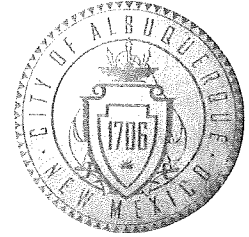


CITY OF ALBUQUERQUE



March 19, 2008

Ronald Ray Bohannon, P.E.
Tierra West, LLC.
5571 Midway Park Place N.E.
Albuquerque, NM 87109

Lot 2

**Re: Auto Zone @ Volcano Point Shopping Center, 131 98th St. NW,
Approval of Permanent Certificate of Occupancy (C.O.), Engineer's Stamp
dated 5/24/07 (K-09/D033)
Certification dated 3/17/08**

Mr. Bohannon:

PO Box 1293

Based upon the information provided in your submittal received 3/17/08, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

Albuquerque

If you have any questions, you can contact me at 924-3982.

NM 87103

Sincerely,

Timothy Sims
Plan Checker

www.cabq.gov

Development and Building Services

C: CO Clerk – Katrina Sigala
File

DRAINAGE AND TRANSPORTATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: Autozone @ Volcano Point Shopping Center
DRB: 1003794 EPC #: _____

ZONE MAP/DRG. FILE # K-9 / 10033
WORK ORDER #: _____

LEGAL DESCRIPTION Lot 2, Volcano Point Shopping Center
CITY ADDRESS: 131 98th Street NW

ENGINEERING FIRM: Tierra West, LLC
ADDRESS: 8509 Jefferson NE
CITY, STATE: Albuquerque, NM

CONTACT: Brad Frosch
PHONE: (505) 858-3100
ZIP CODE: 87113

OWNER: Autozone
ADDRESS: 123 S. Front Street
CITY, STATE: Memphis, TN

CONTACT: Mitch Bramlitt
PHONE: (901) 495-8714
ZIP CODE: 38103

ARCHITECT: N/A
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

SURVEYOR: Walker Surveying
ADDRESS: 424 Shirk SW
CITY, STATE: Albuquerque, NM

CONTACT: Steve Walker
PHONE: (505) 877-8783
ZIP CODE: 87105

CONTRACTOR: Van Tassel Proctor
ADDRESS: 4700 S. Bowman, Suite 900
CITY, STATE: Little Rock, Arkansas

CONTACT: Scott Proctor
PHONE: 505-219-8899
ZIP CODE: 72210

CHECK TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1st SUBMITTAL, **REQUIRES TCL or equal**
- ☐ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEERS CERTIFICATION (TCL)
- ☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA / FINANACIAL GUARANTEE RELEASE
- ☐ 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
- ☒ CERTIFICATE OF OCCUPANCY (PERM.)
- ☐ CERTIFICATE OF OCCUPANCY (TEMP.)
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ SO-19

WAS A PRE-DESIGN CONFERENCE ATTENDED:

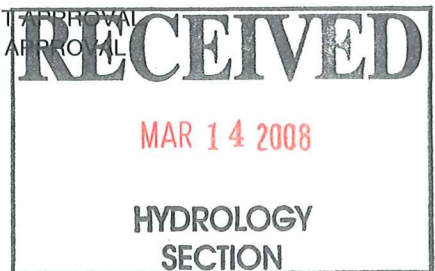
- ☐ YES
- ☐ NO
- ☐ COPY PROVIDED

DATE SUBMITTED: 3/13

Brad Frosch (cell# 263-5808)

Requests for approvals of Site Development Plans shall be accompanied by a drainage submittal. The particular nature, location and scope of the development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plans:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.



FILE in
cabinet.

DRAINAGE AND TRANSPORTATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: Autozone @ Volcano Point Shopping Center ZONE MAP/DRG. FILE # K-9
DRB: 1003794 EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION Lot 2, Volcano Point Shopping Center
CITY ADDRESS: 131 98th Street NW

ENGINEERING FIRM: Tierra West, LLC CONTACT: Brad Frosch
ADDRESS: 8509 Jefferson NE PHONE: (505) 858-3100
CITY, STATE: Albuquerque, NM ZIP CODE: 87113

OWNER: Autozone CONTACT: Mitch Bramlitt
ADDRESS: 123 S. Front Street PHONE: (901) 495-8714
CITY, STATE: Memphis, TN ZIP CODE: 38103

ARCHITECT: N/A CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: Walker Surveying CONTACT: Steve Walker
ADDRESS: 424 Shirk SW PHONE: (505) 877-8783
CITY, STATE: Albuquerque, NM ZIP CODE: 87105

CONTRACTOR: Van Tassel Proctor CONTACT: Scott Proctor
ADDRESS: 4700 S. Bowman, Suite 900 PHONE: 505-219-8899
CITY, STATE: Little Rock, Arkansas ZIP CODE: 72210

CHECK TYPE OF SUBMITTAL:

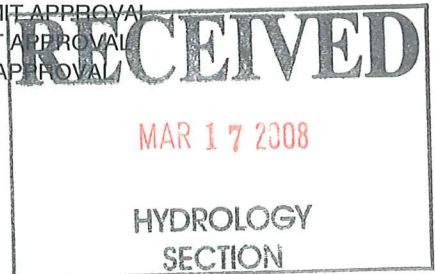
- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1st SUBMITTAL, **REQUIRES TCL or equal**
- ☐ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEERS CERTIFICATION (TCL)
- ☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ☐ OTHER

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☐ YES
- ☐ NO
- ☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA / FINANACIAL GUARANTEE RELEASE
- ☐ 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
- ☐ CERTIFICATE OF OCCUPANCY (PERM.)
- ☐ CERTIFICATE OF OCCUPANCY (TEMP.)
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ SO-19

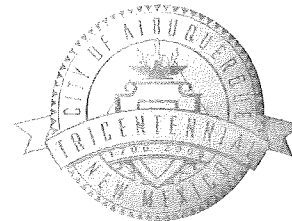


DATE SUBMITTED: 3/17/2008 BY: Brad Frosch (cell# 263-5808)

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plans:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE



March 5, 2007

Ronald R. Bohannon, P.E.
Tierra West, LLC.
5571 Midway Park Place NE
Albuquerque, NM 87109

Re: NW Corner of 98th & Central, Engineer's Stamp dated 2-12-07, (K9/D33)
Request for Preliminary Plat, Grading, and Building Permit Approval

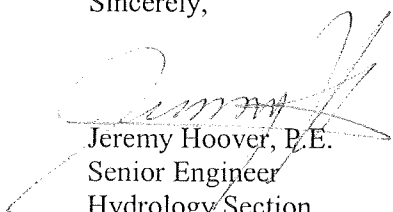
Dear Mr. Bohannon,

Based upon the information provided in your submittal received on November 13, 2006, the above referenced plan is approved for Preliminary Platting Action by the DRB. Additional information is required, however, for the approval of the additional permits. The items to be addressed are as follows.

- The drainage narrative indicates that the site has an area of 4.15 acres while the calculations use 4.01 acres to determine the runoff.
- There will be no SO-19 permit for this project as a work order will be necessary. Please remove the signature block for the Hydrology inspection.
- A new inlet along the southern side of Volcano Road will be necessary in order to accommodate the runoff from that new roadway.
- The dumpster enclosures must be modified with a depressed center to eliminate surface runoff. Details of each enclosure with spot elevations must be provided for grading.
- Where is the property line relative to the retaining wall footing? Please show the relative offset on the wall detail.
- What are the rim and invert elevations for the southern type 'D' inlet and storm drain manhole #2? Please provide the HGL information associated with the discharge from the adjacent pond(s) to the west. Also indicate the design water surface elevation of that feature and the location of the existing, southern storm drain.
- How will the existing storm drain manhole be modified? Will it be relocated outside of the sidewalk area and / or abandoned?
- Please call out all applicable standard drawings and provide a detail for the on-site curb and gutter section(s).

If you have any questions or need additional information, feel free to contact me at 924-3990.

Sincerely,


Jeremy Hoover, P.E.
Senior Engineer
Hydrology Section
Development and Building Services

cc: file (K9/D33)

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

**DRAINAGE REPORT
FOR**

***Commercial Development
NW Corner of
98th Street & Central Avenue***

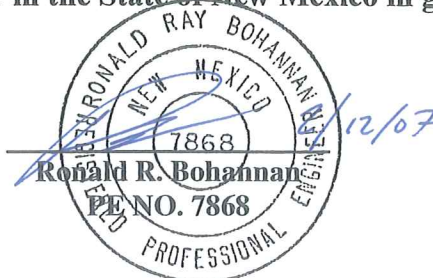
Prepared by:

**Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, New Mexico 87109**

**Prepared for:
Peterson Properties
2325 San Pedro, NE Suite 2-A
Albuquerque, NM 87110**

February 12, 2007

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the State of New Mexico in good standing.



Job No 26037

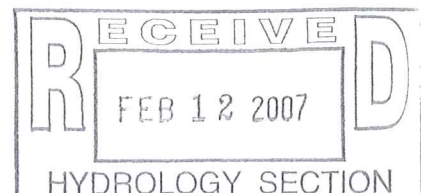


TABLE OF CONTENTS

SECTION I - REPORT

Purpose.....	4
Location	4
Existing Drainage Conditions	4
Vicinity Map	5
Flood Plain	6
Flood Insurance Rate Map	7
Proposed Drainage Management Plan	8,10
Proposed Basins Map.....	9
Calculations.....	10
Summary	10

SECTION II - RUNOFF CALCULATIONS

Runoff Calculations	12
Pipe Capacity	13
Analysis Point Map.....	14
Storm Drop Inlets.....	15
Pond Location Map.....	17
Pond Volume Calculations.....	18
AHYMO Summary	19
AHYMO Input Data.....	20
AHYMO Output Data.....	22

APPENDIX A

Section of Final Design Report for the Amole Del Norte Storm Diversion Facilities, Tierra Bayita Drainage Facilities, Phase III March 1998

MAP POCKET

Grading and Drainage Plan

Section I

Report

PP REQ

- ① IS SITE 4.15 ACRES (EX COND IN NARR)
OR 4.01 ACRES (AS SHOWN IN CALLS)

②

NO GRADING YET

WHERE IS P_2 & FOOTING OF RET WALL

BP ① RIM/INV FOR SOUTHERN TYPE D INLET

& SD MH #2

WHAT TYPE OF MH TO BE USED?

② REMOVE SO 19 SIG. BLOCK.

③ HOW WILL EX. SD MH BE MODIFIED?
RELO OUT OF NEW SIDEWALK, ABANDON?

④ DUMPSTER DRAIN FOR PAD 'C' RQD

PROVIDE SPOTS FOR ALL DUMPSTERS

⑤ ~~B~~ GRADE @ BW (RET. WALLS) SHOULD SPECIFY
TO SLOPE AWAY FR WALL.

⑥ ON SITE CURB DETAIL

⑦ C.O. ALL STD DWGS

⑧ PLAN 9-6 RET WALL

DETAIL: 8' MAX HT INCLUDING 4' OF GARDEN WALL

Purpose

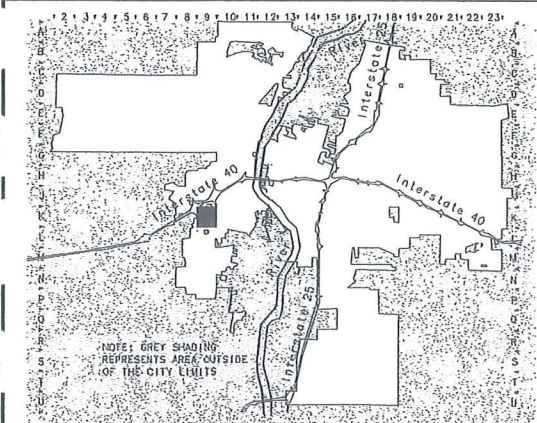
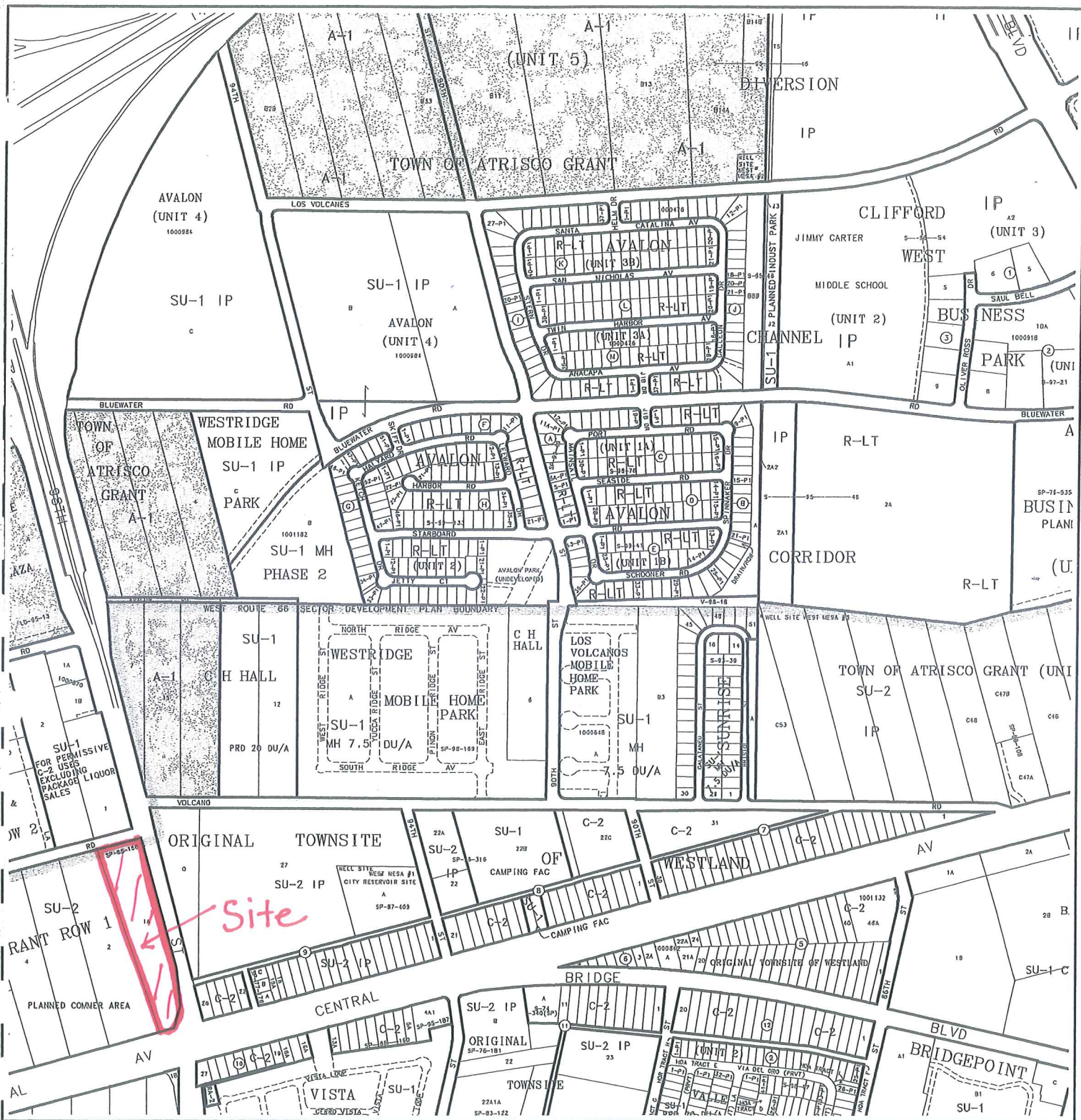
The purpose of this report is to provide the Master Drainage Management Plan for a 4.15± acre parcel of land. The site consists of 4 proposed commercial developments. The project will be developed in multiple phases. The first lot to be developed will be lot 2. Construction of lot 4 will follow, proceeded later by lots 1 and 3.

Location

The site is located on the west side of Albuquerque, more specifically on the northwest corner of 98th Street and Central Avenue, NW. The site is bounded on the west by a large drainage pond which is owned and maintained by the City of Albuquerque. The site is shown on the enclosed Vicinity Map, K-9-Z.

Existing Drainage Conditions

The 4.15± acre site is currently undeveloped. The site is currently vacant and drains naturally from the west to the south east. The site drains naturally to an existing inlet structure located on the southeast corner of the site. From the inlet the drainage is conveyed via an existing 24" RCP to an existing 36" RCP which drains to the east crossing 98th Street and to the Frontage Road adjacent to Central Avenue. The discharge not captured by the inlet is conveyed to 98th Street where it will eventually be conveyed to the existing storm drain in the Frontage Road adjacent to Central Avenue. The parcel lies within Amole Del Norte storm drain facility in Basin 19 D. The Final Design Report for the Amole Del Norte Storm Diversion Facilities and Tierra Bayita Drainage Facilities, Phase III, prepared by URS Griener, Inc. for the City of Albuquerque shows the parcel was intended to drain to the existing storm drain adjacent to the site.



CITY OF
Albuquerque

Albuquerque Geographic Information System
PLANNING DEPARTMENT

© Copyright 2003

GRAPHIC SCALE IN FEET



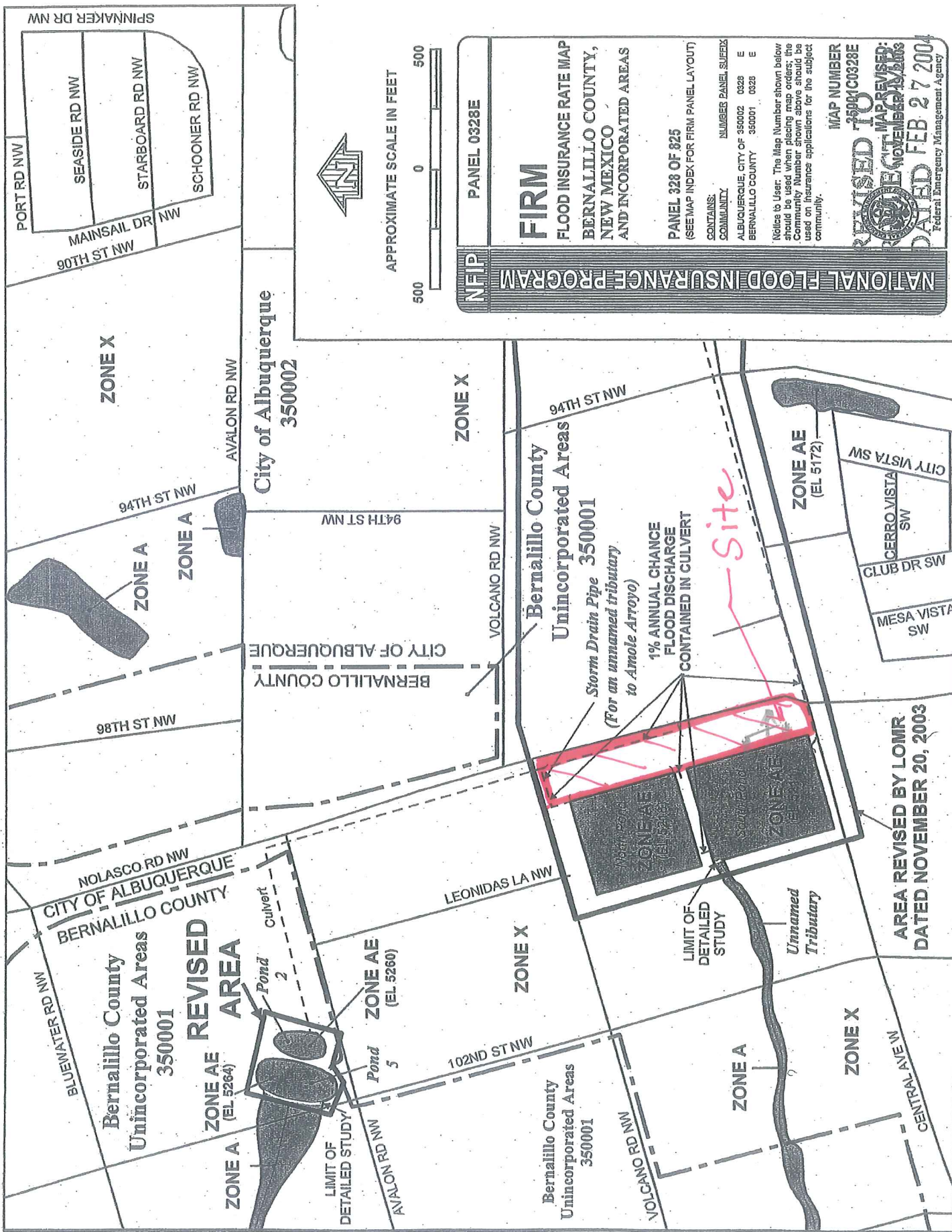
Zone Atlas Page

K-9-Z

Map Amended through July 09, 2003

Flood Plain

The site is located on Firm Map 35001C0328E. The map indicates that the site does not lie within any 100-year flood plain as shown on the following page.



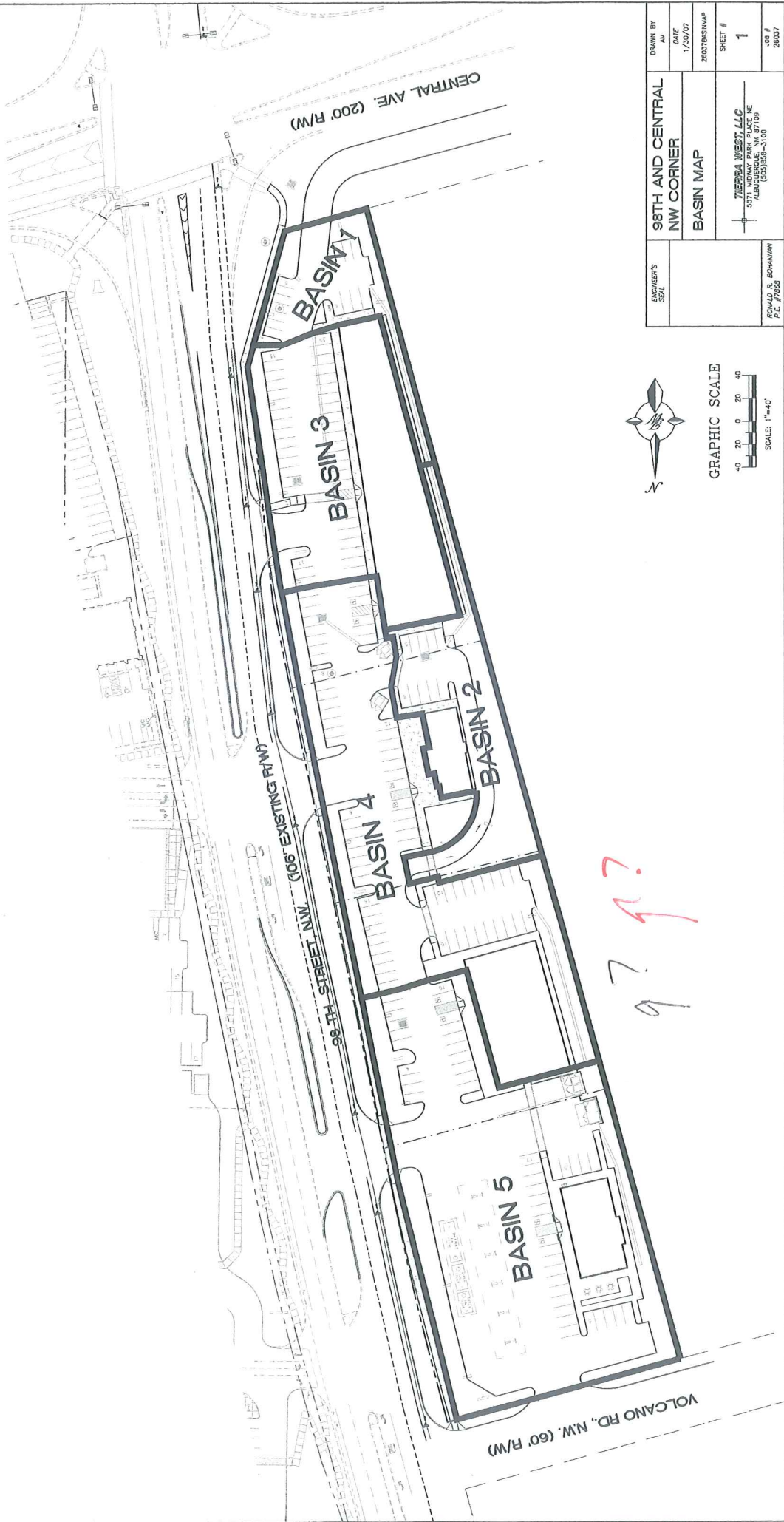
Proposed Drainage Management Plan

The entire site will be graded and all of the surface improvements will be built out in their entirety. The enclosed grading plan (in the map pocket) shows the grades for the entire project.

The drainage conditions for this site were previously analyzed in the Final Design Report for the Amole del Norte Storm Diversion Facilities, Tierra Bayita Drainage Facilities, Phase III, dated March 1998. The site is part of Basin 19D, as shown in Appendix A. Basin D is approximately 0.0897 square miles, this site is 0.014 square miles of the basin. According to the report Basin 19D can discharge 202.80 cfs to the storm drain in Central. According to the AHYMO Summary included in the report, Basin 19D can discharge 3.533 cfs per acre. Using this amount of discharge per acre, our site can discharge 14.66 cfs of the allowable 202.80 cfs. According to the AHYMO analysis included in the report, the existing storm drain in Central Avenue can accept the flow from this site, and should not exceed 14.66 cfs.

The site was separated into 5 basins to analyze the developed drainage conditions (see drainage basin insert). No off-site drainage enters the site. The land treatment types used in the calculations were 75% Type D and 25% Type B, matching the approved master plan. The discharge from Basin 1 (0.96 cfs), surface drains thru the parking lot to a new Type D inlet. The discharge from Basins 2, 3, and 4 (8.70 cfs) is also conveyed to new Type D inlets in various locations throughout the parking lot via surface flow. The discharge from Basin 5 (5.51 cfs) will be conveyed to a Type D inlet. The discharge from this basin will be restricted using an 8.5" orifice.

From the parking lot inlets and grated manhole, the discharge is conveyed to the existing 36" storm drain located adjacent to the site via new 18" and 24" storm drain. According to the



ENGINEER'S SEAL	98TH AND CENTRAL NW CORNER		DRAWN BY AM
	BASIN MAP		DATE 1/25/07
			2007BGNMAP
 TIERSEA WEST, LLC 5371 MONAY PARK PLACE ALBUQUERQUE, NM 87109 (505)555-3100			SHEET # 1
RONALD R. SCHANNAN P.E. #7263			JOB # 20037

AHYMO date, provided in the Report, the discharge from the site is 13.74 cfs which is under the required 14.66 cfs.

$$0.96 + 8.7 + 5.51 = 15.17$$
$$> 14.66 \text{ cfs!!}$$

Calculations

The weighted E method from the "City of Albuquerque Development Process Manual Volume 11 – Design Criteria, 1997 Revision" was used to calculate the runoff and volume for the Site.

Summary

The Site was divided into 5 basins to analyze the future drainage conditions. The Site will drain to a series of drop inlets which will be built with the construction of the Site. From the drop inlets the discharge will be conveyed via a new combined 18" & 24" RCP storm drain to the existing 36" RCP adjacent to the Site. According to data in the Final Design Report for the Amole del Norte Storm Diversion Facilities, Tierra Bayita Drainage Facilities, Phase III, dated March 1998; the site can discharge 14.66 cfs to the existing storm drain. The discharge from Basins 1, 2, 3, and 4 will free discharge. The remaining discharge from Basin 5 will be restricted by parking lot ponding and the use of orifice plates in order to not discharge more than the allowable 14.66 cfs from the Site.

Section II

Runoff Calculations

Weighted E Method

Developed Basins

developed basins																
Basin	Area (sf)	Area (acres)	Treatment A		Treatment B		Treatment C		Treatment D		100-Year			10-Year		
			%	(acres)	%	(acres)	%	(acres)	%	(acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
1	10999	0.25	0%	0	25%	0.06	0%	0.00	75%	0.19	1.645	0.035	0.96	0.985	0.021	0.60
2	18813	0.43	0%	0	25%	0.11	0%	0.00	75%	0.32	1.645	0.059	1.63	0.985	0.035	1.02
3	31949	0.73	0%	0	25%	0.18	0%	0.00	75%	0.55	1.645	0.101	2.78	0.985	0.060	1.73
4	49419	1.13	0%	0	25%	0.28	0%	0.00	75%	0.85	1.645	0.156	4.29	0.985	0.093	2.67
5	63403	1.46	0%	0	25%	0.36	0%	0.00	75%	1.09	1.645	0.200	5.51	0.985	0.119	3.43
TOTAL	174,583	4.01										0.549	15.17		0.329	9.45

4.01 OR 4.15?

Equations:

Weighted E = $E_a \cdot A_a + E_b \cdot A_b + E_c \cdot A_c + E_d \cdot A_d$ / (Total Area)

Volume = Weighted D * Total Area

Flow = $Q_a \cdot A_a + Q_b \cdot A_b + Q_c \cdot A_c + Q_d \cdot A_d$

Excess Precipitation, E (inches)			
Zone 1	100-Year	10 - Year	
E _a	0.44	0.08	
E _b	0.67	0.22	
E _c	0.99	0.44	
E _d	1.97	1.24	

Peak Discharge (cfs/acre)			
Zone 1	100-Year	10 - Year	
Q _a	1.29	0.24	
Q _b	2.03	0.76	
Q _c	2.87	1.49	
Q _d	4.37	2.89	

Pipe Capacity

Pipe	D (in)	Slope (%)	Area (ft ²)	R	Q Provided (cfs)	Q Required (cfs)	Velocity (ft/s)
Inlet 4 to MH 3	18	0.6	1.77	0.375	8.16	5.51	3.12
Inlet 3 to MH 3	10	1	0.55	0.208	2.20	1.63	2.99
MH 3 to Inlet 2	24	0.5	3.14	0.500	16.04	7.14	2.27
Inlet 2 to Inlet 4	24	0.5	3.14	0.500	16.04	11.48	3.65
Inlet 4 to MH 1	24	0.5	3.14	0.500	16.04	14.21	4.52
MH 1 to MH 2	24	0.5	3.14	0.500	16.04	15.17	4.83

Manning's Equation:

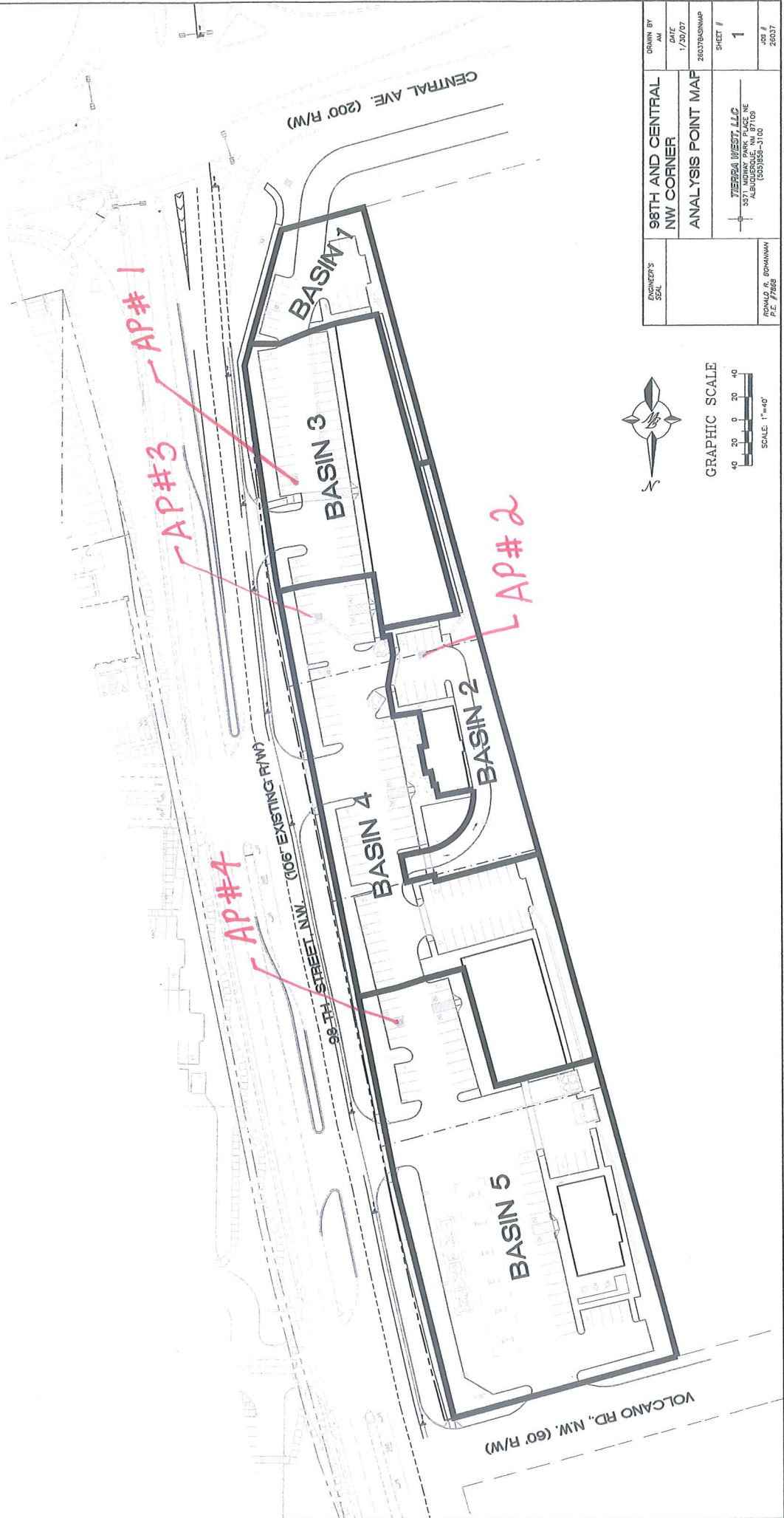
$$Q = 1.49/n * A * R^{(2/3)} * S^{(1/2)}$$

A = Area

R = D/4

S = Slope

n = 0.013



GRAPHIC SCALE



ENGINEER'S SEAL	98TH AND CENTRAL NW CORNER	DRAWN BY AM
	ANALYSIS POINT MAP	DATE 1/20/07
		26037BASINMAP
		SHEET # 1
		JOB # 26037
ENGINEER'S SEAL RONALD R. EDWARDS P.E. #7568	TIERRA WEST, LLC 537 WEST 10TH AVE ALBUQUERQUE, NM 87102 (505)555-3100	

Single 'D' Drop Inlet
EFFECTIVE AREA ASSUMING A 50% CLOGGING FACTOR

SINGLE 'D':

Area at the grate:

$$\begin{aligned} L &= 38.375" - 7 \left(\frac{1}{2}" \text{ middle bars} \right) \\ &= 34.875" \\ &= 2.906' \end{aligned}$$

$$\begin{aligned} W &= 25.5" - 13 \left(\frac{1}{2}" \text{ middle bars} \right) \\ &= 19" \\ &= 1.583' \end{aligned}$$

$$\begin{aligned} \text{Area} &= 1.583' \times 2.906' \\ &= 4.601 \text{ ft}^2 \end{aligned}$$

$$\begin{aligned} \text{Effective Area} &= 4.601 - 0.5 (4.601) \\ &= 2.30 \text{ ft}^2 \end{aligned}$$

$$\text{Effective Area} = 2.30 \text{ ft}^2$$

Orifice Equation

$$Q = CA \sqrt{2gH}$$

$$Q = 0.6 \times 2.30 \times \sqrt{2 \times 32.2 \times 0.5}$$

$$Q = 7.83 \text{ cfs}$$

Total Capacity

$$Q = 7.83 \text{ cfs}$$

AP# 1

$$\text{Flow required} = 2.78 \text{ cfs} < 7.83 \text{ cfs}$$

Single D inlet has capacity

AP# 2

$$\text{Flow required} = 1.63 \text{ cfs} < 7.83 \text{ cfs}$$

Single D inlet has capacity

AP# 3

$$\text{Flow required} = 4.29 \text{ cfs} < 7.83 \text{ cfs}$$

Single D inlet has capacity

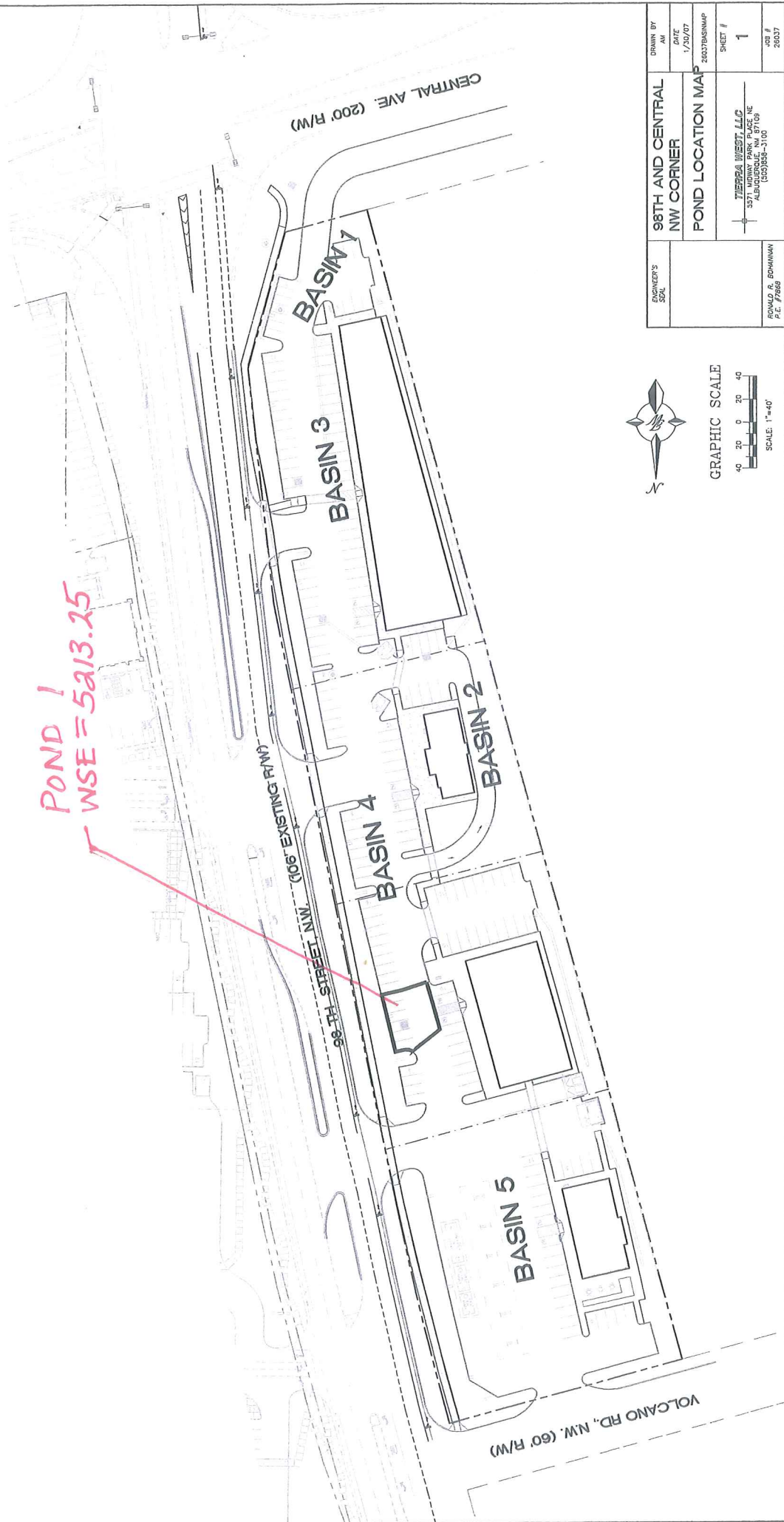
AP# 4

Flow required = 5.51 cfs < 7.83 cfs

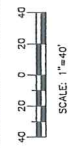
Single D inlet has capacity

VOLUME? OK
 MUST BE 7000.3

POND 1
 WSE = 5213.25



GRAPHIC SCALE



ENGINEER'S SEAL	98TH AND CENTRAL NW CORNER	DRAWN BY AM
	POND LOCATION MAP	DATE 1/30/07
		2007BASMAP
RONALD R. EDWARDS P.E. 72868	728224 WEST LLC 5371 MONY PARK PLACE NE ALBUQUERQUE, NM 87109 (505)558-3100	SHEET # 1
		JOB # 20037

VOLUME CALCULATIONS

POND 1

Ab - Bottom Of The Pond Surface Area
 At - Top Of The Pond Surface Area
 D - Water Depth
 Dt - Total Pond Depth
 C - Change In Surface Area / Water Depth

$$\text{Volume} = \text{Ab} * \text{D} + 0.5 * \text{C} * \text{D}^2$$

$$\text{C} = (\text{At} - \text{Ab}) / \text{Dt}$$

Ab = 6.80
 At = 2,005.48
 Dt = 0.75
 C = 2664.91

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
5208.53	0	0	0.0000
5212.53	4.00	0.0006	3.2184
5212.72	4.188	0.0017	3.2996
5212.91	4.375	0.0050	3.3790
5213.09	4.563	0.0104	3.4564
5213.28	4.750	0.0179	3.5322



780 ft³ OK

Orifice Equation

$$Q = \text{CA} \sqrt{2gH}$$

C = 0.6
 Diameter (in) = 8
 Area (ft²) = 0.349
 g = 32.2
 H (Ft) = Depth of water above center of orifice
 Q (CFS) = Flow

AHYMO.SUM
 - VERSION: 1997.02d
 RUN DATE (MON/DAY/YR)
 USER NO.=

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -
 =02/12/2007
 INPUT FILE = C:\DOCUME~1\New\Desktop\INPUTR~1.TXT
 AHYMO-S-9702dltieraw-AH

COMMAND	HYDROGRAPH IDENTIFICATION	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE
1								
NOTATION								
START								
.00								
RAINFALL TYPE= 1								
2.350								
COMPUTE NM HYD	100.20	1	1.00	.037	1.75596	1.500	3.899 PER	
IMP= 75.00								
COMPUTE NM HYD	100.30	2	1.73	.066	1.75596	1.500	3.871 PER	
IMP= 75.00								
COMPUTE NM HYD	100.40	3	2.72	.103	1.75596	1.500	3.857 PER	
IMP= 75.00								
COMPUTE NM HYD	100.50	4	4.43	.169	1.75596	1.500	3.849 PER	
IMP= 75.00								
COMPUTE NM HYD	100.60	5	5.66	.215	1.75596	1.500	3.847 PER	
IMP= 75.00								
ROUTE RESERVOIR	100.12	5 11	3.97	.215	1.75584	1.600	2.695 AC-FT=	
.017								
ADD HYD	301.00	11& 4 13	8.29	.384	1.75583	1.500	3.161	
ADD HYD	302.00	13& 3 14	11.01	.487	1.75581	1.500	3.308	
ADD HYD	303.00	14& 2 15	12.74	.552	1.75579	1.500	3.375	
ADD HYD	304.00	15& 1 16	13.74	.590	1.75576	1.500	3.408	
FINISH								

TIME=
 RAIN6=

INPUT Revised 2-12-07 tp 0.133.txt

*
* NW CORNER 98TH & CENTRAL *
* 98TH & CENTRAL (26037) *
* PROPOSED CONDITIONS (100-YEAR, 6-HR STORM) *
*

START TIME=0.0 HR
RAINFALL TYPE=1 RAIN QUARTER=0.0 IN
RAIN ONE=1.87 IN RAIN SIX=2.35 IN
RAIN DAY=2.66 IN DT=0.0333 HR

2.20 PER ZONE 1
2.35 16 ZONE 2

*
* BASIN 1
*

COMPUTE NM HYD ID=1 HYD NO=100.2 AREA=0.0004 SQ MI
PER A=0 PER B=25.00 PER C=0.00 PER D=75.00
TP=0.133 HR MASS RAINFALL=-1
PRINT HYD ID=1 CODE=1

*
* BASIN 2
*

COMPUTE NM HYD ID=2 HYD NO=100.3 AREA=0.0007 SQ MI
PER A=0 PER B=25.00 PER C=0.00 PER D=75.00
TP=0.133 HR MASS RAINFALL=-1
PRINT HYD ID=2 CODE=1

*
* BASIN 3
*

COMPUTE NM HYD ID=3 HYD NO=100.4 AREA=0.0011 SQ MI
PER A=0 PER B=25.00 PER C=0.00 PER D=75.00
TP=0.133 HR MASS RAINFALL=-1
PRINT HYD ID=3 CODE=1

*
* BASIN 4
*

COMPUTE NM HYD ID=4 HYD NO=100.5 AREA=0.0018 SQ MI
PER A=0 PER B=25.00 PER C=0 PER D=75.00
TP=0.133 HR MASS RAINFALL=-1
PRINT HYD ID=4 CODE=1

*
* BASIN 5
*

COMPUTE NM HYD ID=5 HYD NO=100.6 AREA=0.0023 SQ MI
PER A=0 PER B=25.00 PER C=0 PER D=75.00
TP=0.133 HR MASS RAINFALL=-1
PRINT HYD ID=5 CODE=1

*
* POND 1
*

ROUTE RESERVOIR ID=11 HYD NO=100.12 INFLOW ID=5 CODE=24
OUTFLOW(CFS) STORAGE(AC-FT) ELEVATION(FT)
0.0000 0.0000 5208.53
3.6229 0.0006 5212.53
3.7149 0.0017 5212.72
3.8047 0.0050 5212.91
3.8924 0.0104 5213.09

INPUT Revised 2-12-07 tp 0.133.txt
3.9781 0.0179 5213.28

PRINT HYD ID=11 CODE=1
*

*ADD BASINS 1 THRU 5

*
ADD HYD ID=13 HYD NO=301.00 ID=11 ID=4
ADD HYD ID=14 HYD NO=302.00 ID=13 ID=3
ADD HYD ID=15 HYD NO=303.00 ID=14 ID=2
ADD HYD ID=16 HYD NO=304.00 ID=15 ID=1

PRINT HYD ID=16 CODE=1

*

FINISH

AHYMO.OUT

AHYMO PROGRAM (AHYMO_97) - - Version: 1997.02d
 RUN DATE (MON/DAY/YR) = 02/12/2007
 START TIME (HR:MIN:SEC) = 07:05:55 USER NO.= AHYMO-S-9702d1TierraW-AH
 INPUT FILE = C:\DOCUME~1\New\Desktop\INPUTR~1.TXT

 *
 * NW CORNER 98TH & CENTRAL *
 * 98TH & CENTRAL (26037) *
 * PROPOSED CONDITIONS (100-YEAR, 6-HR STORM) *
 *

START TIME=0.0 HR
 RAINFALL TYPE=1 RAIN QUARTER=0.0 IN
 RAIN ONE=1.87 IN RAIN SIX=2.35 IN
 RAIN DAY=2.66 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 = 5.999400 HOURS		
.0000	.0034	.0068	.0103	.0139	.0176	.0213
.0252	.0291	.0331	.0372	.0414	.0457	.0502
.0547	.0594	.0643	.0693	.0744	.0797	.0852
.0909	.0968	.1029	.1092	.1159	.1228	.1301
.1377	.1457	.1542	.1594	.1649	.1708	.1835
.2118	.2555	.3182	.4038	.5163	.6598	.8384
1.0565	1.2588	1.3434	1.4147	1.4782	1.5359	1.5890
1.6384	1.6845	1.7277	1.7684	1.8068	1.8430	1.8774
1.9099	1.9407	1.9699	1.9977	2.0241	2.0309	2.0374
2.0435	2.0494	2.0551	2.0606	2.0659	2.0710	2.0759
2.0808	2.0855	2.0900	2.0945	2.0988	2.1031	2.1072
2.1112	2.1152	2.1191	2.1229	2.1266	2.1303	2.1339
2.1375	2.1409	2.1443	2.1477	2.1510	2.1543	2.1575
2.1607	2.1638	2.1669	2.1699	2.1729	2.1759	2.1788
2.1817	2.1845	2.1873	2.1901	2.1928	2.1956	2.1982
2.2009	2.2035	2.2061	2.2087	2.2112	2.2138	2.2162
2.2187	2.2212	2.2236	2.2260	2.2284	2.2307	2.2331
2.2354	2.2377	2.2400	2.2422	2.2445	2.2467	2.2489
2.2511	2.2532	2.2554	2.2575	2.2596	2.2617	2.2638
2.2659	2.2679	2.2700	2.2720	2.2740	2.2760	2.2780
2.2800	2.2819	2.2839	2.2858	2.2877	2.2896	2.2915
2.2934	2.2953	2.2972	2.2990	2.3008	2.3027	2.3045
2.3063	2.3081	2.3099	2.3117	2.3134	2.3152	2.3169
2.3187	2.3204	2.3221	2.3238	2.3255	2.3272	2.3289
2.3305	2.3322	2.3339	2.3355	2.3371	2.3388	2.3404
2.3420	2.3436	2.3452	2.3468	2.3484	2.3500	

*
 * BASIN 1
 *

COMPUTE NM HYD ID=1 HYD NO=100.2 AREA=0.0004 SQ MI
 PER A=0 PER B=25.00 PER C=0.00 PER D=75.00
 TP=0.133 HR MASS RAINFALL=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N
 = 7.106420
 UNIT PEAK = 1.1871 CFS UNIT VOLUME = .9898 B = 526.28 P60 =
 1.8700
 AREA = .000300 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER
 HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

AHYMO.OUT

K = .130697HR TP = .133000HR K/TP RATIO = .982685 SHAPE CONSTANT, N
 = 3.593454
 UNIT PEAK = .24593 CFS UNIT VOLUME = .9457 B = 327.09 P60 =
 1.8700
 AREA = .000100 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER
 HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330
 PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 100.20

RUNOFF VOLUME = 1.75596 INCHES = .0375 ACRE-FEET
 PEAK DISCHARGE RATE = 1.00 CFS AT 1.500 HOURS BASIN AREA = .0004 SQ.
 MI.

*

*BASIN 2

*

COMPUTE NM HYD ID=2 HYD NO=100.3 AREA=0.0007 SQ MI
 PER A=0 PER B=25.00 PER C=0.00 PER D=75.00
 TP=0.133 HR MASS RAINFALL=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N
 = 7.106420
 UNIT PEAK = 2.0774 CFS UNIT VOLUME = .9942 B = 526.28 P60 =
 1.8700
 AREA = .000525 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER
 HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330
 K = .130697HR TP = .133000HR K/TP RATIO = .982685 SHAPE CONSTANT, N
 = 3.593454
 UNIT PEAK = .43038 CFS UNIT VOLUME = .9675 B = 327.09 P60 =
 1.8700
 AREA = .000175 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER
 HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330
 PRINT HYD ID=2 CODE=1

PARTIAL HYDROGRAPH 100.30

RUNOFF VOLUME = 1.75596 INCHES = .0656 ACRE-FEET
 PEAK DISCHARGE RATE = 1.73 CFS AT 1.500 HOURS BASIN AREA = .0007 SQ.
 MI.

*

*BASIN 3

*

COMPUTE NM HYD ID=3 HYD NO=100.4 AREA=0.0011 SQ MI
 PER A=0 PER B=25.00 PER C=0.00 PER D=75.00
 TP=0.133 HR MASS RAINFALL=-1

AHYMO.OUT

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N
 = 7.106420
 UNIT PEAK = 3.2645 CFS UNIT VOLUME = .9962 B = 526.28 P60 =
 1.8700
 AREA = .000825 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER
 HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .130697HR TP = .133000HR K/TP RATIO = .982685 SHAPE CONSTANT, N
 = 3.593454
 UNIT PEAK = .67631 CFS UNIT VOLUME = .9806 B = 327.09 P60 =
 1.8700
 AREA = .000275 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER
 HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=3 CODE=1

PARTIAL HYDROGRAPH 100.40

RUNOFF VOLUME = 1.75596 INCHES = .1030 ACRE-FEET
 PEAK DISCHARGE RATE = 2.72 CFS AT 1.500 HOURS BASIN AREA = .0011 SQ.
 MI.

*
 *BASIN 4
 *

COMPUTE NM HYD ID=4 HYD NO=100.5 AREA=0.0018 SQ MI
 PER A=0 PER B=25.00 PER C=0 PER D=75.00
 TP=0.133 HR MASS RAINFALL=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N
 = 7.106420
 UNIT PEAK = 5.3419 CFS UNIT VOLUME = .9974 B = 526.28 P60 =
 1.8700
 AREA = .001350 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER
 HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .130697HR TP = .133000HR K/TP RATIO = .982685 SHAPE CONSTANT, N
 = 3.593454
 UNIT PEAK = 1.1067 CFS UNIT VOLUME = .9875 B = 327.09 P60 =
 1.8700
 AREA = .000450 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER
 HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=4 CODE=1

PARTIAL HYDROGRAPH 100.50

RUNOFF VOLUME = 1.75596 INCHES = .1686 ACRE-FEET
 PEAK DISCHARGE RATE = 4.43 CFS AT 1.500 HOURS BASIN AREA = .0018 SQ.
 MI.

AHYMO.OUT

*

*BASIN 5

*

COMPUTE NM HYD ID=5 HYD NO=100.6 AREA=0.0023 SQ MI
PER A=0 PER B=25.00 PER C=0 PER D=75.00
TP=0.133 HR MASS RAINFALL=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N
= 7.106420
UNIT PEAK = 6.8258 CFS UNIT VOLUME = .9977 B = 526.28 P60 =
1.8700
AREA = .001725 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER
HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .130697HR TP = .133000HR K/TP RATIO = .982685 SHAPE CONSTANT, N
= 3.593454
UNIT PEAK = 1.4141 CFS UNIT VOLUME = .9904 B = 327.09 P60 =
1.8700
AREA = .000575 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER
HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=5 CODE=1

PARTIAL HYDROGRAPH 100.60

RUNOFF VOLUME = 1.75596 INCHES = .2154 ACRE-FEET
PEAK DISCHARGE RATE = 5.66 CFS AT 1.500 HOURS BASIN AREA = .0023 SQ.
MI.

*

* POND 1

*

ROUTE RESERVOIR ID=11 HYD NO=100.12 INFLOW ID=5 CODE=24
OUTFLOW(CFS) STORAGE(AC-FT) ELEVATION(FT)
0.0000 0.0000 5208.53
3.6229 0.0006 5212.53
3.7149 0.0017 5212.72
3.8047 0.0050 5212.91
3.8924 0.0104 5213.09
3.9781 0.0179 5213.28

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	5208.53	.000	.00
.80	.01	5208.54	.000	.00
1.60	3.94	5213.25	.017	3.97
2.40	.25	5208.80	.000	.25
3.20	.06	5208.60	.000	.06
4.00	.05	5208.58	.000	.05
4.80	.05	5208.58	.000	.05
5.60	.05	5208.58	.000	.05
6.40	.00	5208.53	.000	.00

AHYMO.OUT
PEAK DISCHARGE = 3.967 CFS - PEAK OCCURS AT HOUR 1.60
MAXIMUM WATER SURFACE ELEVATION = 5213.255
MAXIMUM STORAGE = .0169 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD ID=11 CODE=1

PARTIAL HYDROGRAPH 100.12

RUNOFF VOLUME = 1.75584 INCHES = .2154 ACRE-FEET
PEAK DISCHARGE RATE = 3.97 CFS AT 1.600 HOURS BASIN AREA = .0023 SQ.

MI.

*

*ADD BASINS 1 THRU 5

*

ADD HYD ID=13 HYD NO=301.00 ID=11 ID=4
ADD HYD ID=14 HYD NO=302.00 ID=13 ID=3
ADD HYD ID=15 HYD NO=303.00 ID=14 ID=2
ADD HYD ID=16 HYD NO=304.00 ID=15 ID=1

PRINT HYD ID=16 CODE=1

HYDROGRAPH FROM AREA 304.00

RUNOFF VOLUME = 1.75576 INCHES = .5899 ACRE-FEET
PEAK DISCHARGE RATE = 13.74 CFS AT 1.500 HOURS BASIN AREA = .0063 SQ.

MI.

*

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 07:05:55

APPENDIX A

**Section of Final Design Report for the Amole Del Norte
Storm Diversion Facilities, Tierra
Bayita Drainage Facilities, Phase III March 1998**

ID 26

**FINAL DESIGN REPORT
AMOLE DEL NORTE
STORM DIVERSION FACILITIES
TIERRA BAYITA DRAINAGE FACILITIES
PHASE III**

CITY PROJECT NO. 4073.03

March, 1998

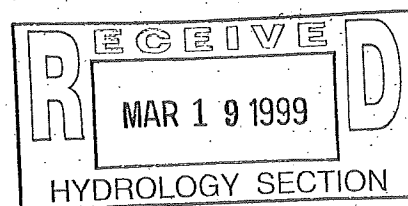
Greiner Job No: E30000114 & E30000115

Prepared for:

City of Albuquerque
Public Works Department
P.O. Box 1293
Albuquerque, New Mexico 87103

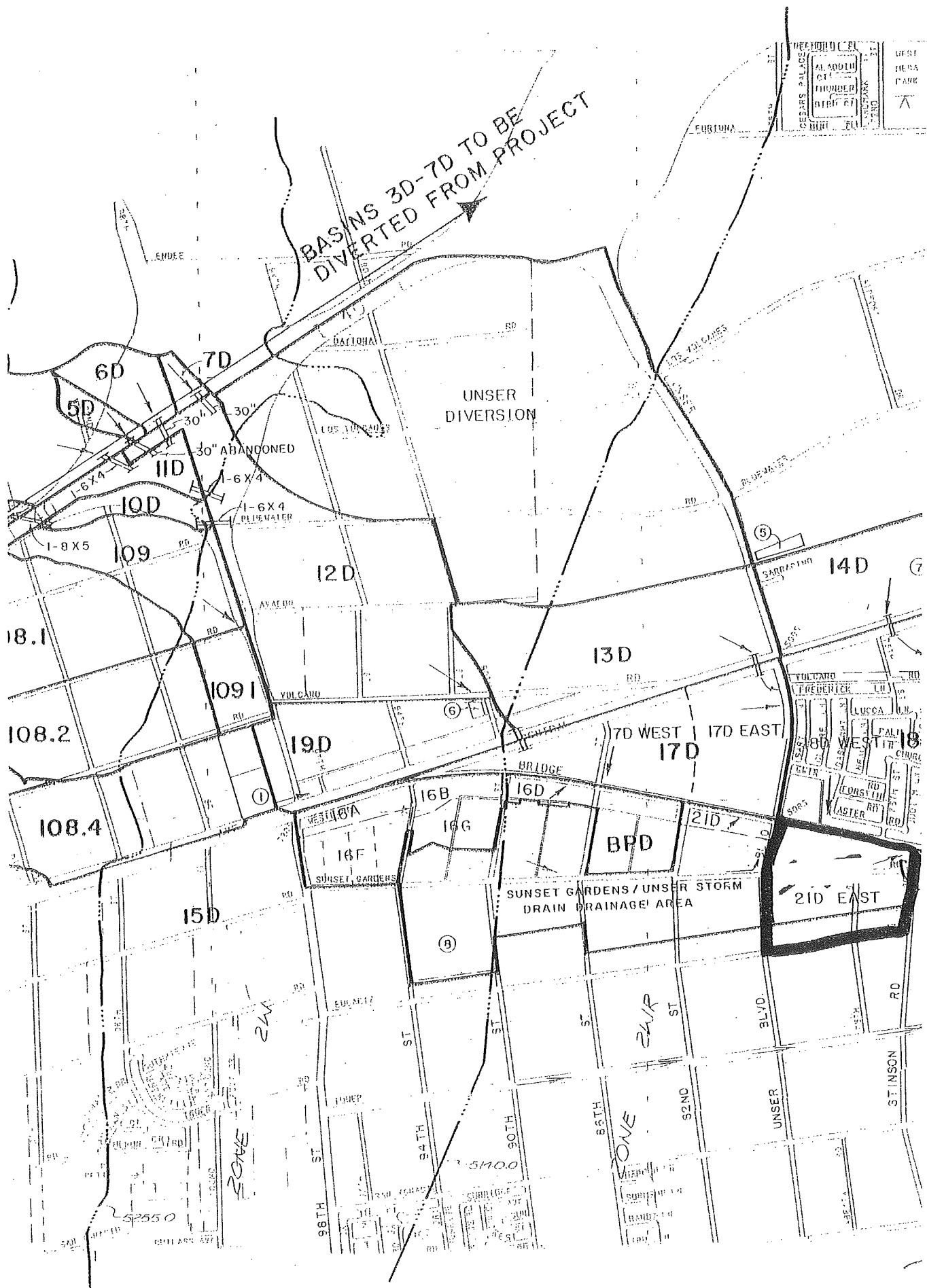
Daniel L. Morehead, PE & PS
Associate Vice President

Mark S. Holstad, PE
Project Manager



URS Greiner, Inc.
5971 Jefferson Boulevard, NE Suite 101
Albuquerque, New Mexico 87109

A handwritten signature in black ink, appearing to read "Mark S. Holstad". The signature is fluid and cursive, written over a light background.



AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
INPUT FILE = AMOLE.DAT

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

*S 100 YEAR, 6 HOUR STORM
RAINFALL TYPE= 1
*S ALL FLOWS INCLUDE A 2% BULKING FACTOR

SEDIMENT BULK
COMPUTE NM HYD 11D - 11 .02500 21.77 .615
COMPUTE NM HYD 10D - 10 .03360 36.63 1.108
ADD HYD 10.10 10&11 1 .05860 58.40 1.723
ROUTE R1 1 2 .05860 42.04 1.723
COMPUTE NM HYD 12D - 12 .24070 462.31 20.498
ADD HYD R12 12&2 4 .29930 501.92 22.221
DIVIDE HYD PIPE 4 3 .26269 315.00 19.503
ROUTE POND AND 5 .03661 186.92 2.718
ROUTE R12 3 4 .26269 315.00 19.503

*S RECALL FLOW FROM AMOLE DEL NORTE PHASE IIIC - DETENTION BASINS

RECALL HYD 501.00 - 10 1.06120 97.00 101.925
COMPUTE NM HYD 19D - 19 .08970 202.80 8.212
ADD HYD 19.10 19&10 5 1.15090 239.79 102.748
ROUTE R19.1 5 6 1.15090 236.32 102.630
ADD HYD 19.20 6&4 7 1.41359 551.30 122.133
ROUTE 19.30 7 8 1.41359 551.28 122.090
COMPUTE NM HYD 16A - 1 .01282 34.51 1.253
COMPUTE NM HYD 16F - 2 .03493 80.83 2.847
ADD HYD 16F.1 1&2 3 .04775 115.33 4.100
ROUTE 16F.2 3 4 .04775 112.16 4.100
COMPUTE NM HYD 16B - 1 .01520 40.91 1.486
ADD HYD 16B.1 1&4 3 .06291 49.99 5.586
COMPUTE NM HYD 16G - 2 .02011 199.09 7.355
ADD HYD 16G.1 2&3 16 1.49665 730.13 129.445
ADD HYD 16.10 16&8 9 1.49665 730.06 129.412
ROUTE 16.20 9 1 .01119 30.12 1.094
COMPUTE NM HYD 16D - 10 1.50784 754.97 130.506
ADD HYD 16D.1 1&10 1 .08020 173.01 7.342
COMPUTE NM HYD 17W - 17 .06327 82.00 5.792
DIVIDE HYD 86TH AND 18 .01693 91.01 1.550
ADD HYD 17.10 17&1 2 1.57111 836.97 136.298
ROUTE 17.20 2 3 1.57111 835.00 136.233
ROUTE 17.30 3 4 1.57111 834.48 136.215
ADD HYD 17.40 4&18 5 1.58804 925.49 137.765
COMPUTE NM HYD BPD - 6 .03420 77.22 2.615
ADD HYD 6.10 6&5 7 1.62224 991.01 140.380
ROUTE 6.20 7 8 1.62224 978.45 140.302
COMPUTE NM HYD 21D - 21 .01010 24.83 .881
ADD HYD 21.10 21&8 6 1.63234 995.91 141.182

*S UNSER BOULEVARD FLOWS TO CHANNEL - FLOW FROM NORTH OF BRIDGE BLVD
*S THE FOLLOWING HYDROGRAPH IS TAKEN FROM THE MASTER DRAINAGE PLAN FOR THE
*S ATRISCO BUSINESS PARK - SEPTEMBER 1992 & REVISED MARCH 1993 & SEPT 1993
*S by Easterling and Associates & REPRESENTS THE ENTIRE UNSER DIVERSION
RECALL HYD 180.16 - 2 .67890 248.30 73.770
2.03740 1.550 .571

RAIN6= 2.210
PK BF = 1.02
PER IMP= .00
PER IMP= 8.00
PER IMP= 65.00
PER IMP= 2.620
PER IMP= 1.874
PER IMP= 7.978
PER IMP= 1.874
PER IMP= 1.433
PER IMP= 3.533
PER IMP= 3.26
PER IMP= 3.21
PER IMP= .609
PER IMP= 4.206
PER IMP= 3.616
PER IMP= 3.774
PER IMP= 3.670
PER IMP= 4.205
PER IMP= 3.753
PER IMP= 3.884
PER IMP= 3.745
PER IMP= .762
PER IMP= 4.206
PER IMP= 7.82
PER IMP= 3.371
PER IMP= 2.025
PER IMP= 8.398
PER IMP= .832
PER IMP= .830
PER IMP= .830
PER IMP= .911
PER IMP= 3.528
PER IMP= .955
PER IMP= .942
PER IMP= 3.841
PER IMP= .953

COMMAND	HYDROGRAPH IDENTIFICATION NO.	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ROUTE	R2	2	3	.67890	247.01	73.770	2.03740	1.600	.568	
ROUTE	R3	3	4	.67890	247.54	73.770	2.03740	1.600	.570	
COMPUTE NM HYD	13D	-	13	.16640	342.65	15.680	1.76677	1.567	3.217	PER IMP= 80.00
ROUTE	R13	13	5	.16640	336.38	15.680	1.76678	1.600	3.159	
ADD HYD	13.10	5& 4	5	.84530	583.91	86.967	1.92905	1.600	1.079	
COMPUTE NM HYD	17E	-	17	.06510	171.89	6.190	1.78282	1.500	4.126	PER IMP= 80.00
ADD HYD	17.10	17& 5	7	.91040	703.48	93.157	1.91859	1.567	1.207	
ROUTE	R6	7	8	.91040	688.34	93.079	1.91700	1.633	1.181	
*S FLOW FROM NORTH ON UNSEER TO CHANNEL - ADD TO FLOW FROM BRIDGE				2.54274	1682.47	234.261	1.72743	1.600	1.034	
ADD HYD	CHANNEL 8& 6	9								
*S UNSEER BLVD - FLOW FROM SOUTH OF BRIDGE EMPYING TO THE CHANNEL										
*S THE FOLLOWING IS TAKEN FROM SUNSET GARDENS/UNSEER BLVD STORM DRAIN										
*S DESIGN ANALYSIS REPORT, DATED 12/5/97 BY RYALS ENGINEERING AND										
*S CONSTRUCTION SERVICES AS REVISED BY TUCKER GREEN, PER SE ENGINEERING										
COMPUTE NM HYD	I	-	1	.00952	18.97	.626	1.23320	1.500	3.113	PER IMP= 38.00
COMPUTE NM HYD	H	-	2	.01501	37.31	1.321	1.65010	1.500	3.884	PER IMP= 70.00
ADD HYD	208.00	1& 2	3	.02453	56.28	1.947	1.48828	1.500	3.585	
*S DIVIDE SO 1ST 8.6 CFS (ID=6) S ON 90TH (ON HOLD) : ID=4 E ON SUNSET GARDENS				.01035	8.60	.821	1.48828	1.333	1.298	
DIVIDE HYD	90.S.PAST.SG	3	6	.01418	47.68	1.126	1.48828	1.500	5.253	
ROUTE MCUNGE	209.00	4	5	.01418	47.57	1.119	1.81798	1.567	5.241	CCODE = .2
COMPUTE NM HYD	J	-	1	.00228	6.09	.221	1.47973	1.500	4.172	PER IMP= 85.00
ADD HYD	210.00	1& 5	3	.01646	53.08	1.340	1.52653	1.533	5.038	
COMPUTE NM HYD	SITE.II	-	1	.00839	19.75	.696	1.55434	1.500	3.679	PER IMP= 65.00
*S PARTIAL WATERBLOCK ==> FLOW > 11.6cfs TO 86TH										
DIVIDE HYD	S2.TO.S3	1	2	.00732	11.60	.607	1.55431	1.433	2.475	
COMPUTE NM HYD	S2.TO.86TH AND	7		.00107	8.15	.088	1.55431	1.500	11.934	
ADD HYD	SITE.III	-	1	.02360	55.53	1.956	1.55434	1.500	3.677	PER IMP= 65.00
ADD HYD	SITE.OUT	1& 2	16	.03092	67.13	2.563	1.55433	1.500	3.392	
*S TOTAL FLOW SUNSET GARDENS WEST OF 86TH										
ADD HYD	SG.W.OF.86	3&16	5	.04738	118.05	3.904	1.54467	1.533	3.893	
COMPUTE NM HYD	C	-	1	.00127	3.50	.128	1.88389	1.500	4.301	PER IMP= 90.00
ADD HYD	218.00	1& 7	3	.00234	11.65	.216	1.73326	1.500	7.787	
ADD HYD	86&SG.N&W	3& 5	7	.04972	128.76	4.120	1.55353	1.533	4.046	
COMPUTE NM HYD	NN	-	1	.01830	33.56	1.116	1.14350	1.500	2.865	PER IMP= 36.40
ADD HYD	INTO.JYDN	1& 6	3	.02865	42.16	1.937	1.26804	1.500	2.299	
ROUTE MCUNGE	300.00	3	5	.02865	40.55	1.927	1.26109	1.600	2.211	CCODE = .1
COMPUTE NM HYD	NS	-	1	.01719	34.79	1.185	1.29219	1.500	3.162	PER IMP= 46.60
ROUTE MCUNGE	302.00	1	2	.01719	34.26	1.185	1.29208	1.567	3.114	CCODE = .2
ADD HYD	304.00	2& 5	3	.02353	55.37	3.111	1.27270	1.600	2.521	
COMPUTE NM HYD	JYD	-	17	.06937	118.68	5.062	1.55434	1.500	3.677	PER IMP= 65.00
ADD HYD	JYD.E.AT.86	3&17	4	.06937	118.68	5.062	1.36823	1.533	2.673	
ROUTE MCUNGE	86.S.OF.SG	4	5	.06937	118.57	5.060	1.36766	1.567	2.671	CCODE = .1
ADD HYD	TOT.SG&86	5& 7	6	.11909	240.79	9.180	1.44526	1.533	3.159	
ROUTE	308.00	6		.11909	238.77	9.180	1.44527	1.567	3.133	
COMPUTE NM HYD	T	-	1	.00457	12.45	.453	1.81798	1.500	4.166	PER IMP= 85.00
ADD HYD	310.00	1& 5	3	.12376	249.07	9.632	1.45932	1.567	3.145	
COMPUTE NM HYD	U	-	1	.01032	25.09	.892	1.62035	1.500	3.799	PER IMP= 70.00
ADD HYD	312.00	1& 3	19	.13408	270.07	10.524	1.47171	1.567	3.147	
COMPUTE NM HYD	V	-	11	.03200	67.84	2.315	1.35662	1.500	3.313	PER IMP= 50.00
ADD HYD	SG.AT.82ND	11&19	3	.16608	330.10	12.839	1.44953	1.533	3.106	
ROUTE	314.00	3	5	.16608	328.29	12.839	1.44953	1.567	3.089	

PAGE = 3

[illegible]

AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
 RUN DATE (MON/DAY/YR) = 03/02/1998
 START TIME (HR:MIN:SEC) = 14:44:24 USER NO.= GREINRNM.STE
 INPUT FILE = AMOLE.DAT

* AMOLE DEL NORTE STORM DRAIN FACILITIES PHASE III D MODEL - DECEMBER 1995
 * FULLY DEVELOPED CONDITIONS 100 YEAR, 6 HOUR STORM
 * GREINER JN E30000114
 * COA PROJECT 4076.92
 * This model is an update of the previous HYMO model for the Amole Del
 * Norte drainage system. The HYMO was done in 1990. Basin
 * areas have been revised somewhat due to the current condition changing
 * from 1990 and incorporation of newer Master Drainage Reports for
 * the area

* -----
 * Developed conditions are to be modeled. This was done by assuming
 * concrete trapazoidal channels for routing purposes using the
 * existing slopes and lengths. channels - 10' bottom w/ 2:1 ss
 * -----

* Station references are from Amole Del Norte Storm Diversion Facilities
 * Tierra Bayita Drainage Facilities Phases IIIB or IIIA
 * *****

*S 100 YEAR, 6 HOUR STORM
 RAINFALL TYPE=1 QUARTER HR = 0 ONE HR RAIN=1.90
 SIX HR RAIN=2.21 TWENTYFOUR HR RAIN=2.70

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40

HR.

DT =	.033333 HOURS			END TIME =			5.999940 HOURS		
.0000	.0014	.0029	.0043	.0059	.0074	.0090			
.0106	.0123	.0140	.0157	.0175	.0193	.0212			
.0232	.0252	.0272	.0294	.0316	.0339	.0362			
.0387	.0412	.0439	.0466	.0495	.0525	.0557			
.0590	.0625	.0663	.0715	.0771	.0831	.0961			
.1249	.1694	.2331	.3202	.4347	.5806	.7622			
.9839	1.1890	1.2748	1.3472	1.4117	1.4703	1.5243			
1.5745	1.6213	1.6652	1.7065	1.7455	1.7824	1.8172			
1.8502	1.8816	1.9113	1.9395	1.9662	1.9722	1.9779			
1.9832	1.9883	1.9932	1.9978	2.0023	2.0066	2.0107			
2.0147	2.0185	2.0223	2.0259	2.0294	2.0328	2.0361			
2.0393	2.0425	2.0455	2.0485	2.0515	2.0543	2.0571			
2.0599	2.0625	2.0652	2.0678	2.0703	2.0728	2.0752			
2.0776	2.0800	2.0823	2.0845	2.0868	2.0890	2.0912			
2.0933	2.0954	2.0975	2.0995	2.1015	2.1035	2.1055			
2.1074	2.1093	2.1112	2.1131	2.1149	2.1167	2.1185			
2.1203	2.1221	2.1238	2.1255	2.1272	2.1289	2.1305			
2.1322	2.1338	2.1354	2.1370	2.1386	2.1401	2.1417			
2.1432	2.1447	2.1462	2.1477	2.1492	2.1506	2.1521			
2.1535	2.1549	2.1564	2.1577	2.1591	2.1605	2.1619			
2.1632	2.1646	2.1659	2.1672	2.1685	2.1698	2.1711			
2.1724	2.1736	2.1749	2.1762	2.1774	2.1786	2.1799			
2.1811	2.1823	2.1835	2.1847	2.1858	2.1870	2.1882			
2.1893	2.1905	2.1916	2.1928	2.1939	2.1950	2.1961			
2.1972	2.1983	2.1994	2.2005	2.2016	2.2027	2.2037			
2.2048	2.2058	2.2069	2.2079	2.2090	2.2100				

*
 *S ALL FLOWS INCLUDE A 2% BULKING FACTOR
 SEDIMENT BULK CODE=1 BULKING FACTOR = 1.02
 *

COMPUTE NM HYD ID=11 HYD=11D AREA=0.0250 PER A=100 PER B=0
 PER C=0 PER D=0 TP=0.1333 MASS RAIN=-1

K = .162928HR TP = .133300HR K/TP RATIO = 1.222262 SHAPE CONSTANT, N =
 2.911962
 1.9000 UNIT PEAK = 51.494 CFS UNIT VOLUME = .9994 B = 274.56 P60 =

AREA = .025000 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

BULKING FACTOR APPLIED TO HYDROGRAPH. FACTOR = 1.02000 AT PEAK FLOW.

PRINT HYD ID=11 CODE=1

HYDROGRAPH FROM AREA 11D

RUNOFF VOLUME = .46095 INCHES = .6146 ACRE-FEET
PEAK DISCHARGE RATE = 21.77 CFS AT 1.533 HOURS BASIN AREA = .0250 SQ. MI.

*
COMPUTE NM HYD ID=10 HYD=10D AREA=0.0336 PER A=84 PER B=0
PER C=8 PER D=8 TP=0.1333 MASS RAIN=-1

7.106420 K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N =

1.9000 UNIT PEAK = 10.612 CFS UNIT VOLUME = .9982 B = 526.28 P60 =

AREA = .002688 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

2.995080 K = .157995HR TP = .133300HR K/TP RATIO = 1.185260 SHAPE CONSTANT, N =

1.9000 UNIT PEAK = 65.261 CFS UNIT VOLUME = .9996 B = 281.42 P60 =

AREA = .030912 SQ MI IA = .62391 INCHES INF = 1.59696 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

BULKING FACTOR APPLIED TO HYDROGRAPH. FACTOR = 1.02000 AT PEAK FLOW.

PRINT HYD ID=10 CODE=1

HYDROGRAPH FROM AREA 10D

RUNOFF VOLUME = .61847 INCHES = 1.1083 ACRE-FEET
PEAK DISCHARGE RATE = 36.63 CFS AT 1.533 HOURS BASIN AREA = .0336 SQ. MI.

*
*ADD FLOW FROM 10D AND 11D
* EXISTING CONDITION - THESE FLOWS ENTER 12D NEAR EACH OTHER AND CROSS
* 12D TO A POINT WHERE THEY COMBINE. - FOR DEVELOPED MODEL ADD
* HYDROGRAPHS THEN ROUTE THROUGH 12D IN AN ASSUMED CONCRETE CHANNEL
* TO SIMULATE DEVELOPED CONDITIONS

ADD HYD ID=1 HYD=10.1 ID=10 ID=11
PRINT HYD ID=1 CODE=1

OUTFLOW HYDROGRAPH REACH 10.10

RUNOFF VOLUME = .55127 INCHES = 1.7229 ACRE-FEET
PEAK DISCHARGE RATE = 58.40 CFS AT 1.533 HOURS BASIN AREA = .0586 SQ. MI.

*
*ROUTE COMBINED 11/10 FLOW THROUGH 12D - USE 10 FT BOTTOM/ 2:1 SIDE SLOPE
COMPUTE RATING CURVE CID=1 VSNO=1 NO SEG=1 MIN ELEV=0
MAX ELEV=6 CH SLOPE=0.0255 FP SLOPE=0.0255
N=0.013 DIST=34
DIST ELEV

0 6
12 0
22 0
34 6

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	.00
.32	3.36	27.11	11.26
.63	7.11	87.66	12.53
.95	11.27	176.01	13.79
1.26	15.82	290.95	15.05
1.58	20.78	432.44	16.32
1.89	26.13	600.91	17.58
2.21	31.88	797.03	18.84
2.53	38.03	1021.61	20.11
2.84	44.58	1275.57	21.37
3.16	51.52	1559.82	22.63
3.47	58.87	1875.34	23.89
3.79	66.61	2223.10	25.16
4.11	74.76	2604.09	26.42
4.42	83.30	3019.29	27.68
4.74	92.24	3469.68	28.95
5.05	101.58	3956.24	30.21
5.37	111.32	4479.94	31.47
5.68	121.46	5041.75	32.74
6.00	132.00	5642.61	34.00

COMPUTE TRAVEL TIME ID=2 REACH NO=1 NOVS=1 L=4000 SLP=0.0255

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ. FT.	FLOW RATE CFS	TRAVEL TIME HRS
.316	3.357	27.11	.1376
.632	7.114	87.66	.0902
.947	11.269	176.01	.0711
1.263	15.823	290.95	.0604
1.579	20.776	432.44	.0534
1.895	26.127	600.91	.0483
2.211	31.878	797.03	.0444
2.526	38.028	1021.61	.0414
2.842	44.576	1275.57	.0388
3.158	51.524	1559.82	.0367
3.474	58.870	1875.34	.0349
3.789	66.615	2223.10	.0333
4.105	74.759	2604.09	.0319
4.421	83.302	3019.29	.0307
4.737	92.244	3469.68	.0295
5.053	101.584	3956.24	.0285
5.368	111.324	4479.94	.0276
5.684	121.463	5041.75	.0268
6.000	132.000	5642.61	.0260

ROUTE ID=2 HYD=R1 INFLOW ID=1 DT=0.0
PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA R1

RUNOFF VOLUME = .55127 INCHES = 1.7229 ACRE-FEET
PEAK DISCHARGE RATE = 42.04 CFS AT 1.600 HOURS BASIN AREA = .0586 SQ. MI.

*

COMPUTE NM HYD ID=12 HYD=12D AREA=0.2407 PER A=1 PER B=19

PER C=15 PER D=65 TP=0.2051 MASS RAIN=-1

6.770819 K = .116105HR TP = .205100HR K/TP RATIO = .566089 SHAPE CONSTANT, N =
1.9000 UNIT PEAK = 389.26 CFS UNIT VOLUME = 1.000 B = 510.29 P60 =
AREA = .156455 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

4.119566 K = .176990HR TP = .205100HR K/TP RATIO = .862946 SHAPE CONSTANT, N =
1.9000 UNIT PEAK = 149.13 CFS UNIT VOLUME = 1.000 B = 363.06 P60 =
AREA = .084245 SQ MI IA = .44000 INCHES INF = 1.08200 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

BULKING FACTOR APPLIED TO HYDROGRAPH. FACTOR = 1.02000 AT PEAK FLOW.

PRINT HYD ID=12 CODE=1

HYDROGRAPH FROM AREA 12D

RUNOFF VOLUME = 1.59678 INCHES = 20.4982 ACRE-FEET
PEAK DISCHARGE RATE = 462.31 CFS AT 1.567 HOURS BASIN AREA = .2407 SQ. MI.

*
*ADD 12D AND ROUTED 11&10
ADD HYD ID=4 HYD=R12 ID=12 ID=2
PRINT HYD ID=4 CODE=1

HYDROGRAPH FROM AREA R12

RUNOFF VOLUME = 1.39208 INCHES = 22.2211 ACRE-FEET
PEAK DISCHARGE RATE = 501.92 CFS AT 1.567 HOURS BASIN AREA = .2993 SQ. MI.

*
*ADD A DIVIDE HYD HERE TO SIMULATE LIMITING THE FLOW TO THE DOWNSTREAM
* SYSTEM TO 331 CFS - WHICH WAS THE ORIGINAL DESIGN FLOW
* IN THE FUTURE COA IS PLANNING ON PROBABLY BUILDING A POND TO LIMIT FLOW
DIVIDE HYD ID=4 Q=315 ID=3 HYD=PIPE
ID=5 HYD=POND
PRINT HYD ID=3 CODE=1

HYDROGRAPH FROM AREA PIPE

RUNOFF VOLUME = 1.39208 INCHES = 19.5031 ACRE-FEET
PEAK DISCHARGE RATE = 315.00 CFS AT 1.500 HOURS BASIN AREA = .2627 SQ. MI.

PRINT HYD ID=5 CODE=1

HYDROGRAPH FROM AREA POND

RUNOFF VOLUME = 1.39207 INCHES = 2.7180 ACRE-FEET
PEAK DISCHARGE RATE = 186.92 CFS AT 1.567 HOURS BASIN AREA = .0366 SQ. MI.

*

*ROUTE THROUGH 66 INCH STORM DRAIN - USE FRICTION SLOPE INSTEAD OF PIPE SLOPE
 COMPUTE RATING CURVE CID=1 VSNO=1 CODE= -1 SLP=0.0038
 DIA=66 N=0.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.29	.47	1.09	2.44
.57	1.31	4.71	3.36
.86	2.37	10.96	3.99
1.15	3.59	19.71	4.47
1.43	4.92	30.77	4.83
1.72	6.35	43.91	5.10
2.01	7.84	58.82	5.30
2.29	9.38	75.21	5.42
2.58	10.94	92.71	5.49
2.87	12.52	110.96	5.50
3.15	14.09	129.54	5.50
3.44	15.63	148.01	5.50
3.73	17.13	165.89	5.50
4.01	18.57	182.64	5.50
4.30	19.92	197.62	5.50
4.59	21.17	210.09	5.50
4.87	22.26	219.01	5.50
5.16	23.15	222.68	5.50
5.50	23.76	222.68	5.50

COMPUTE TRAVEL TIME ID=4 REACH NO=1 NOVS=1 L=630 SLP=0.0038

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ. FT.	FLOW RATE CFS	TRAVEL TIME HRS
.287	.472	1.09	.0761
.573	1.314	4.71	.0488
.860	2.373	10.96	.0379
1.146	3.589	19.71	.0319
1.433	4.923	30.77	.0280
1.720	6.348	43.91	.0253
2.006	7.839	58.82	.0233
2.293	9.377	75.21	.0218
2.579	10.942	92.71	.0207
2.866	12.518	110.96	.0197
3.153	14.086	129.54	.0190
3.439	15.630	148.01	.0185
3.726	17.132	165.89	.0181
4.013	18.571	182.64	.0178
4.299	19.925	197.62	.0176
4.586	21.166	210.09	.0176
4.872	22.258	219.01	.0178
5.159	23.147	222.68	.0182
5.500	23.758	222.68	.0187

ROUTE ID=4 HYD=RR12 INFLOW ID=3 DT=0.0

TRAVEL TIME TABLE EXCEEDED

58 PROBLEM FAILED TO CONVERGE AFTER 50 ITERATIONS. CONVERGENCE WAS FORCED. OUTFLOW NUMBER =
 RATE = 219.23

PRINT HYD ID=4 CODE=1

HYDROGRAPH FROM AREA RR12

RUNOFF VOLUME = 1.39208 INCHES = 19.5031 ACRE-Feet
 PEAK DISCHARGE RATE = 315.00 CFS AT 1.667 HOURS BASIN AREA = .2627 SQ. MI.

*

*s RECALL FLOW FROM AMOLE DEL NORTE PHASE IIIC - DETENTION BASINS
 RECALL HYD ID=10 HYD= 501.00 DT= .050000 HRS DA= 1.0612 SM
 PEAK= 97.003CFS RO= 1.8009 INCHES NO PTS=600

FLOW RATES

.000	.000	.000	.000	.000
.000	.000	.000	.000	.000
.000	.000	.000	.000	.000
.000	.000	.000	.000	.000
.000	.000	.000	.000	.000
.443	2.000	5.064	5.630	15.910
30.855	38.966	45.067	48.996	52.226
55.002	56.732	58.292	59.709	61.000
62.177	63.386	64.835	66.377	67.693
68.710	69.473	70.043	70.466	70.776
71.001	71.185	71.357	71.517	71.669
71.812	71.948	84.498	95.031	97.003
96.932	96.408	95.844	95.338	94.890
94.505	94.183	93.910	93.656	93.401
93.163	92.971	92.815	92.661	92.507
92.378	92.252	92.103	91.946	91.786
91.644	91.513	91.377	91.236	91.110
91.008	90.895	90.778	90.678	90.584
90.495	90.402	90.295	90.194	90.007
89.662	89.252	88.838	88.416	87.976
87.540	87.121	86.705	86.294	85.898
85.515	85.125	84.716	84.307	83.916
83.546	83.190	82.834	82.451	82.042
81.649	81.281	80.908	80.512	80.117
79.752	79.413	79.223	79.268	79.370
79.363	79.227	78.998	78.712	78.380
78.026	77.678	77.316	76.932	76.541
76.135	75.722	75.319	74.945	74.584
74.190	73.772	73.377	73.009	72.646
72.268	71.999	71.996	71.992	71.985
71.977	71.967	71.955	71.942	71.925
71.907	71.885	71.861	71.835	71.806
71.775	71.741	71.705	71.667	71.626
71.583	71.538	71.491	71.442	71.390
71.336	71.281	71.223	71.164	71.102
71.039	70.973	70.906	70.837	70.767
70.695	70.621	70.547	70.470	70.392
70.312	70.232	70.149	70.065	69.980
69.894	69.806	69.717	69.627	69.535
69.442	69.348	69.253	69.157	69.059
68.960	68.860	68.759	68.657	68.554
68.450	68.343	68.234	68.124	68.011
67.896	67.779	67.660	67.539	67.417
67.292	67.166	67.038	66.909	66.778
66.645	66.511	66.375	66.238	66.099
65.959	65.818	65.676	65.532	65.387
65.241	65.093	64.945	64.795	64.645
64.493	64.341	64.187	64.033	63.853
63.666	63.479	63.290	63.101	62.911
62.720	62.529	62.336	62.142	61.946
61.749	61.551	61.352	61.152	60.951
60.749	60.546	60.342	60.137	59.932
59.726	59.520	59.313	59.105	58.897
58.688	58.479	58.270	58.060	57.850
57.640	57.430	57.219	57.008	56.797
56.586	56.375	56.164	55.953	55.742
55.531	55.320	55.109	54.856	54.557
54.259	53.962	53.666	53.371	53.077
52.784	52.492	52.201	51.911	51.621
51.333	51.046	50.759	50.474	50.190
49.906	49.625	49.344	49.064	48.785
48.508	48.232	47.957	47.683	47.410
47.139	46.870	46.601	46.334	46.068
45.804	45.541	45.280	45.019	44.760

44.502	44.246	43.991	43.738	43.486
43.235	42.980	42.627	42.278	41.931
41.588	41.248	40.911	40.577	40.247
39.919	39.595	39.273	38.955	38.639
38.327	38.017	37.711	37.407	37.106
36.808	36.513	36.221	35.933	35.646
35.363	35.082	34.803	34.528	34.255
33.984	33.716	33.451	33.189	32.929
32.672	32.417	32.165	31.915	31.668
31.423	31.180	30.941	30.703	30.468
30.235	30.004	29.776	29.550	29.326
29.104	28.885	28.668	28.453	28.240
28.030	27.821	27.614	27.410	27.207
27.007	26.477	25.950	25.438	24.942
24.461	23.995	23.542	23.102	22.676
22.263	21.863	21.474	21.096	20.729
20.373	20.028	19.693	19.368	19.052
18.746	18.449	18.160	17.878	17.605
17.341	17.085	16.837	16.595	16.360
16.131	15.910	15.696	15.486	15.284
15.086	14.895	14.709	14.529	14.353
14.182	14.016	13.855	13.700	13.548
13.400	13.257	13.117	12.981	12.848
12.719	12.594	12.473	12.356	12.241
12.130	12.021	11.916	11.813	11.712
11.614	11.519	11.427	11.337	11.249
11.164	11.082	11.001	10.922	10.844
10.768	10.695	10.624	10.556	10.489
10.424	10.360	10.298	10.237	10.177
10.120	10.063	10.007	9.952	9.897
9.845	9.795	9.746	9.699	9.653
9.607	9.562	9.517	9.475	9.434
9.393	9.351	9.301	9.234	9.149
9.052	8.948	8.839	8.728	8.615
8.499	8.383	8.265	8.146	8.026
7.906	7.786	7.665	7.544	7.423
7.302	7.182	7.061	6.942	6.823
6.704	6.586	6.468	6.349	6.231
6.113	6.000	5.993	5.987	5.980
5.973	5.967	5.960	5.952	5.945
5.938	5.930	5.923	5.915	5.907
5.899	5.891	5.883	5.875	5.867
5.859	5.851	5.842	5.834	5.826
5.817	5.809	5.800	5.791	5.783
5.774	5.765	5.757	5.748	5.739
5.730	5.721	5.712	5.703	5.695
5.686	5.677	5.668	5.659	5.650
5.641	5.632	5.623	5.614	5.604
5.595	5.586	5.577	5.568	5.559
5.550	5.541	5.532	5.523	5.514
5.505	5.496	5.487	5.478	5.468
5.459	5.450	5.441	5.432	5.423
5.414	5.405	5.396	5.387	5.378
5.369	5.360	5.351	5.342	5.333
5.324	5.315	5.306	5.298	5.289
5.280	5.271	5.262	5.253	5.244

COMPUTE NM HYD

ID=19 HYD=19D AREA=0.0897 PER A=0 PER B=15
PER C=10 PER D=75 TP=0.1714 MASS RAIN=-1

7.053046 K = .093965HR TP = .171400HR K/TP RATIO = .548219 SHAPE CONSTANT, N =
UNIT PEAK = 205.58 CFS UNIT VOLUME = 1.000 B = 523.76 P60 =
1.9000 AREA = .067275 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

K = .154334HR TP = .171400HR K/TP RATIO = .900429 SHAPE CONSTANT, N =

3.935850

1.9000

UNIT PEAK = 45.906 CFS UNIT VOLUME = .9999 B = 350.87 P60 =
 AREA = .022425 SQ MI IA = .44000 INCHES INF = 1.08200 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

BULKING FACTOR APPLIED TO HYDROGRAPH. FACTOR = 1.02000 AT PEAK FLOW.

PRINT HYD ID=19 CODE=1

HYDROGRAPH FROM AREA 19D

RUNOFF VOLUME = 1.71647 INCHES = 8.2115 ACRE-FEET
 PEAK DISCHARGE RATE = 202.80 CFS AT 1.533 HOURS BASIN AREA = .0897 SQ. MI.

*
 *ADD 19D AND OUTFLOW FROM DETENTION BASINS
 ADD HYD ID=5 HYD=19.1 ID=19 ID=10
 PRINT HYD ID=5 CODE=1

OUTFLOW HYDROGRAPH REACH 19.10

RUNOFF VOLUME = 1.67393 INCHES = 102.7471 ACRE-FEET
 PEAK DISCHARGE RATE = 239.79 CFS AT 1.567 HOURS BASIN AREA = 1.1509 SQ. MI.

*
 *ROUTE FLOW ALONG CENTRAL FROM 98TH ST TO 90TH ST IN 66INCH STORM DRAIN
 COMPUTE RATING CURVE CID=1 VSNO=1 CODE=-1 SLP=0.024
 DIA=66 N=0.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.29	.47	2.73	2.44
.57	1.31	11.85	3.36
.86	2.37	27.54	3.99
1.15	3.59	49.53	4.47
1.43	4.92	77.34	4.83
1.72	6.35	110.34	5.10
2.01	7.84	147.83	5.30
2.29	9.38	189.01	5.42
2.58	10.94	233.00	5.49
2.87	12.52	278.85	5.50
3.15	14.09	325.55	5.50
3.44	15.63	371.97	5.50
3.73	17.13	416.91	5.50
4.01	18.57	458.99	5.50
4.30	19.92	496.65	5.50
4.59	21.17	527.98	5.50
4.87	22.26	550.41	5.50
5.16	23.15	559.62	5.50
5.50	23.76	559.62	5.50

COMPUTE TRAVEL TIME ID=6 REACH NO=1 NOVS=1 L=2550 SLP=.024

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.287	.472	2.73	.1226

.573	1.314	11.85	.0786
.860	2.373	27.54	.0610
1.146	3.589	49.53	.0513
1.433	4.923	77.34	.0451
1.720	6.348	110.34	.0407
2.006	7.839	147.83	.0376
2.293	9.377	189.01	.0351
2.579	10.942	233.00	.0333
2.866	12.518	278.85	.0318
3.153	14.086	325.55	.0306
3.439	15.630	371.97	.0298
3.726	17.132	416.91	.0291
4.013	18.571	458.99	.0287
4.299	19.925	496.65	.0284
4.586	21.166	527.98	.0284
4.872	22.258	550.41	.0286
5.159	23.147	559.62	.0293
5.500	23.758	559.62	.0301

ROUTE ID=6 HYD=R19.1 INFLOW ID=5 DT=0.0
 PRINT HYD ID=6 CODE=1

HYDROGRAPH FROM AREA R19.1

RUNOFF VOLUME = 1.67200 INCHES = 102.6290 ACRE-FEET
 PEAK DISCHARGE RATE = 236.32 CFS AT 1.567 HOURS BASIN AREA = 1.1509 SQ. MI.

*
 *ADD ROUTED FLOW FROM 12D, 10D and 11D
 ADD HYD ID=7 HYD=19.2 ID=6 ID=4
 PRINT HYD ID=7 CODE=1

OUTFLOW HYDROGRAPH REACH 19.20

RUNOFF VOLUME = 1.61998 INCHES = 122.1321 ACRE-FEET
 PEAK DISCHARGE RATE = 551.30 CFS AT 1.567 HOURS BASIN AREA = 1.4136 SQ. MI.

*
 *ROUTE FLOW TO STA 69+71 IN 84INCH STORM DRAIN
 COMPUTE RATING CURVE CID=1 VSNO=1 CODE=-1 SLP=0.017
 DIA=84 N=0.013

RATING CURVE PIPE SECTION 1.0			
WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.36	.76	4.37	3.11
.73	2.13	18.97	4.28
1.09	3.84	44.09	5.08
1.46	5.81	79.30	5.69
1.82	7.97	123.82	6.15
2.19	10.28	176.67	6.49
2.55	12.70	236.69	6.74
2.92	15.19	302.62	6.90
3.28	17.72	373.05	6.99
3.65	20.28	446.47	7.00
4.01	22.82	521.23	7.00
4.38	25.32	595.56	7.00
4.74	27.75	667.50	7.00
5.11	30.08	734.88	7.00
5.47	32.27	795.18	7.00
5.84	34.28	845.35	7.00
6.20	36.05	881.24	7.00

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* AMOLE DEL NORTE STORM DRAIN FACILITIES PHASE III D MODEL - DECEMBER 1995
* FULLY DEVELOPED CONDITIONS 100 YEAR, 6 HOUR STORM
* GREINER JN E30000114
* COA PROJECT 4076.92
* This model is an update of the previous HYMO model for the Amole Del
* Norte drainage system. The HYMO was done in 1990. Basin
* areas have been revised somewhat due to the current condition changing
* from 1990 and incorporation of newer Master Drainage Reports for
* the area
*
* -----
* Developed conditions are to be modeled. This was done by assuming
* concrete trapazoidal channels for routing purposes using the
* existing slopes and lengths. channels - 10'bottom w/ 2:1 ss
* -----
* Station references are from Amole Del Norte Storm Diversion Facilities
* Tierra Bayita Drainage Facilities Phases IIIB or IIIA
*****
*S 100 YEAR, 6 HOUR STORM
RAINFALL TYPE=1 QUARTER HR = 0 ONE HR RAIN=1.90
SIX HR RAIN=2.21 TWENTYFOUR HR RAIN=2.70
*
*S ALL FLOWS INCLUDE A 2% BULKING FACTOR
SEDIMENT BULK CODE=1 BULKING FACTOR = 1.02
*
COMPUTE NM HYD ID=11 HYD=11D AREA=0.0250 PER A=100 PER B=0
PER C=0 PER D=0 TP=0.1333 MASS RAIN=-1
PRINT HYD ID=11 CODE=1
*
COMPUTE NM HYD ID=10 HYD=10D AREA=0.0336 PER A=84 PER B=0
PER C=8 PER D=8 TP=0.1333 MASS RAIN=-1
PRINT HYD ID=10 CODE=1
*
*ADD FLOW FROM 10D AND 11D
* EXISTING CONDITION - THESE FLOWS ENTER 12D NEAR EACH OTHER AND CROSS
* 12D TO A POINT WHERE THEY COMBINE. - FOR DEVELOPED MODEL ADD
* HYDROGRAPHS THEN ROUTE THROUGH 12D IN AN ASSUMED CONCRETE CHANNEL
* TO SIMULATE DEVELOPED CONDITIONS
ADD HYD ID=1 HYD=10.1 ID=10 ID=11
PRINT HYD ID=1 CODE=1
*
*ROUTE COMBINED 11/10 FLOW THROUGH 12D - USE 10 FT BOTTOM/ 2:1 SIDE SLOPE
COMPUTE RATING CURVE CID=1 VSNO=1 NO SEG=1 MIN ELEV=0
MAX ELEV=6 CH SLOPE=0.0255 FP SLOPE=0.0255
N=0.013 DIST=34
DIST ELEV
0 6
12 0
22 0
34 6
COMPUTE TRAVEL TIME ID=2 REACH NO=1 NOVS=1 L=4000 SLP=0.0255
ROUTE ID=2 HYD=R1 INFLOW ID=1 DT=0.0
PRINT HYD ID=2 CODE=1
*
COMPUTE NM HYD ID=12 HYD=12D AREA=0.2407 PER A=1 PER B=19
PER C=15 PER D=65 TP=0.2051 MASS RAIN=-1
PRINT HYD ID=12 CODE=1
*
*ADD 12D AND ROUTED 11&10
ADD HYD ID=4 HYD=R12 ID=12 ID=2
PRINT HYD ID=4 CODE=1
*
*ADD A DIVIDE HYD HERE TO SIMULATE LIMITING THE FLOW TO THE DOWNSTREAM

```

* SYSTEM TO 331 CFS - WHICH WAS THE ORIGINAL DESIGN FLOW
 * IN THE FUTURE COA IS PLANNING ON PROBABLY BUILDING A POND TO LIMIT FLOW
 DIVIDE HYD ID=4 Q=315 ID=3 HYD=PIPE
 ID=5 HYD=POND
 PRINT HYD ID=3 CODE=1
 PRINT HYD ID=5 CODE=1
 *
 *ROUTE THROUGH 66INCH STORM DRAIN - USE FRICTION SLOPE INSTEAD OF PIPE SLOPE
 COMPUTE RATING CURVE CID=1 VSNO=1 CODE= -1 SLP=0.0038
 DIA=66 N=0.013
 COMPUTE TRAVEL TIME ID=4 REACH NO=1 NOVS=1 L=630 SLP=0.0038
 ROUTE ID=4 HYD=RR12 INFLOW ID=3 DT=0.0
 PRINT HYD ID=4 CODE=1
 *
 *S RECALL FLOW FROM AMOLE DEL NORTE PHASE IIIC - DETENTION BASINS
 RECALL HYD ID=10 HYD= 501.00 DT= .050000 HRS DA= 1.0612 SM
 PEAK= 97.003CFS RO= 1.8009 INCHES NO PTS=600
 FLOW RATES

.000	.000	.000	.000	.000
.000	.000	.000	.000	.000
.000	.000	.000	.000	.000
.000	.000	.000	.000	.000
.000	.000	.000	.000	.039
.443	2.000	5.064	5.630	15.910
30.855	38.966	45.067	48.996	52.226
55.002	56.732	58.292	59.709	61.000
62.177	63.386	64.835	66.377	67.693
68.710	69.473	70.043	70.466	70.776
71.001	71.185	71.357	71.517	71.669
71.812	71.948	84.498	95.031	97.003
96.932	96.408	95.844	95.338	94.890
94.505	94.183	93.910	93.656	93.401
93.163	92.971	92.815	92.661	92.507
92.378	92.252	92.103	91.946	91.786
91.644	91.513	91.377	91.236	91.110
91.008	90.895	90.778	90.678	90.584
90.495	90.402	90.295	90.194	90.007
89.662	89.252	88.838	88.416	87.976
87.540	87.121	86.705	86.294	85.898
85.515	85.125	84.716	84.307	83.916
83.546	83.190	82.834	82.451	82.042
81.649	81.281	80.908	80.512	80.117
79.752	79.413	79.223	79.268	79.370
79.363	79.227	78.998	78.712	78.380
78.026	77.678	77.316	76.932	76.541
76.135	75.722	75.319	74.945	74.584
74.190	73.772	73.377	73.009	72.646
72.268	71.999	71.996	71.992	71.985
71.977	71.967	71.955	71.942	71.925
71.907	71.885	71.861	71.835	71.806
71.775	71.741	71.705	71.667	71.626
71.583	71.538	71.491	71.442	71.390
71.336	71.281	71.223	71.164	71.102
71.039	70.973	70.906	70.837	70.767
70.695	70.621	70.547	70.470	70.392
70.312	70.232	70.149	70.065	69.980
69.894	69.806	69.717	69.627	69.535
69.442	69.348	69.253	69.157	69.059
68.960	68.860	68.759	68.657	68.554
68.450	68.343	68.234	68.124	68.011
67.896	67.779	67.660	67.539	67.417
67.292	67.166	67.038	66.909	66.778

66.645	66.511	66.375	66.238	66.099
65.959	65.818	65.676	65.532	65.387
65.241	65.093	64.945	64.795	64.645
64.493	64.341	64.187	64.033	63.853
63.666	63.479	63.290	63.101	62.911
62.720	62.529	62.336	62.142	61.946
61.749	61.551	61.352	61.152	60.951
60.749	60.546	60.342	60.137	59.932
59.726	59.520	59.313	59.105	58.897
58.688	58.479	58.270	58.060	57.850
57.640	57.430	57.219	57.008	56.797
56.586	56.375	56.164	55.953	55.742
55.531	55.320	55.109	54.856	54.557
54.259	53.962	53.666	53.371	53.077
52.784	52.492	52.201	51.911	51.621
51.333	51.046	50.759	50.474	50.190
49.906	49.625	49.344	49.064	48.785
48.508	48.232	47.957	47.683	47.410
47.139	46.870	46.601	46.334	46.068
45.804	45.541	45.280	45.019	44.760
44.502	44.246	43.991	43.738	43.486
43.235	42.980	42.627	42.278	41.931
41.588	41.248	40.911	40.577	40.247
39.919	39.595	39.273	38.955	38.639
38.327	38.017	37.711	37.407	37.106
36.808	36.513	36.221	35.933	35.646
35.363	35.082	34.803	34.528	34.255
33.984	33.716	33.451	33.189	32.929
32.672	32.417	32.165	31.915	31.668
31.423	31.180	30.941	30.703	30.468
30.235	30.004	29.776	29.550	29.326
29.104	28.885	28.668	28.453	28.240
28.030	27.821	27.614	27.410	27.207
27.007	26.477	25.950	25.438	24.942
24.461	23.995	23.542	23.102	22.676
22.263	21.863	21.474	21.096	20.729
20.373	20.028	19.693	19.368	19.052
18.746	18.449	18.160	17.878	17.605
17.341	17.085	16.837	16.595	16.360
16.131	15.910	15.696	15.486	15.284
15.086	14.895	14.709	14.529	14.353
14.182	14.016	13.855	13.700	13.548
13.400	13.257	13.117	12.981	12.848
12.719	12.594	12.473	12.356	12.241
12.130	12.021	11.916	11.813	11.712
11.614	11.519	11.427	11.337	11.249
11.164	11.082	11.001	10.922	10.844
10.768	10.695	10.624	10.556	10.489
10.424	10.360	10.298	10.237	10.177
10.120	10.063	10.007	9.952	9.897
9.845	9.795	9.746	9.699	9.653
9.607	9.562	9.517	9.475	9.434
9.393	9.351	9.301	9.234	9.149
9.052	8.948	8.839	8.728	8.615
8.499	8.383	8.265	8.146	8.026
7.906	7.786	7.665	7.544	7.423
7.302	7.182	7.061	6.942	6.823
6.704	6.586	6.468	6.349	6.231
6.113	6.000	5.993	5.987	5.980
5.973	5.967	5.960	5.952	5.945
5.938	5.930	5.923	5.915	5.907
5.899	5.891	5.883	5.875	5.867

5.859	5.851	5.842	5.834	5.826
5.817	5.809	5.800	5.791	5.783
5.774	5.765	5.757	5.748	5.739
5.730	5.721	5.712	5.703	5.695
5.686	5.677	5.668	5.659	5.650
5.641	5.632	5.623	5.614	5.604
5.595	5.586	5.577	5.568	5.559
5.550	5.541	5.532	5.523	5.514
5.505	5.496	5.487	5.478	5.468
5.459	5.450	5.441	5.432	5.423
5.414	5.405	5.396	5.387	5.378
5.369	5.360	5.351	5.342	5.333
5.324	5.315	5.306	5.298	5.289
5.280	5.271	5.262	5.253	5.244

COMPUTE NM HYD ID=19 HYD=19D AREA=0.0897 PER A=0 PER B=15
 PER C=10 PER D=75 TP=0.1714 MASS RAIN=-1
 PRINT HYD ID=19 CODE=1

*

*ADD 19D AND OUTFLOW FROM DETENTION BASINS

ADD HYD ID=5 HYD=19.1 ID=19 ID=10

PRINT HYD ID=5 CODE=1

*

*ROUTE FLOW ALONG CENTRAL FROM 98TH ST TO 90TH ST IN 66INCH STORM DRAIN

COMPUTE RATING CURVE CID=1 VSNO=1 CODE=-1 SLP=0.024

DIA=66 N=0.013

COMPUTE TRAVEL TIME ID=6 REACH NO=1 NOVS=1 L=2550 SLP=.024

ROUTE ID=6 HYD=R19.1 INFLOW ID=5 DT=0.0

PRINT HYD ID=6 CODE=1

*

*ADD ROUTED FLOW FROM 12D, 10D and 11D

ADD HYD ID=7 HYD=19.2 ID=6 ID=4

PRINT HYD ID=7 CODE=1

*

*ROUTE FLOW TO STA 69+71 IN 84INCH STORM DRAIN

COMPUTE RATING CURVE CID=1 VSNO=1 CODE=-1 SLP=0.017

DIA=84 N=0.013

COMPUTE TRAVEL TIME ID=8 REACH NO=1 NOVS=1 L=813 SLP=0.017

ROUTE ID=8 HYD=19.3 INFLOW ID=7 DT=0.0

PRINT HYD ID=8 CODE=1

*

*REVISE BASIN 16 NORTH TO BRING FLOW FROM MOBILE HOMES BTWN 98TH AND 94TH

* TO THE BRIDGE STORM DRAIN & REVISE AREA BTWN 94TH AND 90TH

* PER SUNSET GARDENS/UNSER BLVD SD REPORT (AREA PREVIOUSLY IN 16SOUTH)

*AREA NORTH OF MOBILE HOMES FRONTING ON CENTRAL AVENUE

COMPUTE NM HYD ID=1 HYD=16A AREA=0.01282 PER A=0 PER B=10

PER C=5 PER D=85 TP=0.1333 MASS RAIN=-1

PRINT HYD ID=1 CODE=1

*

* MOUNTAIN VIEW MOBILE HOME PARK

COMPUTE NM HYD ID=2 HYD=16F AREA=0.03493 PER A=2 PER B=33

PER C=2 PER D=63 TP=0.134 MASS RAIN=-1

PRINT HYD ID=2 CODE=1

*

*ADD BASINS 16A AND 16F

ADD HYD ID=3 HYD=16F.1 ID=1 ID=2

PRINT HYD ID=3 CODE=1

*

*ROUTE THIS FLOW DOWN BRIDGE TO BRING IT TO THE PROJECT THROUGH 16B

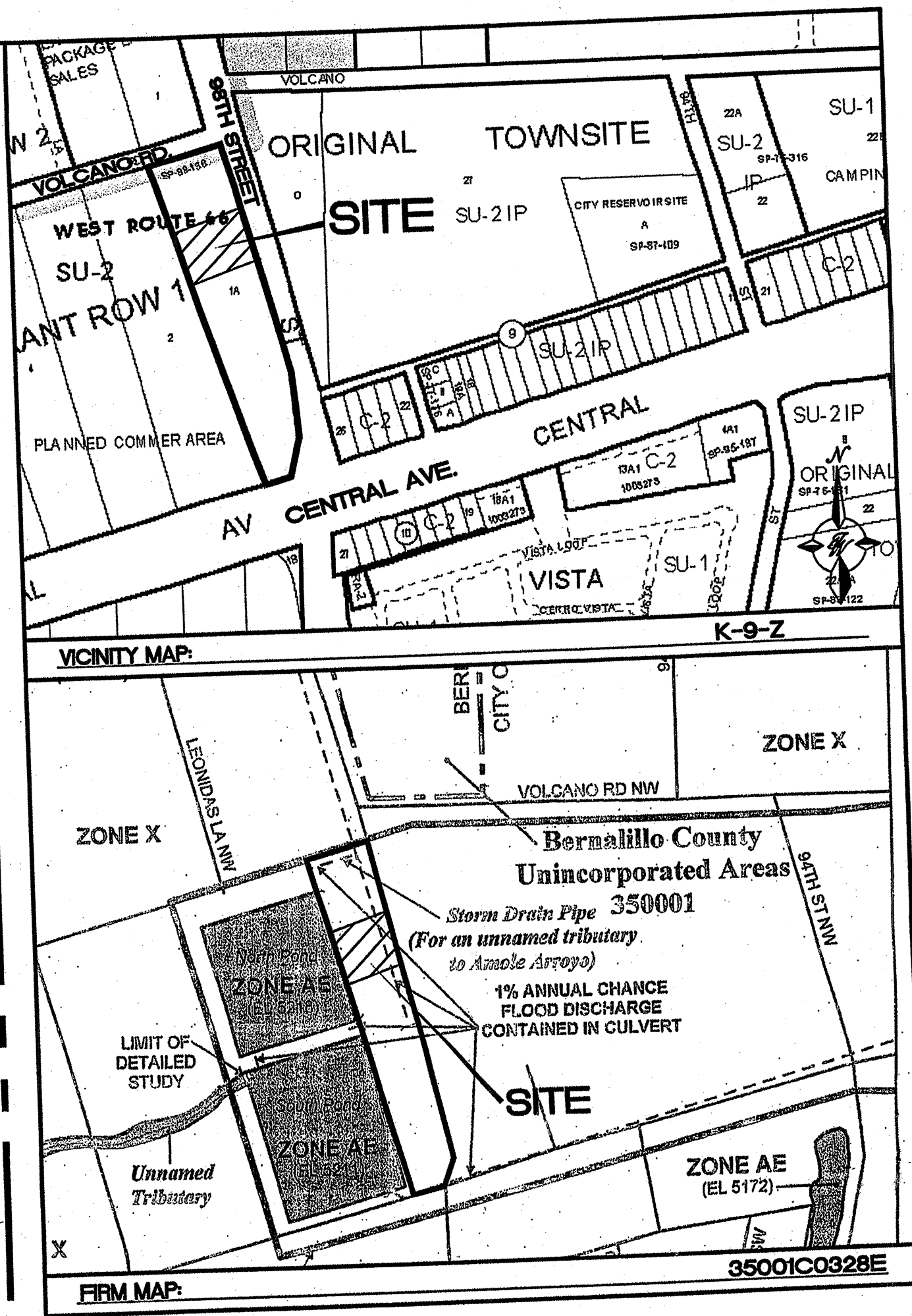
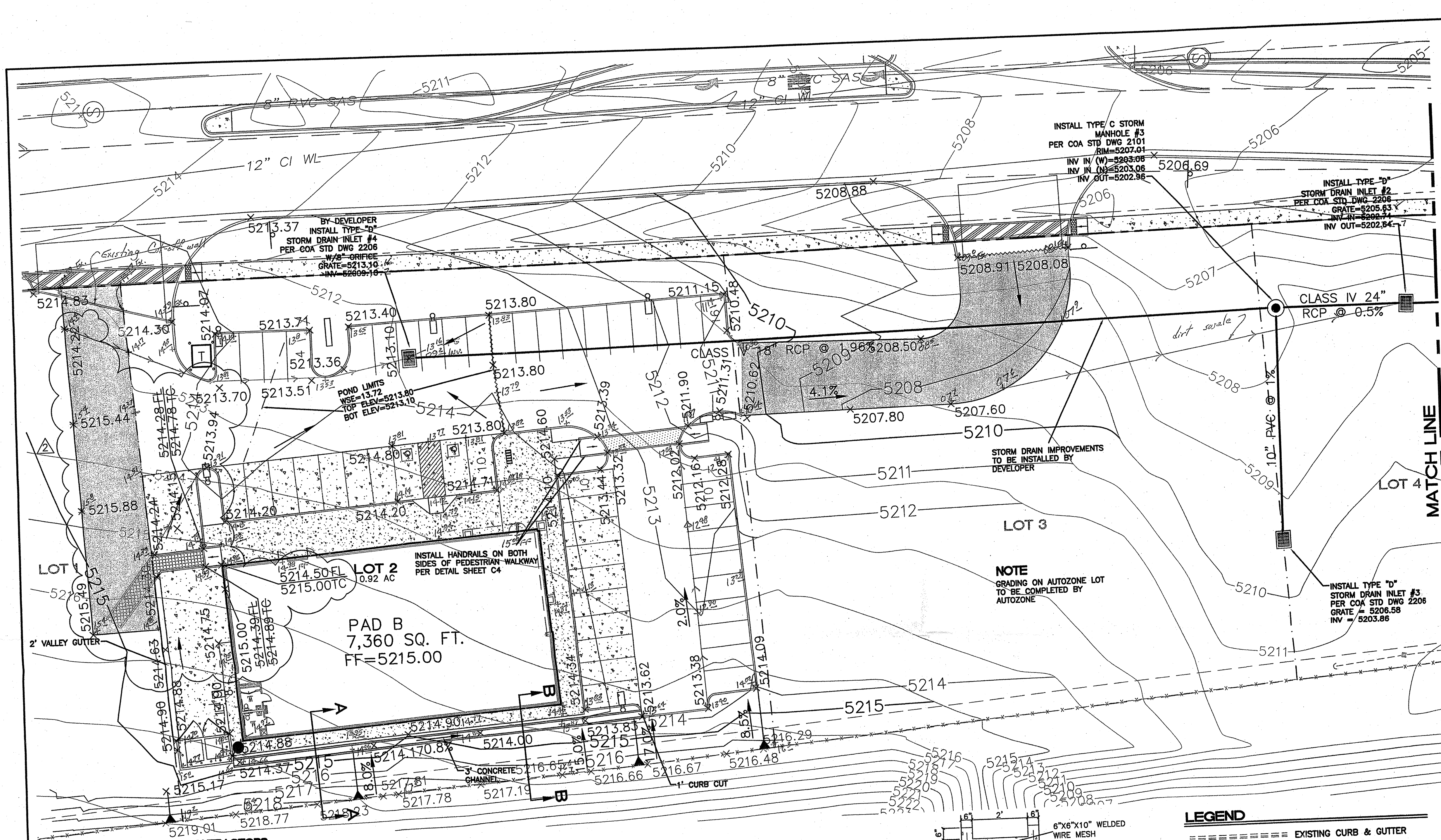
* ASSUME IN A PIPE

COMPUTE RATING CURVE CID=1 VSNO=1 CODE=-1 SLOPE=0.01

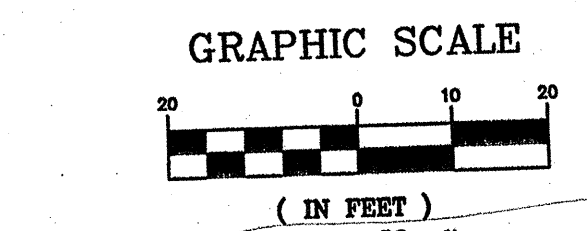
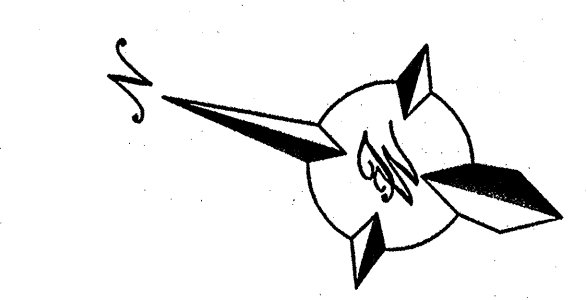
DIA= 48 N=0.013

Map Pocket

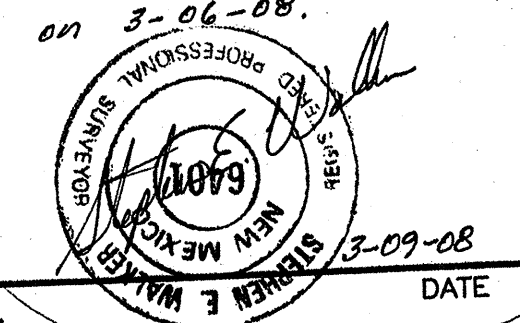
Grading and Drainage Plan



BENCHMARK
 ALBUQUERQUE CONTROL SURVEY MONUMENT "10-19"
 NEW MEXICO STATE PLANE COORDINATES,
 CENTRAL ZONE (NAD27) AS PUBLISHED:
 Y = 1,482,084.51
 X = 352,794.84
 ELEVATION = 5204.437' (NGVD 29)
 GROUND TO GRID FACTOR = 0.99967602
 DELTA ALPHA = -0'16"58"



Note: Information shown in red is "As-built" information, taken on 3-06-08.



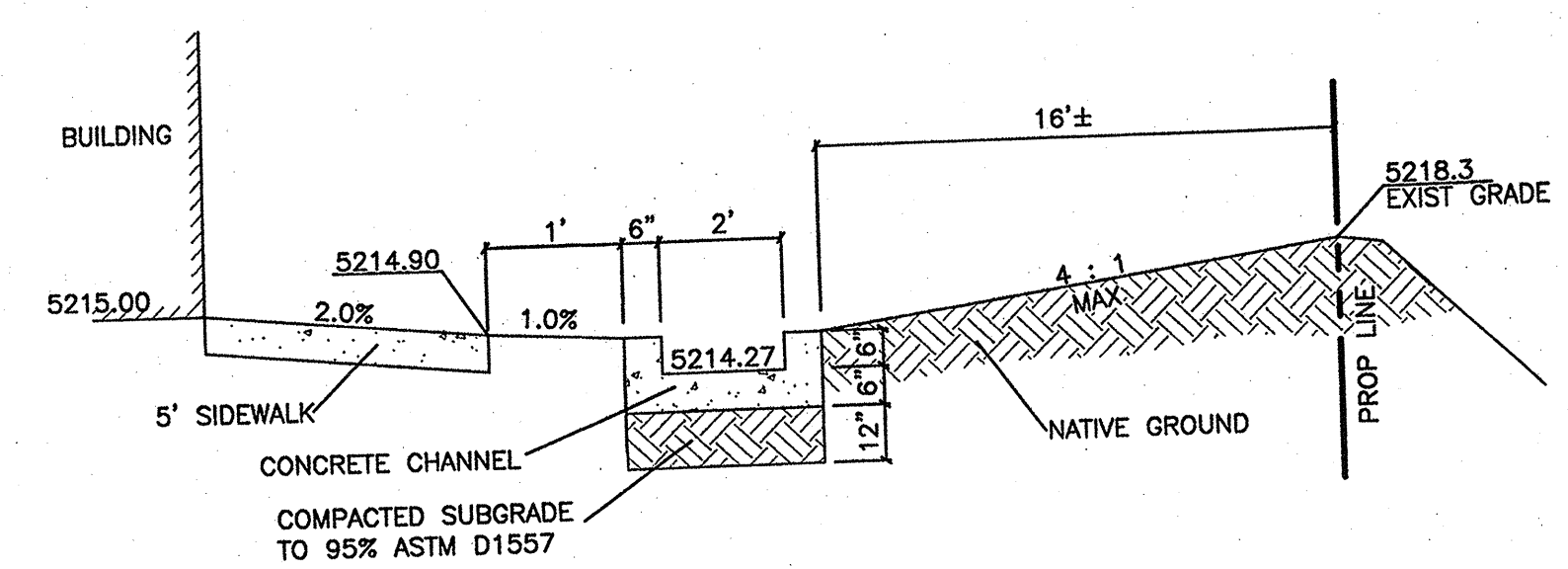
REVISIONS		
NO.	DATE	REMARKS
2-04-08		CLARIFIED GRADES ON NE CORNER OF BUILDING AND ADDED GRADES ON TEMPORARY ACCESS ROAD
8-21-07		ADDRESSING AUTOZONE COMMENTS
AUTOZONE AT VOLCANO POINT SHOPPING CENTER GRADING AND DRAINAGE PLAN		
TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100		DRAWN BY pm DATE 2/04/08 2650-GRB SHEET # C3 JOB # 26050

NOTICE TO CONTRACTORS

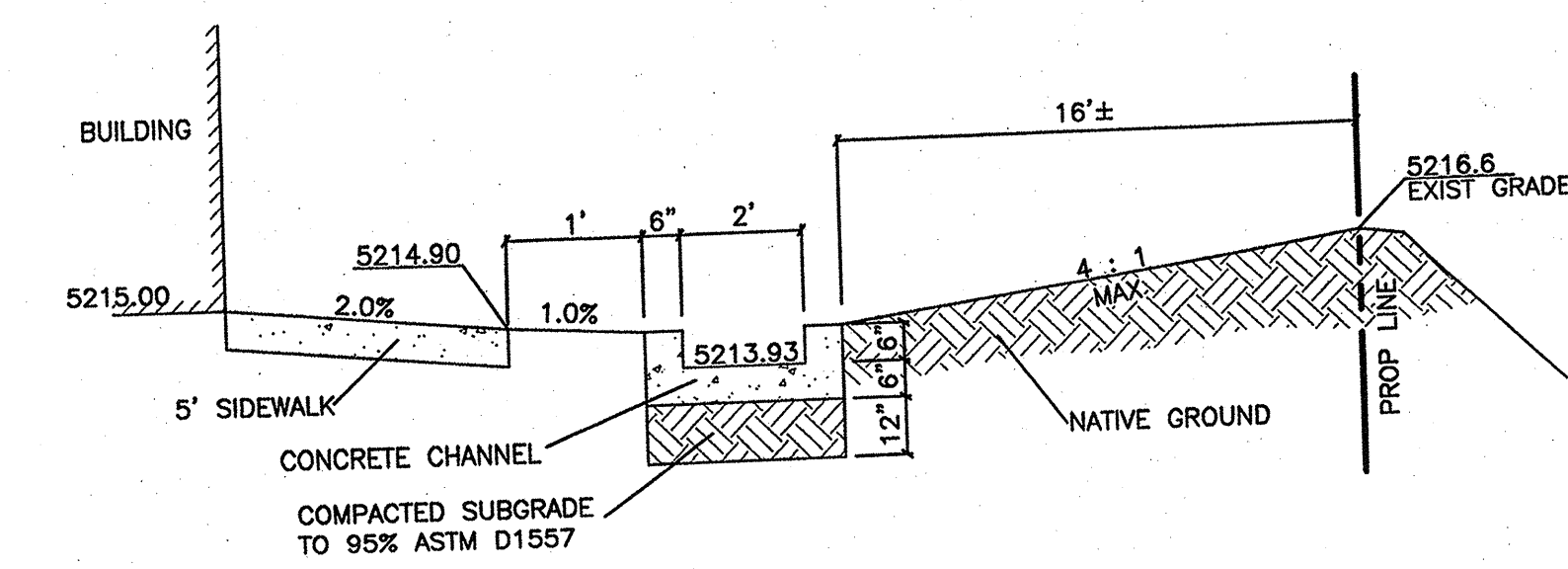
1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

EROSION CONTROL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL (CITY) ACCEPTANCE OF ANY PROJECT.

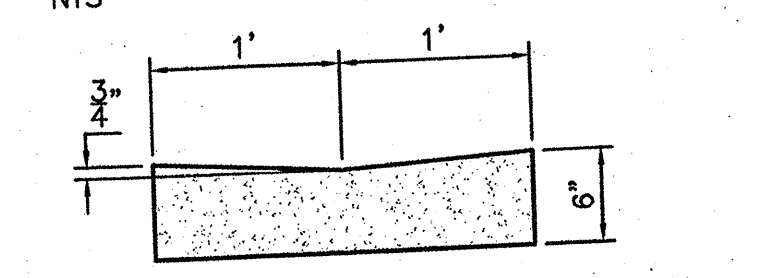


SECTION A-A

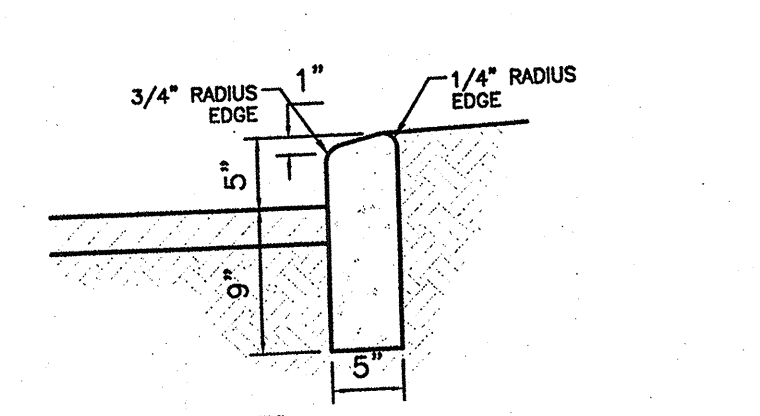


SECTION B-B

CONCRETE CHANNEL DETAIL



6\"/>



LEGEND

- ===== EXISTING CURB & GUTTER
- BOUNDARY LINE
- EXISTING BOUNDARY LINE
- EASEMENT
- PROPOSED SIDEWALK
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- x 5048.25 EXISTING SPOT ELEVATION
- PROPOSED CONTOUR
- PROPOSED INDEX CONTOUR (PROPOSED CONTOURS BASED ON SUBGRADE ELEVATION)
- x 5048.25 PROPOSED SPOT ELEVATION
- FLOW ARROW
- 24\"/>