CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

September 9, 2015

Diane Hoelzer, P.E.
Mark Goodwin & Associates, P.A.
P.O. Box 90606
Albuquerque, NM 87199

RE: **Los Diamantes Subdivision**
Drainage Report, and Grading and Drainage Plan
Engineer's Stamp Date 8-26-2015 (File: N09D013)

Dear Ms. Hoelzer:

Based upon the information provided in your submittal received 8-27-15, the above referenced submittals are approved for Grading Permit with the following condition.

1. Temporary Pond on Tract A: Side slopes (2:1) must be stabilized with a more stable material. Per your email on 9/8/15 you will be changing it to a 3:1 slope with gravel mulch. This change must be reflected on the Engineer's Certified Plan.

Prior to Building Permit approval, Engineer Certification per the DPM checklist will be required.

Since the disturbed area on this site exceeds 1.0 acre, an Erosion and Sediment Control (ESC) Plan, prepared by a NM PE and approved by the City's Stormwater Engineer, will be required for this site.

This project requires a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharge for disturbing one acre or more and a Topsoil Disturbance Permit for disturbing ¾ of an acre or more.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Hydrology
Planning Department

Orig: Drainage filec.pdf
c.pdf Addressee via Email

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

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

September 4, 2015

Diane Hoelzer, P.E.
Mark Goodwin & Associates, P.A.
P.O. Box 90606
Albuquerque, NM 87199

RE: **Los Diamantes Subdivision**
Drainage Report, and Grading and Drainage Plan
Engineer's Stamp Date 8-26-2015 (File: N09D013)

Dear Ms. Hoelzer:

Based upon the information provided in your submittal received 8-27-15, the above referenced submittals are approved for Preliminary Plat and Site Plan for Subdivision action by the DRB.

Prior to Grading Permit approval the following comments must be addressed:

1. Temporary Pond on Tract A: Side slopes (2:1) must be stabilized with a more stable material. Gravel mulch is not stable enough.

The following summary is included in order to maintain a record of how the allowable discharge was determined:

The Conclusions from the meeting 3-11-15, and noted in the 6-1-15 comment letter are maintained. Curtis Cherne concurs with those comments and they are reiterated below.

- Per the meeting notes dated 3-11-15, the allowable discharge into the 30" stub at SDMH 16 (CPN 736782) is the difference between the upstream and downstream Q, or 505cfs - 472cfs = 33 cfs. This value matches that shown on Exhibit 4, Master SD Basin Map, for basin DB16.
- Per the same meeting notes, the Q at 98th St. is noted as 569cfs. The difference between the upstream and downstream Q at MH 17 is 569cfs – 505cfs = 64cfs. Exhibit 4 shows that DB20 (the roadway) discharges 19cfs, so 45 cfs is the allowable from DB9 (Exhibit 4).
- Per meeting notes, a storm drain in 98th was required.
- During the meeting we agreed that the street flows in Blake could be ignored due to the timing of the hydrograph.

Based on the above notes, the drainage report, and response letter:

- The total allowable developed discharge from this site, including Tract A is 45cfs (MH17) + 33cfs (MH16) = **78 cfs**.
- If this subdivision discharges 48.7cfs, then Tract A is allowed to discharge 29.3cfs.
- 33cfs was intended to discharge to the existing stub at MH 16 and the remaining to MH17 in 98th St.

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

- This plan proposes to discharge approximately 50 cfs at MH 16, more than the intended 33 cfs into the 30" stub. This is acceptable as noted in #2 of the response letter dated June 2, 2015 and accepted by Hydrology.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Hydrology
Planning Department

Orig: Drainage filec.pdf
Addressee via Email

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(Rev. 12/05)

PROJECT TITLE: Los Diamantes Subdivision ZONE MAP/DRG. FILE: **N09 / D013**
DRB#: 1010332
LEGAL DESCRIPTION: Tract 34D-1-A, Lands of Salazar Family Trust, Salazar Quatro Trust, JSJ Investment Company, Falba Hannett and Lands of Curb Inc
CITY ADDRESS: Gibson and 98 th Street

ENGINEERING FIRM: MARK GOODWIN & ASSOCIATES, PA
ADDRESS: PO Box 90606
CITY, STATE: Albuquerque, NM
CONTACT: Diane Hoelzer, PE
PHONE: 828-2200
ZIP CODE: 87199

OWNER: 98th Street LLC
ADDRESS: Box 27560
CITY, STATE: Albuquerque, NM
CONTACT: Rhett Waterman
PHONE: 248-1688
ZIP CODE: 87125

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

SURVEYOR: Aldrich Land Surveying
ADDRESS:
CITY, STATE:
CONTACT: Tim Aldrich
PHONE: 328-3988
ZIP CODE:

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

TYPE OF SUBMITTAL:
X DRAINAGE REPORT
____ DRAINAGE PLAN 1st SUBMITTAL
____ DRAINAGE PLAN RESUBMITTAL
____ CONCEPTUAL G & D PLAN
X GRADING PLAN **(dated 8-26-15)**
____ EROSION CONTROL PLAN
____ ENGINEER'S CERT (HYDROLOGY)
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT
____ ENGINEER/ARCHITECT CERT (TCL)
____ ENGINEER/ARCHITECT (DRB SITE PLAN)
____ OTHER

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

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

SUBMITTED BY: Diane Hoelzer, PE DATE: March 24, 2015

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

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.

2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.

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

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE,NM 87199
(505) 828-2200 FAX 797-9539

~ 2012 ACEC/NM Award Winner for Engineering Excellence, Small Firm ~
~ 2008 ACEC/NM Award Winner for Engineering Excellence, Small Firm ~

August 26, 2015

Mrs. Rita Harmon, P.E.
Senior Engineer, Hydrology
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

Re: Los Diamantes Subdivision
Revised Engineers stamp date 8-24-15 (N09/D013)

Dear Mrs. Harmon;

Attached, please find a revised Grading & Drainage Plan (dated 8-26-2015), Drainage Management Plan (dated 8/26/2015), and an updated plat as required by your letter dated 8/12/2015. Our response and/or changes are as follows:

1. ***"On the Preliminary Plat...use cross hatching over the pond easement..."*** Completed, please see attached Plat.

2. ***"Remove Keyed Note 5, existing blanket easement to be entirely vacated"*** Per the email dated 8/25/2015 from Jack Cloud, the vacation request for the blanket drainage easement can be made a condition of approval with preliminary plat, required prior to final plat.

3. ***"Revise Keyed Note D..."*** Completed, please see attached grading plan. The word "free" was removed and Q100= 48.7 cfs was added.

4. ***"Since a total of 78 cfs is allowed, Tract A can discharge 29.3 cfs. Change note on plan and ensure 24" SD still works."*** The note has been changed. Yes, 24" SD still works. Please see calculations in Appendix D of the DMP.

5. ***"The 24" storm pipe in 98th street did not show on the grading plan. This SD should be built with this development (not future) otherwise the infrastructure list cannot be closed out..."*** The 24" storm pipe was added to the plan. Per your email dated 8/13/2015, the storm drain CAN remain a future item. This item will be financially guaranteed separately and is indicated as such in the infrastructure list.

6. ***"Temporary Pond on Tract A: Per DPM 22-5.I, retention ponds must be designed for the 100yr 10 day storm. Side slopes greater than 2:1 must be***

stabilized..." *The pond is designed for the 100yr-10day storm as required. Additional calculations have been added to Appendix D in the DMP to clarify the design. A note has been added to the grading plan stating "2:1 slopes to be stabilized with gravel mulch."*

7. ***"Informational comment: All ponds are to be designed, detailed and certified via the grading plan and not through Work Order..."*** *Your email dated 8/13/2015 clarifies this comment by stating that "the inlet/outlet structures need only be detailed sufficiently to show it works, along with calculations (already done in the report)." This has been accomplished on the grading plan and in the DMP. An additional detail was added to the plan that shows how the inlet structure on Del Timbre Lane will work. These calculations are included in Appendix C of the DMP.*

8. ***"Since the Pond will be constructed off the Grading Plan...."***

    a. ***"Detail the emergency overflow from Del Timbre Lane to the pond. Show that flows will not flow through the emergency overflow before being collected by the inlet..."*** *An additional detail was added to the plan that shows how the inlet structure on Del Timbre Lane will work. Additional calculations are included in Appendix C of the DMP that shows that the developed flows will be captured by the inlet and will not overtop the standard curb. In addition, directional flow arrows and spot elevations have been added to the drive pad to clarify the drainage path for the emergency overflows. The depth of these flows are lower than the adjacent house pads.*
    b. ***"No calculations were included showing that the WSEL of the cattle guard/grate with a 50% clogging factor would not encroach into the private lots."*** *The MWSEL with a 50% clogging factor is 109.82, and the lowest pad is 110.90. Therefore the runoff will not encroach onto the private lots. Please see calculations in Appendix C of the DMP.*
    c. ***"Provide construction details of the cattle guard grate inlet as this is not a WO item..."*** *Please see note 2 of your attached email dated 8/13/2015. The inlet/outlets structures are detailed on the grading plan sufficiently to show how they will work. All calculations are contained in the DMP.*
    d. ***"Show Detail for the manhole/weir cover..."*** *Please see note 2 of your attached email dated 8/13/2015. The inlet/outlet structures are detailed on the grading plan sufficiently to show how they will work. In addition, a "Standard Grate Detail for Inlet" exhibit was added to the DMP for additional explanation.*
    e. ***"The emergency spillway for the pond (El. 108) appears to be lower than the sidewalk"*** *The elevation of the emergency spillway had been raised to 108.40. In addition, the location emergency spillway had been slightly adjusted towards the eastern corner so that the emergency spillway elevation of 108.40 is above the sidewalk.*

9. ***"Slopes on lot layout plan should be 1%...I am in the process of determining exactly what those issues are, and will inform you of any forthcoming information."*** *Per our discussion on 8/21/15, the designed slopes of 0.6% MIN can remain and the adjustment to 1% is NOT required.*

10. ***"All retaining walls and slopes must be shown on the plan. Double retaining walls or a slope must be shown between lots 4-6 and 7-10. It should not be left up the developer to determine..."*** *Please see changes on the Grading Plan. A double retaining wall is not required and new spot elevations have been added between lots 4-6 and 7-10. Keyed Note 9 has been edited to remove the contractor's choice of using 3:1 slopes or double walls.*

Sincerely,

MARK GOODWIN & ASSOCIATES, P.A.

Diane Hoelzer, PE
Senior Engineer

DLH/kmk
f:\\14031 \Los Diamantes\ HYDRO_LTR_4_14031.docx

Kelly Klein

From: Diane Hoelzer
Sent: Wednesday, August 26, 2015 2:09 PM
To: Kelly Klein
Subject: FW: Los Diamante

Diane Hoelzer, PE
MARK GOODWIN & ASSOCIATES, PA
diane@goodwinengineers.com
(505) 828-2200

From: Harmon Rita T. [mailto:rharmon@cabq.gov]
Sent: Thursday, August 13, 2015 3:07 PM
To: Diane Hoelzer
Subject: Los Diamante

Diane,
We discussed this project at today's staff meeting. With the coming and going of staff, it sometimes becomes confusing as how to interpret and establish policy and practices. Private vs. public can be a bit confusing. With that said, I would like to revise my comments given at DRB, and some comments on the G&D comment letter as follows.

1) The Infrastructure List does need to list all the private infrastructure as well as the public infrastructure. Include both the temporary and permanent ponds and indicate the size in Ac-ft. List the outlet structure as well.

2) Ponds are certified as part of the Engineer's Certified Grading Plan and not the Work Order, therefore the pond needs to be detailed on the grading plan. The inlet/outlet structures need only be detailed sufficiently to show it works, along with calculations (already done in the report)

3) Therefore, the modified cattle guard inlet, and pond outlet structure **can** be detailed on the Work order

4) The 24" Storm Drain can be built in the future, but you need to request a deferral (like a SW deferral) and it would be indicated as such o the Infrastructure list. A separate SIA for the 24" SD will be required in order to close out the Work Order for this project.

Sorry for changes,

Rita Harmon, P.E.

Kelly Klein

From: Kay Brashear
Sent: Tuesday, August 25, 2015 2:16 PM
To: Cloud, Jack W.; Diane Hoelzer; Angela Gomez (agomez@cabq.gov)
Cc: Kelly Klein
Subject: RE: Las Diamantes at 98th Street (DRB 1010332)

Jack and Angela,

We would like to request a 2 week deferral of this DRB Hearing, rescheduling to be heard on September 9, 2015.

Thanks,

Kay Brashear
Mark Goodwin & Associates, PA

From: Cloud, Jack W. [mailto:jcloud@cabq.gov]
Sent: Tuesday, August 25, 2015 1:07 PM
To: Diane Hoelzer <Diane@goodwinengineers.com>
Cc: Kelly Klein <Kelly@goodwinengineers.com>; Kay Brashear <kbrashear@goodwinengineers.com>
Subject: RE: Las Diamantes at 98th Street (DRB 1010332)

Sorry – yes, the vacation request for the blanket drainage easement can be made a condition of approval with Preliminary Plat, required prior to Final Plat.

Since this is an advertised case, we need a deferral request to a specific date. If you are wanting a one week deferral you need to come down today ASAP and submit a Sidewalk Waiver application to be heard with the rest of the project.

Jack Cloud, Chair
Development Review Board
505.924.3880

From: Diane Hoelzer [mailto:Diane@goodwinengineers.com]
Sent: Tuesday, August 25, 2015 12:17 PM
To: Cloud, Jack W.
Cc: Kelly Klein; Kay Brashear
Subject: Las Diamantes at 98th Street (DRB 1010332)

Jack,

At the last DRB hearing for this project, the vacation of #5 blanket drainage easement came up for discussion.
I requested that we vacate this easement sometime after Prel.Plat approval and prior to final plat approval.
Since these vacations only last so long and require Council approval, I had requested we do this after PP.

You said you would get back with me on this the next day, but I have not heard back from you on this issue. We are getting ready to make a resubmittal of all other requested revisions, but this issue is still outstanding.

Thanks,

Diane Hoelzer, PE
MARK GOODWIN & ASSOCIATES, PA
diane@goodwinengineers.com
(505) 828-2200

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

August 12, 2015

Diane Hoelzer, P.E.
Mark Goodwin & Associates, P.A.
P.O. Box 90606
Albuquerque, NM 87199

RE: **Los Diamantes Subdivision**
Drainage Report, and Grading and Drainage Plan
Engineer's Stamp Date 8-4-2015 (File: N09D013)

Dear Ms. Hoelzer:

Based upon the information provided in your submittal received 8-4-15, the above referenced submittals cannot be approved for Preliminary Plat and Site Plan for Subdivision action by the DRB until the following comments are addressed:

1. On the Preliminary plat: After discussing it with Jack Cloud, it would be better to use cross-hatching over the pond easement (#9) rather than put on a separate tract.
2. Remove keyed note 5, existing blanket easement to be entirely vacated.
3. Revise Keyed Note D to state "Extend existing 30"SD…to allow a discharge of Q100 = 48.7 cfs" (take out ***free***, and use analysis discharge amount)
4. Since a total of 78 cfs allowed, Tract A can discharge 29.3 cfs. Change note on plan and ensure 24" SD still works.
5. The 24" Storm pipe in 98th St. did not show on the Grading and Drainage plan. This SD should be built with this development (not future) otherwise the infrastructure list cannot be closed out. The City Engineer should be contacted if you are in disagreement.
6. Temporary Pond on Tract A: Per DPM 22-5.I, retention ponds must be designed for the 100 yr-10 day storm. Side slopes greater than 2:1 must be stabilized somehow and shown on the plan.
7. Informational comment: All Ponds are to be designed, detailed, and certified via the grading plan and not thru Work Order as had previous been practiced.
8. Since the pond will be constructed off the grading plan provide an enlarged plan of the pond.
   a. Detail the emergency overflow from Del Timbre Lane to the pond. Show that flows will not flow thru emergency overflow before being collected by the inlet. Is it hardscaped? Is there a drive pad? Or standard Curb?
   b. No calculations were included showing that the WSEL of the cattle guard/grate with a 50% clogging factor would not encroach into private lots.
   c. Provide construction details of the cattle guard grate inlet as this is not a Work Order item. Revise keyed note A as such.
   d. Show details for the manhole/wier cover. This will be certified on the grading plan and not on the Work Order, since the pond is Private.
   e. The emergency spillway for the pond (El. 108.0) appears to be lower than the sidewalk.

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

9. Slopes on lot layout plan should be 1%. Homebuilders have complained that unless there is a 1 % slope, they have to regrade due to administrative issues. I am in the process of determining exactly what those issues are, and will inform you of any forthcoming information.
10. All retaining walls and slopes must be shown on the plan. Double retaining walls or a slope must be shown between lots 4-6 and 7-10. It should not be left up to the developer to determine where to put retaining walls, and where to slope – that should always be on the grading plan.

The following summary is included in order to maintain a record of how the allowable discharge was determined:

The Conclusions from the meeting 3-11-15, and noted in the 6-1-15 comment letter are maintained. Curtis Cherne concurs with those comments and they are reiterated below.

- Per the meeting notes dated 3-11-15, the allowable discharge into the 30" stub at SDMH 16 (CPN 736782) is the difference between the upstream and downstream Q, or 505cfs - 472cfs = 33 cfs. This value matches that shown on Exhibit 4, Master SD Basin Map, for basin DB16.
- Per the same meeting notes, the Q at 98th St. is noted as 569cfs. The difference between the upstream and downstream Q at MH 17 is 569cfs – 505cfs = 64cfs. Exhibit 4 shows that DB20 (the roadway) discharges 19cfs, so 45 cfs is the allowable from DB9 (Exhibit 4).
- Per meeting notes, a storm drain in 98th was required.
- During the meeting we agreed that the street flows in Blake could be ignored due to the timing of the hydrograph.

Based on the above notes, the drainage report, and response letter:

- The total allowable developed discharge from this site, including Tract A is 45cfs (MH17) + 33cfs (MH16) = **78 cfs**.
- If this subdivision discharges 48.7cfs, then Tract A is allowed to discharge 29.3cfs.
- 33cfs was intended to discharge to the existing stub at MH 16 and the remaining to MH17 in 98th St.
- This plan proposes to discharge approximately 50 cfs at MH 16, more than the intended 33 cfs into the 30" stub. This is acceptable as noted in #2 of the response letter dated June 2, 2015 and accepted by Hydrology.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Hydrology
Planning Department

Orig: Drainage filec.pdf
Addressee via Email

Los Diamantes Subdivision

Drainage Management Plan

MARK GOODWIN & ASSOCIATES, PA

August 2015

Los Diamantes Subdivision

Table of Contents

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

August 12, 2015

Diane Hoelzer, P.E.
Mark Goodwin & Associates, P.A.
P.O. Box 90606
Albuquerque, NM 87199

RE: **Los Diamantes Subdivision**
Drainage Report, and Grading and Drainage Plan
Engineer's Stamp Date 8-4-2015 (File: N09D013)

Dear Ms. Hoelzer:

Based upon the information provided in your submittal received 8-4-15, the above referenced submittals cannot be approved for Preliminary Plat and Site Plan for Subdivision action by the DRB until the following comments are addressed:

1. On the Preliminary plat: After discussing it with Jack Cloud, it would be better to use cross-hatching over the pond easement (#9) rather than put on a separate tract.
2. Remove keyed note 5, existing blanket easement to be entirely vacated.
3. Revise Keyed Note D to state "Extend existing 30"SD…to allow a discharge of Q100 = 48.7 cfs" (take out ***free***, and use analysis discharge amount)
4. Since a total of 78 cfs allowed, Tract A can discharge 29.3 cfs. Change note on plan and ensure 24" SD still works.
5. The 24" Storm pipe in 98th St. did not show on the Grading and Drainage plan. This SD should be built with this development (not future) otherwise the infrastructure list cannot be closed out. The City Engineer should be contacted if you are in disagreement.
6. Temporary Pond on Tract A: Per DPM 22-5.I, retention ponds must be designed for the 100 yr-10 day storm. Side slopes greater than 2:1 must be stabilized somehow and shown on the plan.
7. Informational comment: All Ponds are to be designed, detailed, and certified via the grading plan and not thru Work Order as had previous been practiced.
8. Since the pond will be constructed off the grading plan provide an enlarged plan of the pond.
   a. Detail the emergency overflow from Del Timbre Lane to the pond. Show that flows will not flow thru emergency overflow before being collected by the inlet. Is it hardscaped? Is there a drive pad? Or standard Curb?
   b. No calculations were included showing that the WSEL of the cattle guard/grate with a 50% clogging factor would not encroach into private lots.
   c. Provide construction details of the cattle guard grate inlet as this is not a Work Order item. Revise keyed note A as such.
   d. Show details for the manhole/wier cover. This will be certified on the grading plan and not on the Work Order, since the pond is Private.
   e. The emergency spillway for the pond (El. 108.0) appears to be lower than the sidewalk.

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

9. Slopes on lot layout plan should be 1%. Homebuilders have complained that unless there is a 1 % slope, they have to regrade due to administrative issues. I am in the process of determining exactly what those issues are, and will inform you of any forthcoming information.
10. All retaining walls and slopes must be shown on the plan. Double retaining walls or a slope must be shown between lots 4-6 and 7-10. It should not be left up to the developer to determine where to put retaining walls, and where to slope – that should always be on the grading plan.

The following summary is included in order to maintain a record of how the allowable discharge was determined:

The Conclusions from the meeting 3-11-15, and noted in the 6-1-15 comment letter are maintained. Curtis Cherne concurs with those comments and they are reiterated below.

- Per the meeting notes dated 3-11-15, the allowable discharge into the 30" stub at SDMH 16 (CPN 736782) is the difference between the upstream and downstream Q, or 505cfs - 472cfs = 33 cfs. This value matches that shown on Exhibit 4, Master SD Basin Map, for basin DB16.
- Per the same meeting notes, the Q at 98th St. is noted as 569cfs. The difference between the upstream and downstream Q at MH 17 is 569cfs – 505cfs = 64cfs. Exhibit 4 shows that DB20 (the roadway) discharges 19cfs, so 45 cfs is the allowable from DB9 (Exhibit 4).
- Per meeting notes, a storm drain in 98th was required.
- During the meeting we agreed that the street flows in Blake could be ignored due to the timing of the hydrograph.

Based on the above notes, the drainage report, and response letter:

- The total allowable developed discharge from this site, including Tract A is 45cfs (MH17) + 33cfs (MH16) = **78 cfs.**
- If this subdivision discharges 48.7cfs, then Tract A is allowed to discharge 29.3cfs.
- 33cfs was intended to discharge to the existing stub at MH 16 and the remaining to MH17 in 98th St.
- This plan proposes to discharge approximately 50 cfs at MH 16, more than the intended 33 cfs into the 30" stub. This is acceptable as noted in #2 of the response letter dated June 2, 2015 and accepted by Hydrology.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Hydrology
Planning Department

Orig: Drainage filec.pdf
Addressee via Email

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE,NM 87199
(505) 828-2200 FAX 797-9539

~ 2012 ACEC/NM Award Winner for Engineering Excellence, Small Firm ~
~ 2008 ACEC/NM Award Winner for Engineering Excellence, Small Firm ~

August 26, 2015

Mrs. Rita Harmon, P.E.
Senior Engineer, Hydrology
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

Re: Los Diamantes Subdivision
Revised Engineers stamp date 8-24-15 (N09/D013)

Dear Mrs. Harmon;

Attached, please find a revised Grading & Drainage Plan (dated 8-26-2015), Drainage Management Plan (dated 8/26/2015), and an updated plat as required by your letter dated 8/12/2015. Our response and/or changes are as follows:

1. ***"On the Preliminary Plat...use cross hatching over the pond easement..."*** Completed, please see attached Plat.

2. ***"Remove Keyed Note 5, existing blanket easement to be entirely vacated"*** Per the email dated 8/25/2015 from Jack Cloud, the vacation request for the blanket drainage easement can be made a condition of approval with preliminary plat, required prior to final plat.

3. "***Revise Keyed Note D...***" Completed, please see attached grading plan. The word "free" was removed and Q100= 48.7 cfs was added.

4. ***"Since a total of 78 cfs is allowed, Tract A can discharge 29.3 cfs. Change note on plan and ensure 24" SD still works."*** The note has been changed. Yes, 24" SD still works. Please see calculations in Appendix D of the DMP.

5. ***"The 24" storm pipe in 98th street did not show on the grading plan. This SD should be built with this development (not future) otherwise the infrastructure list cannot be closed out..."*** The 24" storm pipe was added to the plan. Per your email dated 8/13/2015, the storm drain CAN remain a future item. This item will be financially guaranteed separately and is indicated as such in the infrastructure list.

6. "***Temporary Pond on Tract A: Per DPM 22-5.I, retention ponds must be designed for the 100yr 10 day storm. Side slopes greater than 2:1 must be***

stabilized..." *The pond is designed for the 100yr-10day storm as required. Additional calculations have been added to Appendix D in the DMP to clarify the design. A note has been added to the grading plan stating "2:1 slopes to be stabilized with gravel mulch."*

7. ***"Informational comment: All ponds are to be designed, detailed and certified via the grading plan and not through Work Order..."*** *Your email dated 8/13/2015 clarifies this comment by stating that "the inlet/outlet structures need only be detailed sufficiently to show it works, along with calculations (already done in the report)." This has been accomplished on the grading plan and in the DMP. An additional detail was added to the plan that shows how the inlet structure on Del Timbre Lane will work. These calculations are included in Appendix C of the DMP.*

8. ***"Since the Pond will be constructed off the Grading Plan...."***

    a. ***"Detail the emergency overflow from Del Timbre Lane to the pond. Show that flows will not flow through the emergency overflow before being collected by the inlet..."*** *An additional detail was added to the plan that shows how the inlet structure on Del Timbre Lane will work. Additional calculations are included in Appendix C of the DMP that shows that the developed flows will be captured by the inlet and will not overtop the standard curb. In addition, directional flow arrows and spot elevations have been added to the drive pad to clarify the drainage path for the emergency overflows. The depth of these flows are lower than the adjacent house pads.*
    b. ***"No calculations were included showing that the WSEL of the cattle guard/grate with a 50% clogging factor would not encroach into the private lots."*** *The MWSEL with a 50% clogging factor is 109.82, and the lowest pad is 110.90. Therefore the runoff will not encroach onto the private lots. Please see calculations in Appendix C of the DMP.*
    c. ***"Provide construction details of the cattle guard grate inlet as this is not a WO item..."*** *Please see note 2 of your attached email dated 8/13/2015. The inlet/outlets structures are detailed on the grading plan sufficiently to show how they will work. All calculations are contained in the DMP.*
    d. ***"Show Detail for the manhole/weir cover..."*** *Please see note 2 of your attached email dated 8/13/2015. The inlet/outlet structures are detailed on the grading plan sufficiently to show how they will work. In addition, a "Standard Grate Detail for Inlet" exhibit was added to the DMP for additional explanation.*
    e. ***"The emergency spillway for the pond (El. 108) appears to be lower than the sidewalk"*** *The elevation of the emergency spillway had been raised to 108.40. In addition, the location emergency spillway had been slightly adjusted towards the eastern corner so that the emergency spillway elevation of 108.40 is above the sidewalk.*

9. ***"Slopes on lot layout plan should be 1%...I am in the process of determining exactly what those issues are, and will inform you of any forthcoming information."*** *Per our discussion on 8/21/15, the designed slopes of 0.6% MIN can remain and the adjustment to 1% is NOT required.*

10. ***"All retaining walls and slopes must be shown on the plan. Double retaining walls or a slope must be shown between lots 4-6 and 7-10. It should not be left up the developer to determine..."*** *Please see changes on the Grading Plan. A double retaining wall is not required and new spot elevations have been added between lots 4-6 and 7-10. Keyed Note 9 has been edited to remove the contractor's choice of using 3:1 slopes or double walls.*

Sincerely,

MARK GOODWIN & ASSOCIATES, P.A.

Diane Hoelzer, PE
Senior Engineer

DLH/kmk
f:\\14031 \Los Diamantes\ HYDRO_LTR_4_14031.docx

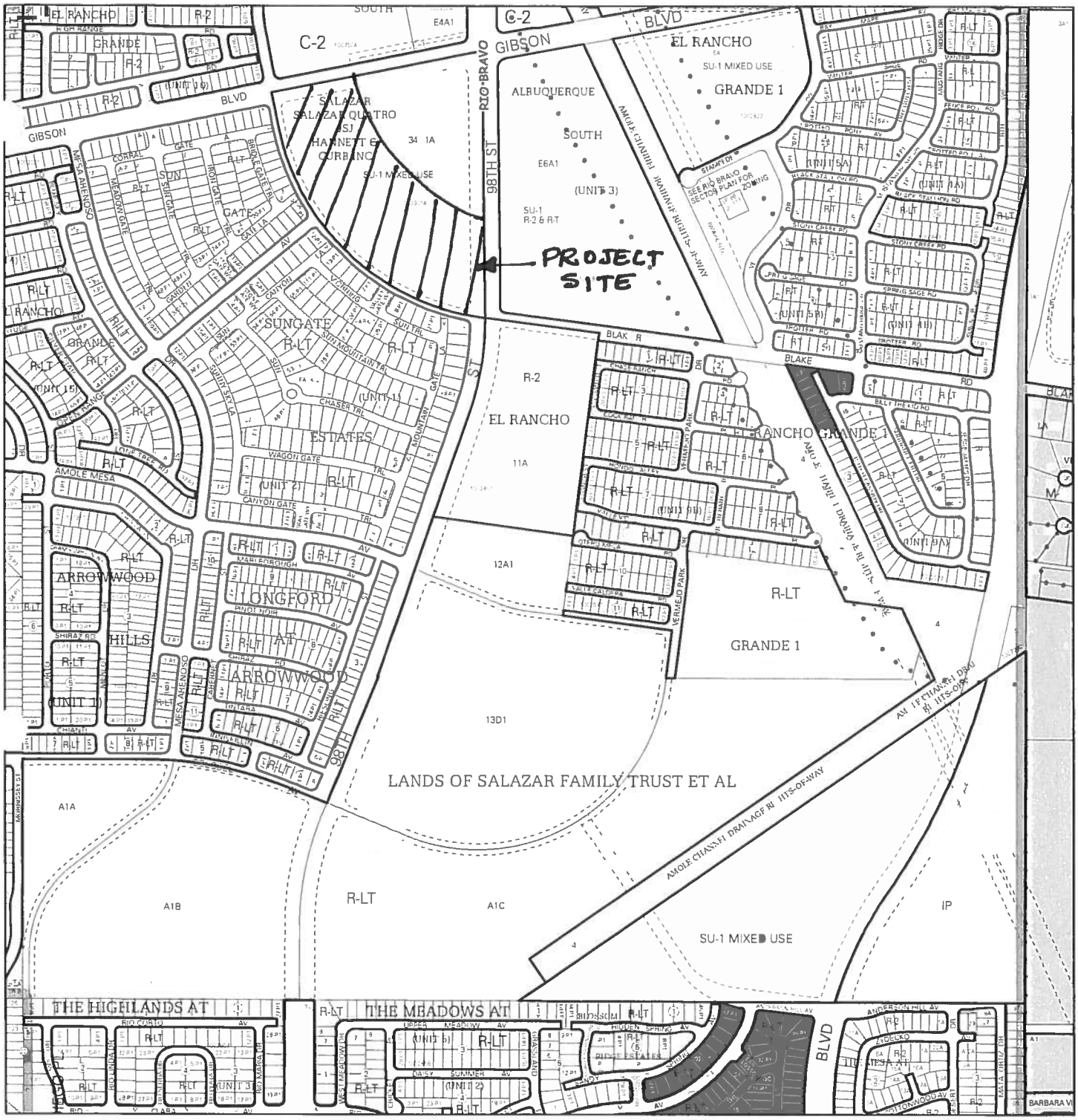
Los Diamantes Drainage Management Plan

The property is bounded by Blake Road to the south and west, by Gibson Blvd. to the north and by 98th Street to the east. The residential portion of the property encompasses 14.52 acres. The residential portion makes up 72% of the total area and will consist of an 80 lot subdivision for single family homes. Since the site is surrounded by developed streets, no offsite flows come onto the project site.

According to the Amole Hubbell Drainage Master Plan Update (excerpts from 2013 Report-Appendix D), this site is identified as sub basin A221 as shown on the Figure 3-7 Proposed Basin Map. The calculated 100 year peak discharge from this sub basin is 118.26 cfs. The report and construction plans indicate that the runoff is intercepted by a storm drain in Blake Road. This project site will discharge into an existing 30" storm pipe stub located at the southeast corner of the project site.

After meeting with City hydrology staff about the allowable discharge from this project site, it was decided that the design discharge from the project site would be based on the Sun Gate Phase I Utility Plan and Profile sheets 30-31 and the Sun Gate Estates Basin Boundary Map Exhibit 4. Both of these drawings can be found in Appendix D. It was further agreed that 50 cfs would be an acceptable allowable discharge value from this project site. When the adjacent commercial site develops, it is likely that an outfall located at the southeast corner of the commercial site will need to be constructed and a storm drain extended in the 98th street median and ultimately connected to the existing 72" storm drain in Blake Road.

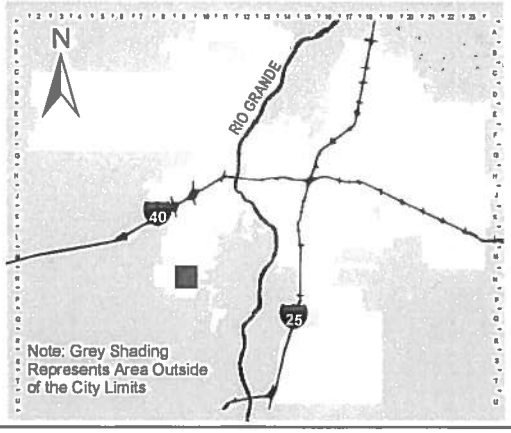
Onsite runoff will be conveyed by surface street flow to the southeast corner of the property into a detention pond that will also serve to retain the "first flush" from stormwater. A 4' diameter manhole with a weir type outfall spillway with a 11 linear foot circumference will be designed to discharge developed flows into the 72" storm drain in Blake through the connecting 30" storm drain stub while retaining the first flush. The maximum water depth for the first flush will be 1.38 feet. The 100 years "allowable" discharge from the project site will be 50 cfs.



For more current information and details visit: http://www.cabq.gov/gis

Albuquerque Geographic Information System

Map amended through: 4/2/2012



Zone Atlas Page:

N-09-Z

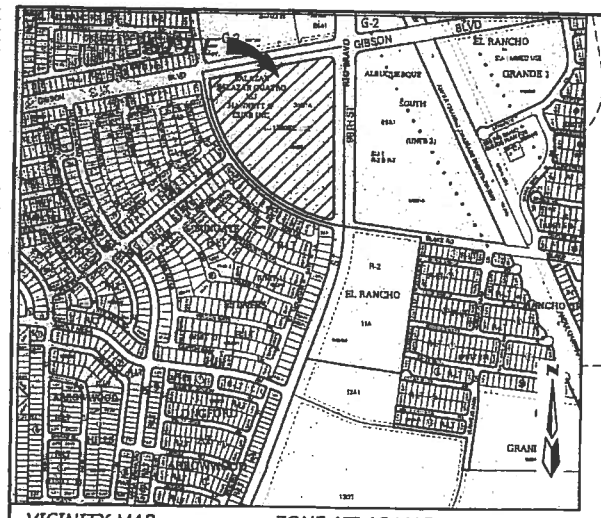
Selected Symbols

- SECTOR PLANS
- Design Overlay Zones
- City Historic Zones
- H-1 Buffer Zone
- Petroglyph Mon.
- Escarpment
- 2 Mile Airport Zone
- Airport Noise Contours
- Wall Overlay Zone

0 750 1 500 Feet

PRELIMINARY PLAT
FOR
LOS DIAMANTES SUBDIVISION

WITHIN THE
TOWN OF ATRISCO GRANT
PROJECTED SECTION 4
TOWNSHIP 9 NORTH, RANGE 2 EAST, NMPM
CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO
JUNE, 2015



VICINITY MAP ZONE ATLAS MAP N-9-Z NTS

LEGAL DESCRIPTION

A TRACT OF LAND SITUATE WITHIN THE TOWN OF ATRISCO GRANT, PROJECTED SECTION 4, TOWNSHIP 9 NORTH, RANGE 2 EAST, NEW MEXICO PRINCIPAL MERIDIAN, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, BEING ALL OF TRACT 34D-1-A, LANDS OF SALAZAR FAMILY TRUST, SALAZAR QUATRO TRUST, JSJ INVESTMENT COMPANY AND FALBA HANNETT AND LANDS OF CURB INC. AS THE SAME IS SHOWN AND DESIGNATED ON SAID PLAT FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON NOVEMBER 25, 2003 IN BOOK 2003C, PAGE 357 AND CONTAINING (1,096,120 S.F.), 25.1635 ACRES MORE OR LESS.

SUBDIVISION DATA

GROSS ACREAGE	25.1635 AC
AREA OF PUBLIC RIGHT-OF-WAY DEDICATED	5.2999 AC
AREA OF TRACT A (COMMERCIAL)	5.6729 AC
AREA OF COMMON AREAS (TRACT B)	3.8472 AC
AREA OF RESIDENTIAL	14.1907 AC
ZONE ATLAS NO.	N-9-Z
NO. OF LOTS CREATED	80 LOTS
NO. OF TRACTS CREATED	2 TRACTS
ZONING	SU-1 MIXED USE
DATE OF SURVEY	FEBRUARY, 2015

PURPOSE OF PLAT

1. SUBDIVIDE LOT 34D-1-A, LANDS OF SALAZAR FAMILY TRUST, SALAZAR QUATRO TRUST, JSJ INVESTMENT COMPANY AND FALBA HANNETT AND LANDS OF CURB INC., INTO 80 RESIDENTIAL LOTS, 2 TRACTS (1 COMMERCIAL).
2. DEDICATE PRIVATE ROADWAY & PUBLIC RIGHT-OF-WAY AS SHOWN.
3. GRANT NEW EASEMENTS AS SHOWN.

NOTES

1. UNLESS OTHERWISE NOTED, ALL BOUNDARY CORNERS SHOWN THUS ⊙ SHALL BE A SET #4 REBAR WITH YELLOW PLASTIC CAP "N.M.P.S. 11993"
2. ALL STREET CENTERLINE MONUMENTATION SHALL BE INSTALLED AT ALL CENTERLINE PC'S, PT'S, ANGLE POINTS, AND STREET INTERSECTIONS AND SHOWN THUS , ▲ WILL BE MARKED BY A FOUR INCH (4") ALUMINUM CAP STAMPED:
   "CITY OF ALBUQUERQUE CENTERLINE MONUMENTATION"
   "DO NOT DISTURB"
   N.M.P.S. #11993
3. FIELD SURVEY PERFORMED ON FEBRUARY, 2015.
4. ALL BEARINGS ARE GRID BEARINGS. NM STATE PLANE: CENTRAL ZONE-NAD 1983.
5. BOUNDARY SHALL BE TIED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM AS SHOWN.
6. THIS PROPERTY LIES WITHIN THE SECTION 4, TOWNSHIP 9 NORTH, RANGE 2 EAST, NEW MEXICO PRINCIPAL MERIDIAN, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.
7. ALL DISTANCES ARE GROUND DISTANCES: U.S. SURVEY
8. MANHOLES WILL BE OFFSET AT ALL POINTS OF CURVATURE, POINTS OF TANGENCY, STREET INTERSECTIONS, AND ALL OTHER ANGLE POINTS TO ALLOW USE OF CENTERLINE MONUMENTATION.
9. PLAT SHOWS ALL EASEMENTS OF RECORD.
10. EASEMENT BEARINGS AND DISTANCES SHOWN HEREON ARE RECORD AND EASEMENTS HAVE BEEN ROTATED TO MATCH BASIS OF BEARINGS AND BOUNDARY UNLESS OTHERWISE INDICATED.
11. UPC #

OWNERS	ENGINEERS	SURVEYOR
98TH STREET, L.L.C. 6300 JEFFERSON NE ALBUQUERQUE, N.M. 87109 (505) 975-0617	D. MARK GOODWIN & ASSOCIATES, P.A. CONSULTING ENGINEERS P.O. BOX 90606 ALBUQUERQUE, NEW MEXICO 87199 (505) 828-2200	ALDRICH LAND SURVEYING. P.O. BOX 30701 ALBUQUERQUE, N.M. 87190 (505) 884-1990

AGRS MONUMENT "TRANS"
N=1471885.503
E=1495145.466
G-G=0.999683154
Δα=-00°16'43.33"
CENTRAL ZONE
ELEVATION=5121.089
(NAD83/NAVD88)

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD LENGTH
C1	1578.54'	1252.00'	72°14'21"	S47°06'29"E	1476.04'
	(1571.30')		(72°24'13")	(N47°17'11"W)	1470.09')

● = FOUND PK NAIL WITH TAG "ALS LS 7719"

TRACT A
5.6729 AC.
(FUTURE COMMERCIAL DEVELOPMENT)

98TH STREET S.W.
EXISTING (78' R/W)
FUTURE (156' R/W)

AREA TO BE DEDICATED TO CITY FOR R/W (5.2999 AC)

GIBSON BOULEVARD S.W.
EXISTING (124' R/W)
FUTURE (124' R/W)

DE ANZA DR S.W.
EXISTING (60' R/W)

GOLD DUST WAY SW

SORRAL WAY SW

RANGE TRAIL SW

DEL TIMBRE LANE SW

SADDLEHORN TRAIL SW

COCHISE LANE SW

BLACK POINT DR S.W.
EXISTING (60' R/W)
FUTURE (60' R/W)

VALLEY GATE WAY S.W.

SUN GATE LN SW

CARROL GATE LN SW

CORBIN GATE LN SW

SUNGATE ESTATES UNIT (07-11-2005, 2005C-245)

MOUNTAIN GATE LN SW

TRACT E-6-A-1 ALBUQUERQUE SOUTH, UNIT 3 (02-01-2008, 2008C-018)

TRACT E-6-A-1 ALBUQUERQUE SOUTH, UNIT 3 (04-21-2009, 2009C-080)

TRACT E-6-A-1 ALBUQUERQUE SOUTH, UNIT 3 (02-24-2009, 2009C-030)

SITE BENCHMARK

A.G.R.S. MONUMENT
"TRANS 1969"
ELEVATION=5121.089
(NAVD 1988)

98TH STREET, LLC, OWNER OF LOT 34-D-1-A

JIMMY DASKALOS DATE

CITY SURVEYOR, CITY OF ALBUQUERQUE, N.M. DATE

EXISTING EASEMENTS

1. Existing 62' Public Roadway, Waterline & Sanitary Sewer Easement. (06-05-02, 02C-197)
2. Existing 30' Public Roadway, Waterline and Sanitary Sewer Easement. (06-05-02, 02C-197)
3. Existing 30' Public Access Easement. (07-23-03, 03C-223)
4. Existing 78' Temporary Public Roadway Easement. (07-23-03, 03c-223)
5. Existing C.O.A. Blanket Drainage Easement. (11-28-94, 94C-393)
6. Existing 15'x15' PNM Easement (for Switchgear). (05-26-05, DOC. 2005074791)
7. Existing 30' Public Roadway, Public Utility & Public Drainage Easement. (12-19-05, DOC. 2005185405)
8. Existing Public Roadway, Public Drainage, Public Sanitary Sewer & Public Waterline Easement. (08-25-06, DOC. 2006129522)

NEW EASEMENTS

9. Permanent Storm Water Quality Pond & Drainage Easement (H.O.A.). Area = 0.4560 acres
10. 10' Private Pedestrian Access Easement (H.O.A.).
11. Private Landscape Easement (H.O.A.). Area = 0.0230 Acres
12. 25' Public Waterline Easement (ABCWUA) & Private Pedestrian Access Easement (H.O.A.). Area = 0.0271 Acres
13. 10' Private Pedestrian Access Easement (H.O.A.). Area = 0.0073 Acres
14. Private Roadway Easement (H.O.A.), Public Waterline & Sanitary Sewer Easement (ABCWUA) & Public Surface Drainage Easement (C.O.A.). Area = 4.9827 Acres
15. 15'x15' Qwest Corporation D/B/A & Centurylink QC Easement.
16. Public Underground Drainage Infrastructure Easement (C.O.A.).
17. 25' Public Waterline Easement (ABCWUA) & Surface Drainage Easement (C.O.A.).

60' 30' 0 60' 120'
SCALE: 1" = 60'

DRB PROJECT No. 1010332

SHEET 1 OF 1

F:\A14JOBS\A14031 Los Diamantes\PLATS\PRELIMINARY PLATS\REVISED PPLAT (4-22-15)\A14031_PPLAT.dwg, Last saved by: Dwayne, 6/25/15

Current DRC
Project Number:_____

FIGURE 12

INFRASTRUCTURE LIST

Date Submitted: 8/26/2015
Date Site Plan Approved:_____
Date Preliminary Plat Approved:_____
Date Preliminary Plat Expires:_____
DRB Project No.: 1010332
DRB Application No.:_____

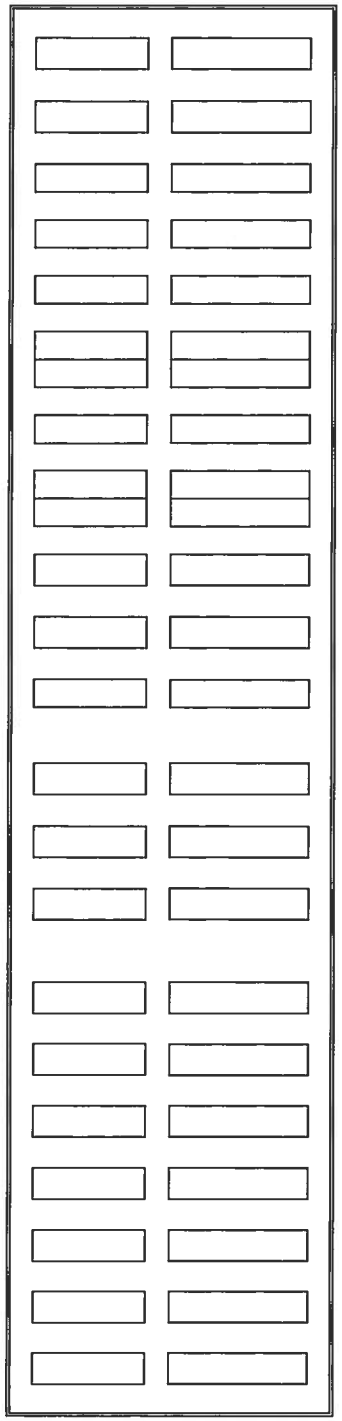
EXHIBIT "A"
TO SUBDIVISION IMPROVEMENTS AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

Los Diamantes Subdivision & Site Plan for Building Permit
PROPOSED NAME OF PLAT AND/OR SITE DEVELOPMENT PLAN

Tract 34D-1-A, LANDS OF SALAZAR FAMILY TRUST,JSJ,INVESTMENT COMPANY AND FALBA HANNETT AND LANDS OF CURB INC.
EXISTING LEGAL DESCRIPTION PRIOR TO PLATTING ACTION

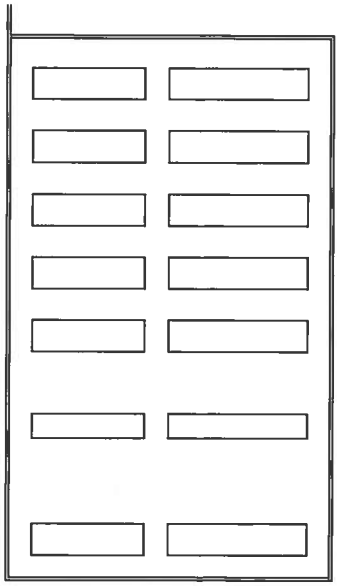
Following is a summary of PUBLIC/PRIVATE Infrastructure required to be constructed or financially guaranteed for the above development. This Listing is not necessarily a complete listing. During the SIA process and/or in the review of the construction drawings, if the DRC Chair determines that appurtenant 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 guarantee. 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
			PAVING (All Streets - Private)						
		26' FF	Perm Pvmt	Del Timbre Lane SW	End stub Road	Saddlehorn Trail SW	/	/	/
			C&G (both sides)		Lot 22, Block 1				
		4'	Sidewalk (west side only)				/	/	/
		26' FF	Perm Pvmt	Del Timbre Lane SW	Saddlehorn Trail SW	Range Trail SW	/	/	/
			C&G (both sides)						
		4'	Sidewalk (both sides) (1)				/	/	/
		28' FF	Perm Pvmt	Del Timbre Lane SW	Range Trail SW	Gold Dust Way SW	/	/	/
			C&G (both sides)						
		4'	Sidewalk (both sides) (1)				/	/	/
		28' FF	Perm Pvmt	Gold Dust Way SW	Del Timbre Lane SW	Sorral Way SW	/	/	/
			C&G (both sides)						
		4'	Sidewalk (both side) (1)				/	/	/
		28' FF	Perm Pvmt	Sorral Way SW	Gold Dust Way SW	Range Trail SW	/	/	/
			C&G (both sides)						
		4'	Sidewalk (both side) (1)				/	/	/
		26' FF	Perm Pvmt	Sorral Way SW	Range Trail SW	Saddlehorn Trail SW	/	/	/
			C&G (both sides)						
		4'	Sidewalk (both side) (1)				/	/	/



	PAVING (All Streets - Private)				
26' FF	Perm Pvmt	Saddlehorn Trail SW	Sorral Way SW	Del Timbre Lane SW	/ / /
	C&G (both sides)				
4'	Sidewalk (both side) (1)				/ / /
28' FF	Perm Pvmt	Range Trail SW	Sorral Way SW	Del Timbre Lane SW	/ / /
	C&G (both side)				
4'	Sidewalk (both side) (1)				/ / /
50' FF	Perm Pvmt	Range Trail SW	Del Timbre Lane SW	Blake Road	/ / /
	C&G (both sides)				
6'	Median				/ / /
6'	Sidewalk (both side) (1)				/ / /
46' FF	Perm Pvmt	Cochise Lane SW	98th Street SW	Gold Dust Way SW	/ / /
	C&G (both sides)				
6'	Median				/ / /
6'	Sidewalk (both side) (1)				/ / /
6'	Sidewalk Connection	Tract B	Gold Dust Way SW	Blake Road	/ / /
6'	Sidewalk Connection	Lot 22, Block 1	Del Timbre Lane SW	Gibson Blvd.	/ / /
6'	Sidewalk Connection	Tract B Easement	Saddlehorn Trail SW	Tract A	/ / /
	SIDEWALKS (PUBLIC)				
6'	Sidewalk	Blake Road	Gibson Blvd.	98th street	/ / /
6'	Sidewalk	98th Street	Blake Road	Gibson Blvd	/ / /
6'	Sidewalk	Gibson Blvd	Blake Road	98th Street	/ / /
	WATER (2WR Zone)				
8"	Waterline (2WR)	Blake Road	Range Trail SW	Exist 12" WL (140 ft SE)	/ / /
8"	Waterline (2WR)	Range Trail SW	Blake Road	Sorral Way	/ / /
8"	Waterline (2WR)	Del Timbre Lane SW	Range Trail SW	Gold Dust Way SW	/ / /
4"	Waterline (2WR)	Del Timbre Lane SW	Range Trail SW	Lot 31 & 32	/ / /
8"	Waterline (2WR)	Gold Dust Way SW	Del Timebre	Sorral Way SW	/ / /
8"	Waterline (2WR)	Cochise Lane SW	Gold Dust Way SW	Existing 12" WL in 98th Street	/ / /
8"	Waterline (2WR)	Sorral Way SW	Gold Dust Way SW	Tract B Easement	/ / /

8"	Waterline (2WR)	Tract B Easement	Sorral Way SW	Tract A Easement	/	/	/
8"	Waterline (2WR)	Tract A Easement	Tract B Easement	Gibson Blvd.	/	/	/
12"	Waterline (2WR)	Gibson Blvd.	Tract A Easement	Existing 12" WL	/	/	/
	WATER (2W Zone)						
8"	Waterline (2W)	Range Trail SW	Existing 12" WL at Blake Road	Del Timbre Lane SW	/	/	/
8"	Waterline (2W)	Del Timbre Lane SW	Range Trail SW	Saddlehorn	/	/	/
4"	Waterline (2W)	Del Timbre Lane SW	Saddlehorn Trail SW	End Stub Lot 22, Block 1	/	/	/
8"	Waterline (2W)	Saddlehorn Trail SW	Del Timbre Lane SW	Tract B Easement	/	/	/
8"	Waterline (2W)	Tract B Easement	Saddlehorn	Tract A Easement	/	/	/
8"	Waterline (2W)	Tract A Easement	Tract B Easement	Gibson Blvd	/	/	/
12"	Waterline (2W)	Gibson Blvd.	Tract A Easement	Existing 20" WL Blake Road	/	/	/
	SANITARY SEWER						
8"	Sanitary Sewer	Cochise Lane SW	Gold Dust Way SW	Existing 8" SAS at 98th Street	/	/	/
8"	Sanitary Sewer	Gold Dust Way SW	Del Timbre Lane SW	Sorral Way SW	/	/	/
8"	Sanitary Sewer	Sorral Way SW	Gold Dust Way SW	Saddlehorn Trail SW	/	/	/
8"	Sanitary Sewer	Saddlehorn Trail SW	Sorral Way SW	Del Timbre Lane SW	/	/	/
8"	Sanitary Sewer	Del Timbre Lane SW	Gold Dust Way SW	Lot 22 Block 1, End Del Timbre Lane SW	/	/	/

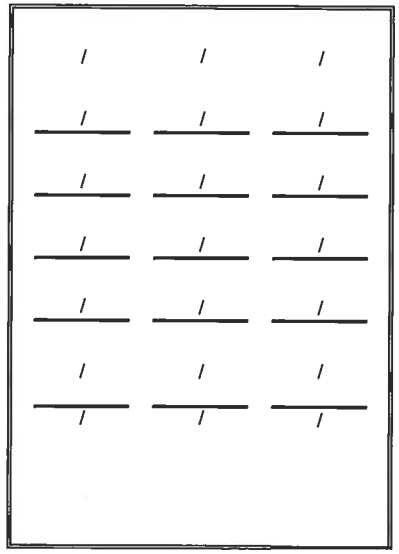


DRAINAGE

Per design	Pond (0.81 ac-ft)	Tract B		
Per design	Inlet	Gold Dust Way SW		
30"	Storm Drain	Tract B Easement	Gold Dust Way SW	Pond
Per design	Outfall Structure	Pond		
30"	Storm Drain	Tract B Easement	Pond	Exist 30" Storm Drain at Blake Road
Per design	Pond (0.35 ac-ft)	Tract A		
24"	Storm Drain (6)	98th Street	Tract A	Exist Stub at Blake Road

WATER AUTHORITY

	Pro-Rata	$58,408.10



this listing. The items listed below are subject to the standard SIA requirements.

Financially Guaranteed DRC #	Constructed Under DRC #	Size	Type of Improvement	Location	From	To	Construction Certification: Private Inspector P.E.	Construction Certification: City Cnst Engineer
							/ /	/ /
							/ /	/ /

Approval of Creditable Items:

Impact Fee Admistrator Signature Date

Approval of Creditable Items:

City User Dept. Signature Date

1 Deferred sidewalk to comply with approved sidewalk exhibit

2 Waterline Infrastructure to include valves, fittings, service connections and fire hydrants

3 Storm Drain Infrastructure to include manholes and inlets

4 Grading & Drainage Certification required per DPM (Prior to release of Financial Guaranty) to include retaining walls as defined on the approved Grading Plan

5 SAS Infrastructure include manholes and service connections.

6 This item to be financially guaranteed separately

AGENT / OWNER

Diane Hoelzer, PE
NAME (print)

MARK GOODWIN & ASSOCIATES
FIRM

SIGNATURE - date

MAXIMUM TIME ALLOWED TO CONSTRUCT THE IMPROVEMENTS WITHOUT A DRB EXTENSION: N/A

DEVELOPMENT REVIEW BOARD MEMBER APPROVALS

DRB CHAIR - date

PARKS & GENERAL SERVICES - date

TRANSPORTATION DEVELOPMENT - date

AMAFCA - date

UTILITY DEVELOPMENT - date

_____ - date

CITY ENGINEER - date

_____ - date

DESIGN REVIEW COMMITTEE REVISIONS

Appendix A

Pond Design

First Flush Calculations

AHYMO printout

LOS DIAMANTES SUBUDIVISION

FIRST FLUSH HYDROLOGY CALCULATIONS

N-value = UNITS/ACRE = 80/14.1907 = 5.64

For N-value less than 6 =} Treatment D = 7*((N)**2+(5*N))**0.5 = 54

Use Land treatment D = 54

Land treatment C = 23

Land treatment B = 23

AHYMO: Zone Atlas: N-9 =} P(60)=1.90", P(36)=2.25", P(24)= 2.70"

RESULTS: Q(100)= 51.61 cfs (100 year 6 hour)

FIRST FLUSH: (0.34 inches)(618,147 SF)(.54))/(12 inches per foot) = 9,458 cu.ft.

DLH 6-2-15 (dmg project 14031)

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE,NM 87199
(505) 828-2200 FAX 797-9539

PROJECT Los Diamantes
SUBJECT Pond Volume Calcs.
BY DLH DATE 6-5-15
CHECKED ____ DATE ____
SHEET 1 OF 2

LOS DIAMANTES POND

ELEV.	AREA	VOLUME	Σ VOL.	ΣAc.Ft.
108.	13286.5	12529.3	47,766.1	1.0965
107.	11787.1	11028.3	35,236.8	0.8089
106.	10286.5	9535.9	24208.5	0.5558
105.	8804.5	8062.6	14672.6	0.3368
104.	7342.8	6610.0	6610.0	0.1517
103.	5903.4	0	0	0

$VOL = \frac{1}{3} D(A_1 + A_2 + \sqrt{A_1 \cdot A_2})$

FIRST FLUSH VOLUME REQ'D = 9458 cu.ft. = 0.21713 AcFt.

CALCULATE DEPTH TO F.F. VOLUME IN POND:

$$\frac{9458 - 6610}{14672.6 - 6610} = \frac{2848.}{8062.6} = 0.35$$

POND ELEVATION TO FIRST FLUSH VOLUME = 104.35

CALCULATE WEIR SPILLWAY OUTFALL:

$$Q = C \cdot L \cdot H^{3/2}$$
$$= 3(11) H^{3/2}$$

17.29cfs = .65 (@ 105.0)
69.94cfs = 1.65 (@ 106.0)

RATING TABLE IN AHYMO

DISCHARGE	ACFT	ELE.
0	0	103.
0.01	.21713	104.35
17.29	.3368	105.
69.94	.5558	106.

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE,NM 87199
(505) 828-2200 FAX 797-9539

PROJECT Los Diamantes
SUBJECT
BY DLH DATE 6-5-15
CHECKED DATE
SHEET 2 OF 2

AHYMO RESULTS

Q(100) = 54.34cfs (from Project Site)

POND RESULTS:

Q(100) = 48.74cfs (to 30" SD)

Max WSEL = 105.6'

Max Stor. Volume = 0.4676 ACFT

Stor. Volume design = 0.8089 ACFT.

```
    AHYMO PROGRAM (AHYMO-S4)                    - Version: S4.01a - Rel: 01a
         RUN DATE (MON/DAY/YR) = 06/03/2015
         START TIME (HR:MIN:SEC) = 16:31:59     USER NO.= M-GoodwinNMSiteA90075759
         INPUT FILE = C:\Program Files (x86)\AHYMO-S4\LASDIA_9.DAT

*S*********************************************************
*S
*S                  Los DIAMONTES
*S                  100 YEAR 6 HOUR STORM EVENT
*S
*S                  FILE: LASDIA_9.DAT
*S                  LAST REVISED: 6-3-15
*S                  NOAA ATLAS 2, VOL IV ZONE N 9
START               TIME=0.0 HR PUNCH CODE=0 PRINT LINES=-6
LOCATION            ALBUQUERQUE
     City of Albuquerque soil infiltration values (LAND FACTORS) used for computations.
     Land Treatment     Initial Abstr.(in)    Unif. Infilt.(in/hour)
          A             0.65                  1.67
          B             0.50                  1.25
          C             0.35                  0.83
          D             0.10                  0.04

RAINFALL            TYPE=1 RAIN QUARTER=0.0
                    RAIN ONE=1.90 IN RAIN SIX=2.23 IN
                    RAIN DAY=2.70 IN DT=0.01 HRS

              6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1
              DT =   0.010000 HOURS       END TIME =     6.000000 HOURS
                0.0000  0.0004  0.0009  0.0013  0.0018  0.0022  0.0026
                0.0031  0.0035  0.0040  0.0045  0.0050  0.0055  0.0059
                0.0064  0.0069  0.0074  0.0079  0.0085  0.0090  0.0096
                0.0101  0.0107  0.0112  0.0118  0.0123  0.0129  0.0136
                0.0142  0.0148  0.0154  0.0160  0.0167  0.0173  0.0184
                0.0197  0.0211  0.0224  0.0237  0.0251  0.0264  0.0277
                0.0291  0.0306  0.0321  0.0336  0.0351  0.0367  0.0382
                0.0397  0.0412  0.0428  0.0445  0.0461  0.0477  0.0494
                0.0510  0.0527  0.0543  0.0560  0.0577  0.0595  0.0612
                0.0629  0.0647  0.0664  0.0681  0.0699  0.0717  0.0735
                0.0753  0.0771  0.0790  0.0808  0.0826  0.0844  0.0864
                0.0885  0.0905  0.0926  0.0946  0.0966  0.0987  0.1007
                0.1029  0.1052  0.1076  0.1099  0.1122  0.1145  0.1168
                0.1191  0.1225  0.1280  0.1335  0.1390  0.1445  0.1500
                0.1555  0.1610  0.1665  0.1738  0.1812  0.1886  0.1959
                0.2033  0.2107  0.2180  0.2254  0.2347  0.2450  0.2553
                0.2656  0.2759  0.2862  0.2965  0.3068  0.3189  0.3343
                0.3498  0.3653  0.3807  0.3962  0.4117  0.4271  0.4426
                0.4693  0.4960  0.5227  0.5494  0.5761  0.6029  0.6296
                0.6563  0.7126  0.7837  0.8549  0.9260  0.9972  1.0683
                1.1395  1.2106  1.2712  1.3106  1.3501  1.3895  1.4289
                1.4684  1.5078  1.5472  1.5867  1.6065  1.6263  1.6461
                1.6659  1.6858  1.7056  1.7254  1.7452  1.7601  1.7726
                1.7851  1.7976  1.8101  1.8225  1.8350  1.8475  1.8587
                1.8674  1.8760  1.8847  1.8933  1.9020  1.9106  1.9193
                1.9279  1.9343  1.9406  1.9469  1.9533  1.9596  1.9659
                1.9723  1.9786  1.9839  1.9887  1.9935  1.9983  2.0031
                2.0079  2.0127  2.0175  2.0214  2.0236  2.0257  2.0279
```

2.0301	2.0322	2.0344	2.0366	2.0387	2.0407	2.0426
2.0445	2.0464	2.0483	2.0503	2.0522	2.0541	2.0558
2.0574	2.0589	2.0605	2.0621	2.0637	2.0652	2.0668
2.0683	2.0698	2.0712	2.0726	2.0741	2.0755	2.0770
2.0784	2.0799	2.0812	2.0826	2.0840	2.0854	2.0868
2.0882	2.0896	2.0910	2.0919	2.0925	2.0932	2.0939
2.0946	2.0952	2.0959	2.0966	2.0972	2.0979	2.0985
2.0992	2.0998	2.1005	2.1011	2.1018	2.1024	2.1030
2.1036	2.1042	2.1048	2.1054	2.1060	2.1066	2.1072
2.1078	2.1084	2.1090	2.1096	2.1102	2.1107	2.1113
2.1119	2.1125	2.1131	2.1136	2.1142	2.1147	2.1153
2.1159	2.1164	2.1170	2.1175	2.1181	2.1186	2.1191
2.1197	2.1202	2.1207	2.1213	2.1218	2.1223	2.1228
2.1233	2.1238	2.1244	2.1249	2.1254	2.1259	2.1264
2.1269	2.1274	2.1279	2.1284	2.1289	2.1294	2.1299
2.1304	2.1309	2.1313	2.1318	2.1323	2.1328	2.1332
2.1337	2.1342	2.1346	2.1351	2.1356	2.1360	2.1365
2.1370	2.1374	2.1379	2.1383	2.1388	2.1392	2.1397
2.1401	2.1406	2.1410	2.1415	2.1419	2.1424	2.1428
2.1432	2.1436	2.1441	2.1445	2.1449	2.1454	2.1458
2.1462	2.1466	2.1470	2.1475	2.1479	2.1483	2.1487
2.1491	2.1495	2.1500	2.1504	2.1508	2.1512	2.1516
2.1520	2.1524	2.1528	2.1532	2.1536	2.1540	2.1544
2.1548	2.1552	2.1556	2.1560	2.1564	2.1568	2.1572
2.1576	2.1580	2.1584	2.1588	2.1591	2.1595	2.1599
2.1603	2.1607	2.1611	2.1614	2.1618	2.1622	2.1626
2.1630	2.1633	2.1637	2.1641	2.1645	2.1648	2.1652
2.1656	2.1660	2.1663	2.1667	2.1671	2.1674	2.1678
2.1682	2.1685	2.1689	2.1693	2.1696	2.1700	2.1703
2.1707	2.1711	2.1714	2.1718	2.1721	2.1725	2.1728
2.1732	2.1736	2.1739	2.1743	2.1746	2.1750	2.1753
2.1757	2.1760	2.1763	2.1767	2.1770	2.1774	2.1777
2.1781	2.1784	2.1788	2.1791	2.1794	2.1798	2.1801
2.1805	2.1808	2.1811	2.1815	2.1818	2.1821	2.1825
2.1828	2.1831	2.1835	2.1838	2.1841	2.1844	2.1848
2.1851	2.1854	2.1858	2.1861	2.1864	2.1867	2.1871
2.1874	2.1877	2.1880	2.1883	2.1887	2.1890	2.1893
2.1896	2.1899	2.1903	2.1906	2.1909	2.1912	2.1915
2.1918	2.1921	2.1925	2.1928	2.1931	2.1934	2.1937
2.1940	2.1943	2.1946	2.1949	2.1952	2.1955	2.1959
2.1962	2.1965	2.1968	2.1971	2.1974	2.1977	2.1980
2.1983	2.1986	2.1989	2.1992	2.1995	2.1998	2.2001
2.2004	2.2007	2.2010	2.2013	2.2015	2.2018	2.2021
2.2024	2.2027	2.2030	2.2033	2.2036	2.2039	2.2042
2.2045	2.2047	2.2050	2.2053	2.2056	2.2059	2.2062
2.2065	2.2068	2.2070	2.2073	2.2076	2.2079	2.2082
2.2085	2.2087	2.2090	2.2093	2.2096	2.2099	2.2101
2.2104	2.2107	2.2110	2.2112	2.2115	2.2118	2.2121
2.2123	2.2126	2.2129	2.2132	2.2134	2.2137	2.2140
2.2143	2.2145	2.2148	2.2151	2.2153	2.2156	2.2159
2.2161	2.2164	2.2167	2.2170	2.2172	2.2175	2.2177
2.2180	2.2183	2.2185	2.2188	2.2191	2.2193	2.2196
2.2199	2.2201	2.2204	2.2206	2.2209	2.2212	2.2214
2.2217	2.2219	2.2222	2.2225	2.2227	2.2230	2.2232
2.2235	2.2237	2.2240	2.2242	2.2245	2.2248	2.2250
2.2253	2.2255	2.2258	2.2260	2.2263	2.2265	2.2268

```
                2.2270  2.2273  2.2275  2.2278  2.2280  2.2283  2.2285
                2.2288  2.2290  2.2293  2.2295  2.2298  2.2300

*S**********************************************************
*** ******************
*S  LOS DIAMONTES SUBDIVISION
*** ******************
*** AREA = 14.1907 ACRES
*** AREA = 618,147 SF
*** ******************
COMPUTE NM HYD       ID=1  HYD NO=100 AREA= 0.022173 SQ MI
                     PER A=0  PER B=23  PER C=23  PER D=54
                     TP=-.1333 HR  MASS RAIN=-1

     K =  0.072649HR    TP =  0.133300HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N =  7.106428
     UNIT PEAK =   47.272    CFS   UNIT VOLUME =   0.9997       B =   526.28      P60 = 1.9000
     AREA =     0.011973 SQ MI    IA =   0.10000 INCHES    INF =   0.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.010000


     K =  0.118483HR    TP =  0.133300HR    K/TP RATIO =  0.888844     SHAPE CONSTANT, N =  3.990415
     UNIT PEAK =   27.128    CFS   UNIT VOLUME =   0.9995       B =   354.53      P60 = 1.9000
     AREA =     0.010200 SQ MI    IA =   0.42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.010000

PRINT HYD            ID=1 CODE=1

                                  PARTIAL HYDROGRAPH   100.00


    RUNOFF VOLUME =     1.52432 INCHES     =       1.8026 ACRE-FEET
    PEAK DISCHARGE RATE =      54.34 CFS  AT   1.530 HOURS   BASIN AREA =  0.0222 SQ. MI.


*s*******************
*s* ROUTE THRU SE POND
*s*********************************************************************
*S* OUTFALL CIRCUMFERENCE = 11 FT.
*S*********************************************************************
ROUTE RESERVOIR      ID=12  HYD=POND.12   INFLOW=1   CODE=100
                     OUTFLOW(CFS)   STORAGE(ACFT)     ELEV(FT)
                     0.00         0.0000         103.00
                     0.01         0.21713        104.35
                     17.29        0.33680        105.00
                     69.94        0.55580        106.00

  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

    TIME       INFLOW     ELEV       VOLUME     OUTFLOW
    (HRS)      (CFS)      (FEET)     (AC-FT)    (CFS)

     0.00        0.00     103.00       0.000       0.00
     0.24        0.00     103.00       0.000       0.00
     0.48        0.00     103.00       0.000       0.00
     0.72        0.00     103.00       0.000       0.00
```

0.96	0.54	103.01	0.001	0.00
1.20	5.00	103.33	0.054	0.00
1.44	34.60	104.76	0.292	10.85
1.68	30.65	105.41	0.426	38.74
1.92	9.67	104.86	0.311	13.55
2.16	3.72	104.56	0.255	5.53
2.40	1.83	104.44	0.234	2.43
2.64	0.70	104.39	0.224	1.02
2.88	0.35	104.37	0.220	0.47
3.12	0.18	104.36	0.219	0.23
3.36	0.11	104.35	0.218	0.13
3.60	0.08	104.35	0.218	0.09
3.84	0.07	104.35	0.218	0.07
4.08	0.07	104.35	0.218	0.07
4.32	0.08	104.35	0.218	0.07
4.56	0.09	104.35	0.218	0.08
4.80	0.10	104.35	0.218	0.10
5.04	0.11	104.35	0.218	0.11
5.28	0.13	104.35	0.218	0.12
5.52	0.14	104.35	0.218	0.14
5.76	0.16	104.36	0.218	0.15
6.00	0.18	104.36	0.218	0.17
6.24	0.04	104.35	0.218	0.09
6.48	0.01	104.35	0.217	0.02
6.72	0.00	104.35	0.217	0.01
6.96	0.00	104.35	0.217	0.01
7.20	0.00	104.35	0.217	0.01
7.44	0.00	104.35	0.217	0.01
7.68	0.00	104.35	0.216	0.01
7.92	0.00	104.34	0.216	0.01
8.16	0.00	104.34	0.216	0.01
8.40	0.00	104.34	0.216	0.01
8.64	0.00	104.34	0.216	0.01
8.88	0.00	104.34	0.215	0.01
9.12	0.00	104.34	0.215	0.01
9.36	0.00	104.34	0.215	0.01
9.60	0.00	104.34	0.215	0.01
9.84	0.00	104.33	0.215	0.01
10.08	0.00	104.33	0.214	0.01
10.32	0.00	104.33	0.214	0.01
10.56	0.00	104.33	0.214	0.01
10.80	0.00	104.33	0.214	0.01
11.04	0.00	104.33	0.214	0.01
11.28	0.00	104.33	0.213	0.01
11.52	0.00	104.33	0.213	0.01
11.76	0.00	104.32	0.213	0.01
12.00	0.00	104.32	0.213	0.01
12.24	0.00	104.32	0.213	0.01
12.48	0.00	104.32	0.212	0.01
12.72	0.00	104.32	0.212	0.01
12.96	0.00	104.32	0.212	0.01
13.20	0.00	104.32	0.212	0.01

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)

13.44	0.00	104.32	0.212	0.01
13.68	0.00	104.31	0.211	0.01
13.92	0.00	104.31	0.211	0.01
14.16	0.00	104.31	0.211	0.01
14.40	0.00	104.31	0.211	0.01
14.64	0.00	104.31	0.211	0.01
14.88	0.00	104.31	0.210	0.01
15.12	0.00	104.31	0.210	0.01
15.36	0.00	104.31	0.210	0.01
15.60	0.00	104.31	0.210	0.01
15.84	0.00	104.30	0.210	0.01
16.08	0.00	104.30	0.210	0.01
16.32	0.00	104.30	0.209	0.01
16.56	0.00	104.30	0.209	0.01
16.80	0.00	104.30	0.209	0.01
17.04	0.00	104.30	0.209	0.01
17.28	0.00	104.30	0.209	0.01
17.52	0.00	104.30	0.208	0.01
17.76	0.00	104.29	0.208	0.01
18.00	0.00	104.29	0.208	0.01
18.24	0.00	104.29	0.208	0.01
18.48	0.00	104.29	0.208	0.01
18.72	0.00	104.29	0.207	0.01
18.96	0.00	104.29	0.207	0.01
19.20	0.00	104.29	0.207	0.01
19.44	0.00	104.29	0.207	0.01
19.68	0.00	104.28	0.207	0.01
19.92	0.00	104.28	0.206	0.01
20.16	0.00	104.28	0.206	0.01
20.40	0.00	104.28	0.206	0.01
20.64	0.00	104.28	0.206	0.01
20.88	0.00	104.28	0.206	0.01
21.12	0.00	104.28	0.206	0.01
21.36	0.00	104.28	0.205	0.01
21.60	0.00	104.28	0.205	0.01
21.84	0.00	104.27	0.205	0.01
22.08	0.00	104.27	0.205	0.01
22.32	0.00	104.27	0.205	0.01
22.56	0.00	104.27	0.204	0.01
22.80	0.00	104.27	0.204	0.01
23.04	0.00	104.27	0.204	0.01
23.28	0.00	104.27	0.204	0.01
23.52	0.00	104.27	0.204	0.01
23.76	0.00	104.27	0.203	0.01
24.00	0.00	104.26	0.203	0.01
24.24	0.00	104.26	0.203	0.01
24.48	0.00	104.26	0.203	0.01
24.72	0.00	104.26	0.203	0.01
24.96	0.00	104.26	0.203	0.01
25.20	0.00	104.26	0.202	0.01
25.44	0.00	104.26	0.202	0.01
25.68	0.00	104.26	0.202	0.01
25.92	0.00	104.25	0.202	0.01
26.16	0.00	104.25	0.202	0.01
26.40	0.00	104.25	0.201	0.01
26.64	0.00	104.25	0.201	0.01

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
26.88	0.00	104.25	0.201	0.01
27.12	0.00	104.25	0.201	0.01
27.36	0.00	104.25	0.201	0.01
27.60	0.00	104.25	0.201	0.01
27.84	0.00	104.25	0.200	0.01
28.08	0.00	104.24	0.200	0.01
28.32	0.00	104.24	0.200	0.01
28.56	0.00	104.24	0.200	0.01
28.80	0.00	104.24	0.200	0.01
29.04	0.00	104.24	0.199	0.01
29.28	0.00	104.24	0.199	0.01
29.52	0.00	104.24	0.199	0.01
29.76	0.00	104.24	0.199	0.01
30.00	0.00	104.24	0.199	0.01
30.24	0.00	104.23	0.199	0.01
30.48	0.00	104.23	0.198	0.01
30.72	0.00	104.23	0.198	0.01
30.96	0.00	104.23	0.198	0.01
31.20	0.00	104.23	0.198	0.01
31.44	0.00	104.23	0.198	0.01
31.68	0.00	104.23	0.197	0.01
31.92	0.00	104.23	0.197	0.01
32.16	0.00	104.23	0.197	0.01
32.40	0.00	104.22	0.197	0.01
32.64	0.00	104.22	0.197	0.01
32.88	0.00	104.22	0.197	0.01
33.12	0.00	104.22	0.196	0.01
33.36	0.00	104.22	0.196	0.01
33.60	0.00	104.22	0.196	0.01
33.84	0.00	104.22	0.196	0.01
34.08	0.00	104.22	0.196	0.01
34.32	0.00	104.22	0.195	0.01
34.56	0.00	104.21	0.195	0.01
34.80	0.00	104.21	0.195	0.01
35.04	0.00	104.21	0.195	0.01
35.28	0.00	104.21	0.195	0.01
35.52	0.00	104.21	0.195	0.01
35.76	0.00	104.21	0.194	0.01
36.00	0.00	104.21	0.194	0.01
36.24	0.00	104.21	0.194	0.01
36.48	0.00	104.21	0.194	0.01
36.72	0.00	104.20	0.194	0.01
36.96	0.00	104.20	0.194	0.01
37.20	0.00	104.20	0.193	0.01
37.44	0.00	104.20	0.193	0.01
37.68	0.00	104.20	0.193	0.01
37.92	0.00	104.20	0.193	0.01
38.16	0.00	104.20	0.193	0.01
38.40	0.00	104.20	0.192	0.01
38.64	0.00	104.20	0.192	0.01
38.88	0.00	104.19	0.192	0.01
39.12	0.00	104.19	0.192	0.01

```
    39.36       0.00    104.19      0.192       0.01
    39.60       0.00    104.19      0.192       0.01
    39.84       0.00    104.19      0.191       0.01
 PEAK DISCHARGE =       48.743 CFS - PEAK OCCURS AT HOUR    1.58
 MAXIMUM WATER SURFACE ELEVATION =      105.597
 MAXIMUM STORAGE =        0.4676 AC-FT      INCREMENTAL TIME=    0.010000HRS

PRINT HYD            ID=12 CODE=1

                                        HYDROGRAPH FROM AREA POND.12


    RUNOFF VOLUME =     1.36254 INCHES     =       1.6113 ACRE-FEET
    PEAK DISCHARGE RATE =      48.74 CFS  AT   1.580 HOURS   BASIN AREA =  0.0222 SQ. MI.

FINISH
    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 16:31:59
```

```
    AHYMO PROGRAM (AHYMO-S4)                    - Version: S4.01a - Rel: 01a
         RUN DATE (MON/DAY/YR) = 06/05/2015
         START TIME (HR:MIN:SEC) = 09:34:03     USER NO.= M-GoodwinNMSiteA90075759
         INPUT FILE = C:\Program Files (x86)\AHYMO-S4\LASDIA_1.DAT

*S*******************************************************
*S
*S                  Los DIAMONTES
*S                  100 YEAR 6 HOUR STORM EVENT
*S
*S                  FILE: LASDIA_1.DAT
*S                  LAST REVISED: 6-5-15
*S                  NOAA ATLAS 2, VOL IV ZONE N 9
START              TIME=0.0 HR PUNCH CODE=0 PRINT LINES=-6
LOCATION           ALBUQUERQUE
     City of Albuquerque soil infiltration values (LAND FACTORS) used for computations.
     Land Treatment     Initial Abstr.(in)    Unif. Infilt.(in/hour)
          A             0.65                  1.67
          B             0.50                  1.25
          C             0.35                  0.83
          D             0.10                  0.04

RAINFALL           TYPE=1 RAIN QUARTER=0.0
                   RAIN ONE=1.90 IN RAIN SIX=2.23 IN
                   RAIN DAY=2.70 IN DT=0.01 HRS

          6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1
          DT =   0.010000 HOURS       END TIME =     6.000000 HOURS
            0.0000  0.0004  0.0009  0.0013  0.0018  0.0022  0.0026
            0.0031  0.0035  0.0040  0.0045  0.0050  0.0055  0.0059
            0.0064  0.0069  0.0074  0.0079  0.0085  0.0090  0.0096
            0.0101  0.0107  0.0112  0.0118  0.0123  0.0129  0.0136
            0.0142  0.0148  0.0154  0.0160  0.0167  0.0173  0.0184
            0.0197  0.0211  0.0224  0.0237  0.0251  0.0264  0.0277
            0.0291  0.0306  0.0321  0.0336  0.0351  0.0367  0.0382
            0.0397  0.0412  0.0428  0.0445  0.0461  0.0477  0.0494
            0.0510  0.0527  0.0543  0.0560  0.0577  0.0595  0.0612
            0.0629  0.0647  0.0664  0.0681  0.0699  0.0717  0.0735
            0.0753  0.0771  0.0790  0.0808  0.0826  0.0844  0.0864
            0.0885  0.0905  0.0926  0.0946  0.0966  0.0987  0.1007
            0.1029  0.1052  0.1076  0.1099  0.1122  0.1145  0.1168
            0.1191  0.1225  0.1280  0.1335  0.1390  0.1445  0.1500
            0.1555  0.1610  0.1665  0.1738  0.1812  0.1886  0.1959
            0.2033  0.2107  0.2180  0.2254  0.2347  0.2450  0.2553
            0.2656  0.2759  0.2862  0.2965  0.3068  0.3189  0.3343
            0.3498  0.3653  0.3807  0.3962  0.4117  0.4271  0.4426
            0.4693  0.4960  0.5227  0.5494  0.5761  0.6029  0.6296
            0.6563  0.7126  0.7837  0.8549  0.9260  0.9972  1.0683
            1.1395  1.2106  1.2712  1.3106  1.3501  1.3895  1.4289
```

1.4684	1.5078	1.5472	1.5867	1.6065	1.6263	1.6461
1.6659	1.6858	1.7056	1.7254	1.7452	1.7601	1.7726
1.7851	1.7976	1.8101	1.8225	1.8350	1.8475	1.8587
1.8674	1.8760	1.8847	1.8933	1.9020	1.9106	1.9193
1.9279	1.9343	1.9406	1.9469	1.9533	1.9596	1.9659
1.9723	1.9786	1.9839	1.9887	1.9935	1.9983	2.0031
2.0079	2.0127	2.0175	2.0214	2.0236	2.0257	2.0279
2.0301	2.0322	2.0344	2.0366	2.0387	2.0407	2.0426
2.0445	2.0464	2.0483	2.0503	2.0522	2.0541	2.0558
2.0574	2.0589	2.0605	2.0621	2.0637	2.0652	2.0668
2.0683	2.0698	2.0712	2.0726	2.0741	2.0755	2.0770
2.0784	2.0799	2.0812	2.0826	2.0840	2.0854	2.0868
2.0882	2.0896	2.0910	2.0919	2.0925	2.0932	2.0939
2.0946	2.0952	2.0959	2.0966	2.0972	2.0979	2.0985
2.0992	2.0998	2.1005	2.1011	2.1018	2.1024	2.1030
2.1036	2.1042	2.1048	2.1054	2.1060	2.1066	2.1072
2.1078	2.1084	2.1090	2.1096	2.1102	2.1107	2.1113
2.1119	2.1125	2.1131	2.1136	2.1142	2.1147	2.1153
2.1159	2.1164	2.1170	2.1175	2.1181	2.1186	2.1191
2.1197	2.1202	2.1207	2.1213	2.1218	2.1223	2.1228
2.1233	2.1238	2.1244	2.1249	2.1254	2.1259	2.1264
2.1269	2.1274	2.1279	2.1284	2.1289	2.1294	2.1299
2.1304	2.1309	2.1313	2.1318	2.1323	2.1328	2.1332
2.1337	2.1342	2.1346	2.1351	2.1356	2.1360	2.1365
2.1370	2.1374	2.1379	2.1383	2.1388	2.1392	2.1397
2.1401	2.1406	2.1410	2.1415	2.1419	2.1424	2.1428
2.1432	2.1436	2.1441	2.1445	2.1449	2.1454	2.1458
2.1462	2.1466	2.1470	2.1475	2.1479	2.1483	2.1487
2.1491	2.1495	2.1500	2.1504	2.1508	2.1512	2.1516
2.1520	2.1524	2.1528	2.1532	2.1536	2.1540	2.1544
2.1548	2.1552	2.1556	2.1560	2.1564	2.1568	2.1572
2.1576	2.1580	2.1584	2.1588	2.1591	2.1595	2.1599
2.1603	2.1607	2.1611	2.1614	2.1618	2.1622	2.1626
2.1630	2.1633	2.1637	2.1641	2.1645	2.1648	2.1652
2.1656	2.1660	2.1663	2.1667	2.1671	2.1674	2.1678
2.1682	2.1685	2.1689	2.1693	2.1696	2.1700	2.1703
2.1707	2.1711	2.1714	2.1718	2.1721	2.1725	2.1728
2.1732	2.1736	2.1739	2.1743	2.1746	2.1750	2.1753
2.1757	2.1760	2.1763	2.1767	2.1770	2.1774	2.1777
2.1781	2.1784	2.1788	2.1791	2.1794	2.1798	2.1801
2.1805	2.1808	2.1811	2.1815	2.1818	2.1821	2.1825
2.1828	2.1831	2.1835	2.1838	2.1841	2.1844	2.1848
2.1851	2.1854	2.1858	2.1861	2.1864	2.1867	2.1871
2.1874	2.1877	2.1880	2.1883	2.1887	2.1890	2.1893
2.1896	2.1899	2.1903	2.1906	2.1909	2.1912	2.1915
2.1918	2.1921	2.1925	2.1928	2.1931	2.1934	2.1937
2.1940	2.1943	2.1946	2.1949	2.1952	2.1955	2.1959
2.1962	2.1965	2.1968	2.1971	2.1974	2.1977	2.1980
2.1983	2.1986	2.1989	2.1992	2.1995	2.1998	2.2001
2.2004	2.2007	2.2010	2.2013	2.2015	2.2018	2.2021
2.2024	2.2027	2.2030	2.2033	2.2036	2.2039	2.2042

```
                2.2045  2.2047  2.2050  2.2053  2.2056  2.2059  2.2062
                2.2065  2.2068  2.2070  2.2073  2.2076  2.2079  2.2082
                2.2085  2.2087  2.2090  2.2093  2.2096  2.2099  2.2101
                2.2104  2.2107  2.2110  2.2112  2.2115  2.2118  2.2121
                2.2123  2.2126  2.2129  2.2132  2.2134  2.2137  2.2140
                2.2143  2.2145  2.2148  2.2151  2.2153  2.2156  2.2159
                2.2161  2.2164  2.2167  2.2170  2.2172  2.2175  2.2177
                2.2180  2.2183  2.2185  2.2188  2.2191  2.2193  2.2196
                2.2199  2.2201  2.2204  2.2206  2.2209  2.2212  2.2214
                2.2217  2.2219  2.2222  2.2225  2.2227  2.2230  2.2232
                2.2235  2.2237  2.2240  2.2242  2.2245  2.2248  2.2250
                2.2253  2.2255  2.2258  2.2260  2.2263  2.2265  2.2268
                2.2270  2.2273  2.2275  2.2278  2.2280  2.2283  2.2285
                2.2288  2.2290  2.2293  2.2295  2.2298  2.2300

*S************************************************************
*** ******************
*S  LOS DIAMONTES Tract A (UNDEVELOPED)
*** ******************
*** AREA = 5.6729 ACRES
*** AREA = 247,111 SF
*** ******************
COMPUTE NM HYD       ID=1  HYD NO=100 AREA= 0.008864 SQ MI
                     PER A=100  PER B=0  PER C=0  PER D=0
                     TP=-.1333 HR  MASS RAIN=-1

     K =  0.162928HR    TP =  0.133300HR    K/TP RATIO =  1.222262     SHAPE CONSTANT, N =  2.911823
     UNIT PEAK =   18.257    CFS   UNIT VOLUME =   0.9992       B =   274.56      P60 = 1.9000
     AREA =     0.008864 SQ MI    IA =   0.65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.010000

PRINT HYD            ID=1 CODE=1

                                  PARTIAL HYDROGRAPH   100.00


    RUNOFF VOLUME =     0.67376 INCHES     =       0.3185 ACRE-FEET
    PEAK DISCHARGE RATE =      10.60 CFS  AT   1.540 HOURS   BASIN AREA =  0.0089 SQ. MI.


FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 09:34:03
```

Appendix B

Summary of Street Capacity Calculations

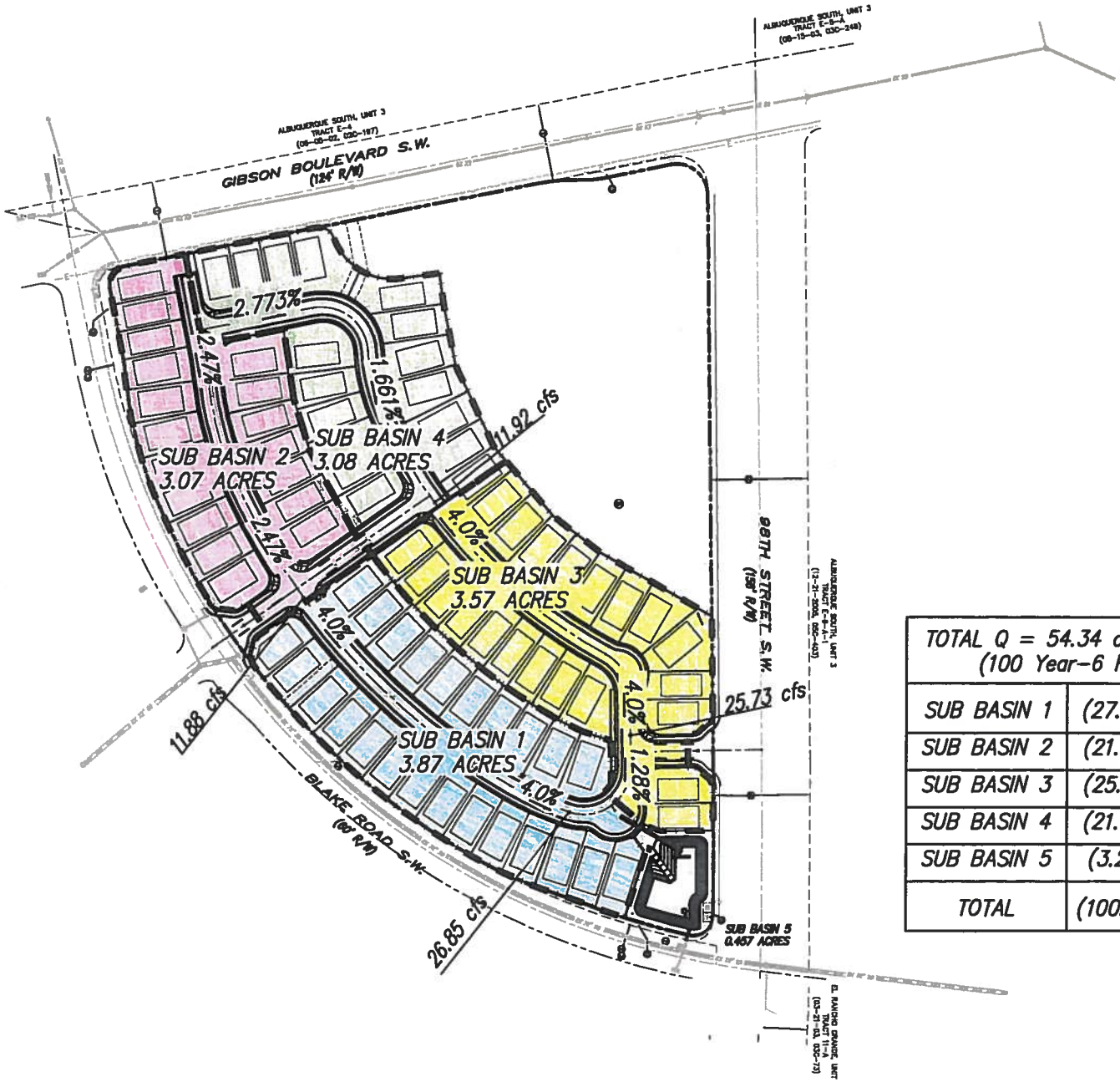
Street Capacity Exhibit / Sub basin Boundaries

HEC-2 Printouts

Los Diamantes Subdivision

Summary of Street Capacity Calculations									
LOCATION	**WIDTH**	**CROWN**	**STD or MTB**	**SLOPE %**	**Q cfs**	**DEPTH ft.**	**EG (ft)**	**INLET Q cfs**	**TYPE INLET**
SORRAL WAY	26	Y	MTB	1.66	11.92	0.36	0.50	n/a	
DEL TIMBRE LANE	26	Y	MTB	2.47	11.88	0.34	0.52	n/a	
DEL TIMBRE LANE	28	Y	STD	4.00	26.85	0.39	0.85		
SORRAL WAY	28	Y	STD	4.00	25.73	0.39	0.83		
DEL TIMBRE LANE	28	Y	STD	1.00	26.85	0.49	0.68	26.85	Sump Inlet
SORRAL WAY	28	Y	STD	1.00	25.73	0.48	0.67	25.73	Sump Inlet

(DLH 6-5-15)



TOTAL Q = 54.34 cfs (from AHYMO results) (100 Year–6 Hour storm event)		
SUB BASIN 1	(27.55%)	14.97 cfs
SUB BASIN 2	(21.86%)	11.88 cfs
SUB BASIN 3	(25.41%)	13.81 cfs
SUB BASIN 4	(21.93%)	11.92 cfs
SUB BASIN 5	(3.25%)	1.76 cfs
TOTAL	(100.00%)	54.34 cfs

LOS DIAMANTES SUBDIVISION
STREET CAPACITY EXHIBIT

(Mark Goodwin & Associates, DLH 6–5–15)

```
1*****************************************                    ***************************************
 *  HEC-2 WATER SURFACE PROFILES             *                *  U.S. ARMY CORPS OF ENGINEERS         *
 *                                           *                *  HYDROLOGIC ENGINEERING CENTER        *
 *  Version   4.6.2;  May 1991               *                *  609 SECOND STREET, SUITE D           *
 *                                           *                *  DAVIS, CALIFORNIA 95616-4687         *
 *  RUN DATE    04JUN15    TIME   09:52:05   *                *           (916) 756-1104              *
 *****************************************                    ***************************************

                                        X     X  XXXXXXX   XXXXX              XXXXX
                                        X     X  X        X     X            X     X
                                        X     X  X        X                        X
                                        XXXXXXX  XXXX     X          XXXXX    XXXXX
                                        X     X  X        X                  X
                                        X     X  X        X     X            X

THIS RUN EXECUTED 04JUN15    09:52:05
 ************************************
  HEC-2 WATER SURFACE PROFILES
  Version   4.6.2;  May 1991
 ************************************

 T1          LOS DIAMANTES - STREET CAPACITY CALCULATIONS
 T2          47'ROW 26'F-F MTB CURB AND GUTTER WITH CROWN
 T3          6-5-15

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2         0         1    .01661         0         0         0         0         0

 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         2        26         4        68         3

 NC     .017      .017      .017        .1        .3
 QT        2     11.92     11.88
 X1        1         9         0        47         0         0         0         0         0         0
 GR      .53         0       .33      9.87         0     11.47      .125      12.5      .345      23.5
 GR     .125      34.5         0     35.53       .33     37.13       .53        47

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

 *PROF 1

 CCHV=     .100 CEHV=     .300
 *SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
      1.000      .36       .36       .40       .00       .50       .14       .00       .00       .53
       11.9       .0      11.9        .0        .0       4.0        .0        .0        .0       .53
        .00      .00      2.96       .00      .000      .017      .000      .000       .00      8.39
    .016866       0.        0.        0.         0        14         7       .00     30.22     38.61

 T1
```

```
T2
T3 26' FF

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         3         0         1      .0247

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     2         0        -1         0         0         0         0         0         0         0

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 2

CCHV=      .100 CEHV=      .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED

3265 DIVIDED FLOW

     1.000       .34       .34       .40       .00       .52       .18       .00       .00       .53
      11.9        .0      11.9        .0        .0       3.5        .0        .0        .0       .53
       .00       .00      3.44       .00      .000      .017      .000      .000       .00      9.37
   .025116        0.        0.        0.         0        14         7       .00     27.77     37.63

THIS RUN EXECUTED 04JUN15    09:52:05
 ************************************
  HEC-2 WATER SURFACE PROFILES
  Version   4.6.2;  May 1991
 ************************************

 NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

     6-5-15

 SUMMARY PRINTOUT

       SECNO        Q        CWSEL      CRIWS       VCH      TOPWID      FRCH        EG

       1.000     11.92         .36        .40      2.96      30.22      1.43         .50
       1.000     11.88         .34        .40      3.44      27.77      1.74         .52
  SUMMARY OF ERRORS AND SPECIAL NOTES
```

```
1*****************************************                    ***************************************
 *  HEC-2 WATER SURFACE PROFILES             *                *  U.S. ARMY CORPS OF ENGINEERS         *
 *                                           *                *  HYDROLOGIC ENGINEERING CENTER        *
 *  Version   4.6.2;  May 1991               *                *  609 SECOND STREET, SUITE D           *
 *                                           *                *  DAVIS, CALIFORNIA 95616-4687         *
 *  RUN DATE    04JUN15    TIME   09:52:34   *                *          (916) 756-1104               *
 *****************************************                    ***************************************

                                        X     X  XXXXXXX   XXXXX             XXXXX
                                        X     X  X        X     X           X     X
                                        X     X  X        X                       X
                                        XXXXXXX  XXXX     X          XXXXX    XXXXX
                                        X     X  X        X                X
                                        X     X  X        X     X          X
THIS RUN EXECUTED 04JUN15    09:52:34
 ************************************
  HEC-2 WATER SURFACE PROFILES
  Version   4.6.2;  May 1991
 ************************************

 T1          LOS DIAMANTES - STREET CAPACITY CALCULATIONS
 T2          49'ROW 28'F-F STD CURB AND GUTTER WITH CROWN
 T3

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2         0         1      .040         0         0         0         0         0

 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

      38        43         1         2        26         4        68         3

 NC     .017      .017      .017        .1        .3
 QT       2     26.85     25.73
 X1       1         9         0        49         0         0         0         0         0         0
 GR     .87         0       .67     10.33         0      10.5      .125      12.5      .365      24.5
 GR    .125      36.5         0      38.5       .67     38.67       .87        49

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

 *PROF 1

 CCHV=     .100 CEHV=     .300
 *SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
      1.000      .39       .39       .52       .00       .85       .45       .00       .00       .87
       26.9       .0      26.8        .0        .0       5.0        .0        .0        .0       .87
```

```
      .00       .00      5.40       .00      .000      .017      .000      .000       .00     10.40
   .039821       0.        0.        0.         0        11         5       .00     28.20     38.60

T1
T2
T3 28' FF

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

     0         3         0         1        .040

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     2         0        -1         0         0         0         0         0         0         0

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 2

CCHV=      .100 CEHV=      .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
     1.000       .39       .39       .51       .00       .83       .44       .00       .00       .87
      25.7        .0      25.7        .0        .0       4.8        .0        .0        .0       .87
       .00       .00      5.31       .00      .000      .017      .000      .000       .00     10.40
   .039762       0.        0.        0.         0        11         5       .00     28.20     38.60

THIS RUN EXECUTED 04JUN15    09:52:34
 ************************************
  HEC-2 WATER SURFACE PROFILES
  Version   4.6.2;  May 1991
 ************************************

 NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

 SUMMARY PRINTOUT

      SECNO        Q        CWSEL     CRIWS      VCH      TOPWID     FRCH       EG

      1.000     26.85         .39       .52      5.40      28.20      2.27       .85
      1.000     25.73         .39       .51      5.31      28.20      2.26       .83


  SUMMARY OF ERRORS AND SPECIAL NOTES
```

```
1*****************************************                    ***************************************
 *  HEC-2 WATER SURFACE PROFILES             *                *  U.S. ARMY CORPS OF ENGINEERS         *
 *                                           *                *  HYDROLOGIC ENGINEERING CENTER        *
 *  Version   4.6.2;  May 1991               *                *  609 SECOND STREET, SUITE D           *
 *                                           *                *  DAVIS, CALIFORNIA 95616-4687         *
 *  RUN DATE    04JUN15    TIME   09:53:20   *                *           (916) 756-1104              *
 *****************************************                    ***************************************

                                    X     X  XXXXXXX   XXXXX             XXXXX
                                    X     X  X        X     X           X     X
                                    X     X  X        X                       X
                                    XXXXXXX  XXXX     X          XXXXX    XXXXX
                                    X     X  X        X                  X
                                    X     X  X        X     X            X
                                    X     X  XXXXXXX   XXXXX            XXXXXXX
                                                                 THIS RUN EXECUTED 04JUN15    09:53:20
 ************************************
  HEC-2 WATER SURFACE PROFILES
  Version   4.6.2;  May 1991
 ************************************

T1          LOS DIAMANTES - STREET CAPACITY CALCULATIONS
T2          49'ROW 28'F-F STD CURB AND GUTTER WITH CROWN
T3

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         2         0         1      .010         0         0         0         0         0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38         43          1          2         26          4         68          3

NC     .017       .017       .017         .1          .3
QT       2      26.85      25.73
X1       1          9          0         49           0          0          0          0          0          0
GR     .87          0        .67      10.33           0       10.5       .125       12.5       .365       24.5
GR     .125      36.5          0       38.5         .67      38.67        .87         49

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 1

CCHV=     .100 CEHV=     .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
```

```
     1.000       .49       .49       .52       .00       .68       .19       .00       .00       .87
      26.9        .0      26.8        .0        .0       7.6        .0        .0        .0       .87
       .00       .00      3.54       .00      .000      .017      .000      .000       .00     10.38
   .009814        0.        0.        0.         0        11         5       .00     28.25     38.62

T1
T2
T3 28' FF

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         3         0         1        .010

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      2         0        -1         0         0         0         0         0         0         0

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 2

CCHV=     .100 CEHV=     .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
     1.000       .48       .48       .51       .00       .67       .19       .00       .00       .87
      25.7        .0      25.7        .0        .0       7.4        .0        .0        .0       .87
       .00       .00      3.48       .00      .000      .017      .000      .000       .00     10.38
   .009853        0.        0.        0.         0        11         5       .00     28.24     38.62
 THIS RUN EXECUTED 04JUN15    09:53:20
************************************
 HEC-2 WATER SURFACE PROFILES
 Version   4.6.2;  May 1991
************************************

 NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SUMMARY PRINTOUT

      SECNO       Q       CWSEL     CRIWS      VCH      TOPWID     FRCH       EG

       1.000     26.85       .49       .52      3.54     28.25      1.20       .68
       1.000     25.73       .48       .51      3.48     28.24      1.20       .67


  SUMMARY OF ERRORS AND SPECIAL NOTES
```

Appendix C

Pond Outfall Design Detail

Gold Dust Way Inlet Design Detail

Standard Grate Detail for Inlet

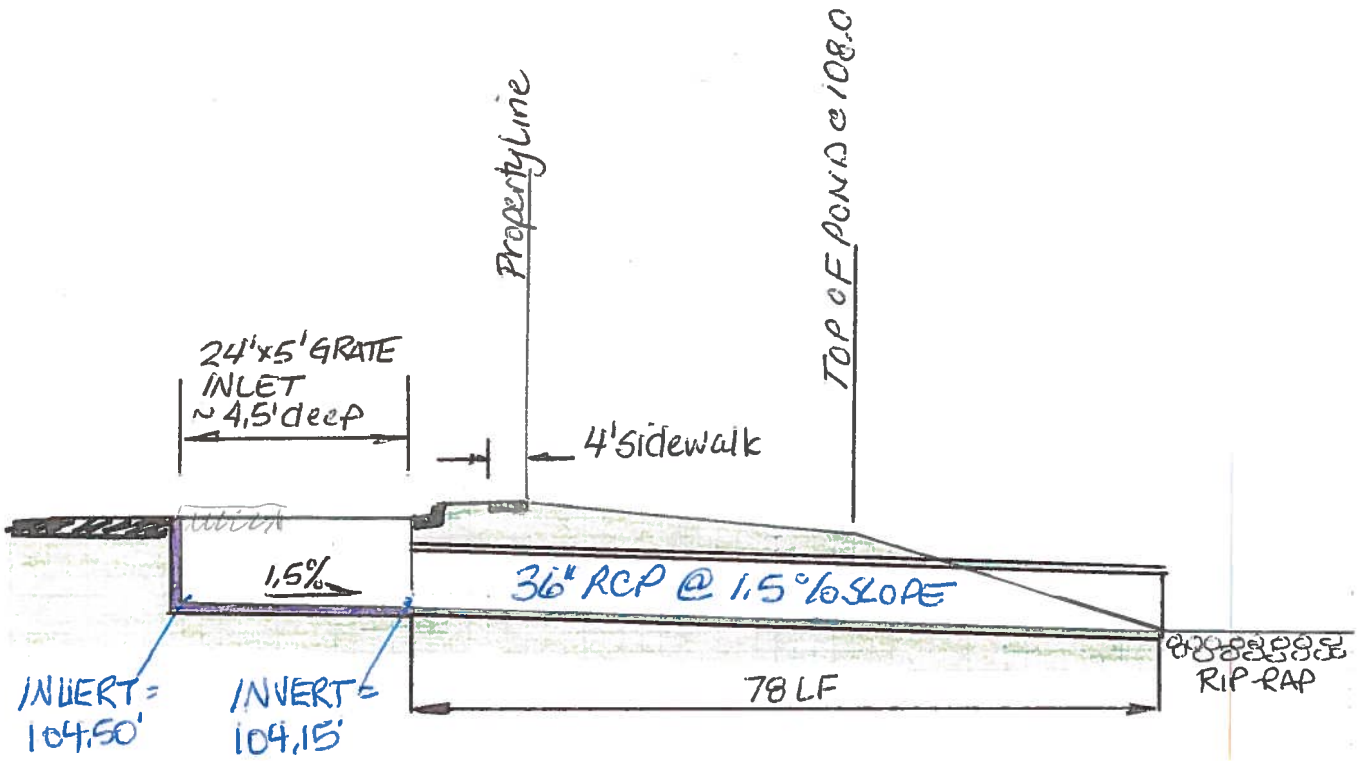
INLET 6060 DUST WAY CULDESAC TO POND

GRATE INLET DESIGN Q = 54.34 cfs

$54.34\ cfs = 3(L)(.5)^{3/2} = L = 51.23$

USE $L = 24' \times 2 = 48'$ (BOTH SIDES)

$54.34\ cfs = 3(48)(H)^{3/2}$ $H = 0.52'$



dmg
D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE,NM 87199
(505) 828-2200 FAX 797-9539

PROJECT 6060 Dust Way
SUBJECT INLET TO POND
BY DLH DATE 6-4-15
CHECKED ____ DATE ____
SHEET ____ OF ____

OUTFALL TO BLAKE ROAD STORM DRAIN 30" STUB

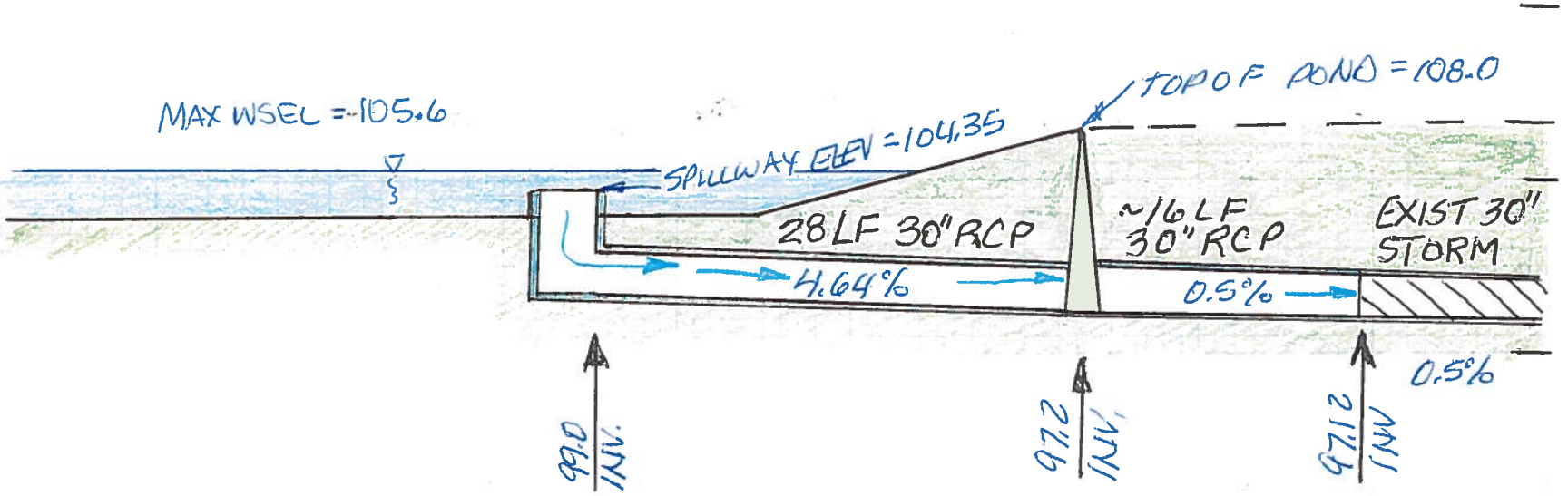
USE A 3.5' DIA. WEIR FOR OUTFALL ON A STD 4' DIA MANHOLE

$L = 2\pi R = 2\pi(1.75) = 11.0$

CALCULATE H: $50 = 3(11)(H)^{3/2}$ $H = 1.32'$ calculated.

AHYMO calculated $H = 1.25'$

104.35 + 1.25 = 105.6 (AHYMO results)
104.35 + 1.32 = 105.67 (Weir eqn. calcs) } BOTH WORK



D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE,NM 87199
(505) 828-2200 FAX 797-9539

PROJECT Los Diamantes
SUBJECT Outfall to Blake RASD
BY DLH DATE 6-4-15
CHECKED ____ DATE ____
SHEET ____ OF ____

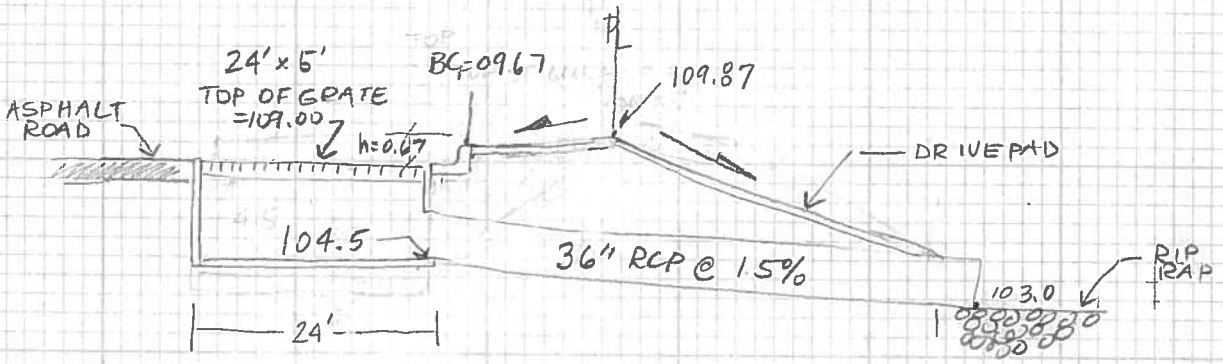
D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE, NM 87199
(505) 828-2200 FAX 797-9539

PROJECT Los Diamantes Subdivision
SUBJECT Hydrology Review Comments
BY _____ DATE _____
CHECKED _____ DATE _____
SHEET 1 OF 2

Comment # 8a + 8b on 8/12/15 Letter

Will flows from Del Timbre Lane flow over curb/drive pad before being collected by the inlet? even with 50% clogging factor on grate. Depths must be less than lowest pad elevation.

Top of Grate = 109.00
Top of Curb @ lowest point in culdesac = 109.67 (standard curb)



8a.) Using WIER EQUATION, calculate depth of flow over grate:

$Q = C_W P h^{3/2}$

$54.35 cfs = 3(24 \times 2)(h)^{3/2}$

$0.377 = h^{3/2}$

$0.52' = h$

$0.52' < 0.67'$ ∴ Flows stay in the street and do not flow through emergency overflow before being collected by the inlet.

8b) Assuming Grate is clogged by 50%:

$Q = C_W P h^{3/2}$

$54.35 = 3(24) h^{3/2}$

$0.75 = h^{3/2}$

$0.82' = h$

$0.82' < 0.87'$

∴ Flows stay within the ROW (P_L) Since P_L is the highest point, the flows do not flow through the emergency overflow before being collected by the inlet.

Lowest Pad elevation = 110.90
depth of water @ 50% clogging = 109.82

∴ Flows DO NOT encroach into private lot

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE, NM 87199
(505) 828-2200 FAX 797-9539

PROJECT Los Diamantes Subdivision
SUBJECT Hydrology Review Comments
BY _____ DATE _____
CHECKED _____ DATE _____
SHEET 2 OF 2

Comment 8a-8b on 8/12/15 Letter

ORIFACE EQUATION assuming 50% CLOGGING:

$Q = C_o A_g \sqrt{2gd}$

$Q = 54.35$

$A_g = 60\% A_{grate} = (24' \times 5')(0.6)$
$= 72 SF$

$C_o = 0.67$

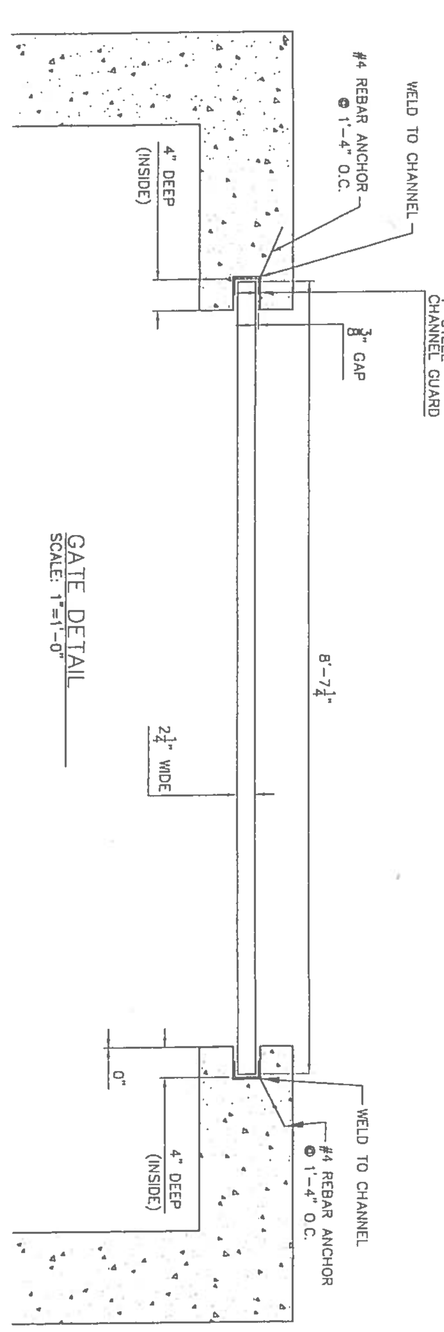
$Q = C_o (.5 A_g) \sqrt{2gd}$

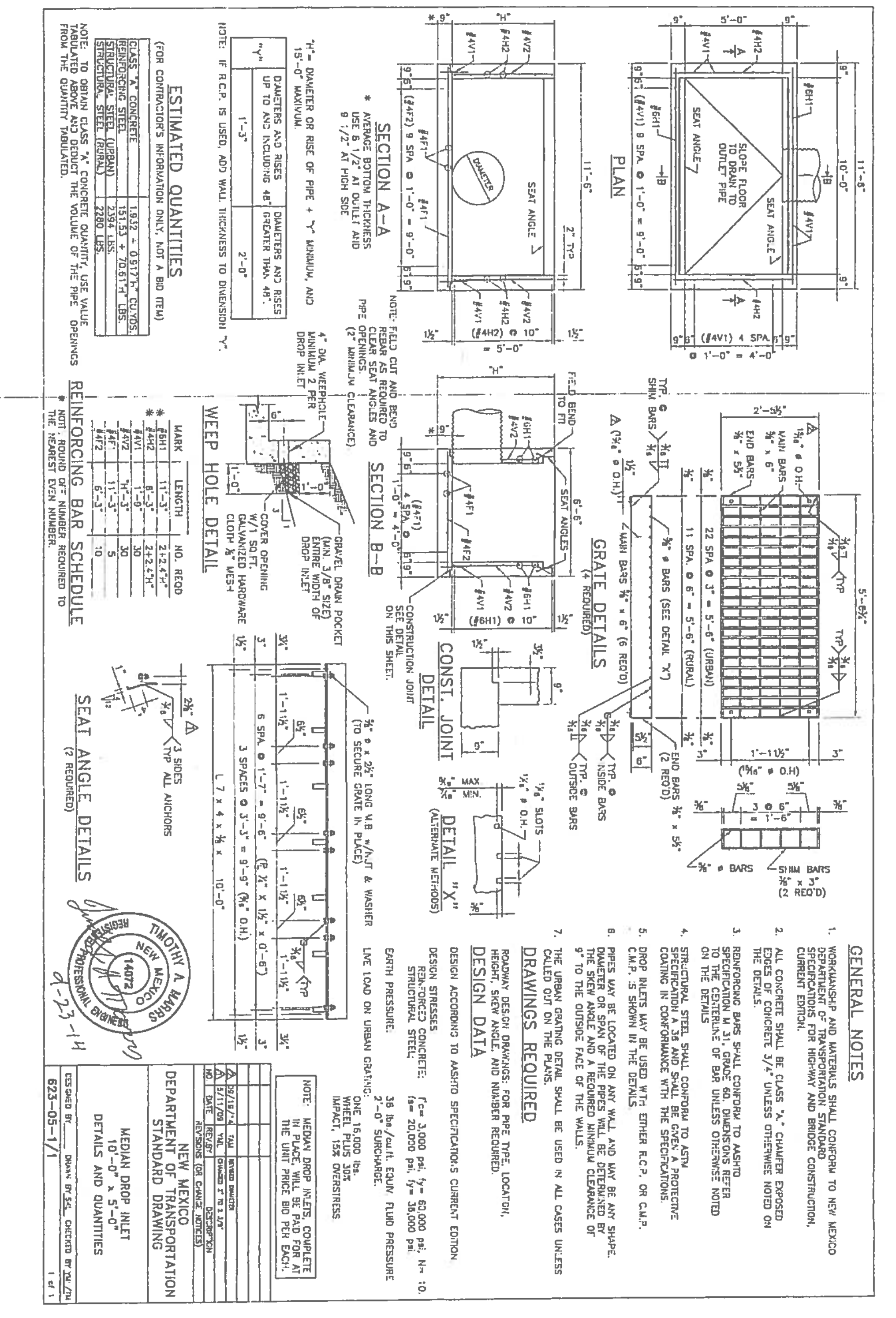
$54.35 = 0.67 (0.5 \cdot 72 SF) \sqrt{64.4} \sqrt{d}$

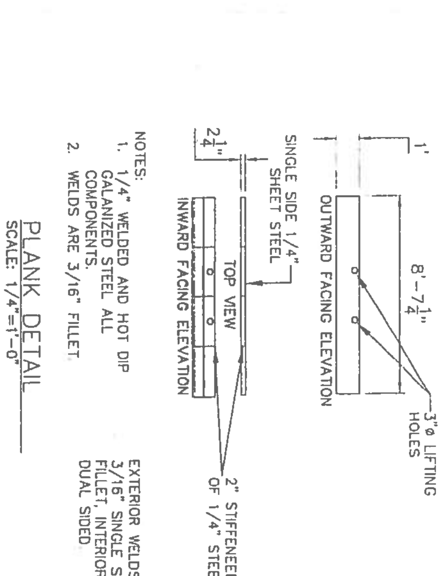
$0.28 = \sqrt{d}$

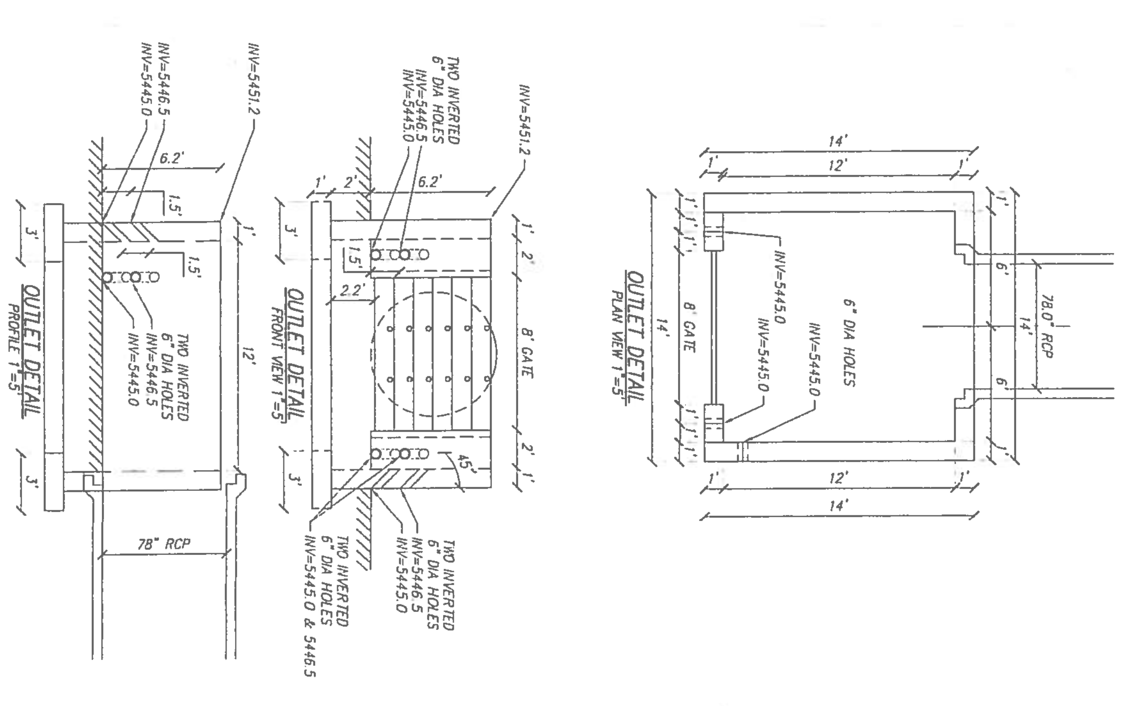
$0.08' = d$

$0.08' < 0.67$ ∴ even based on orifice equation, depth of flow is less than curb height so flow stays in street.









STANDARD GRATE DETAIL FOR INLET

STONEGATE-PHASE I	OWNER/DEVELOPER Coal Bank Holdings, Ltd.
STORM DRAINAGE DETAILS	MARK GOODWIN & ASSOCIATES, P.A. CONSULTING ENGINEERS P.O. BOX 90606 ALBUQUERQUE, NEW MEXICO 87199 (505)828-2200, FAX (505)797-9539

NO.	DESCRIPTION	DATE	BY
7			
6			
5			
4			
3			
2			
1			

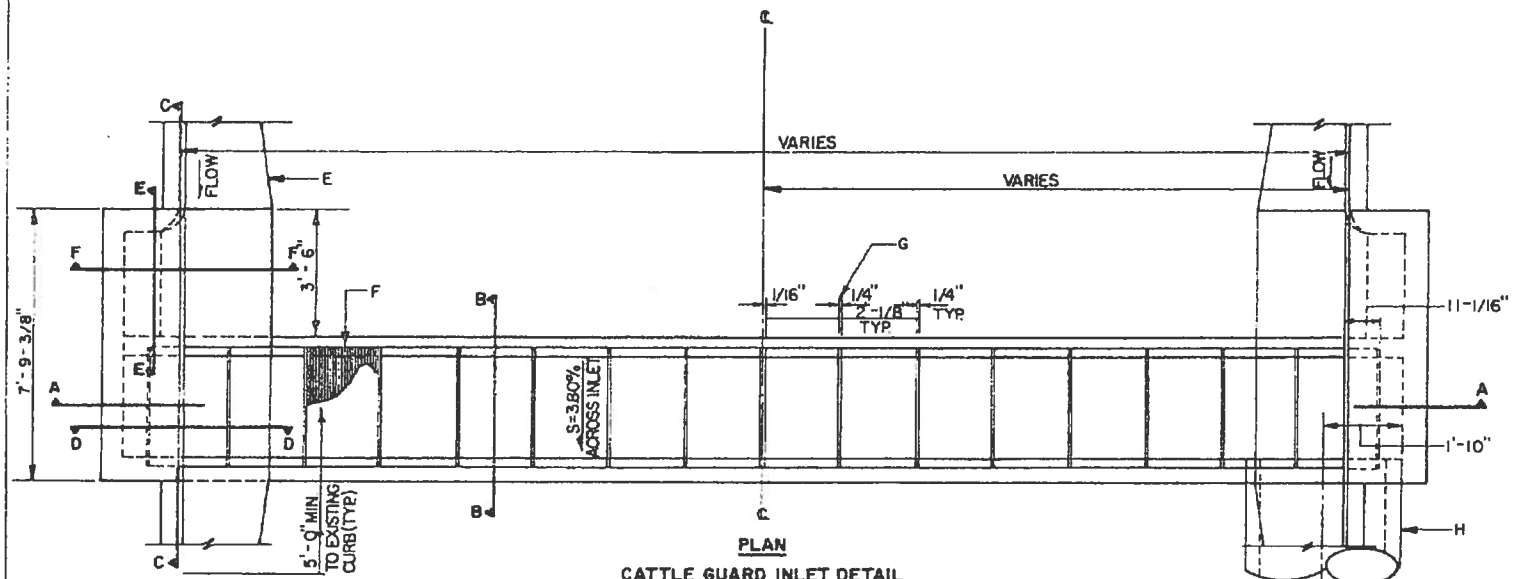
REVISIONS (OR CHANGE NOTICES)

City of Rio Rancho

ENGINEER'S SEAL

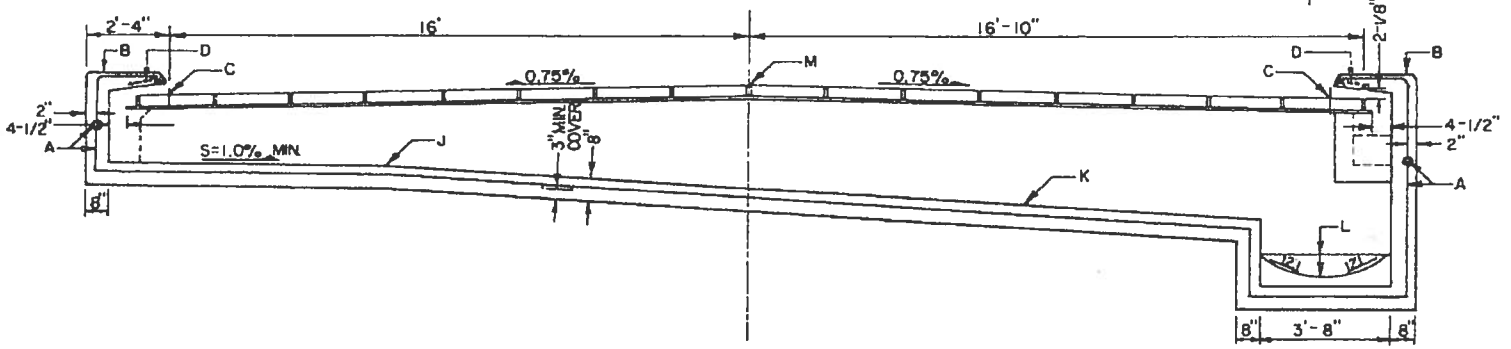
PROJECT NO. A11013
DESIGNED BY: JDH
DRAWN BY: SPS
CHECKED BY: DMG
DATE: 11/13/14
DPW CHK:

SHEET: 71 of 71



PLAN

CATTLE GUARD INLET DETAIL



SECTION A-A

NOTE: SEE DWG. 2272 FOR SECTIONS B-B, C-C, D-D, E-E, AND F-F.

GENERAL NOTES

1. ALL EXPOSED METAL PARTS SHALL BE PAINTED PRIOR TO ASSEMBLY. WELDING, MACHINING AND DRILLING SHALL BE DONE PRIOR TO PAINTING. ALL DIMENSIONS ARE FINISH DIMENSIONS.
2. ALL PARTS SHALL BE OF STRUCTURE STEEL, GRADE 36.
3. FOR CLEANING AND PAINTING OF FRAME SEE DWG. 2215, GENERAL NOTE NO. 4.
4. FRAME MAY BE WELDED OR RIVETED.

CONSTRUCTION NOTES

A. NO. 4 BARS AT 6" O.C. EACH WAY.
B. TOP OF CURB.
C. CURB FLOWLINE.
D. ANGLE ANCHOR DETAIL, SEE DWG. 2205.
E. SEE CITY OF ALBUQUERQUE STD. DWG. 2207 FOR STORM INLET GUTTER TRANSITION.
F. GRATE PER CITY OF ALBUQUERQUE STD. DWG. 2220 (TYP.) 16 TOTAL MODIFIED WITH 1" GAP COVER PLATE PER DETAIL THIS SHEET.
G. 1/4" SPACE BETWEEN GRATER (TYP.).
H. OUTLET STORM DRAINAGE HORIZONTAL AND VERTICAL LOCATION MAY VARY PER SPECIFIC PROJECT.
J. GRADE BREAK.
K. GRADE BREAK LOCATIONS AND SLOPE MAY VARY DEPENDING ON LOCATION OF INLET.
L. CONCRETE FILL MINIMUM LONGITUDINAL SLOPE 4:1.
M. CROWN.

CITY OF ALBUQUERQUE

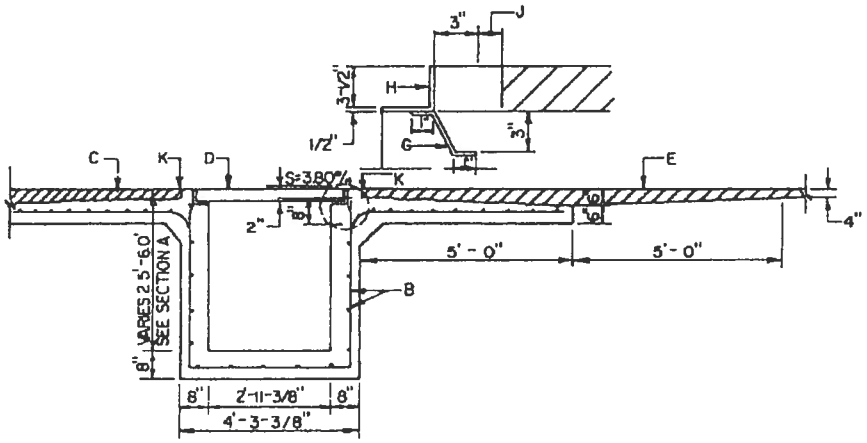
REVISIONS

DRAINAGE

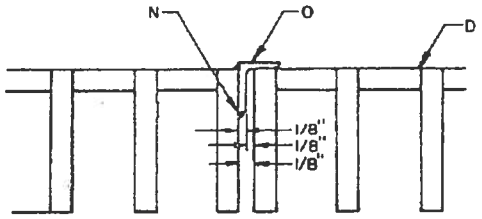
CATTLE GUARD INLET

DWG. 2271

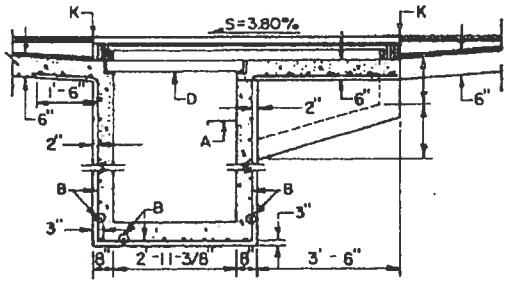
APRIL 1992



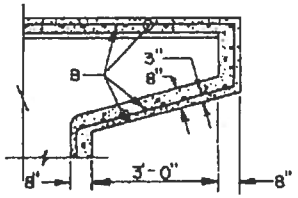
SECTION B-B



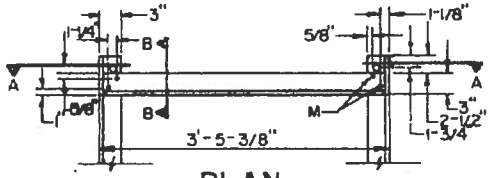
GRATE CAP COVER PLATE DETAIL



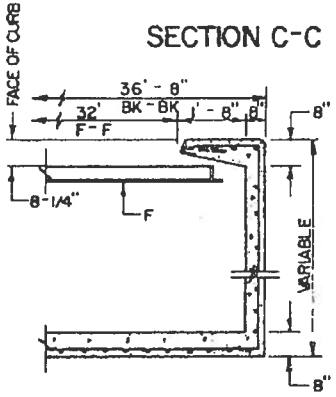
SECTION C-C



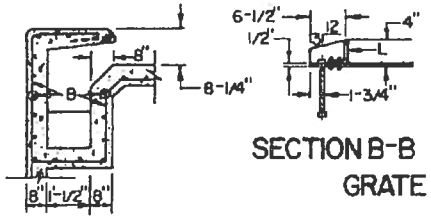
SECTION E-E



PLAN

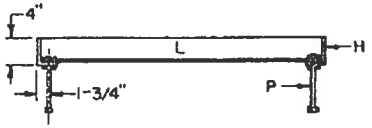


SECTION D-D



SECTION F-F

SECTION B-B



SECTION A-A

GRATE FPAME END DETAIL

NOTE:
SEE DWG. 2271 FOR ADDITIONAL CATTLE GUARD INLET DETAIL

GENERAL NOTES

1. ALL EXPOSED METAL PARTS SHALL BE PAINTED PRIOR TO ASSEMBLY. WELDING, MACHINING AND DRILLING SHALL BE DONE PRIOR TO PAINTING. ALL DIMENSIONS ARE FINISH DIMENSIONS.
2. ALL PARTS SHALL BE OF STRUCTURE STEEL, GRADE 36.
3. FOR CLEANING AND PAINTING OF FRAME SEE DWG. 2215, GENERAL NOTE NO. 4.
4. FRAME MAY BE WELDED OR RIVETED.

CONSTRUCTION NOTES

A. FOR STORM INLET DEPTHS GREATER THAN 4'. INSTALL STD. STEPS, SEE STD. DETAIL.
B. NO. 4 BARS AT 6" O.C. EACH WAY.
C. ROUGH TEXTURE CONCRETE SURFACE (TYP.)
D. GRATE.
E. THICKEN ASPHALT PAVEMENT TO 6" AT EDGE OF APRON BOTH SIDES OF INLET (TYP.)
F. GRATE FRAME.
G. 1" X 1/8" STEEL STRAP-WELD TO ANGLE 6" O.C.
H. 4" X 3" X 1/2".
J. 2" CLEARANCE.
K. SEE PLAN.
L. 3-1/2" X 3" X 3/8" X 3'-4"-3/8".
M. 2-3/8" RIVETS AT EACH CORNER, SEE GENERAL NOTE NO. 4.
N. 1/8" FILLET WELD 2" LONG AT 6" O.C. (TYP.)
O. 1/2" X 1" X 1/8" STEEL ANGLE FULL LENGTH OF GRATE ONE SIDE ONLY EACH GRATE.
P. FOUR (4) EACH 1/2" x 8" BOLTS WITH SQUARE HEADS AND NUTS. ONE BOLT AT EACH CORNER FOR ANCHORING THE FRAME INTO THE CONCRETE WALL.

CITY OF ALBUQUERQUE

REVISIONS

DRAINAGE

CATTLE GUARD INLET

DWG. 2272

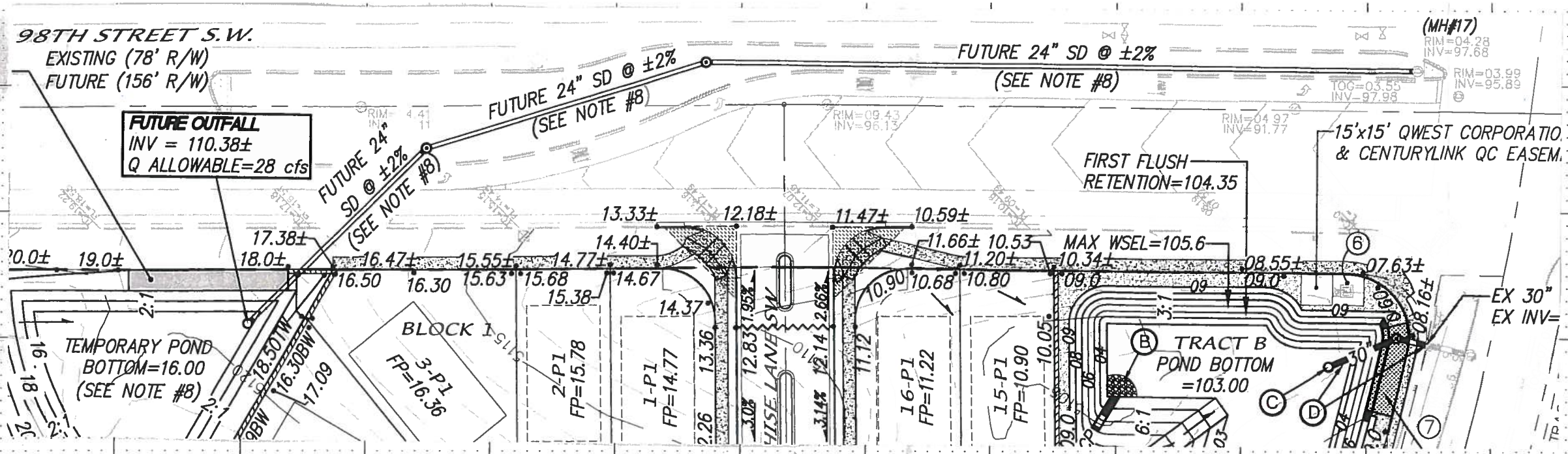
APRIL 1992

Appendix D

Tract A Temporary Pond

Preliminary Plan and Profile

Ahymo printout



Q CAP (24" RCP @ 2%)
= 32 cfs.
∴ HGL JUST BELOW
TOP OF PIPE

120 LF 24" RCP
SLOPE = 2%
Q = 28 cfs

140 LF 24" RCP
SLOPE = 2%
Q = 28 cfs

340 LF 24" RCP
SLOPE = 2%
Q = 28 cfs

HGL

HGL

120
110
100
90

10+00 POND OUTFALL
INV = 110.13
POND BOTTOM = 116.00±

11+20 NEW M.H
INV(N) = 107.73
INV(S) = 107.68
RIM = 114.00±

12+60 NEW M.H
INV(N) = 104.88
INV(S) = 104.83
RIM = 112.50±

16+00 EXIST M.H
INV = 97.98± EXIST
INV(N) = 98.03
RIM = 104.28 EXIST

10+00 11+00 12+00 13+00 14+00 15+00 16+00

98TH ST. STORM DRAIN - PRELIMINARY P+P.

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE,NM 87199
(505) 828-2200 FAX 797-9539

PROJECT Los Diamantes
SUBJECT Temporary Retention P.
BY DLH DATE 6-23-15
CHECKED _____ DATE _____
SHEET ____ OF ____

TRACT A - Temporary Retention Pond.

Design Details:

Design Volume = 15,189 CF
Req'd Volume = 13,874 CF
TOP POND = 18.0
BOTTOM POND = 16.00
Max WSEL (100 YR) = 17.84
SPILLWAY ELEV = 18.00 (EMERGENCY OVERFLOW)
Q_{100} (TRACT A) = 10.6 cfs

$Q = 3 \cdot L \cdot H^{3/2}$
$10.6 = 3 \cdot 76 (H)^{3/2}$
$H = .13' = 1.55''$ (depth over spillway

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE,NM 87199
(505) 828-2200 FAX 797-9539

PROJECT
SUBJECT Hydrology Review Comments
BY DATE
CHECKED DATE
SHEET 1 OF 1

Comment #4 on 8/12/15 Letter

TRACT A

- $Q_{ALLOWABLE} = 29.30$ CFS

- Does 24" SD still work?

$$\text{slope} = \frac{110.38' - 97.68'}{600'} = 2.12\%$$

Design calls for ± 2.0%

Per DPM Plate 22.3 B-5 K for 24" pipe = 226.2

$$Q = K S^{1/2}$$

$$= 226.2 \left(\sqrt{0.02'}\right)$$

$$= 32.00 \text{ CFS}$$

since Capacity 32.00 CFS > Allowable 29.30 CFS

YES; 24" SD has capacity for allowable flows from Tract A.

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE,NM 87199
(505) 828-2200 FAX 797-9539

PROJECT Los Damantes Subdivisi
SUBJECT Hydrology Review Comments
BY _____ DATE _____
CHECKED _____ DATE _____
SHEET 1 OF 1

Comment #6 on 8/12/15 Letter

TRACT A RETENTION POND VOLUME:

- Per DPM 22-5I, retention ponds must be designed for the 100 yr-10 day storm
- Per DPM 22-2, Part A.5

1. $A_A = 5.67$ ac $\quad E_A = 0.44$
   $A_B = 0$ AC $\quad E_B = 0.67$
   $A_C = 0$ AC $\quad E_C = 0.99$
   $A_D = 0$ AC $\quad E_D = 1.97$

2) compute E =

$$E = \frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$$

$$E = \frac{(0.44)(5.67) + 0 + 0 + 0}{5.67 + 0 + 0 + 0}$$

$E = 0.44''$

3.) $Volume_{360} = E(A_A + A_B + A_C + A_D)$

$V = (0.44'')(5.67')/12$

$Vol = 0.21$ ac-ft *

* AHYMO calculates Volume @ 0.32 ac-ft > 0.21
∴ 0.32 ac-ft is more conservative.

- FOR 10 day storms use equation a-9 in DPM

$$V_{10days} = V_{360} + A_D \cdot (P_{10days} - P_{360})/12$$

$V_{10days} = 0.32^{*} + 0$

$V_{10days} = 0.32$ ac-ft ✓ Required for Retention

0.35 ac-ft Provided on Plan.

```
    AHYMO PROGRAM (AHYMO-S4)                    - Version: S4.01a - Rel: 01a
         RUN DATE (MON/DAY/YR) = 06/05/2015
         START TIME (HR:MIN:SEC) = 09:34:03     USER NO.= M-GoodwinNMSiteA90075759
         INPUT FILE = C:\Program Files (x86)\AHYMO-S4\LASDIA_1.DAT

*S*********************************************************
*S
*S                  Los DIAMONTES
*S                  100 YEAR 6 HOUR STORM EVENT
*S
*S                  FILE: LASDIA_1.DAT
*S                  LAST REVISED: 6-5-15
*S                  NOAA ATLAS 2, VOL IV ZONE N 9
START               TIME=0.0 HR PUNCH CODE=0 PRINT LINES=-6
LOCATION            ALBUQUERQUE
     City of Albuquerque soil infiltration values (LAND FACTORS) used for computations.
     Land Treatment     Initial Abstr.(in)    Unif. Infilt.(in/hour)
          A             0.65                  1.67
          B             0.50                  1.25
          C             0.35                  0.83
          D             0.10                  0.04

RAINFALL            TYPE=1 RAIN QUARTER=0.0
                    RAIN ONE=1.90 IN RAIN SIX=2.23 IN
                    RAIN DAY=2.70 IN DT=0.01 HRS

               6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1
               DT =   0.010000 HOURS       END TIME =     6.000000 HOURS
                 0.0000  0.0004  0.0009  0.0013  0.0018  0.0022  0.0026
                 0.0031  0.0035  0.0040  0.0045  0.0050  0.0055  0.0059
                 0.0064  0.0069  0.0074  0.0079  0.0085  0.0090  0.0096
                 0.0101  0.0107  0.0112  0.0118  0.0123  0.0129  0.0136
                 0.0142  0.0148  0.0154  0.0160  0.0167  0.0173  0.0184
                 0.0197  0.0211  0.0224  0.0237  0.0251  0.0264  0.0277
                 0.0291  0.0306  0.0321  0.0336  0.0351  0.0367  0.0382
                 0.0397  0.0412  0.0428  0.0445  0.0461  0.0477  0.0494
                 0.0510  0.0527  0.0543  0.0560  0.0577  0.0595  0.0612
                 0.0629  0.0647  0.0664  0.0681  0.0699  0.0717  0.0735
                 0.0753  0.0771  0.0790  0.0808  0.0826  0.0844  0.0864
                 0.0885  0.0905  0.0926  0.0946  0.0966  0.0987  0.1007
                 0.1029  0.1052  0.1076  0.1099  0.1122  0.1145  0.1168
```

0.1191	0.1225	0.1280	0.1335	0.1390	0.1445	0.1500
0.1555	0.1610	0.1665	0.1738	0.1812	0.1886	0.1959
0.2033	0.2107	0.2180	0.2254	0.2347	0.2450	0.2553
0.2656	0.2759	0.2862	0.2965	0.3068	0.3189	0.3343
0.3498	0.3653	0.3807	0.3962	0.4117	0.4271	0.4426
0.4693	0.4960	0.5227	0.5494	0.5761	0.6029	0.6296
0.6563	0.7126	0.7837	0.8549	0.9260	0.9972	1.0683
1.1395	1.2106	1.2712	1.3106	1.3501	1.3895	1.4289
1.4684	1.5078	1.5472	1.5867	1.6065	1.6263	1.6461
1.6659	1.6858	1.7056	1.7254	1.7452	1.7601	1.7726
1.7851	1.7976	1.8101	1.8225	1.8350	1.8475	1.8587
1.8674	1.8760	1.8847	1.8933	1.9020	1.9106	1.9193
1.9279	1.9343	1.9406	1.9469	1.9533	1.9596	1.9659
1.9723	1.9786	1.9839	1.9887	1.9935	1.9983	2.0031
2.0079	2.0127	2.0175	2.0214	2.0236	2.0257	2.0279
2.0301	2.0322	2.0344	2.0366	2.0387	2.0407	2.0426
2.0445	2.0464	2.0483	2.0503	2.0522	2.0541	2.0558
2.0574	2.0589	2.0605	2.0621	2.0637	2.0652	2.0668
2.0683	2.0698	2.0712	2.0726	2.0741	2.0755	2.0770
2.0784	2.0799	2.0812	2.0826	2.0840	2.0854	2.0868
2.0882	2.0896	2.0910	2.0919	2.0925	2.0932	2.0939
2.0946	2.0952	2.0959	2.0966	2.0972	2.0979	2.0985
2.0992	2.0998	2.1005	2.1011	2.1018	2.1024	2.1030
2.1036	2.1042	2.1048	2.1054	2.1060	2.1066	2.1072
2.1078	2.1084	2.1090	2.1096	2.1102	2.1107	2.1113
2.1119	2.1125	2.1131	2.1136	2.1142	2.1147	2.1153
2.1159	2.1164	2.1170	2.1175	2.1181	2.1186	2.1191
2.1197	2.1202	2.1207	2.1213	2.1218	2.1223	2.1228
2.1233	2.1238	2.1244	2.1249	2.1254	2.1259	2.1264
2.1269	2.1274	2.1279	2.1284	2.1289	2.1294	2.1299
2.1304	2.1309	2.1313	2.1318	2.1323	2.1328	2.1332
2.1337	2.1342	2.1346	2.1351	2.1356	2.1360	2.1365
2.1370	2.1374	2.1379	2.1383	2.1388	2.1392	2.1397
2.1401	2.1406	2.1410	2.1415	2.1419	2.1424	2.1428
2.1432	2.1436	2.1441	2.1445	2.1449	2.1454	2.1458
2.1462	2.1466	2.1470	2.1475	2.1479	2.1483	2.1487
2.1491	2.1495	2.1500	2.1504	2.1508	2.1512	2.1516
2.1520	2.1524	2.1528	2.1532	2.1536	2.1540	2.1544
2.1548	2.1552	2.1556	2.1560	2.1564	2.1568	2.1572
2.1576	2.1580	2.1584	2.1588	2.1591	2.1595	2.1599
2.1603	2.1607	2.1611	2.1614	2.1618	2.1622	2.1626
2.1630	2.1633	2.1637	2.1641	2.1645	2.1648	2.1652
2.1656	2.1660	2.1663	2.1667	2.1671	2.1674	2.1678

```
2.1682  2.1685  2.1689  2.1693  2.1696  2.1700  2.1703
2.1707  2.1711  2.1714  2.1718  2.1721  2.1725  2.1728
2.1732  2.1736  2.1739  2.1743  2.1746  2.1750  2.1753
2.1757  2.1760  2.1763  2.1767  2.1770  2.1774  2.1777
2.1781  2.1784  2.1788  2.1791  2.1794  2.1798  2.1801
2.1805  2.1808  2.1811  2.1815  2.1818  2.1821  2.1825
2.1828  2.1831  2.1835  2.1838  2.1841  2.1844  2.1848
2.1851  2.1854  2.1858  2.1861  2.1864  2.1867  2.1871
2.1874  2.1877  2.1880  2.1883  2.1887  2.1890  2.1893
2.1896  2.1899  2.1903  2.1906  2.1909  2.1912  2.1915
2.1918  2.1921  2.1925  2.1928  2.1931  2.1934  2.1937
2.1940  2.1943  2.1946  2.1949  2.1952  2.1955  2.1959
2.1962  2.1965  2.1968  2.1971  2.1974  2.1977  2.1980
2.1983  2.1986  2.1989  2.1992  2.1995  2.1998  2.2001
2.2004  2.2007  2.2010  2.2013  2.2015  2.2018  2.2021
2.2024  2.2027  2.2030  2.2033  2.2036  2.2039  2.2042
2.2045  2.2047  2.2050  2.2053  2.2056  2.2059  2.2062
2.2065  2.2068  2.2070  2.2073  2.2076  2.2079  2.2082
2.2085  2.2087  2.2090  2.2093  2.2096  2.2099  2.2101
2.2104  2.2107  2.2110  2.2112  2.2115  2.2118  2.2121
2.2123  2.2126  2.2129  2.2132  2.2134  2.2137  2.2140
2.2143  2.2145  2.2148  2.2151  2.2153  2.2156  2.2159
2.2161  2.2164  2.2167  2.2170  2.2172  2.2175  2.2177
2.2180  2.2183  2.2185  2.2188  2.2191  2.2193  2.2196
2.2199  2.2201  2.2204  2.2206  2.2209  2.2212  2.2214
2.2217  2.2219  2.2222  2.2225  2.2227  2.2230  2.2232
2.2235  2.2237  2.2240  2.2242  2.2245  2.2248  2.2250
2.2253  2.2255  2.2258  2.2260  2.2263  2.2265  2.2268
2.2270  2.2273  2.2275  2.2278  2.2280  2.2283  2.2285
2.2288  2.2290  2.2293  2.2295  2.2298  2.2300
```

```
*S************************************************************
*** ******************
*S  LOS DIAMONTES Tract A (UNDEVELOPED)
*** ******************
*** AREA = 5.6729 ACRES
*** AREA = 247,111 SF
*** ******************
COMPUTE NM HYD       ID=1  HYD NO=100 AREA= 0.008864 SQ MI
                     PER A=100  PER B=0  PER C=0  PER D=0
                     TP=-.1333 HR  MASS RAIN=-1

     K =  0.162928HR    TP =  0.133300HR    K/TP RATIO =  1.222262     SHAPE CONSTANT, N =  2.911823
```

```
     UNIT PEAK =    18.257     CFS    UNIT VOLUME =    0.9992        B =    274.56       P60 = 1.9000
     AREA =      0.008864 SQ MI     IA =    0.65000 INCHES     INF =    1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.010000

PRINT HYD             ID=1 CODE=1

                                    PARTIAL HYDROGRAPH    100.00

     RUNOFF VOLUME =      0.67376 INCHES      =        0.3185 ACRE-FEET
     PEAK DISCHARGE RATE =       10.60 CFS  AT    1.540 HOURS    BASIN AREA =  0.0089 SQ. MI.


FINISH

     NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 09:34:03
```

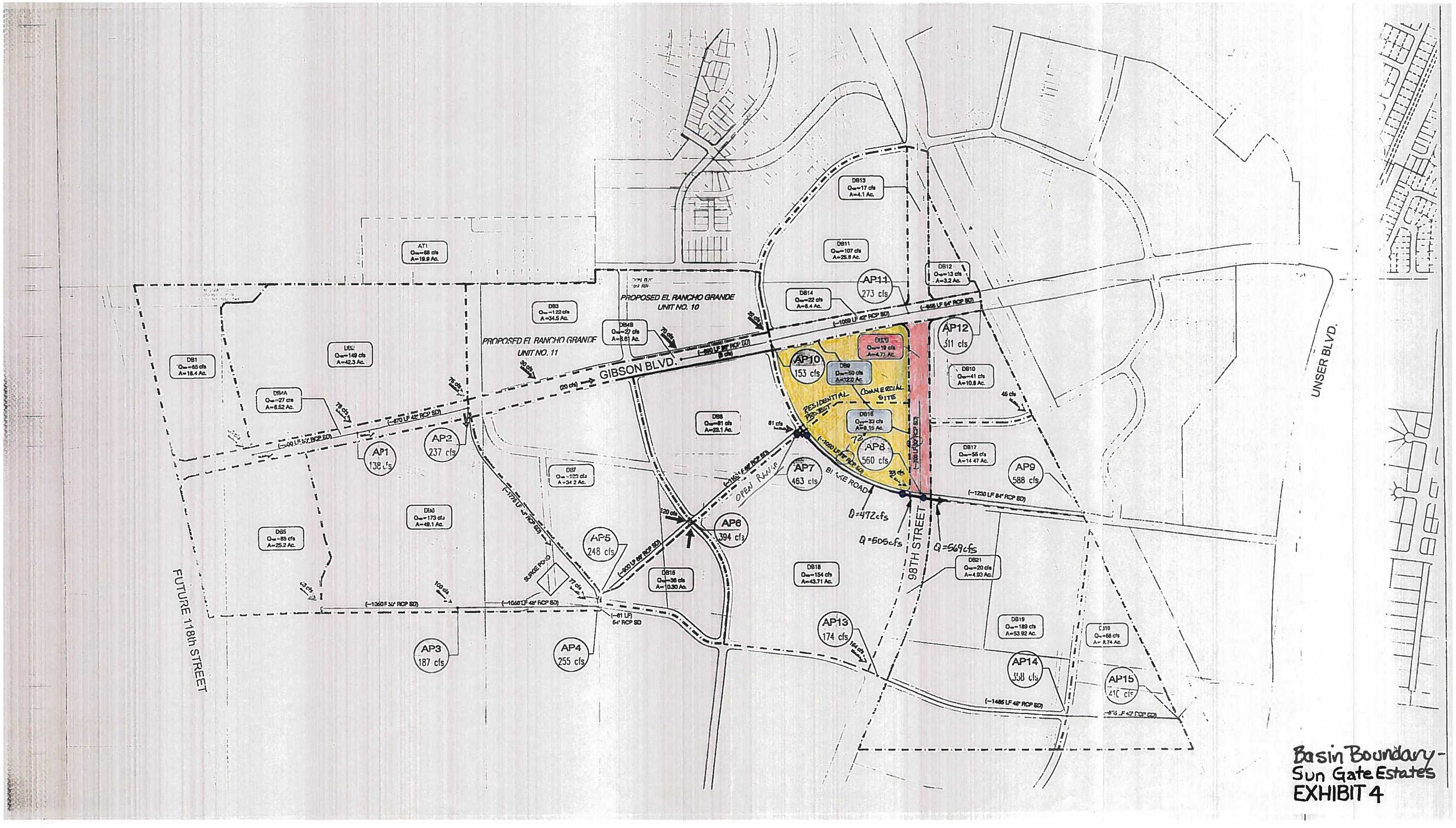
=13,874CF (refer to GRD Plan)

Appendix E

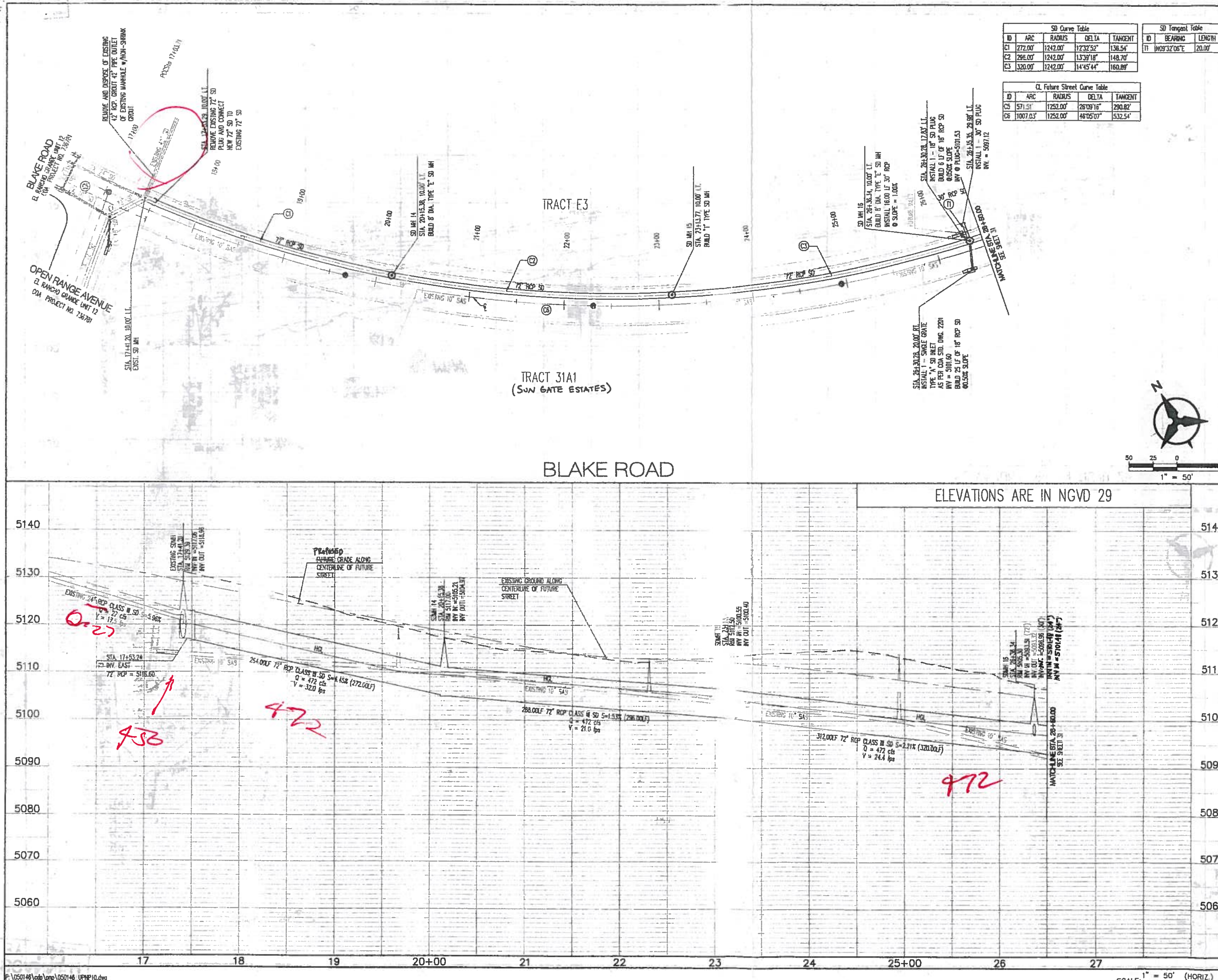
Sun Gate Estates Basin Boundary Exhibit 4

Sun Gate Estates Phase I Utility P&P sheet 30-31

Excerpts from Amole Hubbell 2013 Master Drainage Plan (AMAFCA)



Basin Boundary -
Sun Gate Estates
EXHIBIT 4



SD Curve Table				
ID	ARC	RADIUS	DELTA	TANGENT
C1	272.00'	1242.00'	12°32'52"	136.54'
C2	295.00'	1242.00'	13°39'18"	148.70'
C3	320.00'	1242.00'	14°45'44"	160.89'

SD Tangent Table		
ID	BEARING	LENGTH
T1	N09°32'06"E	20.00'

CL Future Street Curve Table				
ID	ARC	RADIUS	DELTA	TANGENT
C5	571.51'	1252.00'	26°09'16"	290.82'
C6	1007.03'	1252.00'	46°05'07"	532.54'

SCALE: 1" = 50' (HORIZ.) 1" = 10' (VERT.)

P:\050146\cdp\pnp\050146_UPNP10.dwg February 03, 2005 - 7:16am

GENERAL NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. ALL CURVE DATA AND DIMENSIONS ARE CALCULATED FROM CENTERLINE OF PIPE OR MANHOLE. ALL SAS & SD SLOPES ARE CALCULATED TO TRUE PIPE DIMENSIONS FROM INVERT TO INVERT. (PAY ITEMS ARE SHOWN IN PARENTHESES)
3. GRADE ELEVATIONS, WHERE NOTED, ARE FOR FLOWLINE OF STANDARD CURB UNLESS OTHERWISE SPECIFIED.
4. CONTRACTOR IS TO INSTALL A 4" X 4" X 5' POST AND EMD AT THE END OF EACH SANITARY SEWER SERVICE.
5. CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ALL UTILITY CONDUITS AND EXISTING LINES.
6. CONTRACTOR SHALL PROVIDE THE INSPECTORS WITH THE PROPOSED TESTING PLAN. THE PLAN MUST BE APPROVED BEFORE TESTING OPERATIONS BEGIN.
7. CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES AS NOT TO INTERFERE WITH NORMAL ACTIVITIES OF RESIDENTS OR OTHER CONTRACTORS ON SITE.
8. ANY DAMAGE TO THE EXISTING FACILITIES (CURB & GUTTER, PAVEMENT, CONDUITS, LANDSCAPING, UTILITY LINES, ETC.) DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS' EXPENSE.
9. MH RIMS & CATCH BASIN INLET ELEVATIONS, FIRE HYDRANT & FLANGE ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY AND ADJUST TO FINAL PAVEMENT GRADES.
10. SAS STATIONING FOLLOWS CL OF ROAD UNLESS OTHERWISE NOTED.
11. STATIONING OF DROP INLET IS TO MIDDLE OF DOWN HILL GRATE AT FACE OF CURB.
12. FLOWLINE ELEVATIONS FOR DROP INLETS ARE PROJECTED FROM FLOWLINE OF STANDARD CURB TO MIDDLE OF DOWNHILL GRATE.
13. FOR STORM DRAIN CONSTRUCTION: ALL RCP JOINTS SHALL NOT BE GROUTED PRIOR TO FINAL INSPECTION. FINAL INSPECTION SHALL DETERMINE WHICH JOINTS ARE TO BE GROUTED FOR FINAL ACCEPTANCE OF THE CONSTRUCTION.

LEGEND

- DOUBLE WATER METER
- SINGLE WATER METER
- WATER LINE SHUTOFF VALVE
- WATER LINE TEE
- SAS LATERAL
- SAS MANHOLE
- STORM DRAIN MANHOLE
- STORM DRAIN INLET
- PROPOSED FIRE HYDRANT
- EXISTING WATER VALVE
- PROPOSED STREET LIGHT

AS-BUILT INFORMATION

CONTRACTOR: New Constructs — DATE
STAKED BY: AIS — DATE
INSPECTOR'S ACCEPTANCE BY: L.C.L. — DATE 10/05
FIELD VERIFICATION BY: AIS — DATE 9/05
DRAWINGS CORRECTED BY: AIS — DATE 9/05

MICRO-FILM INFORMATION

RECORDED BY — DATE
NO.

BENCH MARKS

ACS BRASS TABLET STAMPED "TRANS"
Geographic Position (NAD 1927)
N.M. State Plane Coordinates (Central Zone)
X= 354,899.45 Y= 1,471,822.67
Ground-to-Grid Factor= 0.99967921(As Published)
Δα = -00°16'42"
SLD 1929 Elevation = 5118.370

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

CHRISTIAN J. ... NEW MEXICO 16144 LICENSED PROFESSIONAL ENGINEER
2-9-05

No.	Date	REMARKS	By
		REVISIONS	
		DESIGN	

Designed By: CJS — DATE: 07/27/04
Drawn By: BJG — DATE: 07/27/04
Checked By: CJS — DATE: 08/19/04

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

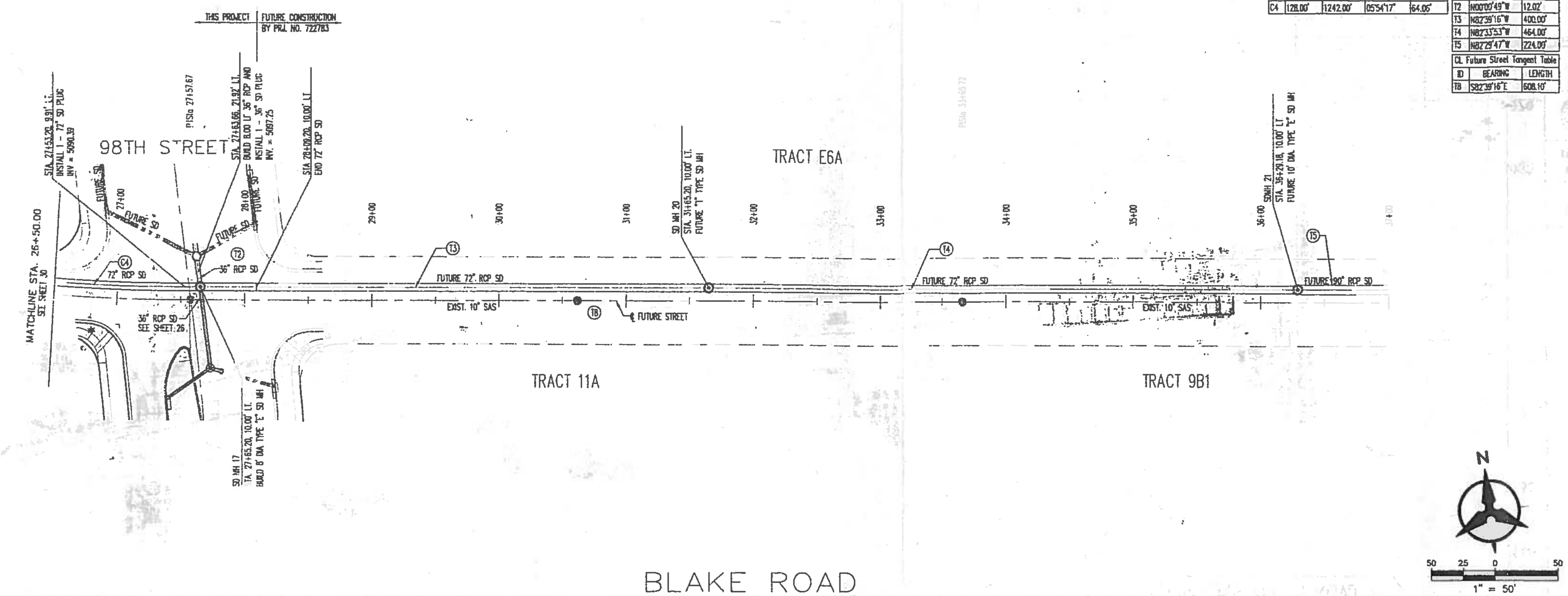
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

SUN GATE ESTATES PHASE I
UTILITY PLAN AND PROFILE
BLAKE ROAD

Design Review Committee: APPROVED — DESIGN REVIEW COMMITTEE
City Engineer Approval: APPROVED MAR - 1 2005 CITY ENGINEER
Last Design Update
Mo./Day/Yr. Mo./Day/Yr.

City Project No. 736782 | Zone Map No. N-9-Z | Sheet 30 of 37

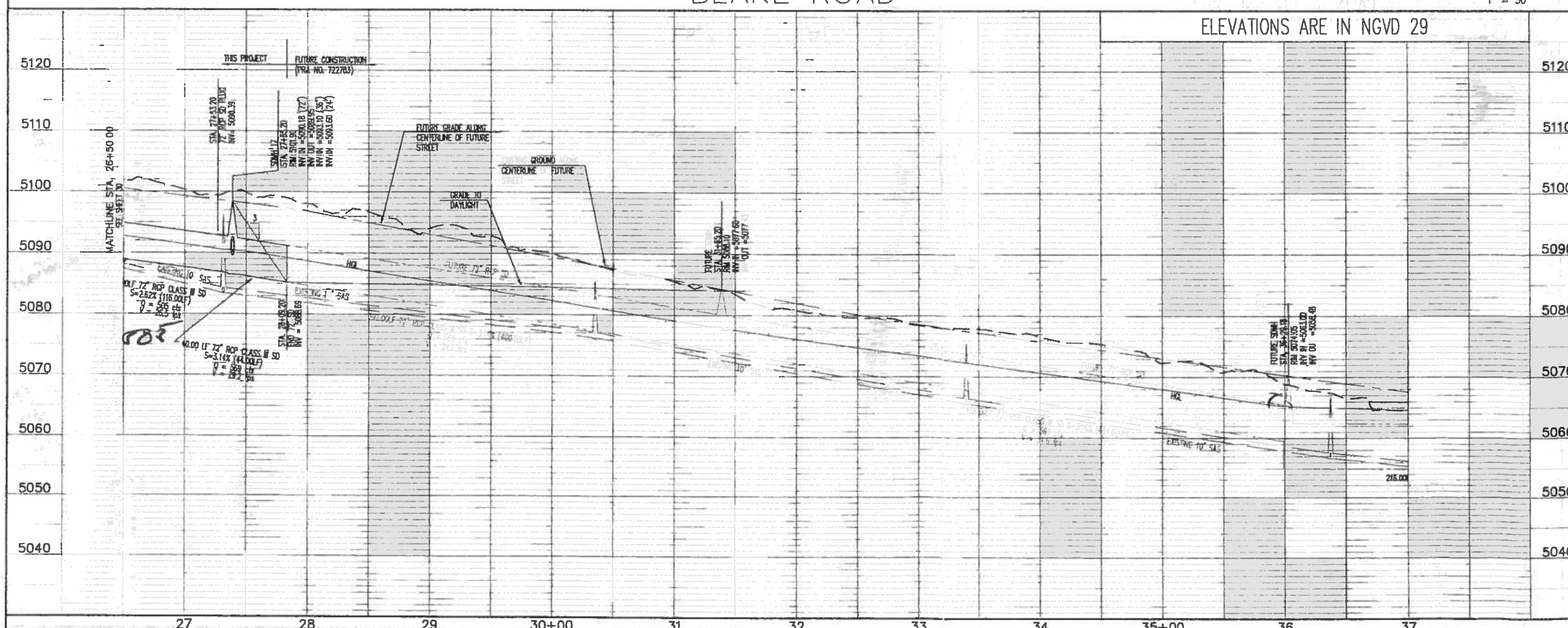
31



SD Curve Table				
ID	ARC	RADIUS	DELTA	TANGENT
C4	128.00'	1242.00'	05°54'17"	64.06'

SD Tangent Table		
ID	BEARING	LENGTH
T2	N00°00'49"W	12.02'
T3	N82°39'16"W	400.00'
T4	N82°33'53"W	464.00'
T5	N82°29'47"W	224.00'

CL Future Street Tangent Table		
ID	BEARING	LENGTH
T8	S82°39'16"E	608.10'



SCALE: 1" = 50' (HORIZ.) 1" = 10' (VERT.)

ENERAL NOTES

THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

ALL CURVE DATA AND DIMENSIONS ARE CALCULATED FROM CENTERLINE OF PIPE OR MANHOLE. ALL SAS & SD SLOPES ARE CALCULATED TO TRUE PIPE DIMENSIONS FROM INVERT TO INVERT. (PAY ITEMS ARE SHOWN IN PARENTHESES)

3. GRADE ELEVATIONS, WHERE NOTED, ARE FOR FLOWLINE OF STANDARD CURB UNLESS OTHERWISE SPECIFIED.
4. CONTRACTOR IS TO INSTALL A 4" X 4" X 5' POST AND END AT THE END OF EACH SANITARY SEWER SERVICE.
5. CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ALL UTILITY CONDUITS AND EXISTING LINES.
6. CONTRACTOR SHALL PROVIDE THE INSPECTORS WITH THE PROPOSED TESTING PLAN. THE PLAN MUST BE APPROVED BEFORE TESTING OPERATIONS BEGIN.
7. CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES AS NOT TO INTERFERE WITH NORMAL ACTIVITIES OF RESIDENTS OR OTHER CONTRACTORS ON SITE.
8. ANY DAMAGE TO THE EXISTING FACILITIES (CURB & GUTTER, PAVEMENT, CONDUITS, LANDSCAPING, UTILITY LINES, ETC.) DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS' EXPENSE.
9. MH RIMS & CATCH BASIN INLET ELEVATIONS, FIRE HYDRANT & FLANGE ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY AND ADJUST TO FINAL PAVEMENT GRADES.
10. SAS STATIONING FOLLOWS CL OF ROAD UNLESS OTHERWISE NOTED.
11. STATIONING OF DROP INLET IS TO MIDDLE OF DOWN HILL GRATE AT FACE OF CURB.
12. FLOWLINE ELEVATIONS FOR DROP INLETS ARE PROJECTED FROM FLOWLINE OF STANDARD CURB TO MIDDLE OF DOWNHILL GRATE.
13. FOR STORM DRAIN CONSTRUCTION: ALL RCP JOINTS SHALL NOT BE GROUTED PRIOR TO FINAL INSPECTION. FINAL INSPECTION SHALL DETERMINE WHICH JOINTS ARE TO BE GROUTED FOR FINAL ACCEPTANCE OF THE CONSTRUCTION.

LEGEND

- DOUBLE WATER METER
- SINGLE WATER METER
- WATER LINE SHUTOFF VALVE
- WATER LINE TEE
- SAS LATERAL
- SAS MANHOLE
- STORM DRAIN MANHOLE
- STORM DRAIN INLET
- PROPOSED FIRE HYDRANT
- EXISTING WATER VALVE
- PROPOSED STREET LIGHT

AS-BUILT INFORMATION
CONTRACTOR: New Concepts
WORK STAKED BY: AIS DATE: 10/05
INSPECTOR'S ACCEPTANCE BY: L.C.L. DATE: 9/05
FIELD VERIFICATION BY: AIS DATE: 9/05
DRAWINGS CORRECTED BY: AIS DATE: 9/05

MICRO-FILM INFORMATION
RECORDED BY / DATE / NO.

BENCH MARKS
ACS BRASS TABLE STAMPED "TRANS"
Geographic Position (NAD 1927)
N.M. State Plane Coordinates (Central Zone)
X= 354,899.45 Y= 1,471,822.67
Ground-to-Grid Factor= 0.99967921(As Published)
Δα = -00°16'42"
SLD 1929 Elevation = 5118.370

SURVEY INFORMATION — FIELD NOTES: NO. / BY / DATE

ENGINEER'S SEAL — CHRISTIAN J. ... 16404 LICENSED PROFESSIONAL ENGINEER 2-9-05

No.	Date	REMARKS	By
		REVISIONS	
		DESIGN	

Designed By: CJS DATE: 07/27/04
Drawn By: BJG DATE: 07/27/04
Checked By: CJS DATE: 08/19/04

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

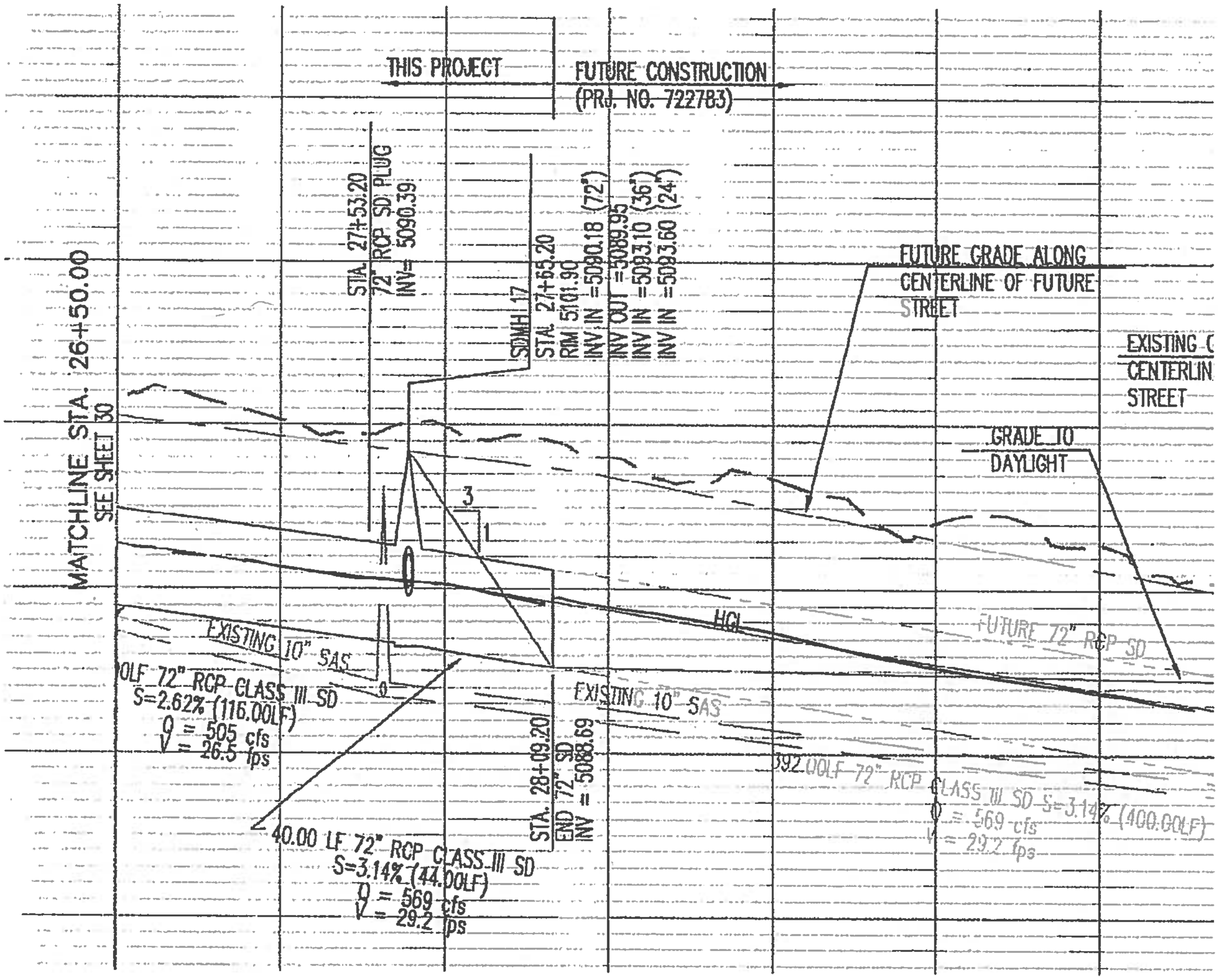
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

SUN GATE ESTATES PHASE I
UTILITY PLAN AND PROFILE
BLAKE ROAD

Design Review Committee | City Engineer Approval | Mo./Day/Yr. | Mo./Day/Yr.
APPROVED MAR 2005 CITY ENGINEER
Last Design Update

City Project No. 736782 | Zone Map No. N-9-Z | Sheet 31 Of 37

P:\050146\cdp\pnp\050146_UPNP11.dwg
February 09, 2005 - 5:18pm



3-11-15

Based on N09/D007 and as-builts from Sun Gate Estates ph 1 736782 we determined the downstream capacity to

472 to 505 at stub
before stub at [illegible]
569 at 98th St
Looks like a pipe storm drain in 98th is required

Curt Eckes / [signature] 3-11-15

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

June 1, 2015

Diane Hoelzer, P.E.
Mark Goodwin & Associates, P.A.
P.O. Box 90606
Albuquerque, NM 87199

RE: **Los Diamantes Subdivision**
Drainage Report, and Grading and Drainage Plan
Engineer's Stamp Date 3-24-2015 (File: N09D013)

Dear Ms. Hoelzer:

Based upon the information provided in your submittal received 3-27-15, the above referenced plan cannot be approved for Preliminary Plat and Grading Permit until the following comments are addressed:

Conclusions from the meeting 3-11-15 were as follows:

- Per the meeting notes dated 3-11-15, the allowable discharge into the 30" stub at SDMH 16 (CPN 736782) is the difference between the upstream and downstream Q, or 505cfs - 472cfs = 33 cfs. This value matches that shown on Exhibit 4, Master SD Basin Map, for basin DB16.
- Per the same meeting notes, the Q at 98th St. is noted as 569cfs. The difference between the upstream and downstream Q at MH 17 is 569cfs – 505cfs = 64cfs. Exhibit 4 shows that DB20 (the roadway) discharges 19cfs, so 45 cfs is the allowable from DB9 (Exhibit 4).
- Per meeting notes, a storm drain in 98th was required.
- During the meeting we agreed that the street flows in Blake could be ignored due to the timing of the hydrograph.

Based on the above notes, revise the report to reflect the following:

- The total allowable developed discharge from this site, including Tract A is 45cfs (MH17) + 33cfs (MH16) = **78 cfs.**
- Based on a proration of area, Tract A is allowed 78cfs*(5.67 Ac/19.86 Ac) = **23 cfs.** Areas were taken from the preliminary plat.
- The allowable discharge for this subdivision is 78cfs -23cfs = **55cfs.** Per Exhibit 4, if 33cfs was intended to the existing stub, then the remaining 22cfs was intended to discharge to a storm drain in 98th St.

Comments:

1. Provide a plan to collect flows from developed Tract A and 98th St. roadway. CPN 736782 shows a stub at MH 17 that was intended to collect flows from DB9 and DB20. It is noted that there are inlets on 98th street near Blake at present.

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

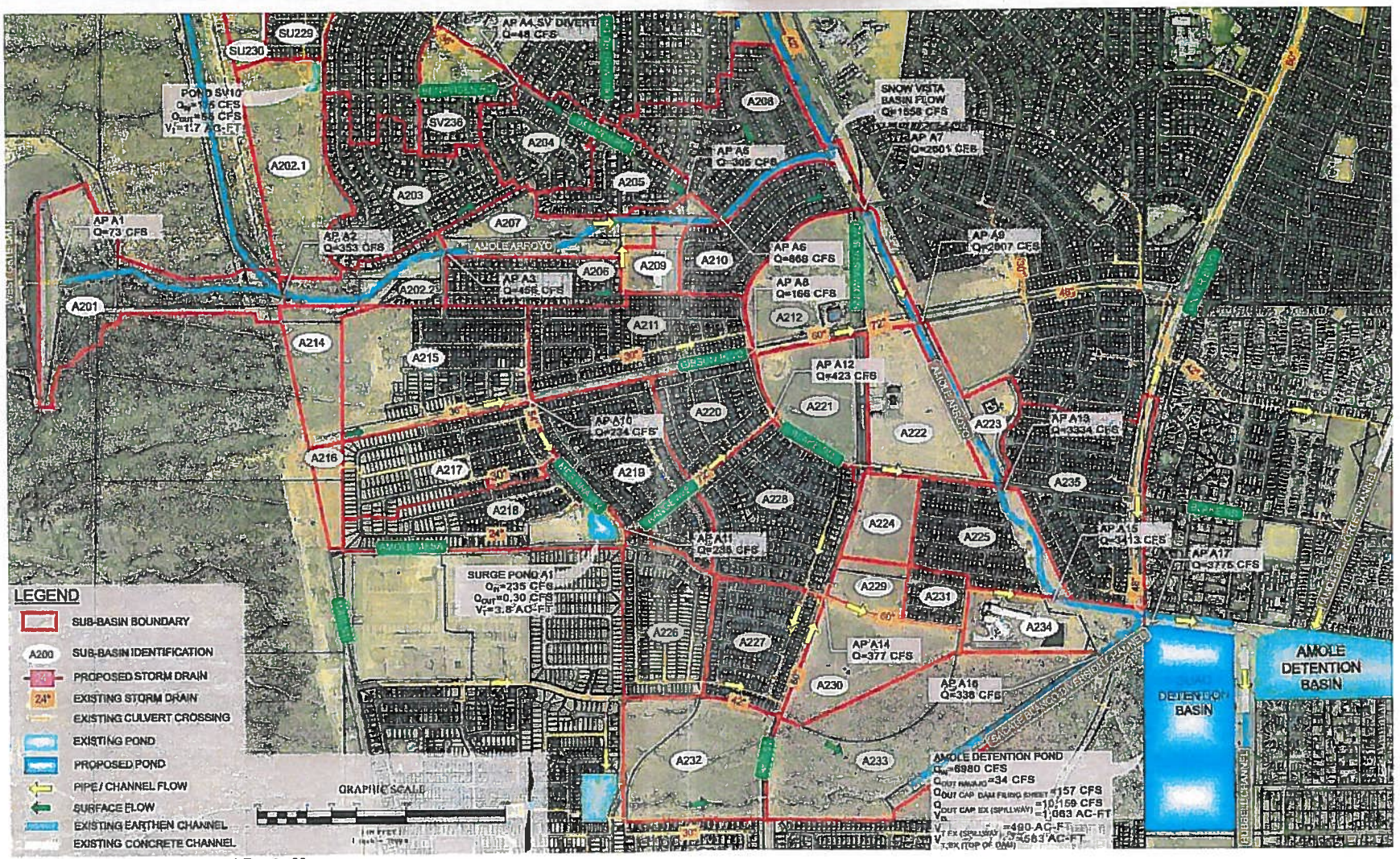


Figure 3-7: Amole Basin - Proposed Basin Map

WILSON & COMPANY

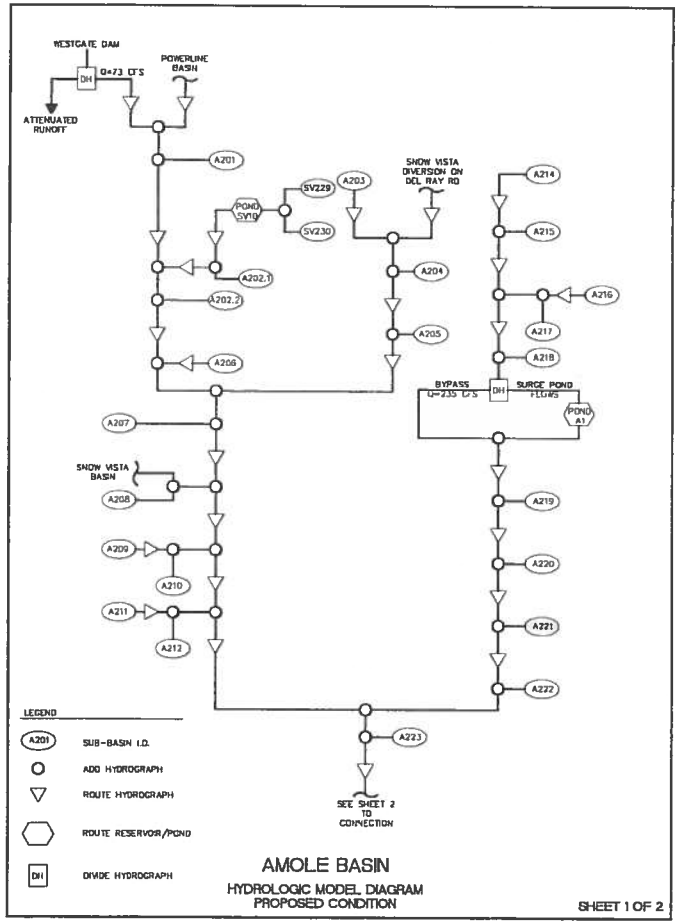


Figure 3-8: Amole Basin - Proposed Hydrologic Model Diagram

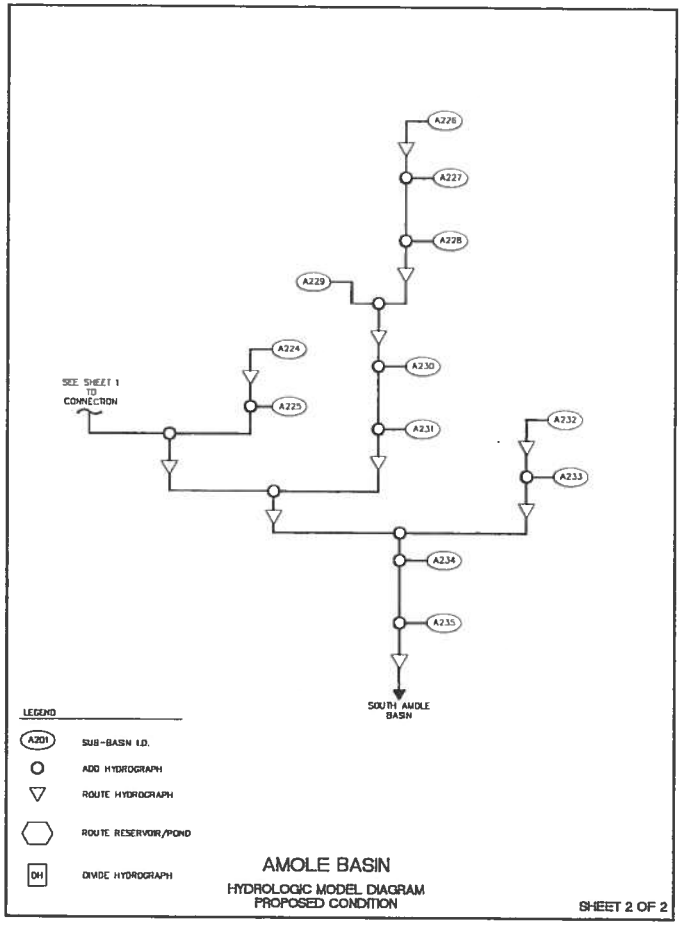


Figure 3-8 Continued: Amole Basin - Proposed Hydrologic Model Diagram

Table 3-8: Amole Basin - Proposed Sub-Basin Peak Discharge and Volumes			
Sub-Basin	Area (ac)	$Q_{100yr-6hr}$ (cfs)	$V_{100yr-24hr}$ (ac-ft)
A201	46	122.09	4.373
A202.1	38	60.67	3.969
A202.2	17	53.58	1.938
A203	40	143.75	5.299
A204	22	78.99	2.908
A205	18	61.77	2.435
A206	20	74.47	2.828
A207	26	60.01	1.945
A208	43	164.52	6.375
A209	8	18.08	0.571
A210	28	111.71	4.491
A211	42	165.76	6.637
A212	40	174.78	7.656
A214	16	61.49	2.335
A215	51	191.61	7.261
A216	6	21.87	0.830
A217	37	133.19	4.615
A218	36	128.79	4.429
A219	41	159.68	6.256
A220	23	89.59	3.514
A221	27	118.26	5.098
A222	29	128.19	5.539
A223	13	57.77	2.479
A224	13	48.08	1.826
A225	30	119.33	4.782
A226	31	122.90	4.929
A227	28	104.57	4.474
A228	45	167.59	6.379
A229	9	33.43	1.269
A230	28	112.97	4.625
A231	8	30.23	1.209
A232	42	171.36	7.021
A233	73	245.20	12.206
A234	23	89.40	3.501
A235	52	194.03	7.857

3.5 Amole Del Norte

3.5.1 98th & Central Basin

Existing Conditions

The 98th & Central Basin is approximately 0.81 sq. mi. This sub-area is generally bounded on the east by 98th Street and north by I-40, while on the south by Central Avenue and the west by the Powerline Channel. A two cell pond made up of Pond NE2 and Pond NE3 receives the area's runoff. The land uses in 98th & Central Area are platted undeveloped, industrial, commercial, and low density residential. Cross-lot drainage is the sub-area's main drainage issue due to the large undeveloped land. No off-site runoff enters the sub-area north of I-40.

Pond NE1 was designed to retain Sub-Basin NE105; however, hydrologic analyses concludes this pond is close to overtopping during the 100-year, 24-hour storm event; therefore, runoff will overflow the pond onto Avalon Road. This sub-area lacks drainage conveyance infrastructure. Without the conveyance infrastructure in place, developed and undeveloped lots experience large amounts of cross-lot drainage. There is only one storm drain system in the sub-area, beginning near the intersection of Volcano Road and 98th Street and runs through Pond NE2 outletting into Pond NE3. Since the majority of the sub-area is not conveyed via a sub-surface drainage system, large amounts of runoff spill into the pond. The two-cell pond outlets into a storm drain system located in the Tierra Bayita Area, which ultimately connects to the Tierra Bayita Channel. Refer to Appendix A for hydrologic data and existing hydrologic model diagram.

Proposed Conditions

The proposed land uses in 98th & Central Area are platted mass graded, industrial, commercial, high and low dense residential, and school. Proposed conditions and development have added a sub-surface storm drainage system to collect runoff and convey it to basin ponds to prevent excessive street flow. No off-site runoff enters the sub-area north of I-40.

The proposed conditions assume that the pond NE1 is abandoned and proposed storm drainage is allowed to collect and flow along the surface to Pond NE2 and NE3. As stated above, this surface flow shall be addressed with the residential development plans. A drainage conveyance system shall be installed to collect runoff from the area and convey it to Pond NE2 and NE3. To help alleviate flows to the Coors N-S pond, we recommend the use of an 18" orifice plate at the outlet structures of these ponds. Shallow cross-lot drainage will remain in upstream portions of this basin, although it is the intent of the plan to eliminateas much of the cross-lot drainage as possible with the proposed system. After development, the runoff from the area will be conveyed through drainage conveyance systems eliminating excess flow to the pond. Refer to Table 3-9 for hydrologic data and Figure 3-10 for proposed hydrologic model diagram.

Recommendations:

Below are the recommendations from 1999 Amole-Hubbell DMP for the basin along with the status of the recommendation.

- *Project AD1: Tower Sage Detention Basin and Outfall* – COMPLETED

Additional Recommendations for the basin based on updated basin analysis are below:

- Relocate the spillway for Pond NE2 to discharge to the south onto Central Avenue. Cost $222,800.
- Install storm drain system proposed in 98th & Central Basin per this DMP.
- Install 18" orifice in the outlet structures of ponds NE2 and NE3.

EXISTING EASEMENTS

① EXISTING 62' PUBLIC ROADWAY, WATERLINE AND SANITARY SEWER EASEMENT (06-05-02, 02C-197)

② EXISTING 30' PUBLIC ROADWAY, WATERLINE AND SANITARY SEWER EASEMENT (06-05-02, 02C-197)

③ EXISTING 30' PUBLIC ACCESS EASEMENT (07-23-03, 03C-223)

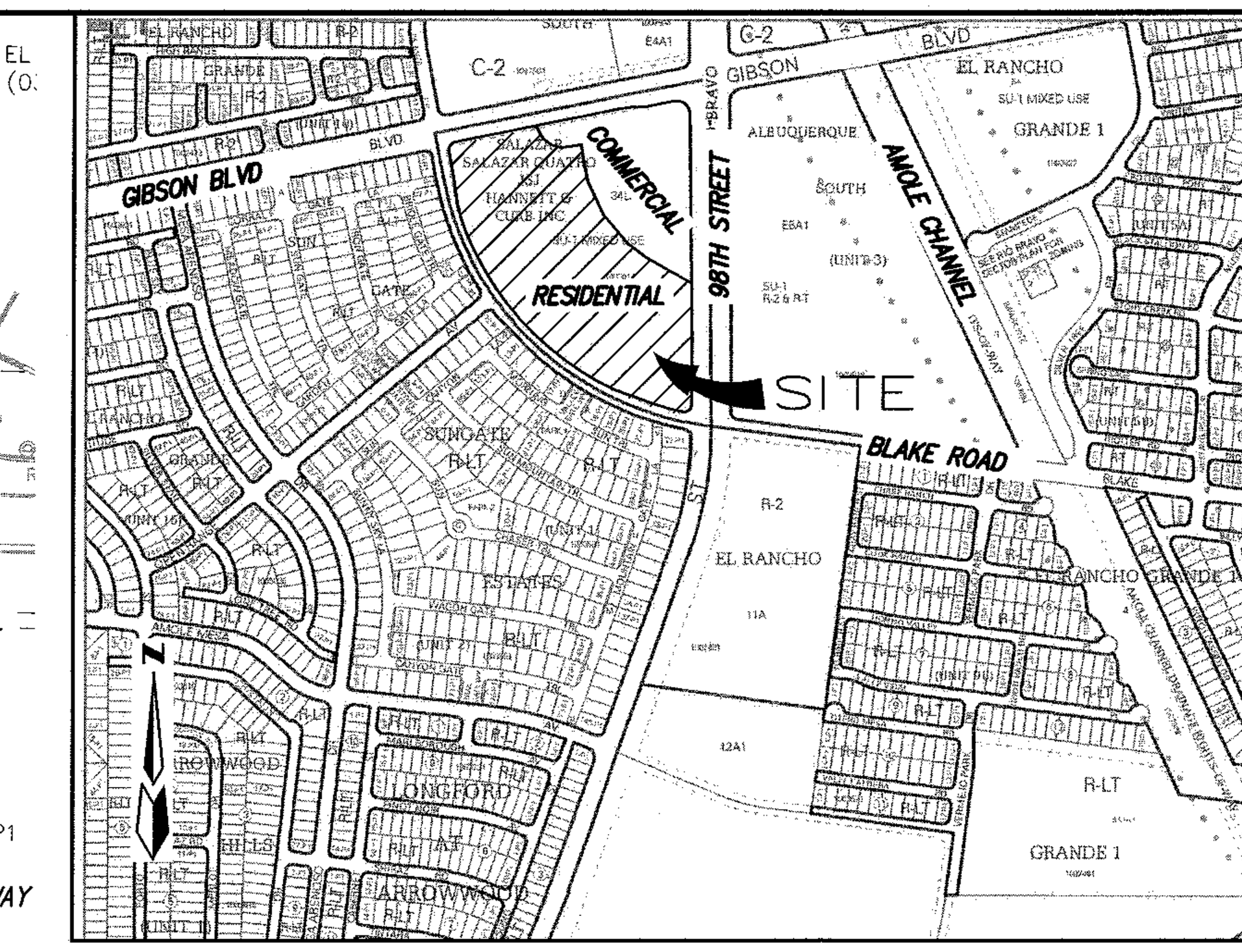
④ EXISTING 78' TEMPORARY PUBLIC ROADWAY EASEMENT (07-23-03, 03C-223)

⑤ ~~EXISTING C.O.A. BLANKET DRAINAGE EASEMENT (11-28-94, 94C-393)~~ **(TO BE VACATED EXCEPT WITHIN "TRACT A" TO REMAIN)**

⑥ EXISTING 15'x15' PNM EASEMENT (FOR SWITCHGEAR) (05-26-05, DOC. 2005074791)

⑦ EXISTING 30' PUBLIC ROADWAY, PUBLIC UTILITY & PUBLIC DRAINAGE EASEMENT (12-19-05, DOC. 2005185405)

⑧ EXISTING PUBLIC ROADWAY, PUBLIC DRAINAGE, PUBLIC SANITARY SEWER & PUBLIC WATERLINE EASEMENT (08-25-06, DOC. 2006129522)

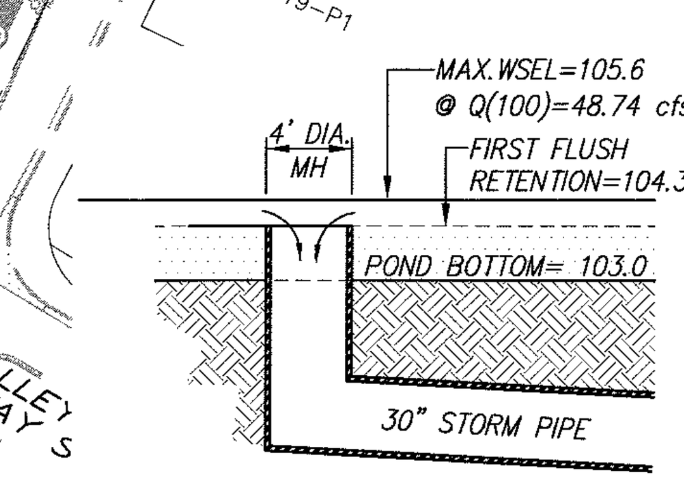


VICINITY MAP

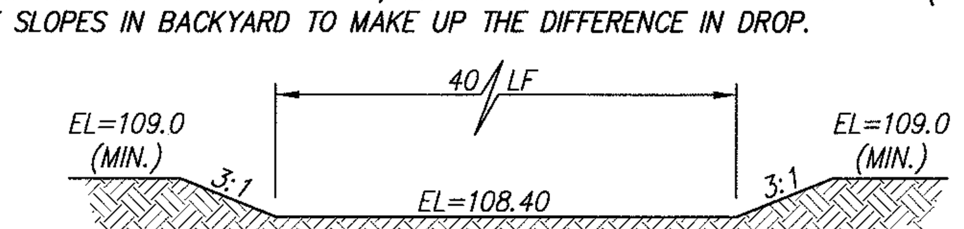
ZONE MAP: N-9-Z

NOTES

1. CONTRACTOR MUST OBTAIN A TOPSOIL DISTURBANCE PERMIT FROM THE ENVIRONMENTAL HEALTH DIVISION PRIOR TO CONSTRUCTION.
2. CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION SHALL GOVERN ALL WORK.
3. THE CONTRACTOR SHALL CONFORM TO ALL CITY, COUNTY, STATE AND FEDERAL DUST CONTROL MEASURES AND REQUIREMENTS AND WILL BE RESPONSIBLE FOR PREPARING AND OBTAINING ALL NECESSARY APPLICATIONS AND APPROVALS.
4. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE LOTS INTO PUBLIC RIGHT-OF-WAY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
5. THE EARTHWORK CONTRACTOR SHALL STOCKPILE ENOUGH MATERIAL ADJACENT TO RETAINING WALL LOCATIONS TO BE UTILIZED FOR WALL BACKFILL.
6. SITE DOES NOT LIE IN A 100 YEAR FLOOD ZONE.
7. ALL SITE WALLS SHALL CONFORM TO THE GENERAL HEIGHT AND DESIGN REGULATIONS CONTAINED IN SECTION 14-16-3-19 OF THE CITY ZONING CODE.
8. FUTURE 24" STORM DRAIN ON INFRASTRUCTURE LIST WILL NOT BE CONSTRUCTED UNTIL SITE PLAN FOR TRACT A IS DESIGNED AND APPROVED. TEMPORARY RETENTION POND WILL BE CONSTRUCTED ONLY.
9. COMBINATION GARDEN WALL/RETAINING WALL CANNOT EXCEED 8 FEET. IF FALL ACROSS PROPERTY BOUNDARY IS GREATER THAN 4', USE A COMBINATION 4' RETAINING WALL (MAX) AND 3:1 SIDE SLOPES IN BACKYARD TO MAKE UP THE DIFFERENCE IN DROP.



OUTFALL DETAIL



EMERGENCY SPILLWAY DETAIL FOR TRACT B

N.T.S.

$Q = CLH^{3/2}$

$Q = 54.34 = 3(40)(H)^{3/2}$

$H = .59' = 7"$

POND SPECS:
Design Pond Volume = 47,538 Cu.Ft.
Maximum Storage Volume = 20,368 Cu.Ft.
Maximum Allowable Outfall Q =50 cfs
Design Outfall Q = 48.7 cfs
Pond Bottom Elevation = 103.0
Pond Top Elevation = 109.0
Pond Spillway Elevation = 108.0
Side Slopes Varie 3:1–6:1
MAX. WSEL= 105.6

HYDROLOGY CALCULATIONS:

N-value = UNITS/ACRE = 80/14.525 = 5.64

For N-value less than 6 =} Treatment D = 7*((N)**2+(5*N))**0.5 = 54

Use Land treatment D = 54

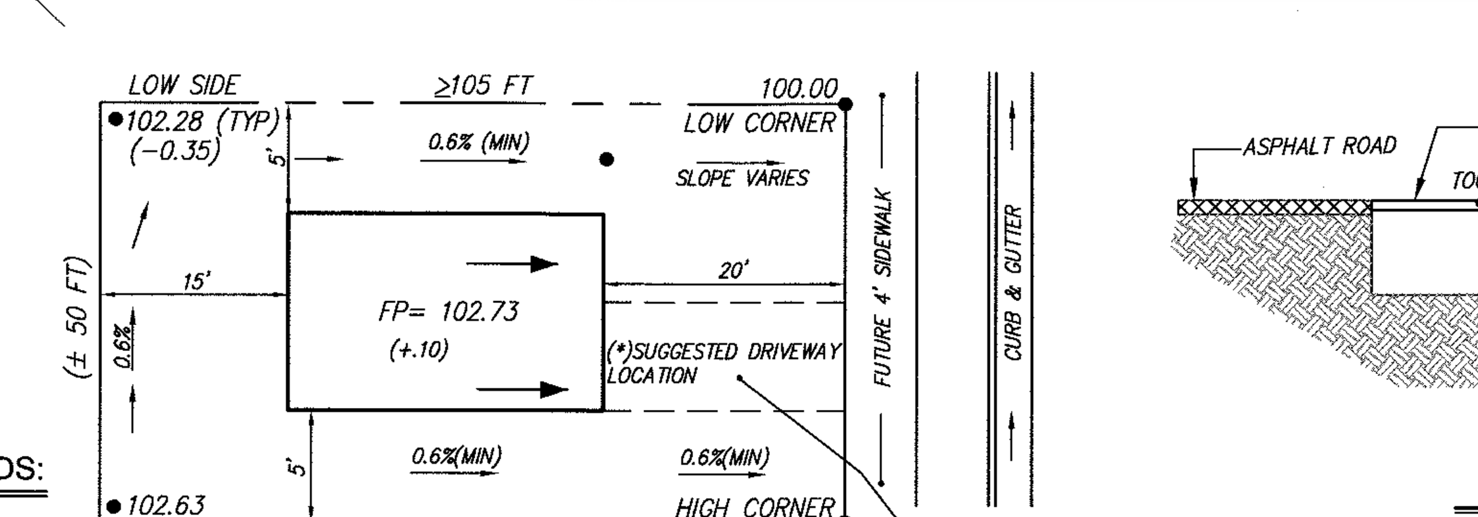
Land treatment C = 23

Land treatment B = 23

RESULTS: Q(100)= 54.34 cfs (100 year, 6 hour)

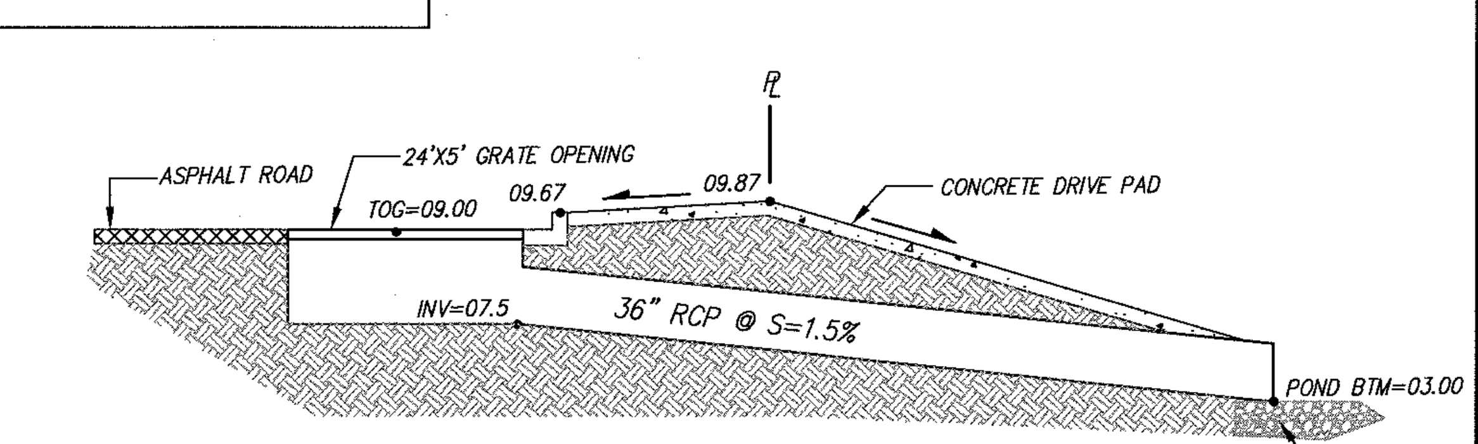
FIRST FLUSH: (0.34 inches)(618,147 SF)(.54)/(12 inches per foot)=9,458 cu.ft.

TYPICAL PADS:
40'x70'
40'x65'
35'x70'



TYPICAL LOT LAYOUT PLAN

N.T.S.



INFLOW FROM DEL TIMBRE LANE TO POND

N.T.S.

LEGEND

	EXISTING CONTOUR (MAJOR)
	EXISTING CONTOUR (MINOR)
× 00.0	EXISTING SPOT ELEVATION
TC= / FL=	EXISTING TOP CURB/FLOWLINE ELEVATION
	EXISTING ASPHALT PAVEMENT
E	EXISTING ELECTRIC TRANSFORMER
—E—E—	EXISTING OVERHEAD ELECTRIC LINE
	EXISTING POWER POLE
	EXISTING LIGHT POLE
	EXISTING TRAFFIC SIGNAL PULLBOX
T	EXISTING TELEPHONE MANHOLE
	EXISTING CATV PEDESTAL
	EXISTING STORM DRAIN MANHOLE
•00.00TW / •00.00BW	TOP OF RETAINING WALL / BOTTOM OF RETAINING WALL
	EXISTING DROP INLET
EX 24"SD	EXISTING STORM DRAIN
FUTURE 24"SD	FUTURE STORM DRAIN
	NEW MOUNTABLE CURB & GUTTER
	NEW STANDARD CURB & GUTTER
	NEW RIGHT-OF-WAY
	NEW CENTERLINE
	NEW LOT LINES
	NEW EASEMENTS
•81.77	NEW SPOT ELEVATIONS
	NEW FLOW DIRECTION
	NEW WATER BLOCK
	NEW RETAINING WALL (SEE NOTE 9)
24" RCP	NEW STORM DRAIN

60' 30' 0 60' 120'

SCALE: 1" = 60'

(•) SPECIAL NOTE FOR DRIVEWAYS:

ON ALL LOTS WHERE FINISHED PAD IS > 2.0 FEET HIGHER THAN LOW CORNER OF LOT, DRIVEWAY SHOULD BE CONSTRUCTED ON HIGH SIDE OF PAD/LOT. THIS WILL HELP MINIMIZE THE STEEPNESS OF DRIVEWAY SLOPE.

KEYED NOTES:

Ⓐ 24'x5' GRATE OPENING (TO BE DETAILED AT DRC)

Ⓑ RIP-RAP PROTECTED

Ⓒ 4' DIA OPENING-OUTFALL STRUCTURE (GRATE COVER TO BE DESIGNED AT DRC)

Ⓓ EXTEND EXISTING 30" SD TO POND CONSTRUCT OUTFALL STRUCTURE TO ALLOW DISCHARGE OF Q100=48.74 cfs RETAINAGE OF FIRST FLUSH TO ELE=104.38.

F:\A14JOBS\A14031 Los Diamantes\GRADE & DRAIN\A14031_ G&D R1.dwg, Last saved by: Kelly, 8/26/2015

AS BUILT INFORMATION

CONTRACTOR	
WORK STAKED BY	DATE
INSPECTOR'S ACCEPTANCE BY	DATE
FIELD VERIFICATION BY	DATE
DRAWINGS CORRECTED BY	DATE

MICRO-FILM INFORMATION

RECORDED BY	DATE
NO.	

SURVEY INFORMATION — FIELD NOTES

NO.	BY	DATE

BENCH MARKS

AGRS Brass Cap stamped "TRANS 1969"
From the intersection of Central Avenue and 98th Street SW go south on 98th Street 2.0 miles to PNM Electric Substation on the left.
The station is east of the substation and south of PNM pylon 52.
Geographic Position, in feet (NAD83)
N.M. State Plane Coordinates (Central Zone)
N=1471885.503, E=1495145.466
Elevation, in feet (NAVD88)=5121.089

ENGINEER'S SEAL

DIANE HOELZER NEW MEXICO 11967 LICENSED PROFESSIONAL ENGINEER 8-26-15

NO.	DATE	REMARKS	BY

REVISIONS

DESIGN		
DESIGNED BY DMG	DATE 10/14	
DRAWN BY DER	DATE 10/14	
CHECKED BY DMG	DATE 10/14	

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
OFFICE (505) 828-2200, FAX (505) 797-9539

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

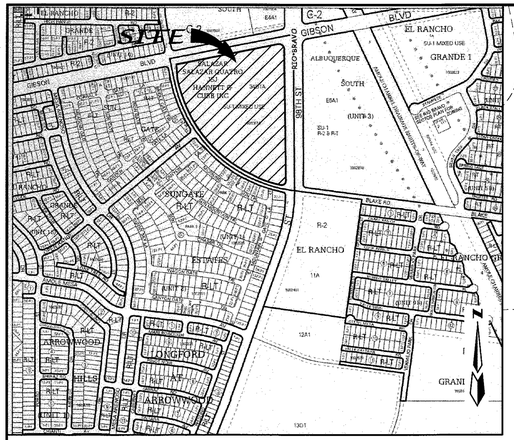
TITLE: LOS DIAMANTES SUBDIVISION GRADING & DRAINAGE PLAN

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
.	N-9-Z	1	1

PRELIMINARY PLAT FOR LOS DIAMANTES SUBDIVISION

WITHIN THE
TOWN OF ATRISCO GRANT
PROJECTED SECTION 4
TOWNSHIP 9 NORTH, RANGE 2 EAST, NMPM
CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO
JUNE, 2015



VICINITY MAP ZONE ATLAS MAP N-9-Z NTS

LEGAL DESCRIPTION

A TRACT OF LAND SITUATE WITHIN THE TOWN OF ATRISCO GRANT, PROJECTED SECTION 4, TOWNSHIP 9 NORTH, RANGE 2 EAST, NEW MEXICO PRINCIPAL MERIDIAN, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, BEING ALL OF TRACT 34D-1-A, LANDS OF SALAZAR FAMILY TRUST, SALAZAR QUATRO TRUST, JSJ, INVESTMENT COMPANY AND FALBA HANNETT AND LANDS OF CURB INC. AS THE SAME IS SHOWN AND DESIGNATED ON SAID PLAT FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON NOVEMBER 25, 2003 IN BOOK 2003C, PAGE 357 AND CONTAINING (1,096,120 S.F.), 25.1635 ACRES MORE OR LESS.

SUBDIVISION DATA

GROSS ACREAGE	25.1635 AC
AREA OF PUBLIC RIGHT-OF-WAY DEDICATED	5.2999 AC
AREA OF TRACT A (COMMERCIAL)	5.6729 AC
AREA OF COMMON AREAS (TRACT B)	3.8472 AC
AREA OF RESIDENTIAL	14.1907 AC
ZONE ATLAS NO.	N-9-Z
NO. OF LOTS CREATED	80 LOTS
NO. OF TRACTS CREATED	2 TRACTS
ZONING	SU-1 MIXED USE
DATE OF SURVEY	FEBRUARY, 2015

PURPOSE OF PLAT

1. SUBDIVIDE LOT 34D-1-A, LANDS OF SALAZAR FAMILY TRUST, SALAZAR QUATRO TRUST, JSJ INVESTMENT COMPANY AND FALBA HANNETT AND LANDS OF CURB INC., INTO 80 RESIDENTIAL LOTS, 2 TRACTS (1 COMMERCIAL).
2. DEDICATE PRIVATE ROADWAY & PUBLIC RIGHT-OF-WAY AS SHOWN.
3. GRANT NEW EASEMENTS AS SHOWN.

NOTES

1. UNLESS OTHERWISE NOTED, ALL BOUNDARY CORNERS SHOWN THUS ○ SHALL BE A SET #4 REBAR WITH YELLOW PLASTIC CAP "N.M.P.S. 11993"
2. ALL STREET CENTERLINE MONUMENTATION SHALL BE INSTALLED AT ALL CENTERLINE PC'S, PT'S, ANGLE POINTS, AND STREET INTERSECTIONS AND SHOWN THUS ', ▲ WILL BE MARKED BY A FOUR INCH (4") ALUMINUM CAP STAMPED:

   "CITY OF ALBUQUERQUE CENTERLINE MONUMENTATION"
   "DO NOT DISTURB"
   N.M.P.S.#11993

3. FIELD SURVEY PERFORMED ON FEBRUARY, 2015.
4. ALL BEARINGS ARE GRID BEARINGS. NM STATE PLANE: CENTRAL ZONE-NAD 1983.
5. BOUNDARY SHALL BE TIED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM AS SHOWN.
6. THIS PROPERTY LIES WITHIN THE SECTION 4, TOWNSHIP 9 NORTH, RANGE 2 EAST, NEW MEXICO PRINCIPAL MERIDIAN, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.
7. ALL DISTANCES ARE GROUND DISTANCES: U.S. SURVEY
8. MANHOLES WILL BE OFFSET AT ALL POINTS OF CURVATURE, POINTS OF TANGENCY, STREET INTERSECTIONS, AND ALL OTHER ANGLE POINTS TO ALLOW USE OF CENTERLINE MONUMENTATION.
9. PLAT SHOWS ALL EASEMENTS OF RECORD.
10. EASEMENT BEARINGS AND DISTANCES SHOWN HEREON ARE RECORD AND EASEMENTS HAVE BEEN ROTATED TO MATCH BASIS OF BEARINGS AND BOUNDARY UNLESS OTHERWISE INDICATED.
11. UPC # _____
12. NEW EASEMENTS 9 THROUGH 17 ARE FOR THE BENEFIT OF ALL PROPERTY OWNERS WITHIN THE LOS DIAMANTES SUBDIVISION. THE MAINTENANCE RESPONSIBILITIES FOR EACH EASEMENT IS DEFINED BY THE ENTITY IN PARENTHESES NEXT TO THE EASEMENT.

OWNERS

98TH STREET, L.L.C.
6300 JEFFERSON NE
ALBUQUERQUE, N.M. 87109
(505) 975-0617

ENGINEERS

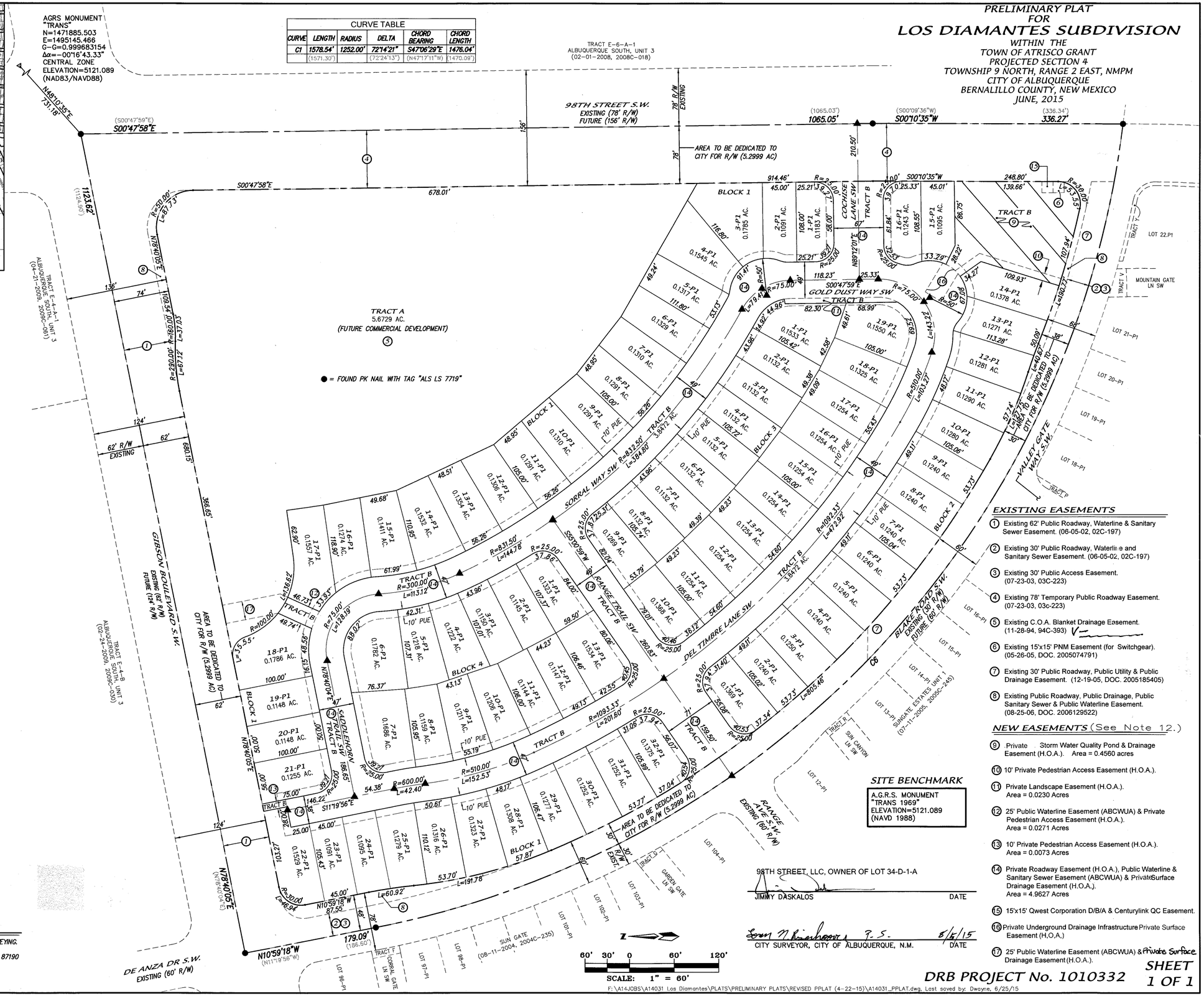
D. MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505) 828-2200

SURVEYOR

ALDRICH LAND SURVEYING.
P.O. BOX 30701
ALBUQUERQUE, N.M. 87190
(505) 884-1990

AGRS MONUMENT "TRANS"
N=1471885.503
E=1495145.466
G-G=0.999683154
Δα=-00°16'43.33"
CENTRAL ZONE
ELEVATION=5121.089
(NAD83/NAVD88)

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD LENGTH
C1	1578.54'	1252.00'	72°14'21"	S47°06'29"E	1476.04'
	(1571.30')		(72°24'13")	(N47°17'11"W)	(1470.09')



EXISTING EASEMENTS

1. Existing 62' Public Roadway, Waterline & Sanitary Sewer Easement. (06-05-02, 02C-197)
2. Existing 30' Public Roadway, Waterline and Sanitary Sewer Easement. (06-05-02, 02C-197)
3. Existing 30' Public Access Easement. (07-23-03, 03C-223)
4. Existing 78' Temporary Public Roadway Easement. (07-23-03, 03c-223)
5. Existing C.O.A. Blanket Drainage Easement. (11-28-94, 94C-393)
6. Existing 15'x15' PNM Easement (for Switchgear). (05-26-05, DOC. 2005074791)
7. Existing 30' Public Roadway, Public Utility & Public Drainage Easement. (12-19-05, DOC. 2005185405)
8. Existing Public Roadway, Public Drainage, Public Sanitary Sewer & Public Waterline Easement. (08-25-06, DOC. 2006129522)

NEW EASEMENTS (See Note 12.)

9. Private Storm Water Quality Pond & Drainage Easement (H.O.A.). Area = 0.4560 acres
10. 10' Private Pedestrian Access Easement (H.O.A.).
11. Private Landscape Easement (H.O.A.). Area = 0.0230 Acres
12. 25' Private Waterline Easement (ABCWUA) & Private Pedestrian Access Easement (H.O.A.). Area = 0.0271 Acres
13. 10' Private Pedestrian Access Easement (H.O.A.). Area = 0.0073 Acres
14. Private Roadway Easement (H.O.A.), Public Waterline & Sanitary Sewer Easement (ABCWUA) & Private Surface Drainage Easement (H.O.A.). Area = 4.9627 Acres
15. 15'x15' Qwest Corporation D/B/A & Centurylink QC Easement.
16. Private Underground Drainage Infrastructure Private Surface Easement (H,O,A,)
17. 25' Public Waterline Easement (ABCWUA) & Private Surface Drainage Easement (H.O.A.).

SITE BENCHMARK

A.G.R.S. MONUMENT
"TRANS 1969"
ELEVATION=5121.089
(NAVD 1988)

98TH STREET, LLC, OWNER OF LOT 34-D-1-A

JIMMY DASKALOS DATE

Sam N. Bienhoorn P.S. 6/5/15
CITY SURVEYOR, CITY OF ALBUQUERQUE, N.M. DATE

DRB PROJECT No. 1010332

SHEET 1 OF 1

F:\A14JOBS\A14031 Los Diamantes\PLATS\PRELIMINARY PLATS\REVISED PPLAT (4-22-15)\A14031_PPLAT.dwg, Last saved by: Dwayne, 6/25/15