CITY OF ALBUQUERQUE

April 17, 2009

Van H. Gilbert, R.A.
Van H. Gilbert Architect PC
2428 Baylor Dr. SE
Albuquerque, NM 87106

Re: Van H. Gilbert Office Addition, 2428 Baylor Dr. SE,
Certificate of Occupancy – Transportation Development
Engineer's Stamp dated 7-16-08 (M16-D012)
Certification dated 02-06-09

Dear Mr. Gilbert,

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

Based upon the information provided in your submittal received 04-16-09, the above referenced certification is approved for release of permanent Certificate of Occupancy by Transportation Development.

If you have any questions, you can contact me at 924-3991.

Sincerely,

Kristal D. Metro, P.E.
Traffic Engineer, Planning Dept.
Development and Building Services

C: CO Clerk
File

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 12/2005)

M-16/2012

PROJECT TITLE: VAN H Gilbert Architect PC office ZONE MAP: ~~M-16-Z~~

DRB#: _____ EPC#: 1007359 WORK ORDER#: _____

LEGAL DESCRIPTION: _____

CITY ADDRESS: 2428 Baylor Drive SE Albuq. NM 87106

ENGINEERING FIRM: N/A CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

OWNER: Van H. Gilbert CONTACT: S. Salazar

ADDRESS: 2428 Baylor Drive SE PHONE: 338-7025

CITY, STATE: Albuquerque, NM ZIP CODE: 87106

ARCHITECT: Van H. Gilbert Architect PC CONTACT: S. Salazar

ADDRESS: 2428 Baylor Drive SE PHONE: 338-7025

CITY, STATE: Albuquerque, NM ZIP CODE: 87106

SURVEYOR: Advanced Engineering & Consulting, LLC CONTACT: Shawn Biazar

ADDRESS: 4416 Anaheim Ave NE PHONE: 899-5570

CITY, STATE: Albuquerque, NM ZIP CODE: 87113

CONTRACTOR: B. R. Gordon Construction CONTACT: B. Il

ADDRESS: 901 Rio Grande Blvd NW Ste F240 PHONE: 344-5792

CITY, STATE: Albuq. NM ZIP CODE: 87104

TYPE OF SUBMITTAL:

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

CHECK TYPE OF APPROVAL SOUGHT:

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

RECEIVED
APR 16 2009
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:

_____ YES
✓ NO
_____ COPY PROVIDED

DATE SUBMITTED: 4/16/09 BY: _____

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

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.

Van H. Gilbert Architect • PC

TRAFFIC CERTIFICATION

I, Van H. Gilbert, of the firm Van H. Gilbert Architect PC, hereby certify that this project is in Substantial Compliance with and in accordance with the design intent of the TCL approved plan dated July, 25, 2008. The record information edited onto the original Design Document has been obtained by Van H. Gilbert of the firm Van H. Gilbert Architect PC. I further certify that I have personally visited the Project Site on 2428 Baylor Drive SE and have determined by visual inspection that the survey data provided is representative of actual site conditions and is true and correct to the best of my knowledge and belief. This certification is submitted in support of a request for Certificate of Occupancy.

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

Signature of Engineer or Architect

2.6.09.
Date

Architecture
Interiors
Planning
2428 Baylor Drive SE
Albuquerque, New Mexico 87106
505.247.9955 fax 505.247.1826

CITY OF ALBUQUERQUE

NILO VISIT THIS SITE 45.

July 25, 2008

Van H. Gilbert, R.A.
Van H. Gilbert Architect PC
2428 Baylor Dr. SE
Albuquerque, NM 87106

Re: Van H. Gilbert Office Addition, 2428 Baylor Dr. SE, Traffic Circulation Layout Architect's Stamp Dated 7-16-08 (M-16/D012)

Dear Mr. Gilbert,

The TCL submittal received 7-25-08 is approved for Building Permit. The plan is stamped and signed as approved. A copy of this plan will be needed for each of the building permit plans. Please keep the original to be used for certification of the site for final C.O. for Transportation. **Public infrastructure or work done within City Right-of-Way shown on these plans is for information only and is not part of approval. A separate DRC and/or other appropriate permits are required to construct these items.**

If a temporary CO is needed, a copy of the original TCL that was stamped as approved by the City will be needed. This plan must include a statement that identifies the outstanding items that need to be constructed or the items that have not been built in "substantial compliance," as well as the signed and dated stamp of a NM registered architect or engineer. Submit this TCL with a completed Drainage and Transportation Information Sheet to Hydrology at the Development Services Center of Plaza Del Sol Building.

When the site is completed and a final C.O. is requested, use the original City stamped approved TCL for certification. A NM registered architect or engineer must stamp, sign, and date the certification TCL along with indicating that the development was built in "substantial compliance" with the TCL. Submit this certification TCL with a completed Drainage and Transportation Information Sheet to Hydrology at the Development Services Center of Plaza Del Sol Building.

Once verification of certification is completed and approved, notification will be made to Building Safety to issue Final C.O. To confirm that a final C.O. has been issued, call Building Safety at 924-3306.

Sincerely,

Kristal D. Metro, P.E.
Traffic Engineer, Planning Dept.
Development and Building Services

C: File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 12/2005)

VanGilbert office

PROJECT TITLE: 2428 Baylor Drive SE ZONE MAP: M16 D12

DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: _____

CITY ADDRESS: _____

ENGINEERING FIRM: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

OWNER: Van H. Gilbert Architect CONTACT: Stanley Stelman

ADDRESS: 2428 Baylor Drive SE PHONE: 247-9955

CITY, STATE: Albuq. NM ZIP CODE: 87106

ARCHITECT: Van H. Gilbert Architect PC CONTACT: Stanley Stelman

ADDRESS: 2428 Baylor Drive SE PHONE: 338-7025

CITY, STATE: Albuq. NM ZIP CODE: 87106

SURVEYOR: Advanced Engineering CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: BR Gordon CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

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

CHECK TYPE OF APPROVAL SOUGHT:

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

RECEIVED
JUL 25 2008
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: <Resub>

_____ YES
_____ NO
_____ COPY PROVIDED

DATE SUBMITTED: 7/25/2008 BY: _____

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

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.

CITY OF ALBUQUERQUE

April 15, 2009

Shahab Biazar, P.E.
Advanced Engineering & Consulting, LLC
4416 Anaheim Avenue NE
Albuquerque, NM 87113

Re: Van H. Gilbert Architect Studio Office Addition, 2428 Baylor Dr. SE,
Approval of Permanent Certificate of Occupancy, (M-16/D012)
Engineer's Stamp Date: 04-11-08
Certification Stamp Date: 4-10-09

Dear Mr. Biazar,

Based upon your submittal received 4/10/09, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

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

Sincerely,

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

C: CO Clerk—Katrina Sigala
file

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

200801-DRN

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(Rev. 12/05)

PROJECT TITLE: VAN H. GILBERT ARCHITECT STUDIO OFFICE ADDITION ZONE ATLAS/DRG. FILE #: M16/D012

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT A-2, BLOCK 2 , AIRPORT INDUSTRIAL PARK

CITY ADDRESS: 2428 BAYLOR DR. S.E.

ENGINEERING FIRM:	Advanced Engineering and Consulting, LLC	CONTACT:	Shahab Biazar
ADDRESS:	4416 Anaheim Ave., NE	PHONE:	(505) 899-5570
CITY, STATE:	Albuquerque, New Mexico	ZIP CODE:	87113
OWNER:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
SURVEYOR:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
CONTRACTOR:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	

CHECK TYPE OF SUBMITTAL:

- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN 1ST SUBMITTAL
- ___ DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- X ENGINEER'S CERTIFICATION (HYDROLOGY)
- ___ CLOMR / LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEER/ARCHITECT CERT (TCL)
- ___ ENGINEER/ARCHITECT CERT (DRB S.P.)
- ___ ENGINEER/ARCHITECT CERT (AA)
- ___ OTHER (SPECITY)

CHECK TYPE OF APPROVAL SOUGHT:

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

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ___ YES
- X NO
- ___ COPY PROVIDED

RECEIVED
APR 10 2009
HYDROLOGY

DATE SUBMITTED: 04 / 10 / 2009 BY: Shahab Biazar, P.E.

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

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

ADVANCED ENGINEERING and CONSULTING, LLC

Consulting
Design
Development
Management
Inspection
Surveying

April 10, 2009

Mr. Timothy E. Sims
Plan Checker-Hydrology
Development and Building Services
600 Second Street NW
Albuquerque, New Mexico 87102

RE: VAN GILBERT ARCHITECT STUDIO OFFICE ADDITION (M16-D012) FINAL CERTIFICATION OF OCCUPANCY

Dear Mr. Sims:

This letter is in request of Final Certification of Occupancy for the above mentioned project. I Shahab Biazar, NMPE, of the Advanced Engineering, LLC hereby certify that project has been graded and will drain in substantial compliance with and design intent of the approved plan dated 04/11/2008. Your comments received dated February 18, 2009 have been addressed. Top of wall elevations at the four corners of the pond are shown (elevations ranging from 5241.12 to 5240.92). Bottom of the wall/pond elevations are shown (elevations ranging from 5235.56 to 5236.12). The average elevations for the bottom of the pond are lower that what was called out on the plan. Therefore, we have more retention volume. The splash blocks are placed at all the scupper locations. Swales and the landscaping are completed as well.

Please contact me if there are any questions or concerns regarding this submittal.

Sincerely yours,

Shahab Biazar, P.E.

4416 Anaheim Ave., N.E., Albuquerque, NM 87113 PH (505) 899-5570 FAX (505) 897-4996 EMAIL-AEGLLC@aol.com

CITY OF ALBUQUERQUE

February 18, 2009

Shahab Biazar, P.E.
Advanced Engineering & Consulting, LLC
4416 Anaheim Avenue NE
Albuquerque, NM 87113

Re: Van H. Gilbert Architect Studio Office Addition, 2428 Baylor Dr. SE,
Permanent Certificate of Occupancy - Not Approved
Engineer's Stamp dated 4/11/08 (M-16/D012)
Certification dated: 2-11-09

Based upon the information provided in the Certification received 2-17-09, the above referenced Certification is not approved for Permanent Certificate of Occupancy.

Before Permanent C.O. approval:

- Additional elevations are required for all the retaining walls. The bottom of pond will need to be called out.
- Splash blocks are required at all scupper locations.
- The landscaping and swales to the basin will need to be completed. A swale will be required behind the building to the detention pond; in addition to another swale will need to be constructed on the east side of the building to the pond.

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

Sincerely,

Timothy E. Sims
Plan Checker—Hydrology
Development and Building Services

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

CITY OF ALBUQUERQUE

July 15, 2008

Van H. Gilbert, R.A.
Van H. Gilbert Architect PC
2428 Baylor Dr. SE
Albuquerque, NM 87106

Re: Van H. Gilbert Office Addition, 2428 Baylor Dr. SE,
Traffic Circulation Layout
No Architect's Stamp (M-16/D012)

Dear Mr. Gilbert,

Based upon the information provided in your submittal received 7-08-08, the above referenced plan cannot be approved for Building Permit until the following comments are addressed:

1. The traffic circulation layout must be stamped, signed, and dated by an engineer or architect licensed in the state of New Mexico.
2. ~~Provide a copy of the shared parking agreement with Lot # 11.~~
3. Please show a vicinity map on the plan.
4. A scale must be shown on the plan. Per the Development Process Manual, Chapter 27, Section 2, Part B.1, only the following scales may be used:
   - 1" = 50'
   - 1" = 40'
   - 1" = 20'
   - 1" = 10'
   - 1" = 100' (for overall layouts only)

If you have any questions, you can contact me at 924-3991.

Sincerely,

Kristal D. Metro, P.E.
Traffic Engineer, Planning Dept.
Development and Building Services

C: File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

CITY OF ALBUQUERQUE

July 2, 2008

Van H. Gilbert, R.A.
Van H. Gilbert Architect PC
2428 Baylor Dr. SE
Albuquerque, NM 87106

Re: Van H. Gilbert Office Addition, 2428 Baylor Dr. SE,
Traffic Circulation Layout
Architect's Stamp dated 6-17-08 (M-16/D012)

Dear Mr. Gilbert,

Based upon the information provided in your submittal received 6-18-08, the above referenced plan cannot be approved for Building Permit until the following comments are addressed:

1. Unless you have been approved for on-street parking credits, you may not count on-street parking within your parking calculations. All on-street parking requires prior approval.
2. Please list the width and length for all parking spaces.
3. Provide a copy of the shared parking agreement with Lot # 11.
4. Clarify the extents of this project; will any changes happen to Lot # 11? Please provide more detail.

VICINITY MAP ON PLANS

If you have any questions, you can contact me at 924-3991.

Sincerely,

Kristal D. Metro, P.E.
Traffic Engineer, Planning Dept.
Development and Building Services

C: File

ENG. SCALE.

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Building & Development Services

April 24, 2008

Shahab Biazar, P.E.
Advanced Engineering and Consulting, LLC
4416 Anaheim Ave., NE
Albuquerque, NM 87113

RE: **VAN H. GILBERT ARCHITECT STUDIO OFFICE ADDITION (M16 - D012)**
***Revised* Grading and Drainage Plan** (PE Stamped 04-11-08)

Dear Mr. Biazar:

Based upon the information provided in your submittal received on 4/11/08, and Drainage Report with P.E. seal dated 2/5/08, the above referenced plan is approved for Grading Permit and Building Permit.

Please attach a copy of this approved plan to the Building Permit plan sets prior to requesting sign-off by the Hydrology Section.

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Notes: -- *1.) This approved plan proposes a retention pond with vertical walls over 5 feet high. Fencing of this installation is not required for drainage purposes, however safety codes may require fence and access rungs for "escape." 2.) As an alternative, your client may want to consider installation of an underground storage/infiltration system, or even 3.) a private drainage easement to create a positive outfall south to the storm drain in Alamo Drive.* ***Please call me if you want to consider one of these alternatives.***

Prior to Certificate of Occupancy approval, an Engineer's Certification of compliance with this plan is required per the DPM.

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

Sincerely,

Greg Olson 4/24/08

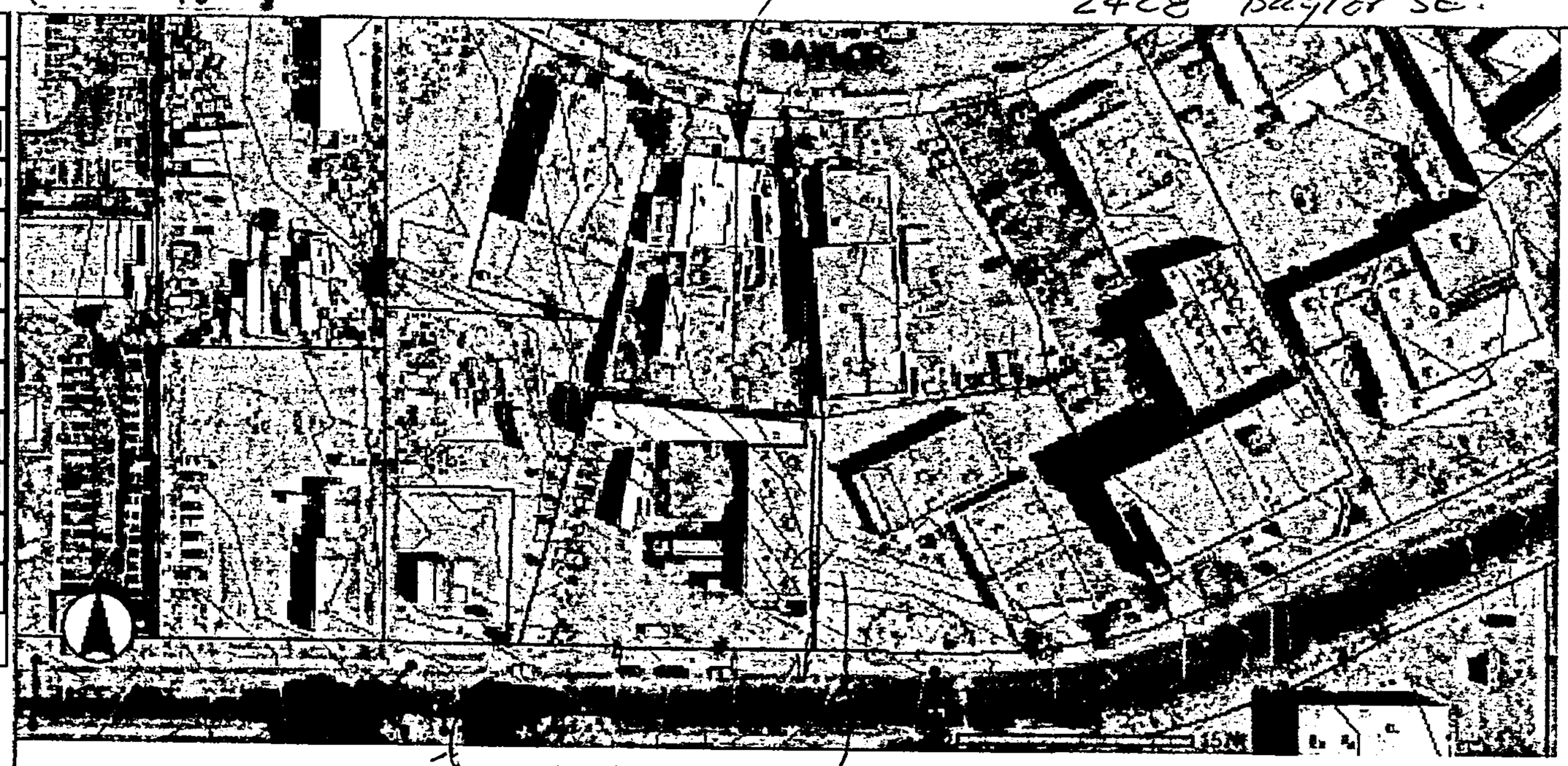
Gregory R. Olson, P.E.

XC: Brad Bingham
file ~~F21-D66~~
M16-D012 AO

Albuquerque - Making History 1706-2006

CITY OF ALBUQUERQUE
www.cabq.gov

TEGIS WEB



LAYERS

- BASEMAP
  - PARCELS
  - METRO ADDRESS
  - ZONING
  - OWNERSHIP
  - 10FT CONTOURS
  - CONTOURS
  - MAJOR STREETS
  - FREEWAYS
  - STREET NETWORK
  - STREET NAMES
- INFRASTRUCTURE
  - MANHOLES
  - HYDRANTS
  - VALVES
  - SERVICE POINTS
  - WATERSERVICEAR
  - METER ROUTES
  - WATER LINES
  - SEWER LINES
  - STORM LINES
  - STORM POINTS
  - PARK MEDIANS
  - CURBS AND MEDI
  - GEODETIC CONTR
  - STREET CONDITIC
  - FLOOD ZONES
  - ARROYOS
  - LANDFILLS
  - LANDFILL BUFFER
  - BIKE SYSTEM
  - BUS ROUTES
  - RAILROADS
- BOUNDARIES
- SITES
- DRC
- APS
- STREETS

CONTOURS
Measure Totals cleared.

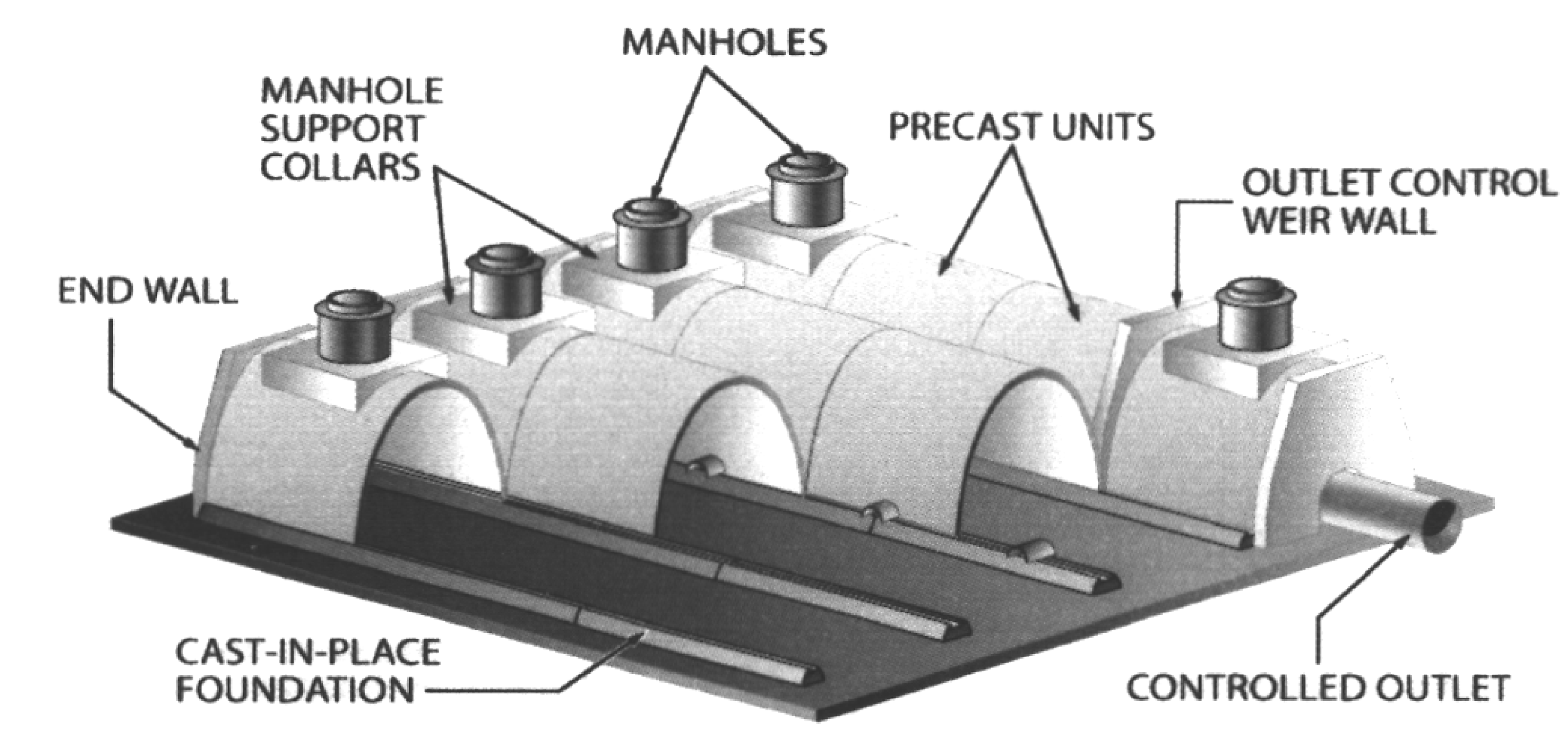
Zoom In SEARCH REFRESH HELP INDEX PAGE CONTACT

DYODS ™
Design Your Own Detention System

CONTECH® STORMWATER SOLUTIONS INC.

CON/STORM™
CONCRETE DETENTION SYSTEMS

For design assistance, drawings,
and pricing send completed worksheet to:
dyods@contech-cpi.com



Project Summary

Date:	4/23/2008
Project Name:	Van Gilbert Offices -CONSTORM Solution
City / County:	Albuquerque
State:	NM
Designed By:	GRO
Company:	COA
Telephone:	

Enter Information in Blue Cells

CON/STORM™ Calculator

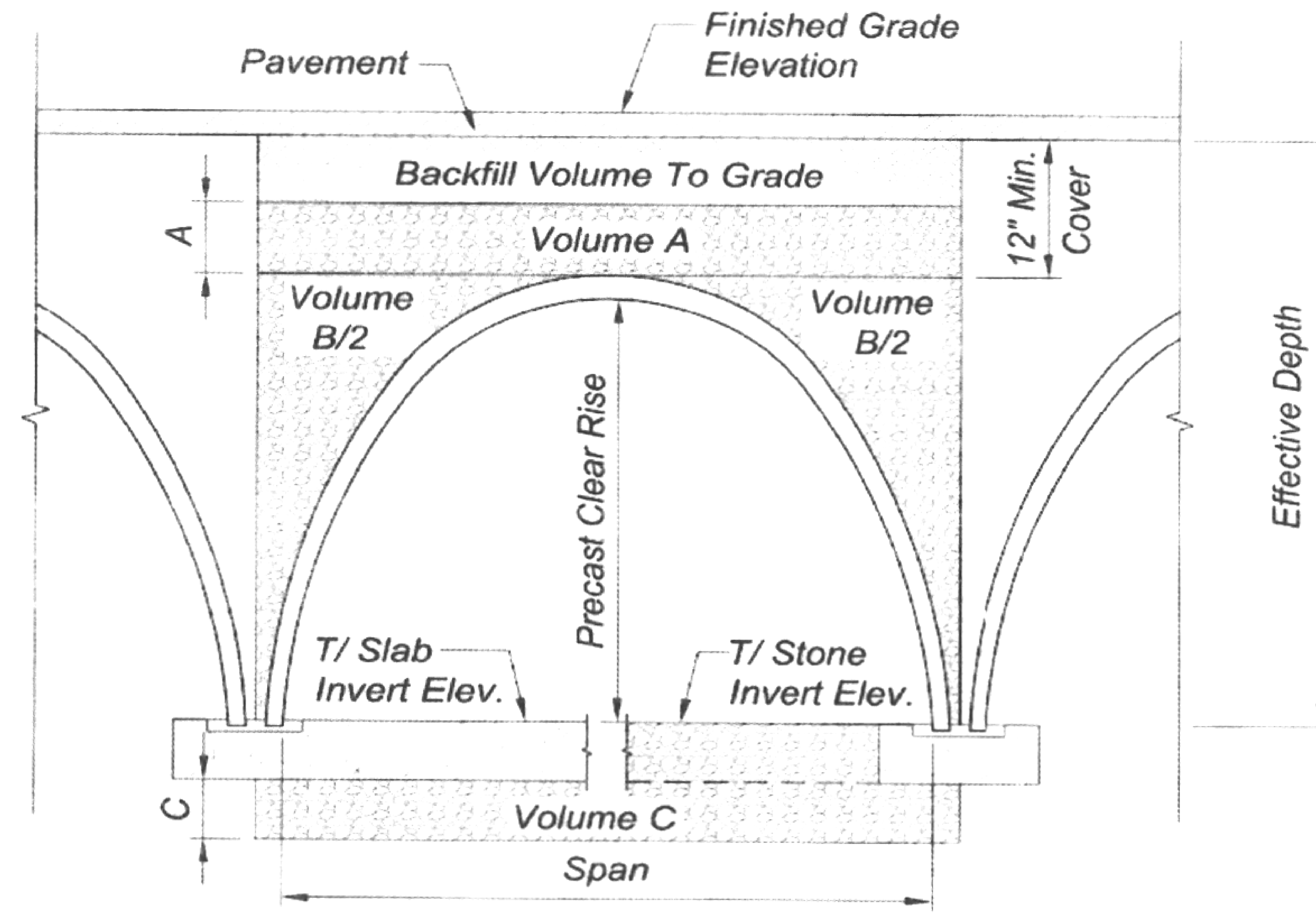
Storage Volume Required (ft^3):	6,265
Limiting Width (ft):	18
Invert Depth Below Asphalt(ft):	8.00
Foundation Type:	Strip
Precast Rise * (ft):	6.00
Porous Stone Backfill included for Storage:	Yes
Depth A: Stone Above Arch (in):	6
Depth C: Stone Below Foundation (in):	6
Stone Porosity (0 to 40%):	40
Number of Outlet Chambers **:	0
Number of Manhole Openings:	2

5 cells at 7.99 ft. span

Waterway Area (ft^2)
47.38

* *Clear Rise is 1" less than Precast Rise due to Keyway.*

** *Outlet chambers used only for internal outlet control walls.*



System Sizing

Use Custom Layout (at right) for layout adjustment

Minimum Hydraulic Storage Length:	1,056 ft	
CON/STORM Storage:	38,568 cf	
Porous Stone Storage:	11850 cf	
Total Storage Provided:	50,418 cf	804.8 % of Required Storage
Total Length of Required Structure:	133 Units	1064 ft
Rectangular Footprint (W x L):	45 ft x 218 ft	

? only Need 6,265 ft3 90± 172LF or ≈ 2X86'

CONTECH Materials

CON/STORM Units:	133	@	2.65	tons
Detached Endwalls:	0	@	1.55	tons
Manhole Supports:	2	@	1.32	tons
Total Length of Joint Wrap	2235	ft		
Approximate Truckloads:	19	trucks		

Construction Quantities**

Total Excavation:	3149	cy
Total Stone Backfill:	1127	cy stone
Remaining Backfill to Grad	454	cy fill
Cast in Place Concrete:	75	cy

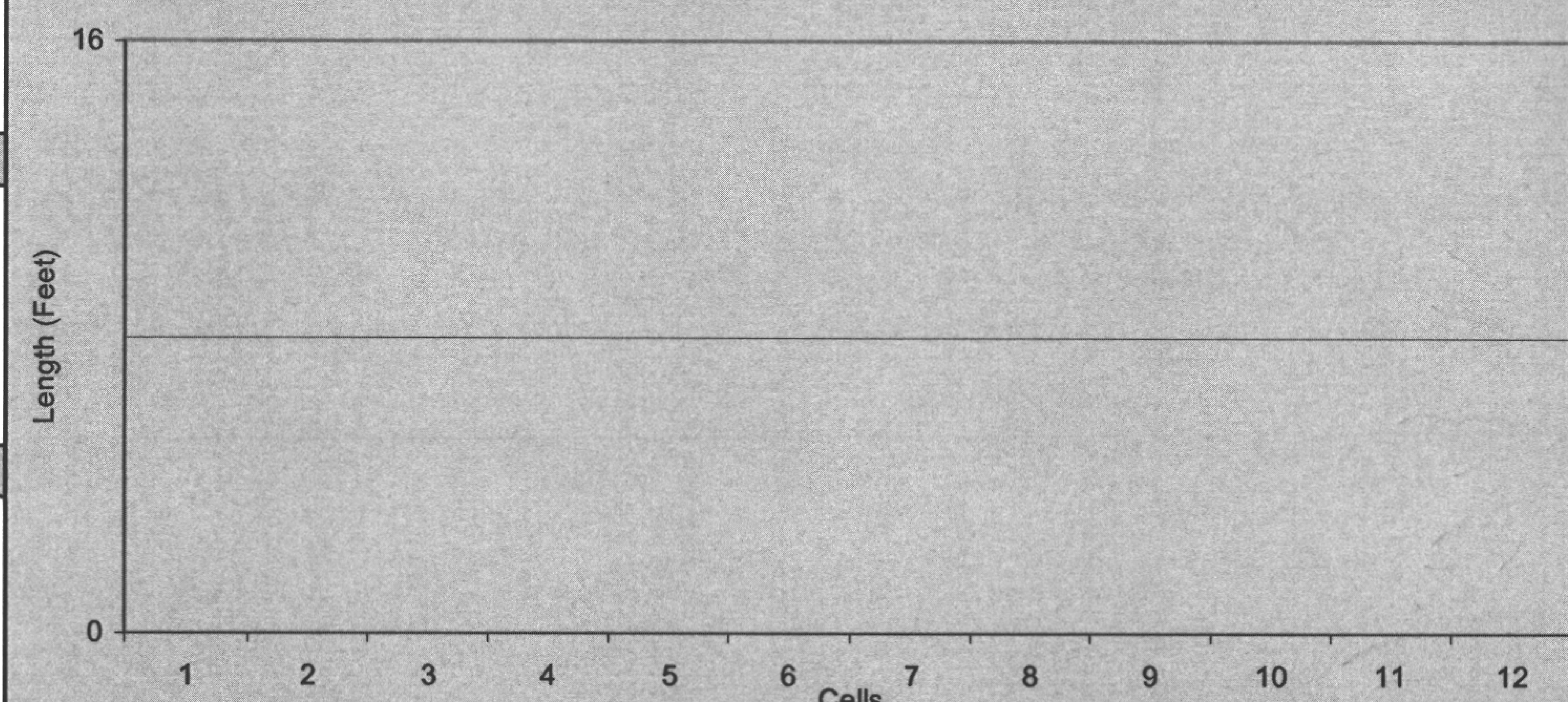
***Construction Quantities are approximate and should be verified upon final design*

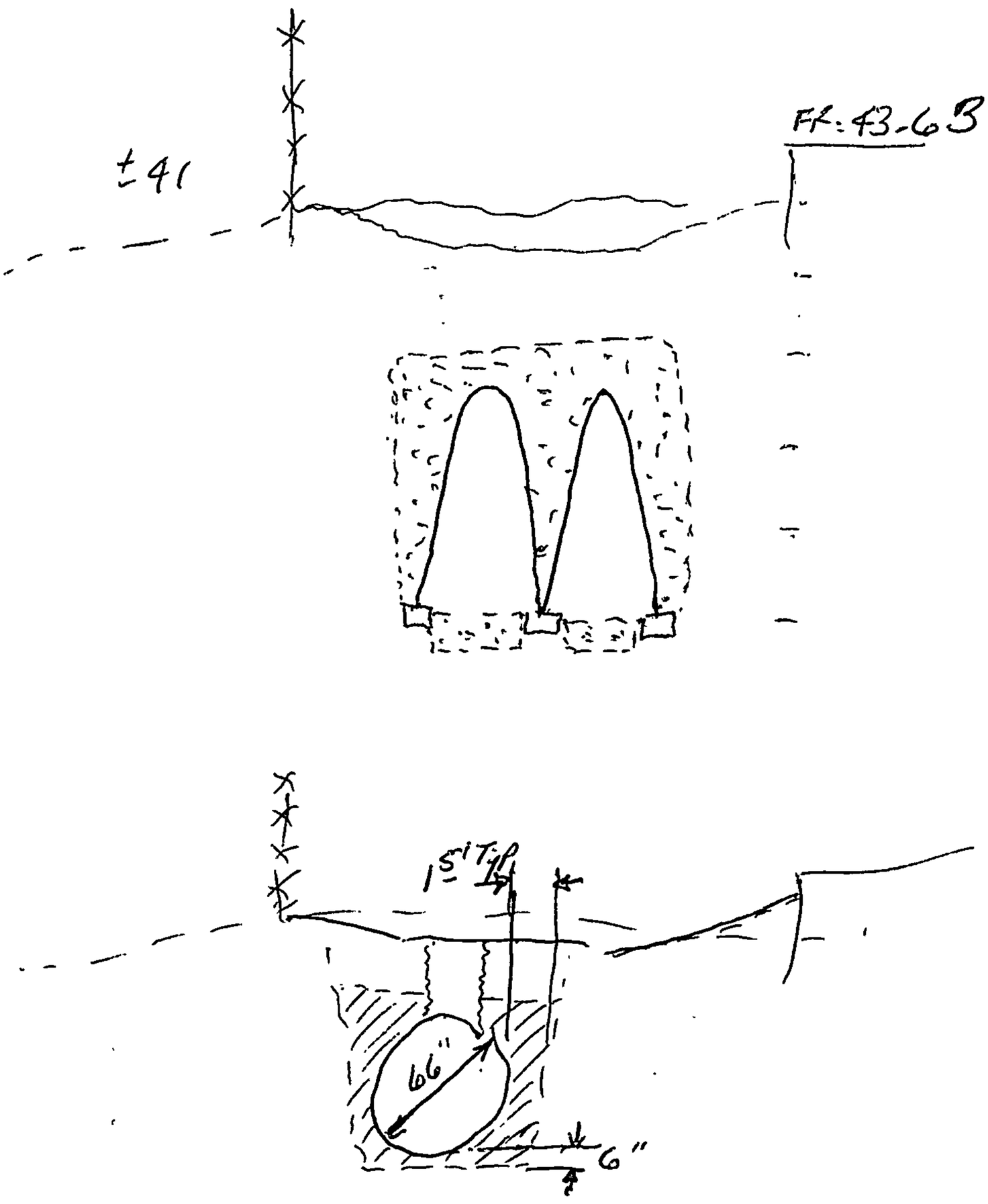
Additional Units Required = 133

Custom Layout

To adjust layout, select the appropriate length in the light blue boxes below

Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	Cell 7	Cell 8	Cell 9	Cell 10	Cell 11	Cell 12




±41
FF: 43-63
15" Typ
66"
6"

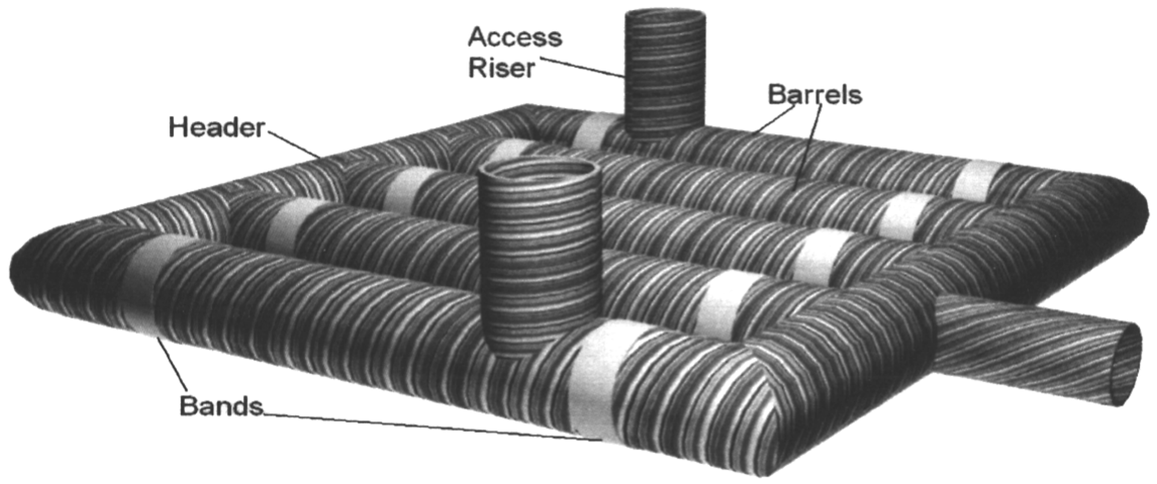
DYODS™

Design Your Own Detention System

CONTECH CMP DETENTION SYSTEMS

CONTECH STORMWATER SOLUTIONS INC.

For design assistance, drawings,
and pricing send completed worksheet to:
dyods@contech-cpi.com

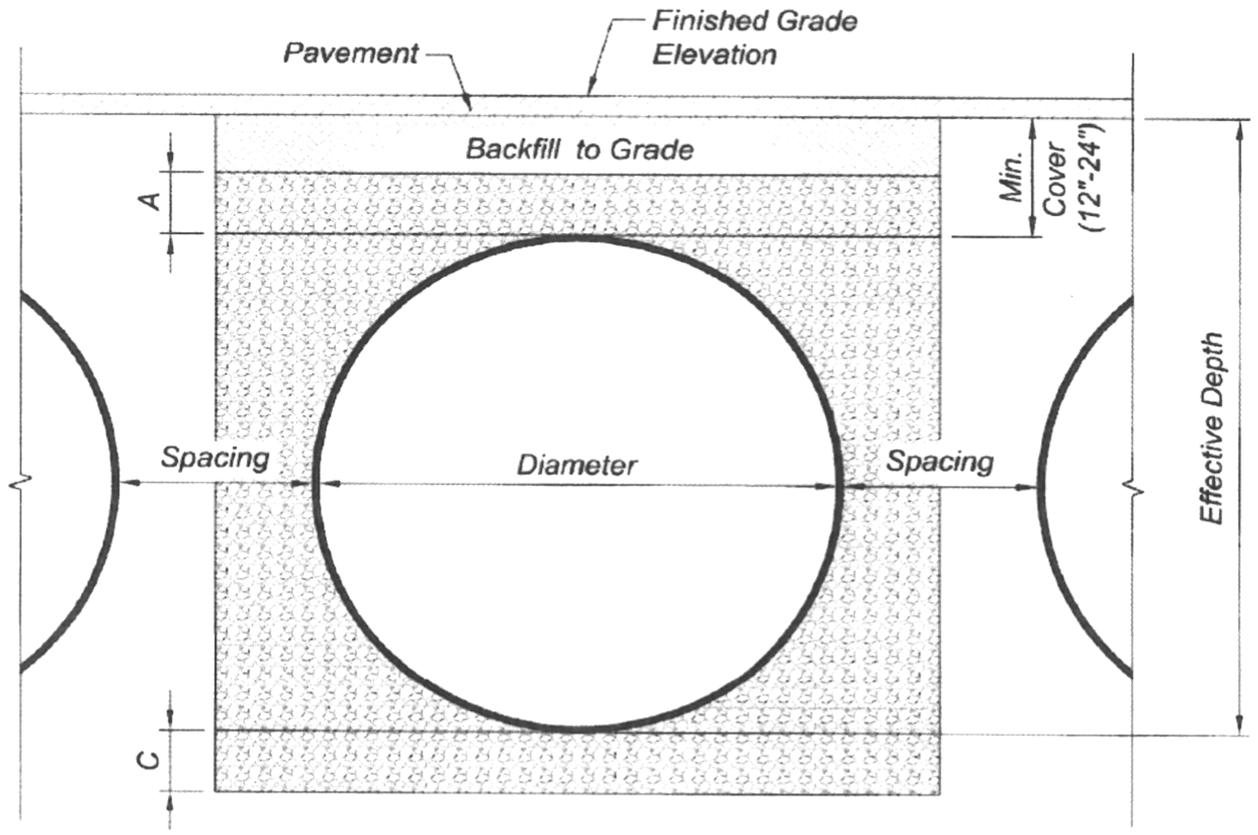


Project Summary

Date:	4/23/2008	**Enter Information in Blue Cells**
Project Name:	Van Gilbert Office Additions	
City / County:	Albuquerque	
State:	NM	
Designed By:	GRO	
Company:	COA	
Telephone:		

Corrugated Metal Pipe Calculator

Storage Volume Required (cf):	6,265	
Limiting Width (ft):	18.00	
Invert Depth Below Asphalt (ft):	6.00	
Solid or Perforated Pipe:	Perforated	
Shape Or Diameter (in):	60	19.63 ft² Pipe Area
Number Of Headers:	0	
Spacing between Barrels (ft):	2.50	
Stone Width Around Perimeter of System (ft):	2.5	
Depth A: Porous Stone Above Pipe (in):	6	
Depth C: Porous Stone Below Pipe (in):	6	
Stone Porosity (0 to 40%):	40	



System Sizing

Pipe Storage:	3,691	cf	
Porous Stone Storage:	2,681	cf	
Total Storage Provided:	6,373	cf	101.7% Of Required Storage
Number of Barrels:	2	barrels	
Length per Barrel:	94.0	ft	
Length Per Header:	0.0	ft	
Rectangular Footprint (W x L):	17.5 ft x 99. ft		

CONTECH Materials

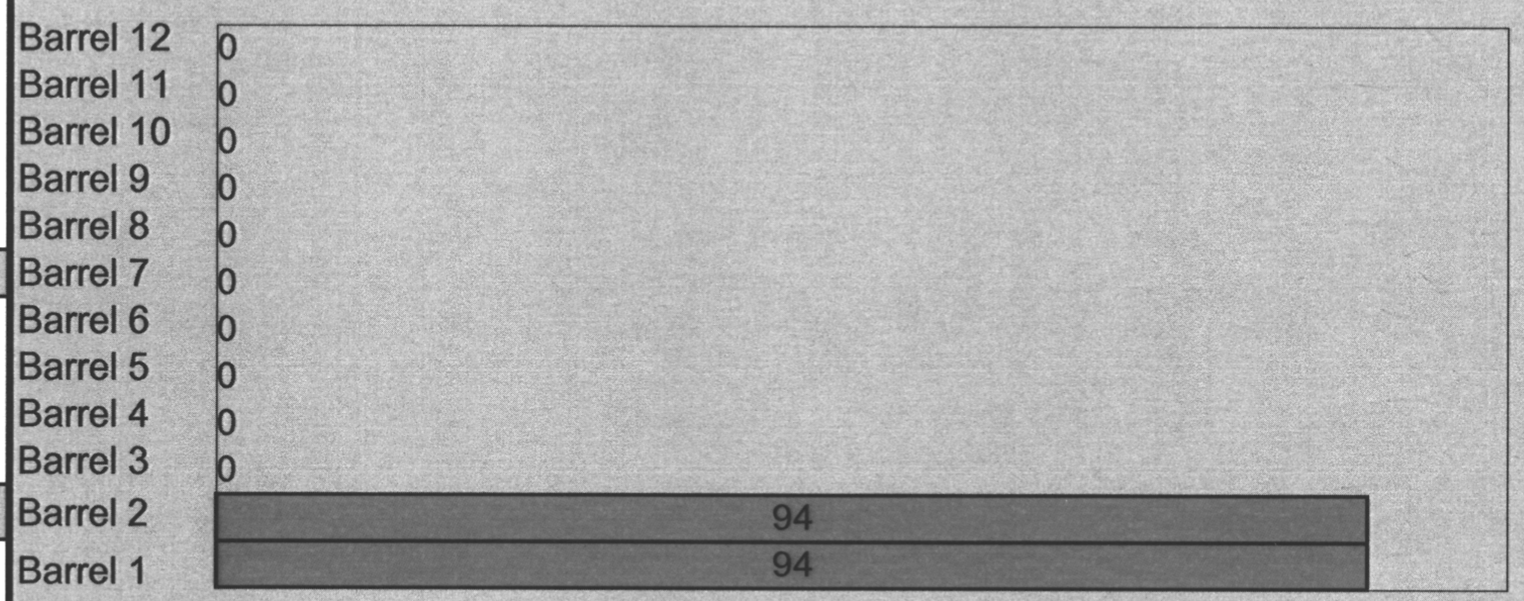
Total CMP Footage:	188	ft
Approximate Total Pieces:	8	pcs
Approximate Coupling Bands:	6	bands
Approximate Truckloads:	2	trucks

Construction Quantities**

Total Excavation:	385	cy
Porous Stone Backfill For Storage:	248	cy stone
Backfill to Grade Excluding Stone:	0	cy fill

***Construction quantities are approximate and should be verified upon final design*

System Layout



Barrel Footage (w/o headers)

200801-DRN

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(Rev. 12/05)

PROJECT TITLE: VAN H. GILBERT ARCHITECT STUDIO OFFICE ADDITION ZONE ATLAS/DRG. FILE #: M16/D012

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT A-2, BLOCK 2 , AIRPORT INDUSTRIAL PARK

CITY ADDRESS: 2428 BAYLOR DR. S.E.

ENGINEERING FIRM: Advanced Engineering and Consulting, LLC
ADDRESS: 4416 Anaheim Ave., NE
CITY, STATE: Albuquerque, New Mexico
CONTACT: Shahab Biazar
PHONE: (505) 899-5570
ZIP CODE: 87113

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

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

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

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

CHECK TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1ST SUBMITTAL
- X DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- X GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ____ CLOMR / LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEER/ARCHITECT CERT (TCL)
- ____ ENGINEER/ARCHITECT CERT (DRB S.P.)
- ____ ENGINEER/ARCHITECT CERT (AA)
- ____ OTHER (SPECITY)

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SIA / FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D. APPROVAL
- ____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- X 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
- X NO
- ____ COPY PROVIDED

RECEIVED
APR 11 2008
HYDROLOGY SECTION

DATE SUBMITTED: 04 / 11 / 2008 BY: Shahab Biazar, P.E.

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

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

ADVANCED ENGINEERING and CONSULTING, LLC

Consulting
Design
Development
Management
Inspection
Surveying

April 11, 2008

Mr. Gregory R. Olson, P.E.
Hydrology Section
Development and Building Services
600 Second Street NW
Albuquerque, New Mexico 87102

RE: VAN GILBERT ARCHITECT STUDIO OFFICE ADDITION (M16-D012) GRADING AND DRAINAGE PLAN

Dear Mr. Olson:

This letter and submittal is based on your comments received dated March 12, 2008. The following are the responses to your comments:

- The retaining wall was modified with a CMU wall retaining wall. With this modification the water should be maintained within the pond, and it should structurally be stable when the pond is full.

- The retention pond was modified to have 1.06' of freeboard. The 100-year/10-day volume water surface elevation is shown on Section A-A. See attached revised calculations for the pond volume.

- Under the General Notes (Note Number 7) reference is made to the drainage report under the City Drainage Number M-16-D012. Also critical values such as surface treatments, Developed Q, Pond Volume, etc was added to the plan.

- The areas of different treatments was added to the plan.

- Since was are proposing to build a CMU retaining wall it will not cause any issues by having the wall suspended over grade at the back elevation 5239.

- The rundowns were eliminated from the design. The runoff will drain over the wall onto a proposed 4'x4' concrete apron. Connection details for the pipe penetrations are added to the plans.

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HYDROLOGY SECTION

4416 Anaheim Ave., N.E., Albuquerque, NM 87113 PH (505) 899-5570 FAX (505) 897-4996 EMAIL AECLLC@aol.com

- Section D-D section cut was corrected on the plans. Section D-D was also modified to show the new retaining wall. The 6" layer of rock is shown.

- Channel Section was eliminated from the plans. The runoff will flow over the wall onto a proposed 4'x4' concrete apron.

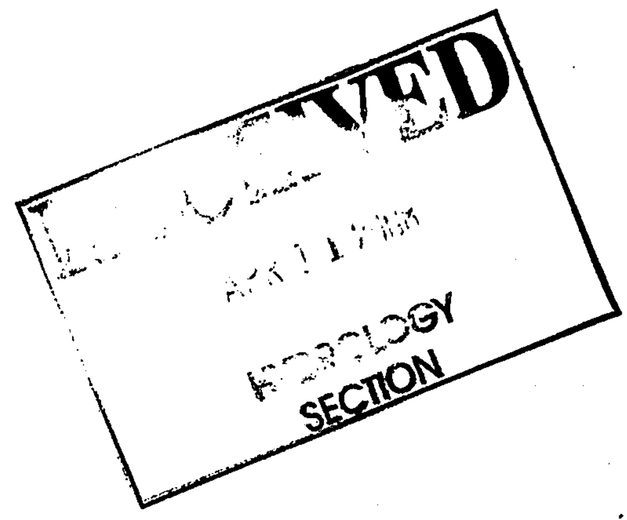
- Section F-F was added to show the retaining wall at the pond and the extended stem wall. Dimensions from the retaining wall to the extended stem wall were added on the Section F-F and Section A-A. Concrete apron does not connect to the extended stem wall.

- Concrete Apron Detail. Sections D-D and F-F both show how concrete apron ties itno the retaining wall.

Please contact me if there are any questions or concerns regarding this submittal.

Sincerely yours,

Shahab Biazar, P.E.



POND CALCULATIONS

SURFACE AREA (SF)	ELEVATION (FT)	VOLUME (CF)	VOLUME (AC-FT)
1,663.25	5,241.00	8,870.67	0.2036
1,663.25	5,235.67		

TOTAL PONDING VOLUME PROVIDED (@ ELEV. 5241) =	**8,870.67**	**0.2036**
PONDING VOLUME REQUIRED (100-YR / 10-DAY STORM) =	**6,264.07**	**0.1438**

PONDING WSEL
(100-YEAR / 10-DAY VOLUME)

SURFACE AREA (SF)	ELEVATION (FT)	VOLUME (CF)	VOLUME (AC-FT)
1,663.25	5239.936160	6,264.07	0.1438
1,663.25	5,236.17		

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Building & Development Services

March 12, 2008

Shahab Biazar, P.E.
Advanced Engineering and Consulting, LLC
4416 Anaheim Ave., NE
Albuquerque, NM 87113

RE: **VAN H. GILBERT ARCHITECT STUDIO OFFICE ADDITION (M16 - D012)**
Grading and Drainage Plan (PE Stamped 02-05-08)

Dear Mr. Biazar:

Based upon the information provided in your submittal received on 2/07/08 the above referenced plan cannot be approved for Grading and Paving Permit until the following comments are addressed:

- The submittal needs to include contour information at the west boundary showing flows remaining on site to the new retention pond. Of specific concern is the 5042 contour intersecting the site near the west side of the pond.
- Since the pond elevation is above the grade at the property line at the SW corner of the site, provide retaining wall details to ensure that the pond wall is impervious (R.R. ties alone are not adequate) and structurally stable when pond is full.
- The retention pond needs to have at least 12" of freeboard above the 100-year, 10-day water surface level. Calculations provided indicate freeboard will be less than 1-3/4". Show the 100-yr/10-day water surface on Section A-A and provide 12" minimum freeboard.
- Make reference on the G & D plan to the separate Drainage Report –AND- include critical values from that report on the G & D Plan (e.g.- Proposed treatments, Developed Q, Pond Volume, etc.).
- Call out on this plan the areas to be paved and landscaped to verify percentages of surface treatments used in the calculation.
- What is the heavy gray line in the SW corner of the addition?
- Section A-A: With the grades provided in the Apron & Channel Detail it appears that the channel will be suspended above grade at the back of the 5239 Terrace Level.
- Section A-A:
- Provide details of how the rundown channels and the Drain Pipes will pass through the R.R. Tie Retaining walls.
- Section D-D: The section appears to be reversed from the section cut in the plan view.
- Section D-D: Show in the section where the channel intercepts the lowest terrace wall.
- Section D-D: Show the 6" layer of rock in the pond bottom.
- Channel Section: Provide specified channel dimensions, not just ranges.

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Building & Development Services
March 12, 2008

- Apron & Channel Detail: Provide a Section F-F cut parallel to D-D, outside the channel to show how the "Extended Stem Wall" fits with the R.R. Tie Retaining Wall and ties to the concrete apron slab; Show dimensions for the "Extended Stem Wall."
- Concrete Apron Detail: How does this tie or fit with the Retaining Wall?

If you have any questions or would like to schedule a meeting to discuss this, you may contact me at 924-3981.

Sincerely,

Gregory R. Olson, P.E. 3/12/8

XC: Brad Bingham
file F21 D66

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

200801-DRN

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(Rev. 12/05)

M-16/D012

PROJECT TITLE: VAN H. GILBERT ARCHITECT STUDIO OFFICE ADDITION ZONE ATLAS/DRG. FILE #: M16

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT A-2, BLOCK 2 , AIRPORT INDUSTRIAL PARK

CITY ADDRESS: 2428 BAYLOR DR. S.E.

ENGINEERING FIRM: Advanced Engineering and Consulting, LLC CONTACT: Shahab Biazar
ADDRESS: 4416 Anaheim Ave., NE PHONE: (505) 899-5570
CITY, STATE: Albuquerque, New Mexico ZIP CODE: 87113

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

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

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

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

CHECK TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- _____ DRAINAGE PLAN 1ST SUBMITTAL
- _____ DRAINAGE PLAN RESUBMITTAL
- _____ CONCEPTUAL GRADING & DRAINAGE PLAN
- X GRADING PLAN
- _____ EROSION CONTROL PLAN
- _____ ENGINEER'S CERTIFICATION (HYDROLOGY)
- _____ CLOMR / LOMR
- _____ TRAFFIC CIRCULATION LAYOUT (TCL)
- _____ ENGINEER/ARCHITECT CERT (TCL)
- _____ ENGINEER/ARCHITECT CERT (DRB S.P.)
- _____ ENGINEER/ARCHITECT CERT (AA)
- _____ OTHER (SPECITY)

CHECK TYPE OF APPROVAL SOUGHT:

- _____ SIA / FINANCIAL GUARANTEE RELEASE
- _____ PRELIMINARY PLAT APPROVAL
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- _____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- _____ SECTOR PLAN APPROVAL
- _____ FINAL PLAT APPROVAL
- _____ FOUNDATION PERMIT APPROVAL
- X 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
- X NO
- _____ COPY PROVIDED

$ 50.00

RECEIVED
FEB 06 2008
07
HYDROLOGY SECTION

DATE SUBMITTED: 02 / 05 / 2008 BY: Shahab Biazar, P.E.

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

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DRAINAGE REPORT
FOR

VAN H. GILBERT ARCHITECT STUDIO OFFICE ADDITION

TRACT A-2, BLOCK 2 , AIRPORT INDUSTRIAL PARK (2428 BAYLOR DR. S.E.)

Prepared by:

ADVANCED ENGINEERING and CONSULTING, LLC

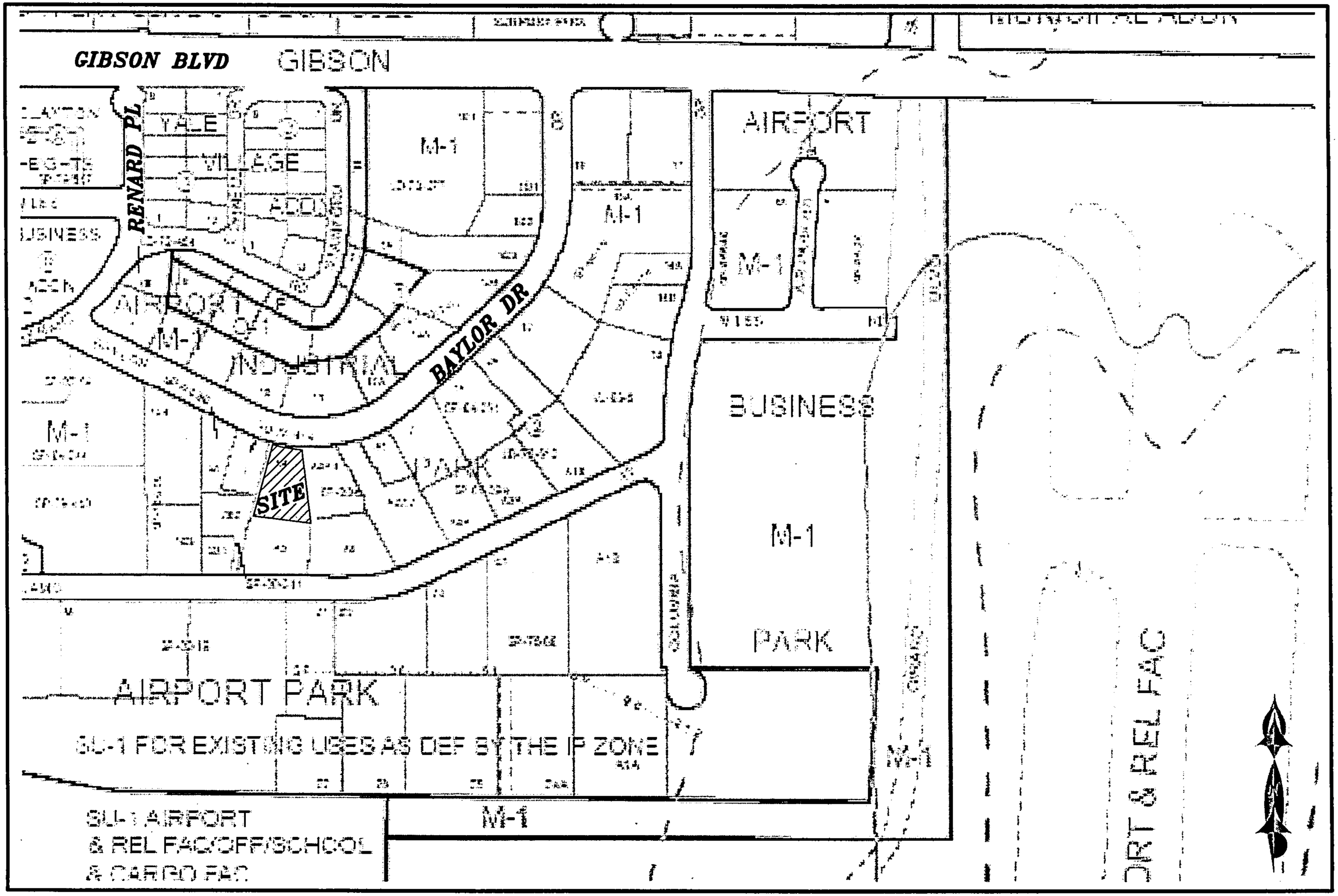
4416 Anaheim Ave., NE
Albuquerque, New Mexico 87113

February, 2008

SHAHAB BIAZAR
NEW MEXICO
13479
02/05/08
REGISTERED PROFESSIONAL ENGINEER

Shahab Biazar
PE NO. 13479

801-DRN



VICINITY MAP:

M–16–Z

Location

Tract A-4, Block 2 , Airport Industrial Park is located at 2428 Baylor Dr. SE. See. See attached portion of the Zone Atlas page number M-16 for exact location.

Purpose

The purpose of this drainage report is to present a grading and drainage solution for the proposed improvements. We are requesting rough Grading Permit and Building Permit Approval for the proposed addition.

Existing Drainage Conditions

This tract currently has a building with parking and landscaping. The runoff from the site drains to an exiting retention pond at the south corner the site. No offsite runoff enters the site. The site does not fall within a 100-year floodplain.

Proposed Conditions and On-Site Drainage Management Plan

The on-site drainage pattern will remain the same. The runoff will drain to a new retention pond along the easterly boundary line. The runoff will drain to the pond via storm

drain system and surface to the proposed retention pond. The pond is designed for the 100-year/10-day storm. An existing trench drain located in front of the building will be replaced by a new trench drain. A new drop inlet is also being proposed in the back (East Parking Lot) where it would intercept some of the runoff and then it will drain it to the retention pond.

Calculations

City of Albuquerque, Development Process Manuel, Section 22.2, Hydrology Section, was used for runoff calculations. See this report for Summary Table for runoff results. See also this report for ponding calculations as well as the AHYMO input and output files for runoff calculations.

RUNOFF CALCULATIONS

(INPUT DATA FOR AHYMO CALCULATIONS)

The site is @ Zone 2

DEPTH (INCHES) @ 100-YEAR STORM

P_{60} = 2.01 inches

P_{360} = 2.35 inches

P_{1440} = 2.75 inches

DEPTH (INCHES) @ 10-YEAR STORM

P_{60} = 2.01 x 0.667
= 1.34 inches

P_{360} = 1.57

P_{1440} = 1.83

See the summary output from AHYMO calculations.

RUNOFF CALCULATION RESULTS

BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)
ON-SITE	22802.63	0.5235	0.000818

HISTORICAL (Undeveloped ?)

BASIN	Q-100 CFS	Q-10 CFS	TREATMENT A, B, C, D
ON-SITE	0.82	0.20	100%, 0%, 0%, 0%

PROPOSED

BASIN	Q-100 CFS	Q-10 CFS	TREATMENT A, B, C, D
ON-SITE	2.31	1.48	0%, 10%, 5%, 85%

AHYMO INPUT FILE

```
* ZONE 2
**********************************************************************
*        100-YEAR,  6-HR STORM (UNDER EXISITNG CONDITIONS)           *
**********************************************************************
START                 TIME=0.0
RAINFALL              TYPE=1 RAIN QUARTER=0.0 IN
                      RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                      RAIN DAY=2.75 IN DT=0.03333 HR
* ON-SITE
COMPUTE NM HYD        ID=1 HYD NO=101.0 AREA=0.000818 SQ MI
                      PER A=100.00 PER B=0.00 PER C=0.00 PER D=0.00
                      TP=0.1333 HR MASS RAINFALL=-1
**********************************************************************
*         10-YEAR,  6-HR STORM (UNDER EXISTING CONDITIONS)           *
**********************************************************************
START                 TIME=0.0
RAINFALL              TYPE=1 RAIN QUARTER=0.0 IN
                      RAIN ONE=1.34 IN RAIN SIX=1.57 IN
                      RAIN DAY=1.83 IN DT=0.03333 HR
* ON-SITE
COMPUTE NM HYD        ID=1 HYD NO=102.0 AREA=0.000818 SQ MI
                      PER A=100.00 PER B=0.00 PER C=0.00 PER D=0.00
                      TP=0.1333 HR MASS RAINFALL=-1
**********************************************************************
*        100-YEAR,  6-HR STORM (UNDER PROPOSED CONDITIONS)           *
**********************************************************************
START                 TIME=0.0
RAINFALL              TYPE=1 RAIN QUARTER=0.0 IN
                      RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                      RAIN DAY=2.75 IN DT=0.03333 HR
* ON-STIE
COMPUTE NM HYD        ID=1 HYD NO=111.0 AREA=0.000818 SQ MI
                      PER A=0.00 PER B=10.00 PER C=5.00 PER D=85.00
                      TP=0.1333 HR MASS RAINFALL=-1
**********************************************************************
*         10-YEAR,  6-HR STORM (UNDER PROPOSED CONDITIONS)           *
**********************************************************************
START                 TIME=0.0
RAINFALL              TYPE=1 RAIN QUARTER=0.0 IN
                      RAIN ONE=1.34 IN RAIN SIX=1.57 IN
                      RAIN DAY=1.83 IN DT=0.03333 HR
* ON-SITE
COMPUTE NM HYD        ID=1 HYD NO=112.0 AREA=0.000818 SQ MI
                      PER A=0.00 PER B=10.00 PER C=5.00 PER D=85.00
                      TP=0.1333 HR MASS RAINFALL=-1
**********************************************************************
FINISH
```

SUMMARY OUTPUT FILE

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - - VERSION: 1997.02d RUN DATE (MON/DAY/YR) =01/28/2008
INPUT FILE = 801 USER NO.= AHYMO-I-9702c01000R31-AH

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION	
START 100yr-6Hr										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.350
COMPUTE NM HYD	101.00	-	1	.00082	.82	.023	.53121	1.533	1.570	PER IMP=	.00
START 10yr-6Hr										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.570
COMPUTE NM HYD	102.00	-	1	.00082	.20	.005	.12517	1.533	.376	PER IMP=	.00
START 100yr/6H										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.350
COMPUTE NM HYD	111.00	-	1	.00082	2.31	.084	1.93022	1.500	4.411	PER IMP=	85.00
START 10yr/6H										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.570
COMPUTE NM HYD	112.00	-	1	.00082	1.48	.052	1.18863	1.500	2.830	PER IMP=	85.00
FINISH											

STORM DRAIN INLET

EFFECTIVE AREA ASSUMING A 50% CLOGGING FACTOR

SINGLE 'D':

Area at the grate:

L = 38.375" - 7 (1/2" $_{\text{middle bars}}$)
= 34.875"
= 2.906'

W = 25.5" - 13 (1/2 $_{\text{middle bars}}$)
= 19"
= 1.583'

Area = 1.583' x 2.906'
= 4.601 ft^2

Effective Area = 4.601 - 0.5 (4.601)
= 2.30 ft^2

Effective Area = 2.30 ft^2

$Q = CA\sqrt{(2gh)}$

$Q = 0.60x2.30\sqrt{(2x32.2x1.00)}$

Q = 11.07 cfs >> 2.31 cfs (developed flow for the entire site)

PIPE FLOW CAPACITY CALCULATIONS

Pipe flow capacity calculations were done using the orifice equation.

12" Pipe Flow Capacity Calculation Using Orifice Equation

Orifice Equation: $Q=CA\sqrt{2gh}$

h (head) = 3.50' (minimum head, 1' above the inlet)
A = 0.7854 sf
g = 32.20

$$Q = 0.60 \times 0.7854 \times \sqrt{(2 \times 32.2 \times 3.50)}$$

Q = 7.103 cfs >> 2.31 cfs (developed flow for the entire site)

PIPE FLOW CAPACITY CALCULATIONS

Pipe flow capacity calculations were done using the orifice equation.

8" Pipe Flow Capacity Calculation Using Orifice Equation

Orifice Equation: $Q = CA\sqrt{(2gh)}$

h (head) = 2.26' (minimum head, invert to the grate)
A = 0.1111 sf
g = 32.20

$$Q = 0.60 \times 0.1111 \times \sqrt{(2 \times 32.2 \times 2.26)}$$

Q = 2.53 cfs > 2.31 cfs (developed flow for the entire site)

$$\frac{2P_{360}}{2.66}$$

B_{int} 1.25

1.35

2.20

− 65

1.55

VOLUME CALCULATIONS FOR 10-DAY STORM

(UNDER PROPOSED CONDITIONS)

DRAINAGE BASINS

SUB-BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
ON-SITE	22,802.63	0.5235	0.000818

weighted $$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

$$V\text{-}360 = E\,(AA + AB + AC + AD)$$

$$V\text{-}10\ Day = V\text{-}360 + AD\,(P\text{-}10\ Day - P\text{-}360) / 12\ in/ft$$

Table A-8 → 100YR/6Hr

EA = 0.53 ✓
EB = 0.78 ✓
EC = 1.13 ✓
ED = 2.12 ✓

AA = 0.00% = 0
AB = 10.00% = 0.05235 AC
AC = 5.00% = 0.02617 Ac
AD = 85.00% = 0.4450 Ac

P-60 = 2.01
P-360 = 2.35
P-1440 = 2.75
P-10 Day = 3.95 ✓

E =	**1.9365**	**IN**
V-360 =	**0.0845**	**AC-FT**
AD =	**0.4450**	**AC**
V-10 Day =	**0.1438**	**AC-FT**
V-10 DAY =	**6,264.07**	**CF**

POND CALCULATIONS
PROPOSED RETENTION POND

SURFACE AREA (SF)	ELEVATION (FT)	VOLUME (CF)	VOLUME (AC-FT)
1,663.25	5,241.00	6,504.34	0.1493
1,663.25	5,239.00 } 3326		
1,059.95	5,239.00	3,177.84	0.0730
1,059.95	5,237.00 } 2120		
528.97	5,237.00	1,057.94	0.0243
528.97	5,235.00 } 1058		
	6504		
TOTAL PONDING VOLUME PROVIDED (@ ELEV. 5241) =		**6,504.34**	**0.1493**
PONDING VOLUME REQUIRED (100-YR / 10-DAY STORM) =			

Need min freeboard