WILSON &COMPANY
4900 Lang Ave. NE
Albuquerque, NM 87109
P.O. Box 94000 87199-4000
505-348-4000

Albuquerque
Colorado Springs
Colton
Denver
Durango
Houston
Kansas City
Lenexa
Oklahoma City
Phoenix
Salina
Wichita

15 May, 2001

H 11/D61

City of Albuquerque
Bradley L. Bingham
Sr. Engineer, Hydrology
600 2nd Street NW
Albuquerque, NM 87102

Re: Chamisa Cove Subdivision Sidewalk Culvert Revision
City Project # 656081

Dear Bradley:

The letter is in regards to a revision for a proposed sidewalk culvert located on the north side of Miami Rd. just west of 57th street. The proposed sidewalk culvert on Miami Rd. is adjacent to Tract A of Chamisa Cove Subdivision.

The intension of the sidewalk culvert was to surface drain the runoff from Tract A onto Miami Road. Due to an elevation difference from Miami Rd. and Tract A we plan to eliminate the sidewalk culvert and replace it with a French drain system located on the southeast end of Tract A (see Figure A). The proposed French drain will be sufficient for the runoff generated by Tract A.

If you should have any questions please call 348-4185.

WILSON & COMPANY

Steve J. Salazar, E.I.
Project Engineer

I concur with the above Revision, _____
Bradley L. Bingham, Public Works Hydrology

sjs/ss

cc: File, Argus Development

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 20, 2001

Daniel S. Aguirre, P.E.
Wilson & Company
4900 Lang Ave NE
Albuquerque, New Mexico 87109

Re: CHAMISA COVE (H-11/D61)
Engineers Certification For Release of Financial Guaranty
Engineers Stamp dated 11/15/2000
Engineer's Certification dated 6/28/2001

Dear Mr. Aguirre:

Based upon the information provided in your submittal dated 6/28/2001, the above referenced plan is adequate to satisfy the Grading and Drainage Certification requirements for Release of Financial Guaranty.

If I can be of further assistance, please contact me at 924-3981.

Sincerely,

Teresa A. Martin
Hydrology Plan Checker
Public Works Department

C: Arlene Portillo, PWD – #656081
file

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Chamisa Cove ZONE MAP/DRG. FILE #: H-11 / D61
DRB #: 1000415 EPC#: Z00110-955 WORK ORDER#: N/A

LEGAL DESCRIPTION: Portions of Tract 334 & 335, Unit 8 town of Atrisco Grant
CITY ADDRESS: N/A

ENGINEERING FIRM: Wilson & Company
ADDRESS: 4900 Lang Ave. NE
CITY, STATE: Alb. NM 87109
CONTACT: Steve Salazar
PHONE: (505) 348-4000
ZIP CODE: 87109

OWNER: Argus Development
ADDRESS: 6400 Uptown NE
CITY, STATE: Alb, NM 87110
CONTACT: Jeff Jesionowski
PHONE: (505) 889-3061
ZIP CODE:

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

SURVEYOR: Aldrich Land Surveying
ADDRESS 4109 Montgomery Blvd. NE
CITY, STATE: Alb, NM 87109
CONTACT: Tim Aldrich
PHONE: 884-1990 (505)
ZIP CODE:

CONTRACTOR: Sundance Mechanical
ADDRESS: 4400 Alameda NE
CITY, STATE: Alb, NM 87113
CONTACT: Carlos
PHONE: (505) 345-2694
ZIP CODE:

TYPE OF SUBMITTAL:
- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION
- ____ CLOMR/LOMR
- ____ OTHER

WAS A PRE-DESIGN CONFERENCE ATTENDED:
- ____ YES
- ____ NO
- ____ COPY PROVIDED

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

DATE SUBMITTED: 6/28/01 BY: Steve Salazar

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

RECEIVED
JUN 28 2001
HYDROLOGY SECTION

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Chamisa Cove ZONE ATLAS/DRNG. FILE#: H-11 / D61

DRB#: 1000415 EPC#: Z00110--455 WORK ORDER #: N/A

LEGAL DESCRIPTION: Portions of Tract 334 & 335, Unit 8 Town of Atrisco Grant

CITY ADDRESS: N/A

ENGINEERING FIRM: Wilson & Company CONTACT: Steve Salazar

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

Albuquerque, NM 87109

OWNER: Argus Development CONTACT: Jeff Jesionowski

ADDRESS: 6400 Uptown NE PHONE: (505) 889-3061

Albuquerque, NM 87110

ARCHITECT: N/A CONTACT:

ADDRESS: PHONE:

SURVEYOR: CONTACT:

ADDRESS: PHONE:

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

____ YES
____ NO
____ COPY PROVIDED

RECEIVED
MAR 22 2001
HYDROLOGY SECTION

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D. APPROVAL
____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ FOUNDATION PERMIT APPROVAL
____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY APPROVAL
____ GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ S.A.D. DRAINAGE REPORT
____ ~~DRAINAGE REQUIREMENTS~~
X OTHER: Release of Financial Guarantee

Date Submitted: 3/22/01

By: Steve Salazar

CURB + GUTTER NOT COMPLETE

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 12, 2000

Chris Perea, PE
Wilson & Company
4900 Lang Ave NE
Albuquerque, NM 87109

Re: Chamisa Cove Subdivision Drainage Report
Engineer's Stamp dated 11-15-00 (H11/D61)

Dear Mr. Perea,

Based upon the information provided in your submittal dated 11-15-00, the above referenced site is approved for Preliminary Plat action by the DRB.

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

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Sr. Engineer, Hydrology

C: file

WILSON
&COMPANY

4900 Lang Ave. NE
Albuquerque, NM 87109
P.O. Box 94000 87199-4000
505-348-4000

Albuquerque
Colorado Springs
Colton
Denver
Durango
Houston
Kansas City
Lenexa
Oklahoma City
Phoenix
Salina
Wichita

14 November, 2000

City of Albuquerque
Bradley L. Bingham
Sr. Engineer, Hydrology
600 2nd Street NW
Albuquerque, NM 87102

Re: Chamisa Cove Subdivision Revised Drainage Report
Project # (H11/D61)

Dear Bradley:

The comments for the grading and drainage submittal are addressed as the following:

- The drop inlets located on the southern end of the site have been resized to be approximately 7 ft. deep. The reason for the depth is due to clear zone between the storm drain and sanitary sewer.
- The difference in elevation between the property line and top of curb is 0.5 feet. The required minimum elevation is 0.48 ft.
- The limits of the floodplain have been added to grading and drainage sheet. Lot 21 finish pad elevation is 5097.51 ft. The base elevation, shown on the FIRM map panel 327, Zone AH is 5095 ft. The flood ponding is 2.57 ft below the finish pad elevation of lot 21. The future construction of the West Bluff Channel will determine the new flood designation for the area.
- The mean elevation of the benchmark used in the survey is as follows: Control Station 11-H11 with an elevation (SLD 1929) 5098.514 feet. See grading and drainage sheet.
- Existing Spot elevations for Ouray Rd., including proposed top of curb elevations at the tie in, and proposed spot elevations at the proposed roadway of Miami Rd. are included on the grading and drainage plan. Plan and profile sheets for the proposed roadway of Miami Rd. will be included in the plan set, as required by DRC submittal.
- A water block is at the intersection of Maiden Grass Rd. and Ouray Rd. to prevent runoff from entering the subdivision. See grading and drainage sheet.
- Existing spot elevations are included on the grading and drainage plan approximately 25ft. west of our property line to show tract 336 existing flow patterns. There will be no wall needed on the west side of the subdivision. A wall will be included on the southern part of the subdivision separating an existing residence and the subdivision, see grading and drainage sheet for location. Tract 336 directly drains south onto Miami Rd. There will be no runoff entering our site from Tract 336. The existing church on the northeast end of the site currently drains

onto 57th street. This site is separated by an existing CMU wall. See Appendix E of drainage report for flow patterns of area.

- The preliminary plat hearing was held on Nov. 8th, it has been deferred to Nov. 29th. The updated infrastructure list and preliminary plat is attached for comment.

If you should have any questions please call 348-4185.

WILSON & COMPANY

Steve Salazar

Steve J. Salazar, E.I.
Project Engineer

sjs/ss

cc: File

FILE X0.210.615

City of Albuquerque

September 28, 2000

Chris Perea, PE
Wilson & Company
4900 Lang Ave NE
Albuquerque, NM 87109

Re: Chamisa Cove Subdivision Drainage Report
Engineer's Stamp dated 8-18-00 (H11/D61)

Dear Mr. Perea,

Based upon the information provided in your submittal dated 8-18-00, the above referenced site cannot be approved for Grading Permit. I also assume that you are asking for Preliminary Plat approval, which also cannot be approved until the following comments are addressed:

- Inlets 15' deep are costly and not advisable for this plan. Please make them shallower.

- The difference in elevation of the right-of-way above the flowline of roll curb is 0.51 feet. You will need to adjust all ROW grades accordingly.

- Please show the limits of the floodplain on the grading plan. I am not sure how you determine that the floodplain, which is a zone AH (usually considered a ponding area), is contained in the street, especially if the street isn't built yet. Be advised that the base elevation of 5195 shown on the FIRM map is incorrect (it should be 5095). Regardless, abutting finish floor elevations must be 1 foot above this. Therefore, the finish floor elevation of lot 21 should be 5096 at a minimum.

- What is the mean elevation of your benchmark?

- You will need to provide spot elevations and road grades on both Ouray and Miami and profiles as well. Please indicate what part of these roads are existing and what is proposed.

- You will need a water block on Street 'A' to keep runoff in Ouray from entering your subdivision.

- You show no contours for Basin 201. How can I be sure how this drains? It appears that a retaining wall will be needed on the west side of this subdivision. Also, how does the church parcel drain and are you cutting off the flow path? From the information provided in the appendix, it is supposed to drain to the south. Without contours or mention in the report, I can't tell.

- Please provide the Preliminary plat and Infrastructure List for comment.

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

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Sr. Engineer, Hydrology

C: file

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Chamisa Cove ZONE ATLAS/DRNG. FILE#: H-11 /D061/

DRB#: 1000415 EPC#: Z00110--455 WORK ORDER #: N/A

LEGAL DESCRIPTION: Portions of Tract 334 & 335, Unit 8 Town of Atrisco Grant

CITY ADDRESS: N/A

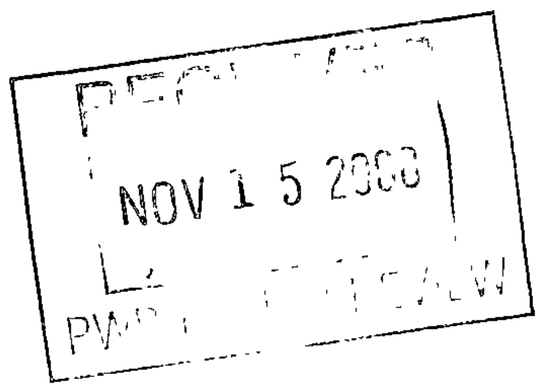
ENGINEERING FIRM:	Wilson & Company	CONTACT:	Steve Salazar
ADDRESS:	4900 Lang Ave. NE Albuquerque, NM 87109	PHONE:	(505) 348-4000
OWNER:	Argus Development	CONTACT:	Jeff Jesionowski
ADDRESS:	6400 Uptown NE Albuquerque, NM 87110	PHONE:	(505) 889-3061
ARCHITECT:	N/A	CONTACT:	
ADDRESS:		PHONE:	
SURVEYOR:		CONTACT:	
ADDRESS:		PHONE:	
CONTRACTOR:		CONTACT:	
ADDRESS:		PHONE:	

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
X DRAINAGE PLAN
____ CONCEPTUAL GRADING & DRAINAGE PLAN
X GRADING PLAN
____ EROSION CONTROL PLAN
____ ENGINEER'S CERTIFICATION
X OTHER (RESUBMITTAL)

PRE-DESIGN MEETING:

X YES
____ NO
____ COPY PROVIDED



CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D. APPROVAL
____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ FOUNDATION PERMIT APPROVAL
____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY APPROVAL
X GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ S.A.D. DRAINAGE REPORT
____ DRAINAGE REQUIREMENTS
X OTHER: (RESUBMITTAL)

Date Submitted: 11/15/00

By: Steve Salazar

DRB Case No. _____
DRB Project No.1000415
Date Submitted: 10-13-00
Prelim. Plat Approval: _____
Site Plan Approval: _____

INFRASTRUCTURE LIST
EXHIBIT "A"
TO SUBDIVISION IMPROVEMENT AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST
FOR: Chamisa Cove Subdivision
Portions of Tract 334 & 335 Town of Atrisco Grant

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

Public Improvements

SIZE	TYPE OF IMPROVEMENT	LOCATION	FROM	TO
18'	Paving, Curb & Gutter, 6' Sidewalk (south side)	Ouray Road	East Property Line	West Property Line
24'	Paving, Curb & Gutter, 6' Sidewalk (north side)	Miami Road	East Property Line	West Property Line
18'	Paving, Curb & Gutter, 6' Sidewalk (north side)	57th Street	North Property Line	South Property Line
	10" Waterline & 8" SAS service	Miami Rd	West Miami Rd Edge of Pvmt. (West Property line Tract 336)	East Property Line
	Temporary asphalt road	Miami Rd	West Miami Rd Edge of Pvmt.	West Property Line
	Re-stripping of Ouray Rd.	Ouray Road	American Ct.	57th Street
25' F-F	Residential Paving Curb & Gutter, 4' Sidewalk (Both Sides)	Potentilla Ct.	Malden Grass Rd.	cul-de-sac
25' F-F	Residential Paving Curb & Gutter, 4' Sidewalk (Both Sides)	Forestal Ct.	Malden Grass Rd.	cul-de-sac
27' F-F	Residential Paving Curb & Gutter, 4' Sidewalk (Both Sides)	Malden Grass Rd.	Ouray Rd.	Miami Rd.

INFRASTRUCTURE LIST
FOR Chamisa Cove Subdivision

DRB Case No.:
DRC Project No.1000415
Date Submitted: 10-13-00

4'	4' Sidewalk	Malden Grass Rd. (west side)	Miami Rd.	Lot 20
6"	Waterline (PVC)	Potentilla Ct.	Malden Grass Rd.	cul-de-sac
6"	Waterline (PVC)	Forestal Ct.	Malden Grass Rd.	cul-de-sac
10"	Waterline (PVC)	Maiden Grass Rd.	Miami Rd	Ouray Rd.
8"	SAS (Gravity Flow)	Potentilla Ct.	Malden Grass Rd.	cul-de-sac
8"	SAS (Gravity Flow)	Forestal Ct.	Malden Grass Rd.	cul-de-sac
8"	SAS (Gravity Flow)	Maiden Grass Rd.	Miami Rd.	Ouray Rd.
36"	Storm Drain System (curb inlets, Manhole)	Malden Grass Rd.	South end	Miami Rd.
	Water line services shall include Valves, Valve boxes, Fittings, and Fire Hydrants as Required			
	SAS services shall include Manholes and Serivice Conections as Required			
	Residental Street Lighting as per DPM Requirements			
	Storm Drain shall tie into existing 60" RCP in Miami RD.			
	Internal Sidewalks Deffered			

Prepared by _____
Print Name: Steve Salazar
Firm: Wilson & Company

Development Review Board Member Approvals

Traffic Date

Utility Development Date

City Engineer/AMAFCA Date

DRB Chairman Date

New Mexico Utilities Date

Design and Development, CIP Date

WILSON
&COMPANY

4900 Lang Ave. NE
Albuquerque, NM 87109
P.O. Box 94000 87199-4000
505-348-4000

Albuquerque
Colorado Springs
Colton
Denver
Durango
Houston
Kansas City
Lenexa
Oklahoma City
Phoenix
Salina
Wichita

Letter of Transmittal

Date: 11/15/00

To: C.O.A.

Attn: Brad Bingham

Project Name: Chamisa Cove Subdivision (RESUBMITTAL)

Project No.: (411/D61)

We are sending you:

☒ Attached

☐ Under separate cover via _____

The following items:

☐ Plans ☐ Copy of letter

☐ Originals ☐ Samples ☐ Change order

☐ Prints ☐ Specifications

☒ Grading & Drainage Resubmittal

Copies	Date	Description
1	11/15/00	G&D

These are transmitted as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit ____ copies for review

☐ For your use ☐ Approved as noted ☐ Submit ____ copies for distribution

☐ As required ☐ Returned for corrections ☐ Return ____ corrected prints

☐ For review and comment

☐ _____

Remarks: Diane Jenson

Action requested:

Copies to:

Signed: Steve Salazar

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

RECEIVED
NOV 15 2000
PWD/DESIGN REVIEW

INFRASTRUCTURE LIST
FOR Chamisa Cove Subdivision

DRB Case No.:
DRC Project No.1000415
Date Submitted: 10-13-00

~~4'~~	~~4' Sidewalk~~	~~Maiden Grass Rd. (west side)~~	~~Miami Rd.~~	~~Lot 20~~
6"	Waterline (PVC)	Potentilla Ct.	Maiden Grass Rd.	cul-de-sac
6"	Waterline (PVC)	Forestal Ct.	Maiden Grass Rd.	cul-de-sac
10"	Waterline (PVC)	Maiden Grass Rd.	Miami Rd	Ouray Rd.
8"	SAS (Gravity Flow)	Potentilla Ct.	Maiden Grass Rd.	cul-de-sac
8"	SAS (Gravity Flow)	Forestal Ct.	Maiden Grass Rd.	cul-de-sac
8"	SAS (Gravity Flow)	Maiden Grass Rd.	Miami Rd.	Ouray Rd.
36"	Storm Drain System (curb inlets, Manhole)	Maiden Grass Rd.	~~South end~~ LOT 21	Miami Rd.
	Water line services shall include Valves, Valve boxes, Fittings, and Fire Hydrants as Required			
	SAS services shall include Manholes and Serivice Conections as Required			
	Residental Street Lighting as per DPM Requirements			
	~~Storm Drain shall tie into existing 60" RCP in Miami RD.~~			
	Internal Sidewalks Deffered			

GRADING CERTIFICATION PER DPM REQUIREMENTS PRIOR TO RELEASE OF S.I.A.

Prepared by Steve Salazar
Print Name: Steve Salazar
Firm: Wilson & Company

Construction Completion deadline date 12-13-02

Development Review Board Member Approvals

R Dourte 12-13-00
Traffic Date

Roger Rhea 12/13/00
Utility Development Date

Lorenzo Ulibarri 12/13/00
City Engineer/AMAFCA Date

New Mexico Utilities Date

Jack C. Cloud 12/13/00
DRB Chairman Date

Adrienne E. Candelaria 12/13/00
~~Design and Development, CIP~~ Parks + Recreation Date

ORIGINAL

DRB Case No. _____
DRB Project No.1000415
Date Submitted: 10-13-00
Prelim. Plat Approval: 12-13-00
Site Plan Approval: _____
Prelim. Plat expires 12-13-01

INFRASTRUCTURE LIST
EXHIBIT "A"
TO SUBDIVISION IMPROVEMENT AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST
FOR: Chamisa Cove Subdivision
Portions of Tract 334 & 335 Town of Atrisco Grant

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

Public Improvements

SIZE	TYPE OF IMPROVEMENT	LOCATION	FROM	TO
18'	Paving, Curb & Gutter, 4' ~~8'~~ Sidewalk (south side)	Ouray Road	East Property Line	West Property Line
24'	Paving, Curb & Gutter, 4'~~8'~~ Sidewalk (north side)	Miami Road	East Property Line	West Property Line
18'	Paving, Curb & Gutter, 4'~~8'~~ Sidewalk (~~north~~ west side)	57th Street	North Property Line	South Property Line
	10" Waterline & 8" SAS service	Miami Rd	West Miami Rd Edge of Pvmt. (West Property line Tract 336)	East Property Line
	Temporary asphalt road	Miami Rd	West Miami Rd Edge of Pvmt.	West Property Line
	Re-stripping of Ouray Rd.	Ouray Road	American Ct.	57th Street
25' F-F	Residential Paving Curb & Gutter, 4' Sidewalk (Both Sides)	Potentilla Ct.	Maiden Grass Rd.	cul-de-sac
25' F-F	Residential Paving Curb & Gutter, 4' Sidewalk (Both Sides)	Forestal Ct.	Maiden Grass Rd.	cul-de-sac
27' F-F	Residential Paving Curb & Gutter, 4' Sidewalk (Both Sides)	Maiden Grass Rd.	Ouray Rd.	Miami Rd.

DRAINAGE REPORT

FOR

CHAMISA COVE SUBDIVISION

AUGUST 2000

PREPARED FOR:

ARGUS DEVELOPMENT
6400 Uptown NE
Albuquerque, NM 87110

PREPARED BY:

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

WILSON & COMPANY

DRAINAGE REPORT

FOR

CHAMISA COVE SUBDIVISION

AUGUST 2000

PREPARED FOR:

ARGUS DEVELOPMENT
6400 Uptown NE
Albuquerque, NM 87110

PREPARED BY:

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

TABLE OF CONTENTS

List of Figures / Appendices

Figure 1: *Location Map*

Appendix A: *Calculations for Existing and Proposed Conditions*

Appendix B: *HydroFlow Analysis*
Existing Storm Drain System at Miami Road

Appendix C: *HydroFlow Analysis*
Proposed Storm Drain System at Miami Road

Appendix D: *Street Capacity Analysis & Weir for Inlets*

Appendix E: *Miami Road Storm Drain West Bluff Outfall-Phase IIA*
Change Order No.1
&
Drainage Basins & Extracts from Summer Ray Drainage Report & Tompiro Subdivision

Introduction

Wilson & Company prepared this drainage report under contract to *Argus Development*. This document provides a basis for the design of a storm water conveyance system within the proposed subdivision of Chamisa Cove. The purpose of this report is to address the hydrology associated with the existing and developed conditions for the Chamisa Cove subdivision site, and to analyze the storm drain system for Miami Rd. between Estancia Rd. and 57th street.

The parcel of land being developed is located on zone atlas sheet H-11-Z (see Figure 1). The proposed subdivision consists of 55 lots. These lots will be distributed on approximately 6.824 acres. Zoning for this site is RD-10 dwelling units/per acre (Zoning Case # Z00110—00455).

Project Location

The subdivision project site is located between Ouray Rd and Miami Rd. just west of 57th street, on the northwest corner of the intersection of Coors Blvd and I-40. (see Figure 1).

Currently, the site typically slopes from west to east at a grade of approximately 0.5 – 0.9% percent. The soils are sandy with minimal vegetation.

Methodologies Used for Analysis

Hydrologic analysis in this report was determined using Section 22.2, Hydrology, of the Development Process Manual, Design Criteria for the City of Albuquerque, New Mexico (COA DPM). Hydrologic modeling for the storm drain system was performed using Hydraflow Storm Sewers, and Flowmaster for water depths (Appendix B). The 100-year 24-hour event was used in design of this project.

Existing basins for developed conditions, storm water runoff volumes, peak discharge rates and the storm drainage system, recently built on Miami Rd., were analyzed using the Summer Ray Subdivision drainage report (Alb., NM March 1995), the Tompiro Subdivision Drainage Report (Alb., NM February 1995), and the Q values on the As-builts for Miami Road Storm Drain West Bluff Outfall-Phase IIA, Change Order No. All the pertinent hydrologic parameters and calculations are in Appendix E.

Existing Conditions

Basins and flow patterns of the surrounding area were analyzed, from the Summer Ray Drainage Basins Identification Map (Appendix E). Our site is located in Basin M700 of the basin map. The parcel on the westerly end of the basin is a subdivision built in 1996 (Basin M600). Drainage flows for this subdivision, are collected by the fully developed Miami St. and the flows are collected by a series of storm drains, which drain into the 60" RCP (Miami Rd. Storm drain system) just east of Estancia Dr. (Appendix D). See Appendix A for existing storm drain system analysis.

See Grading and Drainage plan for new basin boundary. Basin 101 contains 3 parcels and 57th street between Miami Rd. and Ouray Rd. with an area of 16.078 acres. At present the basin is undeveloped and covered with typical west mesa vegetation. Approximately 70% of the existing conditions consist of type A land treatment and the remaining being type C treatment. The northern portion of the basin historically is the high point draining southeast. Currently flows produced by this basin drain into a new storm drainage system on Miami Rd. designed for developed conditions (Appendix E). The flows collected in the storm drainage system are diverted into the West Bluff Outfall (West I-40 Diversion) channel built in June 1997 by AMAFCA. This facility was built to accept storm waters conveyed by both Miami Rd. & Juniper Rd. once they are fully developed.

The calculated existing peak runoff for the Basin 101 is 30.151 cfs. There are no offsite flows impacting or entering this basin. The storm drainage system on Miami Rd. was designed to handle developed runoff from this basin. The design capacity of the system, for this basin, is approximately 86 cfs. Existing flows from Basin 101 drain directly into the system through slotted manhole covers at the intersection of Miami Rd and 57th street.

The Grading and Drainage plan contains the September 20, 1996 FEMA Flood Insurance Rate Map for the area which includes the proposed subdivision layout. The FEMA floodplain encumbers the subdivision at a small area on the southern tip of the subdivision Zoned AH. This area is contained in the street and will not have any effect on any residential lot.

Proposed Conditions

The existing Basin 101 is separated into three proposed basins: Basin 201 includes the parcel on the west end of the subject site. Basin 202 includes the proposed Chamisa Cove Subdivision. Basin 203 includes the southern end of the parcel just east of the subject site and 57th street.

The Chamisa Cove Subdivision (Basin 202) will have a series of four storm drains at the southerly end of the subdivision. The storm drains will convey flows, produced by the subdivision, into the 60" RCP (Miami Rd. Storm drain system) through a manhole on

Miami Rd (see Appendix C for analysis). The total flow added into the system is 25.344cfs. This flow was accounted for in the design of the storm drain system.

Basins 201 produces a flow of 9.899 cfs. This flow will continue to drain into the slotted manhole covers at the Miami Rd and 57th street intersection. In addition, Basin 203 produces a flow of 7.956 cfs., and will continue to flow into the slotted manhole covers at the Miami Rd. and 57th street intersection.

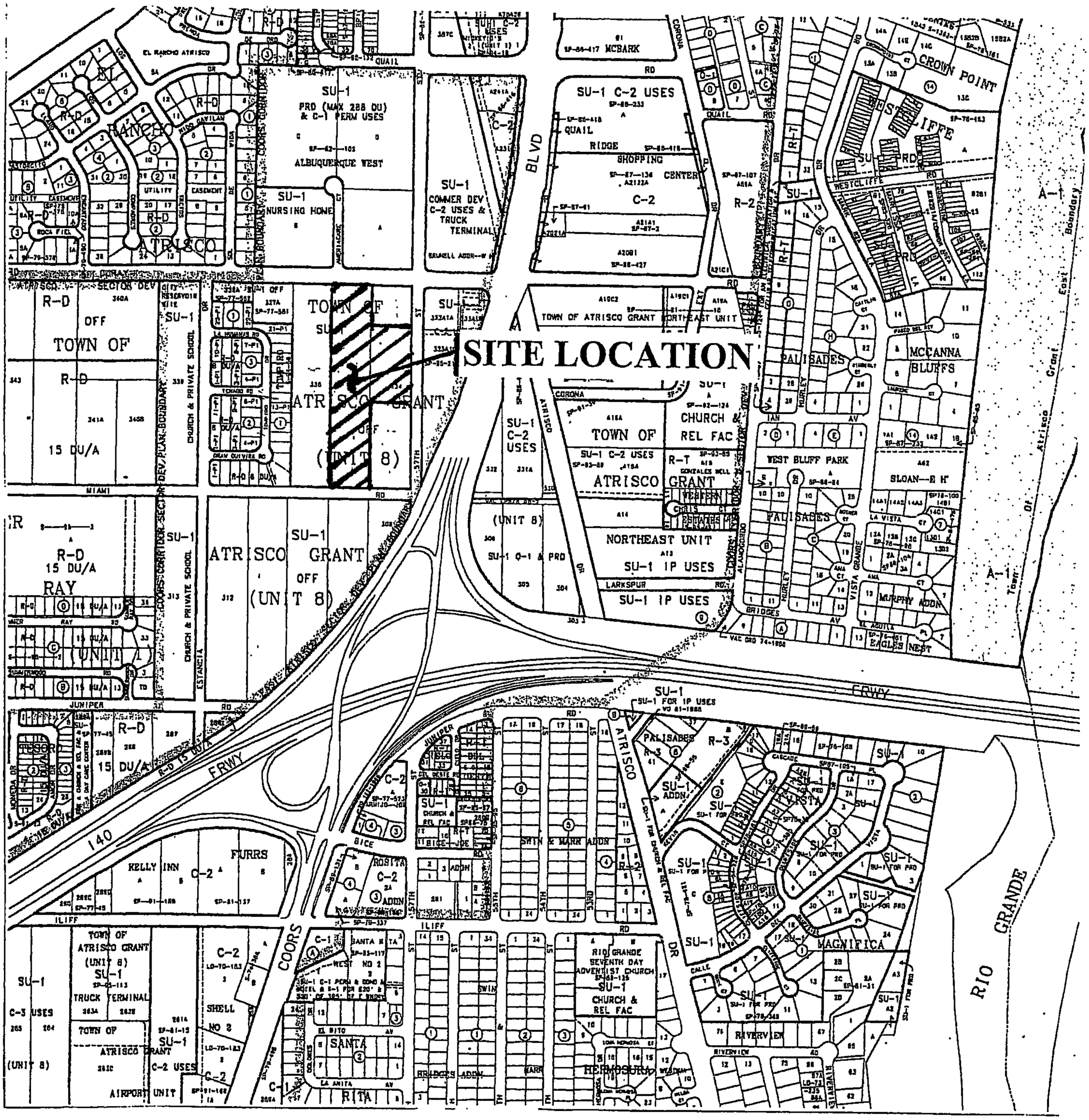
The design flow for the storm drainage system on Miami Rd. has included developed flow for this area in its analysis (see Appendix E). The designed 100 yr. 24-storm flow for this area is approximately 86 cfs into the system. The calculated 100 yr 24-year proposed flow into the system is **43.2 cfs.** Therefore the storm system contains enough capacity to convey the developed flows into the West Bluff Channel.

Each lot will drain to the street it fronts. Runoff from backyards will be limited from flowing laterally onto the adjacent property. The Grading and Drainage Plan shows the typical lot grading scheme.

The proposed Chamisa Cove subdivision will have standard curb at the turnout onto Ouray Rd. and Miami Rd., and at the inlets at the southern end of the subdivision. Roll type curb was placed at all other locations. See sections on Grading and Drainage Sheet. The water depth is contained within the right-of-way at all analysis points. Analysis of the street hydraulics at various analysis points is shown in Appendix D.

Conclusion

The calculations performed in this report demonstrate the proposed subdivision, as planned, will meet current City of Albuquerque and community design standards. The storm drain system on Miami Rd. can adequately convey flows produced by the proposed subdivision basin (Basin 202) to the outfall point at the newly constructed West Bluff box culvert. In addition the implementation of the proposed storm drainage system will have reduced the amount of storm runoff reaching the ponding area from the FEMA map 35001C0327D.



PORTIONS OF TRACT 334 & 335, TOWN OF ATRISCO GRANT

ZONE ATLAS: H-11-Z

WILSON & COMPANY

TRACTS 334 & 335

FIGURE 1

LOCATION MAP

DSGN. SJS	DRAWN SJS	CK.
FILE X0015	DATE 3/2000	SHEET 1 OF 1

APPENDIX A

Calculations for

Existing and Proposed Conditions

Given:
100-year 24-hour storm
Zone 1

Excess Precipitation Treatment A	=	0.44	inches
Excess Precipitation Treatment B	=	0.67	inches
Excess Precipitation Treatment C	=	0.99	inches
Peak Discharge Treatment A	=	1.29	cfs/ac
Peak Discharge Treatment B	=	2.03	cfs/ac
Peak Discharge Treatment C	=	2.87	cfs/ac

Basin 101 - Existing

Total Area	=	744544.18	ft^2
		17.093	ac
Area of Treatment A	=	521180.93	ft^2
		11.965	ac
Area of Treatment B	=	0.00	ft^2
		0.000	ac
Area of Treatment C	=	223363.25	ft^2
		5.128	ac

Volumetric Flow

Weighted E	=	0.605	inches
Volume	=	0.862	acre-ft

Peak Rate of Discharge

Q_{100}	=	30.151	cfs

Given:
100-year 24-hour storm
Zone 1

Excess Precipitation Treatment A	=	0.44	inches
Excess Precipitation Treatment B	=	0.67	inches
Excess Precipitation Treatment C	=	0.99	inches
Excess Precipitation Treatment D	=	1.97	inches
Peak Discharge Treatment A	=	1.29	cfs/ac
Peak Discharge Treatment B	=	2.03	cfs/ac
Peak Discharge Treatment C	=	2.87	cfs/ac
Peak Discharge Treatment D	=	4.37	cfs/ac

Basin 201 - Proposed

Total Area	=	244446.41	ft^2
		5.612	ac
Area of Treatment A	=	171112.49	ft^2
		3.928	ac
Area of Treatment B	=	0.00	ft^2
		0.000	ac
Area of Treatment C	=	73333.92	ft^2
		1.684	ac
Area of Treatment D	=	0.00	ft^3
		0.000	ac

Volumetric Flow

Weighted E	=	0.605	inches
Volume	=	0.283	acre-ft

Peak Rate of Discharge

Q_{100}	=	9.899	cfs

Given:
100-year 24-hour storm
Zone 1

Excess Precipitation Treatment A	=	0.44	inches
Excess Precipitation Treatment B	=	0.67	inches
Excess Precipitation Treatment C	=	0.99	inches
Excess Precipitation Treatment D	=	1.97	inches
Peak Discharge Treatment A	=	1.29	cfs/ac
Peak Discharge Treatment B	=	2.03	cfs/ac
Peak Discharge Treatment C	=	2.87	cfs/ac
Peak Discharge Treatment D	=	4.37	cfs/ac

Basin 202 - Proposed

Total Area	=	303710.27	ft^2
		6.972	ac
Area of Treatment A	=	0.00	ft^2
		0.000	ac
Area of Treatment B	=	75927.57	ft^2
		1.743	ac
Area of Treatment C	=	30371.03	ft^2
		0.697	ac
Area of Treatment D	=	197411.68	ft^3
		4.532	ac

Volumetric Flow

Weighted E	=	1.547	inches
Volume	=	0.899	acre-ft

Peak Rate of Discharge

Q_{100}	=	25.344	cfs

Given:
100-year 24-hour storm
Zone 1

Excess Precipitation Treatment A	=	0.44	inches
Excess Precipitation Treatment B	=	0.67	inches
Excess Precipitation Treatment C	=	0.99	inches
Excess Precipitation Treatment D	=	1.97	inches
Peak Discharge Treatment A	=	1.29	cfs/ac
Peak Discharge Treatment B	=	2.03	cfs/ac
Peak Discharge Treatment C	=	2.87	cfs/ac
Peak Discharge Treatment D	=	4.37	cfs/ac

Basin 203 - Proposed

Total Area	=	196470.46	ft^2
		4.510	ac
Area of Treatment A	=	137529.32	ft^2
		3.157	ac
Area of Treatment B	=	0.00	ft^2
		0.000	ac
Area of Treatment C	=	58941.14	ft^2
		1.353	ac
Area of Treatment D	=	0.00	ft^3
		0.000	ac

Volumetric Flow

Weighted E	=	0.605	inches
Volume	=	0.227	acre-ft

Peak Rate of Discharge

Q_{100}	=	7.956	cfs

APPENDIX B

HydroFlow Analysis

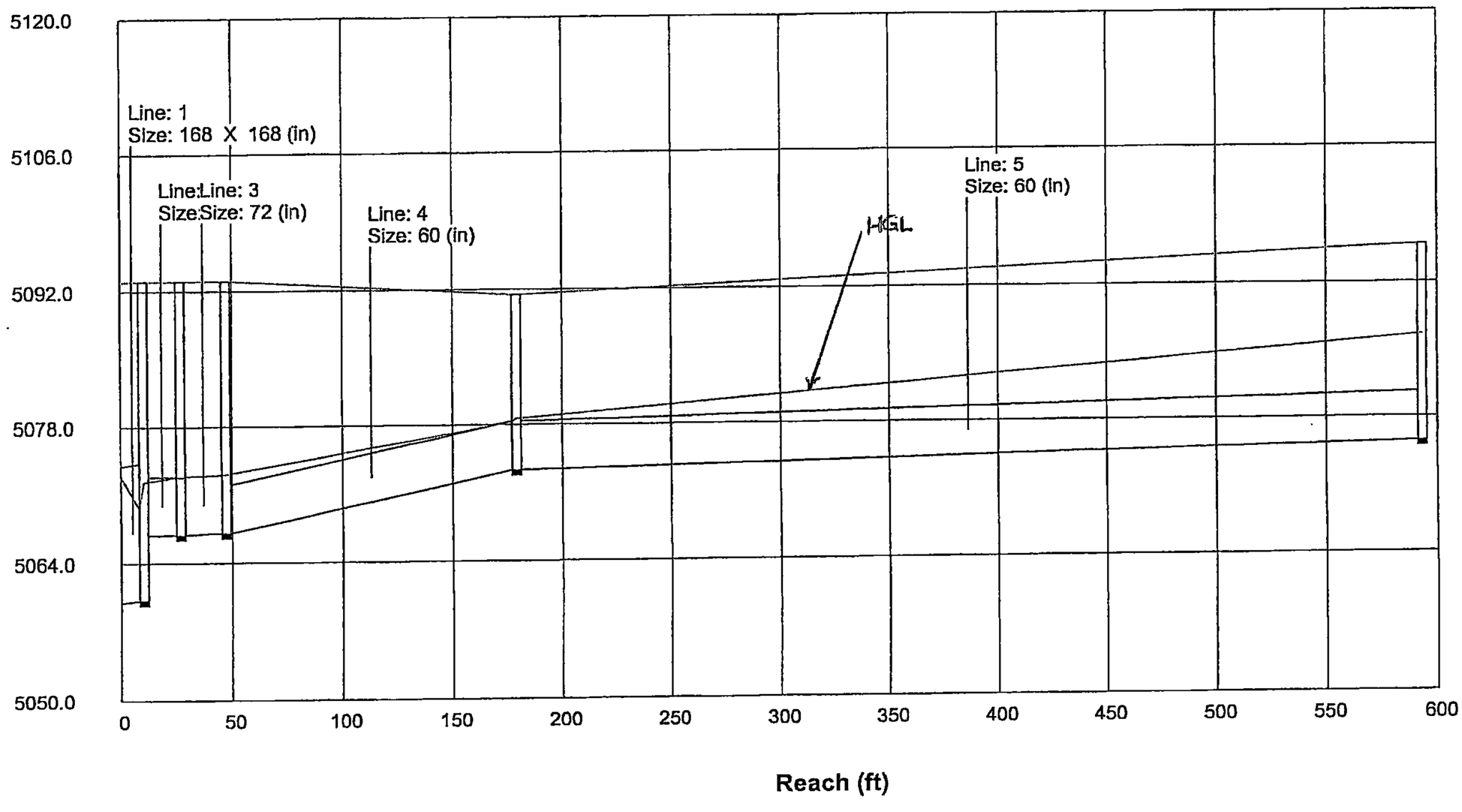
Existing Storm Drain System
At Miami Road

Hydraflow Plan View

Project file: exist_stormsystem.stm	IDF file: SAMPLE.IDF	No. Lines: 6	08-16-2000

Storm Sewer Profile

Proj. file: exist_stormsystem.stm



Hydraflow Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	west bluff box	2290.0	168 x 168 b	10.0	5060.00	5060.27	2.700	5073.00	5069.65	0.94	End
2	Manhole 1	444.9	72 c	16.7	5066.86	5066.92	0.360	5072.38	5072.82	0.04	1
3	Reducer	444.9	72 c	20.5	5066.92	5067.06	0.684	5072.86	5073.06	0.04	2
4	Manhole 2	416.0	60 c	132.0	5067.06	5073.35	4.765	5073.10	5078.25	0.35	3
5	Manhole 3	358.0	60 c	414.0	5073.35	5075.52	0.524	5078.61*	5086.43*	0.05	4

Project File: exist_stormsystem.stm | I-D-F File: SAMPLE.IDF | Total No. Lines: 6 | Run Date: 08-16-2000

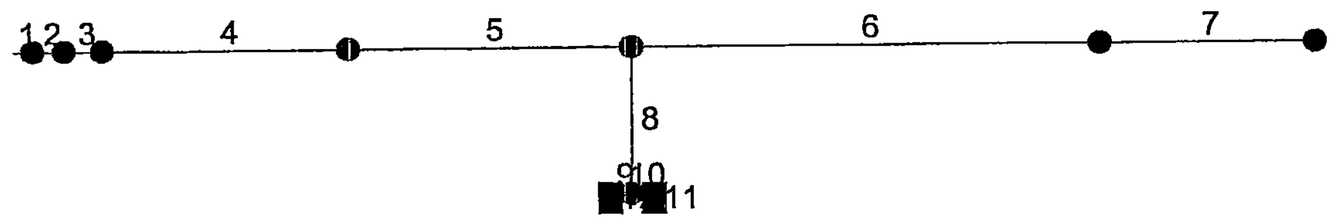
NOTES: c = circular; e = elliptical; b = box; Return period = 100 Yrs.; * Indicates surcharge condition.

APPENDIX C

HydroFlow Analysis

Proposed Storm Drain System
At Miami Road and Proposed St.

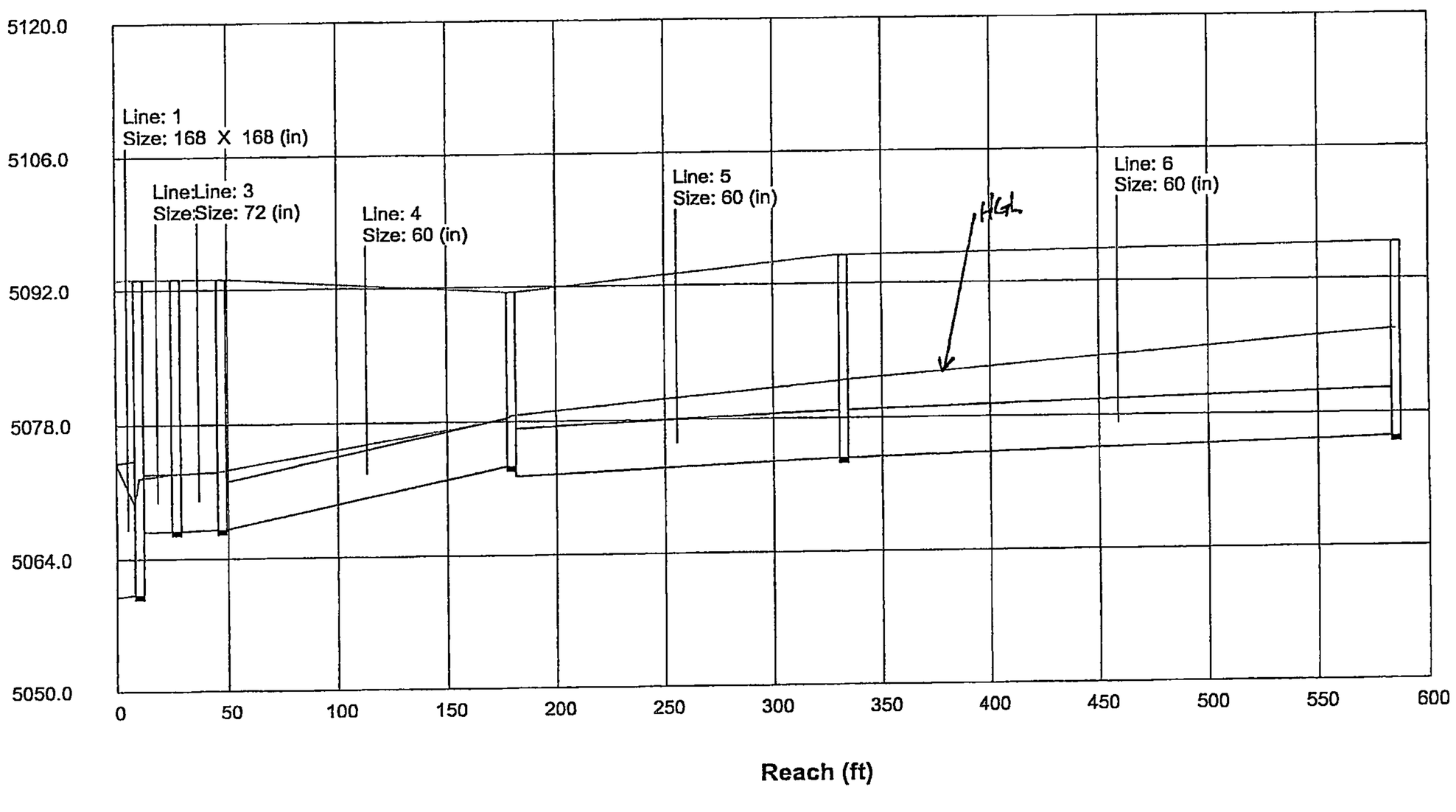
Hydraflow Plan View



Project file: prop_stormsystem.stm	IDF file: SAMPLE.IDF	No. Lines: 12	08-16-2000

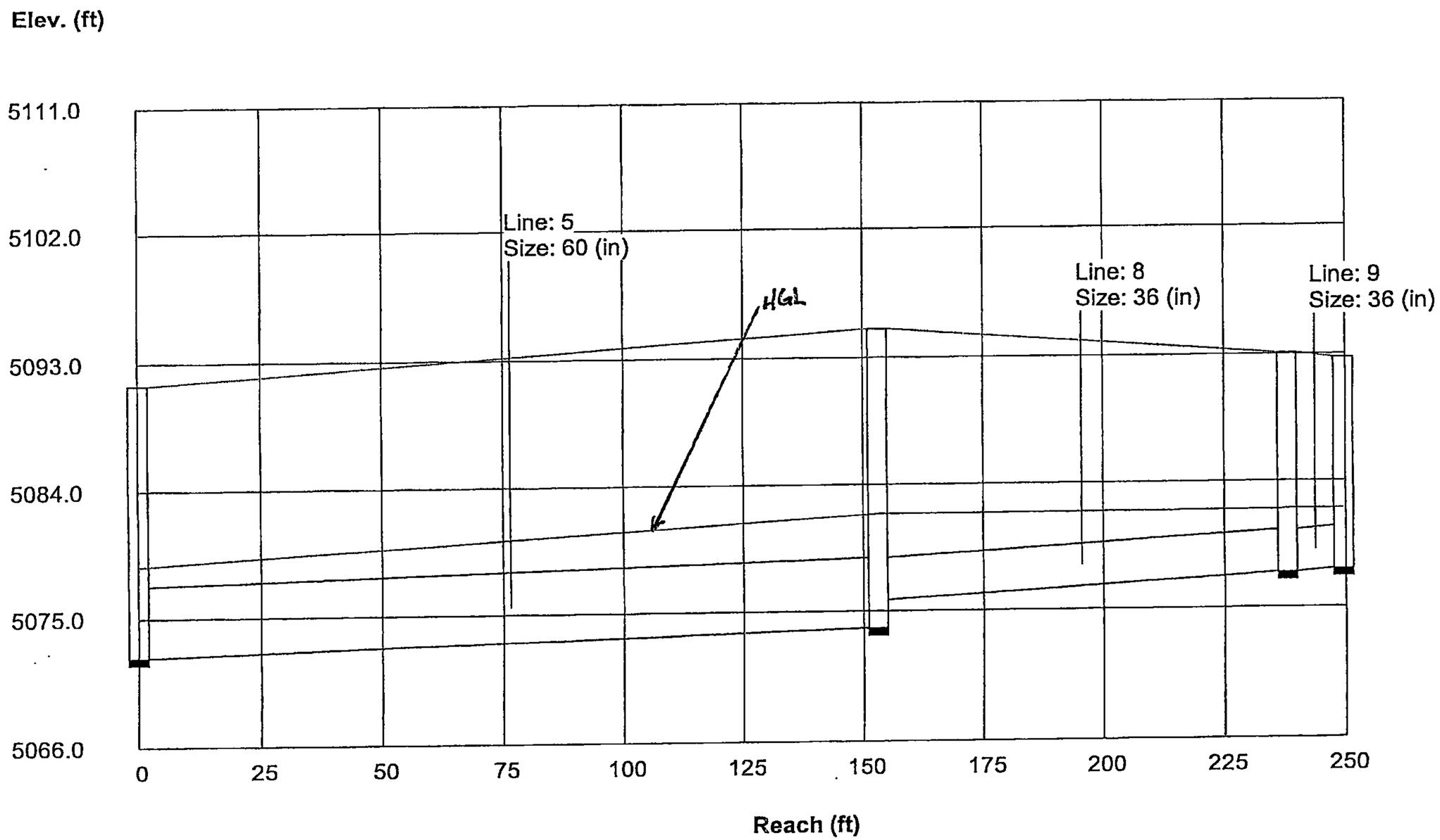
Storm Sewer Profile

Proj. file: prop_stormsystem.stm



Storm Sewer Profile

Proj. file: prop_stormsystem.stm



Hydraflow Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	west bluff box	2284.2	168 x 168 b	10.0	5060.00	5060.27	2.700	5074.00	5069.64	0.94	End
2	Manhole 1	458.2	72 c	16.7	5066.86	5066.92	0.360	5072.43	5072.87	0.04	1
3	Reducer	458.2	72 c	20.5	5066.92	5067.06	0.684	5072.91*	5073.14*	0.04	2
4	Manhole 2	429.2	60 c	132.0	5067.06	5073.35	4.765	5073.18	5078.27	0.37	3
5	Manhole 3	377.2	60 c	153.0	5072.27	5073.80	1.000	5078.64*	5081.85*	0.06	4
6	Manhole 4	358.0	60 c	253.0	5073.80	5075.52	0.680	5081.91*	5086.69*	0.00	5
7	Manhole 5	325.0	60 c	115.0	5075.52	5076.72	1.044	5086.69*	5088.48*	0.04	6
8	Manhole 6	19.20	36 c	85.0	5075.80	5077.50	2.000	5081.91*	5081.98*	0.06	5
9	DI	18.30	36 c	11.5	5077.50	5077.73	2.000	5082.04*	5082.04*	0.00	8
10	DI	18.30	36 c	11.5	5077.50	5077.73	2.000	5082.04*	5082.04*	0.00	8
11	CDI	5.74	24 c	5.0	5077.73	5077.83	2.002	5082.05*	5082.05*	0.00	10
12	CDI	5.73	24 c	5.0	5077.73	5077.83	2.002	5082.05*	5082.05*	0.00	9

Project File: prop_stormsystem.stm	I-D-F File: SAMPLE.IDF	Total No. Lines: 12	Run Date: 08-16-2000

NOTES: c = circular; e = elliptical; b = box; Return period = 100 Yrs.; * Indicates surcharge condition.

APPENDIX D

Street Capacity Analysis
&
Weir for Inlets

45 R/W (std c&g): 25.34 cfs
Cross Section for Irregular Channel

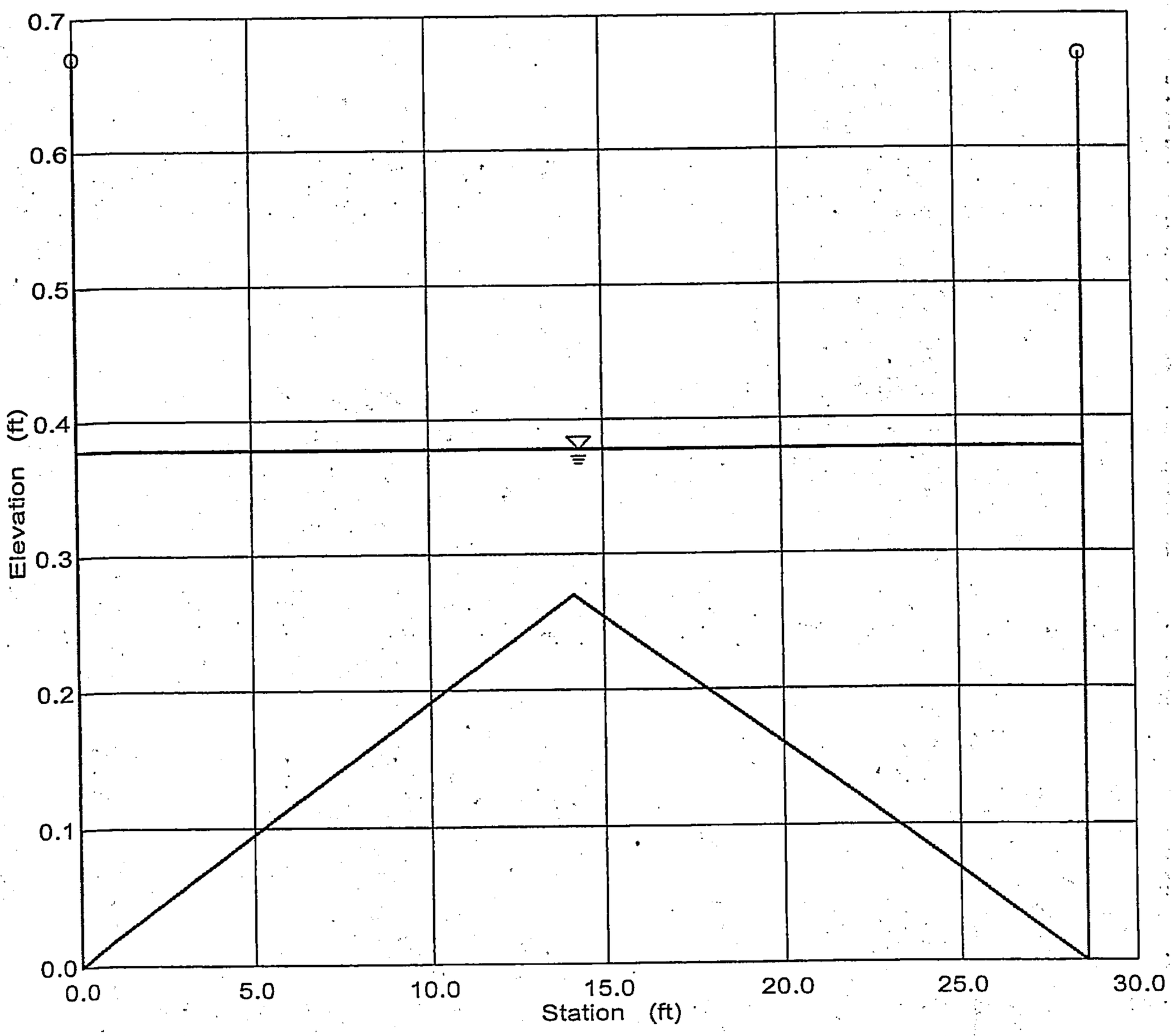
.33
.38

Project Description	
Project File	x:\public\projects\x0015\doc\drainage\street c.fm2
Worksheet	Street Capacity std c&g
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.013	
Channel Slope	0.007000	ft/ft
Water Surface Elevation	0.38	ft
Discharge	25.34	cfs

Above roll curb

.33



45 R/W : 25.4 cfs @ inlets
Worksheet for Irregular Channel

Project Description	
Project File	x:\public\projects\x0015\doc\drainage\street c.fm2
Worksheet	Street Capacity std c&g
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Input Data		
Channel Slope	0.007000	ft/ft

Elevation range: 0.00 ft to 0.67 ft.

Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
0.00	0.67	0.00	28.60	0.013
0.00	0.00			
14.13	0.27			
28.60	0.00			
28.60	0.67			

Discharge	25.34	cfs

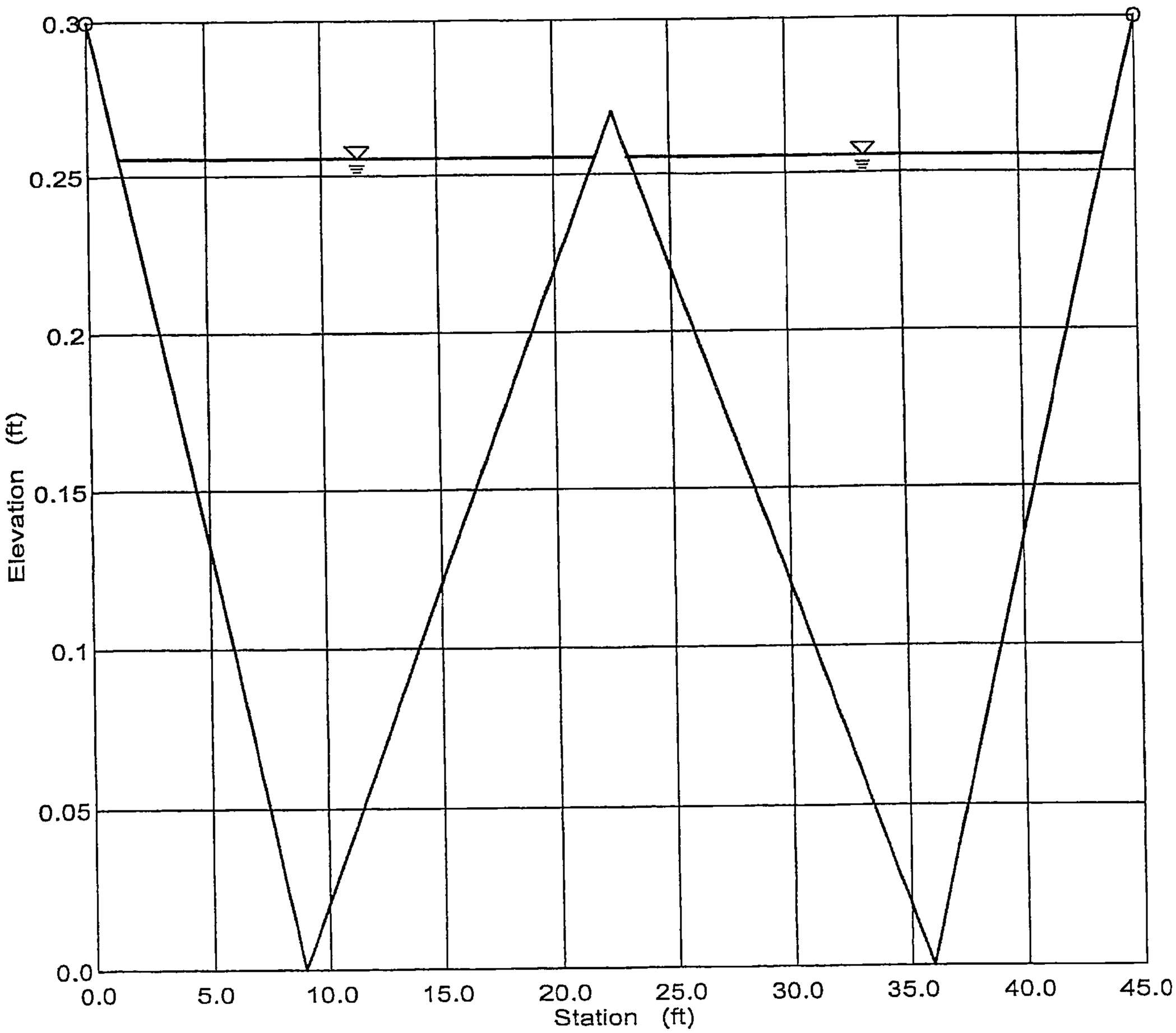
Results		
Wtd. Mannings Coefficient	0.013	
Water Surface Elevation	0.38	ft
Flow Area	6.93	ft²
Wetted Perimeter	29.36	ft
Top Width	28.60	ft
Height	0.38	ft
Critical Depth	0.43	ft
Critical Slope	0.003870	ft/ft
Velocity	3.65	ft/s
Velocity Head	0.21	ft
Specific Energy	0.58	ft
Froude Number	1.31	

Flow is supercritical.

45 R/W section lot line to lot line: 12.67 cfs
Cross Section for Irregular Channel

Project Description	
Project File	x:\public\projects\x0015\doc\drainage\street c.fm2
Worksheet	Street Capacity 4 full ROW
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.013	
Channel Slope	0.007000	ft/ft
Water Surface Elevation	0.26	ft
Discharge	12.67	cfs



45 R/W lot line to lot line: 12.67 cfs
Worksheet for Irregular Channel

Project Description	
Project File	x:\public\projects\x0015\doc\drainage\street c.fm2
Worksheet	Street Capacity 4 full ROW
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Input Data				
Channel Slope	0.007000 ft/ft			
Elevation range: 0.00 ft to 0.30 ft.				
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
0.00	0.30	0.00	45.00	0.013
9.00	0.00			
22.50	0.27			
36.00	0.00			
45.00	0.30			
Discharge	12.67 cfs			

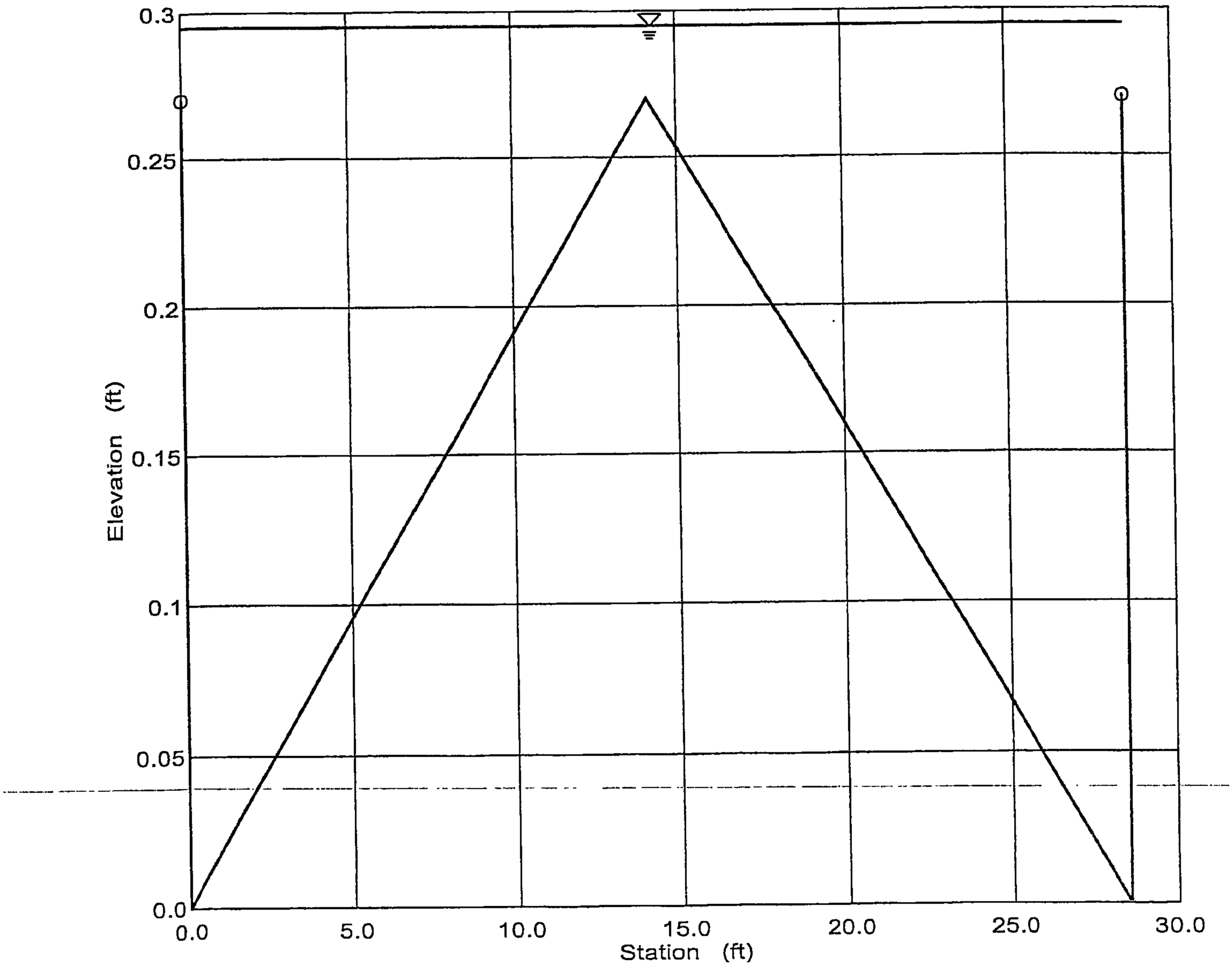
Results		
Wtd. Mannings Coefficient	0.013	
Water Surface Elevation	0.26	ft
Flow Area	5.22	ft²
Wetted Perimeter	40.90	ft
Top Width	40.89	ft
Height	0.26	ft
Critical Depth	0.27	ft
Critical Slope	0.004765	ft/ft
Velocity	2.43	ft/s
Velocity Head	0.09	ft
Specific Energy	0.35	ft
Froude Number	1.20	
Flow is supercritical.		
Flow is divided.		

45 R/W: 12.67 cfs

Cross Section for Irregular Channel

Project Description	
Project File	x:\public\projects\x0015\doc\drainage\street c.fm2
Worksheet	Street Capacity 4
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.013	
Channel Slope	0.007000	ft/ft
Water Surface Elevation	0.29	ft
Discharge	12.67	cfs



45 R/W : 12.67 cfs

Worksheet for Irregular Channel

Project Description	
Project File	x:\public\projects\x0015\doc\drainage\street c.fm2
Worksheet	Street Capacity 4
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Input Data

Channel Slope	0.007000	ft/ft

Elevation range: 0.00 ft to 0.27 ft.

Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
0.00	0.27	0.00	28.60	0.013
0.00	0.00			
14.13	0.27			
28.60	0.00			
28.60	0.27			

Discharge	12.67	cfs

Results

Wtd. Mannings Coefficient	0.013	
Water Surface Elevation	0.29	ft
Flow Area	4.56	ft²
Wetted Perimeter	29.19	ft
Top Width	28.60	ft
Height	0.29	ft
Critical Depth	0.32	ft
Critical Slope	0.004470	ft/ft
Velocity	2.78	ft/s
Velocity Head	0.12	ft
Specific Energy	0.41	ft
Froude Number	1.22	

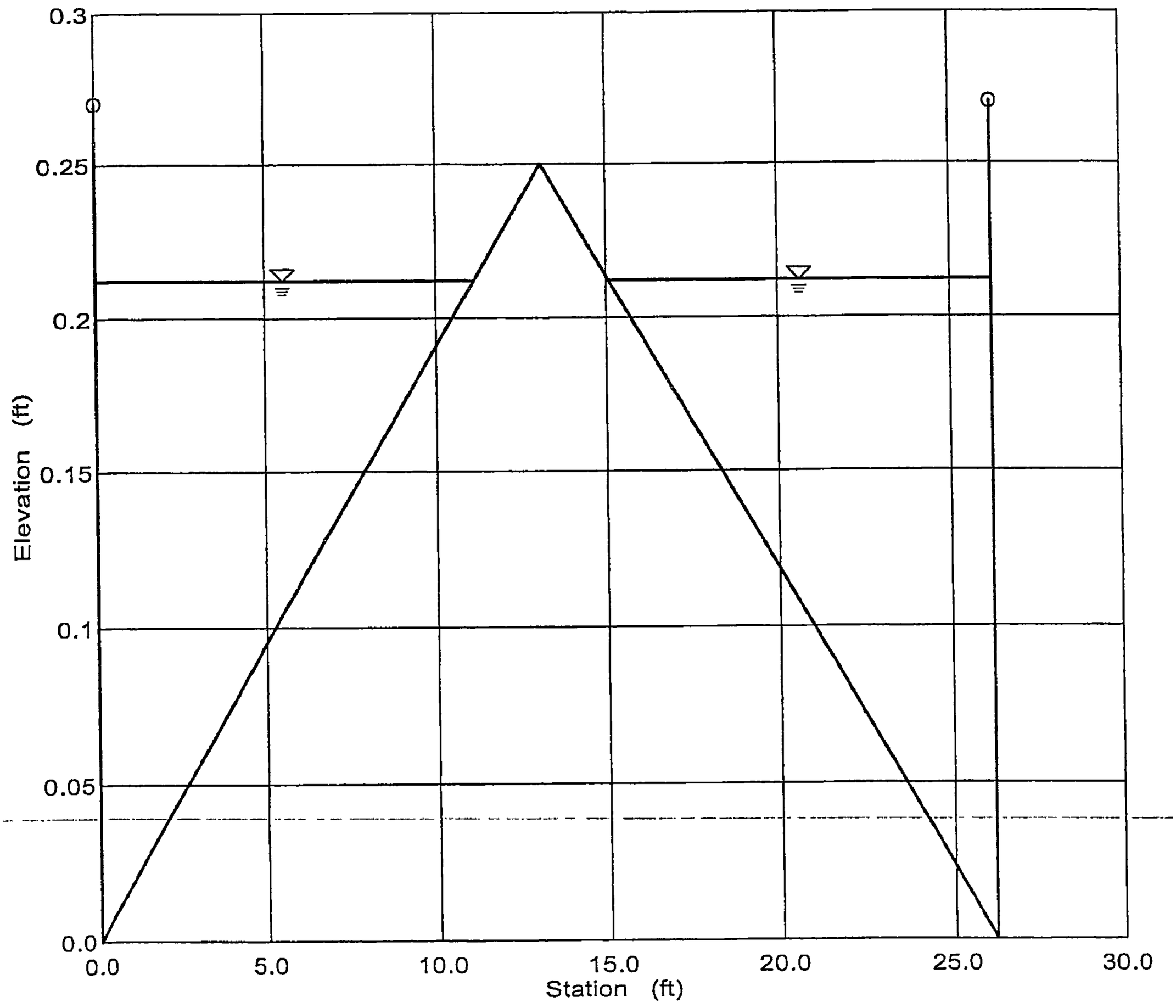
Flow is supercritical.

Water elevation exceeds lowest end station by 0.02 ft.

43' R/W @ cul : 6.0 cfs
Cross Section for Irregular Channel

Project Description	
Project File	x:\public\projects\x0015\doc\drainage\street c.fm2
Worksheet	Street Capacity <2>
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Section Data		
Wtd. Mannings Coefficient	0.013	
Channel Slope	0.010000	ft/ft
Water Surface Elevation	0.21	ft
Discharge	6.00	cfs



43' R/W : 6.0 cfs
Worksheet for Irregular Channel

Project Description	
Project File	x:\public\projects\x0015\doc\drainage\street c.fm2
Worksheet	Street Capacity <2>
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Water Elevation

Input Data		
Channel Slope	0.010000	ft/ft

Elevation range: 0.00 ft to 0.27 ft.

Station (ft)	Elevation (ft)
0.00	0.27
0.00	0.00
13.13	0.25
26.26	0.00
26.26	0.27

Start Station	End Station	Roughness
0.00	26.26	0.013

Discharge	6.00	cfs

Results		
Wtd. Mannings Coefficient	0.013	
Water Surface Elevation	0.21	ft
Flow Area	2.37	ft²
Wetted Perimeter	22.74	ft
Top Width	22.31	ft
Height	0.21	ft
Critical Depth	0.24	ft
Critical Slope	0.005115	ft/ft
Velocity	2.53	ft/s
Velocity Head	0.10	ft
Specific Energy	0.31	ft
Froude Number	1.37	

Flow is supercritical.
Flow is divided.

COMP. SJS

CK.

DATE 3-1-00

WILSON & COMPANY

LOC. Miami Rd & 57th FILE

PROJ. Chamsa Cove SHEET

SUBJ. Weir for Inlets OF

Capacity of Grate Inlets as Weirs

AS PER DRAINAGE OF HIGHWAY PAVEMENTS US DEPT. OF TRANS. MARCH 1984

$Q_i = C_W P d^{1.5}$

P = Perimeter of grate or L

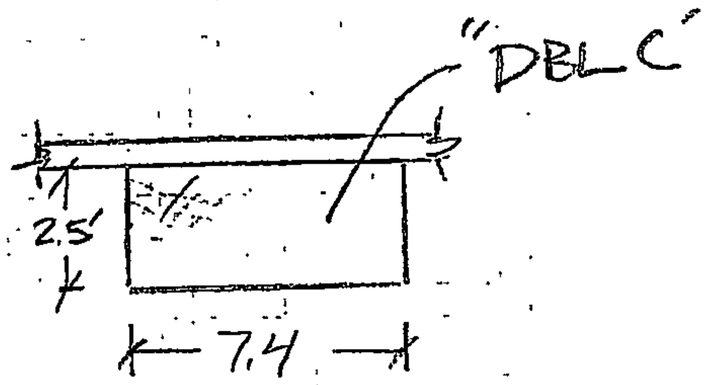
$C_W = 3.0$

d = depth of water

BASIN 202

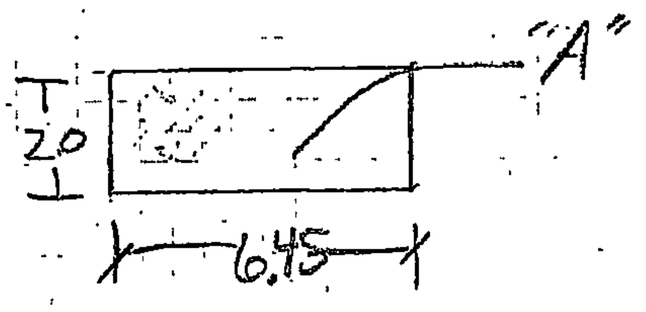
$Q = (3.0)(12.4)(.38)^{1.5}$

$Q = 8.7$ ft³/s each inlet



$Q = (2.3)(6.45)(.38)^{1.5}$

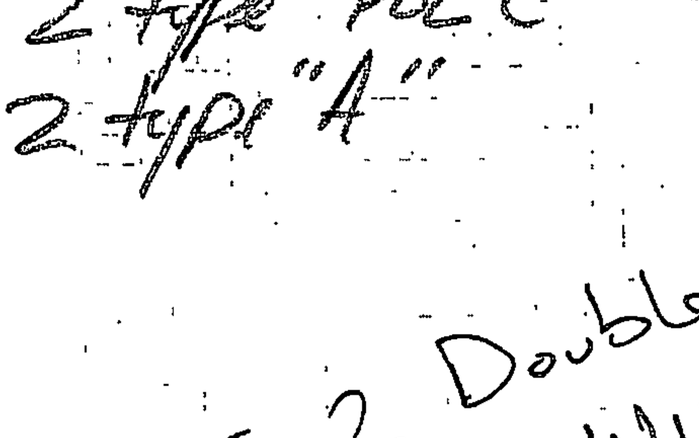
$Q = 4.6$ ft³/s each inlet



USE: 2 type "DBL C"
2 type "A"

$Q_i = 26.6 > 25.3$ ✓

USE 2 Double A INLETS

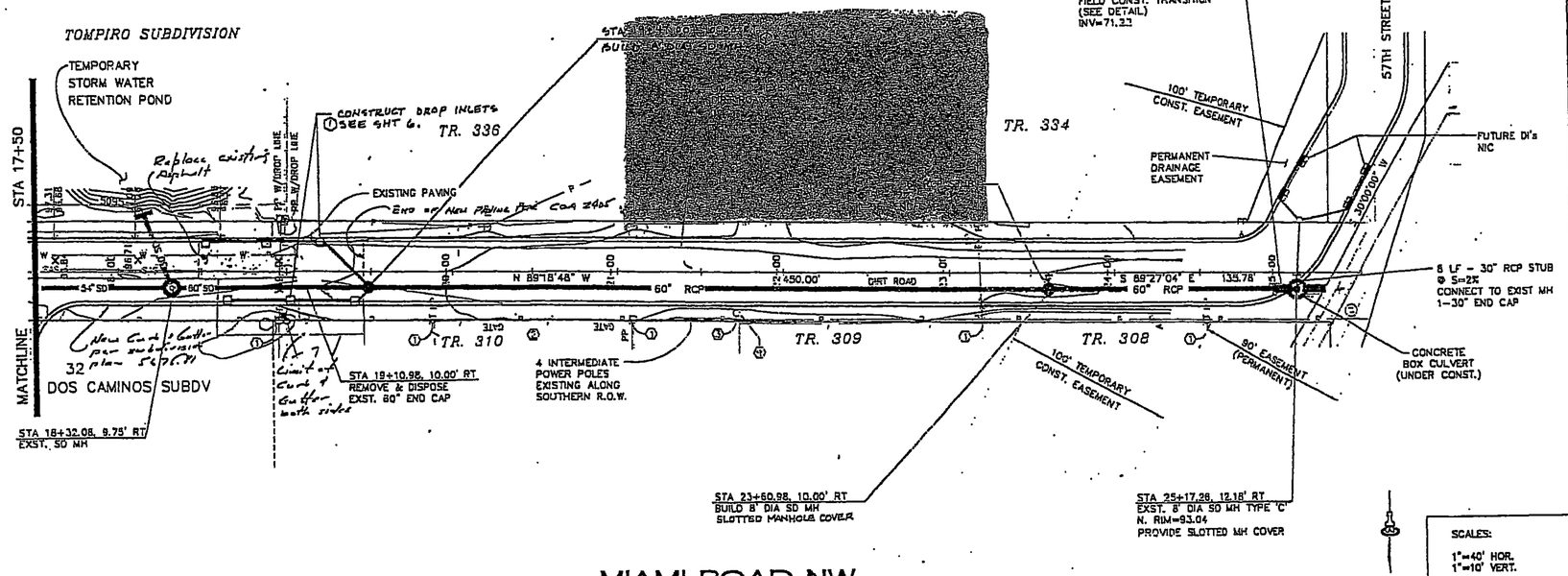


$Q_i = 3.0 \times (24.5)(.38)^{1.5}$

$34 > 25$ OK

APPENDIX E

Miami Road Storm Drain
West Bluff Outfall-Phase IIA
Change Order No. 1
&
Drainage Basins & Extracts
from Summer Ray & Tompiro
Drainage Reports



CONSTRUCTION NOTES (KEYED) ①

1. POWER POLES MUST BE SUPPORTED WHERE THEY FALL WITHIN THE TRENCH PRISM. CONTACT PNM AND COORDINATE THROUGH THEIR FIELD SUPPORT DEPARTMENT.
2. PROVIDE FOR FULL TIME ACCESS TO THE RESIDENCE ALONG TRACT 310.
3. REMOVE AND RESTORE EXST. MAIL BOX TO SAME LOCATION AFTER BACKFILL.

GENERAL NOTES

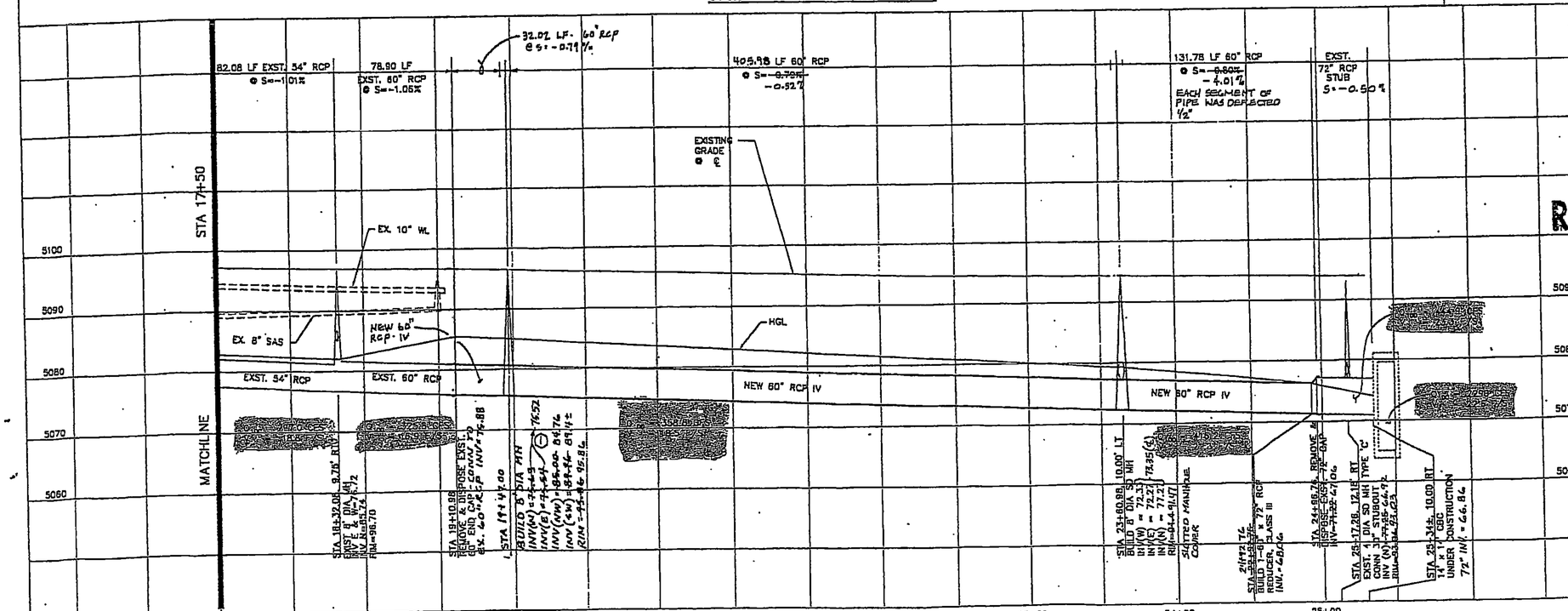
1. ALL STATIONING IS BASED ON CENTERLINE TOF RIGHT-OF-WAY
2. SURVEY AND BASEMAPPING PROVIDED BY ISAACSON & ARFMAN, P.A.

LEGEND

ITEM	EXISTING	PROPOSED
WATERLINE	6" W	6" W
SANITARY SEWER	8" SAS	8" SAS
STORM SEWER	36" SD	60" RCP
FIRE HYDRANT		
VALVE		
WATER SERVICE (SINGLE)		
WATER SERVICE (DOUBLE)		
MANHOLE		
CURB		
DROP INLET		
OVERHEAD ELEC	OHE	
UNDERGROUND ELEC, GAS, TEL, TV	UGT	
FLOWLINE ELEV.	FL 0.14	FL 0.14
TOP OF CURB ELEV.	99.3	99.31
SPOT ELEV.	x 16.7	16.7
SEWER SERVICE		
RIGHT OF WAY		
POWER POLE (GUYED)	PP	
CHAIN LINK FENCE		
CENTERLINE		
RETAINING WALL		
TOP OF ASPHALT ELEV.	TA 16.2	TA 16.2

SCALES:
1"=40' HOR.
1"=10' VERT.

MIAMI ROAD NW



RECORD DRAWINGS

BRASHER & LORENZ, INC.
Consulting Engineers
2201 San Pedro NE Building 1 Suite 210
Albuquerque, New Mexico 87110
Phn 505-888-6065 Fax: 505-888-6165

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque New Mexico

842220.DWGcnw VIEW: 2 11/20/96

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: STA 17+10.98 TO STA 25+17.26
MIAMI RD - STORM DRAIN

APPROVED
FEB 10 1997
DESIGN REVIEW COMMITTEE
City Engineer Approval

City Project No. 4075.90 | Zone Map No. H-11 | Sheet 3 Of 6

AS-BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
FIELD CHECKED BY — DATE
TOPO COMPLETED BY — DATE
DRAWINGS BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE

BENCH MARKS
ACS CONTROL STATION "2-H10" LOCATED AT THE NORTHWEST QUADRANT OF 64TH ST. & MIAMI RD. NW.
ELEVATION: 5108.81

SURVEY INFORMATION
FIELD NOTES — DATE
ALS

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
0	3-20-97	ADDED DI'S, MOVED MH.	DL

REVISIONS
DESIGN — DATE 11/96
DESIGNED BY FCA

M100P
M200P
M100
M200
M300
M400
M500
M600
M700
=BASIN 101
M800
J100
J200
J300
J400
J500
MIAMI RD
JUPITER RD
MAP-1
MAP-P1
MAP-2
MAP-P2
MAP-3
MAP-P3
MAP-4
MAP-P4
JAP-1
JAP-2
JAP-3
TORA TOLLA
UNIT 2
UNIT 1
ACRES
SUMMER RAIN SUBD.
ALDEA SOLANA SUBD.
LA MESA DEL OESTE SUBD.
APS SCHOOL
PARK
CHAMISA POINTE
BASIN NO 14
CORONADO
FREEWAY
INTERSTATE
HIGHWAY
MUNICIPAL LIMITS

HYDROLOGY SUMMARY

	Analysis Pt.	Q_{100}
Miami Road - -	MAP-1	11.2
	MAP-2	50.8
	MAP-3	183.6
	MAP-4	283.4
	MAP-P1	75.2
	MAP-P2	153.4
	MAP-P3	315.2
	MAP-P4	415.6
Juniper Road -	JAP-1	61.0
	JAP-2	101.8
	JAP-3	16.8

FIGURE 1 BASIN IDENTIFICATION MAP

construction cycle. This first phase of the facility will accept all of the storm waters conveyed by both Miami Road and Juniper Road once they are developed. In order to better understand the area wide drainage characteristics, a Drainage Masterplan is offered below for the contributing basins.

III. MIAMI ROAD/64TH STREET STORM DRAIN MASTERPLAN

The Phase One and Two construction sequence of the I-40 Diversion Channel will accept 100% of the storm water runoff for the fully developed subdivision. Ultimately, all three discharge routes are accepted by the proposed facility at three distinct locations. The three outfall routes are more defined for the ultimate condition below:

MIAMI ROAD: A storm drain is required in this 60 foot right-of-way public road. Under the historical and existing conditions, the drainage basin is found to be 90.24 acres. The projected 100-year developed runoff requires a storm drain from the 14' x 14' CBC at Miami Road to a point approximately 360 feet west of Estancia Drive. This point is coincident with the drainage outfall point of Summer Ray Subdivision, Unit Two. The water depth within the fully developed street immediately upstream from the first battery of storm water

catch basins is within the curb section of Miami Road. This point is identified as MAP-3 and has the following hydrological characteristics, (before the addition of flows from Basins 400 and 500):

Q_{100} = 45.8 cfs
V_{100} = 3.90 fps
D_{100} = 0.50'
EGL = 0.73'

The storm drain and the accompanying catch basins shall be designed to accept 100% of the surface flows off of Miami Road as well as 100% of the storm waters generated by or conveyed through Unit Two of the Summer Ray Subdivision (Basin 400), and the future development to the north of Miami between 64th Street and Estancia (Basin 500). The 100% capturing of storm waters in both situations is due to a "roll" in both Miami Road and Summer Ray Drive which creates a "sag" or low point. These sags will be designed with the downstream portion of the roadway having a crest flow line grade about 0.1 feet lower than the top of curb elevation at the catch basin battery at the sag. This enables the roadways to act as their own emergency spillways if clogging occurs.

There appears to be a potential or requirement to expand the contributing drainage basin to include a natural formed playa being a portion of that area within the boundaries of Miami Road, 64th

Street, Quray Road, Ladera Drive, and 72nd Street. The areas are designated as Basins M100P and M200P and they increase the drainage basin by approximately 39 acres as shown on the figure that follows the text.

The drainage outfall must be via a storm drain extension from the manhole at Miami Road and Summer Ray Drive. Adequate storm drain slopes are available if the entire storm drain is designed from the aforementioned 14' x 14' CBC at 57th Street and Miami Road. The increased Q at the Summer Ray Subdivision outfall manhole is 176.3 cfs as determined by the AHYMO output found in Appendix C of this report. The surface flow carrying characteristics of Miami Road are not changed by adding the offsite playa area since the playas cannot surface flow to Miami Road without considerable import of fill material. If this were the case, the developers of those properties within the playa basin will be responsible for adding additional catch basins in Miami Road or 64th Street to accept those increased surface flows.

In summary, the offsite playa basin increases the existng basin by the following runoff values at Miami Road and 64th Street:

Area: 39.17 Ac.
Q_{100}: 131.5 cfs
V_{100}: 4.46 AF

OUTFLOW HYDROGRAPH RESERVOIR 500.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FL C
.000	.0	2.000	72.5	4.000	1.2	6.000	1.4	8.000	
.667	.0	2.667	8.3	4.667	1.1	6.667	.2	8.667	
1.333	40.1	3.333	2.3	5.333	1.2	7.333	.1	9.333	

RUNOFF VOLUME = 1.36651 INCHES = 11.2672 ACRE-FEET
PEAK DISCHARGE RATE = 315.16 CFS AT 1.533 HOURS BASIN AREA = .1546 SQ. MI.

*S THE AMOUNT ABOVE MUST BE REMOVED @ POINT A-3 (ON EXHIBIT)
*S BASINS 600 & 700 ARE INCLUDED TOGETHER, THEY DRAIN SOUTH TO MIAMI
COMPUTE NM HYD ID=17 HYD NO=600.0 DA=0.0411 SQ MI
PER A=0 PER B=37.2 PER C=12.2.0 PER D=50.6
TP=-0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 82.106 CFS UNIT VOLUME = .9992 B = 526.28 P60 = 1.9000
AREA = .020797 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

K = .124696HR TP = .133300HR K/TP RATIO = .935456 SHAPE CONSTANT, N = 3.780775
UNIT PEAK = 51.829 CFS UNIT VOLUME = 1.000 B = 340.28 P60 = 1.9000
AREA = .020303 SQ MI IA = .46296 INCHES INF = 1.14628 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

PRINT HYD ID=17 CODE=20

HYDROGRAPH FROM AREA 600.00

BASIN M600 + M700

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FI C
.000	.0	2.000	17.4	4.000	.3	6.000	.4		
.667	.0	2.667	1.6	4.667	.3	6.667	.0		
1.333	18.5	3.333	.5	5.333	.3				

RUNOFF VOLUME = 1.36652 INCHES = 2.9954 ACRE-FEET
PEAK DISCHARGE RATE = 88.31 CFS AT 1.500 HOURS BASIN AREA = .0411 SQ. MI.

*S ADD THE FLOW FROM BASINS 600 & 700 TO THE EARLIER TOTAL
ADD HYD ID=18 HYD NO=600.1 ID=15 ID=17
PRINT HYD ID=18 CODE=20

HYDROGRAPH FROM AREA 600.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	89.9	4.000	1.5	6.000	1.8	8.000	
.667	.0	2.667	9.9	4.667	1.4	6.667	.2	8.667	
1.333	58.6	3.333	2.7	5.333	1.5	7.333	.1	9.333	

RUNOFF VOLUME = 1.36651 INCHES = 14.2626 ACRE-FEET
PEAK DISCHARGE RATE = 401.61 CFS AT 1.500 HOURS BASIN AREA = .1957 SQ. MI.

*S BASIN 800 IS THE AREA BETWEEN 57TH ST & COORS
COMPUTE NM HYD ID=19 HYD NO=800.0 DA=0.0065 SQ MI
PER A=0 PER B=37.2 PER C=12.2.0 PER D=50.6
TP=-0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 12.985 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.9000
AREA = .003289 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

K = .124696HR TP = .133300HR K/TP RATIO = .935456 SHAPE CONSTANT, N = 3.780775
UNIT PEAK = 8.1968 CFS UNIT VOLUME = .9986 B = 340.28 P60 = 1.9000
AREA = .003211 SQ MI IA = .46296 INCHES INF = 1.14628 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033333

PRINT HYD ID=19 CODE=20

HYDROGRAPH FROM AREA 800.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	2.8	4.000	.0	6.000	.1		
.667	.0	2.667	.3	4.667	.0	6.667	.0		
1.333	2.9	3.333	.1	5.333	.1				

RUNOFF VOLUME = 1.36652 INCHES = .4737 ACRE-FEET
PEAK DISCHARGE RATE = 13.98 CFS AT 1.500 HOURS BASIN AREA = .0065 SQ. MI.

*S ADD THE FLOW FROM BASIN 800 (TOTAL FLOW @ MIAMI & COORS)
ADD HYD ID=20 HYD NO=800.1 ID=18 ID=19
PRINT HYD ID=20 CODE=20

HYDROGRAPH FROM AREA 800.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	2.000	92.6	4.000	1.6	6.000	1.8	8.000	.0
.667	.0	2.667	10.2	4.667	1.4	6.667	.2	8.667	.0
1.333	61.6	3.333	2.8	5.333	1.6	7.333	.1	9.333	.0

SEE SD PROFILE

RUNOFF VOLUME = 1.36650 INCHES = 14.7363 ACRE-FEET
PEAK DISCHARGE RATE = 415.59 CFS AT 1.500 HOURS BASIN AREA = .2022 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 10:49:17

DRAINAGE REPORT for MIAMI Rd. (TOMPIRO Subdivision)

PURPOSE

The purpose of this report is to analyze the storm drain system for Miami Road between 72nd Street and the tie into the future West Bluff box culvert at 57th Street. The drainage basin for this area needed to be defined to accomplish the analysis.

EXISTING CONDITIONS

The outlined area encompasses residential and business zoned tracts to include public thoroughfares. The comprised basin is approximately 138.112 acres between 72nd, 57th, Miami and Ouray (Appendix A). The basin is currently approaching full development with scattered existing structures.

The basin slopes from west to east approximately 0.61 percent. Vegetative cover is typical of west side property, and the soils are sandy. The site currently drains overland and ponds in the numerous playas within the basin. Existing conditions were not considered, only future conditions were analyzed.

HYDROLOGIC ANALYSIS

AHYMO and HYDRAFLOW was utilized for this analysis, with the intent to discharge and convey 100% of developed runoff to the outfall point. SAD 218 hydrologic analysis was utilized to assist in determining the basin boundaries. All of the pertinent hydrologic parameters and calculation methods are located in Appendix B of this report.

PROPOSED MANAGEMENT PLAN

As a fully developed basin, this plan proposes to convey 100% of developed runoff through a storm drain system beginning at Ladera and Ouray to the outfall point at 57th and Miami. The future conditions for the entire basin generate Q=353.93 cfs.

The proposed storm drain system assumes each of the residential and business basins will discharge their runoff directly to designated manholes (see Appendix B). Basin P1 and 68th Street between Miami and Ouray discharges into Manhole #1, Basin P2.1 into Manhole #2 and Basin P2.2 into Manhole #3. Basin P3 and 64th between Basin Line and Ouray into Manhole #4. Basins R2 and R3 will discharge to Manhole #7 and Basin R5.1 into Manhole #8. Basin R4 and street flow will discharge into Manhole #9. Basin R5.2 will discharge into Manhole #10 and R6 discharges into Manhole #11. B1 discharges into Manhole #12 and street flow into Manhole #13. B2 is the final basin discharging into the system at Manhole #14.

The generated runoff from the streets is assumed to be collected by a series of storm inlets on Miami at three separate locations and tie into the storm system through the designated manholes (see Appendix B). The first series of inlets will collect all street flow west of 64th to include Basin R1 then discharge into Manhole #3. The second collection point will collect runoff on Miami between 64th and Estancia then discharge into Manhole #4. The third collection point will collect runoff from 57th, Miami, and Estancia at 57th with a connection to Manhole #7.

There are no off-site flows impacting or entering this basin. Ouray has been excluded from this analysis because of it's improved conditions and drainage is assumed to be collected elsewhere.