

CITY OF ALBUQUERQUE



June 19, 2006

Mr. Chris Sholtis, PE
BOHANNAN-HUSTON, INC.
7500 Jefferson St. NE – Courtyard I
Albuquerque, NM 87109

RE: VISTA WEST SUBDIVISION, (L-10/D23)
Engineers Certification for Release of Financial Guaranty
Engineers Stamp dated 07/31/2003
Engineers Certification dated 06/14/2006

Dear Chris:

P.O. Box 1293

Based upon the information provided in your Engineer's Certification Submittal dated 06/19/2006, the above referenced plan is adequate to satisfy the Grading and Drainage Certification for Release of Financial Guaranty.

Albuquerque

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

New Mexico 87103

Sincerely,

Arlene V. Portillo

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

www.cabq.gov

C: Marilyn Maldonado, COA# 726881
File

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV. 1/11/2002)

PROJECT TITLE: VISTA WEST SUBDIVISION ZONE MAP/DRG. FILE # L-10-~~7~~023
DRB #: 1002022 EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: TRACT 8 & 9 IN UNIT TWO-TOWN OF ATRISCO GRANT
CITY ADDRESS: NORTH OF TOWER ROAD AND WEST OF UNSER BLVD.

ENGINEERING FIRM: Bohannon Huston, Inc. CONTACT: Chris Sholtis, P.E.
ADDRESS: 7500 Jefferson NE - Courtyard I PHONE: (505) 823-1000
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

OWNER: T.S. McNaney and Associates CONTACT: Timothy McNaney
ADDRESS: 3 Wind Road NW PHONE: (505) 338-2286
CITY, STATE: Albuquerque, NM ZIP CODE: 87120

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

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

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

CHECK TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEERS CERTIFICATION (TCL)
- ☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ☐ OTHER

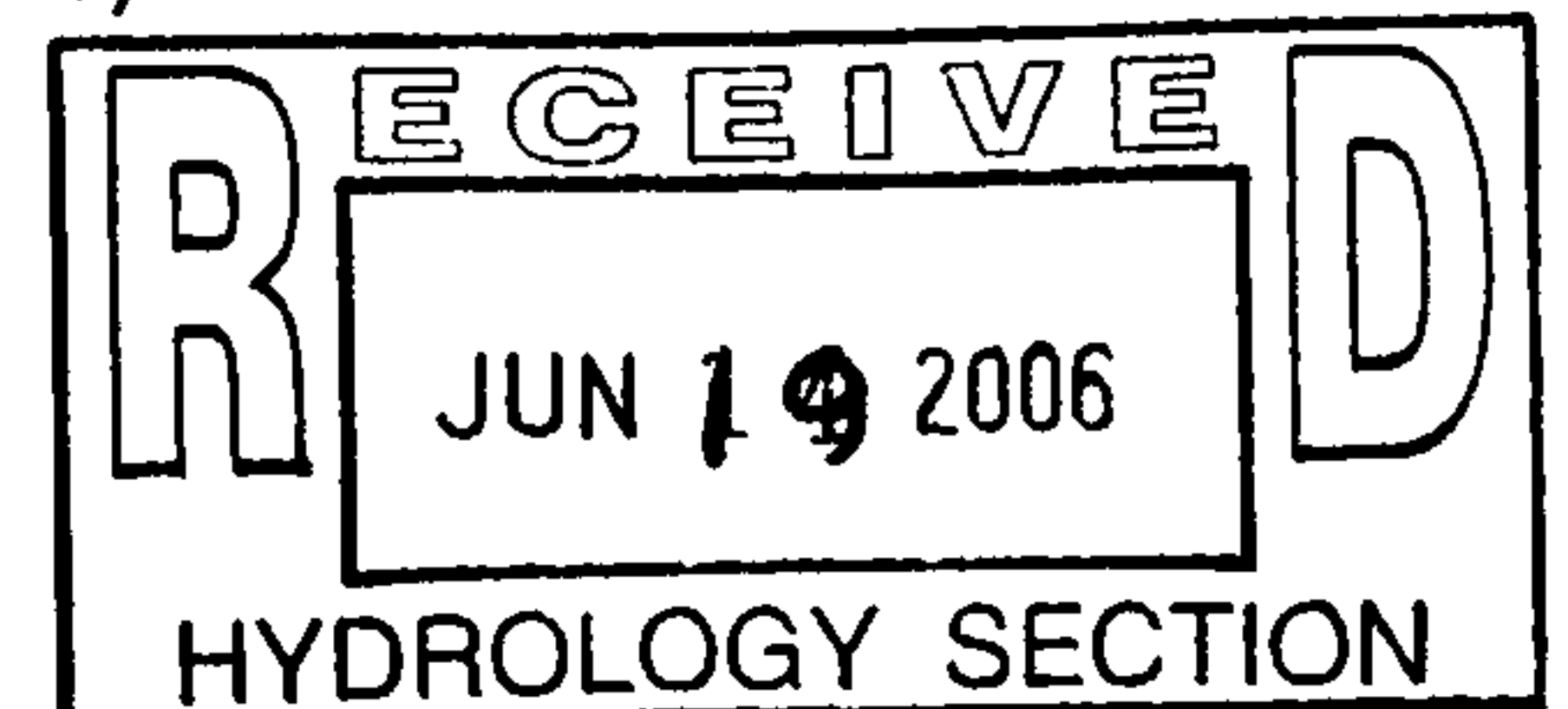
Resub

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 (PERM.)
- ☐ CERTIFICATE OF OCCUPANCY (TEMP.)
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☒ YES
- ☐ NO
- ☐ COPY PROVIDED

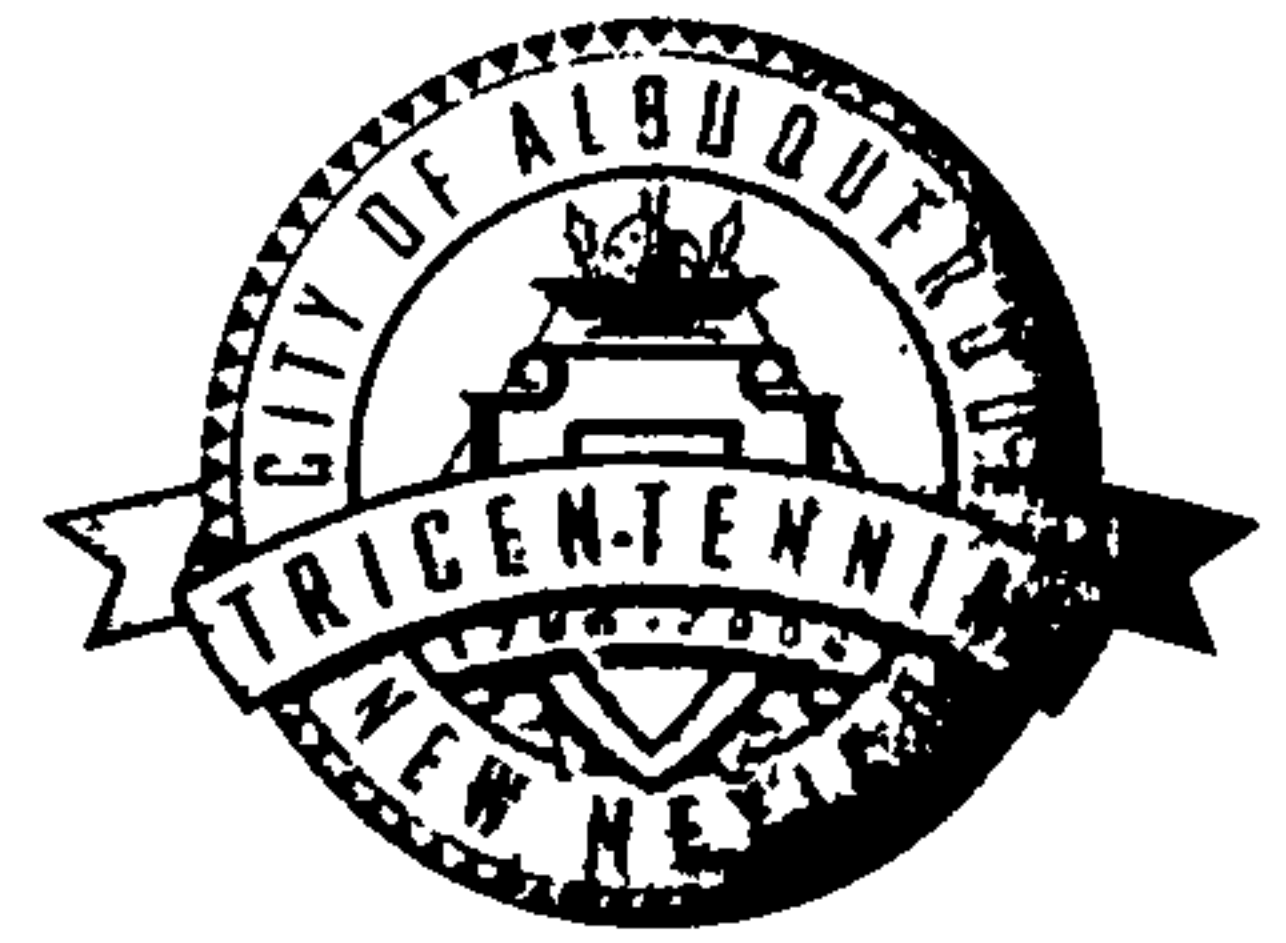


DATE SUBMITTED: June 14, 2006 BY: Chris Sholtis, P.E.

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

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
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3. **Drainage Report:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE



June 14, 2006

Mr. Chris Sholtis, PE
BOHANNAN-HUSTON, INC.
7500 Jefferson St. NE – Courtyard I
Albuquerque, NM 87109

RE: VISTA WEST SUBDIVISION, (L-10/D23)
Engineers Certification for Release of Financial Guaranty
Approved Engineers Stamp dated 08/08/2002
Submitted Engineers Stamp dated 07/31/2003
Engineers Certification dated 06/14/2006

Dear Chris:

Based upon the information provided in your Engineer's Certification Submittal dated 06/14/2006, the above referenced plan cannot be approved for Grading and Drainage Certification for Release of Financial Guaranty.

1. The Approved Grading and Drainage Plan has an Engineer Stamp date of 08/08/2002 not 07/31/2003 as indicated in your submittal. (See attached copy of approval letter and copy of lower right hand corner of approved G/D Plan).

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

Sincerely,

Arlene V. Portillo

Arlene V. Portillo
Plan Checker, Planning Dept.- Hydrology
Development and Building Services

C: File

Attachments

726881

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov



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

September 5, 2002

Scott Steffen, PE
Bohannon Huston, Inc.
7500 Jefferson NE
Albuquerque, NM 87109

Re: Vista West Subdivision Drainage Report
Engineer's Stamp dated 8-8-02 (L10/D23)

Dear Mr. Steffen,

Based upon the information provided in your submittal dated 6-3-02, the above referenced report is approved for Preliminary Plat action by the DRB. However, prior to Final Plat or Work Order, the proposed pond must be analyzed for the 100-yr, 10-day volumes, not the 100-yr, 6-hr volumes as stated in your report.

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

Sincerely,

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

C: file

POND

et
6 ac-ft
1.0'
6:1

Bohannon & Huston

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING • SPATIAL DATA • ADVANCED TECHNOLOGIES

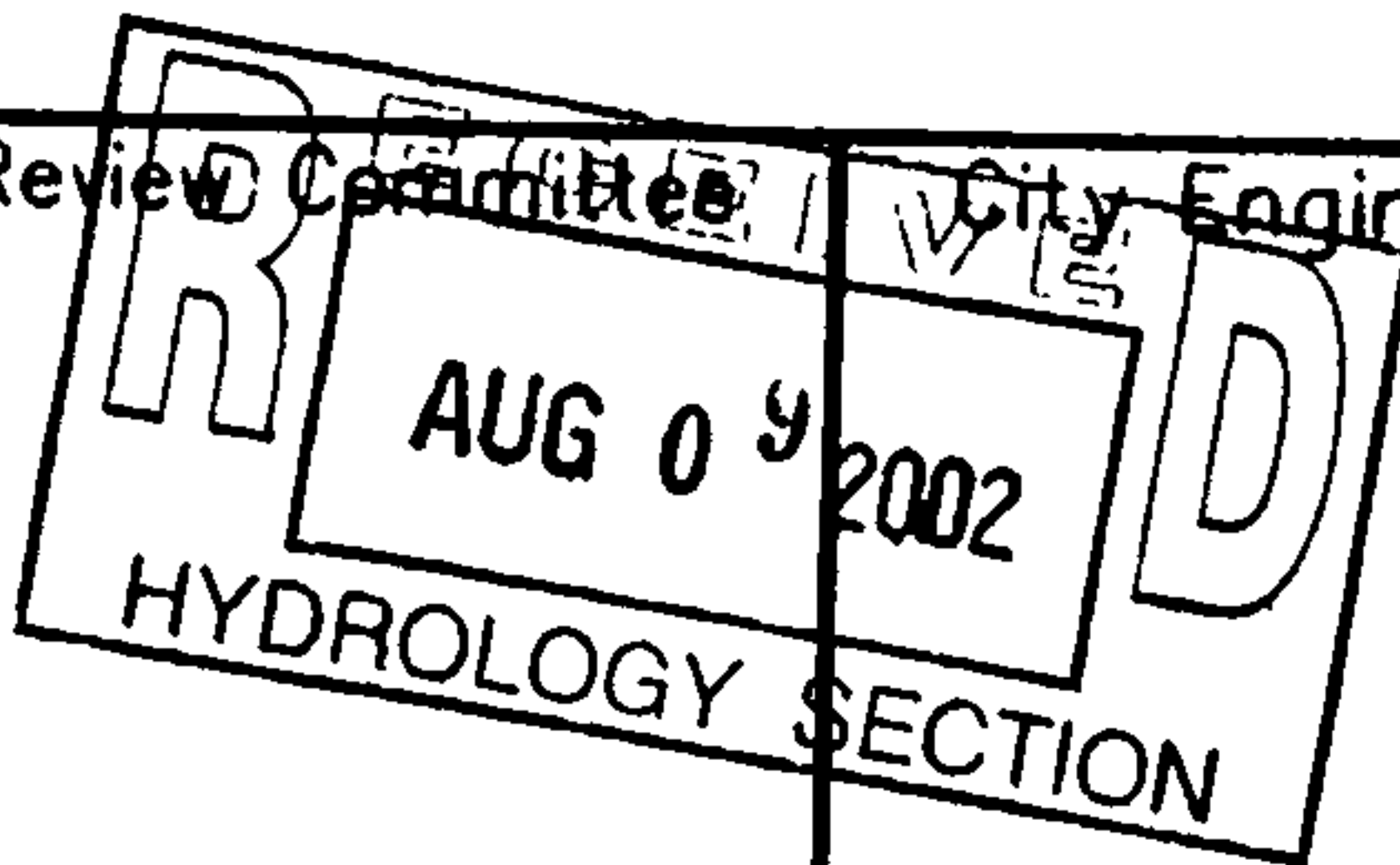


**CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT**

**VISTA WEST SUBDIVISION
GRADING AND DRAINAGE
DETAILS**

Design Review Committee

City Engineer Approval



Last Design Update

Mo./Day/Yr.

Mo./Day/Yr.

(±0.5'):

City Project No.

COA #

Zone Map No.

L10

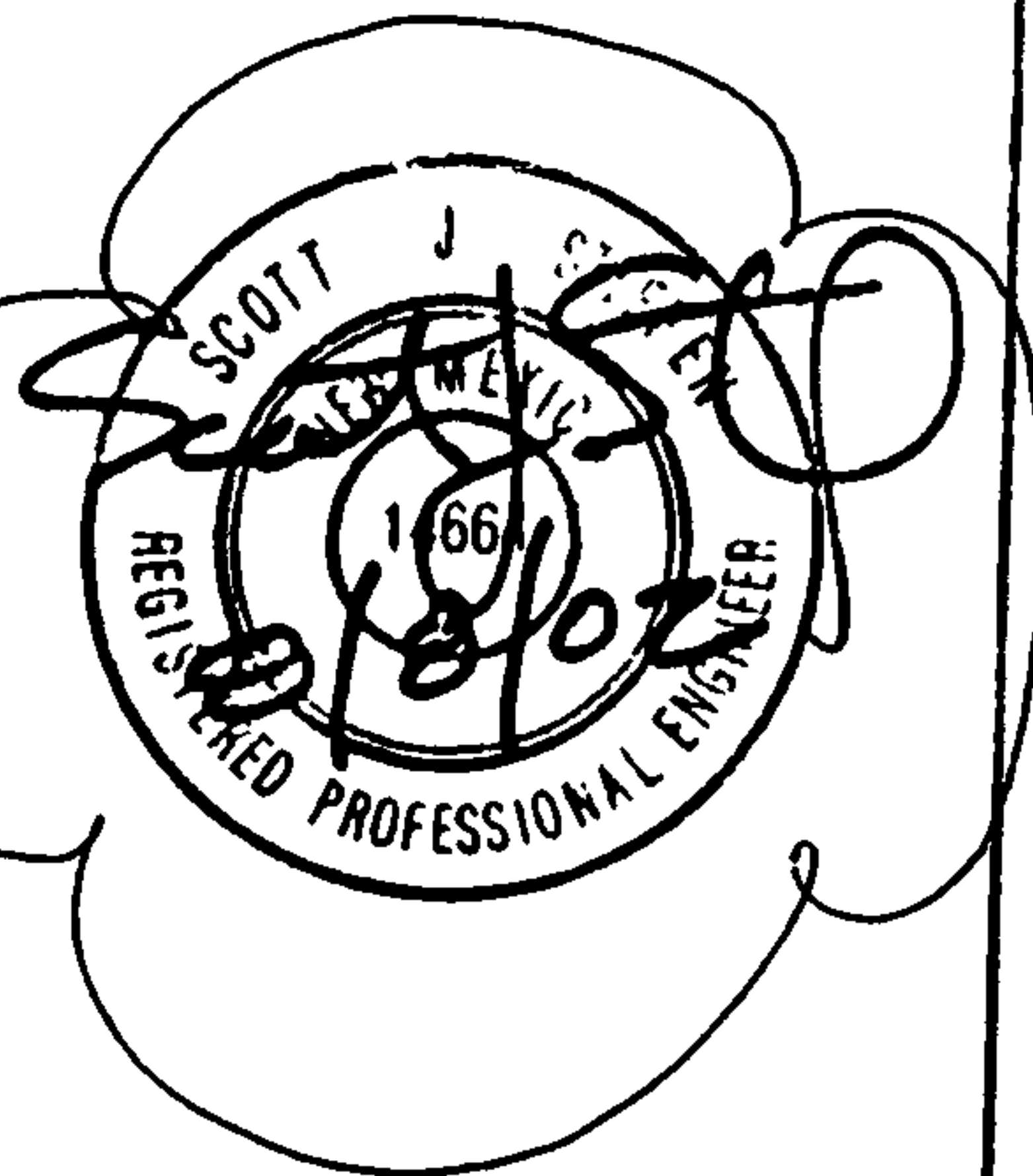
Sheet

Of

2

2

ENGINEER'S SEAL



By

REMARKS

REVISIONS

DESIGN

DATE: 08/08/02

DATE: 08/08/02

DATE: 08/08/02

Designed By: SJS

Drawn By: DTH

Checked By: SJS

CLIENT/COURIER TRANSMITTAL**To:** City of Albuquerque
Dept. of Hydrology
Plaza Del Sol**Requested by:** Nina Leung**Date:** June 14, 2006**Time Due:** ☐ This A.M.
☒ This P.M.
☐ Rush _____
☐ By Tomorrow**Phone:****Job No.:** 030041**Job Name:** Vista West**DELIVERY VIA**☐ Courier ☐ Federal Express
☐ Mail ☐ UPS
☐ Other**PICK UP****Item:** _____

<u>ITEM NO.</u>	<u>QUANTITY</u>	<u>DESCRIPTION</u>
1	1	Grading and Drainage Certification

COMMENTS / INSTRUCTIONS**REC'D BY:** Sandy Handley **DATE:** 06/14/06 **TIME:** 3:15**ENGINEERING ▲****SPATIAL DATA ▲****ADVANCED TECHNOLOGIES ▲**

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/11/2002)

PROJECT TITLE: VISTA WEST SUBDIVISION ZONE MAP/DRG. FILE # L-10-7/D23
DRB #: 1002022 EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: TRACT 8 & 9 IN UNIT TWO-TOWN OF ATRISCO GRANT
CITY ADDRESS: NORTH OF TOWER ROAD AND WEST OF UNSER BLVD.

ENGINEERING FIRM: Bohannon Huston, Inc. CONTACT: Chris Sholtis, P.E.
ADDRESS: 7500 Jefferson NE - Courtyard I PHONE: (505) 823-1000
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

OWNER: T.S. McNaney and Associates CONTACT: Timothy McNaney
ADDRESS: 3 Wind Road NW PHONE: (505) 338-2286
CITY, STATE: Albuquerque, NM ZIP CODE: 87120

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

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

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

CHECK TYPE OF SUBMITTAL:

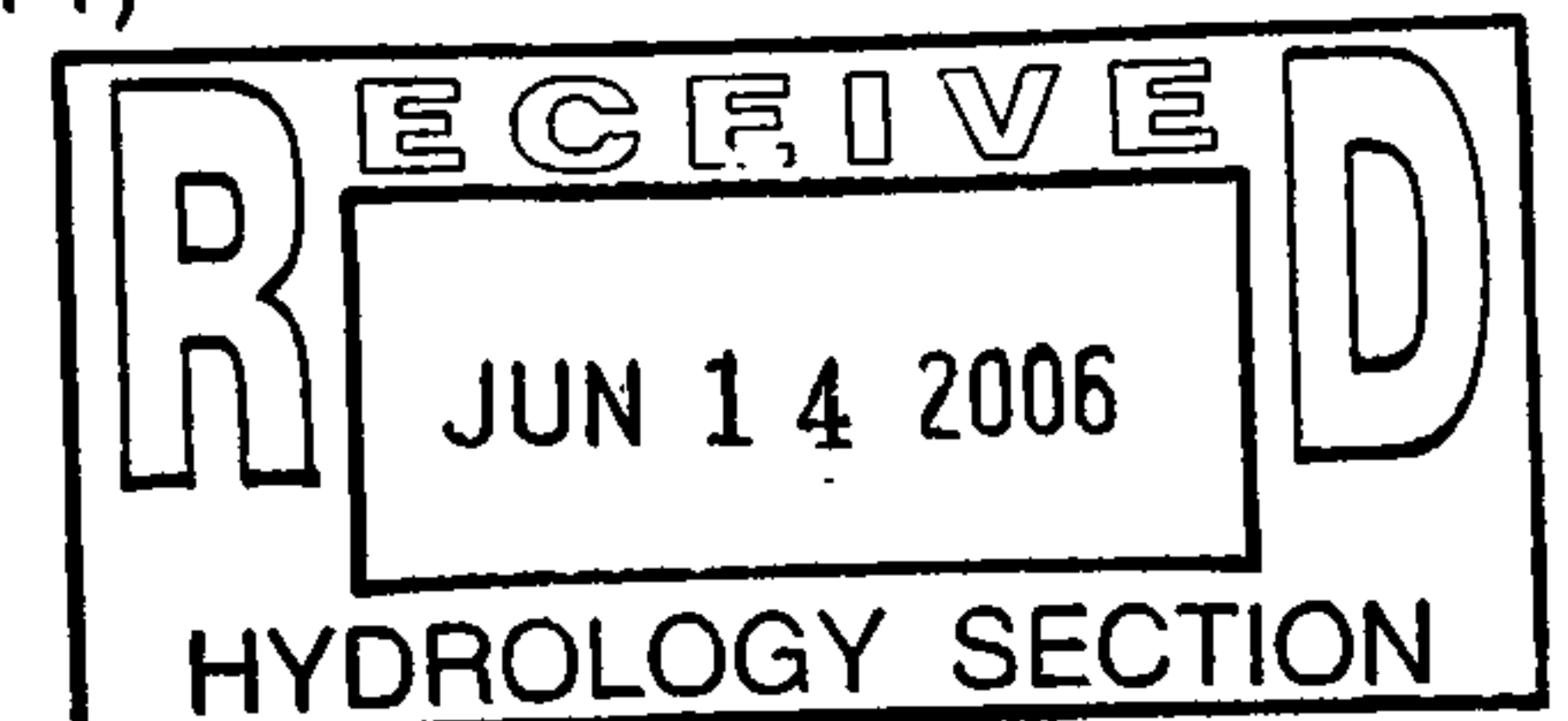
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- ☐ DRAINAGE PLAN
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- ☐ ENGINEERS CERTIFICATION (TCL)
- ☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ☒ SIA / FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
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- ☐ SECTOR PLAN APPROVAL
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- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☒ YES
- ☐ NO
- ☐ COPY PROVIDED



DATE SUBMITTED: June 14, 2006 BY: Chris Sholtis, P.E.

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CITY OF ALBUQUERQUE



June 19, 2006

Scott Stephen, P.E.
BOHANNAN-HUSTON, INC.
7500 Jefferson St. NE – Courtyard 1
Albuquerque, NM 87109

Re: Vista West Subdivision Drainage Report
Engineer's Stamp dated 07/31/2003 (L-10/D23)

Dear Mr. Steffen:

P.O. Box 1293
Based upon the information provided in your submittal received 06/19/2006, the above referenced plan is approved for Preliminary Plat action by the DRB. This plan will now be the approved plan for Release of SIA/Financial Guaranty.

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

Albuquerque

New Mexico 87103

www.cahq.gov

C: file

Sincerely,

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

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/11/2002)

PROJECT TITLE: VISTA WEST SUBDIVISION ZONE MAP/DRG. FILE # L-10-~~Z~~D23
DRB #: 1002022 EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: TRACT 8 & 9 IN UNIT TWO-TOWN OF ATRISCO GRANT
CITY ADDRESS: NORTH OF TOWER ROAD AND WEST OF UNSER BLVD.

ENGINEERING FIRM: Bohannon Huston, Inc. CONTACT: Chris Sholtis, P.E.
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CITY, STATE: Albuquerque, NM ZIP CODE: 87109

OWNER: T.S. McNaney and Associates CONTACT: Timothy McNaney
ADDRESS: 3 Wind Road NW PHONE: (505) 338-2286
CITY, STATE: Albuquerque, NM ZIP CODE: 87120

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

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

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

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- ☐ DRAINAGE PLAN
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- ☐ GRADING PLAN
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- ☐ ENGINEERS CERTIFICATION (TCL)
- ☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ☐ OTHER

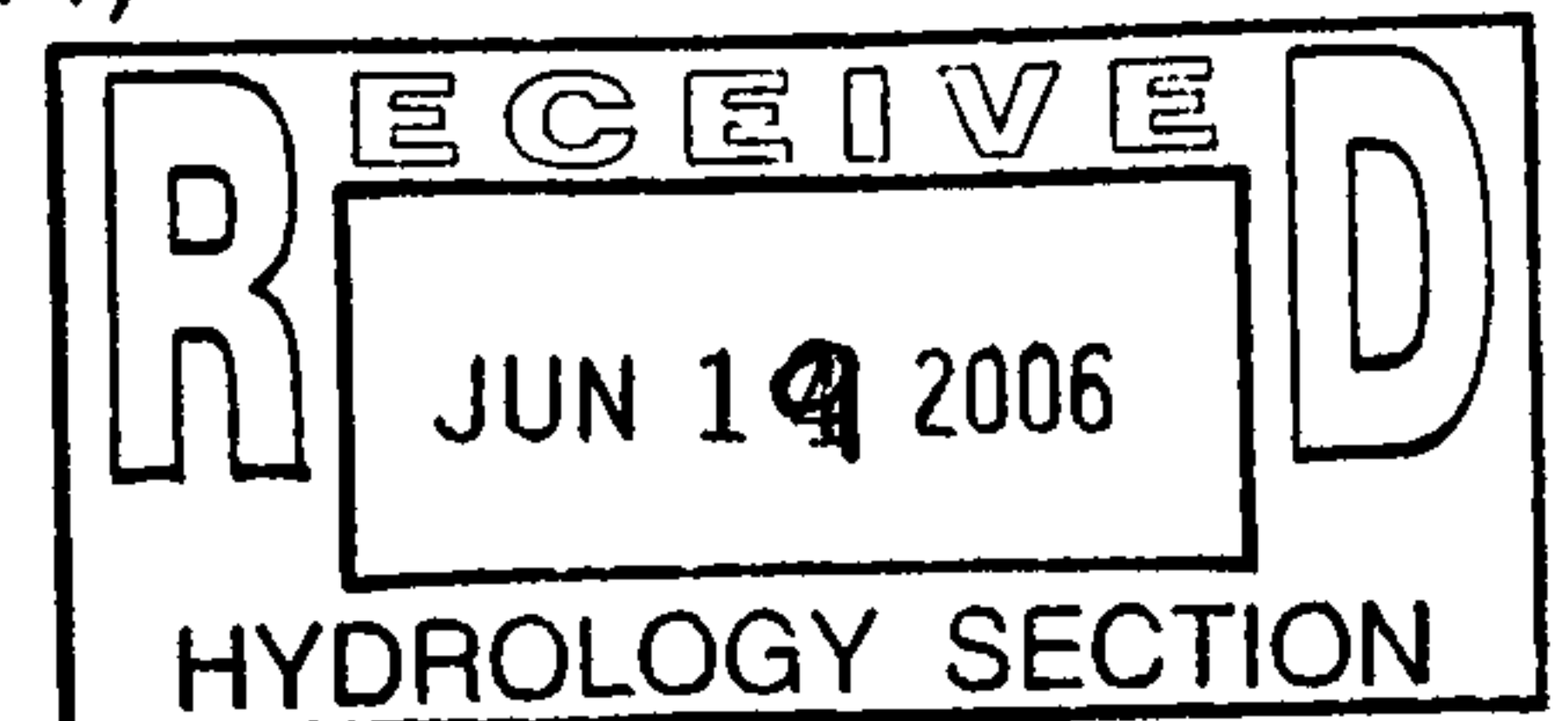
Resub

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- ☐ NO
- ☐ COPY PROVIDED



DATE SUBMITTED: June 14, 2006 BY: Chris Sholtis, P.E.

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*** TX REPORT ***

TRANSMISSION OK

TX/RX NO	0408	
CONNECTION TEL		97987988
SUBADDRESS		
CONNECTION ID	BOHANNAN HUSTON	
ST. TIME	06/20 08:29	
USAGE T	01'20	
PGS.	4	
RESULT	OK	

City of Albuquerque
Planning Department
505-924-3900 (main number)
505-924-3864 (fax number)
Development and Building Services (One Stop Shop)
Plaza Del Sol Building, 2nd Floor
600 2nd Street NW
Albuquerque, NM 87102

City of Albuquerque
Planning Dept.
Dev. & Bldg. Svcs.

Fax

To: Nina From: Julene 924-3982

Copies to:

Fax:

Pages Sent: (including this page) 4

Phone:

Date: 6/20/06

Time: 8:30am

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

COMMENTS:

City of Albuquerque
Planning Department
505-924-3900 (main number)
505-924-3864 (fax number)
Development and Building Services (One Stop Shop)
Plaza Del Sol Building, 2nd Floor
600 2nd Street NW
Albuquerque, NM 87102

City of Albuquerque
Planning Dept.
Dev. & Bldg. Svcs.

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To: Nina From: Julene 924-3982

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Date: 6/20/06

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COMMENTS:

CITY OF ALBUQUERQUE



June 14, 2006

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BOHANNAN-HUSTON, INC.
7500 Jefferson St. NE – Courtyard I
Albuquerque, NM 87109

RE: VISTA WEST SUBDIVISION, (L-10/D23)
Engineers Certification for Release of Financial Guaranty
Approved Engineers Stamp dated 08/08/2002
Submitted Engineers Stamp dated 07/31/2003
Engineers Certification dated 06/14/2006

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

Sincerely,

Arlene V. Portillo

Arlene V. Portillo
Plan Checker, Planning Dept.- Hydrology
Development and Building Services

C: File

Attachments

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov



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

September 5, 2002

Scott Steffen, PE
Bohannon Huston, Inc.
7500 Jefferson NE
Albuquerque, NM 87109

Re: **Vista West Subdivision Drainage Report**
Engineer's Stamp dated 8-8-02 (L10/D23)

Dear Mr. Steffen,

Based upon the information provided in your submittal dated 6-3-02, the above referenced report is approved for Preliminary Plat action by the DRB. However, prior to Final Plat or Work Order, the proposed pond must be analyzed for the 100-yr, 10-day volumes, not the 100-yr, 6-hr volumes as stated in your report.

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

Sincerely,

Bradley L. Bingham

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

C: file

et
6 ac-ft
1.0'
3:1

Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES



CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT

VISTA WEST SUBDIVISION GRADING AND DRAINAGE DETAILS

Design Review Committee

~~City Engineer Approval~~

Mo / Day / Yr.

Mo. / Day / rr

AUG 09 2002

HYDROLOGY SECTION

—Last Design Update

City Project No.

COA #

Zone Map No.
L10

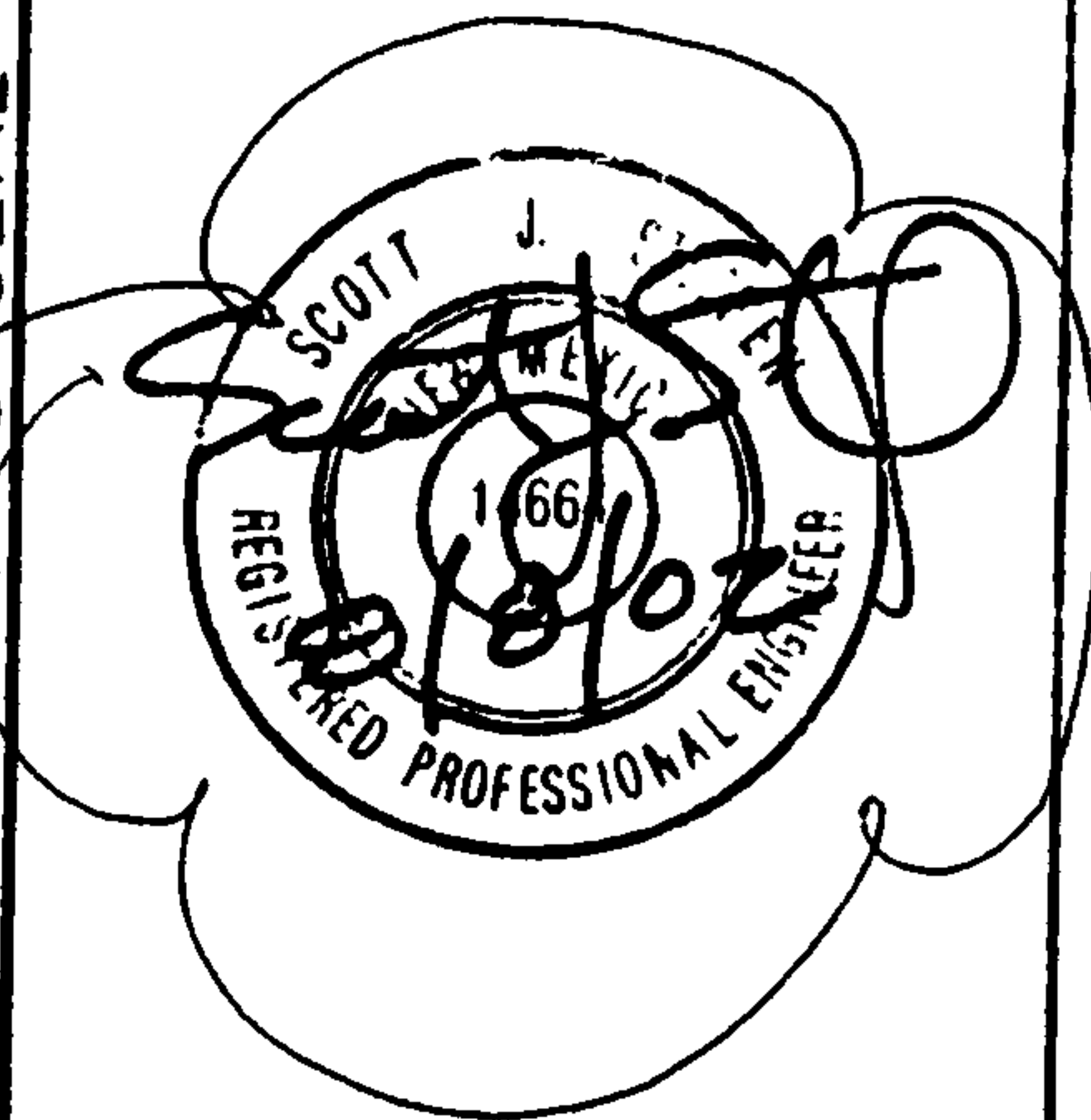
Sheet

Of

2

2

~~ENGINEER'S SEAL~~



By

REMARKS

REVISIONS

DESIGN

Designed By: SJS

DATE: 08/08/02

Drawn By: CTH

DATE: 08/08/02

Checked Ev SJS

DATE: 08/08/02



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 5, 2002

Scott Steffen, PE
Bohannon Huston, Inc.
7500 Jefferson NE
Albuquerque, NM 87109

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Bradley L. Bingham, PE
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Development and Building Services

C: file

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/11/2002)

L-10/D23

PROJECT TITLE: VISTA WEST SUBDIVISION ZONE MAP/DRG. FILE # L-10-Z
DRB #: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: TRACT 8 & 9 IN UNIT TWO-TOWN OF ATRISCO GRANT
CITY ADDRESS: NORTH OF TOWER ROAD AND WEST OF UNSER BLVD.

ENGINEERING FIRM: Bohannon Huston, Inc. CONTACT: RICK BELTRAMO
ADDRESS: 7500 Jefferson NE - Courtyard I PHONE: (505) 823-1000
CITY, STATE: Albuquerque, NM ZIP CODE: 87109

OWNER: Jude Baca CONTACT: Jude Baca
ADDRESS: 3913 72nd Street NW PHONE: (505) 831-2264
CITY, STATE: Albuquerque, NM ZIP CODE: 87120

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

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

CONTRACTOR: _____ CONTACT: _____
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CHECK TYPE OF SUBMITTAL:

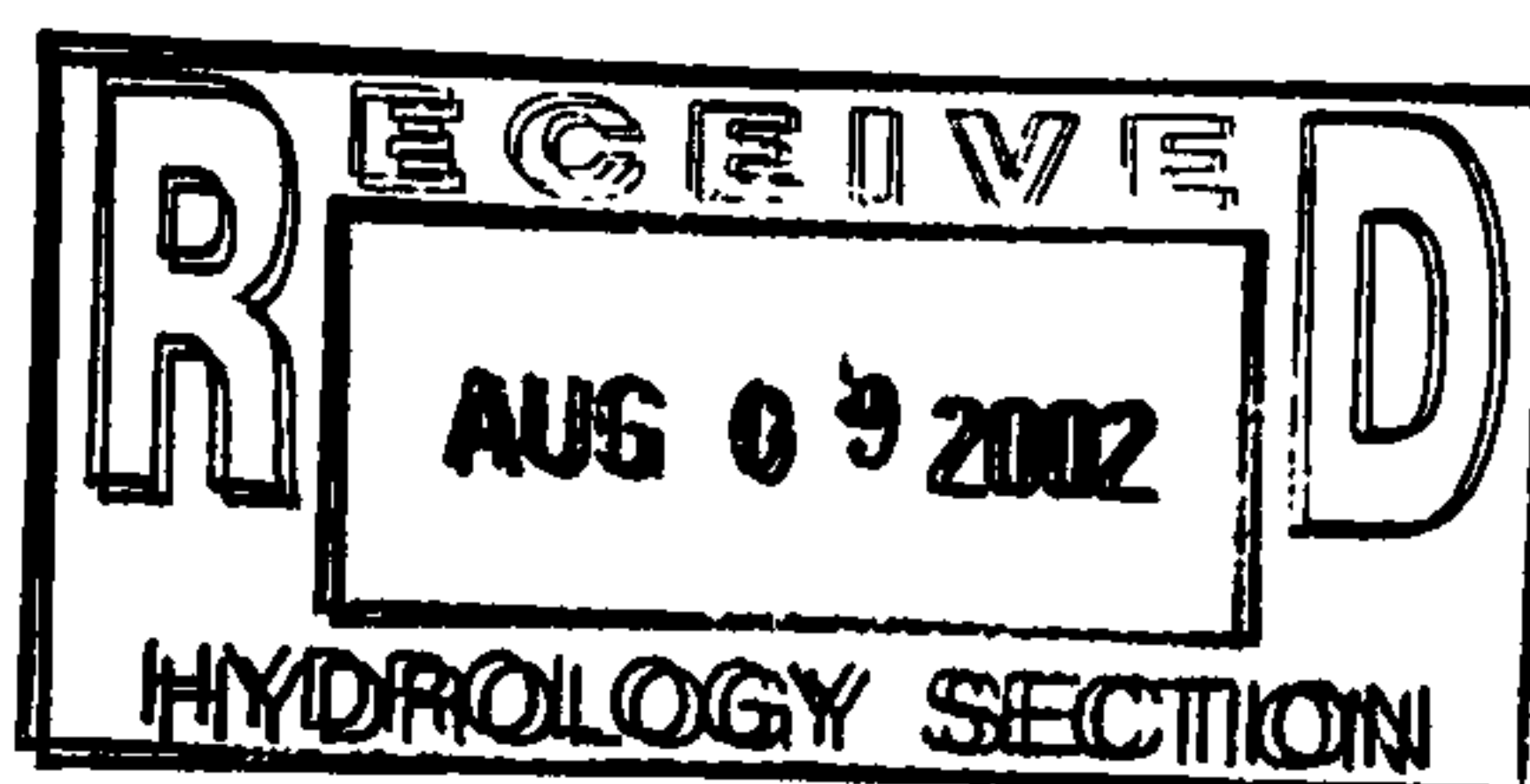
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☐ OTHER

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☐ WORK ORDER APPROVAL
☐ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☒ YES
☐ NO
☐ COPY PROVIDED



DATE SUBMITTED: AUGUST 9, 2002 BY: RICK BELTRAMO

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

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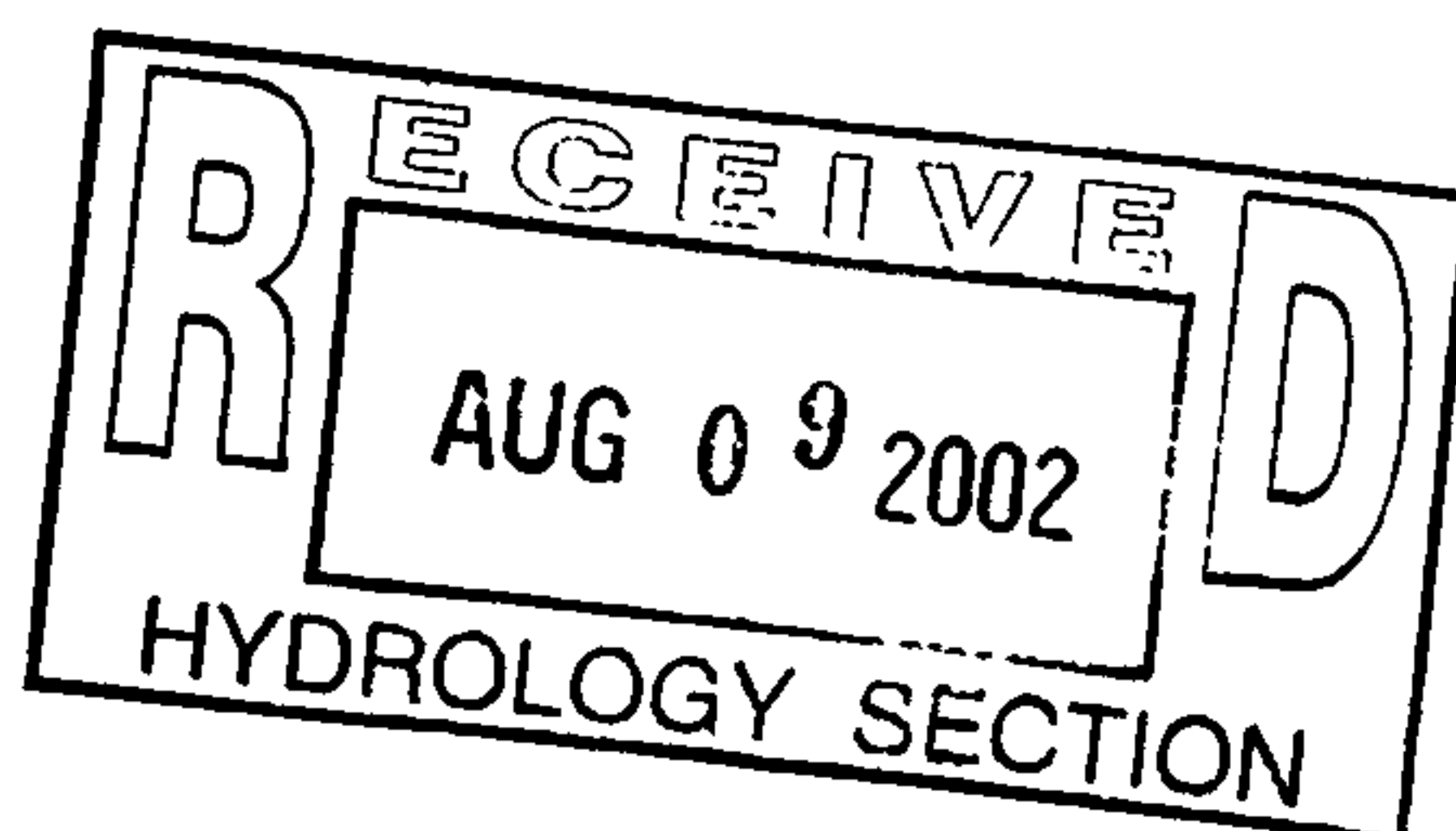
**DRAINAGE STUDY
FOR
VISTA WEST SUBDIVISION**

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335

www.bhinc.com

voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

August 9, 2002



PREPARED FOR:

JUDE BACA

PREPARED BY:

**BOHANNAN HUSTON, INC.
COURTYARD I
7500 JEFFERSON STREET NE
ALBUQUERQUE, NM 87109**

ENGINEERING ▲

SPATIAL DATA ▲

ADVANCED TECHNOLOGIES ▲

**DRAINAGE STUDY
FOR
VISTA WEST SUBDIVISION**

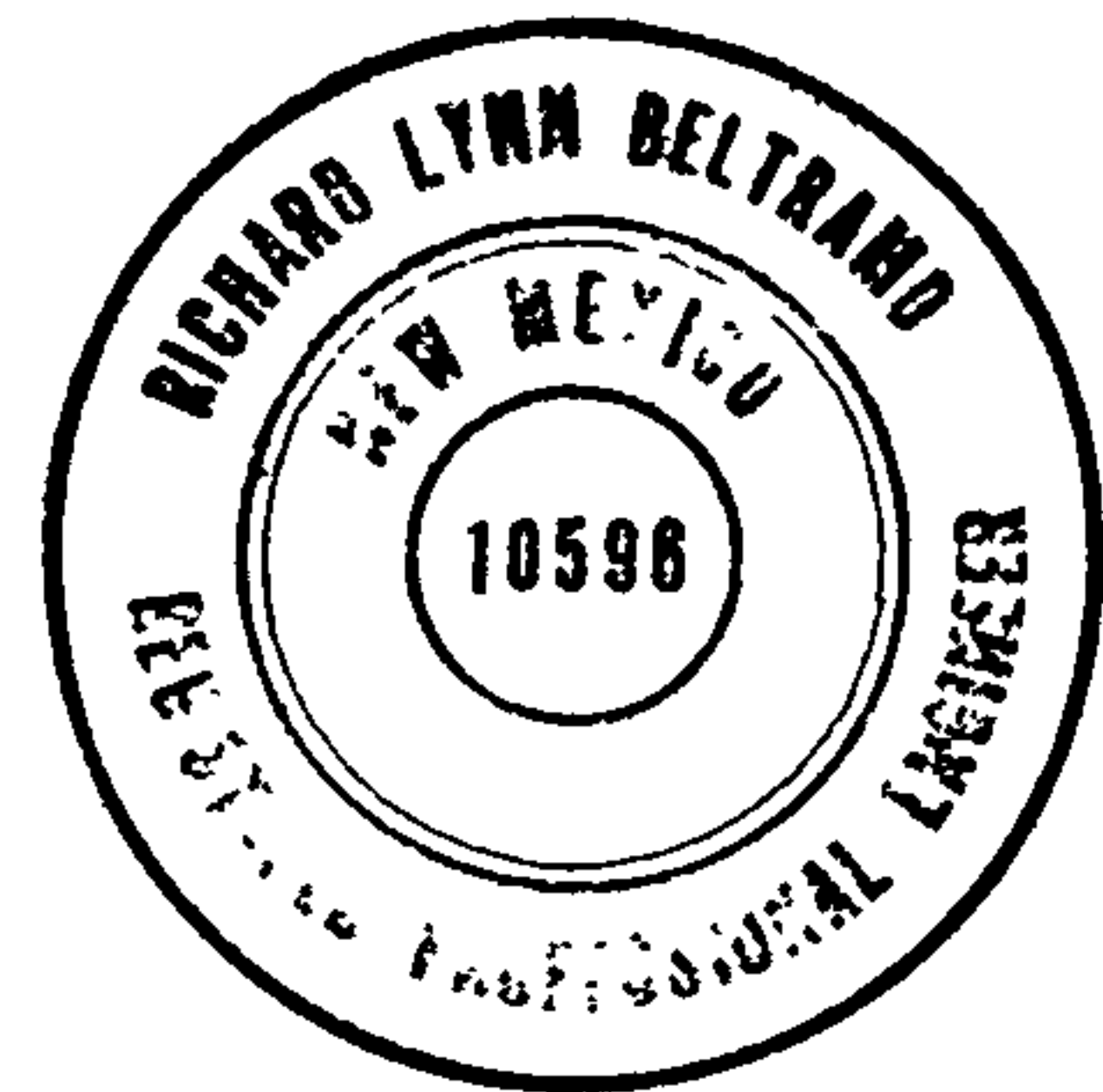
AUGUST 9, 2002

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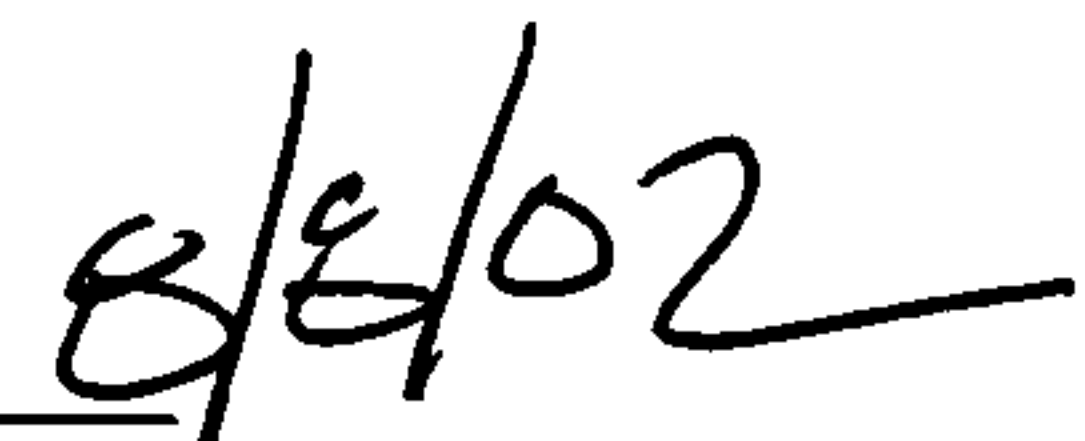

Date

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I. INTRODUCTION

This drainage study establishes a drainage management plan for the proposed development of the property legally described as Tracts 8 and 9 in Unit Two of Town of Atrisco Grant. Vista West is approximately 10 acres of residential (R-D) zoned land to be re-subdivided as the "Vista West Subdivision". The subject property is located on Albuquerque's southwest mesa, west of Unser Blvd. between Eucariz Avenue and Tower Road (see vicinity map on the preliminary plat for location, **Plate 1**). Vista West is planned to consist of 66 single-family, residential dwellings.

This study provides hydrologic and hydraulic analysis and provides a drainage management plan as necessary to support the planned 66-unit development. More specifically, this report is submitted in conjunction with the preliminary plat application. Preliminary plat approval and grading plan approval is requested. Prior to final plat and building permit approvals of this project, the City of Albuquerque (COA) must approve final grading plans and work order construction plans.

II. METHODOLOGY

Existing and proposed site hydrological conditions were analyzed for the 100-year, ~~6-hour~~ ^{10 day} storm in accordance with the revised Section 22.2, Hydrology, of the Development Process Manual (DPM) for the City of Albuquerque, dated January 1993. Street capacities were analyzed using Manning's equation, consistent with the revised DPM Section 22.2. All data and calculations supporting this study are located in Appendix B. The new rational method hydrologic procedures identified within the revised DPM Section 22.2 are utilized to determine peak flow rates for design of the storm drainage improvements within the projects. The 100-year, 6-hour storm is used as the design event. The results are included in Appendix A

The storm sewer system internal to the subdivision is analyzed using current DPM methods for gravity flow conditions. Inlet capacity computations, along with all hydraulic computations, are included in Appendix B.

III. EXISTING CONDITIONS

A. Topography

Vista West is currently undeveloped land, sloping from northwest to southeast with grades ranging from approximately 0.5% to 2%. Soils consist of deep, well-drained loamy fine sands typical of the West Mesa. Vegetation is light and consists mostly of native grasses and sand sagebrush.

B. Existing Drainage Patterns

Vista West is located within the Tower/Sage Drainage Basin, which is a sub-basin of the Amole Del Norte Drainage Basin. Adjacent properties and/or public roadways have been constructed which effectively intercept much of the potential off-site runoff. Flows from the Vista Sandia Subdivision, which is an adjacent property located to the west of Vista West, are contained within a temporary retention pond at the southeast corner of Vista Sandia. The Whispering Pointe Subdivision, located on the north side of Eucariz Avenue, has been designed to flow away from Vista West. Valencia Estates is located to the south of Tower Road and slopes away from the site, therefore, Vista West will not be burdened by runoff developed by that property. Finally, the Southwynd subdivision located to the east of Unser Blvd. drains in a southeasterly direction

IV. LAND TREATMENTS

The minimum lot dimensions are 86' x 45'. The percent impervious was determined using the following formula from Table A-5 of the DPM, Section 22.2. The percent of land treatment D used in the analysis of the developed condition for Vista West is 65.2 percent. The remaining percentage is split between land treatment C and D.

V. PROPOSED CONDITIONS

Vista West Subdivision is a proposed single-family, detached-unit residential development with 66 lots on 10 acres, producing a density of approximately 6.6 D.U. per acre. Proposed street configurations are shown on the Preliminary Plat (See **Plate 1**).

A. Onsite Flows

All developed runoff generated by the Vista West Subdivision drains toward a proposed temporary retention pond, which is located at the southeast corner of the site. The internal street system ~~will convey flows to the pond~~. This pond ~~will encumber approximately three lots (See Plate 2) until downstream storm drain improvements are built~~. The pond is designed to carry flows produced from a 100 year-6 hour storm. An easement placed on the north side of Lot 66 is available as an emergency overflow in the event of a storm that exceeds the pond capacity. ~~Flows will be safely conveyed via surface flow to the public roadway.~~ ^{10 day}

Storm drain infrastructure improvements are currently designed to convey flows into the retention pond as an interim condition. When the downstream storm drain outfall is completed in the ultimate condition, the storm drain flowing into the pond will be capped and flows will be redirected into the ultimate storm drain outfall.

B. Offsite Flows

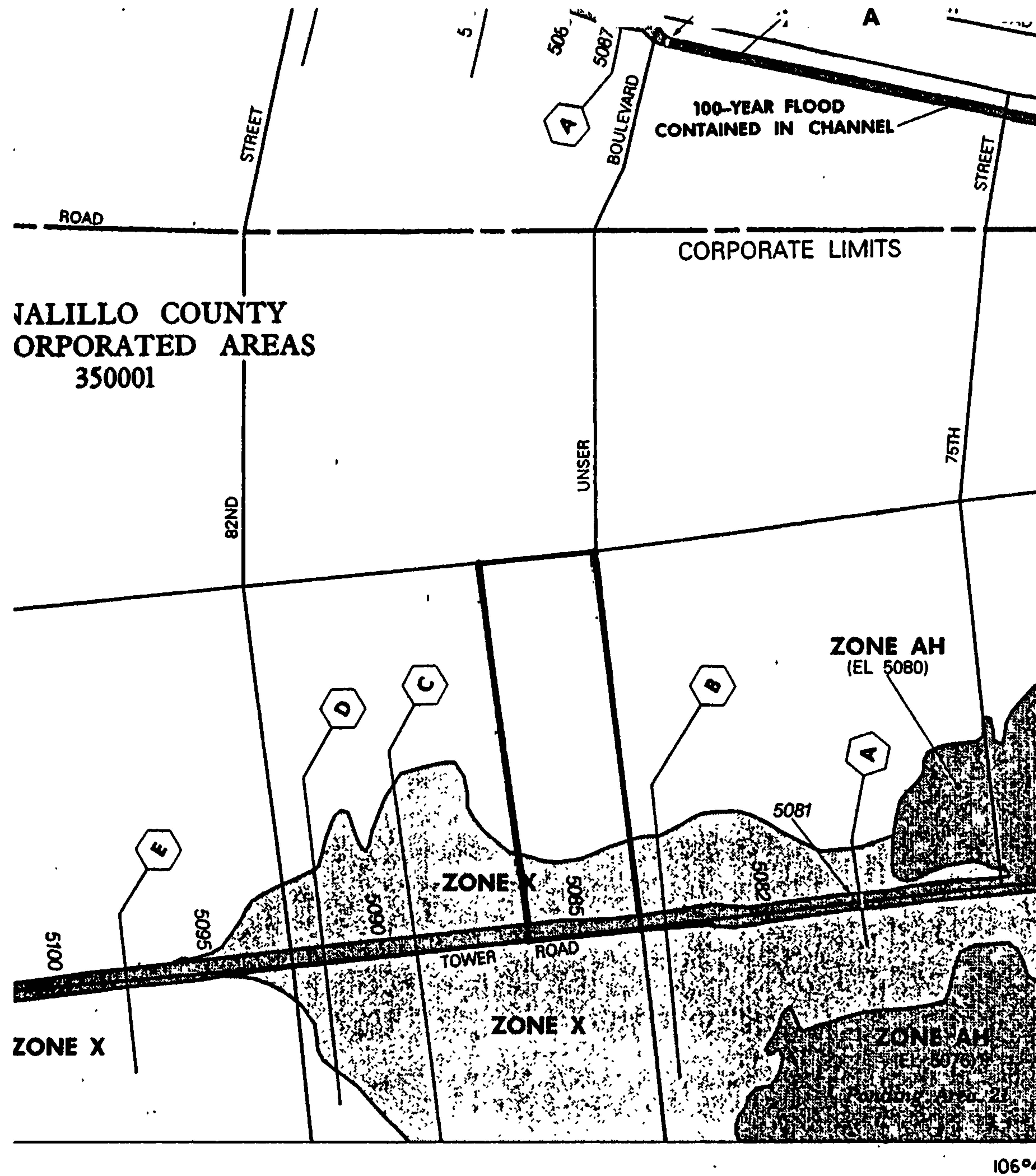
The proposed onsite retention pond is designed to accommodate all of the onsite flows and potential offsite flows. Contributing offsite basins to the pond are shown on the basin map (See **Plate 3**). Contributing basins include the north half of Tower Road, Eucariz Avenue, and the west half of Unser Blvd. These public roadways have been designed to accommodate flows occurring from the 10 year-6 hour design storm. In the event of a design storm, one driving lane will remain clear as specified in the DPM. Excess flows will be contained within the right-of-way and captured by inlets into the retention pond.

C. FEMA Floodplain

A portion of the property lies within an "AE" flood hazard zone, as designated on Panel 328 of 825 of the National Flood Insurance Program, Flood Insurance Rate Map published by FEMA for Bernalillo County, New Mexico (September 20, 1996). The AE floodplain has a base flood elevation of 5085 to the south along Tower Road. In addition, a portion of the property lies within Zone X, which is an area of the 500-year flood. However, a CLOMR is in process (FEMA Case No. 02-06-1421R) in conjunction with the Special Assessment District 222 Project, which will effectively eliminate any floodplains through the Vista West Subdivision. See the FEMA Floodplain exhibit provided at the end of the report text.

VI. CONCLUSION

This report provides a detailed study of the developed runoff and street capacities for the proposed Vista West Subdivision. Included is the preliminary plat, proposed conditions basin map, grading plans, infrastructure list, and all necessary hydrologic and hydraulic analyses. This drainage plan maintains the overall drainage pattern of the area as proposed in "Tower/Sage Drainage Master Plan", and allows for safe management of storm runoff in permanent as well as interim conditions.



NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 328 OF 825
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
ALBUQUERQUE, CITY OF	350002	0328	D
BERNALILLO COUNTY, UNINCORPORATED AREAS	350001	0328	D

**MAP NUMBER
35001C0328 D**

**EFFECTIVE DATE:
SEPTEMBER 20, 1996**



Federal Emergency Management Agency

APPENDICES

APPENDIX A - AHYMO INPUT, OUTPUT FILES

APPENDIX B - STREET FLOW, INLET, AND
STORM DRAIN CALCULATIONS

APPENDIX C - INFRASTRUCTURE LIST

APPENDIX A

AHYMO INPUT, OUTPUT FILES

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*S*      PROJECT NAME:  VISTA WEST SUBDIVISION
*S*      DATE:  AUGUST 9, 2002
*S*      INPUT FILE NAME:  VISTAWST.HYM
*S*      OUTUPUT FILE NAME:  VISTAWST.OUT
*S*      PROJECT NUMBER:  030041
*S*      COMMENTS:      100 YEAR-6 HOUR STORM
*S
*S ///////////////////////////////////////////////////////////////////
START      TIME=0.0 HR PUNCH CODE=0
RAINFALL   TYPE=1      RAIN QUARTER=0.0
           RAIN ONE=1.90 IN    RAIN SIX=2.20 IN
           RAIN DAY=2.67 IN    DT=0.03333 HRS
*****
*S*****
*S      TOWER ROAD (NORTH HALF)
COMPUTE NM HYD      ID=1      HYD NO=112.0      DA=0.0027 SQ MI
                   PER A=0.0    PER B=10.0    PER C=0.0    PER D=90.0
                   TP=-0.1333 HR    MASSRAIN=-1
PRINT HYD           ID=1      CODE=1
*S*****
*S      VISTA WEST SUBDIVISION
COMPUTE NM HYD      ID=2      HYD NO=113A      DA=0.0128 SQ MI
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                   TP=-0.144 HR    MASSRAIN=-1
PRINT HYD           ID=2      CODE=1
*S*****
ADD HYD           ID=3      HYD NO=113.1 ID I=1 ID II=2
PRINT HYD           ID=3      CODE=1
*S*****
*S      EUCARIZ AND WEST HALF OF UNSER BLVD.
COMPUTE NM HYD      ID=4      HYD NO=113B      DA=0.00598 SQ MI
                   PER A=0.0    PER B=26.0    PER C=0.0    PER D=74.0
                   TP=-0.17 HR    MASSRAIN=-1
PRINT HYD           ID=4      CODE=1
*S*****
ADD HYD           ID=5      HYD NO=113.2 ID I=3 ID II=4
PRINT HYD           ID=5      CODE=1
*S*****
FINISH

```

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION	
S	PROJECT NAME: VISTA WEST SUBDIVISION										
S	DATE: AUGUST 9, 2002										
S	INPUT FILE NAME: VISTAWST.HYM										
S	OUTUPUT FILE NAME: VISTAWST.OUT										
S	PROJECT NUMBER: 030041										
S	COMMENTS:100 YEAR-6 HOUR STORM										
*S											
*S	////////////////////////////////////										
START									TIME=	.00	
RAINFALL TYPE= 1									RAIN6=	2.200	
*S*****											
*S	TOWER ROAD (NORTH HALF)										
COMPUTE NM HYD	112.00	-	1	.00270	7.27	.265	1.83785	1.500	4.205 PER IMP=	90.00	
*S*****											
*S	VISTA WEST SUBDIVISION										
COMPUTE NM HYD	113A	-	2	.01280	29.16	1.070	1.56737	1.500	3.559 PER IMP=	65.20	
*S*****											
ADD HYD	113.10	1& 2	3	.01550	36.42	1.335	1.61445	1.500	3.672		
*S*****											
*S	EUCARIZ AND WEST HALF OF UNSER BLVD.										
COMPUTE NM HYD	113B	-	4	.00598	12.97	.521	1.63219	1.533	3.389 PER IMP=	74.00	
*S*****											
ADD HYD	113.20	3& 4	5	.02148	49.03	1.855	1.61937	1.533	3.566		
*S*****											
FINISH											

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*S* PROJECT NAME: VISTA WEST SUBDIVISION
*S* DATE: AUGUST 9, 2002
*S* INPUT FILE NAME: VISTA10.HYM
*S* OUTUTPUT FILE NAME: VISTA10.OUT
*S* PROJECT NUMBER: 030041
*S* COMMENTS: 10 YEAR-6 HOUR STORM
*S*
*S* //////////////////////////////////////
START TIME=0.0 HR PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0
RAIN ONE=1.27 IN RAIN SIX=1.47 IN
RAIN DAY=1.78 IN DT=0.03333 HRS
*****
*S*****
*S TOWER ROAD (NORTH HALF)
COMPUTE NM HYD ID=1 HYD NO=112.0 DA=0.0027 SQ MI
PER A=0.0 PER B=10.0 PER C=0.0 PER D=90.0
TP=-0.1333 HR MASSRAIN=-1
PRINT HYD ID=1 CODE=1
*S*****
*S EUCARIZ AND WEST HALF OF UNSER BLVD.
COMPUTE NM HYD ID=2 HYD NO=113B DA=0.00598 SQ MI
PER A=0.0 PER B=27.0 PER C=0.0 PER D=73.0
TP=-0.17 HR MASSRAIN=-1
PRINT HYD ID=2 CODE=1
*S*****
ADD HYD ID=3 HYD NO=113.2 ID I=1 ID II=2
PRINT HYD ID=3 CODE=1
*S*****
FINISH
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COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1	
										NOTATION	
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S	INPUT FILE NAME: VISTA10.HYM										
S	OUTUPUT FILE NAME: VISTA10.OUT										
S	PROJECT NUMBER: 030041										
S	COMMENTS: 10 YEAR-6 HOUR STORM										
*S											
*S	////////////////////////////////////										
START									TIME=	.00	
RAINFALL TYPE= 1									RAIN6=	1.470	

*S	TOWER ROAD (NORTH HALF)										
COMPUTE NM HYD	112.00	-	1	.00270	4.70	.164	1.13741	1.500	2.722 PER IMP=	90.00	

*S	EUCARIZ AND WEST HALF OF UNSER BLVD.										
COMPUTE NM HYD	113B	-	2	.00598	7.97	.308	.96603	1.533	2.083 PER IMP=	73.00	

ADD HYD	113.20	1& 2	3	.00868	12.46	.472	1.01926	1.533	2.242		

FINISH											

CALCULATIONS FOR TIME OF CONCENTRATION AND TIME TO PEAK

Ref: COA-DPM Section 22.2

SCS Upland Method used for subbasin reach lengths less than 4000 feet

Basin 112

Slope, $s=0.005$ Conveyance Factor, $K=3$ (Table B-1) Subreach Length, $L=1500$ ft

$$v = 10 * K \sqrt{s} \quad (\text{eq. b-2})$$

$$v=2.12 \text{ ft/s}$$

$$t_c = \frac{L}{v} \quad (\text{eq. b-1})$$

$$t_c=0.2 \text{ hr}$$

$$t_p = \frac{2}{3} t_c \quad (\text{eq. b-9})$$

$$t_p=0.133 \text{ hr}$$

Basin 113A

Slope, $s=0.005$ Conveyance Factor, $K=2$ (Table B-1) Subreach Length, $L=1100$ ft

$$v = 10 * K \sqrt{s} \quad (\text{eq. b-2})$$

$$v=1.4 \text{ ft/s}$$

$$t_c = \frac{L}{v} \quad (\text{eq. b-1})$$

$$t_c=0.216 \text{ hr}$$

$$t_p = \frac{2}{3} t_c \quad (\text{eq. b-9})$$

$$t_p=0.144 \text{ hr}$$

Basin 113B

Slope, $s=0.005$ Conveyance Factor, $K=3$ (Table B-1) Subreach Length, $L=1950$ ft

$$v = 10 * K \sqrt{s} \quad (\text{eq. b-2})$$

$$v=2.12 \text{ ft/s}$$

$$t_c = \frac{L}{v} \quad (\text{eq. b-1})$$

$$t_c=0.256 \text{ hr}$$

$$t_p = \frac{2}{3} t_c \quad (\text{eq. b-9})$$

$$t_p=0.171 \text{ hr}$$

9-Aug-02

VISTA WEST SUBDIVISION
TEMPORARY RETENTION POND VOLUME

Elevation	Area ft ²	Avg Area ft ²	increment Vol ft ³	Cum Vol ft ³	Cum Vol ac-ft	H ft
5074.9	0		0	0	0	0
5075	4394	2197	219.7	219.7	0.005044	0.1
5076	5282	4838	4838	5057.7	0.116108	1.1
5077	6238	5760	5760	10817.7	0.248339	2.1
5078	7265	6751.5	6751.5	17569.2	0.403332	3.1
5079	8359	7812	7812	25381.2	0.58267	4.1
5080	9523	8941	8941	34322.2	0.787926	5.1
5081	10755	10139	10139	44461.2	1.020685	6.1
5082	12055	11405	11405	55866.2	1.282506	7.1
5083	13423	12739	12739	68605.2	1.574953	8.1
5084	14859	14141	14141	82746.2	1.899584	9.1
5085	16364	15611.5	15611.5	98357.7	2.257973	10.1

APPENDIX B

STREET FLOW, INLET, AND STORM DRAIN CALCULATIONS

VISTA WEST SUBDIVISION
Inlet & Street Capacity Calculations
August 9, 2002

1. Ridgeside Street

Basin 113A (See AHYMO summary table or Basin Map)

$S = 0.80\%$

$Q = 9.1 \text{ cfs}$

Total flow from Basin 113A is 29.0 cfs. The contributing area from Ridgeside Street north of Brookside Avenue is about 32% of the total Basin 113A area. Therefore, runoff from this area is 9.1 cfs.

At 0.80%, a road with standard curb can handle 28 cfs. Therefore, no inlets needed. See PC stream output. Water flows into Brookside Avenue.

2. Rembert Drive

Basin 113A (See AHYMO summary table or Basin Map)

$S = 0.70\%$

$Q = 16.2 \text{ cfs}$

Total flow from Basin 113A is 29.0 cfs. The contributing area from Rembert Drive is about 56% of the total Basin 113A area. Therefore, runoff from this area is 16.2 cfs.

At 0.70%, a road with standard curb can handle 38.7 cfs. Therefore, no inlets needed. See PC stream output. Portion of water picked up at south end of Rembert Drive by inlets, upstream of intersection with Brookside Avenue. See inlet analysis below.

3. Brookside Avenue

Basin 113A (See AHYMO summary table or Basin Map)

$S = 1.00\%$

$Q = 20.0 \text{ cfs}$

Total flow from Basin 113A is 29.0 cfs. The contributing area from Brookside Avenue is about 12% of the total Basin 113A area. Therefore, runoff from this area is 3.7 cfs. Combining flow from Ridgeside Street and the by-pass flow from inlets on Rembert Drive, there is 20 cfs at the east end of Brookside Avenue.

At 1.00%, a road with standard curb can handle 45.8 cfs. Therefore, no inlets needed. See PC stream output. Water flows to low point at the east end of the Brookside Avenue. See inlet analysis below.

4. Rembert Inlet Analysis

Flow in road is 16.2 cfs at a depth of 0.45 feet (See PC stream output). Inlet capacity for Type 'A' at depth of flow of 0.45 feet and longitudinal slope is 4.5 cfs (See nomograph). Therefore, two inlets pick up 9.0 cfs. Remaining 7.2 cfs flows into Brookside Avenue.

5. Brookside Inlet Analysis

End of street:

Use Double Grate, Double Wing Type 'A'

Assume pond depth at top of curb:

Grate capacity is 28 cfs. (Does not include wing openings)

Inlet capacity at Brookside low point = 28 cfs > 20 cfs, therefore all runoff collected by storm drain inlet at east end of Brookside Avenue.

6. Unser Boulevard

Basin 113B (See AHYMO summary table or Basin Map)

$S = 0.50\%$

$Q = 13.0$ cfs

For the proposed half street section (30 foot face to face), at 0.50%, a road with standard curb can handle 23 cfs. Therefore, no inlets needed for the 100-year storm. See PC stream output.

The COA DPM requires that for the 10-year storm, one drive lane of traffic be free from standing or flowing water for arterial roads. The flow in Unser Boulevard for the 10-year storm is 8.0 cfs (See AHYMO output). A manning's flow analysis for the proposed street section for Unser Boulevard gives a street capacity of 8.1 cfs with a water spread of 18 feet (30 feet – 12 feet). See gutter hydraulic analysis. Therefore, no inlets required to keep lane free and clear of water.

7. Tower Road

Basin 112 (See AHYMO summary table or Basin Map)

$S = 0.66\%$

$Q = 7.0$ cfs

For the proposed half street section (31 foot face to face), at 0.66%, a road with standard curb can handle 26.5 cfs. Therefore, no inlets needed for the 100-year storm. See PC stream output.

The COA DPM requires that for the 10-year storm, one drive lane of traffic be free from standing or flowing water for arterial roads. The flow in Tower Road for the 10-year storm is 4.7 cfs (See AHYMO output). A manning's flow analysis for the proposed street section for Tower Road gives a street capacity of 10.1 cfs with a water spread of 19 feet (31 feet –

12 feet). See gutter hydraulic analysis. Therefore, no inlets required to keep one lane free and clear of water.

8. Unser Inlet Analysis

At low point near Unser/Tower intersection:

Use Single Grate, Single Wing Type 'A'

Assume pond depth at top of curb:

Grate capacity is 27.5 cfs. (Does not include wing opening)

Inlet capacity at Unser low point = 28 cfs > 13 cfs, therefore all runoff collected by storm drain inlet at northwest corner of Unser Boulevard and Tower Road.

9. Tower Inlet Analysis

Flow in Tower Road must be collected before the Tower/Unser intersection. Flow in road is 7.0 cfs at a depth of 0.38 feet (See PC stream output). Inlet capacity for Type 'A' at depth of flow of 0.38 feet and longitudinal slope is 3.5 cfs (See nomograph). Therefore, two inlets pick up 7.0 cfs. See grading plan for approximate location of inlets.

RIDGESIDE ST.

MANNING'S N= .017 SLOPE= .008

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.83	5	10.00	0.13	9	33.17	1.26
2	7.38	0.67	6	20.50	0.34	10	33.63	1.26
3	7.83	0.67	7	31.00	0.55	11	37.00	1.34
4	8.00	0.00	8	33.00	0.59	12	0.00	0.00
WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	VEL	ENERGY
(FT)	INC	AREA	RATE	PER	VEL	(FT)	HEAD	HEAD
(FT)	(FT)	SQ. FT.	(CFS)	(FT)	(FPS)	(FT)	(FT)	(FT)
0.01	0.01	0.00	0.0	0.16	0.22	0.16	0.00	0.01
0.02	0.02	0.00	0.0	0.33	0.35	0.31	0.00	0.02
0.03	0.03	0.01	0.0	0.49	0.46	0.47	0.00	0.03
0.04	0.04	0.01	0.0	0.66	0.56	0.63	0.00	0.04
0.05	0.05	0.02	0.0	0.82	0.65	0.78	0.01	0.06
0.06	0.06	0.03	0.0	0.99	0.73	0.94	0.01	0.07
0.07	0.07	0.04	0.0	1.15	0.81	1.09	0.01	0.08
0.08	0.08	0.05	0.0	1.32	0.88	1.25	0.01	0.09
0.09	0.09	0.06	0.1	1.48	0.96	1.41	0.01	0.10
0.10	0.10	0.08	0.1	1.64	1.03	1.56	0.02	0.12
0.11	0.11	0.09	0.1	1.81	1.09	1.72	0.02	0.13
0.12	0.12	0.11	0.1	1.97	1.16	1.88	0.02	0.14
0.13	0.13	0.13	0.2	2.14	1.22	2.03	0.02	0.15
0.14	0.14	0.15	0.2	2.65	1.18	2.54	0.02	0.16
0.15	0.15	0.18	0.2	3.16	1.17	3.04	0.02	0.17
0.16	0.16	0.22	0.3	3.67	1.18	3.54	0.02	0.18
0.17	0.17	0.25	0.3	4.18	1.21	4.04	0.02	0.19
0.18	0.18	0.30	0.4	4.69	1.24	4.55	0.02	0.20
0.19	0.19	0.34	0.4	5.20	1.28	5.05	0.03	0.22
0.20	0.20	0.40	0.5	5.71	1.32	5.55	0.03	0.23
0.21	0.21	0.46	0.6	6.22	1.37	6.05	0.03	0.24
0.22	0.22	0.52	0.7	6.73	1.42	6.56	0.03	0.25
0.23	0.23	0.59	0.9	7.24	1.46	7.06	0.03	0.26
0.24	0.24	0.66	1.0	7.75	1.51	7.56	0.04	0.28
0.25	0.25	0.74	1.2	8.26	1.56	8.06	0.04	0.29
0.26	0.26	0.82	1.3	8.77	1.61	8.57	0.04	0.30
0.27	0.27	0.91	1.5	9.28	1.66	9.07	0.04	0.31
0.28	0.28	1.00	1.7	9.79	1.71	9.57	0.05	0.33
0.29	0.29	1.10	1.9	10.31	1.76	10.07	0.05	0.34
0.30	0.30	1.20	2.2	10.82	1.81	10.58	0.05	0.35
0.31	0.31	1.31	2.4	11.33	1.86	11.08	0.05	0.36
0.32	0.32	1.43	2.7	11.84	1.91	11.58	0.06	0.38
0.33	0.33	1.54	3.0	12.35	1.95	12.08	0.06	0.39
0.34	0.34	1.67	3.3	12.86	2.00	12.59	0.06	0.40
0.35	0.35	1.80	3.7	13.37	2.05	13.09	0.07	0.42
0.36	0.36	1.93	4.0	13.88	2.10	13.59	0.07	0.43
0.37	0.37	2.07	4.4	14.39	2.14	14.09	0.07	0.44
0.38	0.38	2.21	4.8	14.90	2.19	14.60	0.07	0.45
0.39	0.39	2.36	5.3	15.41	2.24	15.10	0.08	0.47
0.40	0.40	2.51	5.7	15.92	2.28	15.60	0.08	0.48
0.41	0.41	2.67	6.2	16.43	2.33	16.10	0.08	0.49
0.42	0.42	2.83	6.7	16.94	2.37	16.61	0.09	0.51
0.43	0.43	3.00	7.3	17.45	2.42	17.11	0.09	0.52
WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	VEL	ENERGY
(FT)	INC	AREA	RATE	PER	VEL	(FT)	HEAD	HEAD
(FT)	(FT)	SQ. FT.	(CFS)	(FT)	(FPS)	(FT)	(FT)	(FT)
0.45	0.45	3.36	8.4	18.47	2.51	18.11	0.10	0.55
0.46	0.46	3.54	9.0	18.98	2.55	18.62	0.10	0.56
0.47	0.47	3.73	9.7	19.49	2.60	19.12	0.10	0.57
0.48	0.48	3.92	10.3	20.00	2.64	19.62	0.11	0.59
0.49	0.49	4.12	11.0	20.51	2.68	20.12	0.11	0.60
0.50	0.50	4.32	11.8	21.02	2.72	20.63	0.12	0.62
0.51	0.51	4.53	12.5	21.53	2.77	21.13	0.12	0.63
0.52	0.52	4.75	13.3	22.04	2.81	21.63	0.12	0.64
0.53	0.53	4.97	14.2	22.56	2.85	22.13	0.13	0.66
0.54	0.54	5.19	15.0	23.07	2.89	22.64	0.13	0.67
0.55	0.55	5.42	15.9	23.58	2.93	23.14	0.13	0.68
0.56	0.56	5.65	16.8	24.09	2.97	23.64	0.14	0.70

ACTUAL FLOW

0.57	0.57	5.89	17.8	24.60	3.02	24.14	0.14	0.71	RIDGESIDE ST.
0.58	0.58	6.14	18.7	25.11	3.06	24.65	0.15	0.73	
0.59	0.59	6.38	19.8	25.62	3.10	25.15	0.15	0.74	
0.60	0.60	6.64	21.1	25.64	3.18	25.15	0.16	0.76	
0.61	0.61	6.89	22.4	25.66	3.25	25.16	0.16	0.77	
0.62	0.62	7.14	23.8	25.68	3.33	25.16	0.17	0.79	
0.63	0.63	7.39	25.2	25.70	3.41	25.17	0.18	0.81	
0.64	0.64	7.64	26.6	25.72	3.48	25.18	0.19	0.83	STREET CAPACITY
0.65	0.65	7.89	28.1	25.74	3.56	25.18	0.20	0.85	
0.66	0.66	8.15	29.6	25.76	3.63	25.19	0.20	0.86	
0.67	0.67	8.40	31.1	25.78	3.70	25.19	0.21	0.88	
0.68	0.68	8.65	32.3	26.25	3.73	26.10	0.22	0.90	
0.69	0.69	8.91	33.5	26.73	3.76	26.57	0.22	0.91	
0.70	0.70	9.19	34.5	27.65	3.75	27.03	0.22	0.92	
0.71	0.71	9.46	35.8	28.12	3.78	27.50	0.22	0.93	
0.72	0.72	9.74	37.1	28.59	3.81	27.96	0.23	0.95	
0.73	0.73	10.02	38.5	29.06	3.84	28.42	0.23	0.96	
0.74	0.74	10.31	39.9	29.53	3.88	28.89	0.23	0.97	
0.75	0.75	10.60	41.4	30.01	3.91	29.35	0.24	0.99	
0.76	0.76	10.89	42.9	30.48	3.94	29.81	0.24	1.00	
0.77	0.77	11.19	44.4	30.95	3.97	30.28	0.24	1.01	
0.78	0.78	11.50	46.0	31.42	4.00	30.74	0.25	1.03	
0.79	0.79	11.81	47.6	31.89	4.03	31.21	0.25	1.04	
0.80	0.80	12.12	49.3	32.36	4.06	31.67	0.26	1.06	
0.81	0.81	12.44	50.9	32.84	4.09	32.13	0.26	1.07	
0.82	0.82	12.77	52.7	33.31	4.13	32.60	0.26	1.08	
0.83	0.83	13.09	54.4	33.78	4.16	33.06	0.27	1.10	
0.84	0.84	13.42	56.7	33.79	4.23	33.06	0.28	1.12	
0.85	0.85	13.76	59.1	33.80	4.29	33.07	0.29	1.14	
0.86	0.86	14.09	61.4	33.81	4.36	33.07	0.30	1.16	
0.87	0.87	14.42	63.8	33.82	4.43	33.07	0.30	1.17	
0.88	0.88	14.75	66.3	33.83	4.49	33.07	0.31	1.19	
0.89	0.89	15.08	68.8	33.84	4.56	33.08	0.32	1.21	
0.90	0.90	15.41	71.3	33.85	4.63	33.08	0.33	1.23	
0.91	0.91	15.74	73.8	33.86	4.69	33.08	0.34	1.25	
0.92	0.92	16.07	76.4	33.87	4.76	33.08	0.35	1.27	
0.93	0.93	16.40	79.1	33.88	4.82	33.09	0.36	1.29	
0.94	0.94	16.73	81.7	33.89	4.88	33.09	0.37	1.31	
0.95	0.95	17.06	84.4	33.90	4.95	33.09	0.38	1.33	
0.96	0.96	17.39	87.1	33.91	5.01	33.09	0.39	1.35	
0.97	0.97	17.72	89.9	33.92	5.07	33.10	0.40	1.37	
0.98	0.98	18.06	92.7	33.93	5.13	33.10	0.41	1.39	
WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	VEL	ENERGY	
(FT)	INC	AREA	RATE	PER	VEL	(FT)	HEAD	HEAD	
	(FT)	SQ. FT.	(CFS)	(FT)	(FPS)		(FT)	(FT)	
1.00	1.00	18.72	98.4	33.95	5.26	33.10	0.43	1.43	
1.01	1.01	19.05	101.3	33.97	5.32	33.11	0.44	1.45	
1.02	1.02	19.38	104.2	33.98	5.38	33.11	0.45	1.47	
1.03	1.03	19.71	107.2	33.99	5.44	33.11	0.46	1.49	
1.04	1.04	20.04	110.2	34.00	5.50	33.11	0.47	1.51	
1.05	1.05	20.37	113.2	34.01	5.56	33.12	0.48	1.53	
1.06	1.06	20.70	116.3	34.02	5.62	33.12	0.49	1.55	
1.07	1.07	21.04	119.4	34.03	5.67	33.12	0.50	1.57	
1.08	1.08	21.37	122.5	34.04	5.73	33.12	0.51	1.59	
1.09	1.09	21.70	125.6	34.05	5.79	33.13	0.52	1.61	
1.10	1.10	22.03	128.8	34.06	5.85	33.13	0.53	1.63	
1.11	1.11	22.36	132.0	34.07	5.90	33.13	0.54	1.65	
1.12	1.12	22.69	135.3	34.08	5.96	33.13	0.55	1.67	
1.13	1.13	23.02	138.6	34.09	6.02	33.14	0.56	1.69	
1.14	1.14	23.35	141.9	34.10	6.07	33.14	0.57	1.71	
1.15	1.15	23.69	145.2	34.11	6.13	33.14	0.58	1.73	
1.16	1.16	24.02	148.6	34.12	6.19	33.14	0.59	1.75	
1.17	1.17	24.35	152.0	34.13	6.24	33.15	0.61	1.78	
1.18	1.18	24.68	155.4	34.14	6.30	33.15	0.62	1.80	
1.19	1.19	25.01	158.9	34.15	6.35	33.15	0.63	1.82	
1.20	1.20	25.34	162.4	34.16	6.41	33.15	0.64	1.84	
1.21	1.21	25.68	165.9	34.17	6.46	33.16	0.65	1.86	
1.22	1.22	26.01	169.5	34.18	6.52	33.16	0.66	1.88	
1.23	1.23	26.34	173.0	34.19	6.57	33.16	0.67	1.90	
1.24	1.24	26.67	176.7	34.20	6.62	33.16	0.68	1.92	
1.25	1.25	27.00	180.3	34.21	6.68	33.17	0.69	1.94	
1.26	1.26	27.33	184.0	34.22	6.73	33.17	0.70	1.96	

B-5

MANNING'S N= .017 SLOPE= .007

REMBERT DR.

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.83	5	10.00	0.13	9	33.17	0.67
2	7.38	0.67	6	20.50	0.35	10	33.63	0.67
3	7.83	0.67	7	31.00	0.13	11	41.00	0.83
4	8.00	0.00	8	33.00	0.00	12	0.00	0.00
☐ WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	VEL	ENERGY
	INC	AREA	RATE	PER	VEL		HEAD	HEAD
(FT)	(FT)	SQ. FT.	(CFS)	(FT)	(FPS)	(FT)	(FT)	(FT)
0.01	0.01	0.00	0.0	0.33	0.21	0.31	0.00	0.01
0.02	0.02	0.01	0.0	0.66	0.33	0.63	0.00	0.02
0.03	0.03	0.01	0.0	0.99	0.43	0.94	0.00	0.03
0.04	0.04	0.03	0.0	1.32	0.52	1.25	0.00	0.04
0.05	0.05	0.04	0.0	1.64	0.60	1.56	0.01	0.06
0.06	0.06	0.06	0.0	1.97	0.68	1.88	0.01	0.07
0.07	0.07	0.08	0.1	2.30	0.76	2.19	0.01	0.08
0.08	0.08	0.10	0.1	2.63	0.83	2.50	0.01	0.09
0.09	0.09	0.13	0.1	2.96	0.89	2.81	0.01	0.10
0.10	0.10	0.16	0.2	3.29	0.96	3.13	0.01	0.11
0.11	0.11	0.19	0.2	3.62	1.02	3.44	0.02	0.13
0.12	0.12	0.23	0.2	3.95	1.08	3.75	0.02	0.14
0.13	0.13	0.26	0.3	4.28	1.14	4.07	0.02	0.15
0.14	0.14	0.31	0.3	5.25	1.11	5.03	0.02	0.16
0.15	0.15	0.36	0.4	6.23	1.10	5.99	0.02	0.17
0.16	0.16	0.43	0.5	7.20	1.12	6.94	0.02	0.18
0.17	0.17	0.50	0.6	8.18	1.14	7.90	0.02	0.19
0.18	0.18	0.59	0.7	9.15	1.17	8.86	0.02	0.20
0.19	0.19	0.68	0.8	10.13	1.21	9.82	0.02	0.21
0.20	0.20	0.78	1.0	11.10	1.25	10.78	0.02	0.22
0.21	0.21	0.90	1.2	12.08	1.29	11.74	0.03	0.24
0.22	0.22	1.02	1.4	13.06	1.34	12.70	0.03	0.25
0.23	0.23	1.15	1.6	14.03	1.38	13.66	0.03	0.26
0.24	0.24	1.29	1.8	15.01	1.43	14.62	0.03	0.27
0.25	0.25	1.44	2.1	15.98	1.47	15.58	0.03	0.28
0.26	0.26	1.60	2.4	16.96	1.52	16.54	0.04	0.30
0.27	0.27	1.77	2.8	17.93	1.56	17.50	0.04	0.31
0.28	0.28	1.95	3.1	18.91	1.61	18.46	0.04	0.32
0.29	0.29	2.14	3.5	19.88	1.66	19.42	0.04	0.33
0.30	0.30	2.34	4.0	20.86	1.70	20.38	0.04	0.34
0.31	0.31	2.55	4.5	21.83	1.75	21.34	0.05	0.36
0.32	0.32	2.77	5.0	22.81	1.79	22.30	0.05	0.37
0.33	0.33	3.00	5.5	23.78	1.84	23.26	0.05	0.38
0.34	0.34	3.23	6.1	24.76	1.88	24.22	0.06	0.40
0.35	0.35	3.48	6.7	25.74	1.93	25.18	0.06	0.41
0.36	0.36	3.73	7.5	25.76	2.02	25.18	0.06	0.42
0.37	0.37	3.98	8.4	25.78	2.11	25.19	0.07	0.44
0.38	0.38	4.24	9.3	25.80	2.19	25.19	0.07	0.45
0.39	0.39	4.49	10.2	25.82	2.28	25.20	0.08	0.47
0.40	0.40	4.74	11.2	25.84	2.36	25.20	0.09	0.49
0.41	0.41	4.99	12.2	25.86	2.44	25.21	0.09	0.50
0.42	0.42	5.24	13.2	25.88	2.52	25.21	0.10	0.52
0.43	0.43	5.50	14.3	25.90	2.60	25.22	0.11	0.54
☐ WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	VEL	ENERGY
	INC	AREA	RATE	PER	VEL		HEAD	HEAD
(FT)	(FT)	SQ. FT.	(CFS)	(FT)	(FPS)	(FT)	(FT)	(FT)
0.45	0.45	6.00	16.5	25.94	2.76	25.23	0.12	0.57
0.46	0.46	6.25	17.7	25.96	2.83	25.23	0.12	0.58
0.47	0.47	6.51	18.9	25.98	2.91	25.24	0.13	0.60
0.48	0.48	6.76	20.1	26.00	2.98	25.24	0.14	0.62
0.49	0.49	7.01	21.4	26.02	3.05	25.25	0.14	0.63
0.50	0.50	7.26	22.7	26.04	3.12	25.25	0.15	0.65
0.51	0.51	7.52	24.0	26.07	3.19	25.26	0.16	0.67
0.52	0.52	7.77	25.3	26.09	3.26	25.26	0.17	0.69
0.53	0.53	8.02	26.7	26.11	3.33	25.27	0.17	0.70
0.54	0.54	8.27	28.1	26.13	3.40	25.27	0.18	0.72
0.55	0.55	8.53	29.5	26.15	3.46	25.28	0.19	0.74
0.56	0.56	8.78	31.0	26.17	3.53	25.28	0.19	0.75

ACTUAL FLOW

B-6

0.57	0.57	9.03	32.5	26.19	3.60	25.29	0.20	0.77
0.58	0.58	9.29	34.0	26.21	3.66	25.29	0.21	0.79
0.59	0.59	9.54	35.5	26.23	3.73	25.30	0.22	0.81
0.60	0.60	9.79	37.1	26.25	3.79	25.30	0.22	0.82
0.61	0.61	10.04	38.7	26.27	3.85	25.31	0.23	0.84
0.62	0.62	10.30	40.3	26.29	3.91	25.31	0.24	0.86
0.63	0.63	10.55	42.0	26.31	3.98	25.32	0.25	0.88
0.64	0.64	10.80	43.6	26.33	4.04	25.32	0.25	0.89
0.65	0.65	11.06	45.3	26.35	4.10	25.33	0.26	0.91
0.66	0.66	11.31	47.0	26.37	4.16	25.33	0.27	0.93
0.67	0.67	11.56	48.8	26.40	4.22	25.34	0.28	0.95
0.68	0.68	11.82	49.5	27.32	4.18	27.17	0.27	0.95
0.69	0.69	12.09	50.2	28.24	4.15	28.09	0.27	0.96
0.70	0.70	12.39	50.2	30.07	4.05	29.02	0.25	0.95
0.71	0.71	12.69	51.2	30.99	4.03	29.94	0.25	0.96
0.72	0.72	12.99	52.2	31.92	4.02	30.86	0.25	0.97
0.73	0.73	13.30	53.3	32.84	4.00	31.78	0.25	0.98
0.74	0.74	13.63	54.4	33.76	3.99	32.70	0.25	0.99
0.75	0.75	13.96	55.7	34.68	3.99	33.62	0.25	1.00
0.76	0.76	14.30	56.9	35.60	3.98	34.55	0.25	1.01
0.77	0.77	14.65	58.3	36.53	3.98	35.47	0.25	1.02
0.78	0.78	15.01	59.7	37.45	3.98	36.39	0.25	1.03
0.79	0.79	15.38	61.1	38.37	3.98	37.31	0.25	1.04
0.80	0.80	15.76	62.7	39.29	3.98	38.23	0.25	1.05
0.81	0.81	16.14	64.2	40.21	3.98	39.16	0.25	1.06
0.82	0.82	16.54	65.9	41.14	3.98	40.08	0.25	1.07
0.83	0.83	16.94	67.6	42.06	3.99	41.00	0.25	1.08

REMBERT DRIVE

STREET CAPACITY

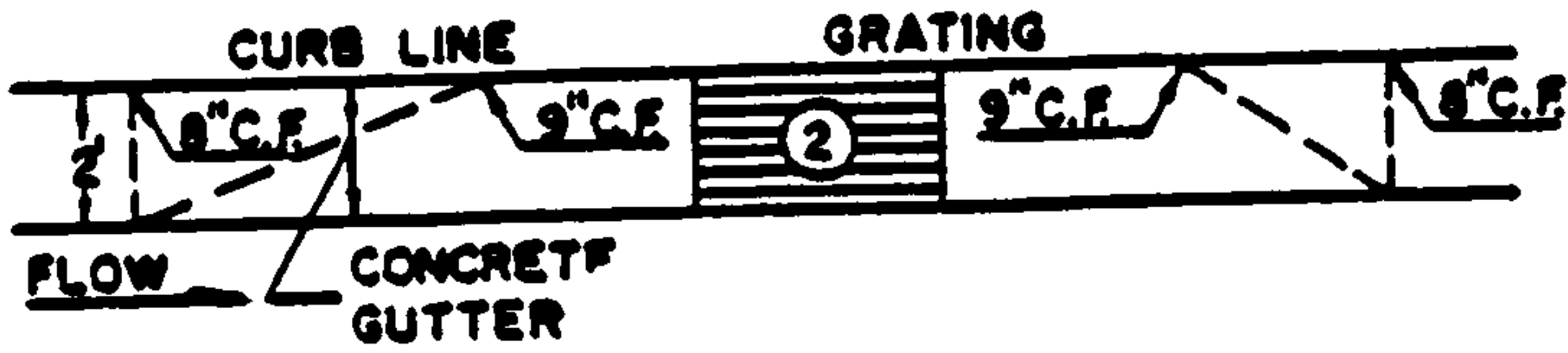
MANNING'S N= .017 SLOPE= .1

BROOKSIDE AVE.

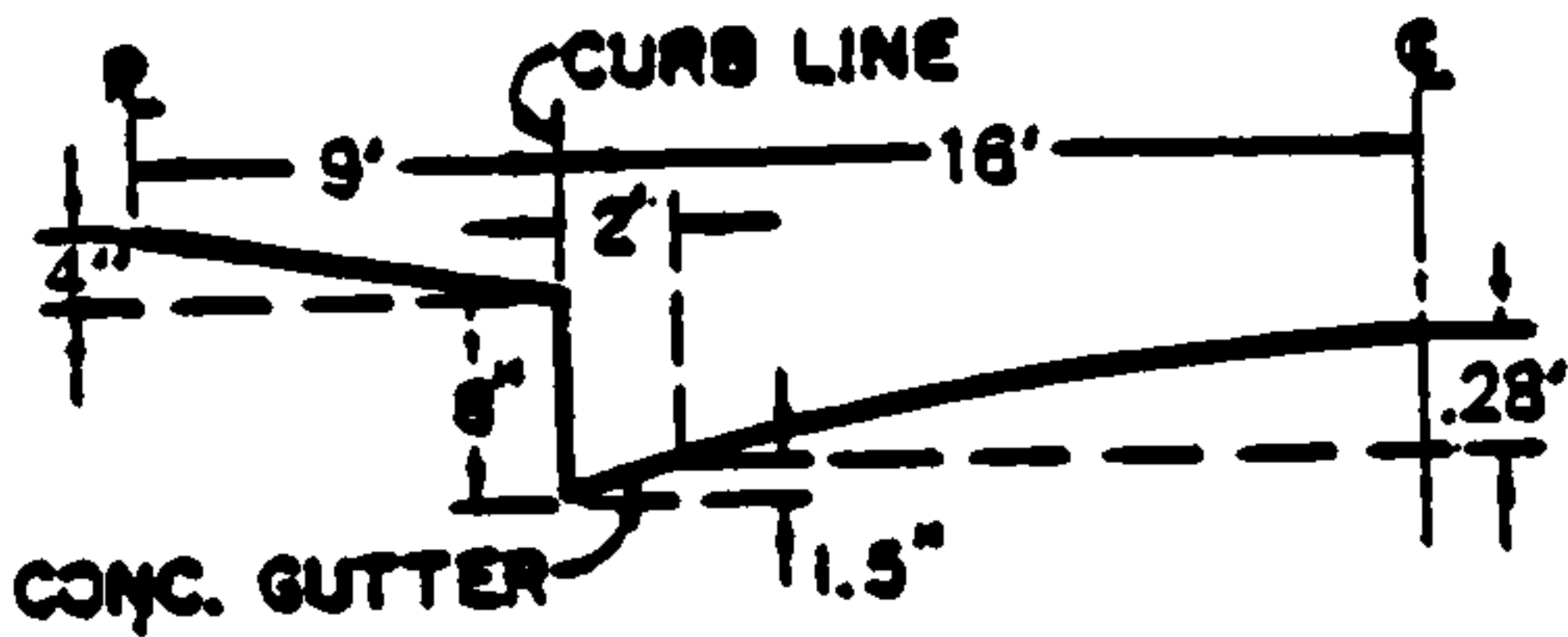
POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.83	5	11.00	0.13	9	35.17	0.67
2	8.38	0.67	6	22.00	0.35	10	35.63	0.67
3	8.83	0.67	7	33.00	0.13	11	44.00	0.83
4	9.00	0.00	8	35.00	0.00	12	0.00	0.00
WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	VEL	ENERGY
(FT)	INC	AREA	RATE	PER	VEL	(FT)	HEAD	HEAD
(FT)	(FT)	SQ. FT.	(CFS)	(FT)	(FPS)	(FT)	(FT)	(FT)
0.01	0.01	0.00	0.0	0.33	0.78	0.31	0.01	0.02
0.02	0.02	0.01	0.0	0.66	1.24	0.63	0.02	0.04
0.03	0.03	0.01	0.0	0.99	1.63	0.94	0.04	0.07
0.04	0.04	0.03	0.0	1.32	1.97	1.25	0.06	0.10
0.05	0.05	0.04	0.1	1.64	2.29	1.56	0.08	0.13
0.06	0.06	0.06	0.1	1.97	2.58	1.88	0.10	0.16
0.07	0.07	0.08	0.2	2.30	2.86	2.19	0.13	0.20
0.08	0.08	0.10	0.3	2.63	3.13	2.50	0.15	0.23
0.09	0.09	0.13	0.4	2.96	3.38	2.81	0.18	0.27
0.10	0.10	0.16	0.6	3.29	3.63	3.13	0.20	0.30
0.11	0.11	0.19	0.7	3.62	3.87	3.44	0.23	0.34
0.12	0.12	0.23	0.9	3.95	4.10	3.75	0.26	0.38
0.13	0.13	0.26	1.1	4.28	4.32	4.07	0.29	0.42
0.14	0.14	0.31	1.3	5.30	4.17	5.07	0.27	0.41
0.15	0.15	0.37	1.5	6.32	4.14	6.08	0.27	0.42
0.16	0.16	0.43	1.8	7.34	4.18	7.08	0.27	0.43
0.17	0.17	0.51	2.2	8.36	4.27	8.09	0.28	0.45
0.18	0.18	0.59	2.6	9.38	4.39	9.09	0.30	0.48
0.19	0.19	0.69	3.1	10.40	4.53	10.10	0.32	0.51
0.20	0.20	0.80	3.7	11.42	4.68	11.10	0.34	0.54
0.21	0.21	0.91	4.4	12.44	4.84	12.11	0.36	0.57
0.22	0.22	1.04	5.2	13.46	5.00	13.11	0.39	0.61
0.23	0.23	1.17	6.1	14.49	5.18	14.12	0.42	0.65
0.24	0.24	1.32	7.1	15.51	5.35	15.12	0.44	0.68
0.25	0.25	1.48	8.2	16.53	5.52	16.13	0.47	0.72
0.26	0.26	1.64	9.4	17.55	5.70	17.13	0.50	0.76
0.27	0.27	1.82	10.7	18.57	5.87	18.14	0.54	0.81
0.28	0.28	2.00	12.1	19.59	6.05	19.14	0.57	0.85
0.29	0.29	2.20	13.7	20.61	6.22	20.15	0.60	0.89
0.30	0.30	2.41	15.4	21.63	6.40	21.15	0.64	0.94
0.31	0.31	2.62	17.2	22.65	6.57	22.16	0.67	0.98
0.32	0.32	2.85	19.2	23.67	6.74	23.16	0.71	1.03
0.33	0.33	3.09	21.3	24.69	6.91	24.17	0.74	1.07
0.34	0.34	3.33	23.6	25.71	7.08	25.17	0.78	1.12
0.35	0.35	3.59	26.0	26.74	7.25	26.18	0.82	1.17
0.36	0.36	3.85	29.3	26.76	7.59	26.18	0.90	1.26
0.37	0.37	4.11	32.6	26.78	7.93	26.19	0.98	1.35
0.38	0.38	4.38	36.1	26.80	8.26	26.19	1.06	1.44
0.39	0.39	4.64	39.8	26.82	8.58	26.20	1.14	1.53
0.40	0.40	4.90	43.6	26.84	8.90	26.20	1.23	1.63
0.41	0.41	5.16	47.5	26.86	9.21	26.21	1.32	1.73
0.42	0.42	5.42	51.6	26.88	9.51	26.21	1.40	1.82
0.43	0.43	5.69	55.8	26.90	9.81	26.22	1.49	1.92
0.45	0.45	6.21	64.6	26.94	10.39	26.23	1.68	2.13
0.46	0.46	6.47	69.1	26.96	10.68	26.23	1.77	2.23
0.47	0.47	6.74	73.8	26.98	10.96	26.24	1.87	2.34
0.48	0.48	7.00	78.6	27.00	11.24	26.24	1.96	2.44
0.49	0.49	7.26	83.6	27.02	11.51	26.25	2.06	2.55
0.50	0.50	7.52	88.6	27.04	11.78	26.25	2.15	2.65
0.51	0.51	7.79	93.8	27.07	12.05	26.26	2.25	2.76
0.52	0.52	8.05	99.1	27.09	12.31	26.26	2.35	2.87
0.53	0.53	8.31	104.5	27.11	12.57	26.27	2.45	2.98
0.54	0.54	8.57	110.0	27.13	12.83	26.27	2.55	3.09
0.55	0.55	8.84	115.6	27.15	13.08	26.28	2.66	3.21
0.56	0.56	9.10	121.3	27.17	13.33	26.28	2.76	3.32

STREET CAPACITY

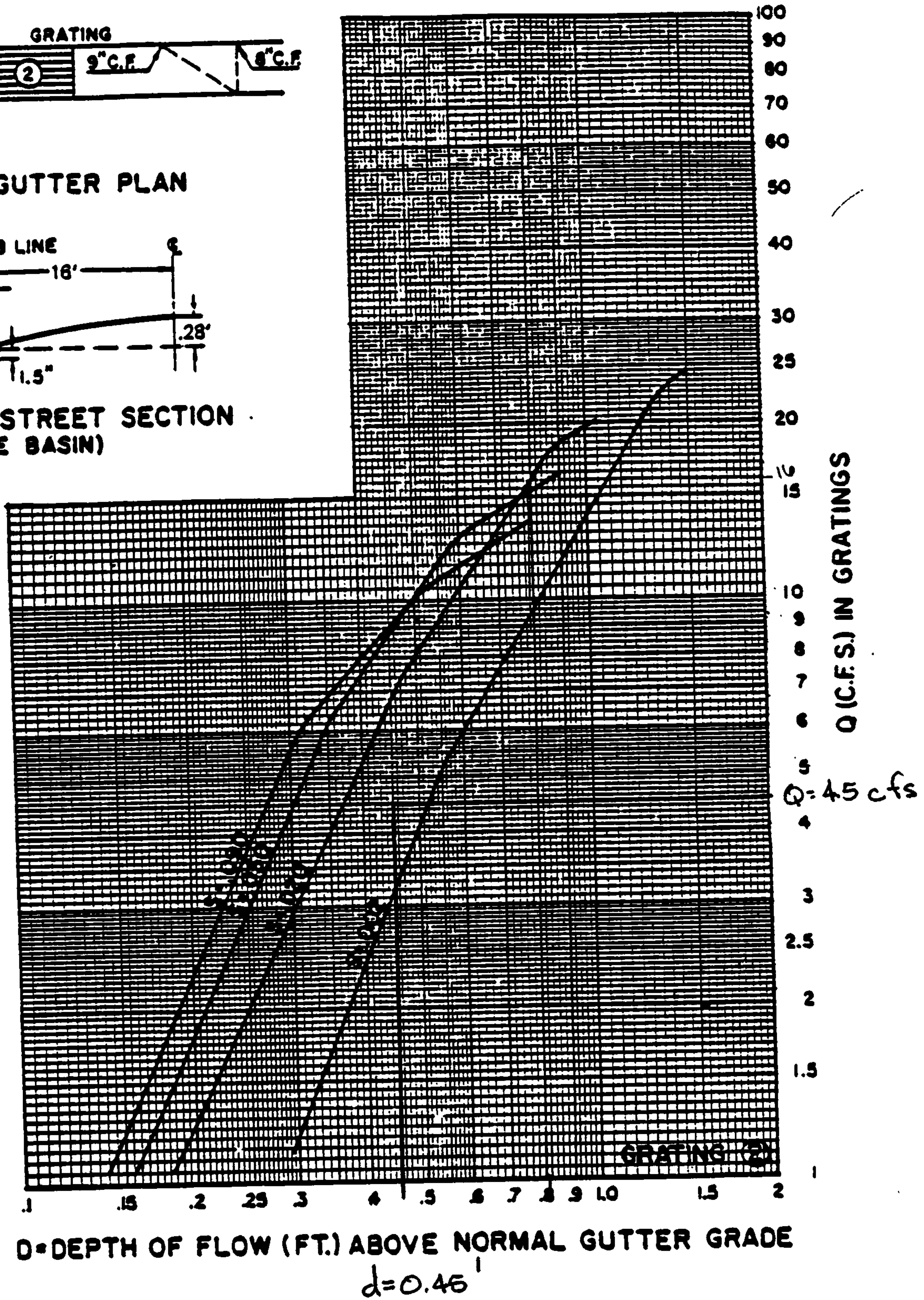
GRATING CAPACITIES FOR TYPE 'A' , 'C' and 'D'



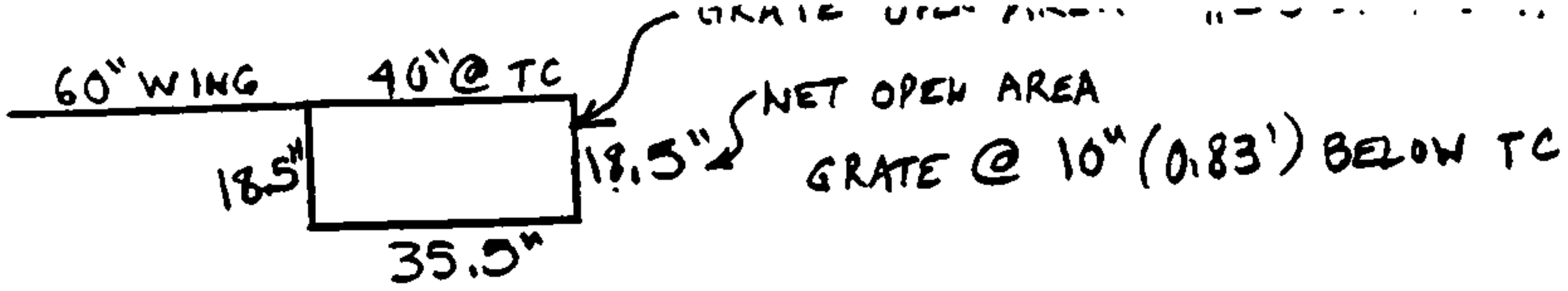
GRATING & GUTTER PLAN



TYPICAL HALF STREET SECTION
(ABOVE BASIN)



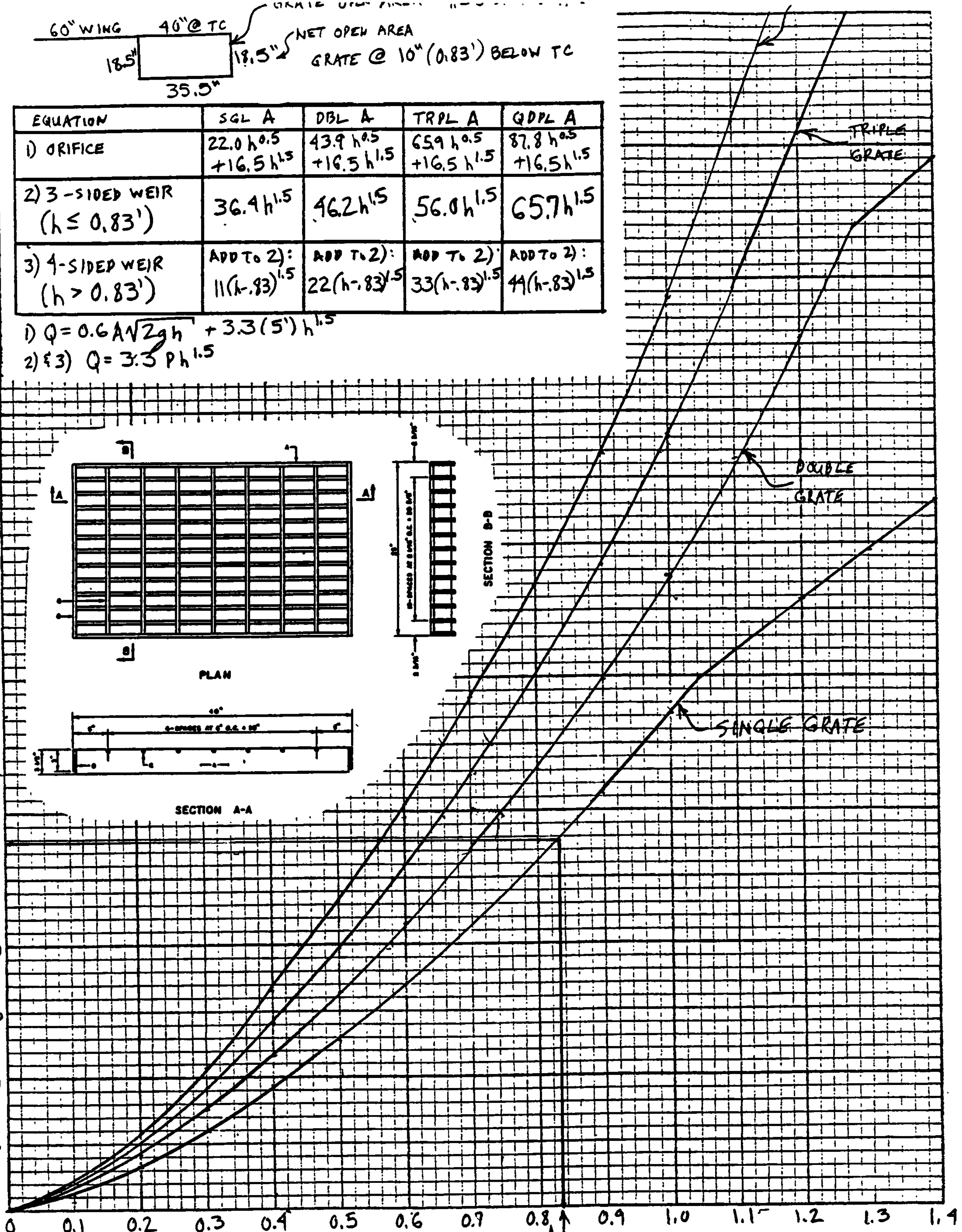
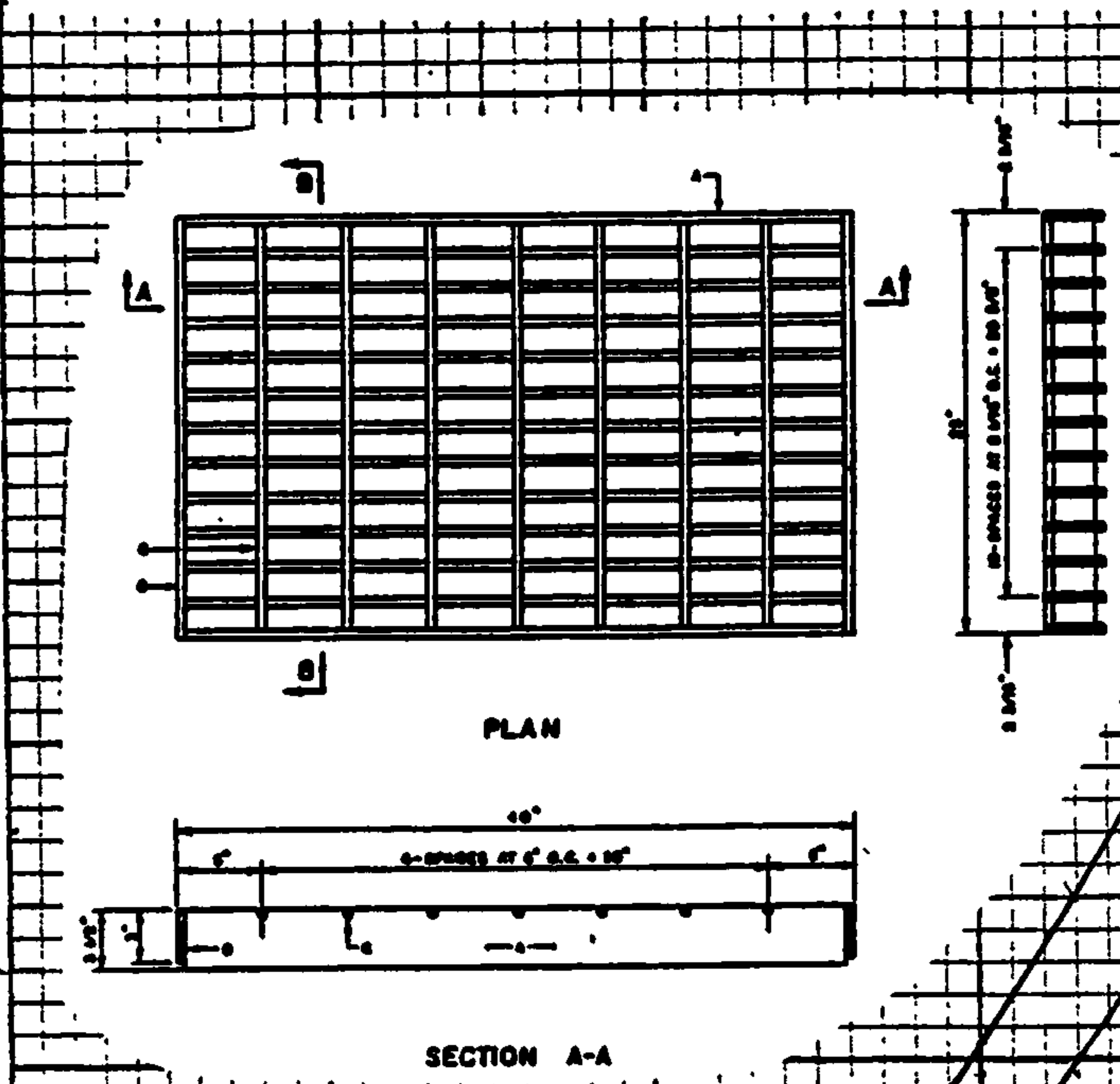
REMBERT DRIVE
S = 0.74%



EQUATION	SGL A	DBL A	TRPL A	QDPL A
1) ORIFICE	$22.0 h^{0.5} + 16.5 h^{1.5}$	$43.9 h^{0.5} + 16.5 h^{1.5}$	$65.9 h^{0.5} + 16.5 h^{1.5}$	$87.8 h^{0.5} + 16.5 h^{1.5}$
2) 3-SIDED WEIR ($h \leq 0.83'$)	$36.4 h^{1.5}$	$46.2 h^{1.5}$	$56.0 h^{1.5}$	$65.7 h^{1.5}$
3) 4-SIDED WEIR ($h > 0.83'$)	ADD TO 2): $11(h-0.83)^{1.5}$	ADD TO 2): $22(h-0.83)^{1.5}$	ADD TO 2): $33(h-0.83)^{1.5}$	ADD TO 2): $44(h-0.83)^{1.5}$

1) $Q = 0.6 A \sqrt{2gh} + 3.3(5') h^{1.5}$
 2) & 3) $Q = 3.3 P h^{1.5}$

GRATE CAPACITY (Q) IN CFS



BOHANNAN-HUSTON INC.

PROJECT NAME BROOKSIDE SHEET _____ OF _____
 PROJECT NO. _____ BY JPK DATE 4/9/92
 SUBJECT RATING CURVE FOR TYPE A INLETS CH'D _____ DATE B-10

UNSER BOULEVARD

PC PROGRAM STREAM

SEPTEMBER 1994

MANNING'S N= .017 SLOPE= .005

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	1.11	4	22.00	0.00	7	52.83	1.19
2	21.38	0.67	5	24.00	0.13	8	0.00	0.00
3	21.83	0.67	6	52.00	0.69	9	0.00	0.00
☐ WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	VEL	ENERGY
	INC	AREA	RATE	PER	VEL		HEAD	HEAD
(FT)	(FT)	SQ.FT.	(CFS)	(FT)	(FPS)	(FT)	(FT)	(FT)
0.01	0.01	0.00	0.0	0.16	0.17	0.16	0.00	0.01
0.02	0.02	0.00	0.0	0.33	0.28	0.31	0.00	0.02
0.03	0.03	0.01	0.0	0.49	0.36	0.47	0.00	0.03
0.04	0.04	0.01	0.0	0.66	0.44	0.63	0.00	0.04
0.05	0.05	0.02	0.0	0.82	0.51	0.78	0.00	0.05
0.06	0.06	0.03	0.0	0.99	0.58	0.94	0.01	0.07
0.07	0.07	0.04	0.0	1.15	0.64	1.09	0.01	0.08
0.08	0.08	0.05	0.0	1.32	0.70	1.25	0.01	0.09
0.09	0.09	0.06	0.0	1.48	0.76	1.41	0.01	0.10
0.10	0.10	0.08	0.1	1.64	0.81	1.56	0.01	0.11
0.11	0.11	0.09	0.1	1.81	0.86	1.72	0.01	0.12
0.12	0.12	0.11	0.1	1.97	0.92	1.88	0.01	0.13
0.13	0.13	0.13	0.1	2.14	0.97	2.03	0.01	0.14
0.14	0.14	0.15	0.1	2.65	0.93	2.54	0.01	0.15
0.15	0.15	0.18	0.2	3.16	0.92	3.04	0.01	0.16
0.16	0.16	0.22	0.2	3.67	0.93	3.54	0.01	0.17
0.17	0.17	0.25	0.2	4.18	0.95	4.04	0.01	0.18
0.18	0.18	0.30	0.3	4.69	0.98	4.55	0.01	0.19
0.19	0.19	0.34	0.3	5.20	1.01	5.05	0.02	0.21
0.20	0.20	0.40	0.4	5.71	1.05	5.55	0.02	0.22
0.21	0.21	0.46	0.5	6.22	1.08	6.05	0.02	0.23
0.22	0.22	0.52	0.6	6.73	1.12	6.56	0.02	0.24
0.23	0.23	0.59	0.7	7.24	1.16	7.06	0.02	0.25
0.24	0.24	0.66	0.8	7.75	1.20	7.56	0.02	0.26
0.25	0.25	0.74	0.9	8.26	1.23	8.06	0.02	0.27
0.26	0.26	0.82	1.0	8.77	1.27	8.57	0.03	0.29
0.27	0.27	0.91	1.2	9.28	1.31	9.07	0.03	0.30
0.28	0.28	1.00	1.4	9.79	1.35	9.57	0.03	0.31
0.29	0.29	1.10	1.5	10.31	1.39	10.07	0.03	0.32
0.30	0.30	1.20	1.7	10.82	1.43	10.58	0.03	0.33
0.31	0.31	1.31	1.9	11.33	1.47	11.08	0.03	0.34
0.32	0.32	1.43	2.1	11.84	1.51	11.58	0.04	0.36
0.33	0.33	1.54	2.4	12.35	1.55	12.08	0.04	0.37
0.34	0.34	1.67	2.6	12.86	1.58	12.59	0.04	0.38
0.35	0.35	1.80	2.9	13.37	1.62	13.09	0.04	0.39
0.36	0.36	1.93	3.2	13.88	1.66	13.59	0.04	0.40
0.37	0.37	2.07	3.5	14.39	1.70	14.09	0.04	0.41
0.38	0.38	2.21	3.8	14.90	1.73	14.60	0.05	0.43
0.39	0.39	2.36	4.2	15.41	1.77	15.10	0.05	0.44
0.40	0.40	2.51	4.5	15.92	1.81	15.60	0.05	0.45
0.41	0.41	2.67	4.9	16.43	1.84	16.10	0.05	0.46
0.42	0.42	2.83	5.3	16.94	1.88	16.61	0.05	0.47
0.43	0.43	3.00	5.7	17.45	1.91	17.11	0.06	0.49
0.44	0.44	3.18	6.2	17.96	1.95	17.61	0.06	0.50

WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	VEL	ENERGY
(FT)	INC	AREA	RATE	PER	VEL	(FT)	HEAD	HEAD
(FT)	(FT)	SQ.FT.	(CFS)	(FT)	(FPS)	(FT)	(FT)	(FT)
0.46	0.46	3.54	7.1	18.98	2.02	18.62	0.06	0.52
0.47	0.47	3.73	7.6	19.49	2.05	19.12	0.07	0.54
0.48	0.48	3.92	8.2	20.00	2.09	19.62	0.07	0.55
0.49	0.49	4.12	8.7	20.51	2.12	20.12	0.07	0.56
0.50	0.50	4.32	9.3	21.02	2.15	20.63	0.07	0.57
0.51	0.51	4.53	9.9	21.53	2.19	21.13	0.07	0.58
0.52	0.52	4.75	10.5	22.04	2.22	21.63	0.08	0.60
0.53	0.53	4.97	11.2	22.56	2.25	22.13	0.08	0.61
0.54	0.54	5.19	11.9	23.07	2.29	22.64	0.08	0.62
0.55	0.55	5.42	12.6	23.58	2.32	23.14	0.08	0.63
0.56	0.56	5.65	13.3	24.09	2.35	23.64	0.09	0.65
0.57	0.57	5.89	14.0	24.60	2.38	24.14	0.09	0.66
0.58	0.58	6.14	14.8	25.11	2.42	24.65	0.09	0.67
0.59	0.59	6.38	15.6	25.62	2.45	25.15	0.09	0.68
0.60	0.60	6.64	16.5	26.13	2.48	25.65	0.10	0.70
0.61	0.61	6.90	17.3	26.64	2.51	26.15	0.10	0.71
0.62	0.62	7.16	18.2	27.15	2.54	26.66	0.10	0.72
0.63	0.63	7.43	19.1	27.66	2.57	27.16	0.10	0.73
0.64	0.64	7.70	20.1	28.17	2.60	27.66	0.11	0.75
0.65	0.65	7.98	21.0	28.68	2.64	28.16	0.11	0.76
0.66	0.66	8.27	22.0	29.19	2.67	28.67	0.11	0.77
0.67	0.67	8.56	23.1	29.70	2.70	29.17	0.11	0.78
0.68	0.68	8.85	23.9	30.69	2.70	30.61	0.11	0.79
0.69	0.69	9.16	24.8	31.67	2.70	31.59	0.11	0.80
0.70	0.70	9.49	25.7	32.63	2.71	32.09	0.11	0.81
0.71	0.71	9.81	26.9	33.13	2.75	32.60	0.12	0.83
0.72	0.72	10.14	28.2	33.64	2.78	33.10	0.12	0.84
0.73	0.73	10.47	29.4	34.14	2.81	33.60	0.12	0.85
0.74	0.74	10.81	30.7	34.65	2.84	34.10	0.13	0.87
0.75	0.75	11.16	32.1	35.16	2.88	34.61	0.13	0.88
0.76	0.76	11.50	33.4	35.66	2.91	35.11	0.13	0.89
0.77	0.77	11.86	34.8	36.17	2.94	35.61	0.13	0.90
0.78	0.78	12.22	36.3	36.67	2.97	36.11	0.14	0.92
0.79	0.79	12.58	37.8	37.18	3.00	36.62	0.14	0.93
0.80	0.80	12.95	39.3	37.68	3.03	37.12	0.14	0.94
0.81	0.81	13.32	40.8	38.19	3.06	37.62	0.15	0.96
0.82	0.82	13.70	42.4	38.69	3.09	38.12	0.15	0.97
0.83	0.83	14.08	44.0	39.20	3.12	38.63	0.15	0.98
0.84	0.84	14.47	45.6	39.70	3.15	39.13	0.15	0.99
0.85	0.85	14.87	47.3	40.21	3.18	39.63	0.16	1.01
0.86	0.86	15.27	49.1	40.71	3.21	40.13	0.16	1.02
0.87	0.87	15.67	50.8	41.22	3.24	40.64	0.16	1.03
0.88	0.88	16.08	52.6	41.73	3.27	41.14	0.17	1.05
0.89	0.89	16.49	54.5	42.23	3.30	41.64	0.17	1.06
0.90	0.90	16.91	56.3	42.74	3.33	42.14	0.17	1.07
0.91	0.91	17.34	58.3	43.24	3.36	42.65	0.18	1.09
0.92	0.92	17.76	60.2	43.75	3.39	43.15	0.18	1.10
0.93	0.93	18.20	62.2	44.25	3.42	43.65	0.18	1.11
0.94	0.94	18.64	64.2	44.76	3.45	44.15	0.18	1.12
0.95	0.95	19.08	66.3	45.26	3.48	44.66	0.19	1.14
0.96	0.96	19.53	68.4	45.77	3.50	45.16	0.19	1.15
0.97	0.97	19.98	70.6	46.27	3.53	45.66	0.19	1.16
0.98	0.98	20.44	72.8	46.78	3.56	46.16	0.20	1.18
0.99	0.99	20.91	75.0	47.28	3.59	46.67	0.20	1.19

STD CURB
CAPACITY

Analyzer Report

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Drainage Structure Analyzer

Gutter Hydraulic Analysis

Date: Wednesday, August 07, 2002 05:42:04 PM

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Input Data

Shape		Composite
Gutter width	2.00 ft	
Side Slope		6.250%
Transverse slope		2.000%
Longitudinal Slope		0.500%
Roughness		0.017000
Flow Rate		8.1 cfs

Output Results

Depth	0.45 ft
Velocity	2.44 ft/s
Spread	18.00 ft

$$\text{DEPTH} \times \text{VELOCITY} = 0.45 \times 2.44 = 1.10 < 6.5 \text{ OK}$$

TOWER ROAD

PC PROGRAM STREAM

SEPTEMBER 1994

MANNING'S N= .017 SLOPE= .0066

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.93	4	13.00	0.00	7	44.83	1.21
2	12.38	0.67	5	15.00	0.13	8	0.00	0.00
3	12.83	0.67	6	44.00	0.71	9	0.00	0.00
☐ WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	VEL	ENERGY
	INC	AREA	RATE	PER	VEL		HEAD	HEAD
(FT)	(FT)	SQ.FT.	(CFS)	(FT)	(FPS)	(FT)	(FT)	(FT)
0.01	0.01	0.00	0.0	0.16	0.20	0.16	0.00	0.01
0.02	0.02	0.00	0.0	0.33	0.32	0.31	0.00	0.02
0.03	0.03	0.01	0.0	0.49	0.42	0.47	0.00	0.03
0.04	0.04	0.01	0.0	0.66	0.51	0.63	0.00	0.04
0.05	0.05	0.02	0.0	0.82	0.59	0.78	0.01	0.06
0.06	0.06	0.03	0.0	0.99	0.66	0.94	0.01	0.07
0.07	0.07	0.04	0.0	1.15	0.73	1.09	0.01	0.08
0.08	0.08	0.05	0.0	1.32	0.80	1.25	0.01	0.09
0.09	0.09	0.06	0.1	1.48	0.87	1.41	0.01	0.10
0.10	0.10	0.08	0.1	1.64	0.93	1.56	0.01	0.11
0.11	0.11	0.09	0.1	1.81	0.99	1.72	0.02	0.13
0.12	0.12	0.11	0.1	1.97	1.05	1.88	0.02	0.14
0.13	0.13	0.13	0.1	2.14	1.11	2.03	0.02	0.15
0.14	0.14	0.15	0.2	2.65	1.07	2.54	0.02	0.16
0.15	0.15	0.18	0.2	3.16	1.06	3.04	0.02	0.17
0.16	0.16	0.22	0.2	3.67	1.07	3.54	0.02	0.18
0.17	0.17	0.25	0.3	4.18	1.10	4.04	0.02	0.19
0.18	0.18	0.30	0.3	4.69	1.13	4.55	0.02	0.20
0.19	0.19	0.34	0.4	5.20	1.16	5.05	0.02	0.21
0.20	0.20	0.40	0.5	5.71	1.20	5.55	0.02	0.22
0.21	0.21	0.46	0.6	6.22	1.24	6.05	0.02	0.23
0.22	0.22	0.52	0.7	6.73	1.29	6.56	0.03	0.25
0.23	0.23	0.59	0.8	7.24	1.33	7.06	0.03	0.26
0.24	0.24	0.66	0.9	7.75	1.37	7.56	0.03	0.27
0.25	0.25	0.74	1.0	8.26	1.42	8.06	0.03	0.28
0.26	0.26	0.82	1.2	8.77	1.46	8.57	0.03	0.29
0.27	0.27	0.91	1.4	9.28	1.51	9.07	0.04	0.31
0.28	0.28	1.00	1.6	9.79	1.55	9.57	0.04	0.32
0.29	0.29	1.10	1.8	10.31	1.60	10.07	0.04	0.33
0.30	0.30	1.20	2.0	10.82	1.64	10.58	0.04	0.34
0.31	0.31	1.31	2.2	11.33	1.69	11.08	0.04	0.35
0.32	0.32	1.43	2.5	11.84	1.73	11.58	0.05	0.37
0.33	0.33	1.54	2.7	12.35	1.78	12.08	0.05	0.38
0.34	0.34	1.67	3.0	12.86	1.82	12.59	0.05	0.39
0.35	0.35	1.80	3.3	13.37	1.86	13.09	0.05	0.40
0.36	0.36	1.93	3.7	13.88	1.91	13.59	0.06	0.42
0.37	0.37	2.07	4.0	14.39	1.95	14.09	0.06	0.43
0.38	0.38	2.21	4.4	14.90	1.99	14.60	0.06	0.44
0.39	0.39	2.36	4.8	15.41	2.03	15.10	0.06	0.45
0.40	0.40	2.51	5.2	15.92	2.07	15.60	0.07	0.47
0.41	0.41	2.67	5.7	16.43	2.12	16.10	0.07	0.48
0.42	0.42	2.83	6.1	16.94	2.16	16.61	0.07	0.49
0.43	0.43	3.00	6.6	17.45	2.20	17.11	0.07	0.50
0.44	0.44	3.18	7.1	17.96	2.24	17.61	0.08	0.52

WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	VEL	ENERGY
(FT)	INC	AREA	RATE	PER	VEL	(FT)	HEAD	HEAD
	(FT)	SQ. FT.	(CFS)	(FT)	(FPS)		(FT)	(FT)
0.46	0.46	3.54	8.2	18.98	2.32	18.62	0.08	0.54
0.47	0.47	3.73	8.8	19.49	2.36	19.12	0.09	0.56
0.48	0.48	3.92	9.4	20.00	2.40	19.62	0.09	0.57
0.49	0.49	4.12	10.0	20.51	2.44	20.12	0.09	0.58
0.50	0.50	4.32	10.7	21.02	2.47	20.63	0.10	0.60
0.51	0.51	4.53	11.4	21.53	2.51	21.13	0.10	0.61
0.52	0.52	4.75	12.1	22.04	2.55	21.63	0.10	0.62
0.53	0.53	4.97	12.9	22.56	2.59	22.13	0.10	0.63
0.54	0.54	5.19	13.6	23.07	2.63	22.64	0.11	0.65
0.55	0.55	5.42	14.4	23.58	2.66	23.14	0.11	0.66
0.56	0.56	5.65	15.3	24.09	2.70	23.64	0.11	0.67
0.57	0.57	5.89	16.1	24.60	2.74	24.14	0.12	0.69
0.58	0.58	6.14	17.0	25.11	2.78	24.65	0.12	0.70
0.59	0.59	6.38	18.0	25.62	2.81	25.15	0.12	0.71
0.60	0.60	6.64	18.9	26.13	2.85	25.65	0.13	0.73
0.61	0.61	6.90	19.9	26.64	2.88	26.15	0.13	0.74
0.62	0.62	7.16	20.9	27.15	2.92	26.66	0.13	0.75
0.63	0.63	7.43	22.0	27.66	2.96	27.16	0.14	0.77
0.64	0.64	7.70	23.1	28.17	2.99	27.66	0.14	0.78
0.65	0.65	7.98	24.2	28.68	3.03	28.16	0.14	0.79
0.66	0.66	8.27	25.3	29.19	3.06	28.67	0.15	0.81
0.67	0.67	8.56	26.5	29.70	3.10	29.17	0.15	0.82
0.68	0.68	8.85	27.5	30.68	3.10	30.60	0.15	0.83
0.69	0.69	9.16	28.5	31.65	3.11	31.57	0.15	0.84
0.70	0.70	9.49	29.3	33.08	3.09	32.55	0.15	0.85
0.71	0.71	9.82	30.4	34.06	3.10	33.52	0.15	0.86
0.72	0.72	10.16	31.9	34.55	3.14	34.02	0.15	0.87
0.73	0.73	10.50	33.4	35.05	3.18	34.51	0.16	0.89
0.74	0.74	10.85	34.9	35.54	3.22	35.00	0.16	0.90
0.75	0.75	11.20	36.5	36.04	3.26	35.50	0.16	0.91
0.76	0.76	11.56	38.1	36.53	3.30	35.99	0.17	0.93
0.77	0.77	11.92	39.8	37.03	3.34	36.48	0.17	0.94
0.78	0.78	12.29	41.5	37.53	3.37	36.97	0.18	0.96
0.79	0.79	12.66	43.2	38.02	3.41	37.47	0.18	0.97
0.80	0.80	13.04	45.0	38.52	3.45	37.96	0.18	0.98
0.81	0.81	13.42	46.8	39.01	3.49	38.45	0.19	1.00
0.82	0.82	13.81	48.6	39.51	3.52	38.94	0.19	1.01
0.83	0.83	14.20	50.5	40.00	3.56	39.44	0.20	1.03
0.84	0.84	14.59	52.5	40.50	3.60	39.93	0.20	1.04
0.85	0.85	15.00	54.5	41.00	3.63	40.42	0.20	1.05
0.86	0.86	15.40	56.5	41.49	3.67	40.92	0.21	1.07
0.87	0.87	15.81	58.6	41.99	3.70	41.41	0.21	1.08
0.88	0.88	16.23	60.7	42.48	3.74	41.90	0.22	1.10
0.89	0.89	16.65	62.9	42.98	3.77	42.39	0.22	1.11
0.90	0.90	17.08	65.1	43.47	3.81	42.89	0.23	1.13
0.91	0.91	17.51	67.3	43.97	3.84	43.38	0.23	1.14
0.92	0.92	17.95	69.6	44.46	3.88	43.87	0.23	1.15
0.93	0.93	18.39	71.9	44.96	3.91	44.37	0.24	1.17
0.94	0.94	18.83	74.8	44.98	3.97	44.38	0.25	1.19
0.95	0.95	19.28	77.8	45.00	4.04	44.40	0.25	1.20
0.96	0.96	19.72	80.8	45.02	4.10	44.42	0.26	1.22
0.97	0.97	20.16	83.8	45.04	4.16	44.43	0.27	1.24
0.98	0.98	20.61	86.9	45.06	4.22	44.45	0.28	1.26
0.99	0.99	21.05	90.0	45.08	4.27	44.46	0.28	1.27

STD CURB
CAPACITY

Analyzer Report

=====

Drainage Structure Analyzer

Gutter Hydraulic Analysis

Date: Wednesday, August 07, 2002 05:53:53 PM

=====

Input Data

Shape	Uniform
Transverse slope	2.000%
Longitudinal slope	0.660%
Roughness	0.017000
Flow Rate	10.1 cfs

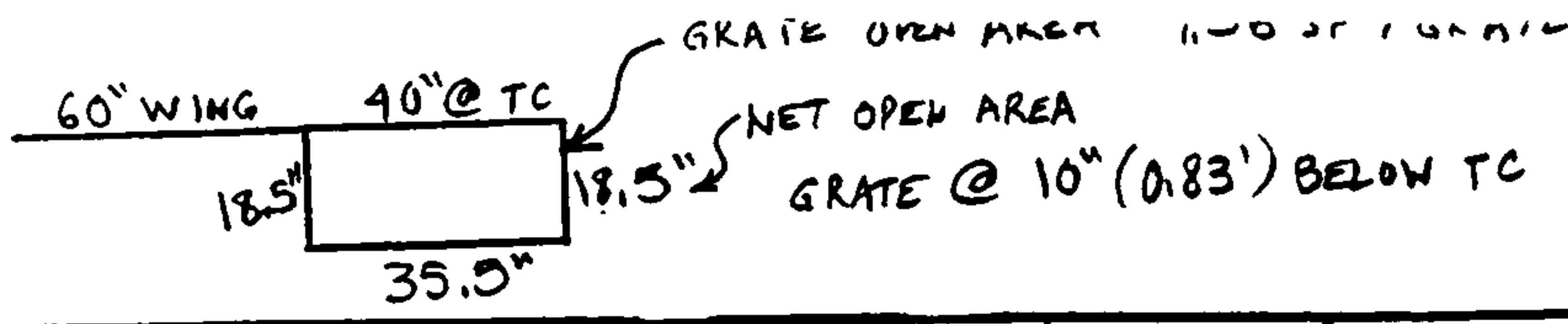
Output Results

Depth	0.38 ft
Velocity	2.81 ft/s
Spread	19.00 ft

$$\text{DEPTH} \times \text{VELOCITY} = 0.38 \times 2.81 = 1.07 < 6.5$$

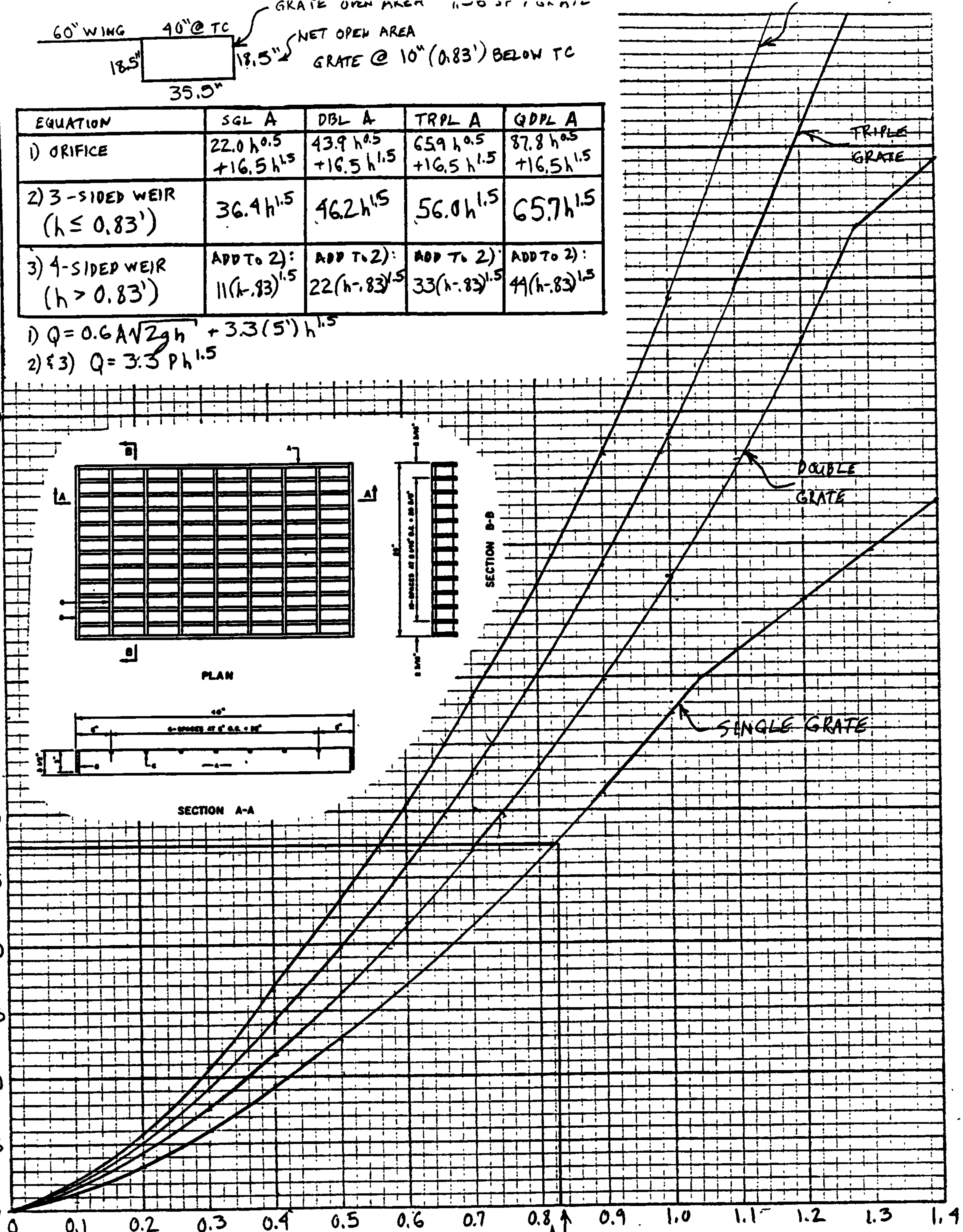
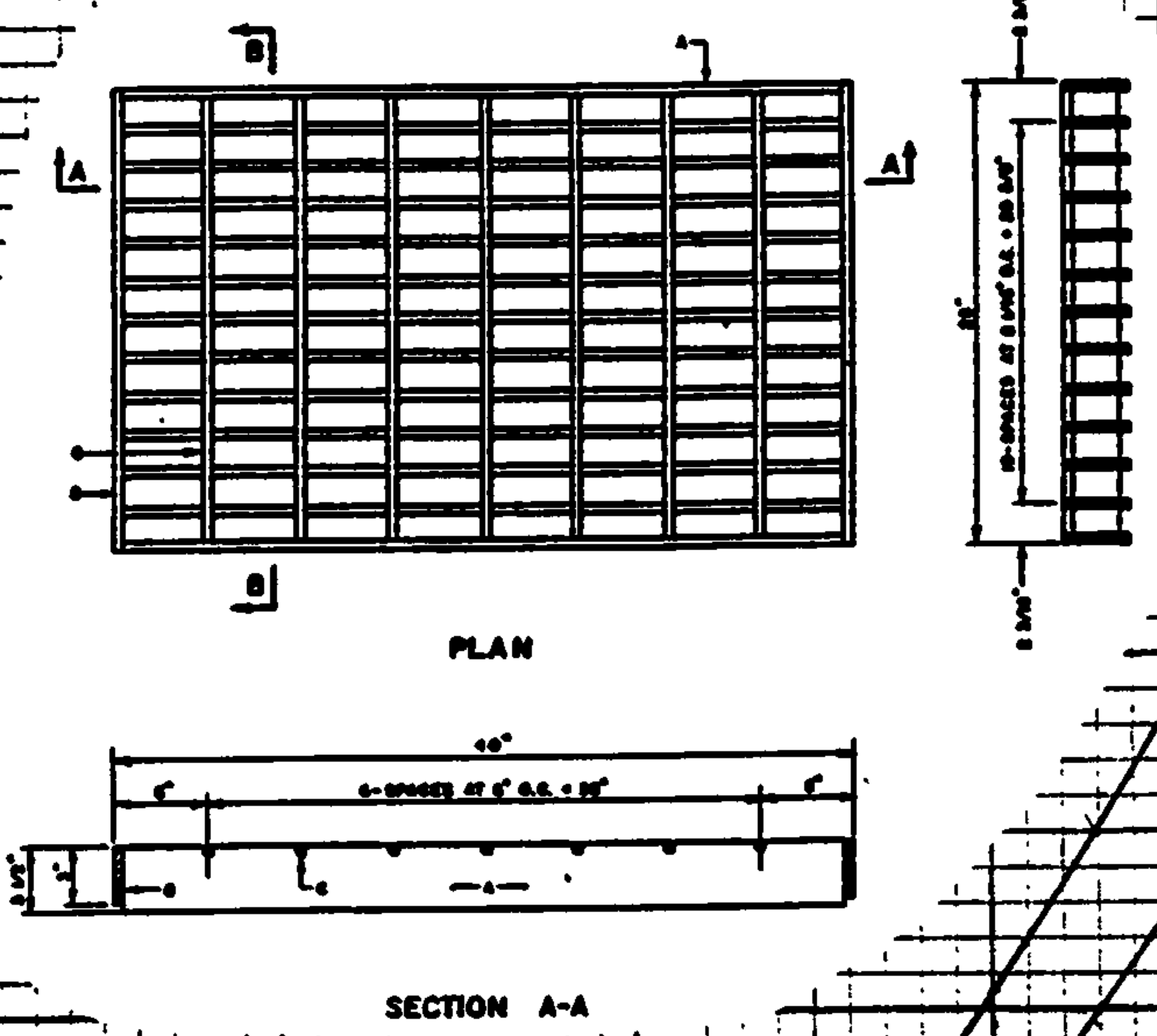
$\therefore \text{OK}$

GRATE CAPACITY (Q) IN CFS



EQUATION	SGL A	DBL A	TRPL A	QDPL A
1) ORIFICE	$22.0 h^{0.5} + 16.5 h^{1.5}$	$43.9 h^{0.5} + 16.5 h^{1.5}$	$65.9 h^{0.5} + 16.5 h^{1.5}$	$87.8 h^{0.5} + 16.5 h^{1.5}$
2) 3-SIDED WEIR ($h \leq 0.83'$)	$36.4 h^{1.5}$	$46.2 h^{1.5}$	$56.0 h^{1.5}$	$65.7 h^{1.5}$
3) 4-SIDED WEIR ($h > 0.83'$)	ADD TO 2): $11(h - 0.83)^{1.5}$	ADD TO 2): $22(h - 0.83)^{1.5}$	ADD TO 2): $33(h - 0.83)^{1.5}$	ADD TO 2): $44(h - 0.83)^{1.5}$

1) $Q = 0.6 A \sqrt{2gh} + 3.3(5') h^{1.5}$
2) & 3) $Q = 3.3 P h^{1.5}$

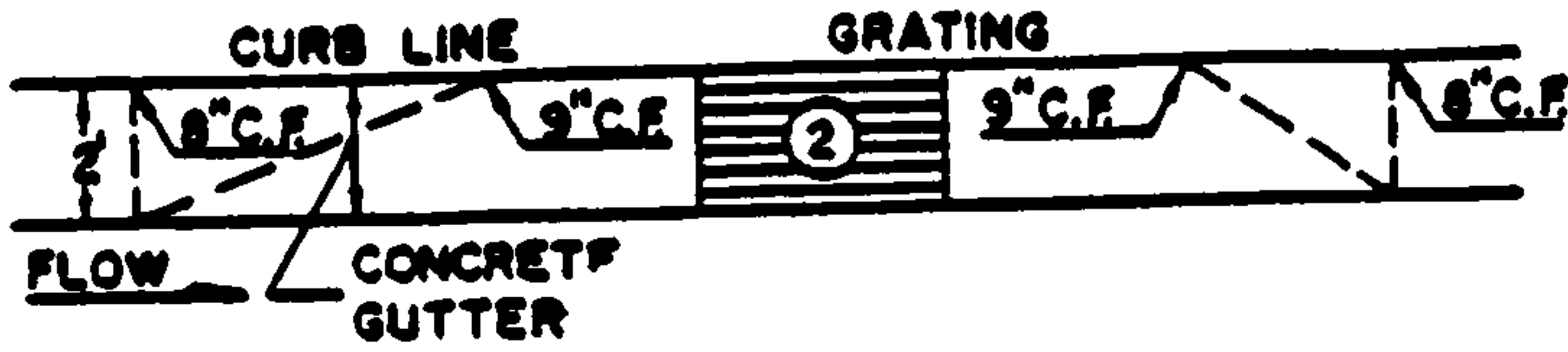


TC 0.83'
HEAD (h) IN FEET
UNSER BLVD

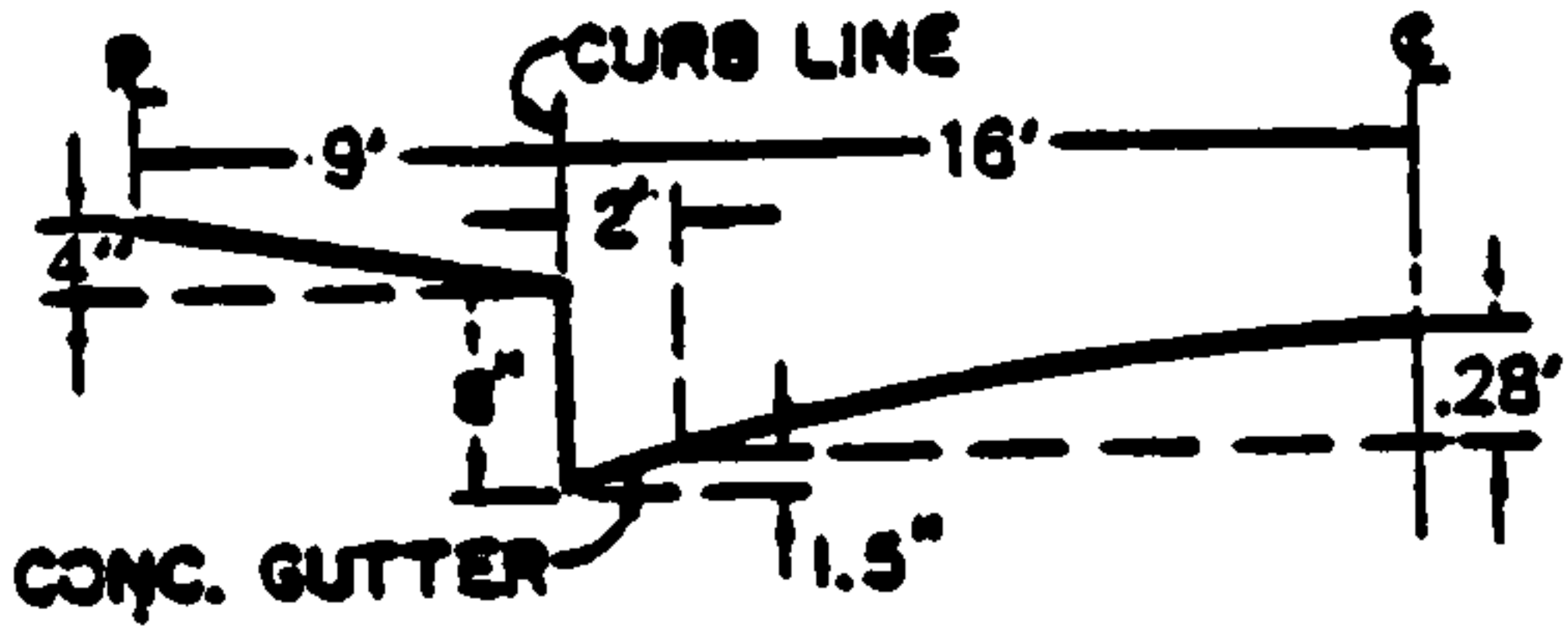
BOHANNAN-HUSTON INC.

PROJECT NAME _____ SHEET _____ OF _____
PROJECT NO. _____ BY JPK DATE 4/9/92
SUBJECT RATING CURVE FOR TYPE A INLETS CH'D _____ DATE B-17

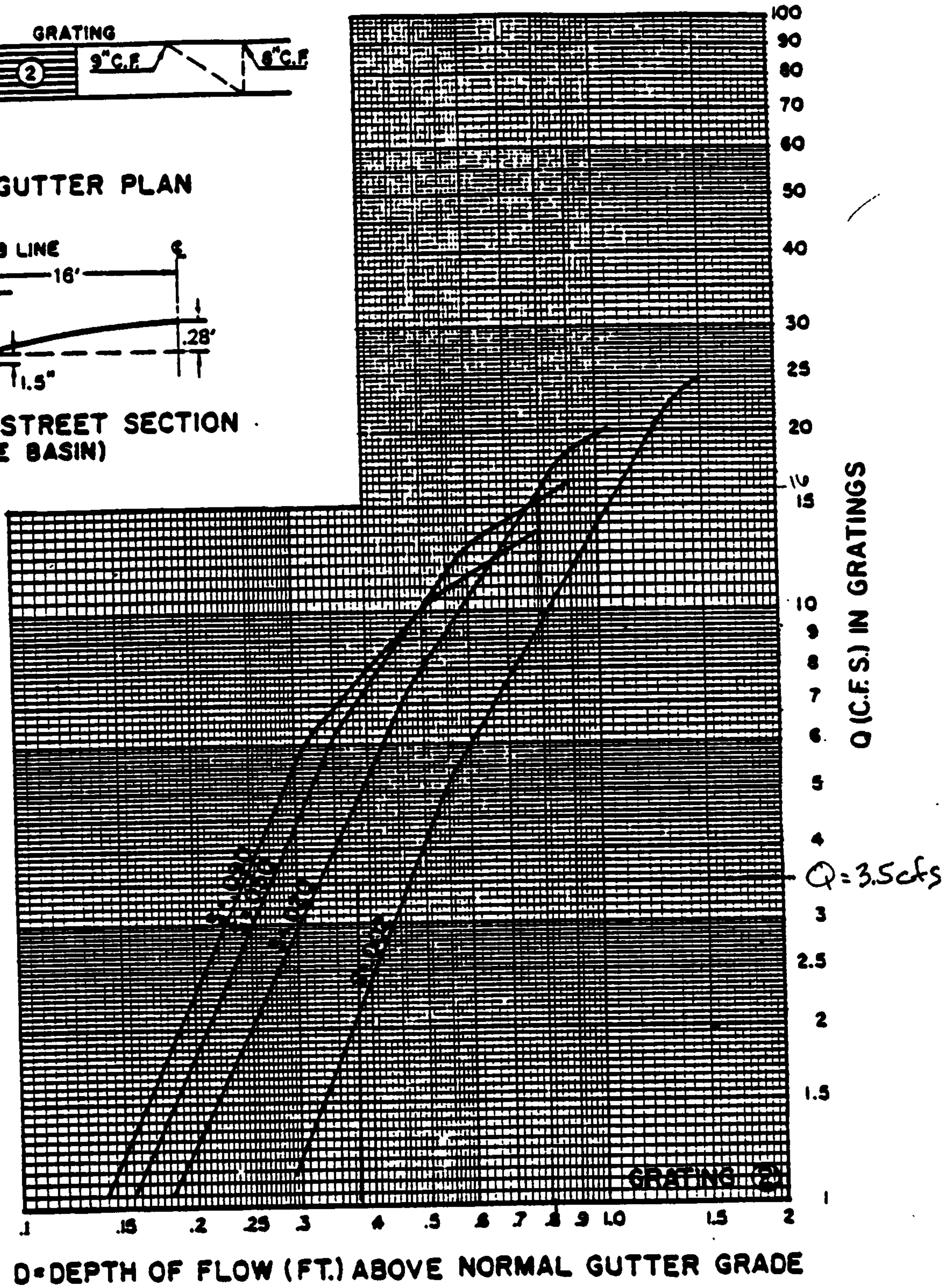
GRATING CAPACITIES FOR TYPE 'A' , 'C' and 'D'



GRATING & GUTTER PLAN



TYPICAL HALF STREET SECTION (ABOVE BASIN)



$$d = 0.38 \text{ FT}$$

TOWER ROAD

$$S = 0.66\%$$

APPENDIX C

INFRASTRUCTURE LIST

Current DRC
Project No. _____

Date Submitted: August 9, 2002

Date Site Plan Approved: N/A

Date Preliminary Plat Approved: _____

Date Preliminary Plat Expires: _____

DRB Project No. _____

Application No. _____

Figure 12

INFRASTRUCTURE LIST

EXHIBIT "A"
TO SUBDIVISION IMPROVEMENTS AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

**VISTA WEST SUBDIVISION
PRELIMINARY PLAT**

Following is a summary of PUBLIC/PRIVATE Infrastructure required to be constructed or financially guaranteed for the above development. This Listing is not necessarily a complete listing. During the SIA process and/or in the review of the construction drawings, if the DRC Chair determines that appurtenant items and/or unforeseen items have not been included in the infrastructure listing, the DRC Chair may include those items in the listing and related financial guarantees. Likewise, if the DRC Chair determines that appurtenant or non-essential items can be deleted from the listing, those items may be deleted as well as the related portions of the financial guarantees. All such revisions require approval by the DRC Chair, the User Department and agent/owner. If such approvals are obtained, these revisions to the listing will be incorporated administratively. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility will be required as a condition of project acceptance and close out by the City.

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnst Engineer
PUBLIC ROADWAY IMPROVEMENTS									
		25' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK ON BOTH SIDES*	REMBERT DRIVE	BROOKSIDE AVENUE	EUCARIZ AVENUE	/	/	/
		28' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK ON BOTH SIDES*	BROOKSIDE AVENUE	RIDGESIDE STREET	REMBERT DRIVE	/	/	/
		24' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK ON SOUTH SIDE*	BROOKSIDE AVENUE	REMBERT DRIVE	EAST STUB TERMINUS	/	/	/
		33' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK ON EAST SIDE*	RIDGESIDE STREET	TOWER ROAD	BROOKSIDE AVENUE	/	/	/
		25' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK ON EAST SIDE*	RIDGESIDE STREET	BROOKSIDE AVENUE	EUCARIZ AVENUE	/	/	/
		24' F-EOP	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 6' WIDE SIDEWALK ON SOUTH SIDE ONLY	EUCARIZ AVENUE	WEST BOUNDARY	UNSER BLVD	/	/	/
		30' F-F	ARTERIAL PAVING W/ PCC CURB & GUTTER & PCC 6' WIDE SIDEWALK ON WEST SIDE ONLY (HALF STREET SECTION)	UNSER BLVD.	TOWER ROAD	EUCARIZ AVENUE	/	/	/
		31' F-F	ARTERIAL PAVING W/ PCC CURB & GUTTER & PCC 6' WIDE SIDEWALK ON NORTH SIDE ONLY (MATCH EXISTING PAVEMENT TO ACHIEVE FULL 31' F-F STREET SECTION)	TOWER ROAD	WEST BOUNDARY	UNSER BLVD	/	/	/
		12' wide	ARTERIAL PAVING W/ PCC MEDIAN CURB & GUTTER FOR LEFT TURN LANE	TOWER ROAD	75 FEET WEST	RIDGESIDE STREET	/	/	/

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnst Engineer
PUBLIC ROADWAY IMPROVEMENTS, CONTINUED									
			\$25,000 MODIFIED TYPE"C" CONTRIBUTION FOR TOWER/UNSER TRAFFIC SIGNAL				/	/	/
			• SIDEWALKS TO BE DEFERRED. WAIVER OF SIDEWALKS ON WEST SIDE OF RIDGESIDE STREET AND NORTH SIDE OF BROOKSIDE AVENUE STUB STREET STREET LIGHTS AS PER COA DPM				/	/	/
							/	/	/
							/	/	/
							/	/	/

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnst Engineer
PUBLIC STORM DRAIN IMPROVEMENTS									
		18"-24" DIA	RCP W/ NEC. MH'S, LATERALS & INLETS	REMBERT DRIVE	BROOKSIDE AVENUE	30' NORTH OF BROOKSIDE AVENUE	/	/	/
		18"-30" DIA	RCP W/ NEC. MH'S, LATERALS & INLETS	BROOKSIDE AVENUE	REMBERT DRIVE	EAST STUB TERMINUS	/	/	/
		18"-30" DIA	RCP W/ NEC. MH'S, LATERALS & INLETS	38' EASEMENT	BROOKSIDE AVENUE	UNSER BLVD.	/	/	/
		66" DIA	RCP W/ NEC. MH'S, LATERALS & INLETS	TOWER ROAD	WEST BOUNDARY LINE	UNSER BLVD.	/	/	/
		18"-24" DIA	RCP W/ NEC. MH'S, LATERALS & INLETS	UNSER BLVD.	TOWER ROAD	800' NORTH OF TOWER ROAD	/	/	/
		2 ACRE-FEET	TEMPORARY RETENTION POND	LOTS 64-66			/	/	/
		NOTE:	A GRADING AND DRAINAGE CERTIFICATION OF THE APPROVED GRADING PLAN IS REQUIRED PRIOR TO THE RELEASE OF FINANCIAL GUARANTEES.						

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnst Engineer
PUBLIC WATERLINE IMPROVEMENTS									
		6" DIA	WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S	REMBERT DRIVE	BROOKSIDE AVENUE	EUCARIZ AVENUE	/	/	/
		6" DIA	WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S	BROOKSIDE AVENUE	RIDGESIDE STREET	EAST STUB TERMINUS	/	/	/
		6" DIA	WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S	RIDGESIDE STREET	TOWER ROAD	EUCARIZ AVENUE	/	/	/
		12" DIA	WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S	EUCARIZ AVENUE	WEST BOUNDARY LINE	UNSER BLVD.	/	/	/
		10" DIA	WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S	UNSER BLVD.	TOWER ROAD	EUCARIZ AVENUE	/	/	/

PUBLIC SANITARY SEWER IMPROVEMENTS									
		8" DIA	SANITARY SEWER W/ NEC. MH'S & SERVICES	REMBERT DRIVE	BROOKSIDE AVENUE	NORTH BOUNDARY LINE	/	/	/
		8" DIA	SANITARY SEWER W/ NEC. MH'S & SERVICES	BROOKSIDE AVENUE	RIDGESIDE STREET	EAST STUB TERMINUS	/	/	/
		8" DIA	SANITARY SEWER W/ NEC. MH'S & SERVICES	RIDGESIDE STREET	BROOKSIDE AVENUE	NORTH BOUNDARY LINE	/	/	/
		8" DIA	SANITARY SEWER W/ NEC. MH'S & SERVICES	38' EASEMENT	BROOKSIDE AVENUE	UNSER BLVD.	/	/	/
		8" DIA	SANITARY SEWER W/ NEC. MH'S & SERVICES	UNSER BLVD.	TOWER ROAD	38' EASEMENT	/	/	/



Scott Steffen *01/02*
PREPARED BY: SCOTT STEFFEN DATE

DRB CHAIR DATE PARKS & RECREATION DEPARTMENT DATE

BOHANNAN HUSTON INC.
FIRM:

TRANSPORTATION DEVELOPMENT DATE

N/A
AMAFCA DATE

SIGNATURE DATE

UTILITY DEVELOPMENT DATE

CITY ENGINEER DATE

MAXIMUM TIME ALLOW TO CONSTRUCT
IMPROVEMENTS WITHOUT A DRB EXTENSION

N/A
NEW MEXICO UTILITIES INC. DATE

DATE



DESIGN REVIEW COMMITTEE REVISIONS

REVISION	DATE	DRC CHAIR	USER DEPARTMENT	AGENT/OWNER

PLATES

PLATE 1 - PRELIMINARY PLAT

PLATE 2 - GRADING PLAN

PLATE 3 - PROPOSED BASIN MAP

PLATE 1

PRELIMINARY PLAT

PLATE 2

GRADING PLAN

PLATE 3

PROPOSED BASIN MAP



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

P.O. BOX 90606, ALBUQUERQUE, NM 87199
(505) 828-2200 FAX 797-9539

L10/D23

April 13, 2005

Mr. Russell Grayson
PULTE HOMES OF NEW MEXICO, INC.
7445 Pan American Frwy. NE
Albuquerque, NM 87109

Re: Vista West

Dear Mr. Grayson:

As you know, the Vista West pond volume has already been reduced by 0.55 ac.ft. (the pre-developed 100-YR, 10 Day volume) in anticipation of Vista West Subdivision controlling their own portion of the water shed, but apparently Vista West lacks about 1.18 ac.ft. of containing the 100-YR, 10 Day volume as required by FEMA and the city. I have asked Brad Bingham to find out how long it will take BHI and the developer to redesign and build the pond. The grading plan is dated 07/31/03 so the SIA will probably go to the DRB for extension soon. Since Vista West Subdivision is already causing "significant adverse downstream impact," the city should act swiftly and surely.

Sincerely,

MARK GOODWIN & ASSOCIATES

A handwritten signature in black ink, reading 'James D. Hughes'.

James D Hughes, PE
Senior Engineer

JDH/kh

xc: Brad Bingham

Doug Hughes

From: Rick Beltramo [rbeltramo@bhlnc.com]
Sent: Monday, April 11, 2005 10:33 AM
To: Doug Hughes
Cc: Scott Steffen
Subject: Vista West Drainage Pond

Doug,

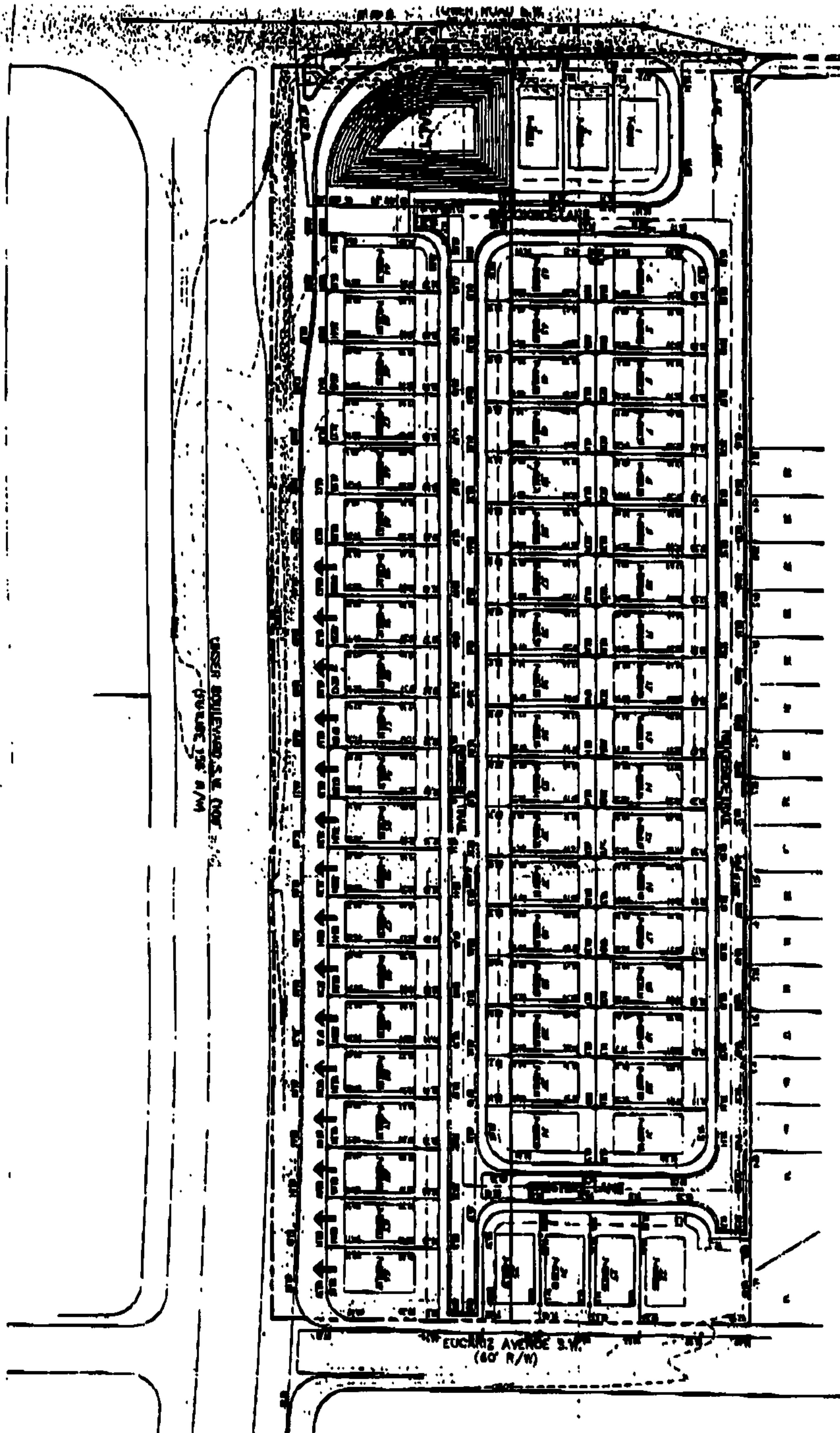
Scott wanted me to call you regarding the Vista West Pond. Apparently you called and asked some questions regarding the pond size which may affect your LOMAR analysis.

I believe we successfully convinced Brad that the pond could remain at the 100 year-6 hour storm event (as opposed to the 100 year-10 day storm). The engineer that completed this design is on leave until May and therefore I will need to do some research to confirm. I believe the pond was designed with an overflow weir that can pass an additional 100-year-6 hour event. Don't act on this information until I can confirm and I'll try to have an answer today.

Please note, the pond is temporary based on downstream systems going in that would allow the pond to completely go away. It is planned that this pond will eventually be replaced and lots will be platted on this area. Also please note that the pond is private. My understanding is that if a pond is temporary or private, it cannot be recognized by the LOMAR. In this specific situation the pond is both temporary and private. Therefore, you should not include it in your LOMAR consideration. I am concerned that if you are considering this pond in your analysis you are also considering it to be permanent and therefore taking away the option in the future for the pond to go away. This of course results in Tim McNaney losing 4 lots.

Thanks. RLB.

4/12/2005



SECRET - (S) - (U)

EUGENE AVENUE S.W.
(60' R/W)

Legend



References

**CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT**

VISTA WEST SUBDIVISION
OWNERS AND DEVELOPER PLAN

GROUND AND COVERED PLANT

For Information

$C_{N/4}$

726871	004	7-10
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EXHIBIT 2-519

			ENGINEER'S SEAL	SURVEY INFORMATION FIELD NOTES	BENCH MARKS	AS-BUILT INFORMATION
No.	Date	REMARKS		NGC	E.V.	DATE
BY VISIONEERING DESIGN						
Graded by HJL DATE: 02/11/03						
Survey by EJJ DATE: 07/18/04						
Checked by JLD DATE: 02/18/03						
						MICRO-PKU INFORMATION
						DATE
						BY