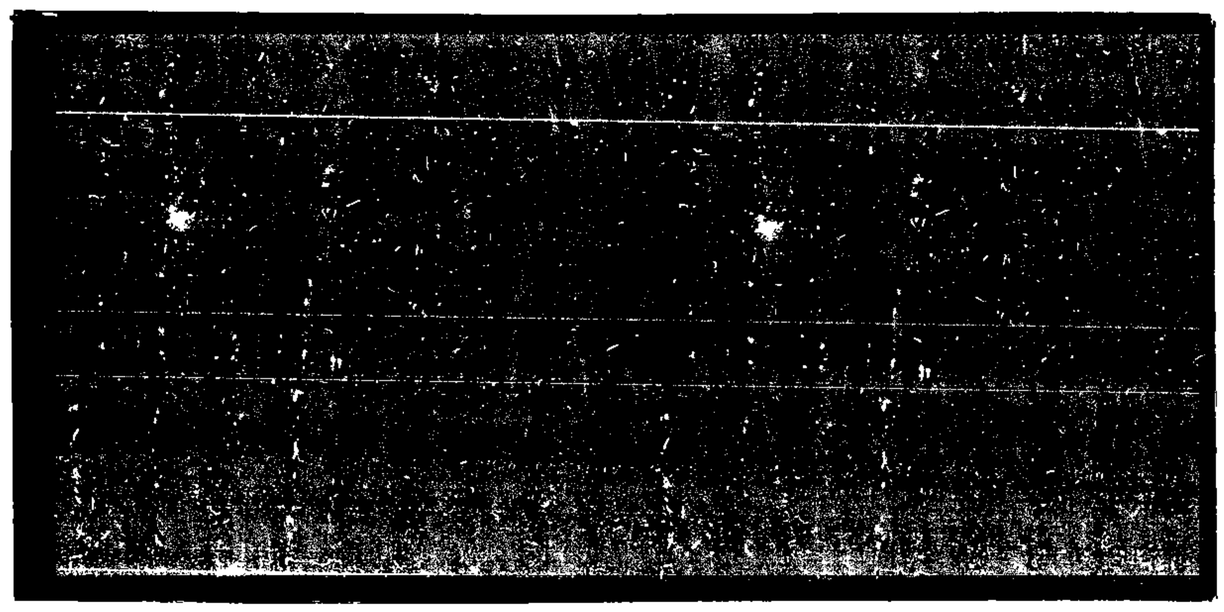

RECEIVED
OCT 12 1998
TECHNOLOGY SECTION

MARK GOODWIN & ASSOCIATES
CONSULTING ENGINEERS

dmg

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

April 12, 2000

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

RE: Grading and Drainage Certification for Desert Song Subdivision (F23/D8A) Submitted for Release of Financial Guarantees, Engineer's Certification Stamp Dated 4/7/00.

Dear Mr. Goodwin:

The above referenced plan is adequate to satisfy the Grading and Drainage Certification requirement per the Infrastructure List dated November 17, 1998, and last revised on May 26, 1999, for the release of the Financial Guarantees for the Desert Song 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 98-300
John Mechenbier, Mechenbier Custom Homes
(File)

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Desert Song Subdivision ZONEATLAS/DRNG,FIL#: F-23/D8A

DRB#: 98-300 EPC# WORK ORDER#:

LEGAL DESCRIPTION: Tract 5A-1A-1, High Desert

CITY ADDRESS: South side of Golden Aster between Cortaderia and Imperata

11-17-98 5-26-99

ENGINEERING FIRM:	Mark Goodwin & Associates, PA	CONTACT:	Mark Goodwin, PE
ADDRESS:	P.O. Box 90606, Albuquerque, NM 87199	PHONE:	828-2200
OWNER:	Mechenbier Custom Homes	CONTACT:	John Mechenbier
ADDRESS:	8804 Washington NE, Suite A, Albuq., NM 87113	PHONE:	828-1676
ARCHITECT:	N/A	CONTACT:	
ADDRESS:		PHONE:	
SURVEYOR:	Aldrich Land Surveying	CONTACT:	Tim Aldrich
ADDRESS:	P.O. Box 30701, Albuquerque, NM 87190-0701	PHONE:	884-1990
CONTACTOR:	Franklin's Earthmoving	CONTACT:	John Ellis
ADDRESS:	2425 Jefferson NE, Albuquerque, NM 87110	PHONE:	884-6947

TYPE OF SUBMITTAL:

- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN (AMENDED)
- ___ 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

DATE SUBMITTED: 4/7/00

BY: Mark Goodwin

Mark Goodwin, PE

RECEIVED
APR 1 0 2000
HYDROLOGY SECTION

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Desert Song Subdivision — ZONEATLAS/DRNG,FIL#: F-23/D8A

DRB#: 98-300 EPC# _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Tract 5A-1A-1, High Desert

CITY ADDRESS: South side of Golden Aster between Cortaderia and Imperata

ENGINEERING FIRM:	Mark Goodwin & Associates, PA	CONTACT:	Mark Goodwin, PE
ADDRESS:	P.O. Box 90606, Albuquerque, NM 87199	PHONE:	828-2200
OWNER:	Mechenbier Custom Homes	CONTACT:	John Mechenbier
ADDRESS:	8804 Washington NE, Suite A, Albuq., NM 87113	PHONE:	828-1676
ARCHITECT:	N/A	CONTACT:	
ADDRESS:		PHONE:	
SURVEYOR:	Aldrich Land Surveying	CONTACT:	Tim Aldrich
ADDRESS:	P.O. Box 30701, Albuquerque, NM 87190-0701	PHONE:	884-1990
CONTACTOR:	Franklin's Earthmoving	CONTACT:	John Ellis
ADDRESS:	2425 Jefferson NE, Albuquerque, NM 87110	PHONE:	884-6947

TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN (AMENDED)
- ____ 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

3-21-00
per Mark Goodwin the private channel is not built - will construct & certify submittal withdrawn
SMC

DATE SUBMITTED: 3/7/00

BY: Mark Goodwin

Mark Goodwin, PE

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MAR 07 2000
HYDROLOGY SECTION

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

January 27, 1999

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

RE: Revised Grading and Drainage Plan for Desert Song Subdivision (F23/D8A) Submitted for Final Plat Approval, Engineer's Stamp Dated 12/2/98.

Dear Mr. Goodwin:

Based on the information provided in the submittal of January 12, 1999, the above referenced revised plan is approved for Final Plat action. As you are aware, the SIA must be in place prior to Final Plat sign-off.

The Amended Infrastructure List is also approved for this subdivision. The Grading and Drainage Certification of the plan approved by the DRB is required prior to the release of Financial Guarantees.

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

Sincerely,

Susan Calongne

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

c: DRB 98-300
John Mechenbier, Mechenbier Custom Homes
File

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

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Desert Song Subdivision

ZONEATLAS/DRNG,FILE#: F-23 / D008A

DRB#: 98-300 EPC#

WORK ORDER#:

LEGAL DESCRIPTION: Tract 5A-1A-1, High Desert

CITY ADDRESS: South side of Golden Aster between Cortaderia and Imperata

ENGINEERING FIRM:	Mark Goodwin & Associates, PA	CONTACT:	Mark Goodwin, PE
ADDRESS:	P.O. Box 90606, Albuquerque, NM 87199	PHONE:	828-2200
OWNER:	Mechenbier Custom Homes	CONTACT:	John Mechenbier
ADDRESS:	8804 Washington NE, Suite A, Albuq., NM 87113	PHONE:	828-1676
ARCHITECT:	N/A	CONTACT:	
ADDRESS:		PHONE:	
SURVEYOR:	Aldrich Land Surveying	CONTACT:	Tim Aldrich
ADDRESS:	P.O. Box 30701, Albuquerque, NM 87190-0701	PHONE:	884-1990
CONTACTOR:	Franklin's Earthmoving	CONTACT:	John Ellis
ADDRESS:	2425 Jefferson NE, Albuquerque, NM 87110	PHONE:	884-6947

TYPE OF SUBMITTAL:

- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- X GRADING PLAN (AMENDED)
- ___ EROSION CONTROL
- ___ 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
- X OTHER Amended Grading Plan & Amended Infrastructure List
- ___
- ___ RELEASE OF FINANCIAL GUARANTY

RECEIVED
JAN 12 1999
HYDROLOGY SECTION

DATE SUBMITTED: 1/12/99

BY: Mark Goodwin

Mark Goodwin, PE

Check plat for 5' private drn easement

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

January 12, 1999

Mr. Fred Aguirre
Acting Chair, Development Review Board
P.O. Box 1293
Albuquerque, NM 87103

Re: Tract 5A-1A-1, High Desert, DRB 98-300

Dear Mr. Aguirre:

Attached, please find an Amended Grading Plan and an Amended Infrastructure List for the referenced project. The Grading Plan was amended at the request of High Desert such that Lots 9 - 14 were lowered to enhance the views for the project south of this project. This change will require that Lots 12 - 14 will have to drain their backyards (no roofs) to the Open Space to the west via private concrete channels in a private easement.

The amendments to the Infrastructure List are:

1. *Addition of aforementioned private channel.*
2. *Change from 36" Storm Drain to 30" Storm Drain.*

If we can provide further information please call our office.

Sincerely,

MARK GOODWIN & ASSOCIATES, PA

Mark Goodwin, PE
President

DMG/st

f:\\desert.sng\comments.wpd

RECEIVED
JAN 12 1999
HYDROLOGY SECTION

Approved

D.R.B. Case No. 98-300
D.R.C. Project No. _____
Date Submitted ~~9/25/98~~ 11-17-98
Prelim. Plat Approved 11-17-98
Prelim. Plat Expires 11-17-99
1/11/99

Figure 12

EXHIBIT "A"

To Subdivision Improvements Agreement

DEVELOPMENT REVIEW BOARD (DRB) REQUIRED INFRASTRUCTURE LISTING

for Desert Song

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
28' FF	Res Pvmt Mount C&G(both sides) 4' Sdwk(both sides)	Desert Song Dr.	Golden Aster	Desert Moon Pl.
26' FF	Res Pvmt Std C&G(both sides) *4' Sdwk(both sides)	Desert Moon Pl.	E. Cul-de-Sac	W. Cul-de-Sac
6"	PVC Waterline (pressure zone 10-E)	Desert Song Dr.	Golden Aster	Desert Moon Pl.
6"	PVC Waterline (pressure zone 9-E)	Desert Song Dr.	Golden Aster	Desert Moon Pl.
6"	PVC Waterline	Desert Moon Pl.	Desert Song Dr.	E. Cul-de-Sac
6"	PVC Waterline	20' Waterline Esmt	E. Cul-de-Sac of Desert Moon Pl.	Imperata
6"	PVC Waterline	Desert Moon Pl.	Desert Song Dr.	W. Cul-de-Sac
6"	PVC Waterline	25' Waterline & Drainage Esmt	W. Cul-de-Sac of Desert Moon Pl.	Golden Aster
8"	SAS	Desert Moon Pl.	E. Cul-de-Sac	W. Cul-de Sac
8"	SAS	20' Sewerline Esmt	W. Cul-de-Sac of Desert Moon PL	Cortaderia
~~30"~~ 30"	RCP	25' Waterline & Drainage Esmt	W. Cul-de Sac of Desert Moon Pl.	Golden Aster
18"	Channel	5' Private Drainage Easement	Lot 12	Lot 14

D.R.B. Case No. 98-300
D.R.C. Project No. ______
Date Submitted 9/25/98
Prelim. Plat Approved ______
Prelim. Plat Expires ______

Stormdrain to include manholes, inlets, riprap and outfall.

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. ~~Financial Guarantee is not required for this item~~.

Water infrastructure to include valves, fittings, valveboxes and fire hydrants.

Sanitary sewer to include manholes and service connections.

Street lights per DPM.

* Items to be deferred

Prepared By: ______
Print Name: David Soule
Firm: Mark Goodwin & Associates, PA

****

Development Review Board Member Approvals

Transportation Dev.	Date: 11-17-98	Utility Dev.	Date: 11/17/98
Design & Development, C.I.P.	Date: 11-17-98	Parks, Engineer/AMAFCA	Date: 11/17/98
DRB Chairman	Date: 11-17-98		

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JAN 12 1999
HYDROLOGY SECTION

CITY OF
Albuquerque

November 6, 1998

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

RE: Drainage Report and Grading and Drainage Plan for Desert Song Subdivision (F23/D8A) Submitted for Preliminary Plat Approval, Engineer's Stamp Dated 10/9/98.

Dear Mr. Goodwin:

Based on the information provided, the Grading and Drainage Plan for the above referenced subdivision is approved for Preliminary Plat action.

The above referenced plan is also approved for Rough Grading provided that a topsoil disturbance permit is obtained.

As you are aware, prior to Final Plat sign-off, the SIA must be in place. The Grading and Drainage Certification is required prior to release of Financial Guarantees.

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

Sincerely,

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

c: Fred Aguirre, DRB 98-300
John Mechenbier, Mechenbier Custom Homes
File

DRAINAGE INFORMATION SHEET

8A

PROJECT TITLE: DESERT SONG SUBDIVISION ZONE ATLAS/DRNG,FILE#: F-23

DRB #: 98-300 EPC #: WORK ORDER #:

LEGAL DESCRIPTION: TRACT 5A-1A-1,HIGH DESERT CITY ADDRESS:

SOUTH SIDE OF GOLDEN ASTER BETWEEN CORTADERIA AND IMPERATA

ENGINEERING FIRM: Mark Goodwin & Associates, PA CONTACT: David Soule , PE

ADDRESS: PO Box 90606, Albuquerque, NM 87199 PHONE: 828-2200

OWNER: MECHENBIER CUSTOM HOMES CONTACT: JOHN MECHENBIER

ADDRESS: 8804 WASHINGTON- A, NE Albuquerque, NM 87113 PHONE: 828-1676

ARCHITECT: CONTACT:

ADDRESS: PHONE:

SURVEYOR: ALDRICH LAND SURVEYING CONTACT: TIM

ADDRESS: PHONE: 884-1990

CONTRACTOR: CONTACT:

ADDRESS: PHONE: 884-6123

TYPE OF SUBMITTAL:

X DRAINAGE REPORT

X 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

GRADING PERMIT APPROVAL

PAVING PERMIT APPROVAL

S.A.D. DRAINAGE REPORT

DRAINAGE REQUIREMENTS

OTHER _____ (Specify)

RECEIVED OCT 12 1998 HYDROLOGY SECTION

DATE SUBMITTED: 9/25/98

BY: _____
David Soule

DRAINAGE REPORT
FOR
DESERT SONG
SUBDIVISION

PREPARED FOR
MECHENBIER CUSTOM HOMES,INC.

OCTOBER 1998

LETTER OF TRANSMITTAL

dmg
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 10/12/98 JOB NO.

ATTENTION Andrew

RE: Tract 5A-1A-1 High desert
'Desert Sony'
Drb 98-300

TO Andrew Garcia
Hydrology Dept.
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			Grading & Drainage Plan for Desert Sony
			Subdivision
			tract 5A-1A-1 High Desert

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 Plan was revised to accomodate High Desert comments and Earth work balance. I was hoping this would replace previously submitted plan.

RECEIVED
OCT 12 1998
HYDROLOGY SECTION

COPY TO _____

SIGNED: David Soule

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

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PROPOSED IMPROVEMENTS.....3
INTERIM EROSION CONTROL.....3
CONCLUSIONS.....3

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APPENDIX B
HYDRAULIC CALCULATIONS

APPENDIX C (MAP POCKET)
HIGH DESERT-DRAINAGE MANAGEMENT MASTER PLAN, ULTIMATE CONDITIONS
SUMMARY MAP
SUMMARY TABLE

APPENDIX D (MAP POCKET)
IMPERATA STREET EXTENSION PROPOSED CONDITIONS MAP

APPENDIX E (MAP POCKET)
THE CANYONS AT HIGH DESERT ULTIMATE CONDITIONS MAP

APPENDIX F (MAP POCKET)
GRADING AND DRAINAGE PLAN FOR DESERT SONG

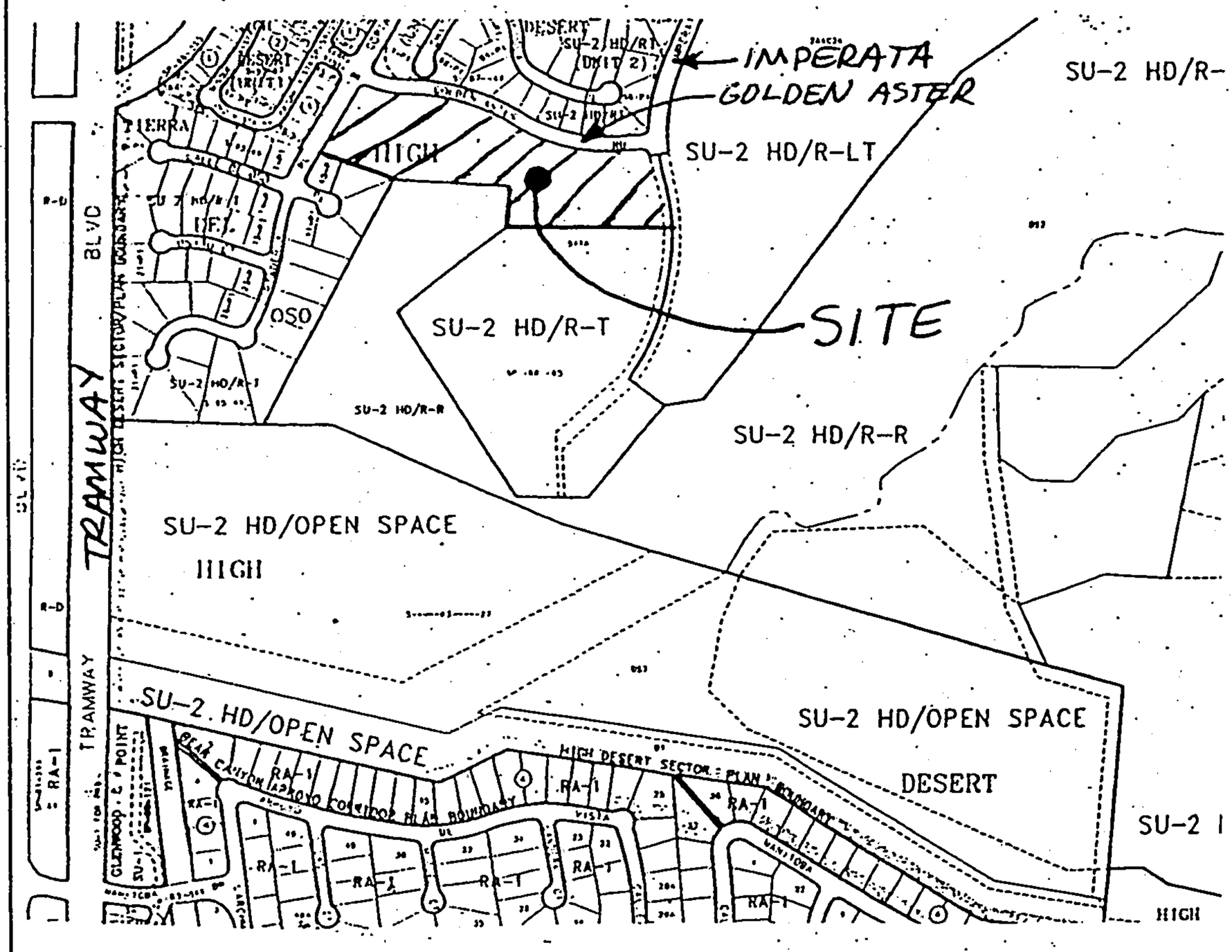
PURPOSE

The purpose of this drainage report is to present the Drainage Management and Grading Plan for Final Plat and Work Order approvals for Desert Song Subdivision, High Desert. All applicable Master plans, Ordinances and the DPM were utilized for this study.

EXISTING SITE CONDITIONS

The site which is known as Tract 5A-1A-1, High Desert consists of approximately 7.1 acres. The site is located on the South side of Golden Aster(partially constructed and financially guaranteed with The Canyons at High Desert) between Imperata Street (under construction and financially guaranteed as part The Canyons at High Desert) and Cortateria Street (constructed).

The site is vacant land which has been denuded of vegetation and leveled as part of The Canyons at High Desert grading operations. The site slopes from the east to west with a consistent grade of approximately 4%. Offsite runoff does not enter the site due to the improvements under construction along the perimeter streets. This tract is included within the approved Master Drainage Plan for High Desert (see appendix C).


IMPERATA
GOLDEN ASTER
SU-2 HD/R-
SU-2 HD/R-LT
SITE
SU-2 HD/R-T
SU-2 HD/R-R
SU-2 HD/OPEN SPACE
HIGH
SU-2 HD/OPEN SPACE
SU-2 HD/OPEN SPACE
DESERT
TRAMWAY
BLVD
TRAMWAY
HIGH

PROPOSED CONDITIONS

The proposed site will consist of 26 single family residential lots fronting a single street. All lots will drain to the street with the exception to 5 lots which will drain to the southern open space. This single interior street will convey the entire 100 year 6 hour storm event to a bank of two type A double grate inlets located at the most Westerly end of the subdivision (see appendix A and B for supporting calculations). The captured runoff will be conveyed to the existing storm drain system located in Golden Aster.

The Master drainage plan was modified by the grading and drainage plan for The Canyons at High Desert by reducing the ultimate discharge to Imperata Street from basin 14P from 62.1 CFS (see appendix D) to 31 CFS (see appendix E). This modification allows for the additional flow of 27.35 CFS from this site to be conveyed within the previously mentioned storm drain system within Golden Aster.

INTERIM EROSION CONTROL

The erosion control plan centers on the fact that storm waters will not be allowed free discharge during the construction process nor off the finished lots prior to home construction. This detail is shown on the grading plan.

CONCLUSIONS

The proposed improvements and the associated drainage management plan are consistent with accepted engineering practices. The handling of the developed storm run off is consistent with the Master Drainage Plan as modified with the acceptance of the drainage plan for the Canyons at High Desert. The latest AHYMO methodology and all current City of Albuquerque and High Desert ordinances are being utilized with the development of this site.

APPENDIX A

```
          AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - Janu
ary, 1994
                RUN DATE (MON/DAY/YR) = 10/07/1998
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OODWN.I01
                INPUT FILE = dessong.dat


     START                    TIME=0.0


     *****   HYDROGRAPH FOR TRACT 5A- HIGH DESERT

     *****   DESERT SONG SUBDIVISION



     RAINFALL                 TYPE=1 RAIN QUARTER=0.0 IN

                              RAIN ONE=2.23 IN RAIN SIX=2.90 IN

                              RAIN DAY=3.65 IN DT=0.03333 HR


                         COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON
 NOAA ATLAS 2 - PEAK AT 1.40 HR.
                         DT =     .033330 HOURS        END TIME =     5.9
99400 HOURS
                            .0000    .0055    .0110    .0167    .0225    .02
84    .0345
                            .0406    .0469    .0534    .0600    .0668    .07
38    .0809
                            .0882    .0958    .1035    .1115    .1197    .12
82    .1370
                            .1461    .1555    .1653    .1754    .1860    .19
71    .2086
                            .2207    .2334    .2469    .2530    .2596    .26
67    .2818
                            .3156    .3677    .4425    .5446    .6787    .84
98   1.0629
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38  2.5790
                    2.5841  2.5891  2.5940  2.5988  2.6036  2.60
82  2.6128
                    2.6173  2.6218  2.6262  2.6305  2.6347  2.63
89  2.6431
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00  2.7629
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01  2.7829
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93  2.8020
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77  2.8202
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53  2.8378
                    2.8402  2.8427  2.8451  2.8475  2.8499  2.85
23  2.8547
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87  2.8710
                    2.8733  2.8756  2.8779  2.8801  2.8824  2.88
46  2.8868
                    2.8890  2.8912  2.8934  2.8956  2.8978  2.90
00

     *HYDROGRAPH FOR SITE IN DEVELOPED CONDITION


     COMPUTE NM HYD       ID=1 HYD NO=101.1 AREA=0.0111 SQ MI

                          PER A=00.00 PER B=60.0 PER C=00.00 PER D=
40.0

                          TP=0.1333 HR MASS RAINFALL=-1


          K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .54
5000      SHAPE CONSTANT, N =  7.106420
          UNIT PEAK =    17.529    CFS   UNIT VOLUME =    .9988
  B =   526.28      P60 = 2.2300
```

```
          AREA =       .004440 SQ MI    IA =    .10000 INCHES    INF
 =     .04000 INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBE
R METHOD - DT =    .033330

          K =    .134742HR    TP =    .133300HR    K/TP RATIO =  1.01
0815      SHAPE CONSTANT, N =  3.492236
          UNIT PEAK =    15.976    CFS   UNIT VOLUME =    .9994
  B =    319.76       P60 = 2.2300
          AREA =       .006660 SQ MI    IA =    .50000 INCHES    INF
 =    1.25000 INCHES PER HOUR
          RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBE
R METHOD - DT =    .033330

     PRINT HYD            ID=1 CODE=1


                                          PARTIAL HYDROGRAPH   101.
10

          RUNOFF VOLUME =      1.70216 INCHES      =        1.0077 ACR
E-FEET
          PEAK DISCHARGE RATE =       27.35 CFS  AT   1.500 HOURS
BASIN AREA =    .0111 SQ. MI.
```

3.85 cfs/ac ok

```
     FINISH

          NORMAL PROGRAM FINISH              END TIME (HR:MIN:SEC) = 13
:56:03
```

```
START                   TIME=0.0

*****   HYDROGRAPH FOR TRACT 5A- HIGH DESERT
*****   DESERT SONG SUBDIVISION

RAINFALL                TYPE=1 RAIN QUARTER=0.0 IN
                        RAIN ONE=2.23 IN RAIN SIX=2.90 IN
                        RAIN DAY=3.65 IN DT=0.03333 HR

*HYDROGRAPH FOR SITE IN DEVELOPED CONDITION

COMPUTE NM HYD          ID=1 HYD NO=101.1 AREA=0.0111 SQ MI
                        PER A=00.00 PER B=60.0 PER C=00.00 PER D=40.0
                        TP=0.1333 HR MASS RAINFALL=-1
PRINT HYD               ID=1 CODE=1

FINISH
```

APPENDIX B

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

PROJECT Desert Song
SUBJECT Inlet capacity
BY DPS DATE
CHECKED DATE
SHEET OF

Inlet Requirement 27.35 CFS.

Since Inlets are in Sump Condition number of inlets will be doubled. ∴ $Q_{required}$ = 54.7 CFS

D = .67

Type A has perimeter of

$6.45 + 2 + 2 = 10.45$

Inlets Shall act as weir

$Q = CLH^{3/2}$

$= (2.9)(10.45)(.67)^{3/2} = 16.62$ CFS

Inlets Required $= \frac{54.7}{16.62} = 3.29$

Use 2 double grate 'A' inlets.

STREET CAPACITY

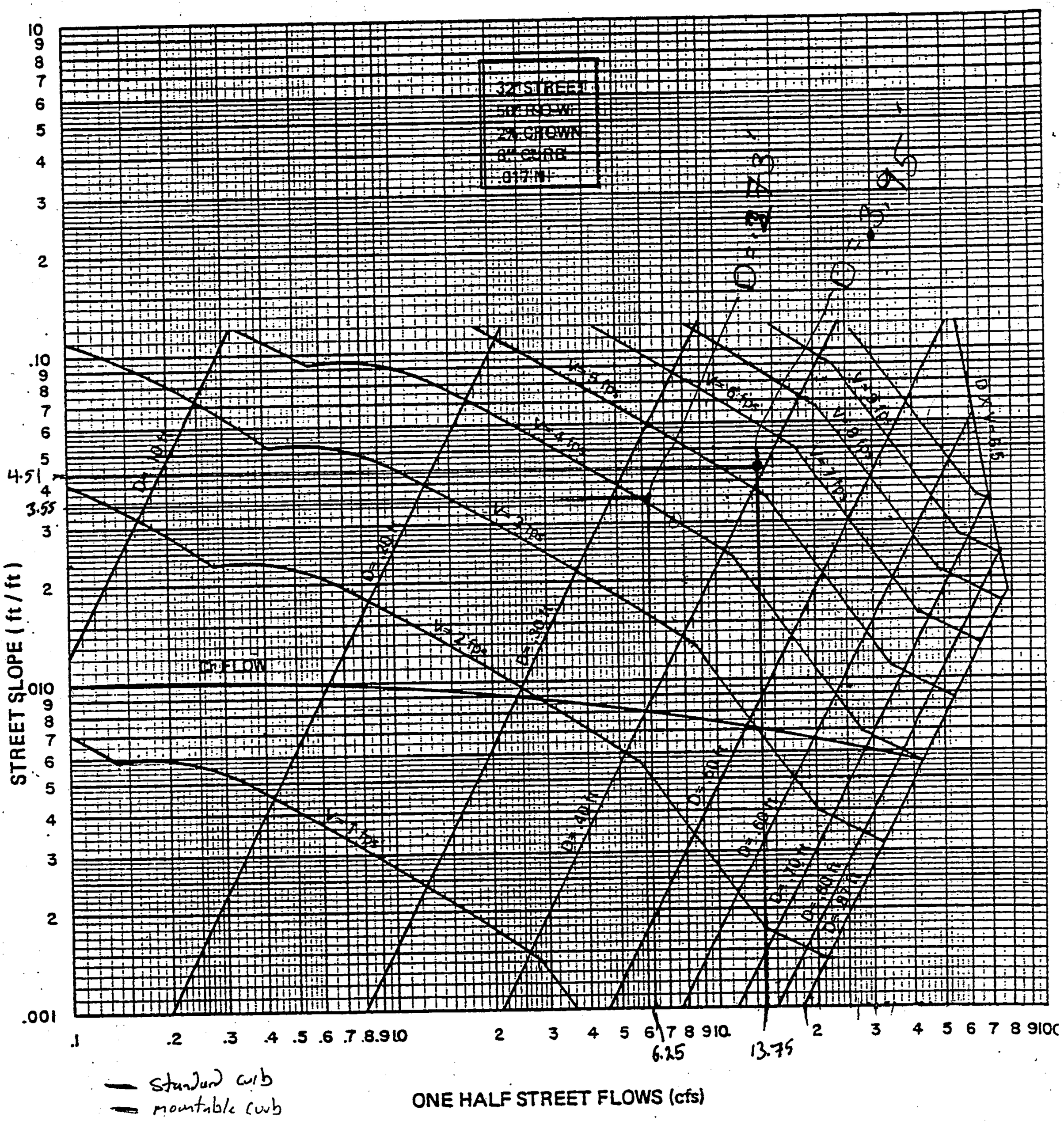

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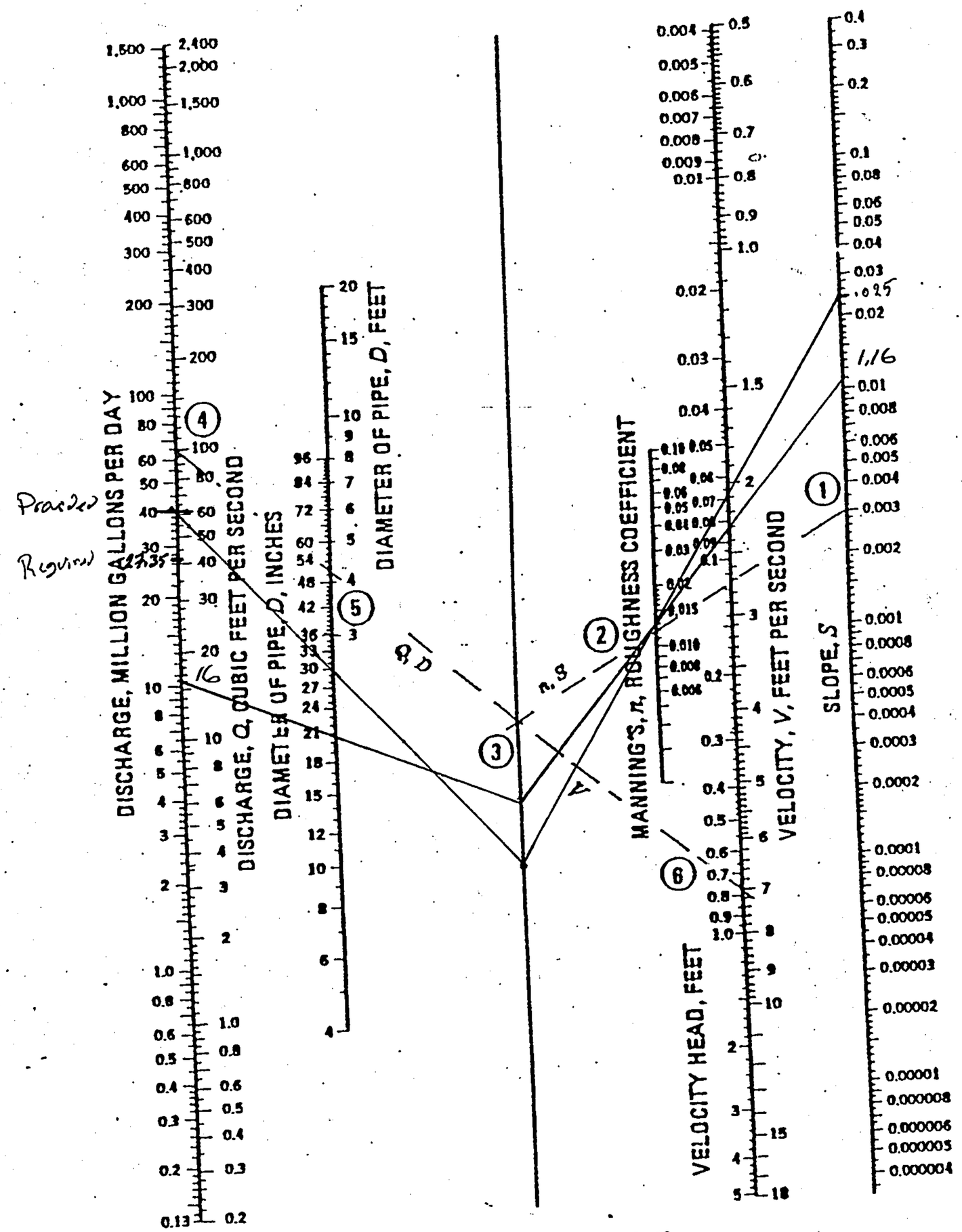
PLATE 22.3 D-1

Reference: American Concrete Pipe Association (1980).



B) Circular Pipe Solution

APPENDIX C

APPENDIX D

APPENDIX E

APPENDIX F