.1572 AC
7 0.1253 AC
6 0.1253 AC
5 0.1253 AC
4 0.1253 AC
3 0.1253 AC
2 0.1253 AC
1 0.1644 AC

S16°11'30"W 105.00'

16.67' | 52.00' | 52.00' | 52.00' | 52.00' | 52.00' | 52.00' | 52.00' | 60.94'

76.84'

BLOCK 3

68.50' S73°48'30"E

TRACT A
0.1878 ACRES

201.57' S73°48'30"E

127.13'

185.84'

106.05'

79.78'

9 0.1437 AC

10' P.U.E.

S87°35'12"E 105.00'

N04°53'27"E 46.77'

S00°08'27"E 48.22'

10 0.1280 AC

105.00'

S87°18'17"W

S05°14'59"E 48.22'

20.74'

27.48'

S10°21'39"E

11 0.1280 AC

105.00'

S82°11'46"W

48 5 A

10' P.U.E.

49 0.3022 AC

N63°48'24"W 128.68'

N18°52'45"W 137.17'

N18°52'45"W 132.95'

50 0.1972 AC

107.20'

52.90'

N26°06'02"E 54.28'

52 0.1596 AC

S63°53'58"E 111.05'

112.73'

10' P.U.E.

72.31'

51 0.1650 AC

43.85'

44'

C122 C123 C124 C125 C126 C121 C120 C118

SANTA MARTHA CT. NE

L7 R=40'

N63°53'58"W 133.05'

22'

23.11'

27 1286 AC

10' P.U.E.

28 0.1286 AC

N89°34'07"W 107.00'

46' R/W

CASA MARIA ROAD NE

42"SD
23
FP= 35.85
24
FP= 35.87
25
FP= 36.29
30
FP= 38.40
31
FP= 38.81
32
FP= 39.23
33
FP= 39.67
34
FP= 40.28
8
FP= 36.10
7
FP= 36.63
6
FP= 37.20
5
FP= 37.67
4
FP= 38.20
3
FP= 38.74
2
FP= 39.25
19
FP= 36.
18
FP= 37.05
17
FP= 37.56
16
FP= 38.07
15
FP= 38.58
14
FP= 39.00
9
FP= 36.93
10
FP= 37.47
11
FP= 38.01
12
FP= 38.57
13
FP= 39.13
14
FP= 39.70
15
FP= 40.09
16
FP= 40.83
48
FP= 39.90
49
FP= 39.88
50
FP= 40.50
51
FP= 42.36
52
FP= 42.36
47
FP= 40.96
46
FP= 41.10
45
FP= 42.00
44
FP= 42.00
(3) 2' SIDEWALK CULVERTS
TRACT "A"
25' PUBLIC WATER, PUBLIC DRAINAGE & PRIVATE ACCESS EASEMENT
6' MEANDERING SIDEWALK
46' R/W
28' F-F
CASA TOMAS
SANTA MARTHA
CASA MARIA
5038
5040
5042
1.01%
0.9%
0.6%