CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

December 9, 2016

Kristine I. Susco, P.E.
Wilson & Company, Inc.
4900 Lang Ave. NE
Albuquerque, NM 87109

Re: Vista Vieja Unit 3
Certification for Financial Guarantee Release
Cert Date 5-3-2011 – D09D003

Dear Ms. Susco,

Based upon the information provided in your submittal received 11-17-2016, the above referenced Certification is approved for Release of Financial Guarantee.

On June, 2011, a hold was placed on this approval until some dirt piles were removed from the Scenic Drive area (see previous correspondence in the Hydrology File). As noted in the memo that was placed in the file, it was determined that the current material was not attributable to this project.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Abiel Carrillo, P.E.
Principal Engineer, Planning Dept.
Development Review Services

Orig: Drainage file

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

Copy Mo

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 10/2015)

Project Title: Vista Vieja Unit 3 Building Permit #: _____ Hydrology File #: D09/D003

DRB#: 1004607 EPC#: _____ Work Order#: 763383

Legal Description: Vista Vieja Subdivision Unit 3

City Address: _____

Applicant: Wilson & Company Contact: Kristine Susco

Address: 4900 Lang Ave NE Albuquerque, NM 87109

Phone#: 505-348-4191 Fax#: _____ E-mail: kisusco@wilsonco.com

Other Contact: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

RECEIVED
NOV 17 2016
LAND DEVELOPMENT SECTION

Check all that Apply:

DEPARTMENT:

X HYDROLOGY/ DRAINAGE

___ TRAFFIC/ TRANSPORTATION

___ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

X ENGINEER/ARCHITECT CERTIFICATION

___ CONCEPTUAL G & D PLAN

X GRADING PLAN

___ DRAINAGE MASTER PLAN

___ DRAINAGE REPORT

___ CLOMR/LOMR

No Fee

___ TRAFFIC CIRCULATION LAYOUT (TCL)

___ TRAFFIC IMPACT STUDY (TIS)

___ EROSION & SEDIMENT CONTROL PLAN (ESC)

___ OTHER (SPECIFY) _____

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

___ BUILDING PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY

___ PRELIMINARY PLAT APPROVAL

___ SITE PLAN FOR SUB'D APPROVAL

___ SITE PLAN FOR BLDG. PERMIT APPROVAL

___ FINAL PLAT APPROVAL

X SIA/ RELEASE OF FINANCIAL GUARANTEE

___ FOUNDATION PERMIT APPROVAL

___ GRADING PERMIT APPROVAL

___ SO-19 APPROVAL

___ PAVING PERMIT APPROVAL

___ GRADING/ PAD CERTIFICATION

___ WORK ORDER APPROVAL

___ CLOMR/LOMR

___ **PRE-DESIGN MEETING?**

___ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: X Yes ___ No

DATE SUBMITTED: 11-16-16 By: Kristine Susco

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

memo

City of Albuquerque – Planning – Development Review Services - Hydrology

To: File

From: Abiel Carrillo, P.E., Principal Engineer 1/18/16

CC: Planning – Hydrology Staff

Date: 1/18/2016

Re: Vista Vieja Unit 3 (Hydro File : D09D003) – Building Permits

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On June 10, 2011, a hold was placed on the Release of Financial guarantee (and home Building Permits), until the dirt/rubble pile is removed from the Scenic Dr. area (Letter dated 6/10/2011, from Curtis Cherne to Kristina Susco, Wilson & Company).

As of the date of this memo, a dirt pile and rubble exists within Scenic Drive right of way. However, after reviewing aerial photography between 2011 and 2014, there is enough evidence to show that the dirt pile was removed by the Vista Vieja development on or before August, 2011. A new dirt pile and stockpiling activity is visible in March 2014. Some activity adjacent to the right of way can be seen in January 2013 aerials. (Source: Google Earth Pro)

(See attached Exhibit A)

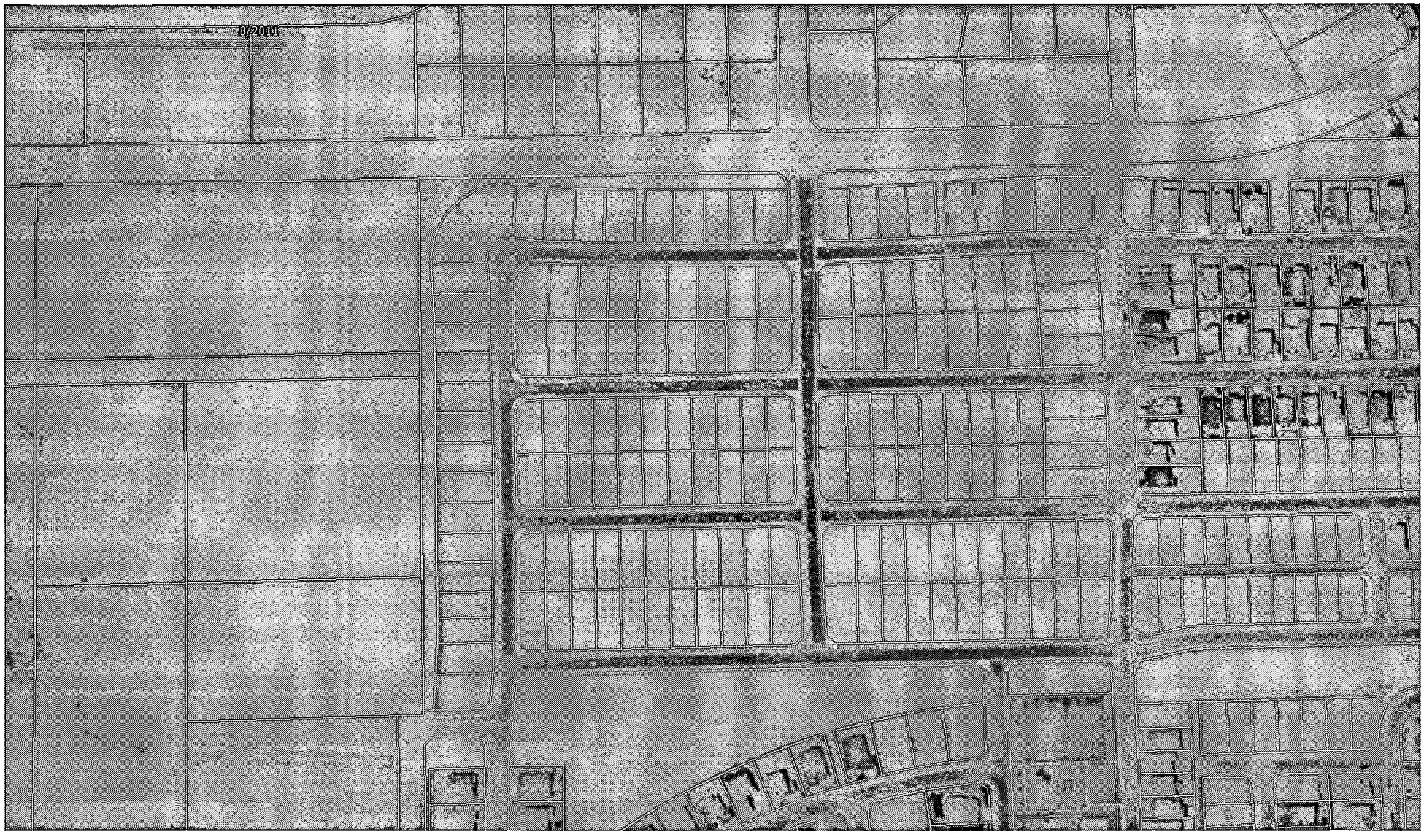
Because of the evidence above, it is not my belief that the rubble and dirt piles mentioned in the 2011 letter referenced above are attributable to the Vista Vieja Unit 3 project. As such, Building Permits will no longer be "on hold".

The source of the rubble and dirt pile will be researched.

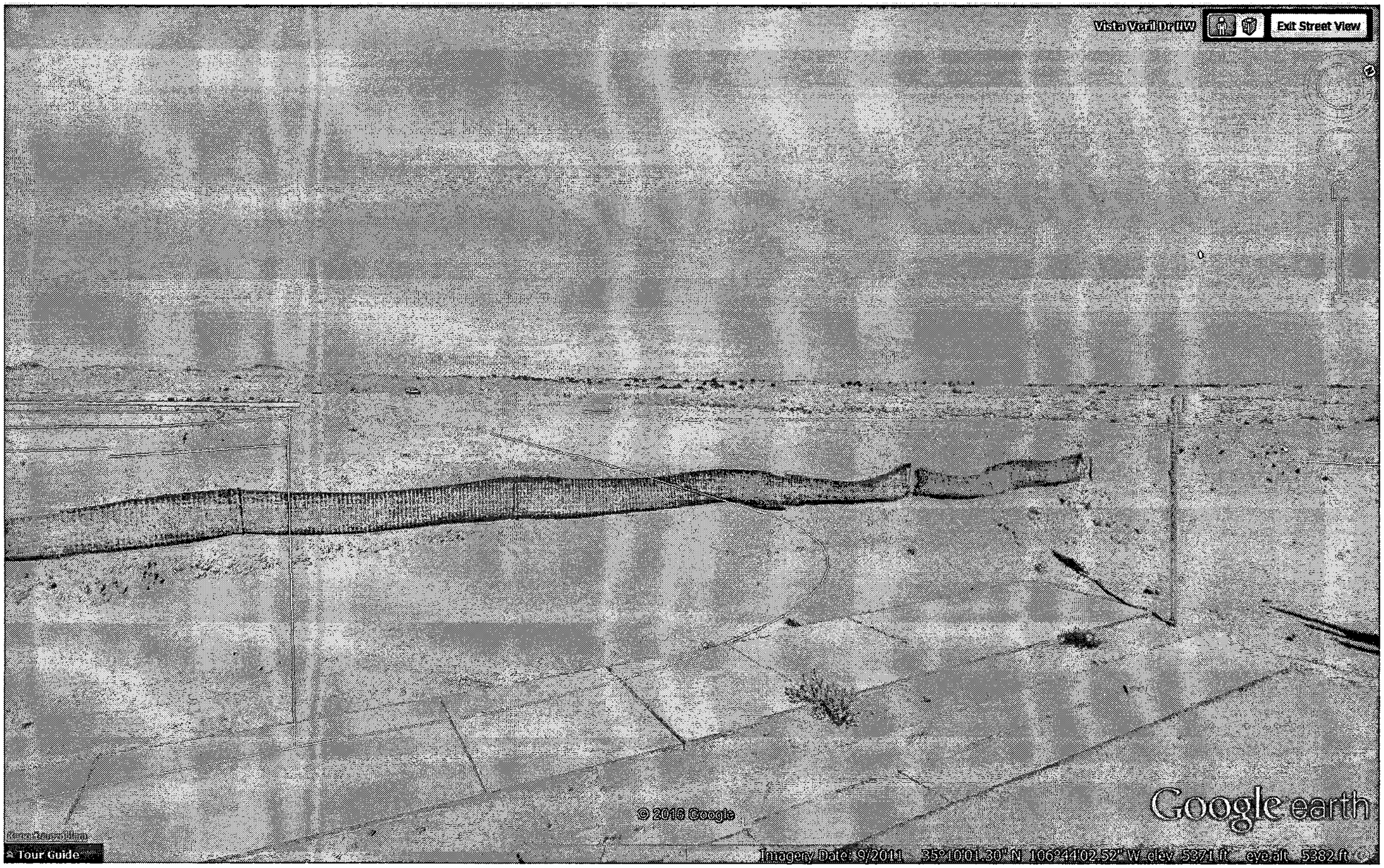
Exhibit A – Carrillo Memo
RE: Vista Vieja Building Permits 1/18/2016

February 2011

August 2011



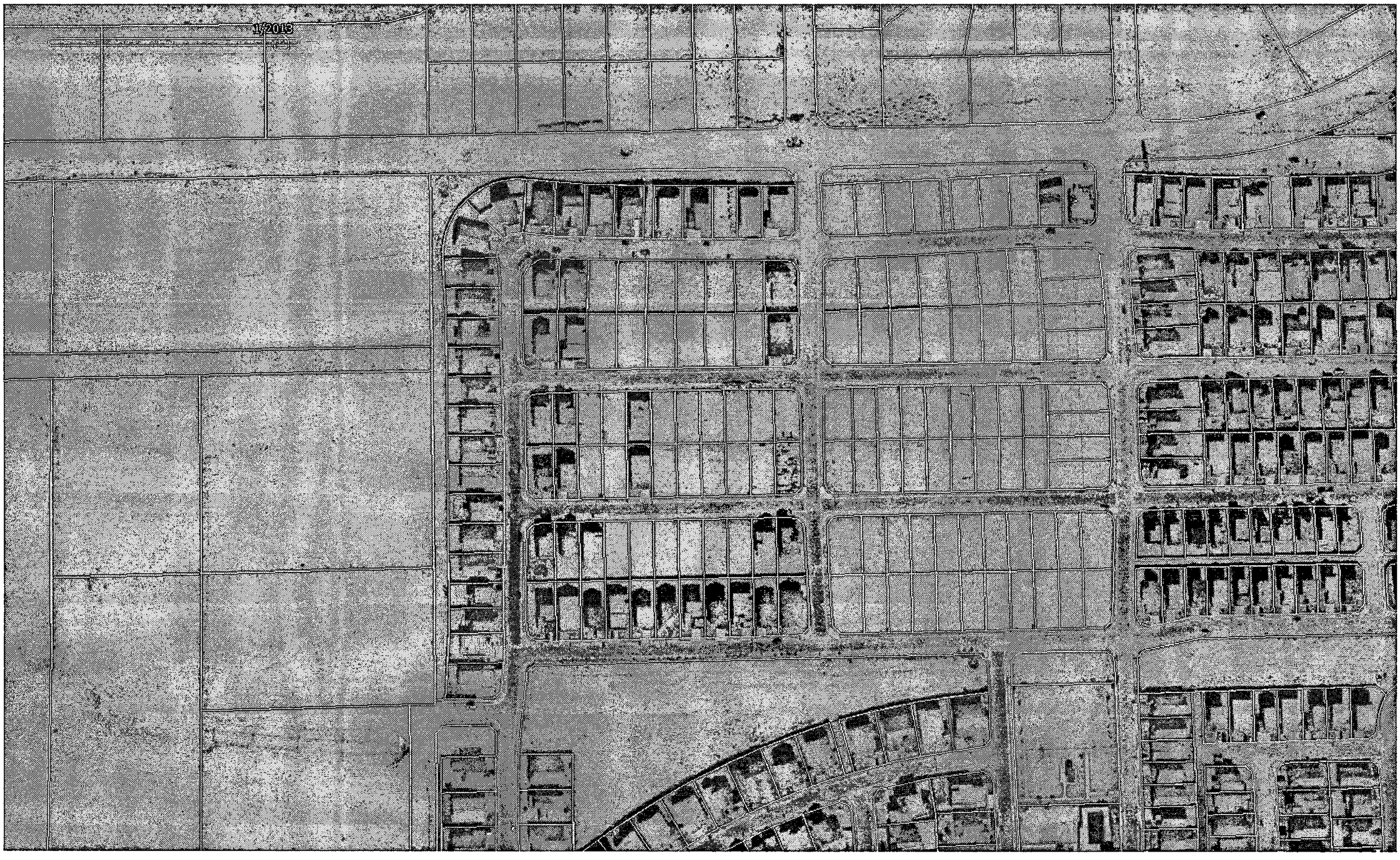
September 2011



March 2012

November 2012

January 2013



March 2014

Exhibit A – Carrillo Memo
RE: Vista Vieja Building Permits 1/18/2016

CITY OF ALBUQUERQUE

June 10, 2011

Kristine Susco
Wilson & Company, Inc.
4900 Lang Ave. NE
Albuquerque, NM 87109

Re: Vista Vieja Unit 3 Grading and Drainage Plan Certification
Engineer's Stamp dated 2-22-08 (D09/D003)
Certification dated 5/3/11

Dear Ms. Susco,

Based upon the information provided in your submittal received 5-5-11, the above referenced plan is approved to allow Building Permit approvals on the lots. However, a portion of the Financial Guarantee must be held until the dirt/rubble pile is removed from the Scenic Dr. area.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Curtis Cherne, P.E.
Principal Engineer, Planning Dept.
Development and Building Services

C: file

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

Vista Vieja Unit 4 Inspection - After Rain Event

Paul Olson, PE
Construction Engineer

Field visit to look into possible problems with drainage infrastructure. No problems found with City infrastructure, although there may be a problem with some of the grading behind the lots and with some of the drainage from northwest of the subdivision not reaching channel.

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1 Field Inspection - Vista Vieja IV

1.1 Purpose

Curtis Cherne received complaints from a builder in the Vista Vieja Unit 4 Subdivision about runoff from the open area to the west.

1.2 Overview

The Vista Vieja Unit 4 subdivision was built as an AHBA project with Sall's Bros. as the contractor and Wilson & Co. as the primary inspector. The project required some drainage improvements along the western side of the subdivision. The western edge of the subdivision is City of Albuquerque Right-of-Way and platted as a future street named Albaricoque. The improvements include:

- An embankment serving as a detention dam that runs north south along the southern have of the subdivision in the Right-of-Way. The detention dam includes an outlet structure (NMDOT type) at the midpoint of the embankment that connects to the storm drain system of the subdivision.
- A large concrete headwall with RCP pipe entrance was constructed near the northern edge of the subdivision. The structure is fed by an armored channel that leads from the western undeveloped area to the edge of the subdivision.

The concern expressed to Curtis was that the structures could not handle the recent rain events.

1.3 Field Observations

1.3.1 Embankment

The embankment appears similar to after construction. The outlet structure, see Figure 1 was mostly clear and appeared to be functioning correctly. There was some minor subsidence on the western side of the outlet, but did not appear concerning. The embankment did not show any signs of over-topping

The area directly downstream of the embankment did show ponding. There is an area about 12 wide that has been cleared between the embankment and the homes back walls. This area is not graded to drain and has accumulated water. It is likely that this water, see Figure 2, is from this area and the downstream slope of the dam.

1.3.2 RCP Entrance with Headwall

It was difficult to determine a high water mark in the channel near the headwall, but due to erosion of a large amount of sediment just upstream of the RCP inlet, see Figure 3, it was likely 6 to 12 inches deep. The sediment in the inlet area is likely wind born and investigation in the first 100 feet of the storm drain did not show any deposition in the pipe. The areas around the sediment show that the recent storm event is eroding this material.

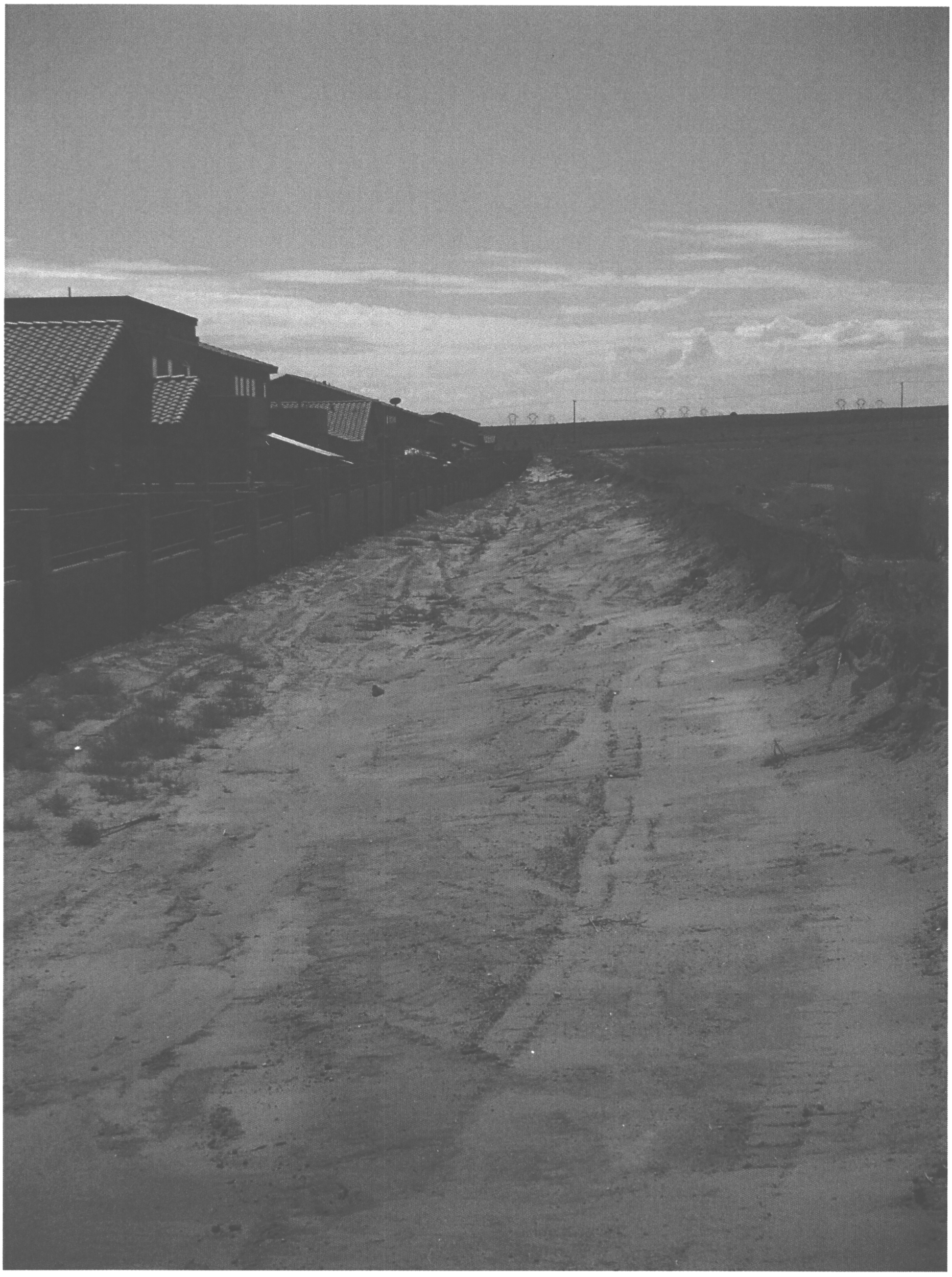

Figure 2: Looking south between downstream toe of embankment and west edge of subdivision.

Figure 3: Looking east at RCP entrance and headwall, note sediment

Figure 4: Looking west up channel

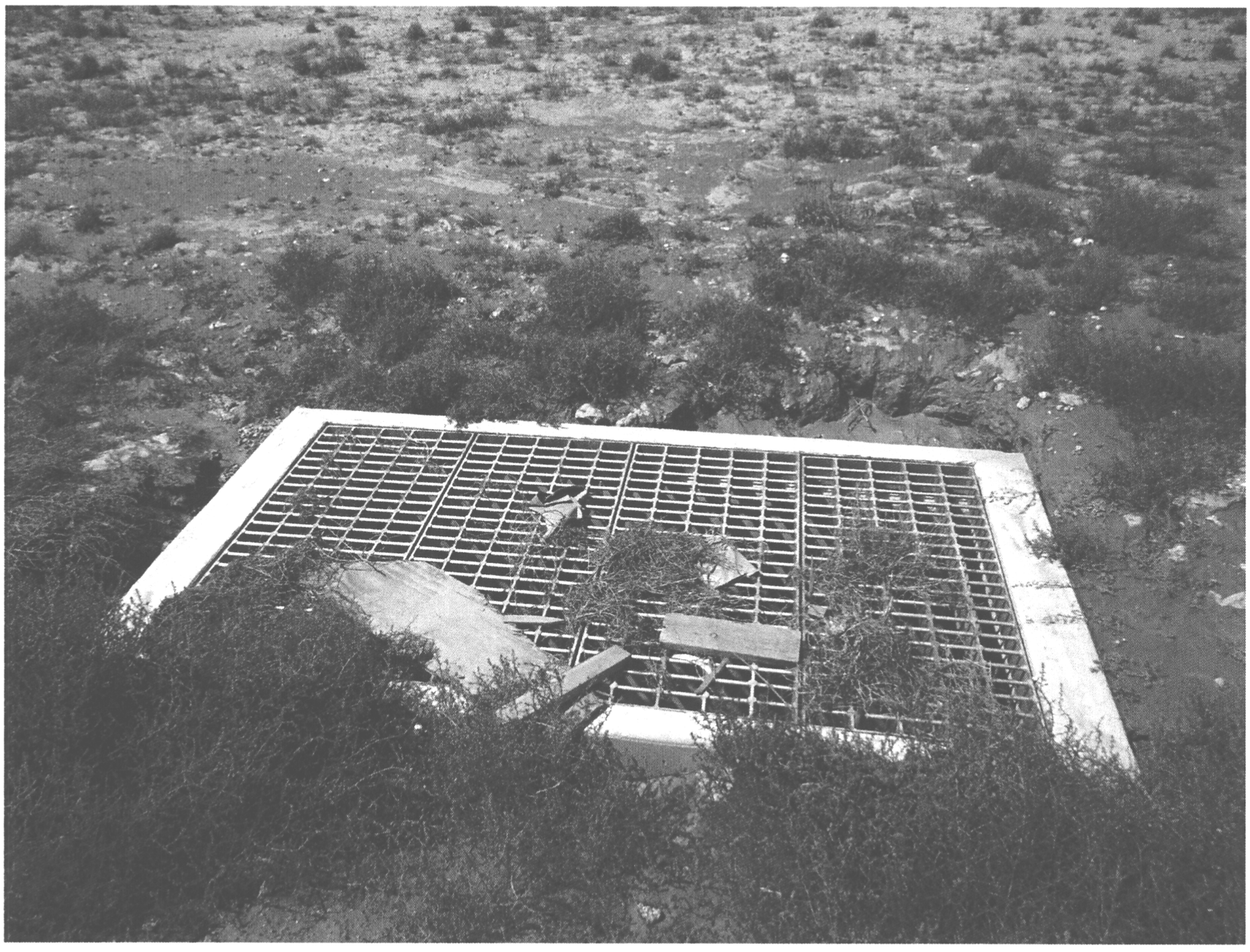

Figure 1: Embankment outlet structure

Looking upstream in the channel, see Figure 4, there does not appear to be any degradation of the improvements nor substantial sediment.

It does appear that an area to the northwest of the subdivision does not drain to the channel and likely flows down a street entrance just north of the storm drain This was mentioned during construction, but was acceptable to drainage.

1.4 Conclusion

The installed infrastructure appears to be working as planned. The grading between the embankment and the subdivision is likely trapping water and may need to be looked at. In addition the area to the northwest of the subdivision may need to be analyzed to determine where is was intended to drain to.

CITY OF ALBUQUERQUE

April 28, 2014

Chris Perea, P.E.
Wilson and Company, **INC.**
4900 Lang Ave NW
Albuquerque, NM 87109

RE: Vista Vieja—Unit 1, (D09/D003)
LOMR- Release of Financial Guaranty

Dear Mr. Perea,

The LOMR for this subdivision has been approved. This fulfills the LOMR portion of the Infrastructure List for Release of Financial Guarantee.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Curtis Cherne, P.E.
Principal Engineer, Hydrology
Planning Dept.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

C: Pam Lujan

CITY OF ALBUQUERQUE

June 10, 2009

Christopher A. Perea, P.E.
Wilson & Company, Inc.
4900 Lang Ave. NW
Albuquerque, NM 87109

Re: Vista Vieja Unit 1, (D-09/D003), W.O. #: 763381
Engineers Certification for Release of Financial Guaranty
Engineers Stamp dated 04/26/05,
Engineers Certification dated 06/08/2009

Dear Mr. Perea,

Based upon the information provided in your submittal received 06/09/2009, the above referenced certification is approved for release of SIA and Financial Guarantee.

However, prior to release of financial guaranty or reduction, the LOMR must be accepted by FEMA.

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

Sincerely,

Timothy E. Sims
Plan Checker, Planning Dept. - Hydrology
Development and Building Services

C: Marilyn Maldonado, COA# 763381
File
Bradley L. Bingham

PO Box 1293
Albuquerque
NM 87103
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WILSON
&COMPANY

4900 Lang Ave. NE
Albuquerque, NM 87109
505-348-4000
505-348-1072 Fax

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Kansas City
Las Cruces
Lenexa
Los Angeles
Omaha
Phoenix
Rio Rancho
Salina
San Bernardino

8 June 2009

Brad Bingham
City of Albuquerque
Hydrology
Plaza Del Sol
600 Second Street NW
Albuquerque, NM 87103

Re: *DRAINAGE CERTIFICATION – **Vista Vieja Unit 1 - CPN 763381** (D9/D3) –SUBMITTAL*
WCI File: X321807800

I, **Christopher A. Perea,** NMPE # **13686**, of the firm **WILSON & COMPANY**, hereby certify that this Project has been graded and will drain in substantial compliance with and in accordance with the design intent of the approved Drainage Report which is entitled '**VISTA VIEJA SUBDIVISION UNIT 2, 3, 4 REVISED DRAINAGE REPORT'** and dated **1-24-07**, as well as in accordance with the '**CONSTRUCTION GRADING PLAN**' dated **4-26-05**. The record information edited onto the original design document has been obtained by **Will Plotner**, NMPS # **14271**, of the firm **Cartesian Surveys, Inc.**. I further certify that I personally visited the Project site on **6-08-09-** and have determined by visual inspection that the survey data provided is representative of actual site conditions and true and correct to the best of my knowledge and belief. This Certification is submitted in support of a request for **RELEASE OF FINANCIAL GUARANTY AND SIA**.

The record information presented hereon is not necessarily complete and intended only to verify substantial compliance of the grading and drainage aspects of this Project. Those relying on the record document are advised to obtain independent verification of its accuracy before using it for any other purpose.

Christopher A. Perea, PE
Construction Manager
Wilson & Company, Inc., Engineers & Architects
Email: caperea@wilsonco.com

VISTA VIEJA – Phase I
Drainage Report

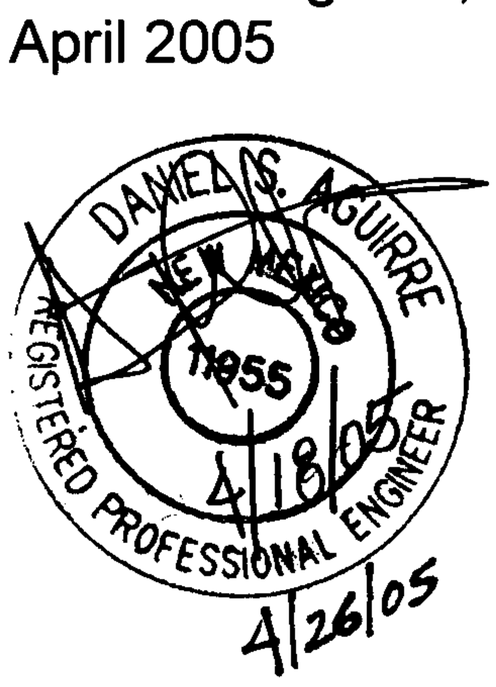
Prepared for

Mesa Verde Development, LLC

Prepared by

Wilson & Company, Inc.
4900 Lang Ave NE
Albuquerque, NM 87109
(505) 348-4000
(505) 348-4055 Fax

Daniel S. Aguirre, P.E.
April 2005



WILSON
&COMPANY

Purpose of Study

The Mesa Verde Development, LLC proposes to develop the Kassuba-Montbel Tract in the Volcano Cliffs Subdivision, located in northwest Albuquerque above the escarpment. The purpose of this report is to develop a drainage plan for the design and construction of the Phase I storm drain infrastructure required to convey the off-site and on-site flows generated by the improvements anticipated as a result of proposed VISTA VIEJA Phase I Subdivision.

Site Description

The proposed project site is currently undeveloped land. The site is located above the escarpment west of the Petroglyph National Monument on the west side of Albuquerque. The proposed site is bounded by 81st Street on the east, Scenic Drive on the north, Open Space on the south and the Albericoque Pl. along the west boundary. The total Sub-division area is approximately 160 acres sloping from west to east, Phase I is Approximately 40 acres located in the southeast corner of the site. The site has significant off-site flows discharging at 2 locations along 81st Street. These are designated as the Boca Negra Arroyo Dam and the North Fork of the South Branch of the Boca Negra Arroyo and the San Antonio Arroyo (60-inch RCP Storm Drain constructed with SAD 227). Phase I will discharge to the 60 inch storm drain. The diversion of the off site flows to the Boca Negra will be graded as part of this project. A project vicinity map and Zone Atlas Map are shown on Figures 1 and 1A on the following pages.

Methodology

This report utilizes the hydrologic and hydraulic methods and guidelines as described in Section 22.2 of the City of Albuquerque Development Process Manual (DPM). The hydrology for the project has been prepared using the modified rational method. The 100-year 6-hour event was used as the design storm for this project.

Existing Conditions

The existing site is currently undeveloped. The soils are hydrologic group Madurez-Wink (MWA), and Latene (LTB) Associations. The map on Figure 2 shows the hydraulic soil types based on the SCS Bernalillo County Soils Map, 1977. The soils are well drained and subject to erosion. These moderately permeable soils overlay basalt rock that is 1-10 feet deep.

The Boca Negra Arroyo has a Zone A Flood Zone along the southern third of the site as shown in the FEMA Flood Map on Figure 3. This project will require a LOMR to modify the FEMA flood map.

The existing drainage was analyzed with SAD 227 as Basins 83 (AP-3). The existing flows are collected by a 60-inch RCP storm drain constructed with SAD 227. This North Fork of the south Branch of the Boca Negra Arroyo will be conveyed through a 60-inch RCP storm drain

under 81st Street and through SAD 227 along Onyx Drive and into Unser Boulevard. The storm drain will combine with the rest of the SAD 227 subdivision flow near Marigold Drive and continue in a 60-inch storm drain in Unser Boulevard to the San Antonio Arroyo structure at Montano.

The allowable 100-year flow is 229 c.f.s. as developed by the SAD 227 Drainage Report.

Proposed Conditions

The Phase I project grading and drainage plans have been prepared in substantial compliance with the master drainage plan dated October 2004 and revised April 2004. The revised basin boundary map is shown in Appendix D.

The Hydrologic Analysis is shown in Appendix A. The site was divided into 10 on-site basins and 4 offsite basins. Three of the 4 off-site basins are potions of future design phases and have been used for the design of the storm drainage system. The storm drainage system for development of the north fork of the south branch of the Boca Negra watershed is shown on Plate 1. This flow will be conveyed to a temporary retention pond located at the future Boca Negra Dam. The retention requirements are twice the 100 year event or 7 acre feet per the drainage master plan (see Appendix B).

The Hydraulic analysis for sizing the system is shown in Appendix B. The system conveys various flows to combine to a total of 190 cfs from on-site basins 101-109 and off-site basins OF1-OF3. The remaining off-site flows and the south open space will discharge to the 60 inch pipe in the south east corner of the site through a detention facility with a total peak discharge of 30 cfs.

The streets vary in slope from .6% to just over 3%. We ran street capacities for the 28 foot face to face street (worst case), with various grades and with the specific energy at 8 inches and 10 inches. The worst case with the 3.5% grade and specific energy at 8 inches the street could carry 22.4 cfs. We have limited the flows to a maximum of 31.7 cfs on a 2% roadway with a capacity of 36 cfs before discharge to area inlets. The flows are then conveyed via a pipe system to the 60 inch outfall. The street capacity analysis is shown in Appendix C.

An earthen channel along the north side of the project will be constructed to convey the offsite flows to the Boca Negra Channel. The channel will be maintained by the owner until completed in subsequent phases. The hydraulics are shown in Appendix C.

The total discharge is in compliance with the Drainage Master Plan and the Capacity of the down stream conveyance system.

The Drainage Basin Map and proposed system is shown on Plate 1.

Reference Data:

1. Boca Negra – Mariposa Arroyo Hydrologic & Hydraulic Analysis Prepared for AMAFCA by Resource Technology, Inc., 2002 (Establishes offsite flows)

2. Unser Boulevard Corridor Study & Record of Decision, Prepared for COA by ASCG

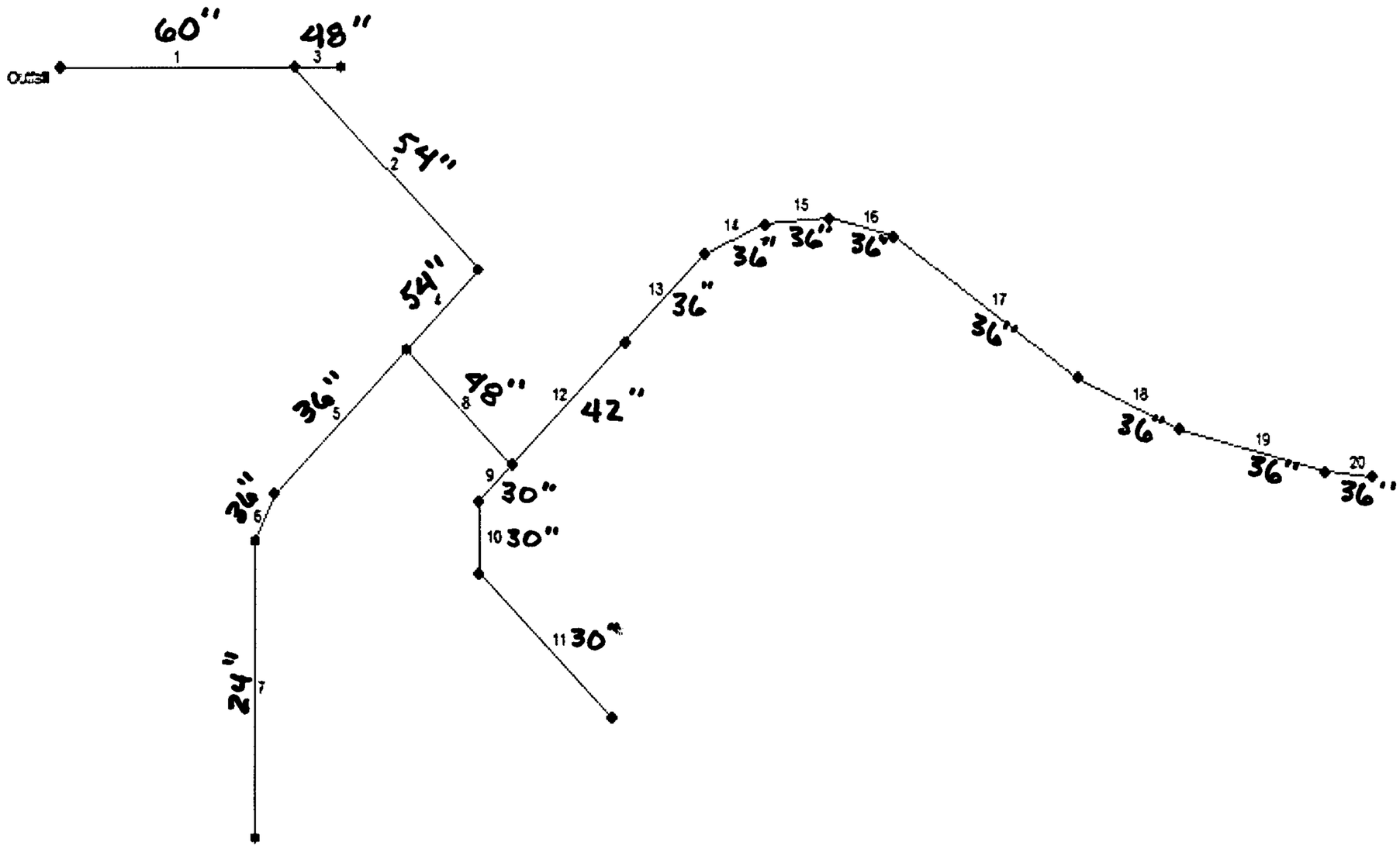
3. SAD 227 Unser Boulevard Middle Section, Prepared for Volcano Cliffs Property Owners Association by Wilson & Company, Inc., June 2003

4. Boca Negra – Mariposa Arroyo Drainage Management Plan, Prepared for AMAFCA by Research Technology, Inc., 2004
(Establishes Boca Negra Dam Site)

Vista Vieja Phase 1
Hydrologic Analysis

Land Treatment		A	B	C	D		
Peak Discharge (cfs/acre)		1.29	2.03	2.87	4.37		
Basins							
Offsite Basins	Acreage	A	B	C	D	Q_{100} (cfs)	V_{100} (fps)
OF-1	7.50	0%	20%	20%	60%	27.02	
OF-2	7.30	0%	20%	20%	60%	26.29	
OF-3	2.00	0%	0%	0%	100%	8.74	
Area A	166.40	95%	0%	0%	5%	136.00	
Subtotal	183.20					198.05	
Basins		Land Treatment					
Onsite Basins	Acreage	A	B	C	D	Q_{100} (cfs)	V_{100} (fps)
101	4.30	0%	20%	20%	60%	15.49	
102	6.40	0%	20%	20%	60%	23.05	
103	8.80	0%	20%	20%	60%	31.70	
104	4.20	0%	20%	20%	60%	15.13	
105	1.80	0%	20%	20%	60%	6.48	
106	3.50	0%	20%	20%	60%	12.61	
107	5.30	0%	20%	20%	60%	19.09	
108	0.90	0%	20%	20%	60%	3.24	
109	2.70	75%	0%	0%	25%	5.56	
Area B	12.80	100%	0%	0%	0%	19.00	
Subtotal	50.70					151.35	

Hydraflow Plan View



Project File: Vista Vieja.stm	No. Lines: 20	04-25-2005

Hydraulic Grade Line Computations

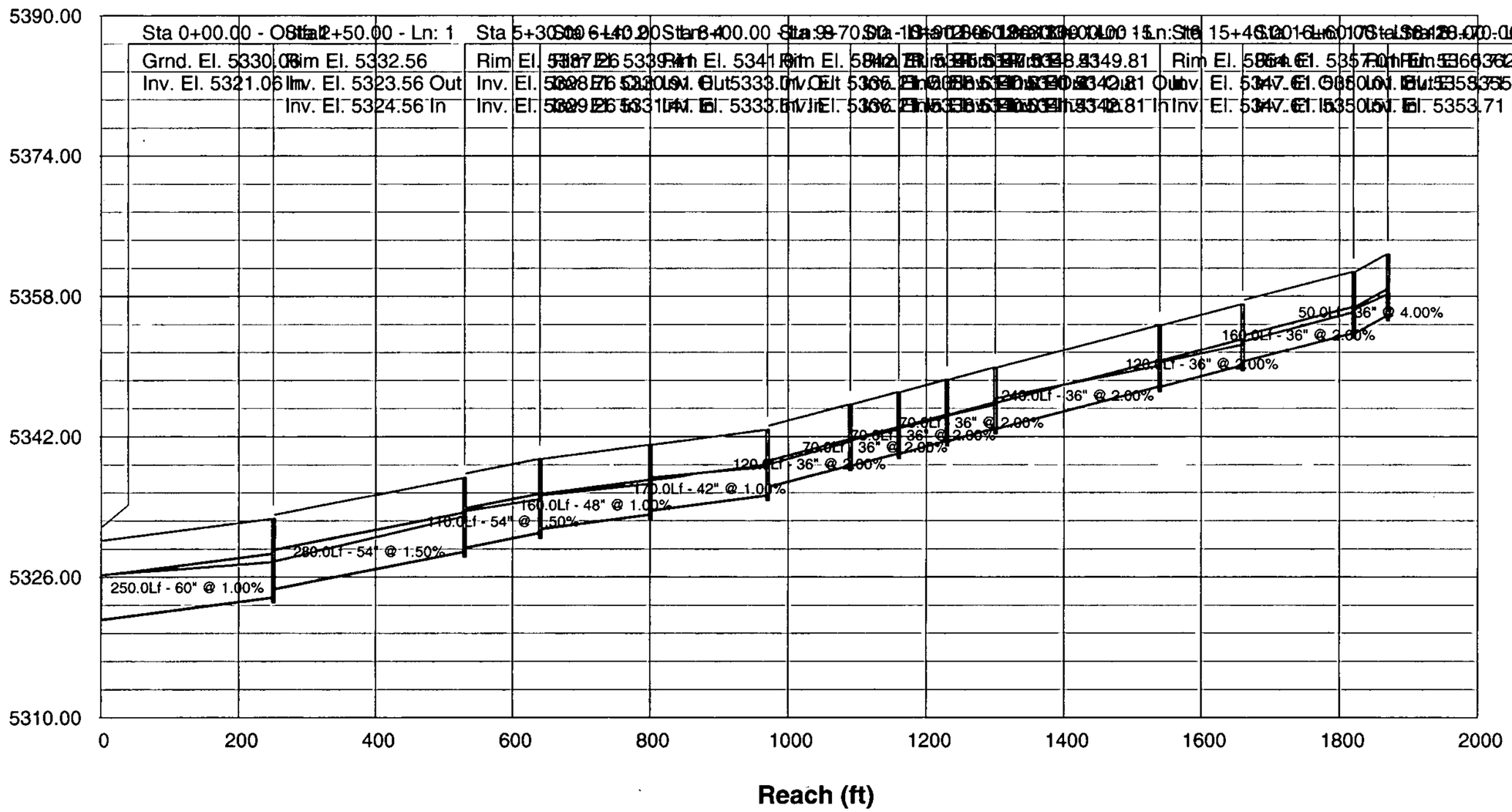
Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf		Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf	Ave Sf	Enrgy loss		
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)
1	60	204.3	5321.06	5326.06	5.00	19.63	10.41	1.68	5327.74	0.615	250	5323.56	5327.55	3.99**	16.80	12.16	2.30	5329.85	0.647	0.631	n/a	0.75	n/a
2	54	188.7	5324.56	5327.66	3.10	14.83	16.15	4.05	5331.72	1.370	280	5328.76	5332.72	3.96**	14.83	12.73	2.52	5335.24	0.828	1.099	n/a	1.00	2.52
3	48	10.00	5324.56	5329.84	4.00	12.56	0.80	0.01	5329.85	0.005	50.0	5325.56	5329.84	4.00	12.57	0.80	0.01	5329.85	0.005	0.005	0.002	1.00	0.01
4	54	173.5	5329.26	5333.39	4.13	15.28	11.35	2.00	5335.39	0.677	110	5330.91	5334.69	3.78**	14.26	12.17	2.30	5336.99	0.747	0.712	n/a	1.00	n/a
5	36	37.40	5332.41	5336.56	3.00	7.07	5.29	0.44	5336.99	0.315	200	5334.41	5337.09	2.68	6.67	5.61	0.49	5337.58	0.278	0.296	0.593	0.40	0.20
6	36	37.40	5334.41	5337.29	2.88	6.97	5.36	0.45	5337.74	0.274	50.0	5334.91	5337.29	2.38	6.01	6.23	0.60	5337.89	0.336	0.305	0.152	0.48	0.29
7	24	15.10	5334.91	5337.82	2.00	3.14	4.81	0.36	5338.18	0.446	290	5337.81	5339.19	1.38**	2.31	6.55	0.67	5339.85	0.665	0.556	n/a	1.00	0.67
8	48	136.1	5331.41	5335.17	3.76	11.61	11.11	1.92	5337.09	0.776	160	5333.01	5336.49	3.48**	11.61	11.72	2.14	5338.63	0.818	0.797	n/a	1.00	n/a
9	30	31.70	5333.01	5337.98	2.50	4.91	6.46	0.65	5338.63	0.598	50.0	5333.76	5338.28	2.50	4.91	6.46	0.65	5338.93	0.597	0.598	0.299	0.75	0.49
10	30	31.70	5333.76	5338.76	2.50	4.91	6.46	0.65	5339.41	0.598	70.0	5334.51	5339.18	2.50	4.91	6.46	0.65	5339.83	0.597	0.598	0.418	0.75	0.49
11	30	31.70	5334.51	5339.67	2.50	4.91	6.46	0.65	5340.32	0.598	200	5335.51	5340.86	2.50	4.91	6.46	0.65	5341.51	0.597	0.598	1.195	1.00	0.65
12	42	91.80	5333.51	5337.21	3.50	9.62	9.54	1.42	5338.63	0.833	170	5335.21	5338.41	3.20	9.22	9.95	1.54	5339.95	0.725	0.779	1.324	0.15	0.23
13	36	68.80	5336.21	5338.71	2.50	6.60	10.94	1.86	5340.57	1.035	120	5338.61	5341.26	2.65**	6.60	10.43	1.69	5342.95	0.955	0.995	n/a	0.40	n/a
14	36	68.80	5338.61	5341.47	2.86	6.60	9.90	1.52	5343.00	0.923	70.0	5340.01	5342.66	2.65**	6.60	10.43	1.69	5344.35	0.955	0.939	n/a	0.40	n/a
15	36	68.80	5340.01	5342.87	2.86	6.60	9.90	1.52	5344.40	0.923	70.0	5341.41	5344.06	2.65**	6.60	10.43	1.69	5345.75	0.955	0.939	n/a	0.40	n/a
16	36	68.80	5341.41	5344.27	2.86	6.60	9.90	1.52	5345.80	0.923	70.0	5342.81	5345.46	2.65**	6.60	10.43	1.69	5347.15	0.955	0.939	n/a	0.40	n/a

Project File: Vista Vieja.stm | Number of lines: 16 | Run Date: 04-25-2005

Notes: ; ** Critical depth.; j-Line contains hyd. jump.

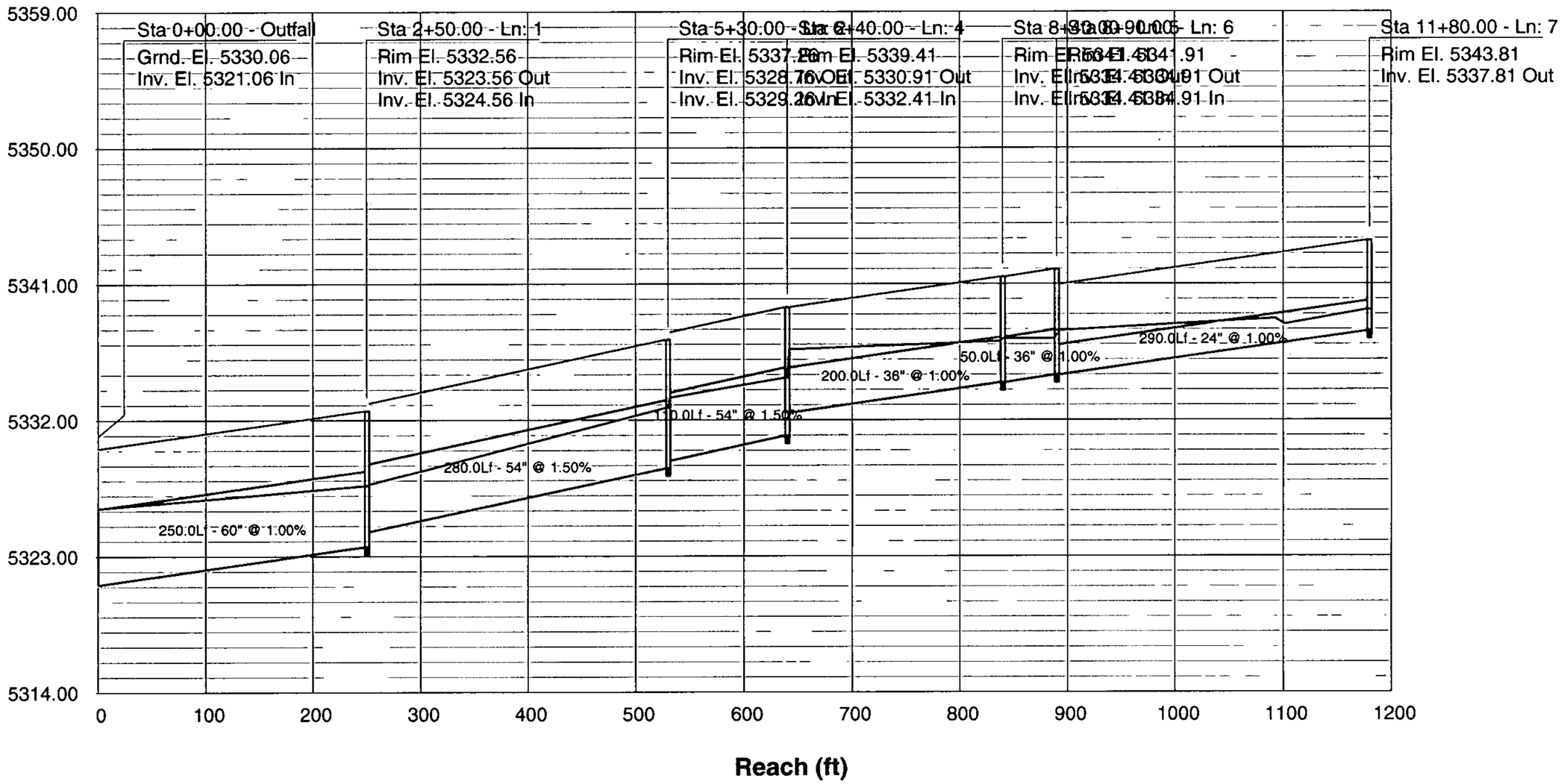
Storm Sewer Profile

Proj. file: Vista Vieja.stm



Storm Sewer Profile

Proj. file: Vista Vieja.stm



Residential Streets - .6% Minimum Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Slope	006000	ft/ft
Water Surface Elev.	100.50	ft

Options	
Current Roughness Metho	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.017	
Elevation Range	.00 to 100.67	
Discharge	33.77	cfs
Flow Area	10.1	ft²
Wetted Perimeter	28.96	ft
Top Width	28.02	ft
Actual Depth	0.50	ft
Critical Elevation	100.50	ft
Critical Slope	0.006205	ft/ft
Velocity	3.35	ft/s
Velocity Head	0.17	ft
Specific Energy	100.67	ft
Froude Number	0.98	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+10	0+39	0.017

Natural Channel Points

Station (ft)	Elevation (ft)
0+10	100.67
0+11	100.67
0+11	100.00
0+25	100.28
0+39	100.00
0+39	100.67
0+39	100.67

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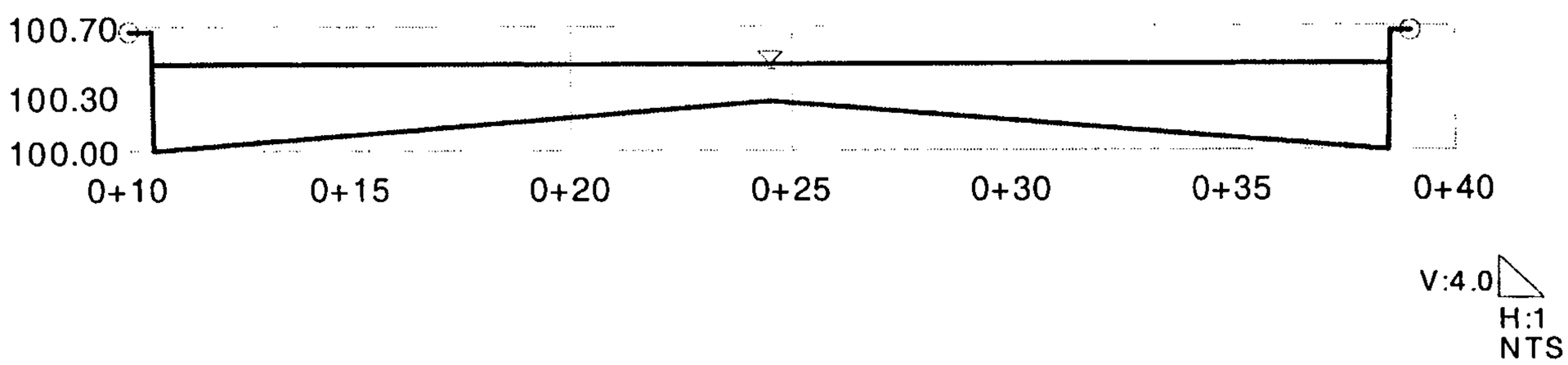
Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Mannings Coefficie	0.017	
Slope	0.006000	ft/ft
Water Surface Elev.	100.50	ft
Elevation Range	).00 to 100.67	
Discharge	33.77	cfs



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Residential Streets - .6% Minimum Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Slope	006000	ft/ft
Water Surface Elev.	100.55	ft

Options	
Current Roughness Meth	oved Lotter's Method
Open Channel Weighting	oved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.017	
Elevation Range	.00 to 100.67	
Discharge	41.86	cfs
Flow Area	11.5	ft²
Wetted Perimeter	29.06	ft
Top Width	28.03	ft
Actual Depth	0.55	ft
Critical Elevation	100.55	ft
Critical Slope	0.005944	ft/ft
Velocity	3.65	ft/s
Velocity Head	0.21	ft
Specific Energy	100.76	ft
Froude Number	1.00	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+10	0+39	0.017

Natural Channel Points

Station (ft)	Elevation (ft)
0+10	100.67
0+11	100.67
0+11	100.00
0+25	100.28
0+39	100.00
0+39	100.67
0+39	100.67

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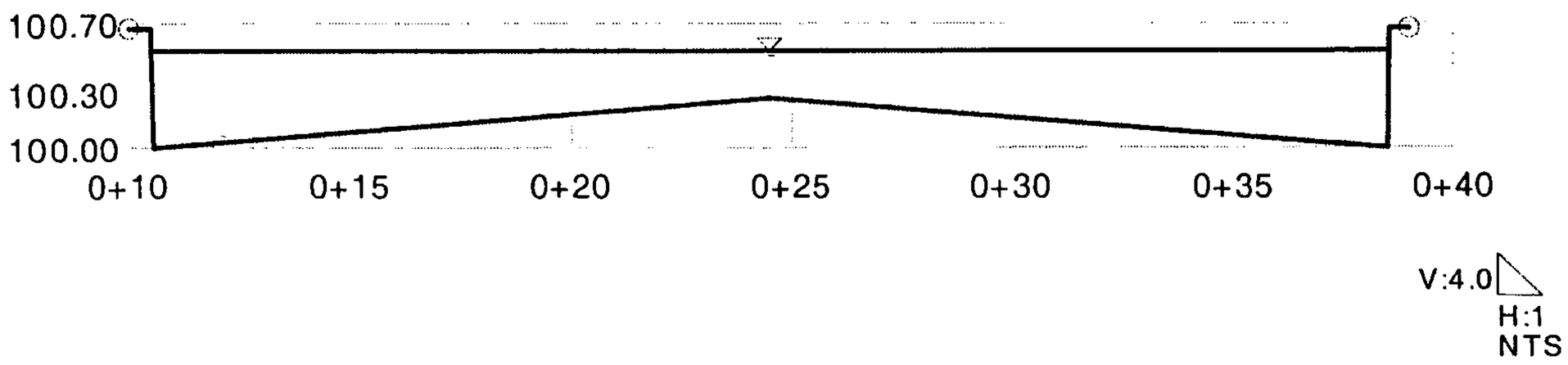
Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Mannings Coefficie	0.017	
Slope	0.006000	ft/ft
Water Surface Elev.	100.55	ft
Elevation Range	).00 to 100.67	
Discharge	41.86	cfs



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Residential Streets - 2.0% Maximum Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Slope	020000	ft/ft
Water Surface Elev	100.40	ft

Options	
Current Roughness Meth	›ved Lotter's Method
Open Channel Weighting	›ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.017	
Elevation Range	).00 to 100.67	
Discharge	36.00	cfs
Flow Area	7.3	ft²
Wetted Perimeter	28.76	ft
Top Width	28.01	ft
Actual Depth	0.40	ft
Critical Elevation	100.51	ft
Critical Slope	0.006126	ft/ft
Velocity	4.95	ft/s
Velocity Head	0.38	ft
Specific Energy	100.78	ft
Froude Number	1.71	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+10	0+39	0.017

Natural Channel Points

Station (ft)	Elevation (ft)
0+10	100.67
0+11	100.67
0+11	100.00
0+25	100.28
0+39	100.00
0+39	100.67
0+39	100.67

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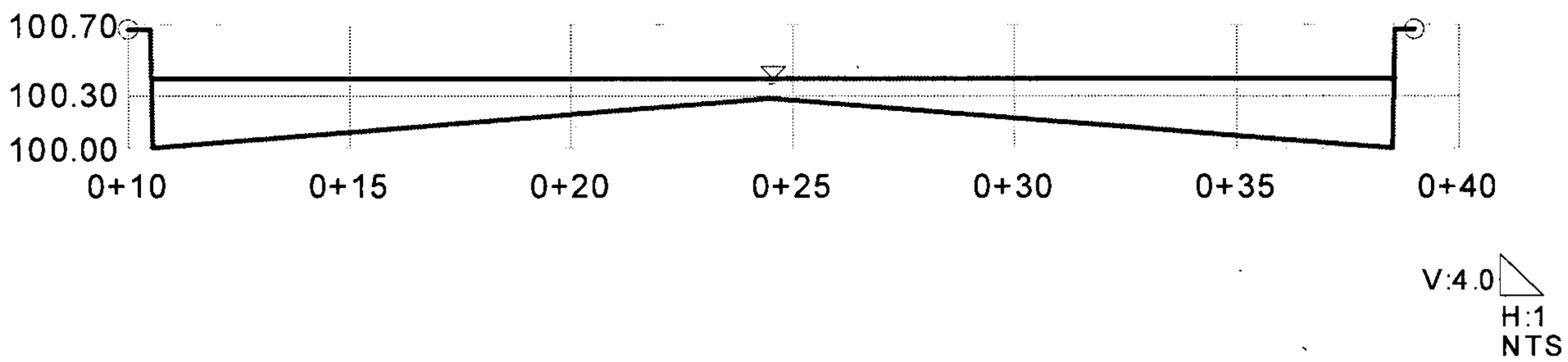
Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Mannings Coefficie	0.017	
Slope	0.020000	ft/ft
Water Surface Elev	100.40	ft
Elevation Range	).00 to 100.67	
Discharge	36.00	cfs



Residential Streets - 2.0% Maximum Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Slope	020000	ft/ft
Water Surface Elev	100.36	ft

Options	
Current Roughness Meth	›ved Lotter's Method
Open Channel Weighting	›ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.017	
Elevation Range	).00 to 100.67	
Discharge	27.30	cfs
Flow Area	6.2	ft²
Wetted Perimeter	28.68	ft
Top Width	28.00	ft
Actual Depth	0.36	ft
Critical Elevation	100.45	ft
Critical Slope	0.006479	ft/ft
Velocity	4.43	ft/s
Velocity Head	0.31	ft
Specific Energy	100.67	ft
Froude Number	1.67	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+10	0+39	0.017

Natural Channel Points

Station (ft)	Elevation (ft)
0+10	100.67
0+11	100.67
0+11	100.00
0+25	100.28
0+39	100.00
0+39	100.67
0+39	100.67

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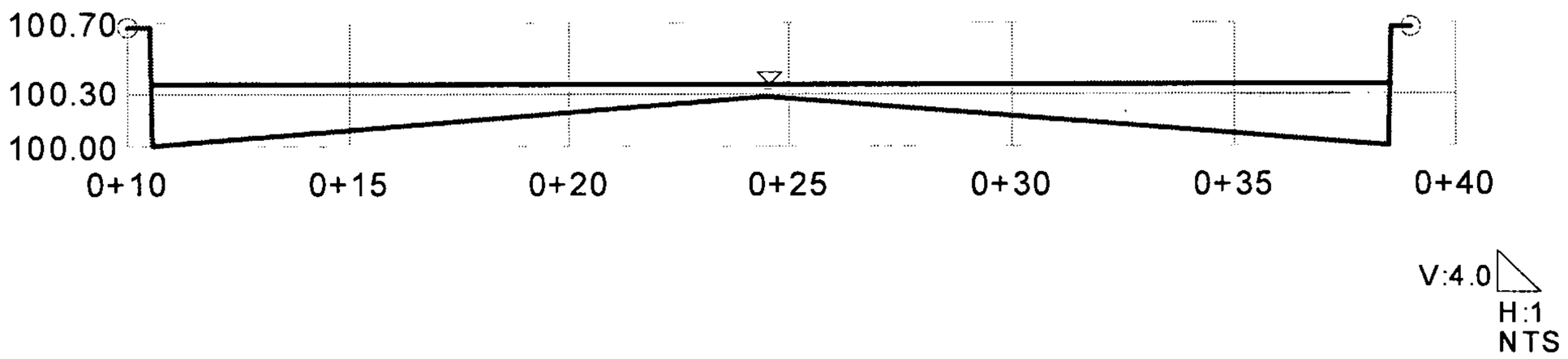
Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Mannings Coefficier	0.017	
Slope	0.020000	ft/ft
Water Surface Elev	100.36	ft
Elevation Range	).00 to 100.67	
Discharge	27.30	cfs



Residential Streets - 3.0% Maximum Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Slope	030000	ft/ft
Water Surface Elev	100.35	ft

Options	
Current Roughness Meth	oved Lotter's Method
Open Channel Weighting	oved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.017	
Elevation Range	0.00 to 100.67	
Discharge	30.96	cfs
Flow Area	5.9	ft²
Wetted Perimeter	28.66	ft
Top Width	28.00	ft
Actual Depth	0.35	ft
Critical Elevation	100.48	ft
Critical Slope	0.006315	ft/ft
Velocity	5.27	ft/s
Velocity Head	0.43	ft
Specific Energy	100.78	ft
Froude Number	2.03	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+10	0+39	0.017

Natural Channel Points

Station (ft)	Elevation (ft)
0+10	100.67
0+11	100.67
0+11	100.00
0+25	100.28
0+39	100.00
0+39	100.67
0+39	100.67

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Residential Streets - 3.0% Maximum Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Slope	030000	ft/ft
Water Surface Elev	100.32	ft

Options	
Current Roughness Meth	oved Lotter's Method
Open Channel Weighting	oved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.017	
Elevation Range	0.00 to 100.67	
Discharge	23.97	cfs
Flow Area	5.0	ft²
Wetted Perimeter	28.60	ft
Top Width	28.00	ft
Actual Depth	0.32	ft
Critical Elevation	100.42	ft
Critical Slope	0.006654	ft/ft
Velocity	4.76	ft/s
Velocity Head	0.35	ft
Specific Energy	100.67	ft
Froude Number	1.98	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+10	0+39	0.017

Natural Channel Points

Station (ft)	Elevation (ft)
0+10	100.67
0+11	100.67
0+11	100.00
0+25	100.28
0+39	100.00
0+39	100.67
0+39	100.67

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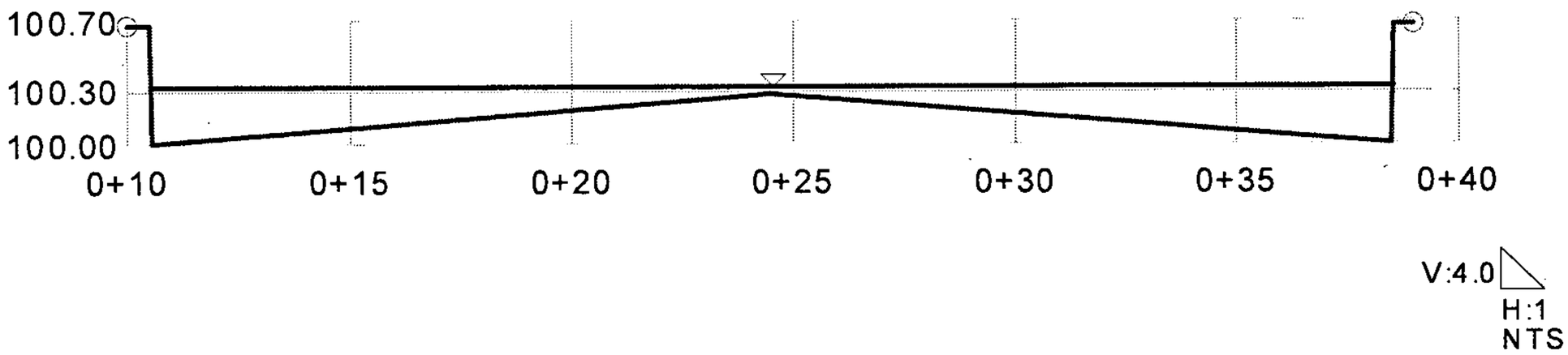
Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Mannings Coefficie	0.017	
Slope	0.030000	ft/ft
Water Surface Elev	100.32	ft
Elevation Range	).00 to 100.67	
Discharge	23.97	cfs



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Residential Streets - 3.5% Maximum Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Slope	035000	ft/ft
Water Surface Elev.	100.31	ft

Options	
Current Roughness Meth	oved Lotter's Method
Open Channel Weighting	oved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.017	
Elevation Range	0.00 to 100.67	
Discharge	22.41	cfs
Flow Area	4.6	ft²
Wetted Perimeter	28.57	ft
Top Width	28.00	ft
Actual Depth	0.31	ft
Critical Elevation	100.41	ft
Critical Slope	0.006747	ft/ft
Velocity	4.85	ft/s
Velocity Head	0.37	ft
Specific Energy	100.67	ft
Froude Number	2.11	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+10	0+39	0.017

Natural Channel Points

Station (ft)	Elevation (ft)
0+10	100.67
0+11	100.67
0+11	100.00
0+25	100.28
0+39	100.00
0+39	100.67
0+39	100.67

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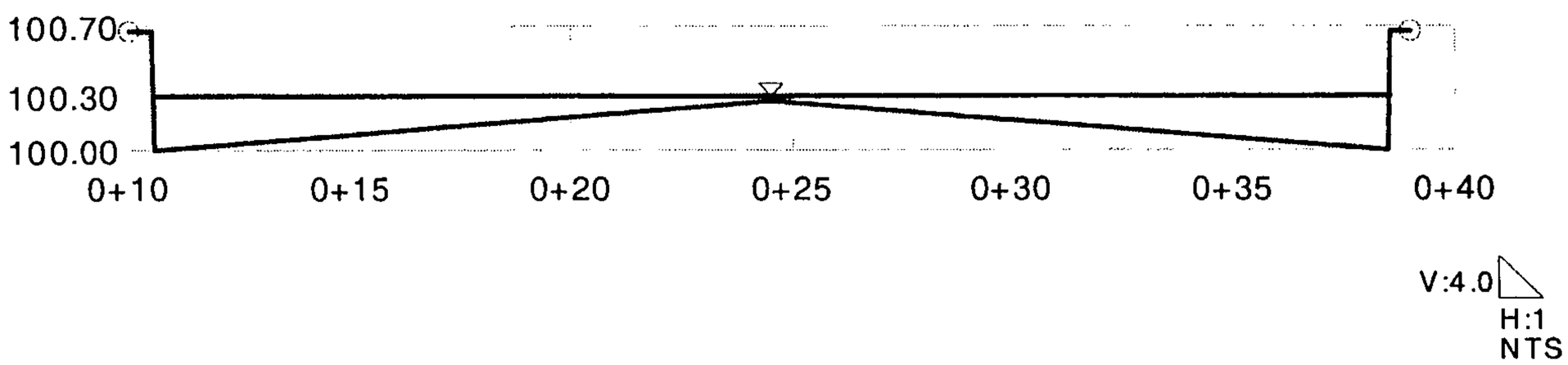
Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Mannings Coefficie	0.017	
Slope	0.035000	ft/ft
Water Surface Elev	100.31	ft
Elevation Range	).00 to 100.67	
Discharge	22.41	cfs



Residential Streets - 3.5% Maximum Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Slope	035000	ft/ft
Water Surface Elev.	100.34	ft

Options	
Current Roughness Meth	oved Lotter's Method
Open Channel Weighting	oved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.017	
Elevation Range	.00 to 100.67	
Discharge	30.84	cfs
Flow Area	5.6	ft²
Wetted Perimeter	28.64	ft
Top Width	28.00	ft
Actual Depth	0.34	ft
Critical Elevation	100.48	ft
Critical Slope	0.006320	ft/ft
Velocity	5.51	ft/s
Velocity Head	0.47	ft
Specific Energy	100.81	ft
Froude Number	2.17	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+10	0+39	0.017

Natural Channel Points

Station (ft)	Elevation (ft)
0+10	100.67
0+11	100.67
0+11	100.00
0+25	100.28
0+39	100.00
0+39	100.67
0+39	100.67

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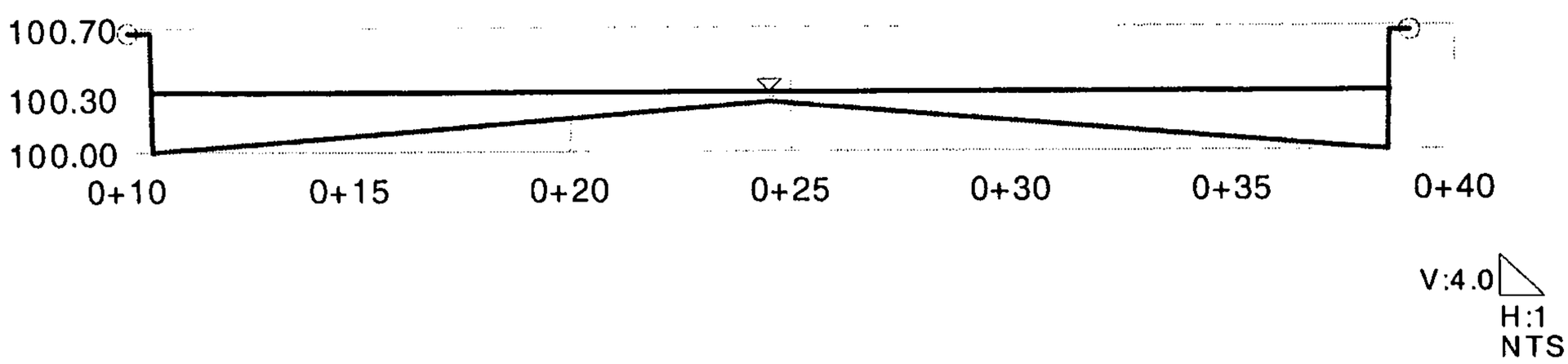
Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Mannings Coefficiel	0.017	
Slope	0.035000	ft/ft
Water Surface Elev.	100.34	ft
Elevation Range	).00 to 100.67	
Discharge	30.84	cfs



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Vista Vieja Earthen Channel
Worksheet for Trapezoidal Channel

Project Description	
Worksheet	Trapezoidal Channe
Flow Element	Trapezoidal Channe
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Mannings Coeffic	0.030	
Slope	015000	ft/ft
Left Side Slope	4.00	H : V
Right Side Slope	4.00	H : V
Bottom Width	10.00	ft
Discharge	309.00	cfs

Results		
Depth	2.15	ft
Flow Area	39.9	ft²
Wetted Perim	27.71	ft
Top Width	27.18	ft
Critical Depth	2.29	ft
Critical Slope	0.011640	ft/ft
Velocity	7.74	ft/s
Velocity Head	0.93	ft
Specific Energ	3.08	ft
Froude Numb	1.13	
Flow Type	Supercritical	

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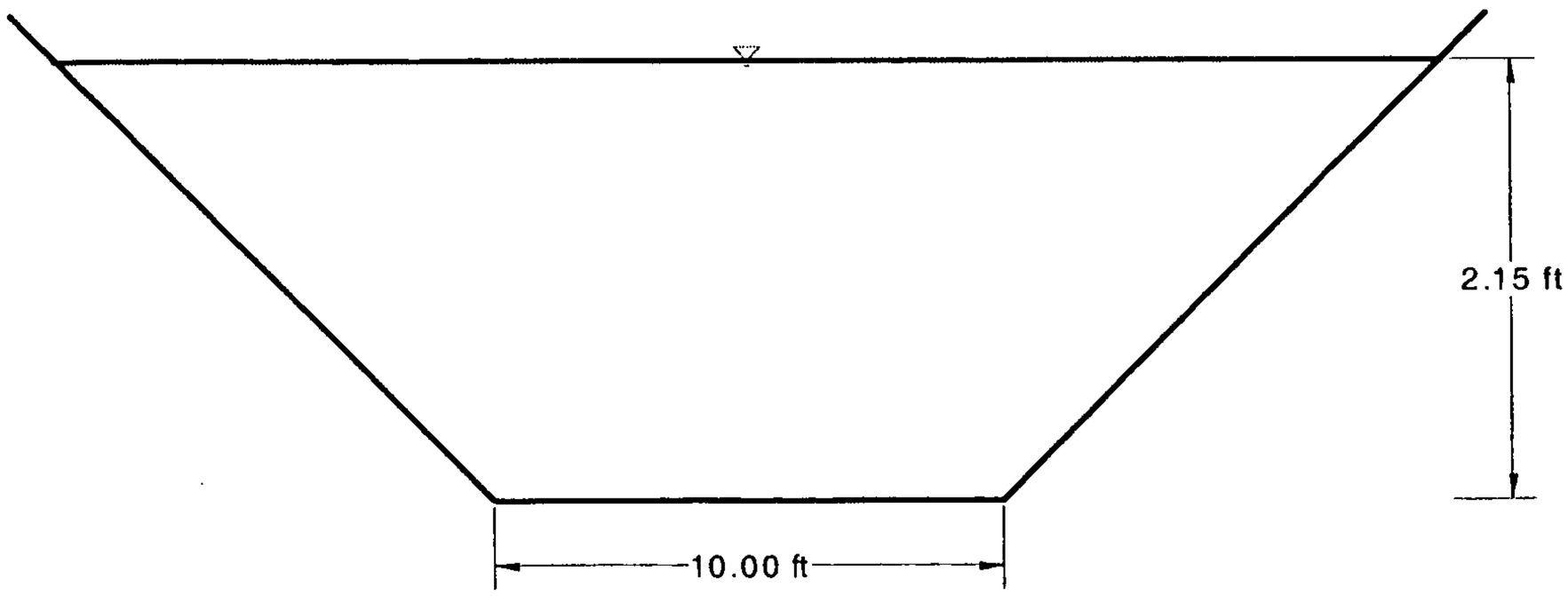
Cross Section
Cross Section for Trapezoidal Channel

Project Description	
Worksheet	Trapezoidal Channe
Flow Element	Trapezoidal Channe
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coeffic	0.030	
Slope	015000	ft/ft
Depth	2.15	ft
Left Side Slope	4.00	H : V
Right Side Slope	4.00	H : V
Bottom Width	10.00	ft
Discharge	309.00	cfs



V:4.0
H:1
NTS

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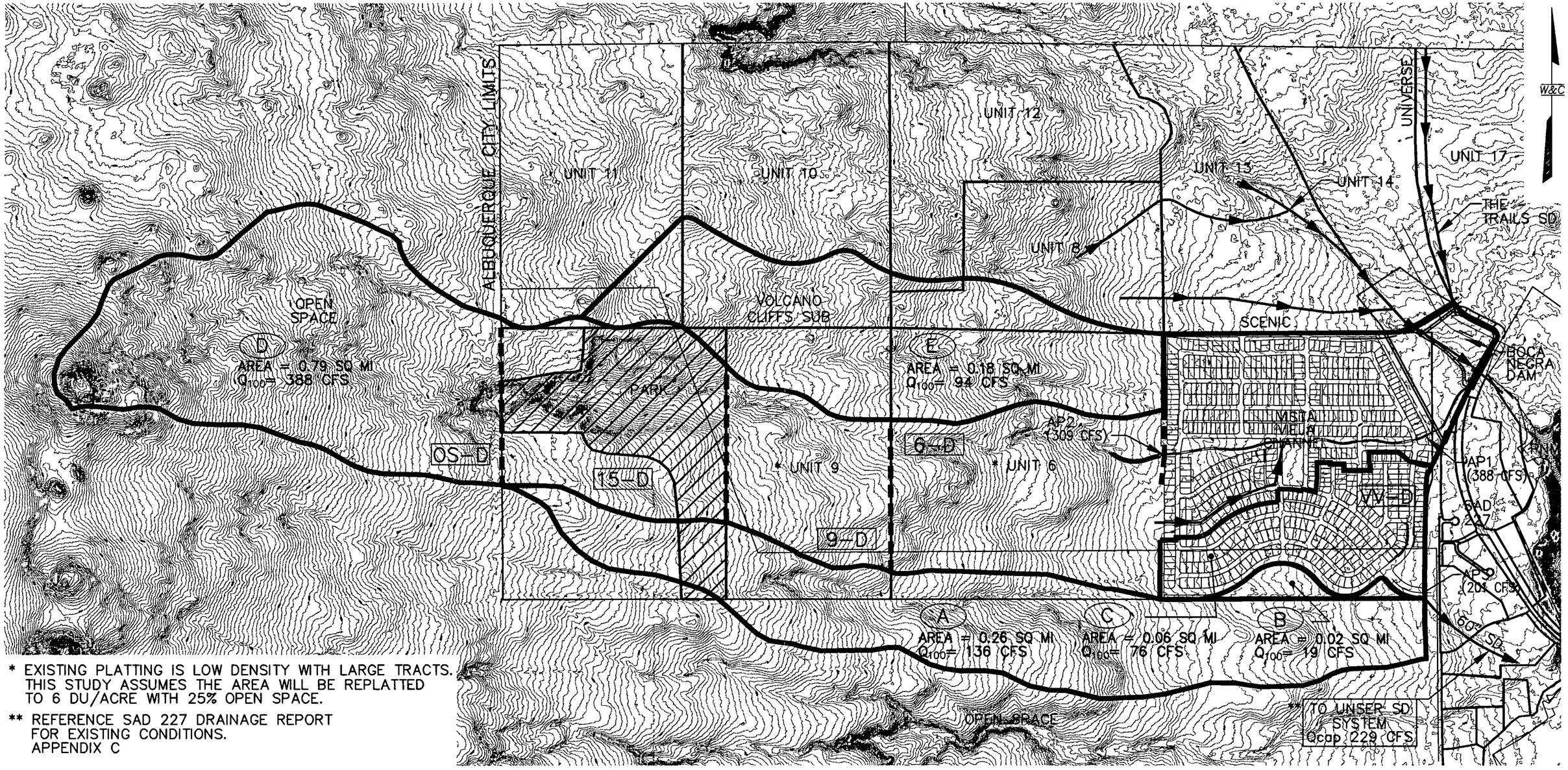
Project Engineer: Dan Aguirre



* EXISTING PLATTING IS LOW DENSITY WITH LARGE TRACTS. THIS STUDY ASSUMES THE AREA WILL BE REPLATTED TO 6 DU/ACRE WITH 25% OPEN SPACE.

** REFERENCE SAD 227 DRAINAGE REPORT FOR EXISTING CONDITIONS. APPENDIX C

BASIN SUMMARY				
			PROPOSED	
BASIN	AREA (sq mi)	AREA (ac)	Q100 24 hr (cfs)	VOL100 24 hr (ac-ft)
A	0.26	168	136	4.95
B	0.02	14	19	0.44
C	0.07	46	89	5.19
D	0.79	506	388	38.49
E	0.18	115	94	3.42

ANALYSIS POINT SUMMARY			
		PROPOSED	
AP NO.	DESCRIPTION	Q100 24 hr (cfs)	VOL100 24 hr (ac-ft)
1	BOCA NEGRA DAM	388	31.60
2	VISTA VIEJA	309	29.59
3	DISCHARGE TO (SAD 227 SD)	201	10.53
4	SCENIC DR. FLOWS	94	3.4

LEGEND

- 5070 — EXISTING INTERMEDIATE CONTOUR
- 5071 — EXISTING INDEX CONTOUR
- (A) — BASIN ID
- OS-D — SUB-BASIN
- BASIN BOUNDARY
- SUB-BASIN BOUNDARY
- PARK

GRAPHIC SCALE

1000 500 0 1000 2000

(IN FEET)
1 inch=1000 ft.

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RIO RANCHO, NEW MEXICO
87124
(505) 898-8021

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

VISTA VIEJA
PROPOSED BASIN BOUNDARY MAP

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

DATE	APR 2005	DESIGN	DRAWN
FILE NO.	X3218078	RSM	JMB

City Project No.	Zone Map No.	Sheet
XXXXX	D-9-Z	APPENDIX D

X:\Public\PROJECTS\X3218078\Drainage\837604_Dwr_all.dwg 4/13/2005 13:31:2 PM MDT

CITY OF ALBUQUERQUE

February 7, 2005

Steve Metro, PE
Wilson & Company
2600 American Rd, SE, Ste. 100
Rio Rancho, NM 87124

Re: Vista Vieja Subdivision Drainage Report

Engineer Stamp 10-4-04 (D9/D3)

Dear Mr. Metro,

Based upon information provided in your submittal dated 10-4-04, the above referenced study is approved as a conceptual master plan for the above referenced subdivision.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Principal Engineer, Planning Dept.
Development and Building Services

C: file

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

VISTA VIEJA
Drainage Report

Prepared for

Mesa Verde Development, LLC

Prepared by

Wilson & Company, Inc.
4900 Lang Ave NE
Albuquerque, NM 87109
(505) 348-4000
(505) 348-4055 Fax

Steven J. Metro, P.E.
July 2004
Revised October 2004

WILSON
&COMPANY

Purpose of Study

The Mesa Verde Development, LLC proposes to develop the Kassuba-Montbel Tract in the Volcano Cliffs Subdivision, located in northwest Albuquerque above the escarpment. The purpose of this report is to develop a drainage plan for the design and construction of the storm drain infrastructure required to convey the off-site and on-site flows generated by the improvements anticipated as a result of proposed VISTA VIEJA Subdivision.

Site Description

The proposed project site is currently undeveloped land. The site is located above the escarpment west of the Petroglyph National Monument on the west side of Albuquerque. The proposed site is bounded by 81st Street on the east, Scenic Drive on the north, Open Space on the south and the Albericoque Pl. along the west boundary. The area is approximately 160 acres sloping from west to east. The site has significant off-site flows discharging at 2 locations along 81st Street. These are designated as the Boca Negra Arroyo Dam and the North Fork of the South Branch of the Boca Negra Arroyo and the San Antonio Arroyo (60-inch RCP Storm Drain constructed with SAD 227). A project vicinity map and Zone Atlas Map are shown on Figures 1 and 1A on the following pages.

Methodology

This report utilizes the hydrologic and hydraulic methods and guidelines as described in Section 22.2 of the City of Albuquerque Development Process Manual (CPM). The hydrology for the project has been prepared using the AHYMO 97 computer modeling software. The 100-year 24-hour event was used as the design storm for this project.

Existing Conditions

The existing site is currently undeveloped. The soils are hydrologic group Madurez-Wink (MWA), and Latene (LTB) Associations. The map on Figure 2 shows the hydraulic soil types based on the SCS Bernalillo County Soils Map, 1977. The soils are well drained and subject to erosion. These moderately permeable soils overlay basalt rock that is 1-10 feet deep.

The Boca Negra Arroyo has a Zone A Flood Zone along the southern third of the site as shown in the FEMA Flood Map on Figure 3. This project will require a LOMR to modify the FEMA flood map.

The existing drainage was analyzed with SAD 227 as Basins 83 (AP-3) and is included in Appendix C of this report. The existing flows are collected by a 60-inch RCP storm drain constructed with SAD 227. This North Fork of the south Branch of the Boca Negra Arroyo will be conveyed through a 60-inch RCP storm drain under 81st Street and through SAD 227 along Onyx Drive and into Unser Boulevard. The storm drain will combine with the rest of the SAD

227 subdivision flow near Marigold Drive and continue in a 60-inch storm drain in Unser Boulevard to the San Antonio Arroyo structure at Montano.

The 100-year flows for the existing conditions is 229 c.f.s. as developed by the SAD 227 Drainage Report.

Proposed Conditions

The undeveloped property is comprised of a portion of two significant drainage basins located along the upper edge of the escarpment. The proposed discharges from these basins are conveyed by the arroyos identified as listed below:

1. Basins D & E. The Boca Negra Arroyo Dam (sub-basins OS-D, 15-D, 9-D, 6-D, VV-D and E).
2. Basins A, B & C. North Fork of the South Branch of the Boca Negra Arroyo.

On-site flows from Basin D will be handled with curb inlets and curb & gutter and will be captured at identified locations using City of Albuquerque's standard inlets (single and double) and a storm drain system to collect and convey the runoff to the proper down stream facility. The offsite and on-site flows will be collected in a 60-inch RCP storm drain as shown on Figure 4. The hydraulic calculations for this storm drain is included in Appendix B.

The North Fork of the south Branch of the Boca Negra Arroyo will be conveyed through a 60-inch RCP under 81st Street and then a 60-inch RCP under Onyx Drive and into Unser Boulevard. The storm drain will combine with the rest of the SAD 227 subdivision flow near Marigold Drive and continue in a 60-inch storm drain in Unser Boulevard to the San Antonio Arroyo structure at Montano.

Developed conditions have the following land use assumptions:

		Land Treatment			
Basin/Sub-Basin	Developed C	A	B	C	D
OS-D	Open space	100	0	0	0
15-D	Open Space/Residential	50	0	25	25
9-D	Residential	0	20	20	60
6-D	Residential	0	20	20	60
VV-D	Residential	0	20	20	60
A	Open Space	100	0	0	0
B	Open Space	100	0	0	0
C	Residential	0	20	20	60
E	Residential	0	20	20	60

All residential development assumes 6 DU/acre. - Lower basins 3.5 cfs/ac $Q_{MIL} = 0.16$ cfs/ac

The Drainage Basin Map is shown on Figure 4. This drainage plan includes:

1. The existing conditions storm drain installed with SAD 227 with a capacity of 229 c.f.s. which will drain the southern basins A, B and C.

2. The northern Basins D & E (sub-basins 15D, 9D, 6D, VVD and E) will drain to the proposed Boca Negra Dam (reference the Boca Negra – Mariposa Arroyo Drainage Management Plan by RTI). This project will construct a temporary detention drain (which will be used in the development of the ultimate Boca Negra Dam) with the following hydraulic characteristics:

100-year Q in	=	388 c.f.s.
100-year Q out	=	50 c.f.s.
100-year Storage	=	29 ac. ft.

The AHYMO analysis for the proposed conditions is shown in Appendix A.

The proposed drainage basins are shown on Figure 4, Proposed Basin Boundary Map. The Analysis Points are shown on Figure 4 and tabulated below.

AP-1	Discharge to the Boca Negra Dam And Design Flow for the Vista Vieja Drain (Appendix B)	388 c.f.s.
AP-2	Offsite developed flows to the Vista Vieja Storm Drain	309 c.f.s.
AP-3	Developed Flows to the SAD 226 60" Storm Drain (Basins A, B and C)	201 c.f.s.
AP-4	Developed Flows to Scenic Drive	94 c.f.s.

Reference Data:

1. Boca Negra – Mariposa Arroyo Hydrologic & Hydraulic Analysis Prepared for AMAFCA by Resource Technology, Inc., 2002 (Establishes offsite flows)

2. Unser Boulevard Corridor Study & Record of Decision, Prepared for COA by ASCG

3. SAD 227 Unser Boulevard Middle Section, Prepared for Volcano Cliffs Property Owners Association by Wilson & Company, Inc., June 2003

4. Boca Negra – Mariposa Arroyo Drainage Management Plan, Prepared for AMAFCA by Research Technology, Inc., 2004
(Establishes Boca Negra Dam Site)

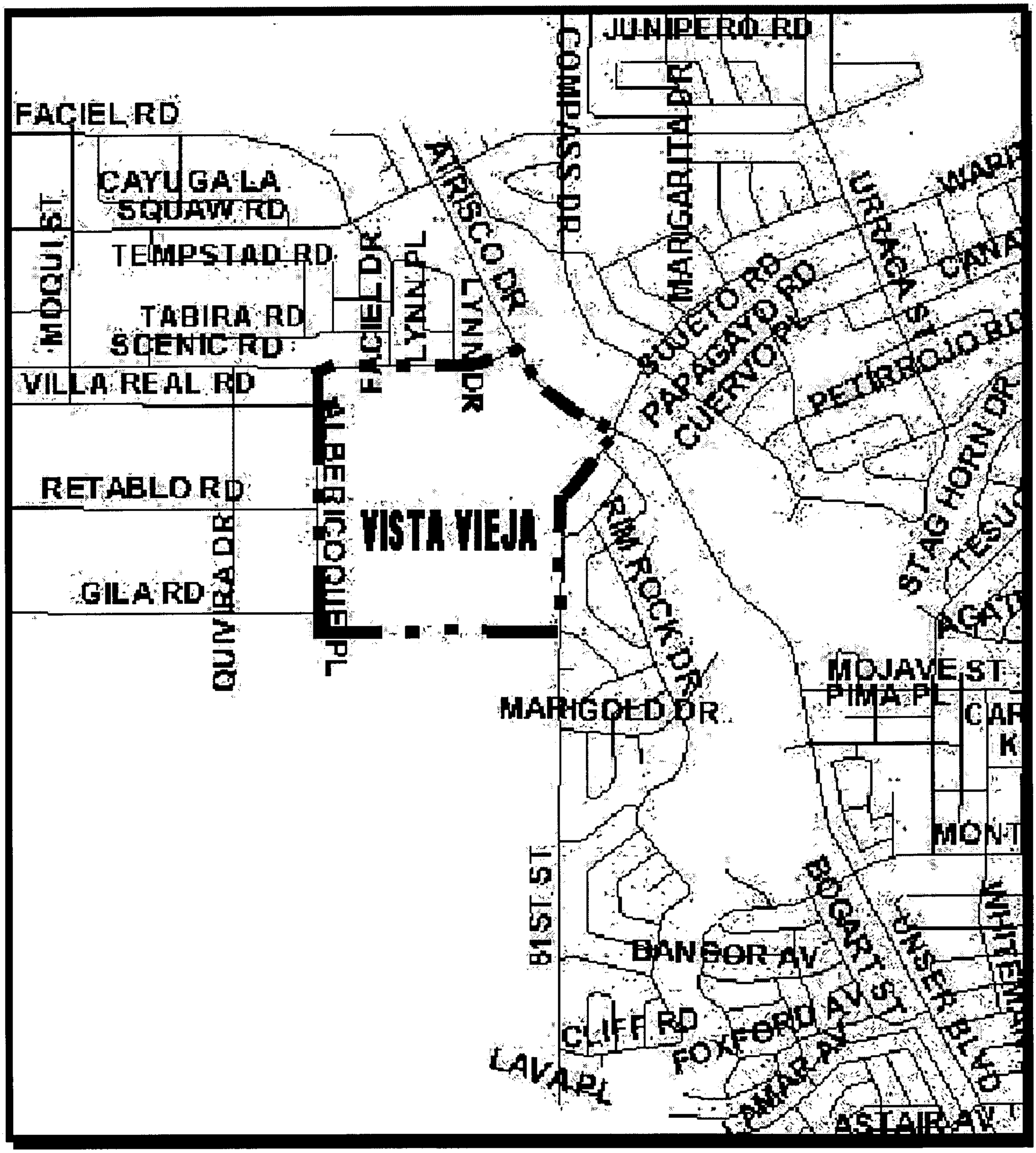
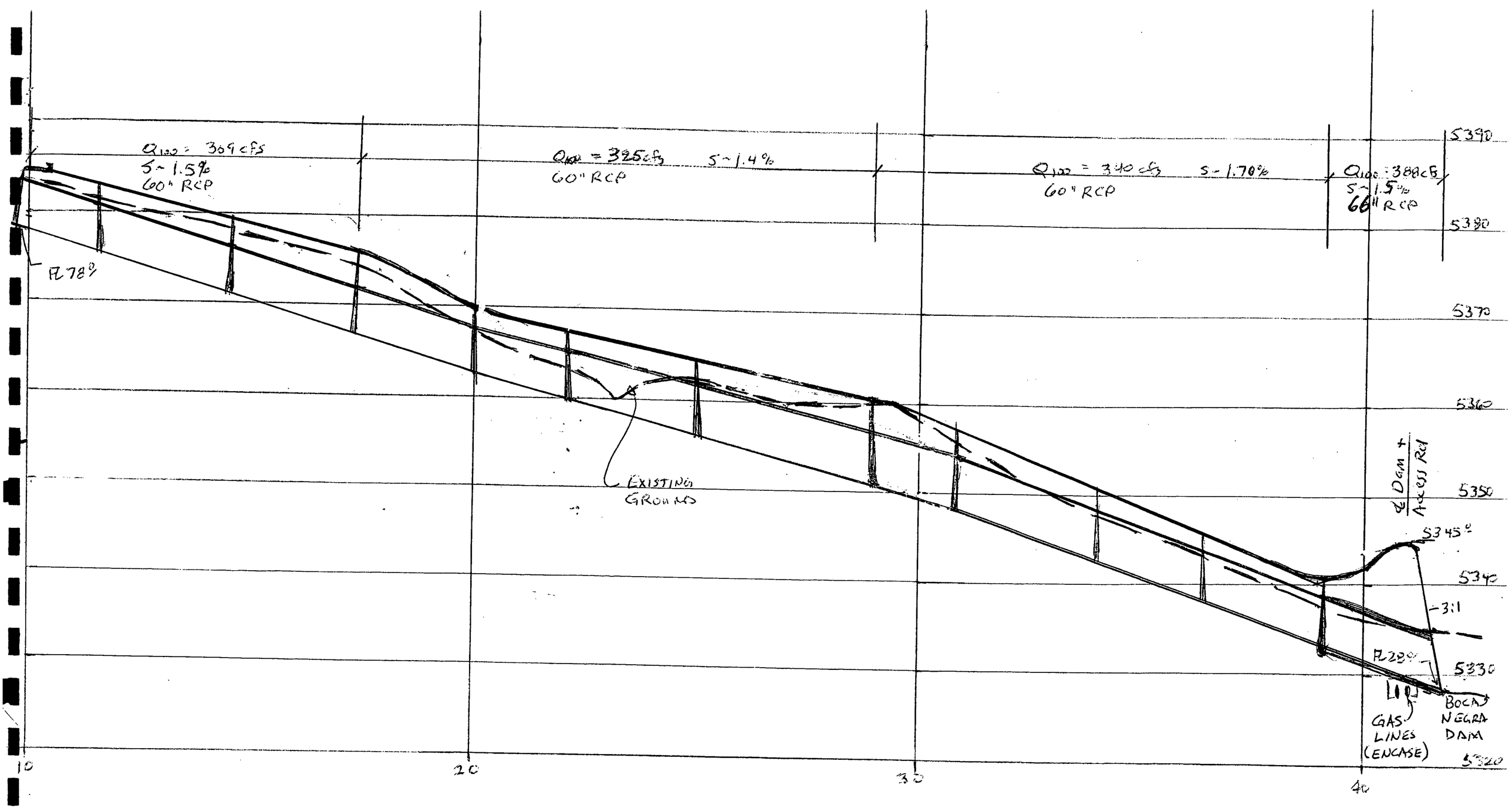


Figure 1
Location Map

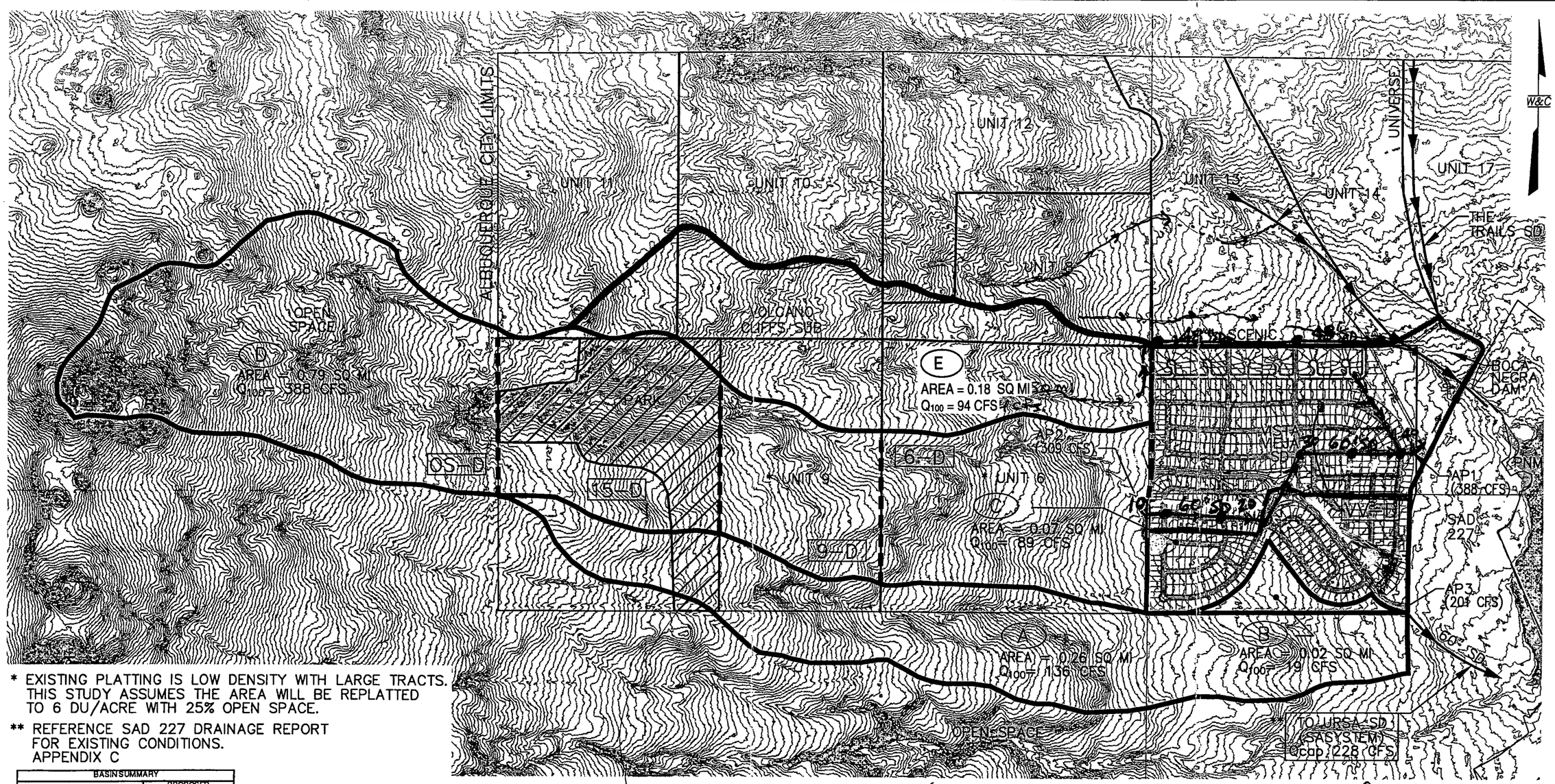
WILSON &COMPANY



VISTA VIEJA
STORM DRAIN PROFILE
& HYDRAULIC ANALYSIS

APPENDIX B

Volcano cliffs Sector Development pln



* EXISTING PLATTING IS LOW DENSITY WITH LARGE TRACTS. THIS STUDY ASSUMES THE AREA WILL BE REPLATTED TO 6 DU/ACRE WITH 25% OPEN SPACE.

** REFERENCE SAD 227 DRAINAGE REPORT FOR EXISTING CONDITIONS. APPENDIX C

BASIN SUMMARY				
			PROPOSED	
BASIN	AREA (sq mi)	AREA (ac)	Q100 24 hr (cfs)	VOL 100 24 hr (ac-ft)
A	0.26	168	136	4.95
B	0.02	14	19	0.44
C	0.07	46	89	5.19
D	0.79	506	388	38.49
E	0.18	115	94	3.42

151

ANALYSIS POINT SUMMARY			
		PROPOSED	
AP NO.	DESCRIBION	(cfs)	(ac-ft)
1	BOCA NEGRA DAM	368	31.6
2	VISTA VIEJA	309	29.59
3	DISCHARGE TO (SAD 227 SD)	201	10.53
4	SCENIC DR FLOWS	94	3.4

LEGEND — Mobile Gasoline corner

- 5070 — EXISTING INTERMEDIATE CONTOUR
- 5071 — EXISTING INDEX CONTOUR
- (A) — BASIN ID
- OS-D — SUB-BASIN
- BASIN BOUNDARY
- SUB-BASIN BOUNDARY
- PARK

(D) .79 sq. mi = 506 ac 309 cfs / 516 = 0.6 cfs/ac

.07 = 45 ac

(B) .18 mi² = 115 ac

94 cfs / 115 ac. = 0.8 cfs/ac

7633.83 N
7633.89 N
.06 S

GRAPHIC SCALE
1000 500 0 1000 2000
(IN FEET)
1 inch=1000 ft.

WILSON & COMPANY
2600 THE AMERICAN RD. SE
RIO RANCHO, NEW MEXICO
87124
(505) 898-8021

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

VISTA VIEJA
PROPOSED BASIN BOUNDARY MAP

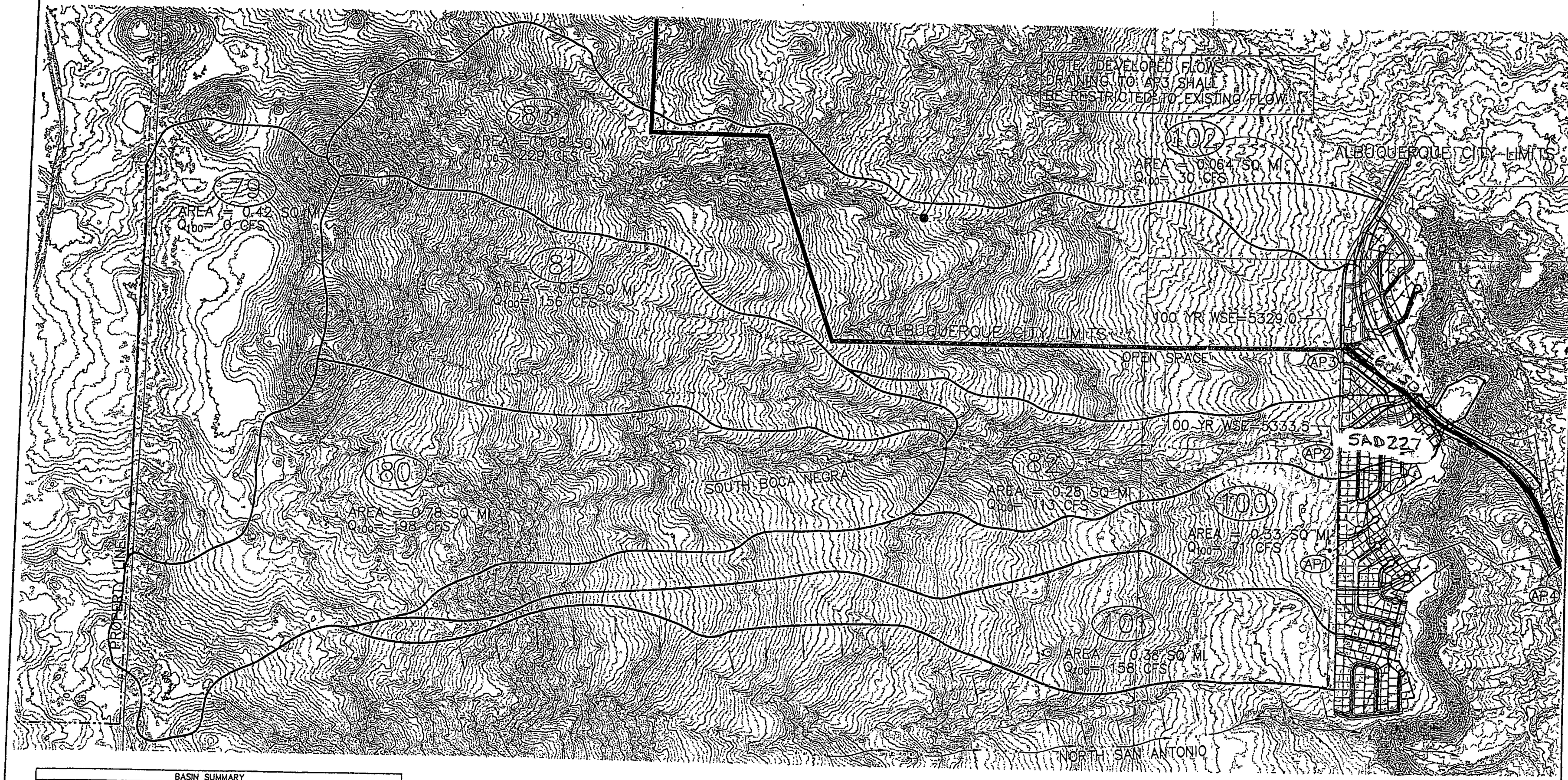
Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.
			Mo./Day/Yr.

DATE	AUG 2004	DESIGN	DRAWN
FILE NO.	X3218078	KIS	JNH

City Project No. 707391 | Zone Map No. X-XX | Sheet

FIGURE 4

F:\PROJECTS\X3218078\Drainage\B378BA_Dv-allarg 7/22/2004 12:12:03 PM CST



BASIN SUMMARY						
			PROPOSED		EXISTING	
BASIN	AREA (sq mi)	AREA (ac)	Q100 24 hr (cfs)	VOL100 24 hr (ac-ft)	Q100 24 hr (cfs)	VOL100 24 hr (ac-ft)
80	0.78	500	198	17.80	198	17.80
81	0.55	352	156	11.50	156	11.50
82	0.28	180	113	5.80	113	5.80
83	1.08	691	229	23.40	229	23.40
100	0.33	211	71	6.29	71	6.29
101	0.38	243	158	7.23	158	7.23
102	0.06	41	30	1.20	30	1.20

ANALYSIS POINT SUMMARY							
		PROPOSED			EXISTING		
AP NO.	DESCRIPTION	Q100 24 hr (cfs)	VOL100 24 hr (ac-ft)	VOL100 STORED (ac-ft)	Q100 24 hr (cfs)	VOL100 24 hr (ac-ft)
1	MONTE CARLO	37.5	6.29	2.5	71	6.29
2	SOUTH BRANCH OF THE BOCA NEGRA ARROYA	366	35.0		366	35.0
3	NORTH BRANCH OF THE BOCA NEGRA ARROYO		23.4			23.4
4	DISCHARGE AT MONTANO	399			135	

LEGEND

- 5070 — EXISTING INTERMEDIATE CONTOUR
- 5071 — EXISTING INDEX CONTOUR
- (80) BASIN ID
- EXISTING BASIN BOUNDARY

GRAPHIC SCALE

(IN FEET)
1 inch = 800 ft

APPENDIX C

WILSON & COMPANY
4900 LANG AVENUE N.E.
SUITE 100
ALBUQUERQUE, NEW MEXICO
87109
(505) 348-4000

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

SPECIAL ASSESSMENT DISTRICT 227
OFFSITE BASIN BOUNDARY MAP

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

City Project No. 707391 | Zone Map No. X-XX | Sheet PLATE 1

WCEA #X1218025
MONTH 2003

X:\Public\PROJECTS\X1218025\W\SHEETS\8125086W01.dwg 8/13/2003 10:07:09 AM MDT

SCANNED BY PLANNING

PROFILE

STA 10+00.00, 65.00' RT,
INSTALL INLET STRUCTURE
EX.GRADE= 5381.00
INV(SW)= ~~5380.50~~ 7951

STA 10+50.00, 10.00' RT,
INSTALL 6' DIA TYPE "E" SD MH
RIM = ~~5377.88~~ 7781
INV(SW)= ~~5371.88~~ 7062
INV(E)= ~~5370.98~~ 7051

320LF 36" RCP, S= 5.00%, Q100=94cfs, V100=13.5fps

320LF 36" RCP, S= 2.22%, Q100=94cfs, V100=13.4fps

94 cfs

HGL

STA 13+70.00, 10.00' RT,
INSTALL 6' DIA TYPE "E" SD MH
RIM = ~~5378.75~~ 7085
INV(W)= ~~5369.69~~ 6952
INV(E)= ~~5369.77~~ 6952

PVC: 16+50
ELEV: 5364.27

16+95.00, 10.00' RT,
INSTALL 6' DIA TYPE "E" SD MH
RIM = ~~5367.55~~ 6352
INV(W)= ~~5356.65~~ 5247
INV(E)= 5356.55 5247

17+55.05, 10.00' RT,
INSTALL 6' DIA TYPE "E" SD MH
RIM = ~~5362.45~~ 6052
INV(W-36")= ~~5356.64~~ 5247
INV(S-30")= 5354.61 5247
INV(E-48")= ~~5354.54~~ 5247
(SEE STA 20+22.16, W RT VISTA VIEJA DR NW SHEET 15)

PVT: 18+50
ELEV: 5360.83

PVI STA = 17+50
PVI ELEV = 5362.04
M.O. = 0.25'
K = 197.26
200.00' VC

285LF 48" RCP, S= 1.20%, Q100=134cfs, V100=11.3fps

285LF 48" RCP, S= 2.22%, Q100=134cfs, V100=13.3fps

EXISTING GROUND ● CL
PROPOSED GRADE ● FLOWLINE RT

STA 20+40.00, 10.00' RT,
INSTALL 6' DIA TYPE "E" SD MH
RIM = ~~5380.77~~ 5820
INV(W)= ~~5351.10~~ 5042
INV(E)= ~~5351.06~~ 5042

MATCHLINE STA 22+00 SEE SHEET 23

PLAN

SCENIC ROAD

10+00, 50' RT, CONSTRUCT 36" RCP INLET STRUCTURE W/ 15'x15' RIPRAP PAD @ END SECTION, SEE DETAIL THIS SHEET

10+50.00, 10' RT, 6' DIA TYPE "E" SD MH

13+70.00, 10' RT, 6' DIA TYPE "E" SD MH

24" RCP LATERAL, TYPE "C" INLET, 18" CONNECTOR & TYPE "A" INLET DEFERRED TO BE CONSTRUCTED WITH ROADWAY

18+95.00, 10' RT, 6' DIA TYPE "E" SD MH

17+55.05, 10' RT, 6' DIA TYPE "E" SD MH

EXISTING 30" WL-4W

20+40.00, 10' RT, 6' DIA TYPE "E" SD MH

VISTA VEJA DR. NW SEE SHEET 15

36" RCP SD

48" RCP SD

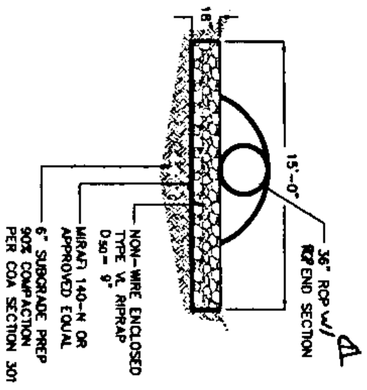
MATCHLINE STA 22+00 SEE SHEET 23

SCALE:
HORIZ: 1" = 50'
VERT: 1" = 5'

SCENIC ROAD, NW

RIPRAP PAD DETAIL

SCALE: NTS



SURVEYOR'S CERTIFICATION

I, Russ P. Hugg, New Mexico Professional Surveyor Number 9750, hereby certify that this as-built information hereon is the result of an actual field survey performed by me or under my direct supervision and that the same is true and correct to the best of my knowledge and belief.

Russ P. Hugg
NMPS No. 9750
3-29-11, 2011

PROFESSIONAL SURVEYOR STATE OF NEW MEXICO No. 9750 RUSS P. HUGG

WILSON & COMPANY
4900 LANG AVENUE NE
ALBUQUERQUE, NM 87109
(505) 348-4000

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

Design Review Committee
City Engineer Approval
Last Design Update

City Project No. 763383
Zone Map No. D-9
Sheet 22 of 33

VISTA VIEJA PHASE 3
STORM DRAIN PLAN & PROFILE
SCENIC ROAD STORM DRAIN

NO.	DATE	REMARKS	BY
		REVISIONS	
		WILSON & COMPANY, ENGINEERS & ARCHITECTS	
		DESIGNED BY RSM DATE JAN 08	
		DRAWN BY STAFF DATE JAN 08	
		CHECKED BY RSM DATE JAN 08	

ENGINEER'S SEAL
ROBERT S. MACLAVE NEW MEXICO 11-17-08 PROFESSIONAL ENGINEER

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

BENCH MARKS

THE STATION IS A 3 1/2" ALUMINUM CAP SET FLUSH IN THE LAVA OUTCROP, AND IS STAMPED "ACS 8-C10, 1986". (NAD 1927), X= 361860.83, Y= 1521476.37

ELEVATION = 5390.130 FT. (SLD 1929)

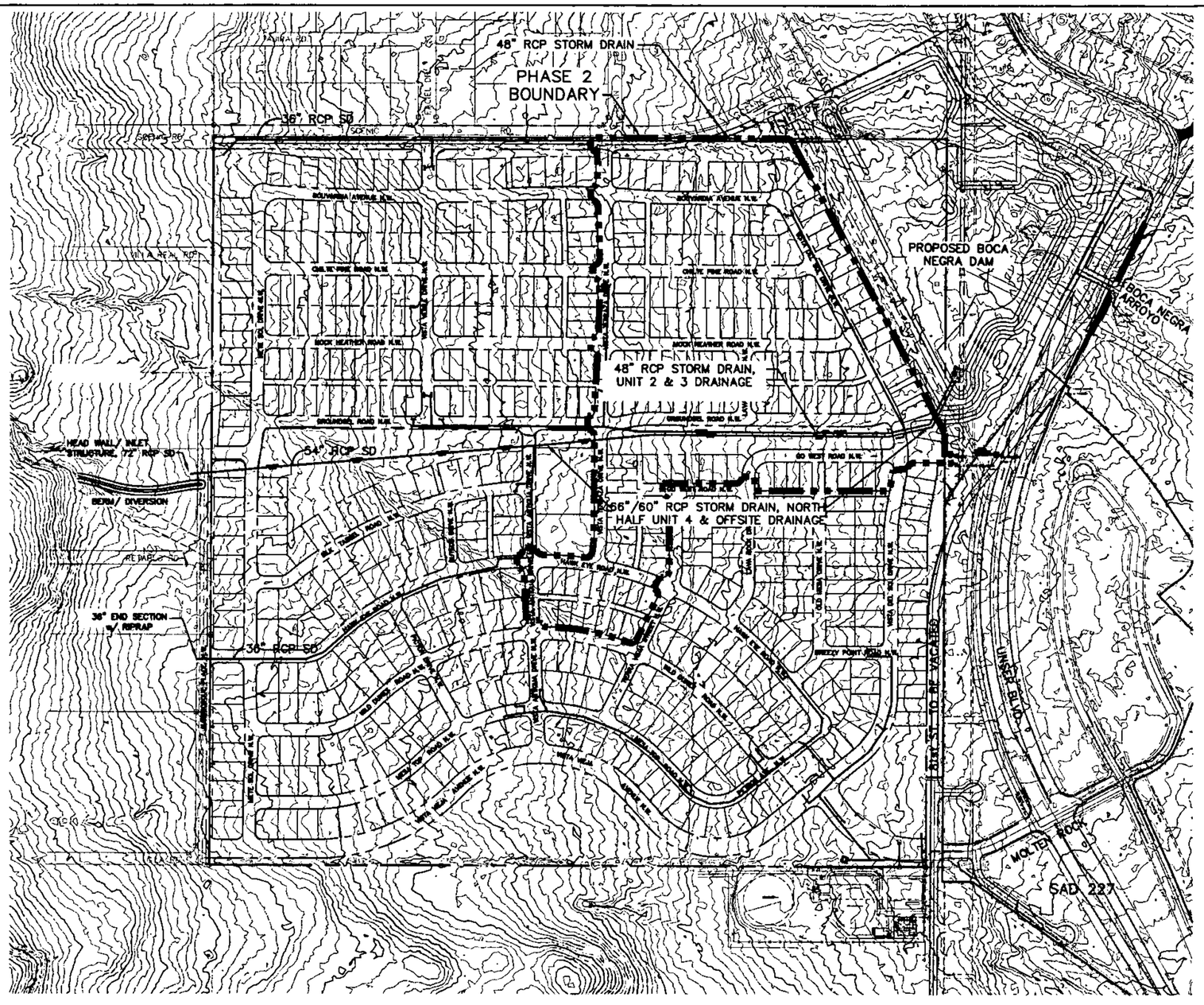
AS-BUILT INFORMATION

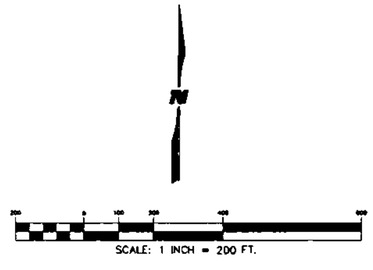
CONTRACTOR SALLS BROTHERS CONSTRUCTION, INC
WORK STAKED BY SURVTEK, INC DATE 8/10 TO 3/11
IMPROVEMENTS ACCEPTANCE BY WILSON & COMPANY DATE 3/11
FIELD VERIFICATION BY SURVTEK, INC DATE 3/8/11
DRAWINGS CORRECTED BY SURVTEK, INC DATE 3/8/11

MICRO-FILM INFORMATION

RECORDED BY DATE
NO.

SCANNED BY PLANNING





SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

BENCH MARKS

THE STATION IS A 3 1/2" ALUMINUM CAP SET FLUSH IN THE LAVA OUTCROP, AND IS STAMPED "ACS 8-C10, 1986". (NAD 1927). X= 1611650.83, Y= 1521476.37

ELEVATION = 5390.130 FT (SLD 1929)

AS-BUILT INFORMATION

CONTRACTOR	
STAKED BY	DATE
INSPECTOR'S ACCEPTANCE BY	DATE
FIELD VERIFICATIONS BY	DATE
REVISIONS PLOTTED BY	DATE
CORRECTIONS BY	DATE

MICRO-FILM INFORMATION

RECORDED BY	DATE
NO.	

ENGINEER'S SEAL

ROBERT S. MALONE, 15063, REGISTERED PROFESSIONAL ENGINEER, 12-31-07, NEW MEXICO

NO.	DATE	REMARKS / REVISIONS	BY

WILSON & COMPANY, ENGINEERS & ARCHITECTS

DESIGNED BY	RSM
DRAWN BY	STAFF
CHECKED BY	RSM
DATE	DECEMBER 2006

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

VISTA VIEJA SUBDIVISION PHASE 4
OVERALL DRAINAGE PLAN

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

WCEA #X3218078
DECEMBER 2006

City Project No.	Zone Map No.	Sheet	Of
763384	D-9	6	35

WILSON & COMPANY

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EXISTING DIVERSION CHANNEL
UNIT 3 BOUNDARY
66"/60" RCP STORM DRAIN
UNIT 4 & OFFSITE DRAINAGE
54" RCP STORM DRAIN
OFFSITE DRAINAGE-UNIT 4
48" RCP STORM DRAIN
UNIT 2 & 3 DRAINAGE
48" SD OUTLET STRUCTURE
48" RCP SD
30" RCP SD
24" RCP SD
36" RCP SD
36" END SECTION W/ RIPRAP

RECORD DRAWING
DATE 4-10-09

City Project No. 7633.84	Zone Map No. D-9		Sheet 34A of 35

City Engineer Approval — DATE
DESIGN REVIEW COMMITTEE — DATE
CITY ENGINEER — DATE

Last Design Update: No. / Date / By

VISTA VEJA SUBDIVISION
OFFSITE DRAINAGE IMPROVEMENTS

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

WILSON & COMPANY
4900 LANG AVENUE NE
ALBUQUERQUE, NM 87110
(505) 348-4000

NO.	DATE	REMARKS / REVISIONS	BY
1	1/18	ADD 72" RCP & 15' CHANNEL/GRADING	RM
2	2/07	REVISED LOT 17 DRAINAGE EASEMENT	RS
		VOLCANO CLIFFS SUBDIVISION UNIT 6	

WILSON & COMPANY, ENGINEERS & ARCHITECTS
DESIGNED BY DSA DATE JANUARY 2008
DRAWN BY JMG DATE JANUARY 2008
CHECKED BY DSA DATE JANUARY 2008

ENGINEER'S SEAL

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

BENCH MARKS

THE STATION IS A 3 1/2" ALUMINUM CAP SET FLUSH IN THE LAVA OUTCROP. AND IS STAMPED "ACS 8-C10, 1986". (NAD 1927).
X= 361860.83, Y= 1521476.37

ELEVATION = 5390.130 FT. (SLD 1929)

AS-BUILT INFORMATION

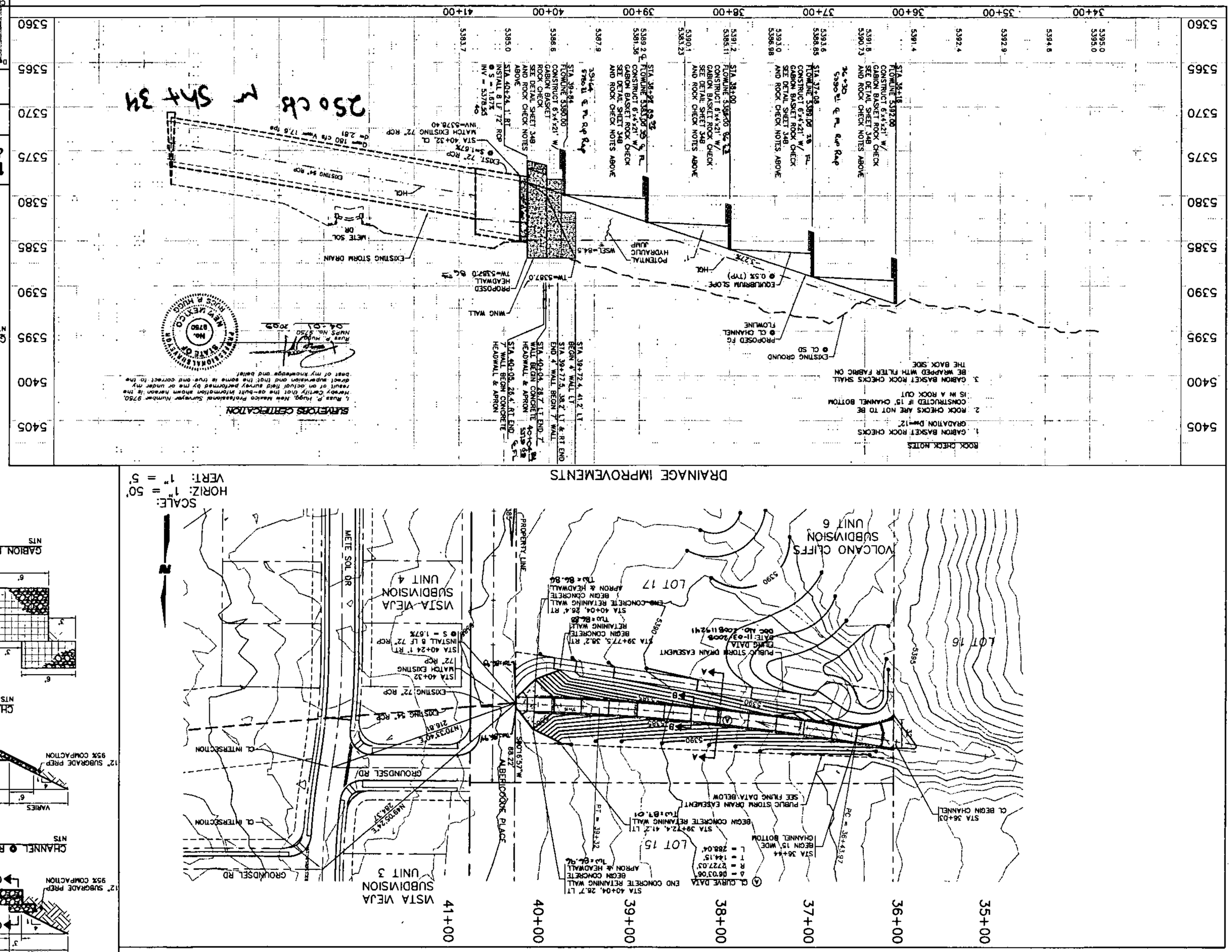
CONTRACTOR'S AS-BUILT INFORMATION

FIELD VERIFICATION BY		DATE
AS-BUILTS BY		DATE
AS-BUILTS REVIEWED BY		DATE
AS-BUILTS ACCEPTANCE BY CONTRACTOR		DATE
AS-BUILTS ACCEPTANCE BY OWNER		DATE
AS-BUILTS ACCEPTANCE BY CITY		DATE

MICRO-FILM INFORMATION
DRAWING NO.
RECORDED BY
DATE

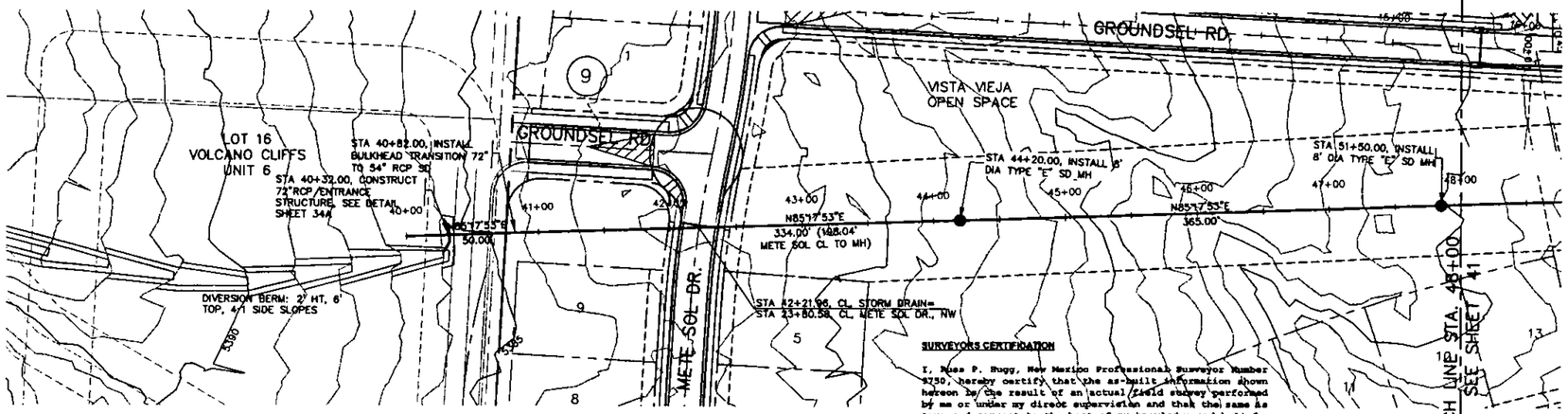
DRAINAGE IMPROVEMENTS

SCALE:
HORIZ: 1" = 50'
VERT: 1" = 5'



SCANNED BY
PLANNING

SCANNED BY PLANNING



PLAN

SURVEYORS CERTIFICATION

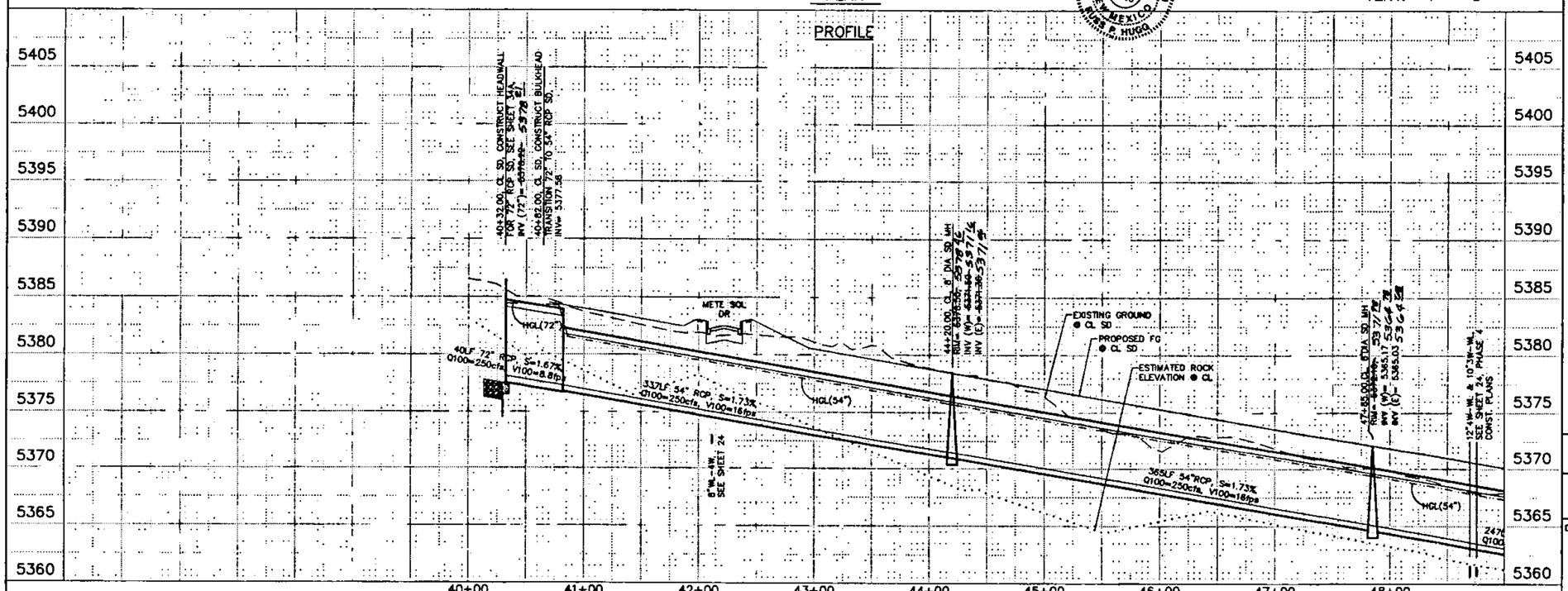
I, Russ P. Hugg, New Mexico Professional Surveyor Number 9750, hereby certify that the as-built information shown hereon is the result of an actual field survey performed by me or under my direct supervision and that the same is true and correct to the best of my knowledge and belief;

Russ P. Hugg
NMPS No. 9750
2-28, 2008

PROFESSIONAL SURVEYOR STATE OF NEW MEXICO No. 9750 RUSS P. HUGG

SCALE:
HORIZ: 1" = 50'
VERT: 1" = 5'

PROFILE



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WCEA #X3218078
OCTOBER 2006

AS-BUILT INFORMATION
CONTRACTOR _____ DATE _____
ENGINEER OF RECORD _____ DATE _____
INSPECTOR _____ DATE _____
FIELD SURVEYOR _____ DATE _____
DRAWING CORRECTED BY _____ DATE _____
MICRO-FILM INFORMATION
RECORDED BY _____ DATE _____

BENCH MARKS
STD. XXX
THE STATION IS A 3 1/2" ALUMINIUM CAP SET FLUSH IN THE LAVA OUTCROP, AND IS STAMPED "ACS 8-C10, 1986". (NAD 1927).
X 351860.83, Y 1521476.37
ELEVATION = 5390.130 FT. (SLD 1929)

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL
ROBERT S. MACLANE NEW MEXICO 14729 REGISTERED PROFESSIONAL ENGINEER

NO.	BY	DATE	REMARKS / REVISIONS

WILSON & COMPANY, ENGINEERS & ARCHITECTS
DESIGNED BY RSM DATE OCTOBER 2006
DRAWN BY RKS DATE OCTOBER 2006
CHECKED BY RSM DATE OCTOBER 2006

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

VISTA VIEJA PHASE 4
OPEN SPACE STORM DRAIN

Design Review Committee: MAR 21 '07 DESIGN REVIEW COMMITTEE
City Engineer Approval: MAR 26 2007 CITY ENGINEER
Last Design Update: Mo./Day/Yr. _____ Mo./Day/Yr. _____

City Project No. 763384
Zone Map No. D-9
Sheet 34 Of 35

WILSON & COMPANY

BY PLANNING DATE 4-10-09

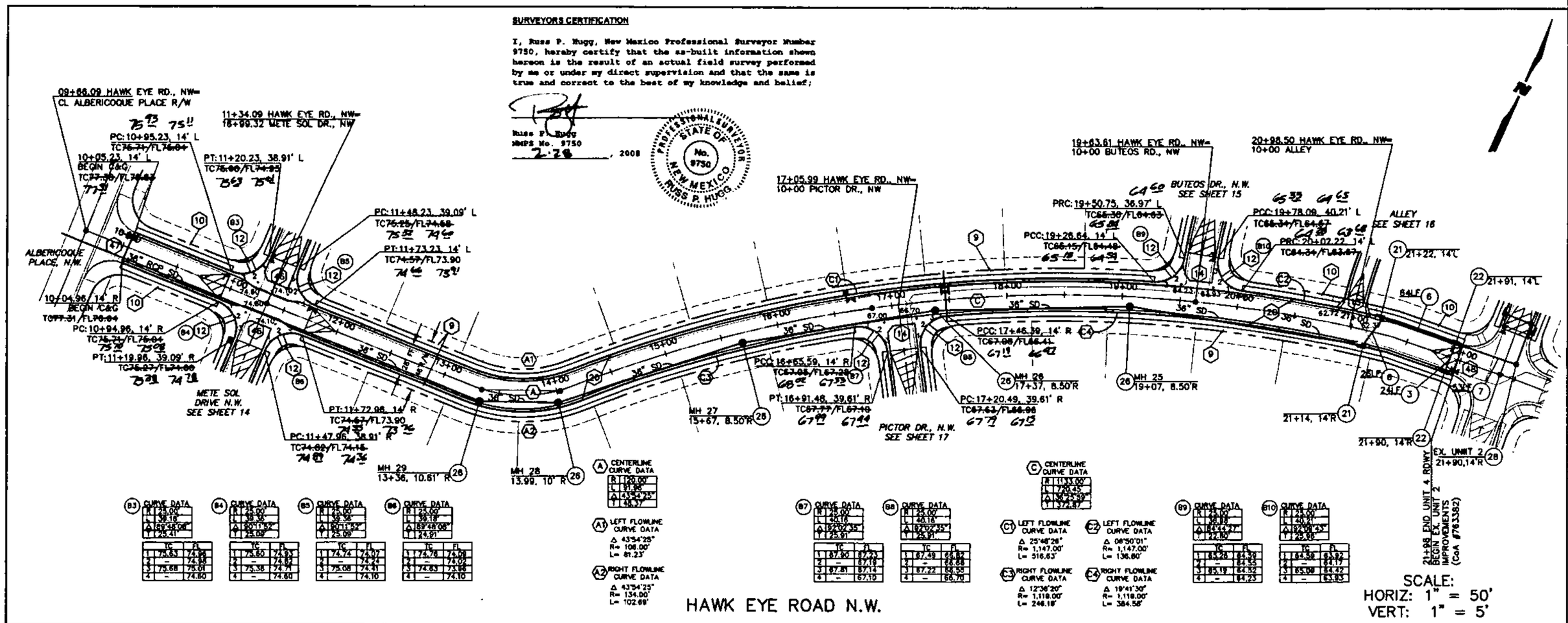
SCANNED BY PLANNING

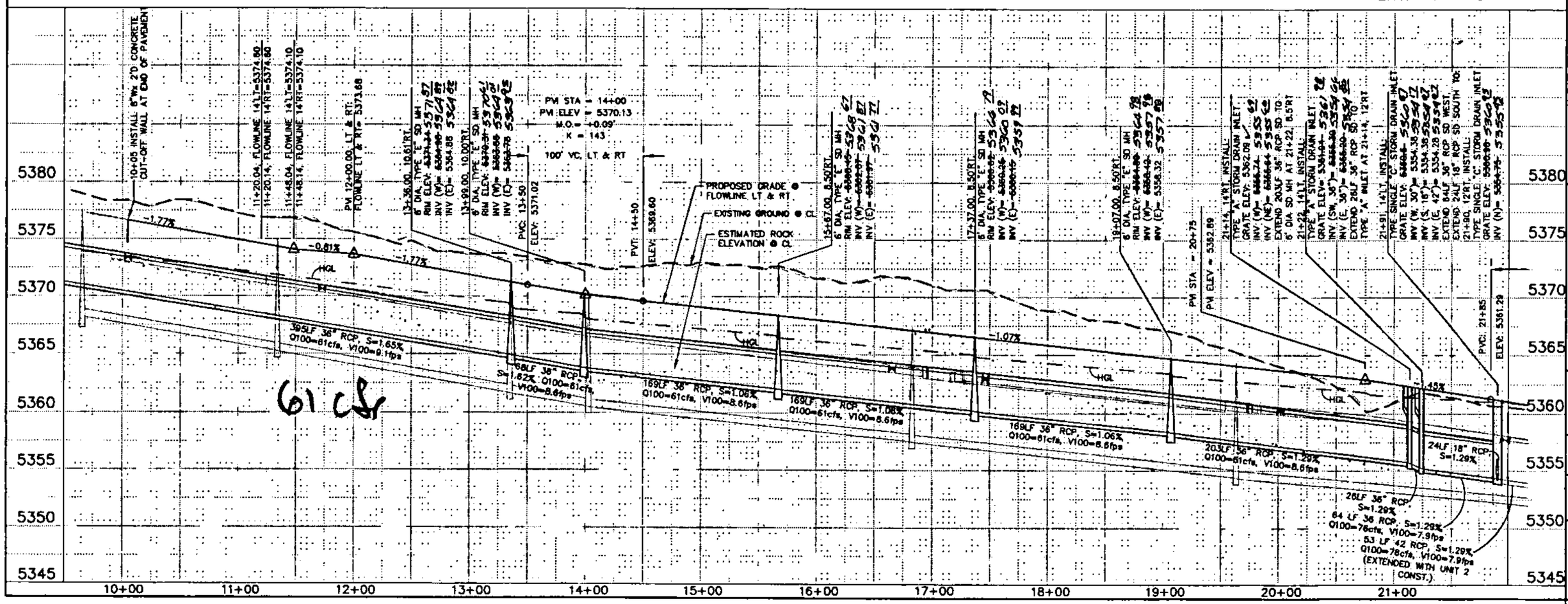
SURVEYORS CERTIFICATION

I, Russ P. Hugg, New Mexico Professional Surveyor Number 9750, hereby certify that the as-built information shown hereon is the result of an actual field survey performed by me or under my direct supervision and that the same is true and correct to the best of my knowledge and belief;

Russ P. Hugg
NMPS No. 9750
2-28, 2008

PROFESSIONAL SURVEYOR — STATE OF NEW MEXICO — No. 9750 — RUSS P. HUGG





PAVING CONSTRUCTION NOTES

I.D.#	DESCRIPTION
9	4' PCC SIDEWALK, PER COA STD. DWG. 2430 (DEFERRED)
10	BUILD 4' PCC SIDEWALK, PER COA STD. DWG. 2430
12	BUILD PCC WHEELCHAIR RAMP W/ TRUNCATED DOMES PER COA STD. DWG. 2441 (SEE DETAIL SHEET 11)
13	BUILD DRIVEPAD 20' NOMINAL, PER COA STD. DWG. 2425
14	BUILD PCC 6' VALLEY GUTTER, PER COA STD. DWG. 2420
20	BUILD PCC STD. CURB AND GUTTER, PER COA STD. DWG. 2415A
48	BUILD PCC 10' VALLEY GUTTER, PER COA STD. DWG. 2422
47	INSTALL CUT-OFF WALL PER CoA STD DWG 2415A. INSTALL TYPE III BARRICADES
46	REMOVE EX. CUT-OFF WALL AND BARRICADES. MATCH NEW ASPHALT PAVEMENT TO EXISTING.

STORM DRAIN CONSTRUCTION NOTES

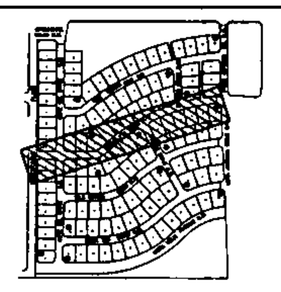
I.D.#	DESCRIPTION
3	INSTALL 18" CL III, RCP STORM DRAIN PER CoA STD. SPEC. 901
6	INSTALL 36" CL III, RCP STORM DRAIN PER CoA STD. SPEC. 901
7	INSTALL 42" CL III, RCP STORM DRAIN PER CoA STD. SPEC. 901
21	INSTALL TYPE "A" STORM INLET PER CoA STD. DWG #2201 & #2202
22	INSTALL TYPE "C" STORM INLET PER CoA STD. DWG #2205. SEE PLAN FOR "SINGLE" OR "DOUBLE"
26	INSTALL 6' DIA SD MANHOLE PER CoA STD. DWG. #2101
28	INSTALL 8' DIA SD MANHOLE PER CoA STD. DWG. #2101

LEGEND

- TC — TOP OF CURB
- FL — FLOWLINE
- 38.85 — FLOWLINE ELEVATION AT INTERSECTION OF PROJECTED FACE OF CURB.
- TRANSITION CROWN PER COA STD DWG 2401

GENERAL NOTES

1. ALL CURB RETURNS HAVE 25' RADIUS AT THEORETICAL FACE OF CURB (FLOWLINE) PER COA STD DWG 2415A, UNLESS OTHERWISE INDICATED
2. ALL STATIONS AND OFFSETS ARE TO THEORETICAL FACE OF CURB (FLOWLINE) PER COA STD DWG 2415A, UNLESS OTHERWISE INDICATED
3. ALL CURB LAYOUT DATA IS AT THEORETICAL FACE OF CURB (FLOWLINE) PER COA STD DWG 2415A, UNLESS OTHERWISE INDICATED. CURB LAYOUT THAT IS A DIRECT OFFSET OF PLATTED BASELINE IS NOT SHOWN
4. ADJUST ALL MANHOLE RIMS AND VALVE COVERS PER COA STD. DWG. 2480



WILSON & COMPANY
4900 LANG AVENUE NE
ALBUQUERQUE, NM 87110
(505) 348-4000

AS-BUILT INFORMATION
CONTRACTOR'S NAME, ADDRESS, & PHONE NO.
WORK PERFORMED BY CONTRACTOR'S FORCES OR SUBCONTRACTORS
INSPECTORS
ACCEPTANCE DATE
VERIFICATION ATTACHED & CERTIFIED BY
CONNECTED AT SURVEYOR
MICRO-FILM INFORMATION
RECORDED BY
DATE

BENCH MARKS
THE STATION IS A 3 1/2" ALUMINUM CAP SET FLUSH IN THE LAVA OUTCROP, AND IS STAMPED "ACS B-C10, 1986". (NAD 1927), X= 361860.83, Y= 1521476.37
ELEVATION = 5390.130 FT. (SLD 1929)

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL
ROBERT S. MACLAREN — NEW MEXICO — 14729 — REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	REMARKS	BY
		REVISIONS	

WILSON & COMPANY, ENGINEERS & ARCHITECTS
DESIGNED BY RSM DATE JANUARY 2007
DRAWN BY STAFF DATE JANUARY 2007
CHECKED BY RSM DATE JANUARY 2007

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

VISTA VIEJA PHASE 4
PAVING AND STORM DRAIN PLAN & PROFILE
HAWK EYE ROAD N.W.

Design Review Committee — DESIGN REVIEW COMMITTEE
City Engineer Approval — DESIGN REVIEW COMMITTEE
Last Design Update — Mo./Day/Yr.

City Project No. 763384
Zone Map No. D-9
Sheet 19 Of 35

4-10-09

CITY OF ALBUQUERQUE

March 21, 2007

Robert MacLake, PE
Wilson & Company
4900 Lang Ave NE
Albuquerque, NM 87109

Re: Vista Vieja Subdivision Unit 2, 3, 4 Revised Drainage Report
Engineer Stamp 1-24-07 (D9/D3)

Dear Mr. MacLake,

Based upon information provided in your submittal dated 1-24-07, the above referenced report is approved for Amended Preliminary Plat action by the DRB and Work Order. This is now the plan that must be certified for Release of SIA and Financial Guarantees.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Bradley L. Bingham, PE
Principal Engineer, Planning Dept.
Development and Building Services

C: file

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

VISTA VIEJA – Phase II, III & IV
Drainage Report

Prepared for

KB Home New Mexico, Inc.

Prepared by

Wilson & Company, Inc.
4900 Lang Ave., NE
Albuquerque, NM 87109
(505) 348-4000
(505) 348-4055 Fax

Robert MacLake, P.E.
January, 2007 revision

WILSON
&COMPANY

Purpose of Study

KB Home New Mexico has completed construction of Vista Vieja Subdivision Unit One infrastructure and proposes to develop the three remaining Units– 2, 3 & 4 per the Plat of Vista Vieja Subdivision, Unit Two (recorded 10/03/06) and the Plat of Vista Vieja Subdivision, Units Three and Four (recorded 10/31/06). The purpose of this report is to revise the drainage plans and reports for design and construction of the Phase II, III and Phase IV storm drain infrastructure required to convey on-site flows from the developed Unit 2, 3 and 4 site as well as convey off-site flows through the site.

Site Description

The proposed Unit 2, 3 & 4 project site is currently undeveloped land. The site is located above the escarpment west of Petroglyph National Monument on the west side of Albuquerque. The site is bound on the north by Scenic Road and Volcano Cliffs Subdivision Unit 8; on the northeast by AMAFCA's proposed Boca Negra Dam site; on the southeast by 81st Street, Unser Boulevard and Unser Heights Subdivision; along the south by City of Albuquerque Open Space, and bound to the west by the two to five acre tracts of Volcano Cliffs Subdivision Unit 6. Vista Vieja Subdivision including Unit 1 is 159 acres and the natural surface slopes at approximately 2% from west to east, Phase II contains approximately 41 acres, Phase III, approximately 34 acres, and Phase IV approximately 44 acres. Unit 1 comprises the southeast quadrant of the Subdivision and Unit 2, 3 and 4, the northeast, northwest and southwest quadrants respectively.

The site conveys significant off-site flows, discharging at two locations along the east side of the site (see Proposed Basin Boundary Map- appendix D). Off-site flows from Basin E (approx 94 cfs, roughly centered along the Scenic Road right-of-way) discharge into the Boca Negra Arroyo, at the proposed Boca Negra Dam site. Flows from Basins A, B, C and D discharge into the North Fork of the South Branch of the Boca Negra Arroyo and are conveyed to the San Antonio Arroyo through a 60-inch RCP storm drain constructed with SAD 227.

Comparison to earlier Phase II, III and IV Drainage Reports

Consistent with earlier Vista Vieja drainage reports, flows from Basin A- currently undeveloped public open space and privately held parcels, (excepting the City water reservoir site), Basin B- open space which will remain landscaped open space within the subdivision and Basin C- the developed flows from Unit 1 and the southern half of Unit 4 are conveyed to the San Antonio Arroyo via the 60 inch storm drain constructed with SAD 227.

In previous reports, diverted off-site flows from Basin D and developed flows from Units 2, 3 and the remainder of Unit 4 were discharged through an earthen channel that transitioned into a box culvert at Vista del Sol Drive, then to a 84-inch RCP storm drain, discharging to a temporary seven acre-foot retention pond within the proposed Boca Negra Dam site. Offsite flows from Basin E were picked up and conveyed down Scenic Road to the proposed Boca Negra Dam.

This report splits the flow previously carried by the channel/culvert/pipe conveyance into three flows. The off-site flows from Basin D are combined with flows from the north half of Unit 4 and conveyed to the Boca Negra Dam site through a 54"/60"/66" RCP storm drain through the drainage easement established for the channel. Developed flows from Unit 2 and all but the northwest 10 acres of Unit 3 are conveyed to the Boca Negra Dam site through a second 48" RCP drain in the former channel drainage easement. The parcels comprising the channel easement, Common Areas Tracts A, B and C in Unit 4 and Tracts C and E in Unit 2 will remain landscaped open space with pedestrian trails serving as maintenance access. Developed flows from the northwest 10 acres of Unit 3 are combined with off-site Basin E flows and conveyed to the Boca Negra Dam site through a 36"/48" RCP drain in the Scenic Road right-of-way.

A project vicinity map and Zone Atlas Map are shown on Figures 1 and 1A on the following pages.

Methodology

This report utilizes the hydrologic and hydraulic methods and guidelines as described in Section 22.2 of the City of Albuquerque Development Process Manual (DPM). The hydrology for the project has been prepared using the modified rational method. The 100-year 6-hour event was used as the design storm for this project.

Existing Conditions

The existing Units 2, 3 & 4 site is currently undeveloped. The soils are hydrologic group Madurez-Wink (MWA), and Latene (LTB) Associations. The map on Figure 2 shows the hydraulic soil types based on the SCS Bernalillo County Soils Map, 1977. The soils are well drained and subject to erosion. These moderately permeable soils overlay basalt rock that is 1-10 feet deep.

The Boca Negra Arroyo has a Zone A Flood Zone across the southern third of the site (within Unit 1 and 4) as shown in the FEMA Flood Map on Figure 3. This project will require a LOMR to modify the FEMA flood map.

The existing drainage was analyzed in the Special Assessment District 227 Drainage Report as Basin 83 (AP-3) with an allowable 100-year flow of 229 cfs. The Basin 83 flow is collected into a 60-inch RCP storm drain constructed with SAD 227 (see Proposed Basin Boundary Map- appendix D). The 60" RCP drain follows the path of the North Fork of the South Branch of the Boca Negra Arroyo conveying flows under 81st Street, through SAD 227 along Onyx Drive and into the Unser Boulevard right-of-way. The Unser storm drain accepts the remainder of developed SAD 227 flow near Marigold Drive and conveys the combined flow in the 60-inch RCP to the San Antonio Arroyo structure at Montano Road. Basin 83 is split into Basins A, B, C & D in this report. Basin E currently follows Scenic Road discharging into the Boca Negra Arroyo.

Proposed Conditions

The revised Phase II, III & IV project grading and drainage plans have been prepared in substantial compliance with the master drainage plan dated October 2004 and revised April 2004 Phase I drainage plan. These grading plans are included as Plates 2-7, found in the pockets after the report. The revised basin boundary map is included as Appendix D.

The Hydrologic Analysis is shown in Appendix A.

Unit 2 lot and street grading and drainage remains little changed from that submitted with the April, 2006 Report. Unit 2 is divided into five basins. Runoff from developed lots in Basins 201, 202, 203 and 205 is picked up with type "C" inlets in sump conditions in Vista del Sol and conveyed through storm drain pipes into the 48" storm drain discharging into the Boca Negra Dam site. Basin 205 will remain landscaped open space. Runoff from Basin 205 and 210 will be picked up in type "D" inlets at the low point in the northeast corner of the parcels and also discharged to the Boca Negra through the 48" storm drain. Design of the City Park comprising much of basin 210 may cause the inlet location to be adjusted. Basins identified in the earlier report as off-site basins within Unit 3 (OF201 and OF203) are adjusted to reflect final platting and grading and considered as smaller developed basins 306 through 309 below.

On-site flows from Unit 3 are described through 10 drainage sub-basins. As in the earlier report, Unit 3 runoff from developed lots in the area between Vista Terraza and Vista Verile, (here described as Basins 306, 307, 308 and 309), is picked up with type "C" inlets in a sump condition in Vista Terraza. These flows will now be conveyed to the Boca Negra Dam site through the 48" storm drain rather than the open channel.

The developed flows from basins 303 and 304 are collected in type "C" inlets in a sump condition on Vista Verile Street and a series of type "A" and "C" inlets in Groundsel Road. Basin 305 will remain landscaped open space and runoff from Basin 305 will be picked up in a type "D" inlet at the low point in the northeast corner of the parcel and also discharged to the Boca Negra through the 48" storm drain. Developed flows from basins 301 and 302 are collected using type "C" inlets in sump condition on Vista Verile Drive and directed to the Scenic Road storm drain rather than the central channel drain as in the earlier report. While Scenic Road paving and curb and gutter are deferred, the 36"/48" RCP storm drain will be built with Unit 3 construction, including the extension and inlet to intercept offsite Basin "E flows and the capacity to add Scenic Road curb inlets later.

Off-site flows from Basin "D" and developed flows from the north half of Unit 4 are conveyed to the Boca Negra Dam site through a second RCP storm drain placed in the drainage easement established for the channel. The total offsite developed flows to the Vista Vieja storm drain system is approximately 310 cfs. Approximately 250 cfs is intercepted in a 72" RCP/entrance structure adjacent to the west end of Groundsel Road. The 72" pipe transitions to a 54" RCP pipe in a box just east of Albericoque Place then increases to a 66" RCP pipe at Vista Antigua as it picks up flows from the north half of Unit 4. A 36" RCP/entrance structure west of Hawk Eye Road intercepts the remaining 61 cfs of off-site flows from Basin "D" and a 36" line conveys the flow to Vista Antigua. Developed flows from basins 401 & 402 in Unit 4 are collected using a series of inlets on Silk Tassel Road NW, Hawk Eye Road NW and Vista Antigua Drive NW,

then conveyed north to the 66" RCP storm drain in the Vista Antigua line. Developed flows from basins 403 and 404 are collected through a series of inlets on Mesa Top Road NW and Vista Antigua Drive NW and conveyed to the existing detention pond at the southeast corner of the site through the existing Unit 1 storm drain system. Runoff flows from sub-basin 405, Vista Vieja right-of-way, discharge on to Vista Vieja Avenue NW and are captured in the sump inlets built in Unit 1. Basin 406 will remain landscaped open space and runoff from 406 combines with off-site flow from Basin "A" discharging through the existing Unit 1 pond and 60-inch pipe constructed with SAD 227.

Parcel "D" in Unit 2 is part of the Boca Negra Dam scheduled to be under construction later this year. This flow will be conveyed to a temporary retention pond located within the future Boca Negra Dam. The retention requirements are twice the 100-year event or 7 acre feet per the drainage master plan (see Appendix B).

The proposed streets vary in slope from 0.5% to 4.0%. Street capacities were calculated for the 28 foot face-to-face street (worst case), with various grades and with the specific energy at 10 inches. A street grade of 4.0% and specific energy at 10 inches is the most limiting with a street capacity of 30 cfs. The maximum flow for a street with a .5% grade is 48 cfs. We have proposed inlets to capture flows in the streets at locations to prevent the streets from reaching these calculated capacities. The flows are then conveyed via pipe systems to the Scenic or central RCP storm drain lines. The street capacity analysis is shown in Appendix C.

The Hydraulic analysis for sizing the system is shown in Appendix B. The system in Unit 2, 3 and 4 conveys various flows for a combined total of 526.5 cfs from on-site basins and off-site basins. The remaining off-site flows (Scenic Drive) discharge to the Boca Negra Channel. The total discharge is in compliance with the Drainage Master Plan and the Capacity of the down-stream conveyance system.

The Drainage Basin Map and proposed system is shown on Plate 1.

Reference Data:

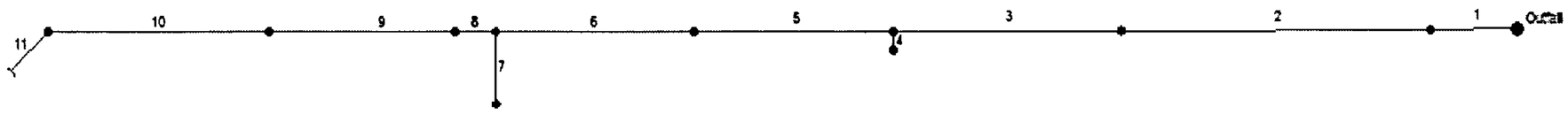
1. Boca Negra – Mariposa Arroyo Hydrologic & Hydraulic Analysis Prepared for AMAFCA by Resource Technology, Inc., 2002 (Establishes offsite flows)

2. Unser Boulevard Corridor Study & Record of Decision, Prepared for COA by ASCG

3. SAD 227 Unser Boulevard Middle Section, Prepared for Volcano Cliffs Property Owners Association by Wilson & Company, Inc., June 2003

4. Boca Negra – Mariposa Arroyo Drainage Management Plan, Prepared for AMAFCA by Research Technology, Inc., 2004 (Establishes Boca Negra Dam Site)

Hydraflow Plan View



Scenic- V Verile	No. Lines: 11	01-10-2007

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Drng area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line type	N value (n)	J-loss coeff (K)	Inlet/ Rim El (ft)	
1	End	129.0	179.7	MH	0.00	0.00	0.00	0.0	5329.00	1.00	5330.29	48	Cir	0.013	0.15	5343.00	BocaNegra- Scenic
2	1	434.0	0.0	MH	0.00	0.00	0.00	0.0	5330.41	2.01	5339.14	48	Cir	0.013	0.15	5351.00	Scenic
3	2	319.0	0.0	MH	0.00	0.00	0.00	0.0	5339.32	2.57	5347.51	48	Cir	0.013	1.00	5355.00	Scenic
4	3	24.0	-90.0	MH	4.00	0.00	0.00	0.0	5347.61	1.96	5348.08	24	Cir	0.013	1.00	5355.00	Scenic Lateral
5	3	279.0	0.5	MH	0.00	0.00	0.00	0.0	5347.61	1.24	5351.06	48	Cir	0.013	0.15	5359.00	Scenic
6	5	279.0	-0.2	MH	0.00	0.00	0.00	0.0	5351.16	1.20	5354.51	48	Cir	0.013	1.00	5362.50	Scenic
7	6	94.0	-90.0	MH	36.00	0.00	0.00	0.0	5354.61	1.50	5356.02	30	Cir	0.013	1.00	5362.50	V Verile
8	6	55.0	0.0	MH	4.00	0.00	0.00	0.0	5355.61	1.71	5356.55	36	Cir	0.013	0.15	5363.50	Scenic
9	8	321.0	0.0	MH	0.00	0.00	0.00	0.0	5356.65	2.22	5363.77	36	Cir	0.013	0.15	5371.00	Scenic
10	9	316.0	0.0	MH	0.00	0.00	0.00	0.0	5363.87	2.22	5370.90	36	Cir	0.013	0.75	5378.00	Scenic
11	10	48.0	-45.0	Hdwl	94.00	0.00	0.00	0.0	5371.00	5.21	5373.50	36	Cir	0.013	1.00	5379.00	Scenic

Scenic- V Verile | Number of lines: 11 | Date: 01-12-2007

Hydraulic Grade Line Computations

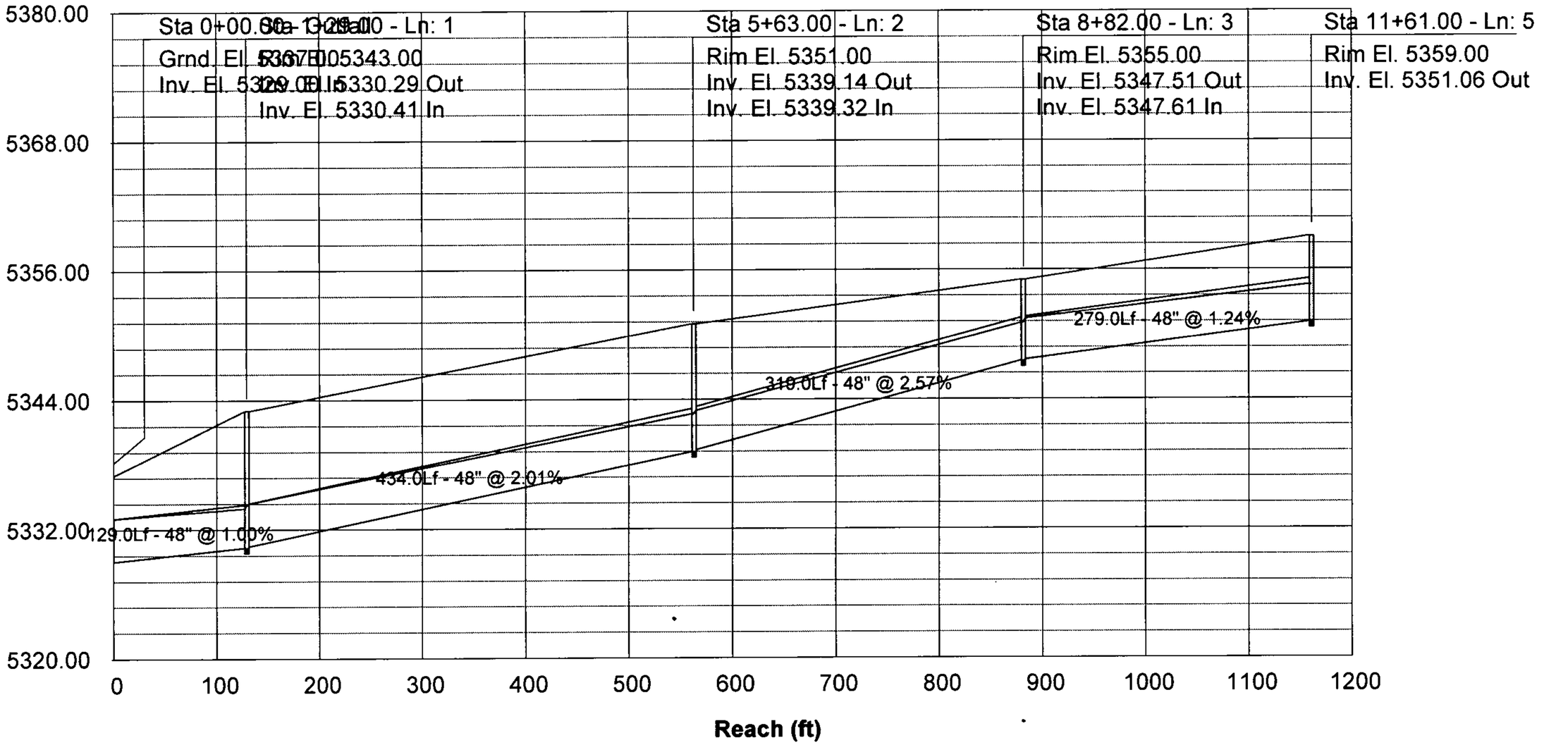
Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf		Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf	Ave Sf	Enrgy loss		
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)
1	48	138.0	5329.00	5333.00	4.00	12.56	10.98	1.88	5334.88	0.923	129	5330.29	5333.95	3.66	12.05	11.45	2.04	5335.99	0.803	0.863	1.114	0.15	0.31
2	48	138.0	5330.41	5334.42	4.00	11.66	10.98	1.88	5336.29	0.923	434	5339.14	5342.64	3.50**	11.66	11.83	2.18	5344.82	0.835	0.879	n/a	0.15	n/a
3	48	138.0	5339.32	5342.94	3.62	11.66	11.53	2.07	5345.01	0.809	319	5347.51	5351.01	3.50**	11.66	11.83	2.18	5353.19	0.835	0.822	n/a	1.00	n/a
4	24	4.00	5347.61	5353.16	2.00	3.14	1.27	0.03	5353.19	0.031	24.0	5348.08	5353.17	2.00	3.14	1.27	0.03	5353.20	0.031	0.031	0.008	1.00	0.03
5	48	134.0	5347.61	5351.42	3.81	11.56	10.85	1.83	5353.25	0.754	279	5351.06	5354.52	3.46**	11.56	11.60	2.09	5356.61	0.799	0.777	n/a	0.15	0.31
6	48	134.0	5351.16	5354.84	3.68	11.56	11.07	1.91	5356.75	0.755	279	5354.51	5357.97	3.46**	11.56	11.60	2.09	5360.06	0.799	0.777	n/a	1.00	2.09
7	30	36.00	5354.61	5359.23	2.50	4.91	7.34	0.84	5360.06	0.771	94.0	5356.02	5359.95	2.50	4.91	7.33	0.84	5360.79	0.771	0.771	0.724	1.00	0.84
8	36	98.00	5355.61	5358.61	3.00*	7.07	13.87	2.99	5361.60	2.160	55.0	5356.55	5359.80	3.00	7.07	13.86	2.99	5362.79	2.159	2.160	1.188	0.15	0.45
9	36	94.00	5356.65	5360.49	3.00	7.07	13.30	2.75	5363.24	1.987	321	5363.77	5366.77	3.00	7.07	13.30	2.75	5369.52	1.927	1.957	6.282	0.15	0.41
10	36	94.00	5363.87	5367.18	3.00	6.96	13.30	2.75	5369.93	1.987	316	5370.90	5373.77	2.87**	6.96	13.50	2.83	5376.60	1.727	1.857	n/a	0.75	n/a
11	36	94.00	5371.00	5373.85	2.85	6.96	13.54	2.85	5376.71	1.721	48.0	5373.50	5376.37	2.87**	6.96	13.50	2.83	5379.21	1.727	1.724	n/a	1.00	n/a

Scenic- V Verile	Number of lines: 11	Run Date: 01-12-2007

Notes: * Normal depth assumed.; ** Critical depth.

Storm Sewer Profile

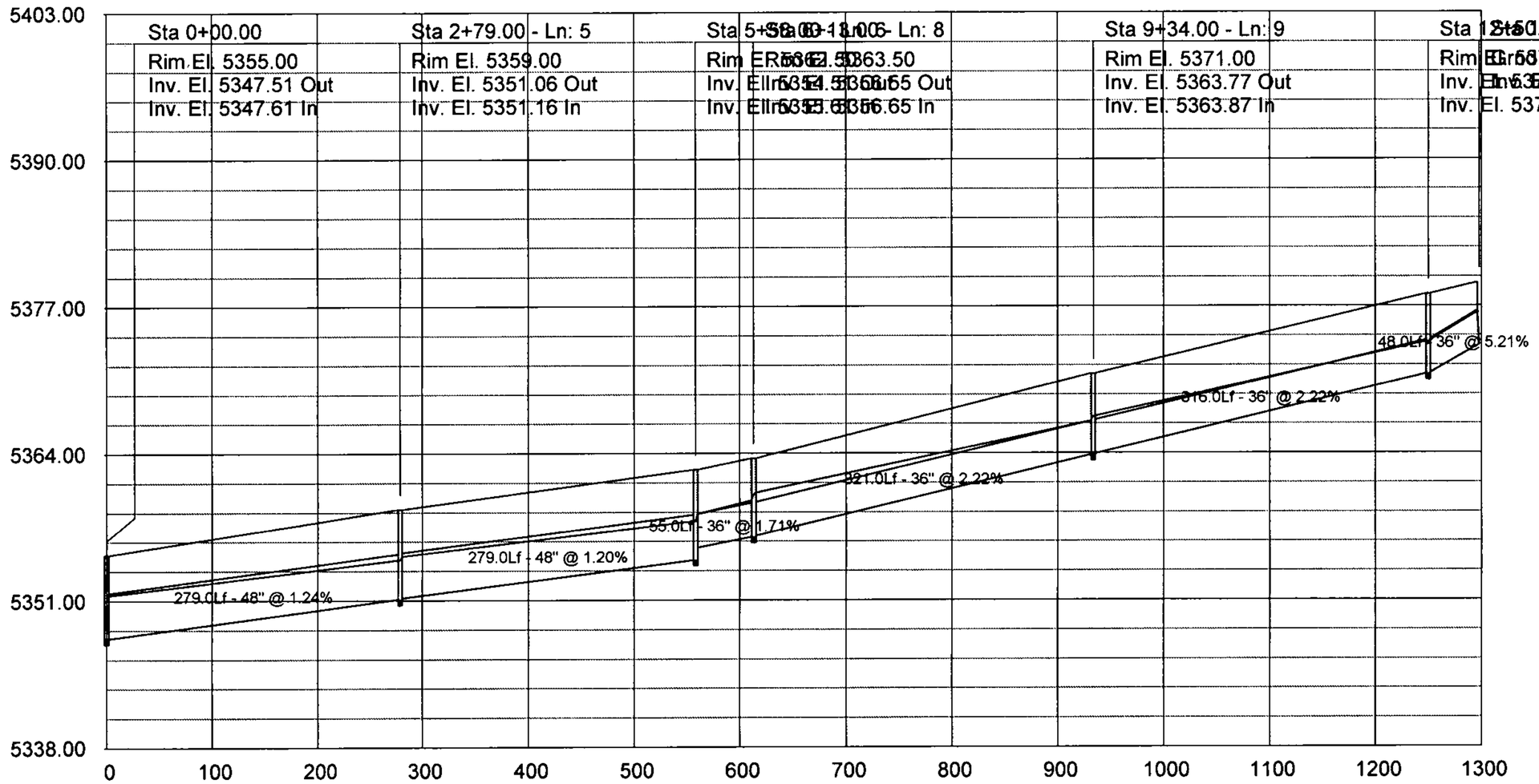
Proj. file: Scenic- V Verile.stm



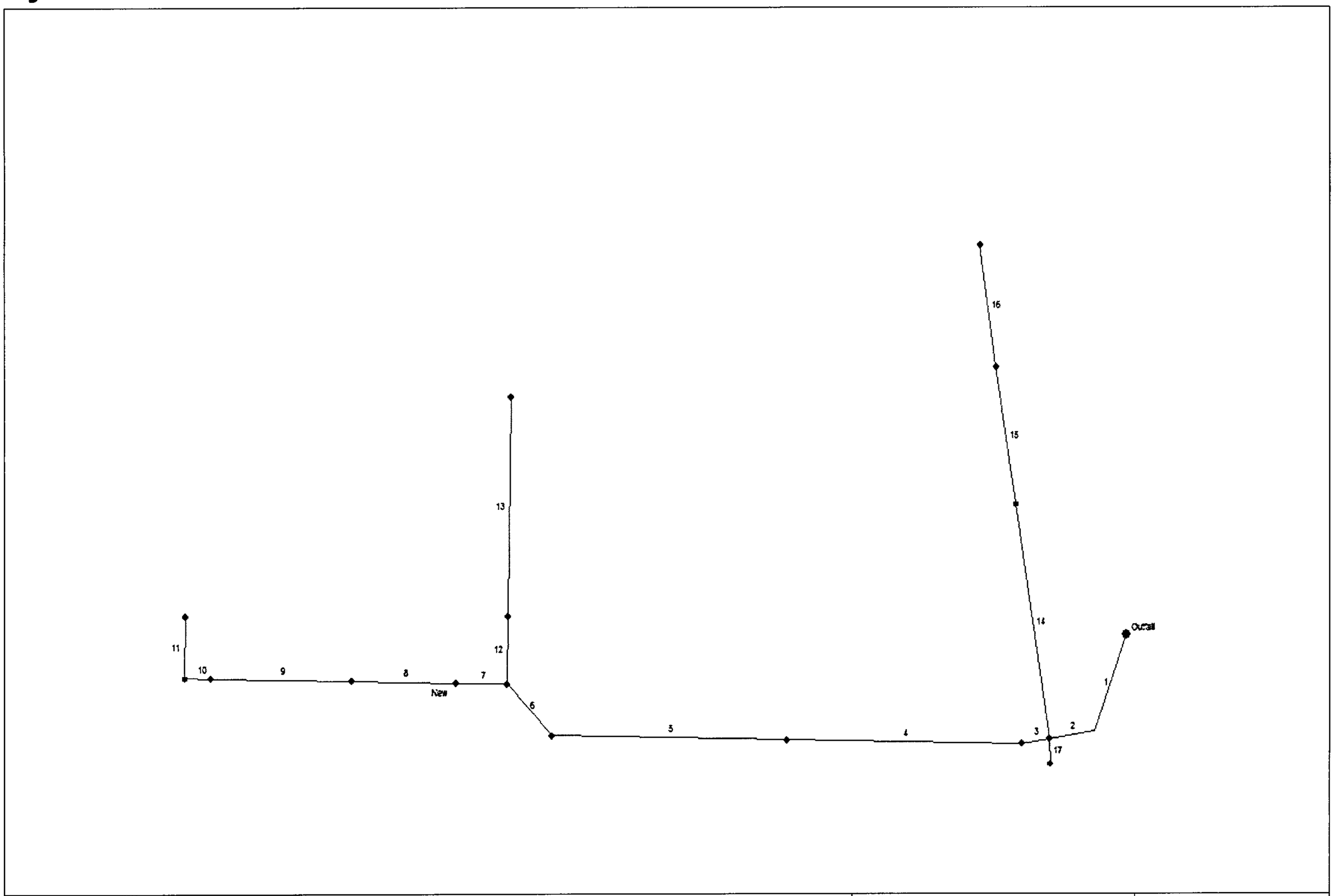
Storm Sewer Profile

Proj. file: Scenic- V Verile.stm

Elev. (ft)



Hydraflow Plan View



Central 01 North	No. Lines: 17	01-12-2007

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Drng area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line type	N value (n)	J-loss coeff (K)	Inlet/ Rim El (ft)	
1	End	177.0	110.0	None	0.00	0.00	0.00	0.0	5320.00	3.44	5326.08	48	Cir	0.013	0.90	5337.00	
2	1	85.0	61.0	MH	0.00	0.00	0.00	0.0	5326.34	3.22	5329.08	48	Cir	0.013	1.00	5341.00	
3	2	54.0	0.0	MH	5.00	0.00	0.00	0.0	5329.34	3.30	5331.12	48	Cir	0.013	0.21	5338.00	Open Space
4	3	442.0	10.0	MH	0.00	0.00	0.00	0.0	5331.33	1.72	5338.95	48	Cir	0.013	0.15	5347.00	Open Space
5	4	442.0	0.0	MH	5.00	0.00	0.00	0.0	5339.06	1.03	5343.62	48	Cir	0.013	0.75	5353.00	Open Space
6	5	122.0	45.0	MH	0.00	0.00	0.00	0.0	5343.72	1.02	5344.96	48	Cir	0.013	0.75	5355.00	OS/ Groundsel
7	6	96.0	-45.0	MH	8.00	0.00	0.00	0.0	5346.06	3.98	5349.88	30	Cir	0.013	0.15	5356.00	Groundsel
8	7	196.0	0.0	MH	11.00	0.00	0.00	0.0	5349.98	1.63	5353.18	30	Cir	0.013	0.15	5359.00	Groundsel
9	8	266.0	0.0	MH	7.00	0.00	0.00	0.0	5353.28	1.05	5356.07	30	Cir	0.013	0.15	5364.00	Groundsel
10	9	50.0	0.0	MH	8.00	0.00	0.00	0.0	5356.17	1.72	5357.03	24	Cir	0.013	1.00	5365.00	Groundsel
11	10	105.0	90.0	MH	15.00	0.00	0.00	0.0	5357.13	0.51	5357.66	24	Cir	0.013	1.00	5365.00	V Verile
12	6	117.0	45.0	MH	24.00	0.00	0.00	0.0	5345.07	0.45	5345.60	42	Cir	0.013	0.15	5353.00	V Terraza
13	12	375.0	0.0	MH	31.00	0.00	0.00	0.0	5345.70	0.43	5347.30	36	Cir	0.013	1.00	5353.00	V Terraza
14	2	407.0	90.0	MH	24.00	0.00	0.00	0.0	5329.40	1.37	5334.99	42	Cir	0.013	0.15	5342.00	V del Sol
15	14	238.0	0.0	MH	0.00	0.00	0.00	0.0	5335.09	0.41	5336.07	36	Cir	0.013	0.15	5343.00	V del Sol
16	15	210.0	0.8	MH	34.00	0.00	0.00	0.0	5336.17	0.40	5337.02	36	Cir	0.013	1.00	5342.00	V del Sol
17	2	42.7	-84.1	MH	28.00	0.00	0.00	0.0	5332.79	5.01	5334.93	24	Cir	0.013	1.00	5342.00	V del Sol

Central 01 North | Number of lines: 17 | Date: 01-12-2007

Hydraulic Grade Line Computations

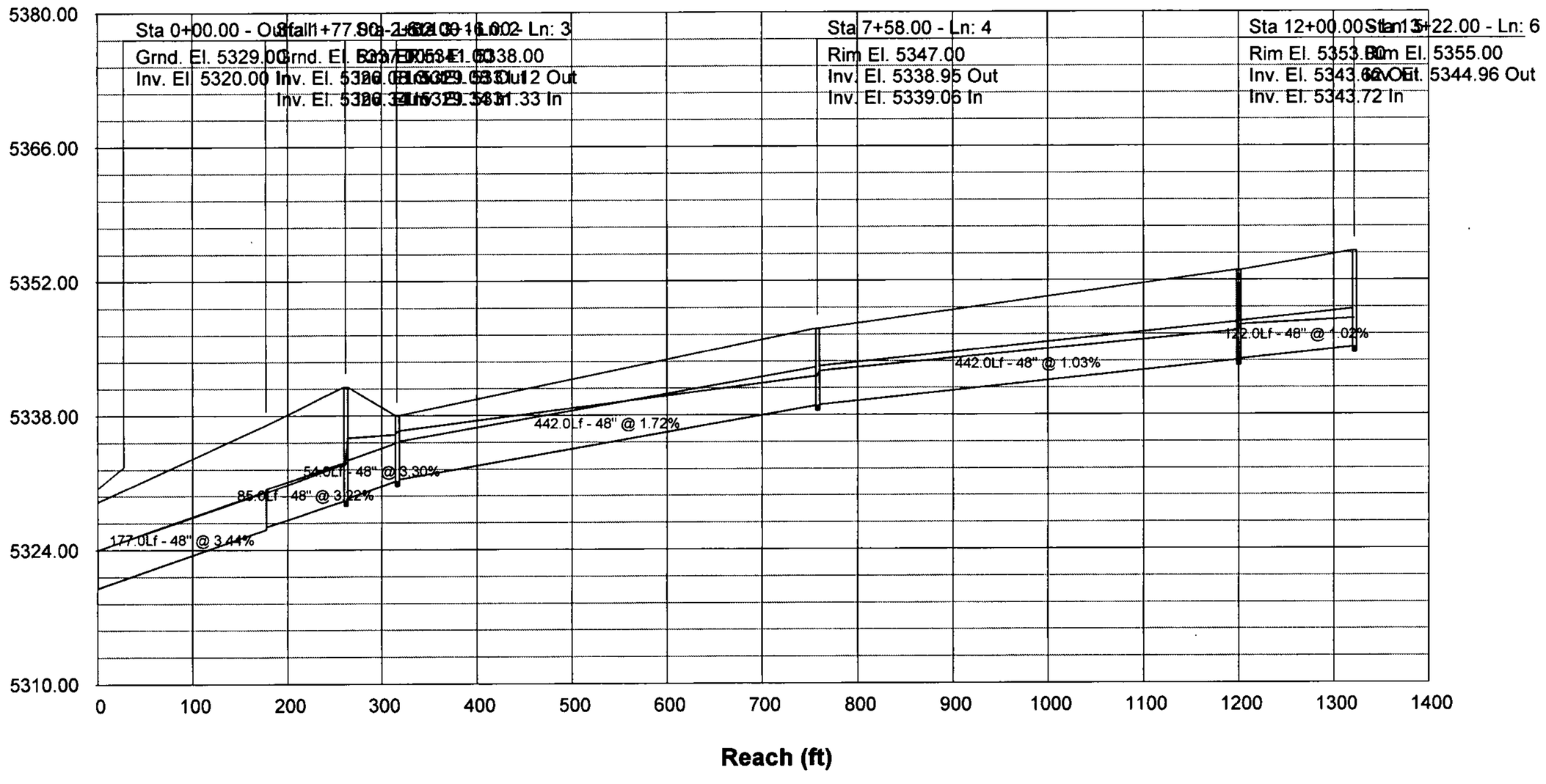
Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf		Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf	Ave Sf	Enrgy loss		
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)
1	48	200.0	5320.00	5324.00	4.00	12.41	15.92	3.94	5327.94	1.939	177	5326.08	5329.93	3.85**	12.41	16.11	4.04	5333.97	1.692	1.816	n/a	0.90	3.63
2	48	200.0	5326.34	5330.03	3.69	12.41	16.52	4.24	5334.27	1.681	85.0	5329.08	5332.93	3.85**	12.41	16.11	4.04	5336.97	1.692	1.687	n/a	1.00	4.04
3	48	114.0	5329.34	5335.69	4.00	12.56	9.07	1.28	5336.97	0.630	54.0	5331.12	5336.03	4.00	12.57	9.07	1.28	5337.31	0.630	0.630	0.340	0.21	0.27
4	48	109.0	5331.33	5336.40	4.00	12.56	8.68	1.17	5337.58	0.576	442	5338.95	5342.04	3.09**	10.41	10.47	1.70	5343.74	0.649	0.612	n/a	0.15	n/a
5	48	109.0	5339.06	5342.57	3.51	11.69	9.32	1.35	5343.92	0.519	442	5343.62	5346.71	3.09**	10.41	10.47	1.70	5348.41	0.649	0.584	n/a	0.75	n/a
6	48	104.0	5343.72	5347.35	3.63	11.98	8.68	1.17	5348.52	0.459	122	5344.96	5347.98	3.02**	10.17	10.23	1.63	5349.60	0.622	0.541	n/a	0.75	n/a
7	30	49.00	5346.06	5348.05	1.99	4.71	11.68	2.12	5350.17	1.504	96.0	5349.88	5352.17	2.29**	4.71	10.40	1.68	5353.85	1.241	1.373	n/a	0.15	n/a
8	30	41.00	5349.98	5352.77	2.50	4.50	8.35	1.09	5353.85	1.000	196	5353.18	5355.34	2.15**	4.50	9.11	1.29	5356.63	0.923	0.961	n/a	0.15	0.19
9	30	30.00	5353.28	5356.05	2.50	4.91	6.11	0.58	5356.63	0.535	266	5356.07	5357.90	1.83**	3.85	7.79	0.94	5358.84	0.681	0.608	n/a	0.15	n/a
10	24	23.00	5356.17	5358.01	1.84	3.02	7.61	0.90	5358.91	0.898	50.0	5357.03	5358.73	1.70**	2.84	8.09	1.02	5359.75	0.975	0.936	n/a	1.00	1.02
11	24	15.00	5357.13	5359.25	2.00	3.14	4.78	0.35	5359.60	0.440	105	5357.66	5359.66	2.00	3.14	4.78	0.35	5360.01	0.424	0.432	0.454	1.00	0.35
12	42	55.00	5345.07	5349.08	3.50	9.62	5.72	0.51	5349.59	0.299	117	5345.60	5349.44	3.50	9.62	5.72	0.51	5349.94	0.299	0.299	0.350	0.15	0.08
13	36	31.00	5345.70	5349.72	3.00	7.07	4.39	0.30	5350.02	0.216	375	5347.30	5350.53	3.00	7.07	4.39	0.30	5350.83	0.216	0.216	0.810	1.00	0.30
14	42	58.00	5329.40	5336.40	3.50	9.62	6.03	0.57	5336.97	0.332	407	5334.99	5337.59	2.60	7.65	7.58	0.89	5338.48	0.411	0.371	1.512	0.15	0.13
15	36	34.00	5335.09	5338.25	3.00	7.07	4.81	0.36	5338.61	0.260	238	5336.07	5338.80	2.73	6.75	5.03	0.39	5339.19	0.227	0.243	0.579	0.15	0.06
16	36	34.00	5336.17	5338.89	2.72	6.74	5.04	0.40	5339.29	0.227	210	5337.02	5339.31	2.29	5.78	5.88	0.54	5339.84	0.301	0.264	0.555	1.00	0.54
17	24	28.00	5332.79	5335.73	2.00	3.01	8.91	1.24	5336.97	1.533	42.7	5334.93	5336.76	1.83**	3.01	9.29	1.34	5338.10	1.334	1.434	n/a	1.00	1.34

Central 01 North | Number of lines: 17 | Run Date: 01-12-2007

Notes: ; ** Critical depth.; j-Line contains hyd. jump.

Storm Sewer Profile

Proj. file: Central01 North.stm



Storm Sewer Profile

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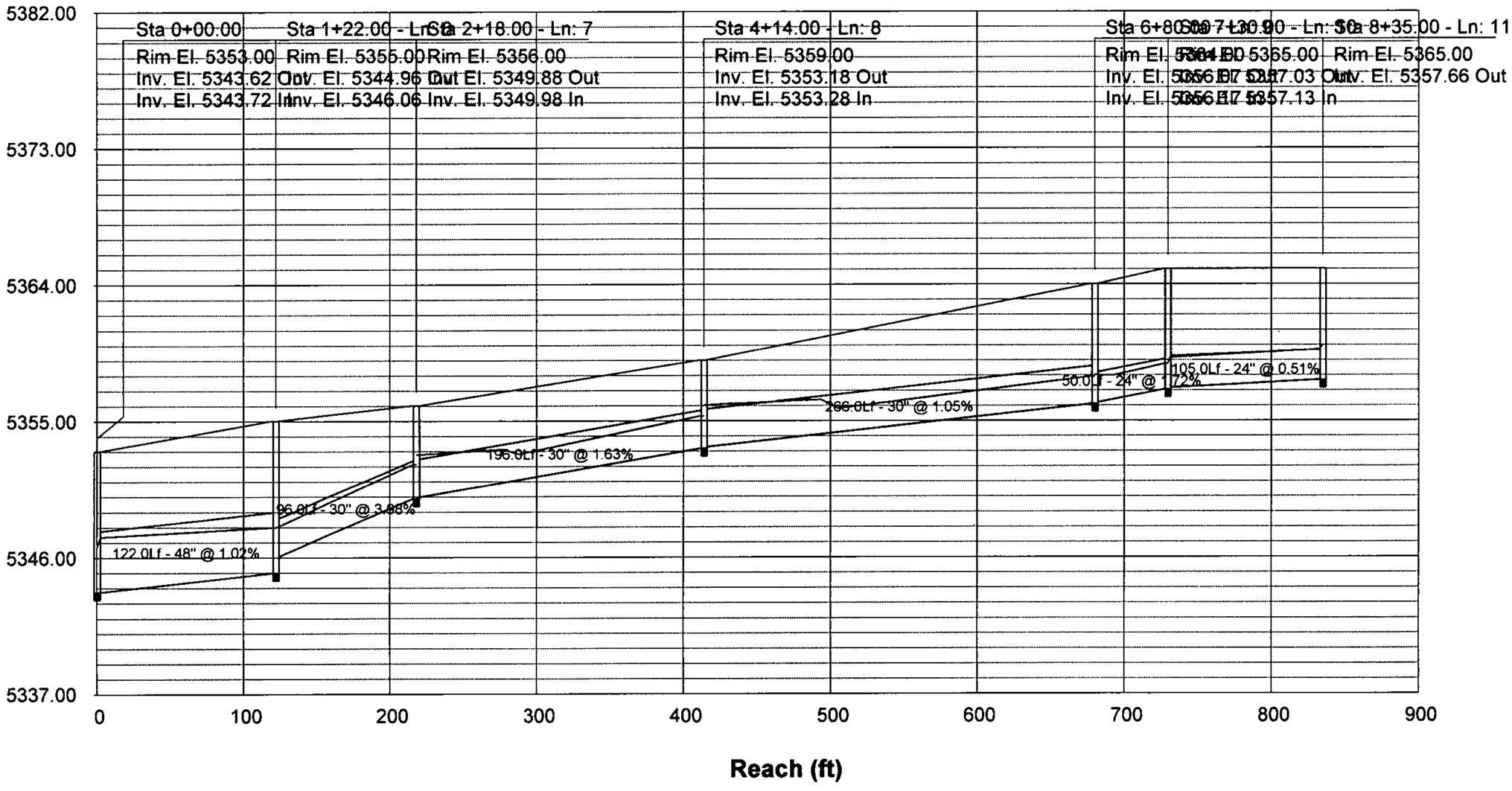

Storm Sewer Profile

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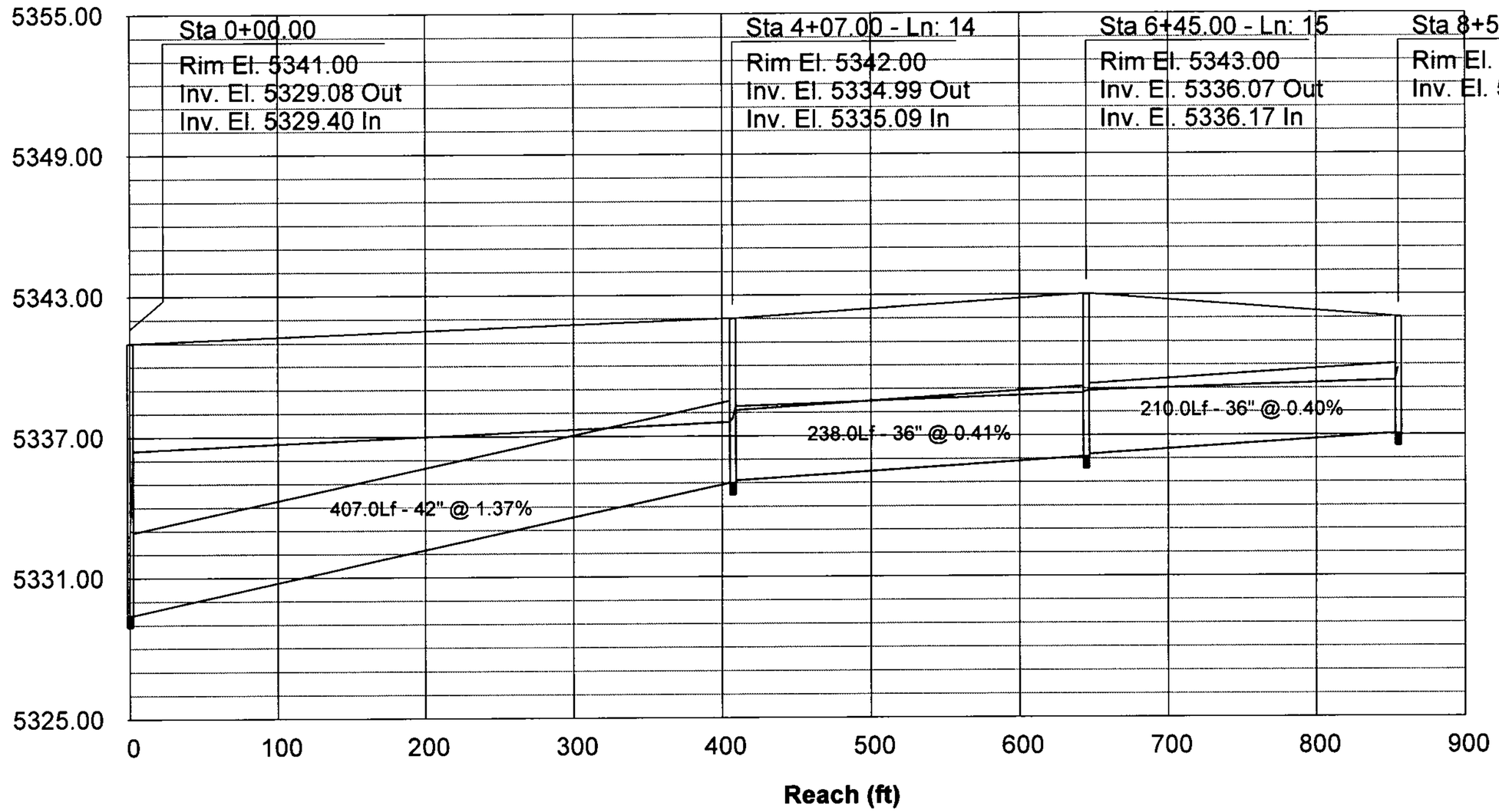

Storm Sewer Profile

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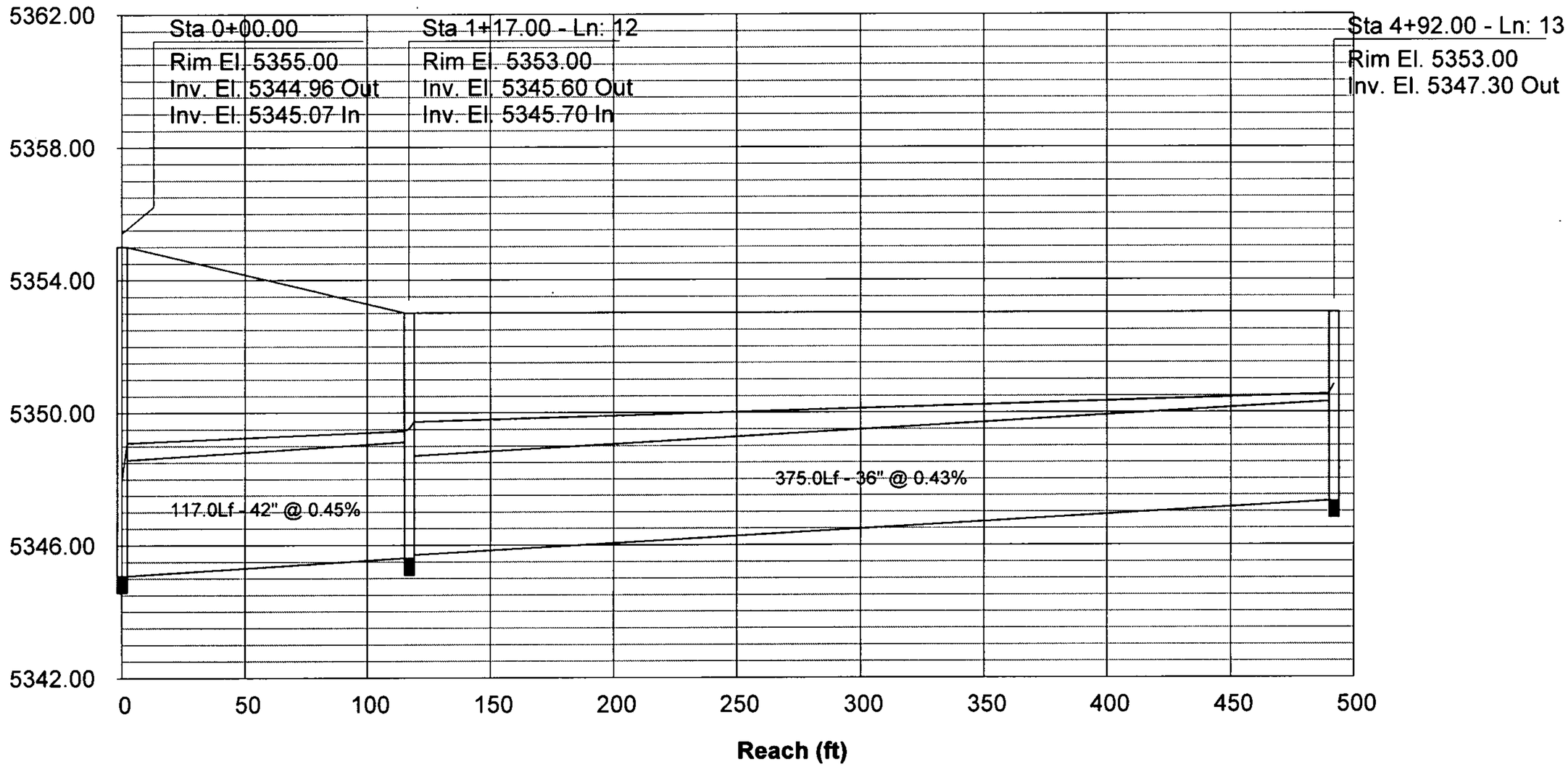
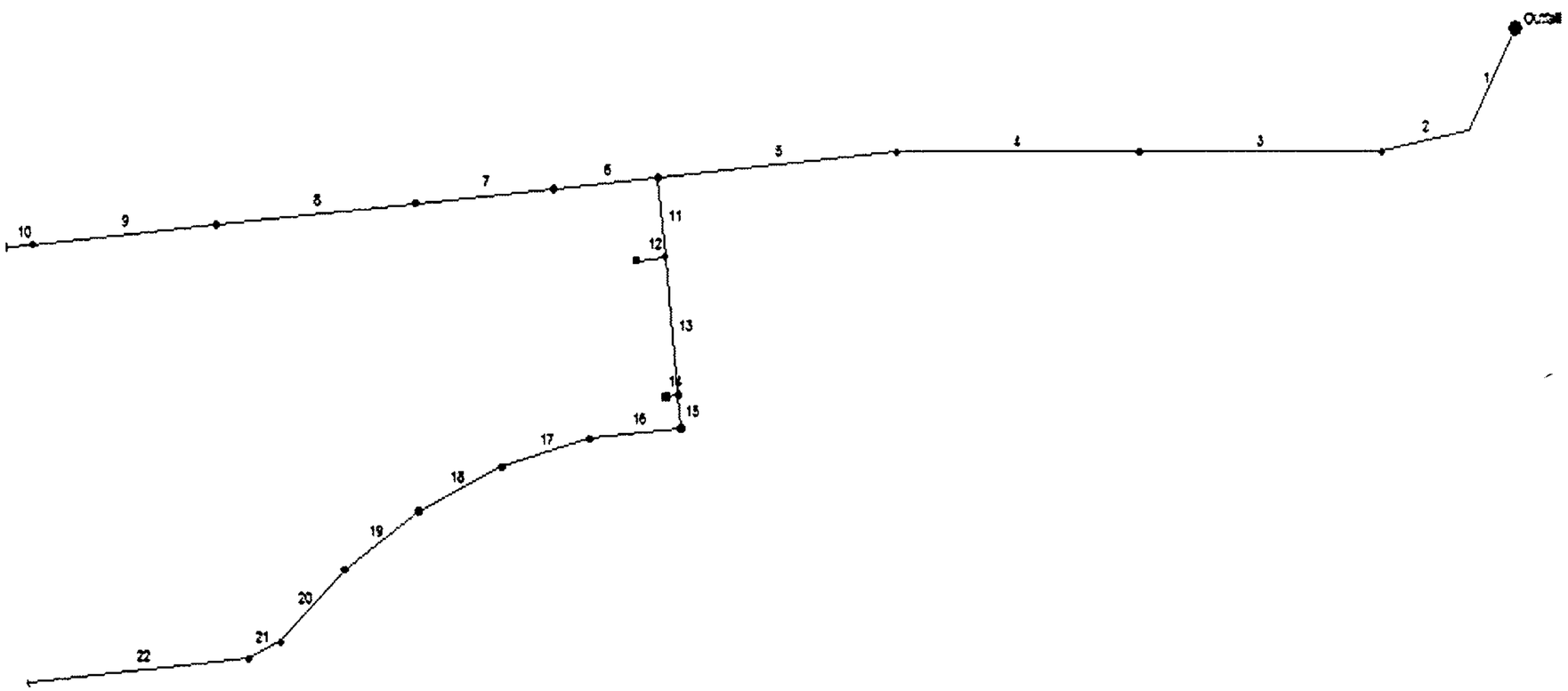


Hydraflow Plan View



Central 02 Southb	No. Lines: 22	01-17-2007

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Drng area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line type	N value (n)	J-loss coeff (K)	Inlet/ Rim El (ft)	
1	End	186.0	116.5	None	0.00	0.00	0.00	0.0	5320.00	2.88	5325.35	60	Cir	0.013	0.81	5339.00	Boca Negra
2	1	160.0	51.0	MH	0.00	0.00	0.00	0.0	5325.35	2.89	5329.97	60	Cir	0.013	0.26	5342.00	Open Space
3	2	430.0	12.5	MH	0.00	0.00	0.00	0.0	5329.97	2.01	5338.60	66	Cir	0.013	0.15	5347.00	Open Space
4	3	430.0	0.0	MH	0.00	0.00	0.00	0.0	5338.60	1.43	5344.74	66	Cir	0.013	0.15	5353.00	Open Space
5	4	426.0	-5.5	MH	0.00	0.00	0.00	0.0	5344.74	1.31	5350.30	66	Cir	0.013	1.00	5363.00	Open Space
6	5	186.0	0.0	MH	0.00	0.00	0.00	0.0	5351.40	4.95	5360.61	54	Cir	0.013	0.15	5366.00	Open Space
7	6	246.0	0.0	MH	0.00	0.00	0.00	0.0	5360.75	1.74	5365.03	54	Cir	0.013	0.15	5372.00	Open Space
8	7	357.0	0.0	MH	0.00	0.00	0.00	0.0	5365.17	1.73	5371.36	54	Cir	0.013	0.15	5378.50	Open Space
9	8	330.0	0.0	MH	0.00	0.00	0.00	0.0	5371.50	1.74	5377.23	54	Cir	0.013	0.15	5386.00	Open Space
10	9	46.0	0.0	Hdwl	250.00	0.00	0.00	0.0	5377.37	1.67	5378.14	72	Cir	0.013	1.00	5386.00	Inlet Struct/ OS
11	5	129.0	-90.3	MH	0.00	0.00	0.00	0.0	5350.40	0.75	5351.37	60	Cir	0.013	1.00	5361.00	V Antigua
12	11	52.0	89.3	Curb	30.00	0.00	0.00	0.0	5354.68	2.92	5356.20	30	Cir	0.013	1.00	5361.00	Lateral
13	11	225.0	0.0	MH	0.00	0.00	0.00	0.0	5351.47	0.75	5353.15	54	Cir	0.013	1.00	5361.00	V Antigua
14	13	22.0	90.0	Curb	15.00	0.00	0.00	0.0	5358.00	3.82	5358.84	30	Cir	0.013	1.00	5361.00	Lateral
15	13	54.0	0.0	MH	0.00	0.00	0.00	0.0	5353.25	0.76	5353.66	48	Cir	0.013	1.00	5361.00	V Antigua
16	15	163.0	90.0	MH	15.00	0.00	0.00	0.0	5353.76	1.45	5356.13	42	Cir	0.013	0.21	5363.00	Hawk Eye
17	16	163.0	-10.0	MH	0.00	0.00	0.00	0.0	5356.23	1.28	5358.32	36	Cir	0.013	0.21	5365.00	Hawk Eye
18	17	163.0	-10.0	MH	0.00	0.00	0.00	0.0	5358.42	1.06	5360.15	36	Cir	0.013	0.21	5367.00	Hawk Eye
19	18	163.0	-10.0	MH	0.00	0.00	0.00	0.0	5360.25	1.06	5361.97	36	Cir	0.013	0.21	5368.50	Hawk Eye
20	19	162.0	-10.0	MH	0.00	0.00	0.00	0.0	5362.07	1.06	5363.78	36	Cir	0.013	0.40	5370.00	Hawk Eye
21	20	62.0	20.0	MH	0.00	0.00	0.00	0.0	5363.88	1.61	5364.88	36	Cir	0.013	0.40	5371.00	Hawk Eye

Central 02 Southb | Number of lines: 22 | Date: 01-23-2007

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Drng area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line type	N value (n)	J-loss coeff (K)	Inlet/ Rim El (ft)	
22	21	396.0	20.0	Hdwl	61.00	0.00	0.00	0.0	5364.98	1.63	5371.44	36	Cir	0.013	1.00	5379.00	Hawk Eye

Hydraulic Grade Line Computations

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf		Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf	Ave Sf	Enrgy loss		
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)
1	60	371.0	5320.00	5325.00	5.00	19.47	18.90	5.55	5330.55	2.030	186	5325.35	5330.20	4.85**	19.47	19.06	5.65	5335.85	1.787	1.908	n/a	0.81	4.57
2	60	371.0	5325.35	5330.30	4.95	19.47	18.93	5.57	5335.87	1.864	160	5329.97	5334.82	4.85**	19.47	19.06	5.65	5340.47	1.787	1.825	n/a	0.26	1.47
3	66	371.0	5329.97	5336.68	5.50	23.02	15.62	3.79	5340.47	1.221	430	5338.60	5343.71	5.11**	23.02	16.11	4.04	5347.75	1.056	1.138	n/a	0.15	n/a
4	66	371.0	5338.60	5343.96	5.36	23.02	15.73	3.84	5347.80	1.081	430	5344.74	5349.85	5.11**	23.02	16.11	4.04	5353.89	1.056	1.068	n/a	0.15	n/a
5	66	371.0	5344.74	5350.10	5.36	23.02	15.73	3.84	5353.94	1.081	426	5350.30	5355.41	5.11**	23.02	16.11	4.04	5359.45	1.056	1.068	n/a	1.00	n/a
6	54	250.0	5351.40	5355.61	4.21	15.62	16.16	4.06	5359.67	1.397	186	5360.61	5364.89	4.28**	15.62	16.01	3.98	5368.87	1.400	1.398	n/a	0.15	n/a
7	54	250.0	5360.75	5365.03	4.28	15.62	16.01	3.98	5369.01	1.400	246	5365.03	5369.31	4.28**	15.62	16.01	3.98	5373.29	1.400	1.400	n/a	0.15	n/a
8	54	250.0	5365.17	5369.45	4.28	15.62	16.01	3.98	5373.43	1.400	357	5371.36	5375.64	4.28**	15.62	16.01	3.98	5379.62	1.400	1.400	n/a	0.15	n/a
9	54	250.0	5371.50	5375.78	4.28	15.62	16.01	3.98	5379.76	1.400	330	5377.23	5381.51	4.28**	15.62	16.01	3.98	5385.49	1.400	1.400	n/a	0.15	n/a
10	72	250.0	5377.37	5384.28	6.00	28.27	8.84	1.22	5385.49	0.348	46.0	5378.14	5384.44	6.00	28.27	8.84	1.22	5385.65	0.348	0.348	0.160	1.00	1.22
11	60	121.0	5350.40	5358.86	5.00	19.63	6.16	0.59	5359.45	0.216	129	5351.37	5359.14	5.00	19.63	6.16	0.59	5359.73	0.216	0.216	0.278	1.00	0.59
12	30	30.00	5354.68	5359.74	2.50	4.91	6.11	0.58	5360.32	0.535	52.0	5356.20	5360.02	2.50	4.91	6.11	0.58	5360.60	0.535	0.535	0.278	1.00	0.58
13	54	91.00	5351.47	5359.81	4.50	15.90	5.72	0.51	5360.32	0.214	225	5353.15	5360.29	4.50	15.90	5.72	0.51	5360.80	0.214	0.214	0.482	1.00	0.51
14	30	15.00	5358.00	5361.16	2.50	4.91	3.06	0.15	5361.31	0.134	22.0	5358.84	5361.18	2.34	4.78	3.14	0.15	5361.34	0.116	0.125	0.027	1.00	0.15
15	48	76.00	5353.25	5360.80	4.00	12.56	6.05	0.57	5361.37	0.280	54.0	5353.66	5360.95	4.00	12.57	6.05	0.57	5361.52	0.280	0.280	0.151	1.00	0.57
16	42	76.00	5353.76	5361.52	3.50	9.62	7.90	0.97	5362.49	0.571	163	5356.13	5362.45	3.50	9.62	7.90	0.97	5363.42	0.571	0.571	0.930	0.21	0.20
17	36	61.00	5356.23	5362.66	3.00	7.07	8.63	1.16	5363.81	0.837	163	5358.32	5364.02	3.00	7.07	8.63	1.16	5365.18	0.837	0.837	1.364	0.21	0.24
18	36	61.00	5358.42	5364.26	3.00	7.07	8.63	1.16	5365.42	0.837	163	5360.15	5365.63	3.00	7.07	8.63	1.16	5366.78	0.837	0.837	1.364	0.21	0.24
19	36	61.00	5360.25	5365.87	3.00	7.07	8.63	1.16	5367.03	0.837	163	5361.97	5367.23	3.00	7.07	8.63	1.16	5368.39	0.837	0.837	1.364	0.21	0.24
20	36	61.00	5362.07	5367.48	3.00	7.07	8.63	1.16	5368.64	0.837	162	5363.78	5368.83	3.00	7.07	8.63	1.16	5369.99	0.837	0.837	1.356	0.40	0.46
21	36	61.00	5363.88	5369.30	3.00	7.07	8.63	1.16	5370.46	0.837	62.0	5364.88	5369.82	3.00	7.07	8.63	1.16	5370.97	0.837	0.837	0.519	0.40	0.46

Central 02 Southb | Number of lines: 22 | Run Date: 01-23-2007

Notes: ; ** Critical depth.

Hydraulic Grade Line Computations

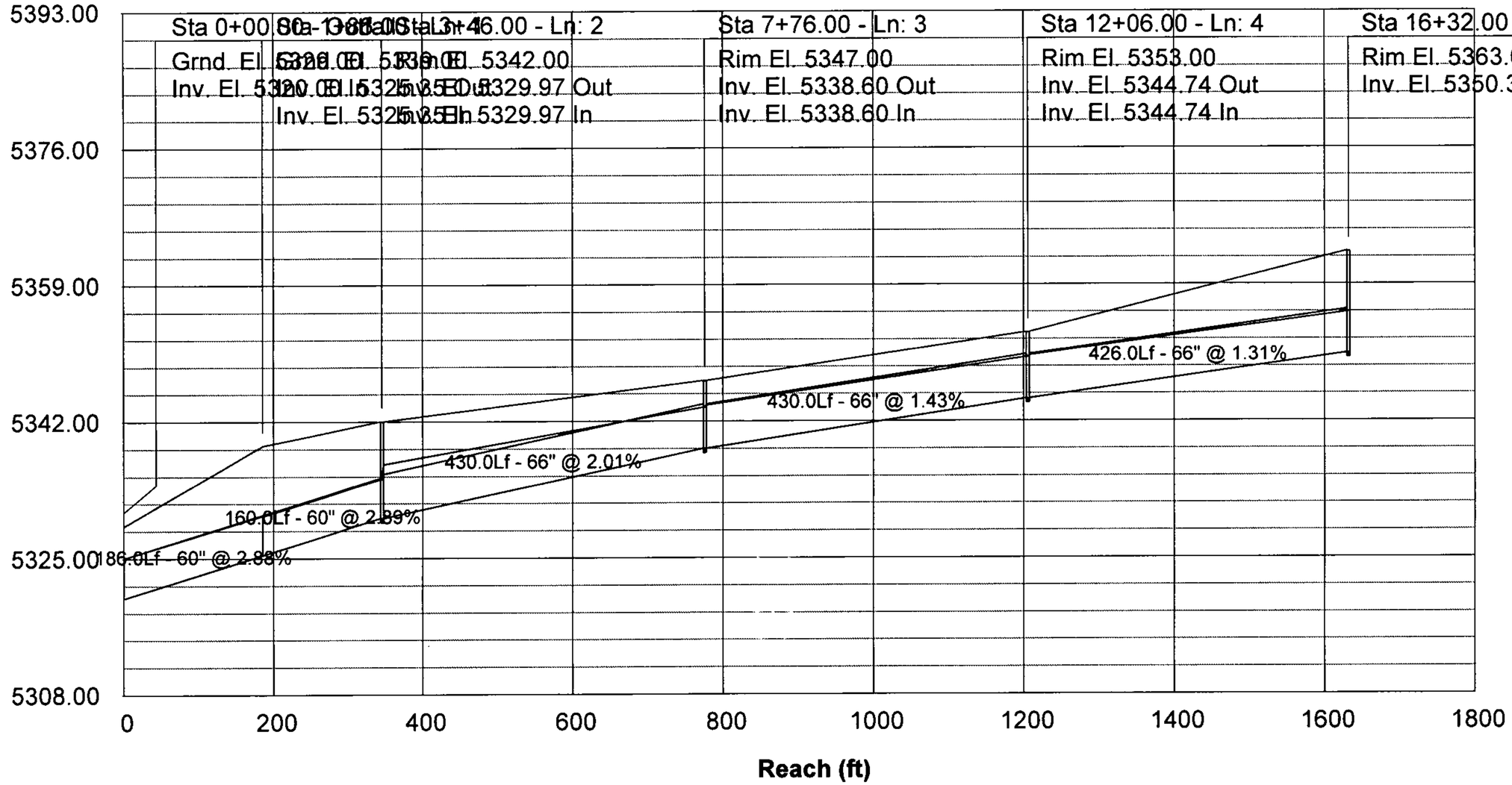
Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
	(in)	(cfs)									(ft)											(K)	(ft)
22	36	61.00	5364.98	5370.28	3.00	7.07	8.63	1.16	5371.44	0.837	396	5371.44	5373.93	2.49**	6.27	9.73	1.47	5375.40	0.819	0.828	n/a	1.00	n/a

Central 02 Southb | Number of lines: 22 | Run Date: 01-23-2007

Notes: ; ** Critical depth.

Storm Sewer Profile

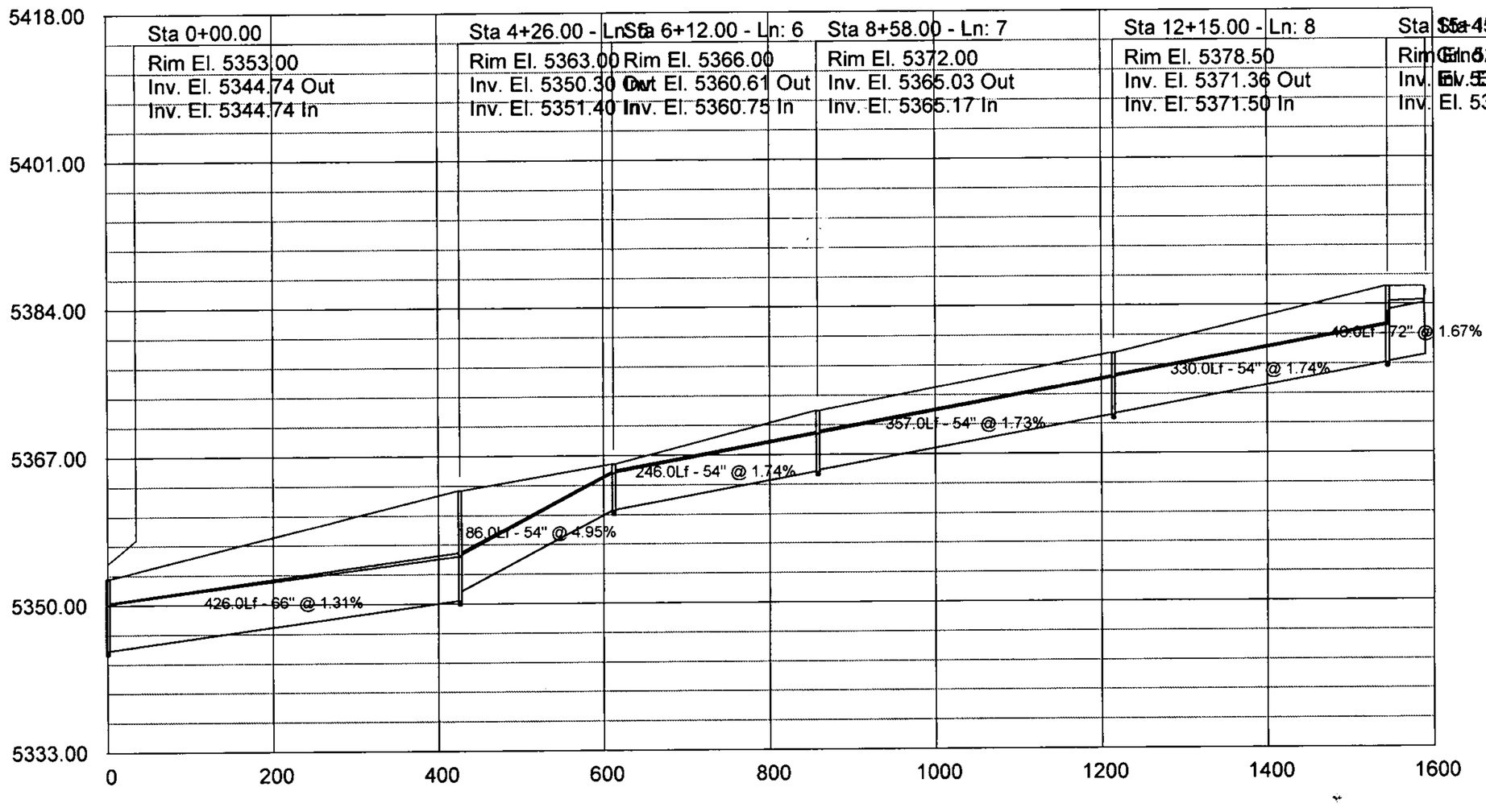
Proj. file: Central02 South.stm



Storm Sewer Profile

Proj. file: Central02 South.stm

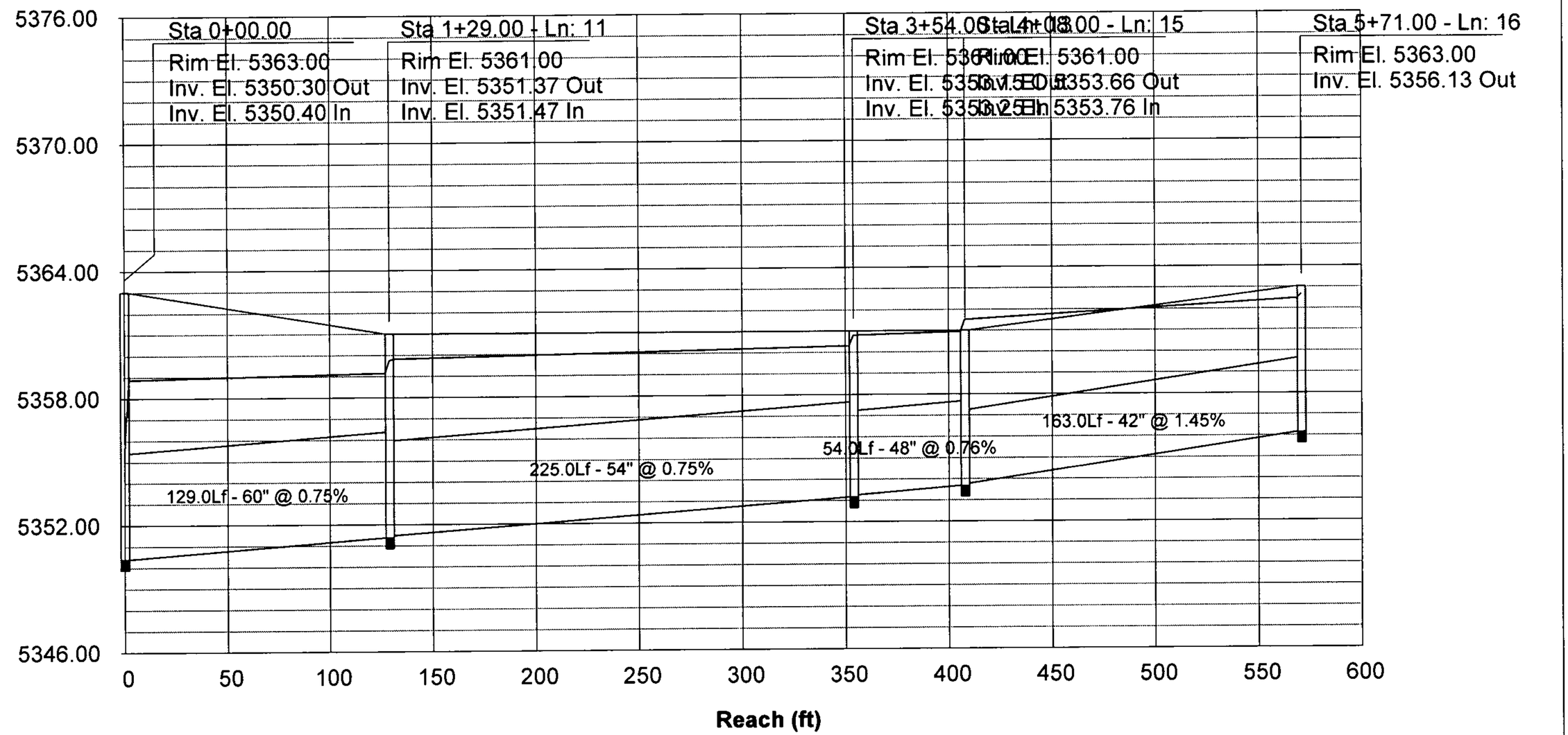
Elev. (ft)



Reach (ft)

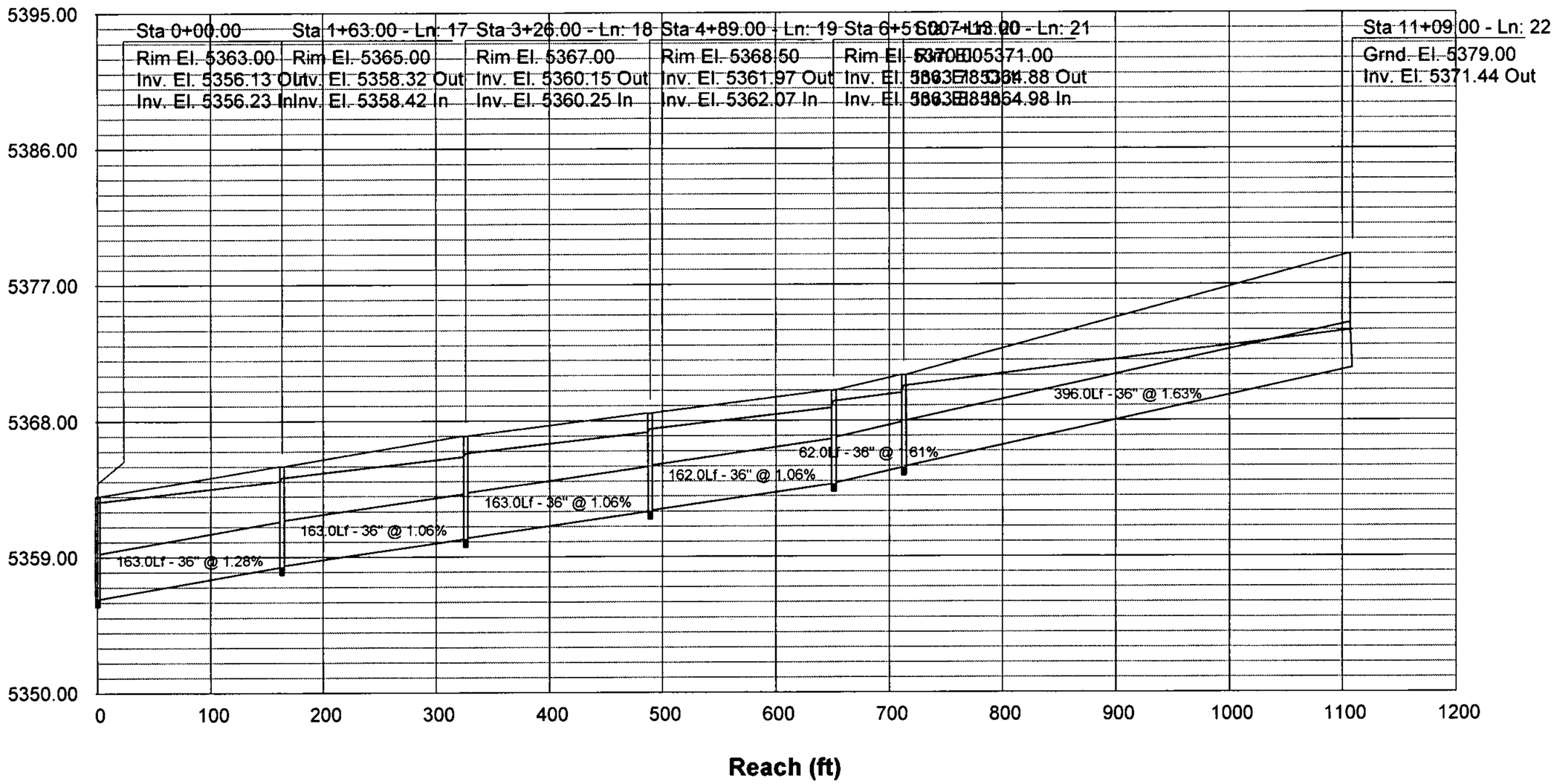
Storm Sewer Profile

Proj. file: Central02 South.stm



Storm Sewer Profile

Proj. file: Central02 South.stm



Residential Streets - 1% Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	010000	ft/ft
Discharg	47.00	cfs

Options	
Current Roughness Metho	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coefficie	0.017	
Water Surface Elev	100.52	ft
Elevation Range	).00 to 100.67	
Flow Area	10.5	ft²
Wetted Perimeter	28.99	ft
Top Width	28.03	ft
Actual Depth	0.52	ft
Critical Elevation	100.58	ft
Critical Slope	0.005810	ft/ft
Velocity	4.46	ft/s
Velocity Head	0.31	ft
Specific Energy	100.83	ft
Froude Number	1.28	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+10	0+39	0.017

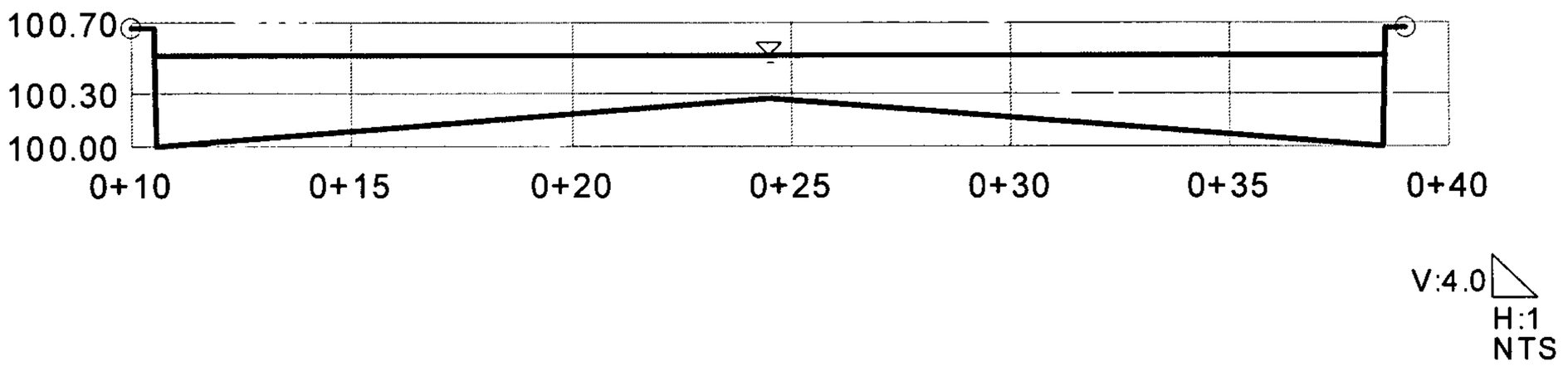
Natural Channel Points

Station (ft)	Elevation (ft)
0+10	100.67
0+11	100.67
0+11	100.00
0+25	100.28
0+39	100.00
0+39	100.67
0+39	100.67

Residential Street Section- 1.0% Slope
Cross Section for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficie	0.017	
Slope	0.010000	ft/ft
Water Surface Elev	100.52	ft
Elevation Range	).00 to 100.67	
Discharge	47.00	cfs



Residential Streets - 2% Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	020000	ft/ft
Discharg	34.00	cfs

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coefficie	0.017	
Water Surface Elev	100.39	ft
Elevation Range	).00 to 100.67	
Flow Area	7.0	ft²
Wetted Perimeter	28.74	ft
Top Width	28.01	ft
Actual Depth	0.39	ft
Critical Elevation	100.50	ft
Critical Slope	0.006197	ft/ft
Velocity	4.84	ft/s
Velocity Head	0.36	ft
Specific Energy	100.75	ft
Froude Number	1.70	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+10	0+39	0.017

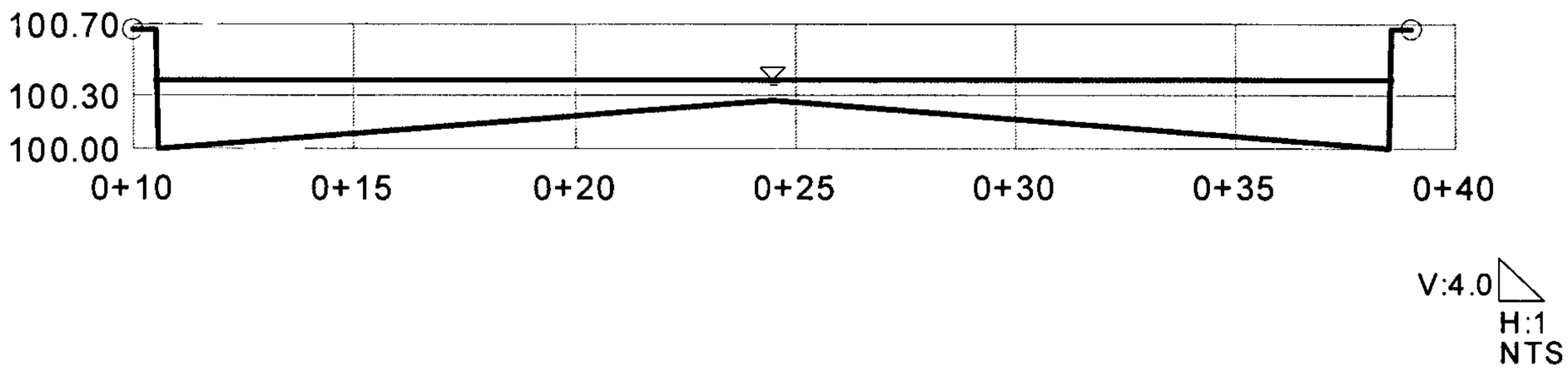
Natural Channel Points

Station (ft)	Elevation (ft)
0+10	100.67
0+11	100.67
0+11	100.00
0+25	100.28
0+39	100.00
0+39	100.67
0+39	100.67

Residential Street Section- 2.0% Slope
Cross Section for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficie	0.017	
Slope	0.020000	ft/ft
Water Surface Elev	100.39	ft
Elevation Range	).00 to 100.67	
Discharge	34.00	cfs



Residential Streets - 3% Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	030000	ft/ft
Discharg	34.00	cfs

Options	
Current Roughness Metho	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coefficie	0.017	
Water Surface Elev	100.36	ft
Elevation Range	).00 to 100.67	
Flow Area	6.2	ft²
Wetted Perimeter	28.68	ft
Top Width	28.00	ft
Actual Depth	0.36	ft
Critical Elevation	100.50	ft
Critical Slope	0.006197	ft/ft
Velocity	5.47	ft/s
Velocity Head	0.46	ft
Specific Energy	100.83	ft
Froude Number	2.04	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+10	0+39	0.017

Natural Channel Points

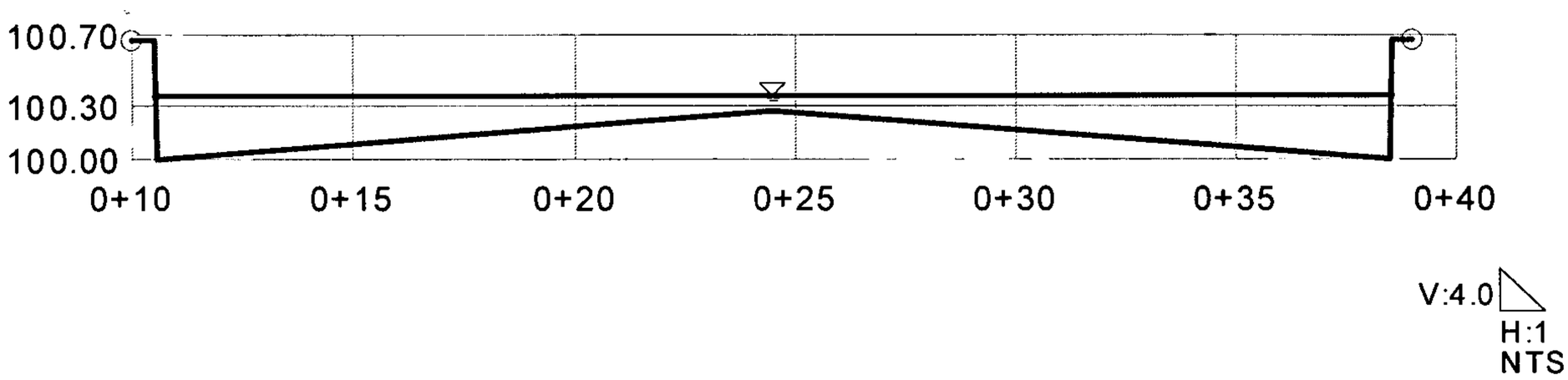
Station (ft)	Elevation (ft)
0+10	100.67
0+11	100.67
0+11	100.00
0+25	100.28
0+39	100.00
0+39	100.67
0+39	100.67

© Haestad Methods, Inc.

Residential Street Section- 3.0% Slope
Cross Section for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficie	0.017	
Slope	0.030000	ft/ft
Water Surface Elev	100.36	ft
Elevation Range	0.00 to 100.67	
Discharge	34.00	cfs



Residential Streets - 4% Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	040000	ft/ft
Discharg	30.00	cfs

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coefficie	0.017	
Water Surface Elev	100.33	ft
Elevation Range	).00 to 100.67	
Flow Area	5.3	ft²
Wetted Perimeter	28.62	ft
Top Width	28.00	ft
Actual Depth	0.33	ft
Critical Elevation	100.47	ft
Critical Slope	0.006356	ft/ft
Velocity	5.67	ft/s
Velocity Head	0.50	ft
Specific Energy	100.83	ft
Froude Number	2.30	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+10	0+39	0.017

Natural Channel Points

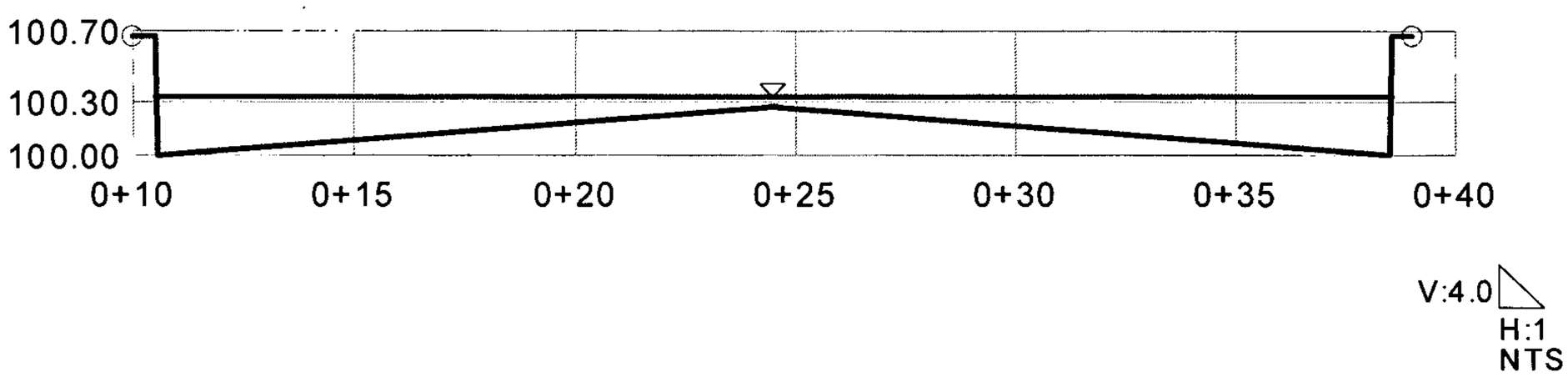
Station (ft)	Elevation (ft)
0+10	100.67
0+11	100.67
0+11	100.00
0+25	100.28
0+39	100.00
0+39	100.67
0+39	100.67

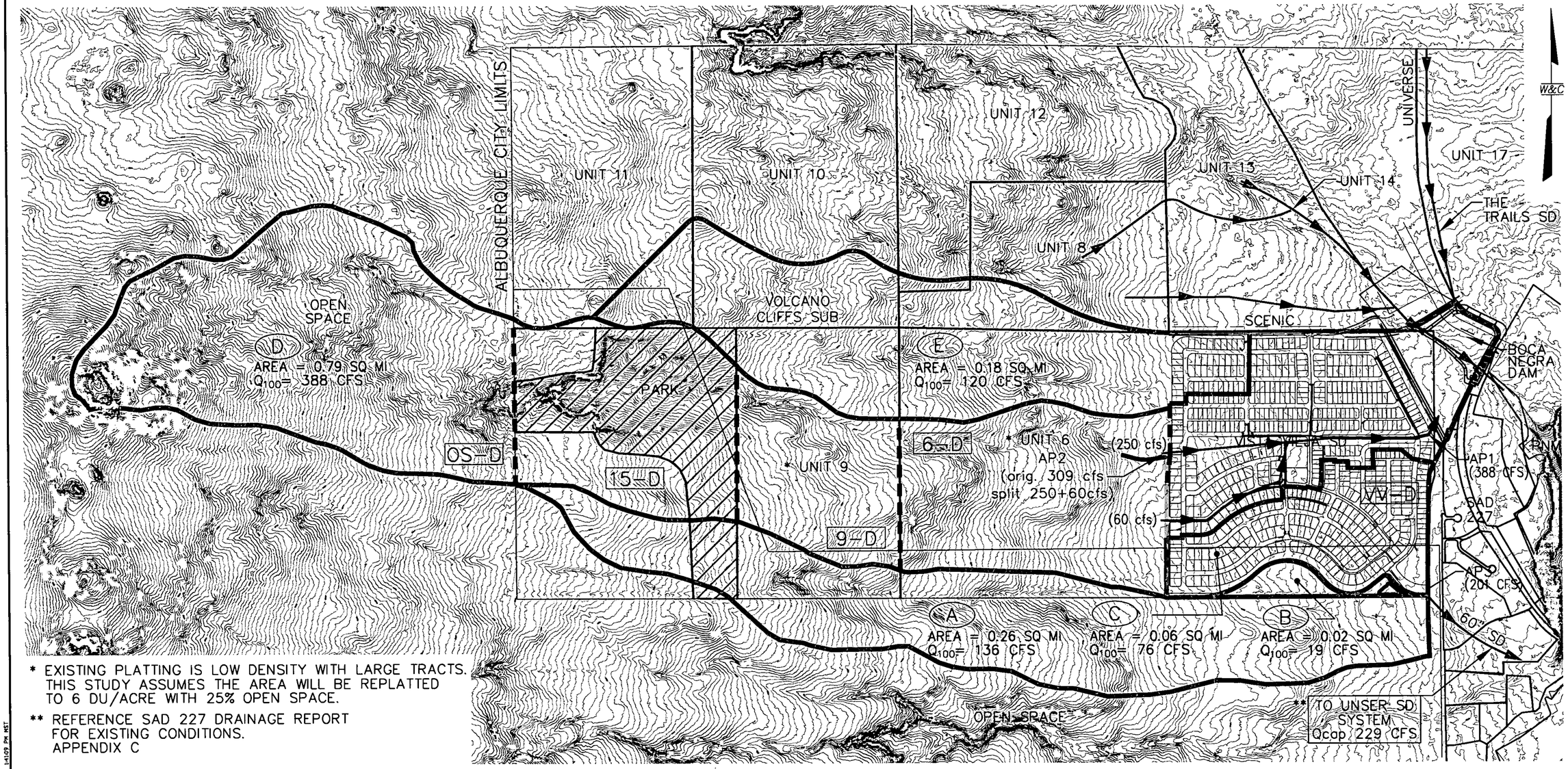
© Haestad Methods, Inc.
Wilson & Co.
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Residential Street Section- 4.0% Slope
Cross Section for Irregular Channel

Project Description	
Worksheet	Residential Streets
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficiel	0.017	
Slope	0.040000	ft/ft
Water Surface Elev	100.33	ft
Elevation Range	).00 to 100.67	
Discharge	30.00	cfs





* EXISTING PLATTING IS LOW DENSITY WITH LARGE TRACTS. THIS STUDY ASSUMES THE AREA WILL BE REPLATTED TO 6 DU/ACRE WITH 25% OPEN SPACE.

** REFERENCE SAD 227 DRAINAGE REPORT FOR EXISTING CONDITIONS. APPENDIX C

BASIN SUMMARY				
			PROPOSED	
BASIN	AREA (sq mi)	AREA (ac)	Q100 24 hr (cfs)	VOL100 24 hr (ac-ft)
A	0.26	168	136	4.95
B	0.02	14	19	0.44
C	0.07	46	89	5.19
D	0.79	506	388	38.49
E	0.18	115	94	3.42

ANALYSIS POINT SUMMARY			
		PROPOSED	
AP NO.	DESCRIPTION	Q100 24 hr (cfs)	VOL100 24 hr (ac-ft)
1	BOCA NEGRA DAM	388	31.60
2	VISTA VIEJA	309	29.59
3	DISCHARGE TO (SAD 227 SD)	201	10.53
4	SCENIC DR. FLOWS (OFFSITE)	94	3.4

LEGEND

- 5070 — EXISTING INTERMEDIATE CONTOUR
- 5071 — EXISTING INDEX CONTOUR
- (A) — BASIN ID
- OS-D — SUB-BASIN
- BASIN BOUNDARY
- SUB-BASIN BOUNDARY
- PARK

GRAPHIC SCALE

1000 500 0 1000 2000

(IN FEET)
1 inch=1000 ft.

WILSON & COMPANY
4900 LANG AVENUE, NE
ALBUQUERQUE, NEW MEXICO
87109
(505) 348-4000

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

VISTA VIEJA
PROPOSED BASIN BOUNDARY MAP

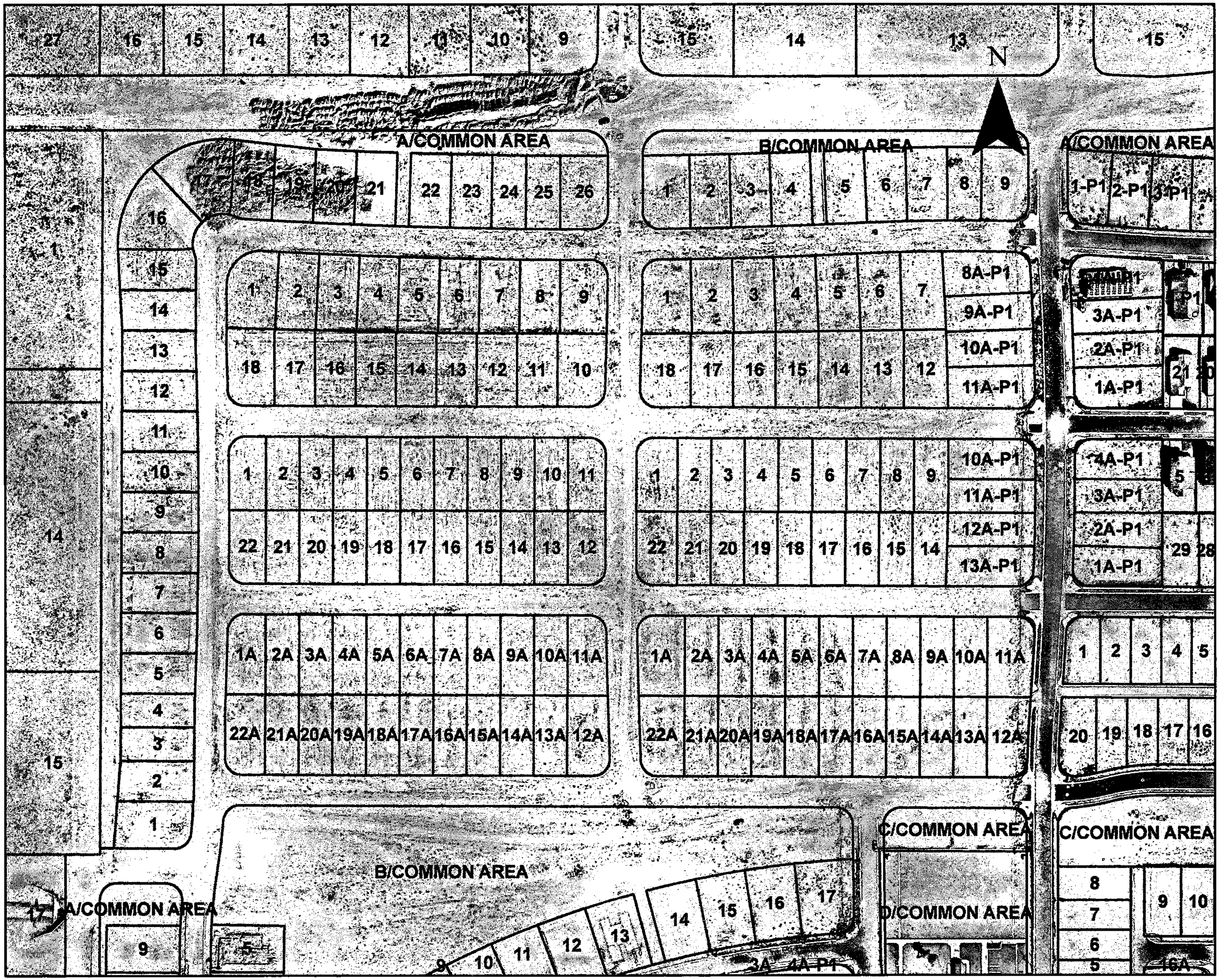
Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.
			Mo./Day/Yr.

DATE	JAN 2007	DESIGN	DRAWN
FILE NO.	X3218078	RSM	JMB

City Project No.	Zone Map No.	Sheet
763381,2,3,4	D-9-Z	APPENDIX D

X:\Public\PROJECTS\X3218078\engr\Drainage\83788a_Dwr_all.dwg 8/29/2005 14:09 PM MST

ALRISCO
UNSER


N
A/COMMON AREA
B/COMMON AREA
A/COMMON AREA
C/COMMON AREA
C/COMMON AREA
D/COMMON AREA
B/COMMON AREA
A/COMMON AREA
1-P1 2-P1 3-P1
8A-P1
9A-P1
10A-P1
11A-P1
12A-P1
13A-P1
3A-P1
2A-P1
1A-P1
4A-P1
5
29 28
16A

CITY OF ALBUQUERQUE

August 5, 2008

Dan Aguirre, PE
Wilson & Co.
4900 Lang Ave NE
Albuquerque, NM 87109

Re: Vista Vieja Unit 3 Revised Grading and Drainage Plan
Engineer Stamp date 7-28-08 (D9/D3)

Dear Mr. Ashton,

Based on information provided in your submittal dated 8-1-08, the above referenced plan is approved for Preliminary Plat action by the DRB. Please include this sheet for block 15 and 16 with the original approved grading plan with your certification in order to release your SIA and Financial Guarantees.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Bradley L. Bingham, PE
Principal Engineer, Planning Dept
Development and Building Services

C: file

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 01/06 – KDM)

PROJECT TITLE: Vista Vieja Subdivision Unit 3 ZONE MAP: D-9 D003

DRB#: 1004607 EPC#: WORK ORDER#: 763383

LEGAL DESCRIPTION: Vista Vieja Subdivision Unit 3, Blocks 15 & 16

CITY ADDRESS: Groundsel Rd NW between Mete Sol Dr NW and Vista Terraza Dr NW

ENGINEERING FIRM: Wilson & Company CONTACT: Kristine Susco

ADDRESS: 4900 Lang Ave NE PHONE: (505) 348-4000

CITY, STATE: Albuquerque, NM ZIP CODE: 87109

OWNER: Salls Brothers Construction CONTACT: Fred Salls

ADDRESS: 7301 Reading Ave SE PHONE: (505) 873-8780

CITY, STATE: Albuquerque, NM ZIP CODE: 87105

ARCHITECT: CONTACT:

ADDRESS: PHONE:

CITY, STATE: ZIP CODE:

SURVEYING FIRM: LICENSED SURVEYOR:

ADDRESS: PHONE:

CITY, STATE: ZIP CODE:

PROFESSIONAL LICENSED SURVEYOR SIGNATURE **LICENSE NO.** **DATE**

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

CITY, STATE: ZIP CODE:

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
_____ DRAINAGE PLAN RESUBMITTAL
_____ CONCEPTUAL G & D PLAN
__X__ GRADING PLAN - AMENDED
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERT (HYDROLOGY)
_____ CLOMR/LOMR
_____ TRAFFIC CIRCULATION LAYOUT
_____ ENGINEER'S CERT (TCL)
_____ ENGINEER'S CERT (DRB SITE PLAN)
_____ OTHER-

CHECK TYPE OF APPROVAL SOUGHT:

_____ SIA/FINANCIAL GUARANTEE RELEASE
__X__ PRELIMINARY PLAT APPROVAL
_____ S. DEV. PLAN FOR SUB'D APPROVAL
_____ S. DEV. FOR BLDG. PERMIT APPROVAL
_____ SECTOR PLAN APPROVAL
_____ FINAL PLAT APPROVAL
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ OTHER (SPECIFY) - REVISION

WAS A PRE-DESIGN CONFERENCE ATTENDED:

_____ YES
_____ NO
_____ COPY PROVIDED

DATE SUBMITTED: _____ BY: Kristine Susco

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to 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 Plan**: 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 subdivision containing more than ten (10) lots or constituting five (5) acres or more.

RECEIVED

AUG 01 2008

HYDROLOGY SECTION

ALA GRANDE
NIT TWO—
ERQUE, NEW MEXICO

G-20

Filed for record this 21st day of March A.D. 1963
at 2 o'clock P.M. and recorded in Book D3
Records of Bernalillo County, N.M. Page 124
Jane Finzel
County Clerk

COMANCHE RD., N.E.

VACANT LAND

S 89° 32' 15" E

LA SALA GRANDE DEL OESTE

LA SALA GRANDE DEL ESTE

EAST LA SALA GRANDE DEL NORTE

EAST CENTRO

LA SALA GRANDE DEL SUR

EAST LA SALA GRANDE

REDONDO DR.

DRNG. & UTILITY ESM'T

25' SETBACK

BLOCK 1

BLOCK 2

VACANT

LA SALA GRANDE DEL OESTE

LA SALA GRANDE

LA SALA GRANDE

DEL CENTRO

DEL SUR

LA SALA GRANDE

LA SALA GRANDE

LA SALA GRANDE

LA SALA CUADRA

STILWELL ST.

— AZTEC RD., N.E. —

F) ALL STREETS AND ISLANDS SHOWN HEREIN ARE DEDICATED AS PUBLIC RIGHT-OF-WAY

INEERING DEPT.
se Numbering

THE
N(7)
RGR
E

SAID
ND

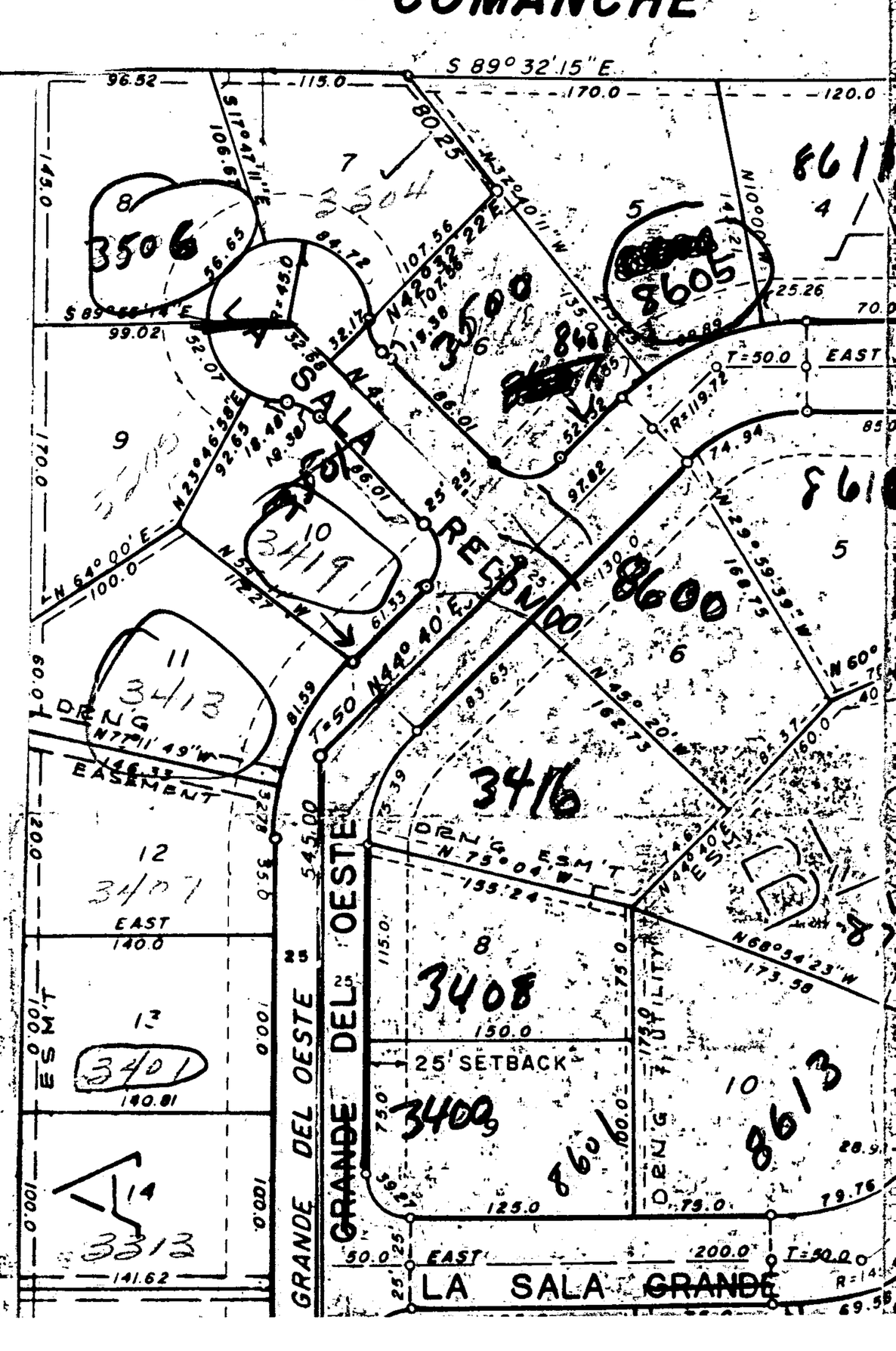
THE
NT

5

2ND AMENDED PLAT OF
LA SALA GRANDE
— UNIT TWO —
ALBUQUERQUE, NEW MEXICO

COMANCHE BLVD., N.E.

VACANT LAND



TAX CERTIFICATE

[redacted]ed does hereby certify that taxes on the land within the subdivision hereon shown have been paid for 19[illegible] and all prior years.

Rio Grande Title Company

Leonard K. Haller — By:

1-27-72 — Date:

[illegible]

1-27-72 — Date:

[illegible] Lt. 4, Block 4
and A. Tammen

1-27-72 — Date:

[illegible] L.D. 71-437

CITY ENGINEERS
ADDRESS
VERIFICATION
OFFICE

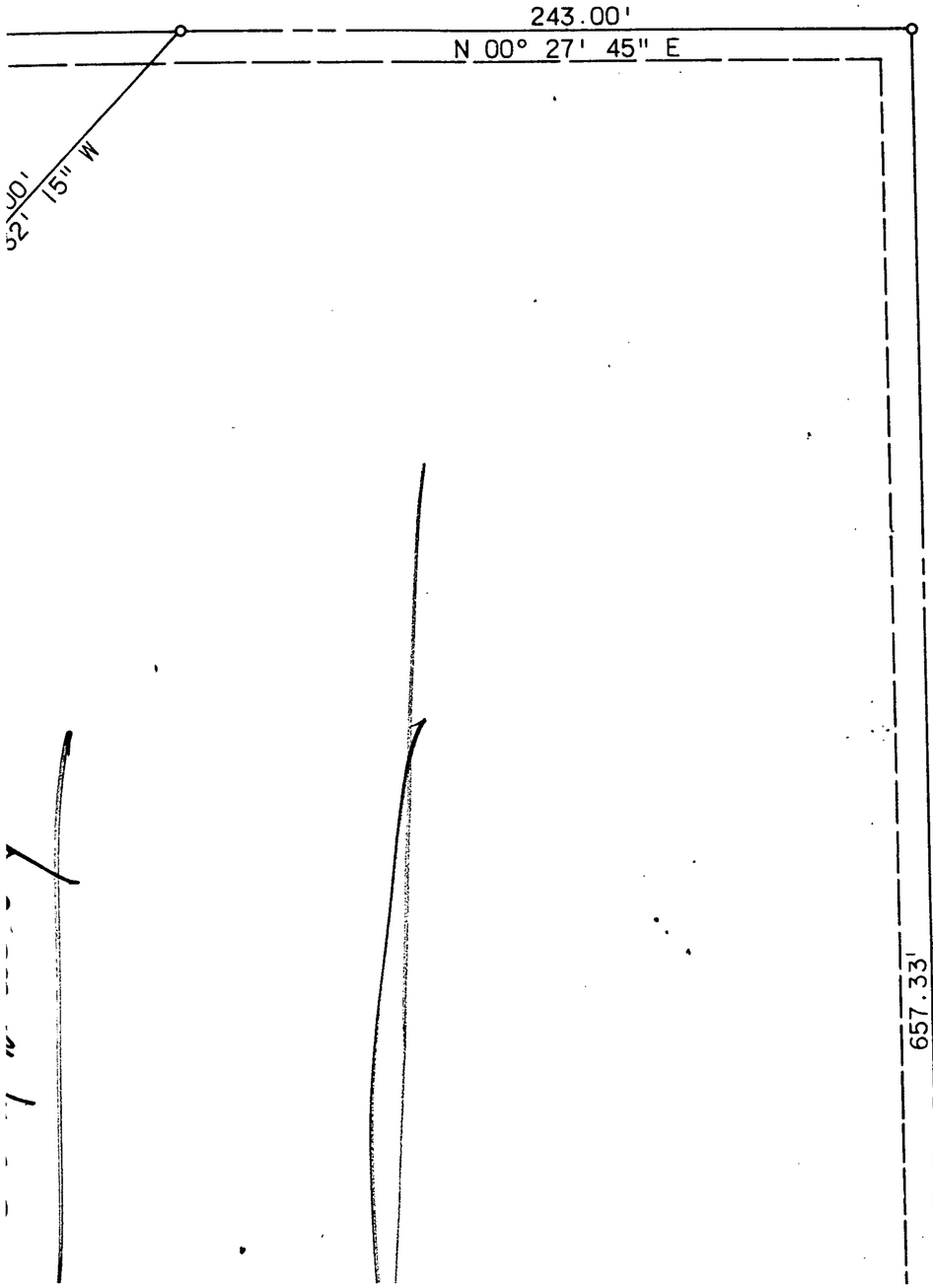
AMENDED LAND DIVISION PLAT OF LA SALA GRANDE ADDITION PART OF UNIT 4 - BLOCK A

LOTS 1-3 (AS REVISED HEREIN)

LIMBAUGH ENGINEERS, INC.
CONSULTING ENGINEERS and PHOTOGRAMMETRISTS

DRAWN BY J.L.
CHECKED BY BVH
FILE NO. 3360
SCALE AS SHOWN
DATE NOV. 72
SHEET NO. 1 OF 1

D4-184



PROPERTY DESCRIPTION

D4-184

A particular parcel of property situate in Section 5, T 10 N, R 4 E, N.M.P.M., comprising Lots 1-5, Block A, Unit 4 of the La Sala Grande Addition to the city of Albuquerque, Bernalillo County, New Mexico, as filed in the office of the County Clerk on October 3, 1968; said lots to be redivided into Lots 1-3 as shown hereon.

DEDICATION

Chamisa Associates (a partnership), which is the owner of Lots 1-3, Block A, Unit 4 of the La Sala Grande Addition to the City of Albuquerque, Bernalillo County, New Mexico, does hereby dedicate easements as shown on this plat for the location of utilities, including the right of ingress, egress, and the right to trim interfering trees; the owner agrees to provide and maintain adequate channelization for surface drainage across property from La Sala Grande Addition No. 2 on the east side of this plat; said tract appearing on this plat is with the free consent and in accordance with the undersigned owner and proprieter of the land.

Signed: B C Godwin Date: Jan 27 1972

B.C. Godwin
President, Godwin, Bevers Co., Inc., General Partner
of Chamisa Associates

Signed: W.M. Bevers Date: Jan 27 1972

W.M. Bevers
Secetary, Godwin, Bevers Co., Inc.

State of New Mexico } ss
County of Bernalillo }
This instrument was filed for record on
JAN 28 1972
At 9 o'clock A.M. Recorded in Vol. ...
of records of said County, Folio ...
Clerk & Recorder
Deputy Clerk

ACKNOWLEDGEMENT

State of Colorado
County of El Paso } S.S.

The foregoing instrument was acknowledged before me this 27th day of ~~October 1971~~ January 1972, by B.C. Godwin and W.M. Bevers authorized agents of Chamisa Associates, owner of the land shown hereon.

My Commission Expires: 3/25/74

Notary Public

SURVEYOR'S CERTIFICATE

I, Robert A. Jennings, do hereby certify that I am a registered Land Surveyor in the State of New Mexico, that the information shown on this plat is based on field surveys performed by me or under my direction during May 19-22 1971, and these surveys were accurate and correct to the best of my knowledge and belief.

REGISTERED LAND SURVEYOR STATE OF NEW MEXICO

Robert A. Jennings
New Mexico LS 4117

CITY OF ALBUQUERQUE

ALBUQUERQUE
Making History

December 20, 2005

Robert S. MacLake, P.E.
Wilson & Company
2600 The American Rd. SE Suite 100
Rio Rancho, NM 87124

Re: Vista Vieja Units III & IV, Tracts 3 & 4 Vista Vieja Subdivision
Grading and Drainage Plan
Engineer's Stamp dated 12-16-05 (D9-D3)

Dear Mr. MacLake,

Based upon the information provided in your submittal received 12-16-05, the above referenced plan cannot be approved for Preliminary Plat until the following comments are addressed:

1. Profiles are needed for the channel, Albericoque Rd. and Scenic Rd. along the frontage of both units.
2. What is the design of Albericoque and Scenic Rd.? Including the Storm Drain design and Drain capacity.
3. An offsite condition exists West of the Subdivision. How is it going to be collected?
4. Please remove the word conceptual from the Grading and Drainage plan.

If you have any questions, you can contact me at 924-3986.

Need retaining wall at alley west of Vista Terraza

Sincerely,

Bradley L. Bingham, PE
Principal Engineer, Planning Dept.
Development and Building Services

C: file

Alley would need some elev at each end

P.O. Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

CITY OF ALBUQUERQUE

April 27, 2011

Kristine Susco
Wilson & Company, Inc.
4900 Lang Ave. NE
Albuquerque, NM 87109

Re: Vista Vieja Unit 3 Grading and Drainage Certification
Engineer's Stamp dated 7-28-08 (D09/D003)
Certification dated-no date

Dear Ms. Susco,

Based upon the information provided in your submittal received 3-22-11, the above referenced plan cannot be approved for Release of Financial Guarantee until the following comments are addressed:

- We received 2 copies of the same sheet, 1 of 1, that shows the southern half of Unit 3, but not the north half.
- The Preliminary Plat approval letter states to include the sheet you provided as well as the original grading plan in order to release the Financial Guarantees.
- Storm drain inlets were blocked in the subdivision. How is this area to drain as intended with the inlets mostly covered? The preferred BMP is to control erosion at the property line.
- Provide certification language on the plan.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Curtis A. Cherne, P.E.
Principal Engineer, Planning Dept.
Development and Building Services

C: file

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

Requires Site Visit Sch

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 01/06 – KDM)

PROJECT TITLE: Vista Vieja Subdivision Unit 3 ZONE MAP: D-9 / D003
DRB#: 1004607 EPC#: WORK ORDER#: 763383

LEGAL DESCRIPTION: Vista Vieja Subdivision Unit 3
CITY ADDRESS:

ENGINEERING FIRM: Wilson & Company CONTACT: Kristine Susco
ADDRESS: 4900 Lang Ave NE PHONE: (505) 348-4000
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

OWNER: KB Homes CONTACT: Tony Sciarrillo
ADDRESS: PO Box 93488 PHONE: (505) 508-0153
CITY, STATE: Albuquerque, NM ZIP CODE: 87199

ARCHITECT: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

SURVEYING FIRM: LICENSED SURVEYOR:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

PROFESSIONAL LICENSED SURVEYOR SIGNATURE **LICENSE NO.** **DATE**

CONTRACTOR: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

TYPE OF SUBMITTAL:
____ DRAINAGE REPORT
____ DRAINAGE PLAN 1st SUBMITTAL
____ DRAINAGE PLAN RESUBMITTAL
____ CONCEPTUAL G & D PLAN
____ GRADING PLAN - AMENDED
____ EROSION CONTROL PLAN
_X_ ENGINEER'S CERT (HYDROLOGY)
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT
____ ENGINEER'S CERT (TCL)
____ ENGINEER'S CERT (DRB SITE PLAN)
____ OTHER-

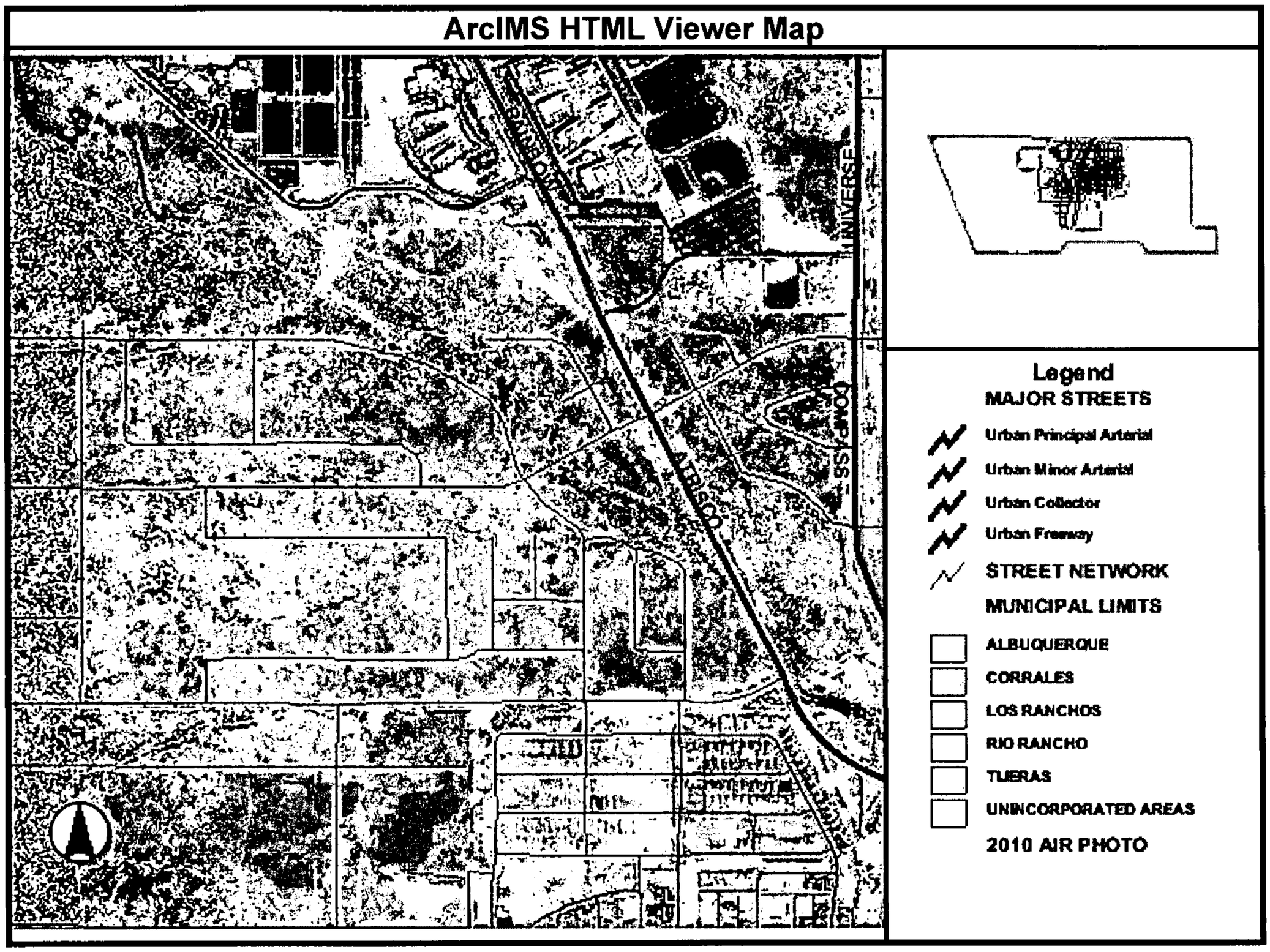
CHECK TYPE OF APPROVAL SOUGHT:
_X_ SIA/FINANCIAL GUARANTEE RELEASE
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D APPROVAL
____ S. DEV. FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ FOUNDATION PERMIT APPROVAL
____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY
____ GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ WORK ORDER APPROVAL
____ OTHER (SPECIFY)--REVISION

RECEIVED
MAR 22 2011
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
____ YES
_X_ NO
____ COPY PROVIDED
DATE SUBMITTED: 3-18-11 BY: Kristine Susco 348-4191

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to 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 Plan**: 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 subdivision containing more than ten (10) lots or constituting five (5) acres or more.


ArcIMS HTML Viewer Map
UNIVERSE
COMPASS
ARBISO
Legend
MAJOR STREETS
Urban Principal Arterial
Urban Minor Arterial
Urban Collector
Urban Freeway
STREET NETWORK
MUNICIPAL LIMITS
ALBUQUERQUE
CORRALES
LOS RANCHOS
RIO RANCHO
TIJERAS
UNINCORPORATED AREAS
2010 AIR PHOTO

3-20-4

Spoke with Kristine Cusco.

Told her she needs to have "mound"

removed from around NW inlet and

have huge dirt pile removed from

North of Scenic

She is to call back when

it is done.

cc

CITY OF ALBUQUERQUE
PLANNING DEPARTMENT
HYDROLOGY DEVELOPMENT SECTION

DEVELOPMENT REVIEW BOARD MEMO

DRB PROJECT NO: 1004353

AGENDA ITEM NO: 3

SUBJECT:

SIA Extension

ENGINEERING COMMENTS:

Since the money was called on 3-2-11 and the construction funds are needed this summer. The Hydrology Section does not approve the extension.

RESOLUTION:

APPROVED ____; DENIED _____; COMMENTS PROVIDED ____; WITHDRAWN___
DEFERRED TO:_____

SIGNED: **(UD) (CE) (TRANS) (PKS) (PLNG)**
DELEGATED TO: **(UD) (CE) (TRANS) (PKS) (PLNG)**

COMMENTS:

SIGNED:

Curtis Cherne
Hydrology Section
City Engineer Designee
AMAFCA Designee
924-3695

DATE: 3-30-11

CITY OF ALBUQUERQUE

May 6, 2009

Christopher A. Perea, P.E.
Wilson & Company, Inc.
4900 Lang Ave. NW
Albuquerque, NM 87109

RE: Vista Vieja Unit 4, (D-09/D003)
Engineers Certification for Release of Financial Guaranty
Engineers Stamp dated 3-2-07
Engineers Certification dated 04/30/2009

Dear Mr. Perea,

Based upon your Engineer's Certification submitted on 4/30/2009, the above referenced plan is adequate and satisfies the Grading and Drainage Certification for Release of Financial Guaranty.

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

Sincerely,

Timothy E. Sims
Plan Checker, Planning Dept. - Hydrology
Development and Building Services

C: Marilyn Maldonado, COA# 763384
File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 01/06 – KDM)

PROJECT TITLE: Vista Vieja Subdivision Unit 4 ZONE MAP: D-9/D003
DRB#: 1004607 EPC#: _____ WORK ORDER#: 763384

LEGAL DESCRIPTION: Vista Vieja Subdivision Units 3 & 4
CITY ADDRESS: _____

ENGINEERING FIRM: Wilson & Company CONTACT: Kristine Susco
ADDRESS: 4900 Lang Ave NE PHONE: (505) 348-4191
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

OWNER: KB Homes CONTACT: Tony Sciarrillo
ADDRESS: 6330 Riverside Plaza Lane Suite 200 PHONE: (505)353-5313
CITY, STATE: Albuquerque, NM ZIP CODE: 87120

ARCHITECT: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

SURVEYING FIRM: _____ LICENSED SURVEYOR: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

_____
PROFESSIONAL LICENSED SURVEYOR SIGNATURE LICENSE NO. DATE

CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:
_____ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
_____ DRAINAGE PLAN RESUBMITTAL
_____ CONCEPTUAL G & D PLAN
_____ GRADING PLAN (RESUBMITTAL)
_____ EROSION CONTROL PLAN
X ENGINEER'S CERT (HYDROLOGY)
_____ CLOMR/LOMR
_____ TRAFFIC CIRCULATION LAYOUT
_____ ENGINEER'S CERT (TCL)
_____ ENGINEER'S CERT (DRB SITE PLAN)
_____ OTHER-

CHECK TYPE OF APPROVAL SOUGHT:
X SIA/FINANCIAL GUARANTEE RELEASE
_____ PRELIMINARY PLAT APPROVAL
_____ S. DEV. PLAN FOR SUB'D APPROVAL
_____ S. DEV. FOR BLDG. PERMIT APPROVAL
_____ SECTOR PLAN APPROVAL
_____ FINAL PLAT APPROVAL
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ OTHER (SPECIFY) - REVISION

RECEIVED
APR 30 2009
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
_____ YES
X NO
_____ COPY PROVIDED
DATE SUBMITTED: 4-30-09 BY: _____

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to 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:

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3. **Drainage Report**: Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

WILSON
&COMPANY

4900 Lang Ave. NE
Albuquerque, NM 87109
505-348-4000
505-348-1072 Fax

Albuquerque
Arlington
Colorado Springs
Denver
El Paso
Fort Worth
Houston
Kansas City
Las Cruces
Lenexa
Los Angeles
Omaha
Phoenix
Rio Rancho
Salina
San Bernardino

30 April 2009

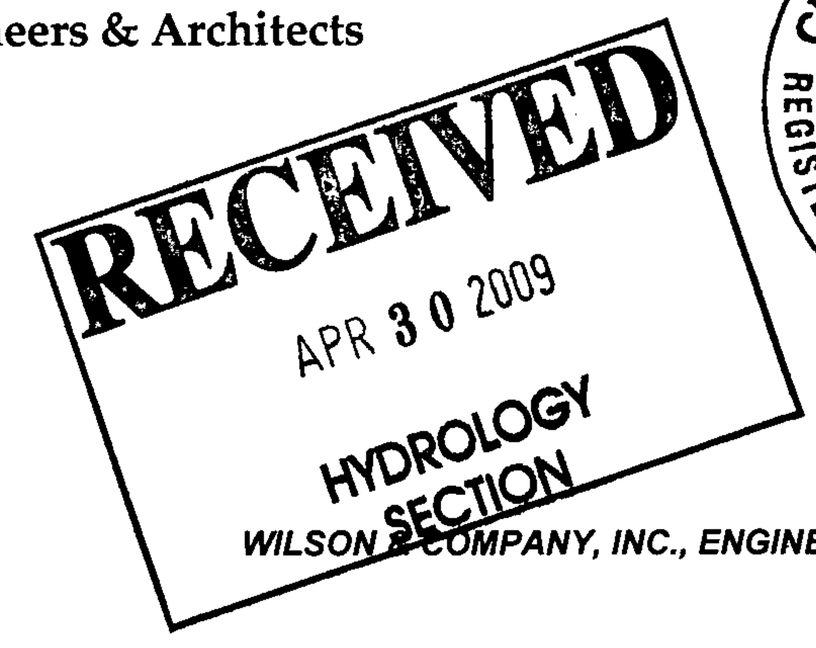
Brad Bingham
City of Albuquerque
Hydrology
Plaza Del Sol
600 Second Street NW
Albuquerque, NM 87103

Re: *DRAINAGE CERTIFICATION- CPN 763384 (D9/D3) -SUBMITTAL*
WCI File: X321807800

I, **Christopher A. Perea,** NMPE # **13686**, of the firm **WILSON & COMPANY**, hereby certify that this Project has been graded and will drain in substantial compliance with and in accordance with the design intent of the approved Drainage Report entitled '**VISTA VIEJA SUBDIVISION UNIT 2, 3, 4 REVISED DRAINAGE REPORT'** and dated **1-24-07**, as well as in accordance with the '**CONSTRUCTION GRADING PLAN**' dated **3-02-07**. The record information edited onto the original design document has been obtained by **RUSS P. HUGG**, NMPS # **9750**, of the firm **SURVTEK INC.**. I further certify that I have personally visited the Project site on **4-30-09** and have determined by visual inspection that the survey data provided is representative of actual site conditions and true and correct to the best of my knowledge and belief. This Certification is submitted in support of a request for **RELEASE OF FINANCIAL GUARANTY AND SIA**.

The record information presented hereon is not necessarily complete and intended only to verify substantial compliance of the grading and drainage aspects of this Project. Those relying on the record document are advised to obtain independent verification of its accuracy before using it for any other purpose.

Christopher A. Perea, PE
Construction Manager
Wilson & Company, Inc., Engineers & Architects
Email: caperea@wilsonco.com



CITY OF ALBUQUERQUE

June 10, 2009

Christopher A. Perea, P.E.
Wilson & Company, Inc.
4900 Lang Ave. NW
Albuquerque, NM 87109

RE: Vista Vieja Unit 2 & parcel D, (D-09/D003)
Engineers Certification for Release of Financial Guaranty
Engineers Stamp dated 1-25-07
Engineers Certification dated 06/08/2009

Dear Mr. Perea,

Based upon your Engineer's Certification submitted on 6/09/2009, the above referenced plan is adequate and satisfies the Grading and Drainage Certification for Release of Financial Guaranty.

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

Sincerely,

Timothy E. Sims
Plan Checker, Planning Dept. - Hydrology
Development and Building Services

C: Marilyn Maldonado, COA# 763382
File

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