CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director

Mayor Timothy M. Keller

March 4, 2019

Mike Walla, P.E.
Walla Engineering
6501 Americas Pwky NE, Suite 301
Albuquerque, NM, 87110

RE: Tin Can Alley
6100 Alameda NE
Grading and Drainage Plan
Engineer's Stamp Date: 02/20/19
Hydrology File: C18D086

Dear Mr. Walla:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the information provided in your submittal received 02/20/2019, the Grading and Drainage Plan **is not** approved for Building Permit and Foundation Permit. The following comments need to be addressed for approval of the above referenced project:

1. Overall G & D. Please show what is being constructed with this Building Permit (the limits of construction). Will a permanent drainage system or a temporary retention pond (100 year 10 day volume) be constructed? Whichever the solution is built, please include this in the construction plans.

2. Overall G & D. Please show and label all work within the R.O.W. as being constructed under CPN # 766382.

3. Overall G & D. Please show all future development with a lighter linetype and label as future development.

4. Please also show the parking spaces along with the ADA spaces.

5. Please show the trash enclosures. For trash enclosures serving food service developments, demonstrate control of liquids from dumpster areas per DPM Chapter 22.9.E, Table 1 by containing runoff from the dumpster area and discharging to the sanitary sewer. If this information is on the utility plan please provide it, or show on the grading plan.

6. Where is the oil/water separator from Detail #5 from Sheet C201? If this was to be used in the dumpster area, please see Comment #5 and remove this as it is not appropriate use in a dumpster area.

7. Please provide the drainage calculation for this phase of the construction.

8. Please show the drainage area for each stormwater quality (SWQ) pond, provide the stormwater quality (SWQ) volume calculations including how much is required and how much is provided for each drainage area to the pond, and please label all stormwater quality ponds with the provided volume.

9. Please provide the weir calculation for the 4' curb cuts. Please verify the size of curb cuts needed. If a smaller one can be used then please change the calculation and labeling to reflect this.

10. Please revise the detention volume for the underground facility. The hydrograph that was submitted in the Conceptual Grading Plan was incorrectly calculated. Please see the section from the DPM.

6-1(A)(7) HYDROGRAPH FOR SMALL WATERSHED

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Albuquerque

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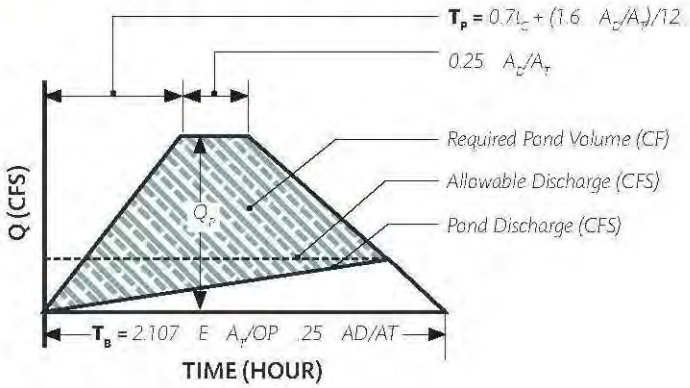
Base time, t_B, for a small watershed hydrograph is,

EQUATION 6.8 $t_B = (2.107 * E * A_T / Q_P) - (0.25 * A_D / A_T)$

Where t_B is in hours, E is the excess precipitation in inches (from TABLE 6.7), Q_P is the peak flow in cfs, A_D is the area in treatment D, and A_T is the total area in acres. Using the time of concentration, t_c (hours), the time to peak in hours is:

EQUATION 6.9 $t_p = (0.7 * t_c) + ((1.6 - (A_D / A_T)) / 12)$

Figure 6.3 **Time to Peak in Hours**



11. If there will be any retention (SWQ) then the pond discharge line will start after the retention volume is reached along the TIME axis.

12. Please show a buildable underground detention facility with all needed details.

13. Please include all calculations for the outfall structure/orifice plate whichever is being used to limit the discharge rate.

14. Please show how the runoff from the proposed phased paving area is going to be stopped from traveling to the adjacent undeveloped area. Also provide any supporting hydrologic calculations.

15. Please revise the Hydrologic Grade Line (HGL) calculations for the proposed storm system from the existing storm drain truck line in Alameda through the underground system to the sump inlet near the drive entrance to San Pedro Blvd. Using DPM procedures including Bernoulli's equation and minor losses applied to the energy grade line. Also Include the Energy Grade Line (EGL) elevations. The normal depth calculations submitted in the Conceptual G&D Plan are not adequate for the final construction plan approval.

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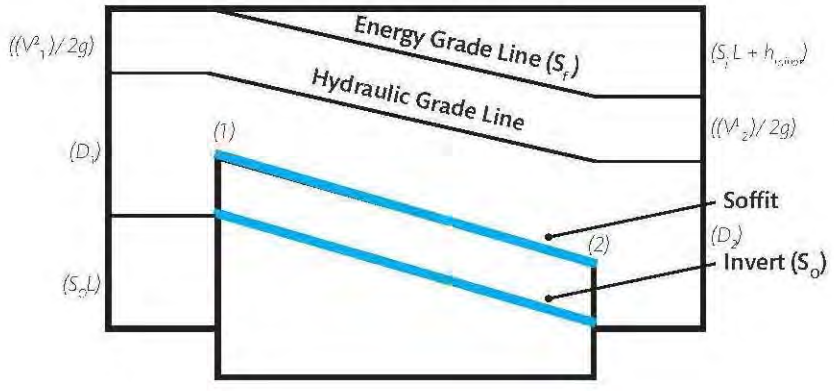
6-9(C) INSTRUCTIONS FOR HYDRAULIC CALCULATIONS

Most procedures for calculating hydraulic grade line profiles are based on the Bernoulli equation. This equation can be expressed as follows:

Figure 6.10 **Hydraulic Grade**

$$\frac{V_1^2}{2g} + D_1 + S_o L = \frac{V_2^2}{2g} + D_2 + S_f L + h_{minor}$$



where:
D = Vertical distance from invert to H.G.L.
$\mathbf{S_o}$ = Invert slope
L = Horizontal projected length of conduit
$\mathbf{S_g}$ = Average friction slope between Sections 1 and 2
V = Average velocity (g/A)
$\mathbf{h_{minor}}$ = Minor head losses

Minor losses have been included in the Bernoulli equation because of thei importance in calculating hydraulic grade line profiles and are assumed to be uniformly distributed in the above figure.

When specific energy (E) is substituted for the quantity (V2/2g + D) in the above equation and the result rearranged,

EQUATION 6.38 $L = \frac{E2 - E1}{S_o - S_f}$

The above is a simplification of a more complex equation and is convenient for locating the approximate point where pressure flow may become unsealed.

16. Also as a reminder, please provide a Drainage Covenant for the proposed underground detention facility and stormwater quality ponds per Chapter 17 of the DPM. The covenant must be approved by Hydrology and City legal and recorded prior to Building Permit and/or Foundation Permit approval. Please submit this on the 4th floor of Plaza de Sol. A $25 fee will be required.
17. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.
18. Standard review fee of $300 will be required at the time of resubmittal.

Please note that there may be more comments upon the review of your resubmittal.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov .

Sincerely,

Renée C. Brissette

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: TIN CAN ALLEY Building Permit #: _____ Hydrology File #: _____

DRB#: 1000682 EPC#: _____ Work Order#: _____

Legal Description: REMAINING PORTIONS OF LOTS 1, 2 AND 3 AND ALL OF LOTS 4, 5, 6 AND 29 IN BLOCK 29, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, JUNE 2018

City Address: 6100 ALAMEDA NE, ALBUQUERQUE, NEW MEXICO 87113

Applicant: WALLA ENGINEERING Contact: MIKE WALLA

Address: 6501 AMERICAS PARKWAY NE, SUITE 301, ALBUQUERQUE, NM 87110

Phone#: 505-881-3008 Fax#: 505-881-4025 E-mail: mikew@wallaenginering.com

Other Contact: JOE SLAGLE ARCHITECT Contact: JOE SLAGLE

Address: 413 2ND ST. SW, ALBUQUERQUE, NM 87102

Phone#: 505-246-0870 Fax#: _____ E-mail: joe@slaglearchitect.com

TYPE OF DEVELOPMENT: _____ PLAT (# of lots) _____ RESIDENCE __X__ DRB SITE ___ ADMIN SITE

IS THIS A RESUBMITTAL? _____ Yes __X__ No

DEPARTMENT _____ TRANSPORTATION __X__ HYDROLOGY/DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

____ ENGINEER/ARCHITECT CERTIFICATION
____ PAD CERTIFICATION
____ CONCEPTUAL G & D PLAN
__X__ GRADING PLAN
____ DRAINAGE REPORT
____ DRAINAGE MASTER PLAN
____ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
____ ELEVATION CERTIFICATE
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ STREET LIGHT LAYOUT
____ OTHER (SPECIFY) _____
____ PRE-DESIGN MEETING?

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

__X__ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY

____ PRELIMINARY PLAT APPROVAL
____ SITE PLAN FOR SUB'D APPROVAL
____ SITE PLAN FOR BLDG. PERMIT APPROVAL
____ FINAL PLAT APPROVAL

____ SIA/ RELEASE OF FINANCIAL GUARANTEE
__X__ FOUNDATION PERMIT APPROVAL
____ GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR
____ FLOODPLAIN DEVELOPMENT PERMIT
____ OTHER (SPECIFY) _____

DATE SUBMITTED: 2-20-19 By: MIKE WALLA

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

Drainage Report
For

Alameda & San Pedro Mixed Use

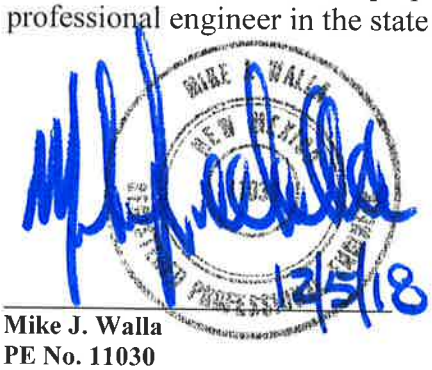
Prepared by:

Walla Engineering, Ltd.
6501 Americas Parkway NE
Suite 301
Albuquerque, New Mexico 87110

Prepared for:
Joe Slagle Architects
413 2nd St. SW
Albuquerque, New Mexico 87109

December, 2018

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the state of New Mexico in good standing.



Mike J. Walla
PE No. 11030

Project # S48-0218

TABLE OF CONTENTS

SECTION I

REPORT

Introduction

The subject site is located in North Albuquerque Acres at the southeast corner of the intersection of San Pedro Blvd. and Alameda Blvd. NE. The site is currently unimproved but is planned for development into a light commercial center. The site is made up of 7 original lots that total approximately 5.26 acres that will be replatted into 4 lots. The project will require public works improvements on Alameda to widen the road and add sidewalk and a bike lane. San Pedro will be widened as well as part of this work. The site is accessed from San Pedro Blvd. on the west, Signal Avenue on the south and there will be two north entrances off of Alameda Blvd. The attached City of Albuquerque Zone Atlas Map, C-18-Z indicates the site location. The purpose of this report is to describe existing and proposed onsite drainage conditions and how the new development will handle developed storm runoff flows.

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: ALAMEDA DEVELOPMENT Building Permit #: _____ Hydrology File #: _____

DRB#: 1000682 EPC#: _____ Work Order#: _____

Legal Description: REMAINING PORTIONS OF LOTS 1, 2 AND 3 AND ALL OF LOTS 4, 5, 6 AND 29 IN BLOCK 29, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, JUNE 2018

City Address: 6100 ALAMEDA NE, ALBUQUERQUE, NEW MEXICO 87113

Applicant: WALLA ENGINEERING Contact: MIKE WALLA

Address: 6501 AMERICAS PARKWAY NE, SUITE 301, ALBUQUERQUE, NM 87110

Phone#: 505-881-3008 Fax#: 505-881-4025 E-mail: mikew@wallaenginering.com

Other Contact: JOE SLAGLE ARCHITECT Contact: JOE SLAGLE

Address: 413 2ND ST. SW, ALBUQUERQUE, NM 87102

Phone#: 505-246-0870 Fax#: _____ E-mail: joe@slaglearchitect.com

TYPE OF DEVELOPMENT: _____ PLAT (# of lots) _____ RESIDENCE __X__ DRB SITE ___ ADMIN SITE

IS THIS A RESUBMITTAL? __X__ Yes _____ No

DEPARTMENT _____ TRANSPORTATION __X__ HYDROLOGY/DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

____ ENGINEER/ARCHITECT CERTIFICATION
____ PAD CERTIFICATION
__X__ CONCEPTUAL G & D PLAN
____ GRADING PLAN
__X__ DRAINAGE REPORT
____ DRAINAGE MASTER PLAN
____ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
____ ELEVATION CERTIFICATE
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ STREET LIGHT LAYOUT
____ OTHER (SPECIFY) _____
____ PRE-DESIGN MEETING?

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY

____ PRELIMINARY PLAT APPROVAL
____ SITE PLAN FOR SUB'D APPROVAL
__X__ SITE PLAN FOR BLDG. PERMIT APPROVAL
__X__ FINAL PLAT APPROVAL

____ SIA/ RELEASE OF FINANCIAL GUARANTEE
____ FOUNDATION PERMIT APPROVAL
____ GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR
____ FLOODPLAIN DEVELOPMENT PERMIT
____ OTHER (SPECIFY) _____

DATE SUBMITTED: 12-6-18 By: MIKE WALLA

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

FIGURE 12
INFRASTRUCTURE LIST

Project Number 1000682

Date Submitted Dec. 6, 2018
Date Site Plan Approved_____
Date Preliminary Plat Approved_____
Date Preliminary Plat Expires _____
DRB Project No._____
DRB Application No.: _____

EXHIBIT "A"
TO SUBDIVISION IMPROVEMENTS AGREEMENT
DEVELOPMENT REVIEW BOARD (DRB) REQUIRED INFRASTRUCTURE IMPROVEMENTS LIST

Alameda Blvd. & San Pedro Blvd. Mixed Use Development

PROPOSED NAME OF PLAT AND/OR SITE DEVELOPMENT PLAN

Remaining Portions of Lots 1,2 & 3 and All of Lots 4,5 & 6 and 29 in Block 29, Tract A, Unit B of North Albuquerque Acres, City of Albuquerque, Bernalillo County, New Mexico, 2018

EXISTING LEGAL DESCRIPTION PRIOR TO PLATTING ACTION

Following is a summary of **PUBLIC:PRIVATE** Infrastructure required to be constructed 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 on the related portions of the financial guarantee. All such revisions require approval from the DRC Chair, the User Department and agent/owner. If such approvals are obtained, those 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.

Financially Guaranteed DRC #	Constructed Under DRC #	Size	Type of Improvement	Location	From	To	Construction Certification Private Inspector / P.E	Construction Certification City Const Engineer
		12' lane	Arterial AC Pvmt, PCC Curb & Gutter	Alameda Blvd.	San Pedro	East P. Line	____/____	____/____
		6 ft	Sidewalk with landscape buffer	Alameda Blvd.	San Pedro	East P. Line	____/____	____/____
		6 ft	6' bike lane	Alameda Blvd.	San Pedro	East P. Line	____/____	____/____
		12' lane	Arterial AC Pvmt, PCC Curb & Gutter,	San Pedro Blvd.	South P Line	90' north past drive	____/____	____/____
		6 ft	Sidewalk for widening of San Pedro	San Pedro Blvd.	South P Line	north to intersection	____/____	____/____

FIGURE 12
INFRASTRUCTURE LIST

Financially Guaranteed DRC #	Constructed Under DRC #	Size	Type of Improvement	Location	From	To	Construction Certification: Private Inspector	Private P.E	City Const Engineer
		Std C&G	Standard Curb & Gutter and 6'-0" SW on Signal Ave. – South site boundary	Project Site	West P. Line	East P. Line	/__	/__	/__
		18" RCP	Remove and replace existing storm drain lateral from replaced Inlet to existing manhole in Alameda Blvd.	Alameda Blvd.	Replaced DI	Existing MH	/__	/__	/__
		24' Wide	Private Drive Entrance w/Valley Gutter	Signal Ave. Alameda Blvd.	Site Entry Drive		/__	/__	/__
		18" RCP	Storm Drain lateral	Signal Ave.	New Curb Inlet	Existing MH	/__	/__	/__
		8" PVC	Storm Drain Outlet Pipe	Signal Ave.	New Pond Inlet	New Curb Inlet	/__	/__	/__
		18" PVC	Storm Drain Outlet Pipe	Alameda Blvd.	Onsite Detention	Ex'g Curb Inlet	/__	/__	/__
		8" PVC	Storm Drain Outlet Pipe	Alameda Blvd.	Onsite Catch Basin	Ex'g Curb Inlet	/__	/__	/__
		12" PVC	Storm Drain Outlet Pipe	Alameda Blvd.	Onsite Catch Basin	Ex'g Curb Inlet	/__	/__	/__
		26' Wide	Private Drive Entrance w/Valley Gutter	San Pedro Blvd. Alameda Blvd.	Site Entry Drive		/__	/__	/__
		1 Each	Remove/Replace Storm Drain Inlet "Type "A"	Alameda Blvd.	Existing curb	New Curb	/__	/__	/__
		1 Each	Storm Drain Inlet – Type "A"	Signal Ave.	West of Entry		/__	/__	/__
		8" dia	New public water line main - 880 LF	Alameda Blvd. ROW	San Pedro Blvd.	East Prop Line	/__	/__	/__
		8" dia	New public SAS main – 300 LF	San Pedro Blvd.	San Pedro/Signal	San Pedro/New MH	/__	/__	/__
		8" dia	New public SAS main – 900 LF	Development Drive	San Pedro/New MH	East Parcel	/__	/__	/__
		8" dia	New public SAS – 1000 LF (Deferred)	Alameda Blvd.	San Pedro/Alameda	East P Line	/__	/__	/__
		3 Each	Fire Hydrants (2-public, 1-private)	Alameda Blvd.	San Pedro Blvd.	East end	/__	/__	/__
		1" dia	Commercial water service – 4 Ea	Alameda Blvd.	San Pedro Blvd.	Easternmost Lot	/__	/__	/__
		1	Engineer's Certification of Private G&D Will be required prior to ROFG	Subject Site	All Lots		/__	/__	/__

FIGURE 12
INFRASTRUCTURE LIST

NOTES

Street lights per City requirements

1 Engineer's Certification of Private Grading and Drainage will be required prior to ROFG

2 20' Public Sanitary Sewer Service Easement required on the developed property

3

AGENT/OWNER

NAME (print)

FIRM

SIGNATURE – date

DEVELOPMENT REVIEW BOARD MEMBER APPROVALS

DRB CHAIR – date

TRANSPORTATION DEVELOPMENT – date

UTILITY DEVELOPMENT – date

CITY ENGINEER – date

PARKS & GENERAL RECREATION – date

AMAFCA – date

_____-date

_____-date

DESIGN REVIEW COMMITTEE REVISIONS

REVISION	DATE	DRC CHAIR	USER DEPARTMENT	AGENT/OWNER

National Flood Hazard Layer FIRMette

FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

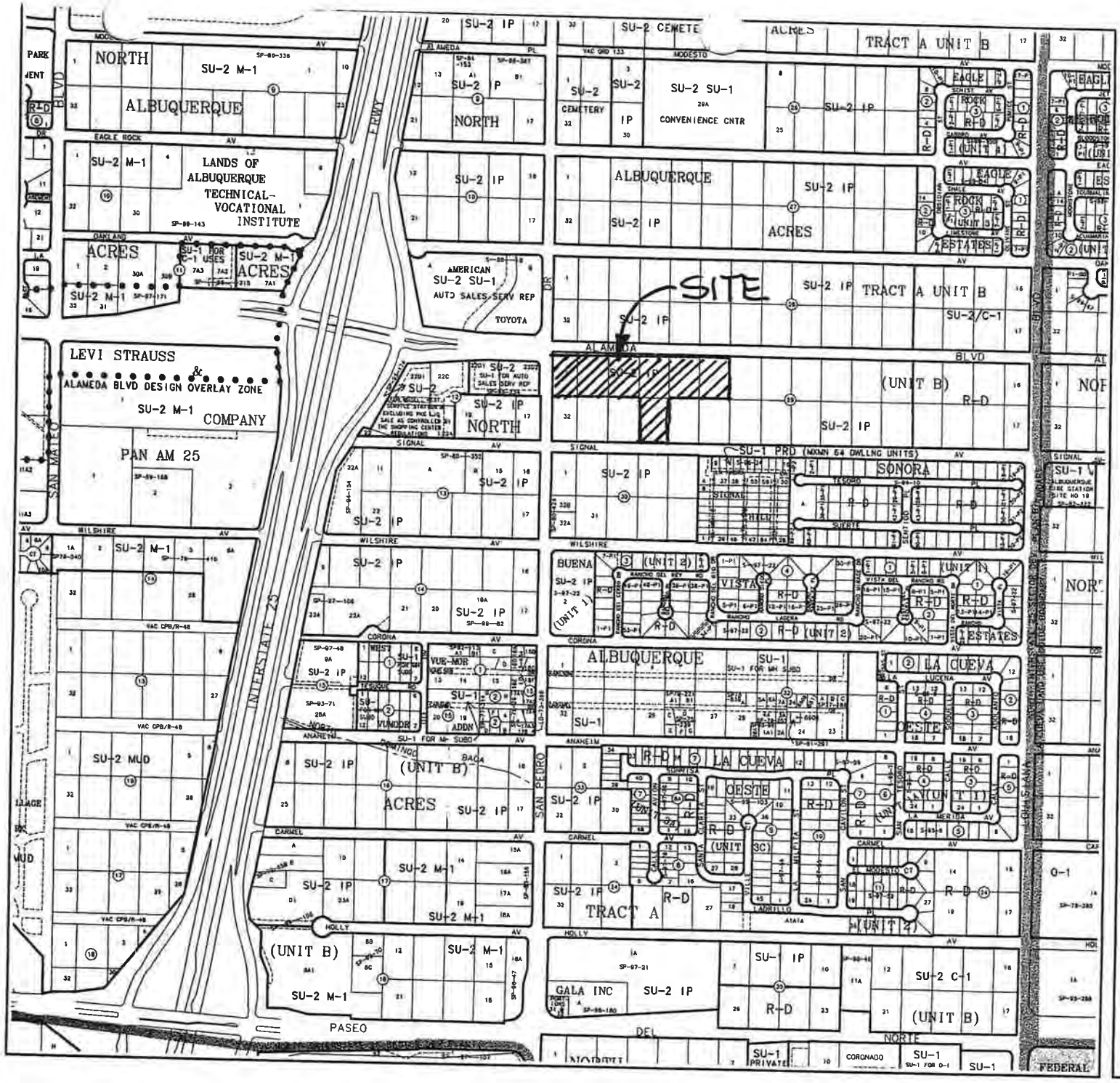
N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/11/2018 at 10:27:43 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



CITY OF Albuquerque

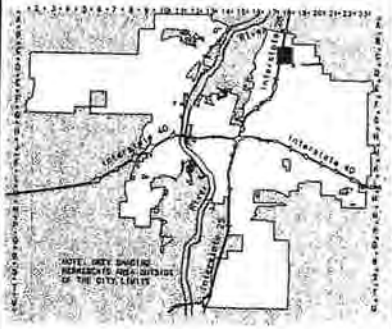
A Albuquerque G Geographic I Information S System

PLANNING DEPARTMENT

AGIS

GRAPHIC SCALE IN FEET

250 0 500 1000



Zone Atlas Page

C-18-Z

Map Amended through
December 20, 1999

LEGAL DESCRIPTION

The current legal description of the subject property (prior to platting action) is:

Remaining portions of Lots 1,2 & 3 and all of Lots 4,5,6 and 29, Tract A, Unit B of North Albuquerque Acres, City of Albuquerque, Bernalillo County, New Mexico, June 2018.

When platted, the legal description will be:

Lots 1-A, 2-A, 4-A & 6-A, Block 29, Tract A, Unit B North Albuquerque Acres within Projected Section 13, T.11N.,R.3E., NMPM Within the Elena Gallegos Grant, City of Albuquerque, Bernalillo County, New Mexico, August 2018.

Existing Drainage Conditions & Offsite Flows

The existing site is an unimproved property with a prevailing slope from east to west that varies from 2 to 5% (3.1% average). Any runoff currently developed on this site is conveyed to Alameda and San Pedro Blvd. NE. The site is bordered on the east by an unimproved property with similar slopes. The adjacent properties to the south of the subject site are developed but do not appear to impact the subject site drainage. The portion of the subject site that borders Signal Blvd. also has an existing east to west slope with some small portion of storm runoff historically flowing into Signal Ave. or adjacent property west of this section of the site. No significant storm runoff developed offsite appears to be conveyed through the subject site.

Proposed Drainage Management

The proposed on-site drainage management plan will be based on the North Albuquerque Acres Master Drainage Plan as outlined in the design analysis report titled "Alameda Blvd. – San Pedro to Wyoming" Project #7663.91, by Thompson Engineering, dated January 2012. In this report the allowable storm runoff discharge to Alameda Blvd. is limited to 3.82 CFS per acre and runoff to San Pedro Blvd. is prohibited. The developed conditions on the subject site will create an increase in developed runoff discharge and underground storage will be used to temporarily store runoff with a controlled release to Alameda while a water block and catch basin will be utilized to intercept flows in the parking area and driveway from San Pedro to direct storm water to underground storage and ultimately the downstream facilities in Alameda as well. Developed storm water from the southern end of the site will be directed to a pond on the west side of this portion of the site where the first flush volume will be retained prior to outlet to Signal Ave. from an onsite catch basin to a new city drop inlet in the new curb and gutter on Signal Ave. which will be constructed per COA Work Order. This will be tied into an existing manhole and 30" storm drain in Signal and the subsequent downstream facilities.

Calculations

The weighted E method from the "City of Albuquerque Development Process Manual Volume 11 – Design Criteria, 1997 Revision" was used to calculate runoff volumes from the project site. The 6-hr, 100-yr developed storm runoff for the portion of the site fronting Alameda Blvd. was calculated to be a total of 20.36 CFS (Basins II, III and IV). The allowable discharge of storm runoff to Alameda Blvd. as defined by the NAA Master Drainage Plan, Project #7663.91, by Thompson engineering dated January 2012 is 3.82 CFS/acre and the area of the site affected by this limitation totals 4.342 acres. Therefore, the total allowable discharge to the Alameda storm drain facilities is 16.59 CFS from the developed site which is less than the total developed flow and an underground storage system will be required to hold storm runoff with a controlled release. Calculations for that runoff and controlled outlet included in the Appendix of this report. The portion of the site that fronts on Signal Ave. (Basin I) will also be sloped to drain towards Signal but this runoff will be detained in a first flush pond on the west side of a new parking lot and will have an onsite catch basin that will then direct discharge storm flow to a new curb inlet and storm drain lateral in Signal that will connect to an existing storm manhole and 30" diameter pipe in Signal Ave.

Summary

The site will be developed to comply with requirements of the NAA Master Drainage Plan by not exceeding runoff limits to Alameda Blvd. and all but eliminating any runoff to San Pedro Blvd. from the developed site. As indicated on the Conceptual Grading & Drainage Plan, a series of catch basins will be constructed to collect storm runoff and direct it to an underground storage tank where it will be released at a controlled rate to existing City facilities in Alameda. As much as possible, the developed first flush storm volumes will be either detained in an open pond, captured and released from an underground tank through a shrouded orifice or collected in roof drains and storm drains which will also be released through a shrouded orifice in an onsite catch basin.

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director

Mayor Timothy M. Keller

September 19, 2018

Mike Walla, P.E.
Walla Engineering
6501 Americas Pwky NE, Suite 301
Albuquerque, NM, 87110

RE: Alameda Development
6100 Alameda NE
Conceptual Grading and Drainage Plan
Engineer's Stamp Date: 09/12/18
Hydrology File: C18D086

Dear Mr. Walla:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the information provided in your submittal received 09/12/2018, the Conceptual Grading and Drainage Plan **is not** approved for action by the DRB for Site Plan for Building Permit. The following comments need to be addressed for approval of the above referenced project:

1. Sheet 3. Basin II is missing the northern boundary line along, please add this.
2. Sheet 3. Please reevaluate Basin II's area. It appears that a portion of the building on Lot 2-A and drive entrance should be included in Basin III which discharges into the underground system.
3. Sheet 3. Please add a water block at the entrances to Alameda Blvd and Signal to ensure that drainage does not leave the site.
4. Sheet 3. Please add an inlet within the drive entrances along Alameda to capture the runoff and direct it to Drainage Point "A".
5. Sheet 3. Please add a berm or add a grade line to redirect the runoff to the proposed inlet in Basin IV. The grading as is appears to allow runoff into San Pedro.
6. Sheet 3. Please call out the storm pipe size.
7. Sheet 3. Please show and label the volume provided for the

8. Drainage Report. Each Basin must have its own first flush pond with volume calculations showing what is required and what is provided. These can be provided within the depressed landscaping or detention basin.

9. Drainage Report. Please provide the allowable discharge for each Basin.

10. Drainage Report. Based on the drainage calculations and the allowable discharge, the areas drainage to Alameda and the area draining to Signal will need a detention pond. For example, Basin I (0.915 ac) has an allowable discharge of 3.50 cfs and a runoff of 4.02 cfs. Therefore a detention pond needs to capture the excess of 0.52 cfs. To size the detention pond, please use either the simple hydrograph method for small watersheds to calculate the volume needed for detention (100 year – 24 hour storm event) or a routing program such as AHYMO as outlined in Chapter 22 of the DPM. If you want to use the HEC-HMS model, then please use the following parameters:

    a. The use of just four CN values, one for each of the land treatments already described in the DPM: A=76, B=80, C=85 and D=98. This way the hydrologic soil groups don't need to be determined to select the CN and the soil maps do not need to be consulted.
    b. These CNs are for a 24 hour precipitation distribution using NOAA Atlas 14 with the peak at 12 hours.
    c. Lag=0.6Tc where Tc is calculated using the procedure already in the DPM

11. Drainage Report. Based on some preliminary calculations, it appears that the proposed underground detention system will be too small. Please reevaluate the underground system based on the calculations from item #10.

12. Drainage Report. Please provide the maintenance responsivities for each detention and/or first flush ponds.

13. Drainage Report. It appears that the storm drain system and inlet near the drive entrance to San Pedro Blvd is too low to drain through the underground system and then into the existing storm sewer on Alameda. Please provide the Hydraulic Grade Line in a profile from the existing storm drain truck line in Alameda through the underground system to the sump inlet near the drive entrance to San Pedro Blvd in a profile view.

14. Drainage Report. Please provide hydraulic calculations for all drainage structures (inlets, pipes, and pond outfall structures).

15. Infrastructure List. Please add the storm sewer type at the SW corner of Signal.

16. Infrastructure List. Please add all storm drains from the property line to the existing or proposed inlet. Specifying the pipe size and location.

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17. Infrastructure List. Please add the storm drains from the proposed inlet on Signal to the existing manhole. Specifying the pipe size and location.

18. Infrastructure List. Please move note #1 to a line item instead of in the notes. This is to ensure that the item can be initialed as complete during closeout process.

Please note that an approved "For Construction" grading and drainage plan by Hydrology will be required for each lot prior to grading or building permit.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov .

Sincerely,

Renée C. Brissette

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

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December 6, 2018

Renee C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Project: **Alameda & San Pedro Mixed Use Development**
6100 Alameda NE
Albuquerque, New Mexico

Ms. Brissette,

Walla Engineering has received your comments and incorporated them into our revised Conceptual Grading & Drainage Plan for the above referenced project. Our response to each comment is listed below:

1. The north boundary line for Basin II has been added to the plan.
2. The area for Basin II has been revised and the change is reflected in the runoff calculations submitted in our Drainage Report.
3. Water block changes have been made at the San Pedro, Signal and Alameda drive entrances to the site.
4. This comment was eliminated per our email/telephone conversation.
5. A landscape berm has been added to prevent runoff from exiting the site into San Pedro Blvd.
6. Storm drain line sizes have been added to the plan.
7. The storm water quality volumes and BMP facilities have been identified in the calculations and on the plan.
8. First flush volumes for each basin have been identified in the calculation section of the report. Much of the Basin III first flush runoff detention will be captured in depressed landscape parking lot islands.
9. Allowable discharge values for each basin have been identified in the calculations section of the report.
10. The area draining to Signal Ave. has a detention pond with a controlled release to downstream facilities. The outlet pipe will restrict flow to meet the requirements of the Sector Plan and the pond is sized to handle a 100-year – 24 hour storm event. Similarly, Basin III is designed to store runoff in an underground tank sized with capacity to function as a detention pond with a controlled release to downstream facilities. The tank size is based on a simple hydrograph method for small watersheds per Chapter 22 of the DPM.

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Mike J. Walla P.E. • Larry E. Kennedy

11. The underground detention system in Basin III has been enlarged to appropriately handle the expected peak runoff volume.
12. A note has been added to the plan to define responsivities for maintenance of the onsite drainage facilities.
13. A diagram has been added to the drainage report to describe the profile of the runoff path from the storm inlet at the San Pedro drive entrance to the outlet in Alameda Blvd.
14. Calculations have been added to the report to describe outfall capacities at outlet pipes and some sizes have been adjusted.
15. The Infrastructure List has been amended to indicate the storm sewer type at the SW corner of Signal side of the site.
16. Storm drain lines connecting to the public facilities have been added to the Infrastructure List indicating line size and location.
17. The storm drain line from the pond to the proposed inlet in Signal is included in the Infrastructure List.
18. The Infrastructure List has been amended to include note #1 as a line item in response to this comment.

Please contact me if you have questions regarding this information.

Sincerely,
Walla Engineering Ltd. by,

Michael J. Walla P.E.
President

MJW/Hs

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SECTION II

Runoff Calculations

Pond Calculations

Pipe Calculations

Hydrograph and Detention Requirements

PRECIPITATION ZONE 3

DESIGN STORM: (IN)	1hr	6hr	24hr	4day	10day
	2.14	2.60	3.10	3.95	4.90

EXISTING CONDITIONS - ALAMEDA LOTS

LAND TRTMNT	AREA (ACRE)	AREA %	P6	Q (CFS/AC)	Q (CFS)	V6 (CF)	V24 (CF)	V4day (CF)	V10day (CF)
A	0.000	0%	0.66	1.87	0.00	0	0	0	0
B	4.342	100%	0.92	2.60	11.29	14,501	14,501	14,501	14,501
C	0.000	0%	1.29	3.45	0.00	0	0	0	0
D	0.000	0%	2.36	5.02	0.00	0	0	0	0
TOTALS	4.342	100%			11.29	14,501	14,501	14,501	14,501

EXISTING CONDITIONS - SIGNAL AVE. PORTION

LAND TRTMNT	AREA (ACRE)	AREA %	P6	Q (CFS/AC)	Q (CFS)	V6 (CF)	V24 (CF)	V4day (CF)	V10day (CF)
A	0.000	0%	0.66	1.87	0.00	0	0	0	0
B	0.915	100%	0.92	2.60	2.38	3,056	3,056	3,056	3,056
C	0.000	0%	1.29	3.45	0.00	0	0	0	0
D	0.000	0%	2.36	5.02	0.00	0	0	0	0
TOTALS	0.915	100%			2.38	3,056	3,056	3,056	3,056

PROPOSED CONDITIONS - BASIN I

LAND TRTMNT	AREA (ACRE)	AREA %	P6	Q (CFS/AC)	Q (CFS)	V6 (CF)	V24 (CF)	V4day (CF)	V10day (CF)
A	0.000	0%	0.66	1.87	0.00	0	0	0	0
B	0.238	26%	0.92	2.60	0.62	795	795	795	795
C	0.000	0%	1.29	3.45	0.00	0	0	0	0
D	0.677	74%	2.36	5.02	3.40	5,800	7,028	7,889	8,134
TOTALS	0.915	100%			4.02	6,595	7,823	8,683	8,929

PROPOSED CONDITIONS - BASIN II

LAND TRTMNT	AREA (ACRE)	AREA %	P6	Q (CFS/AC)	Q (CFS)	V6 (CF)	V24 (CF)	V4day (CF)	V10day (CF)
A	0.000	0%	0.66	1.87	0.00	0	0	0	0
B	0.185	19%	0.92	2.60	0.48	618	618	618	618
C	0.000	0%	1.29	3.45	0.00	0	0	0	0
D	0.770	81%	2.36	5.02	3.87	6,596	7,994	8,972	9,252
TOTALS	0.955	100%			4.35	7,214	8,612	9,590	9,870

PROPOSED CONDITIONS - BASIN III

LAND TRTMNT	AREA (ACRE)	AREA %	P6	Q (CFS/AC)	Q (CFS)	V6 (CF)	V24 (CF)	V4day (CF)	V10day (CF)
A	0.000	0%	0.66	1.87	0.00	0	0	0	0
B	0.178	6%	0.92	2.60	0.46	594	594	594	594
C	0.000	0%	1.29	3.45	0.00	0	0	0	0
D	2.877	94%	2.36	5.02	14.44	24,647	29,868	33,524	34,568
TOTALS	3.055	100%			14.91	25,241	30,463	34,118	35,162

PROPOSED CONDITIONS - BASIN IV

LAND TRTMNT	AREA (ACRE)	AREA %	P6	Q (CFS/AC)	Q (CFS)	V6 (CF)	V24 (CF)	V4day (CF)	V10day (CF)
A	0.000	0%	0.66	1.87	0.00	0	0	0	0
B	0.232	70%	0.92	2.60	0.60	775	775	775	775
C	0.000	0%	1.29	3.45	0.00	0	0	0	0
D	0.100	30%	2.36	5.02	0.50	857	1,038	1,165	1,202
TOTALS	0.332	100%			1.11	1,631	1,813	1,940	1,976

Allowable discharge to Alameda: 4.342 Acres X 3.82 CFS/AC = 16.59 CFS
Calculated direct discharge to Alameda: Basin II + Basin IV = 4.35 CFS + 1.11 CFS = 5.46 CFS
Basin III discharge allowed: 16.59 CFS - 5.46 CFS = 11.13 CFS

Use 18" dia PVC discharge pipe installed at 0.57% slope - Capacity = 11.09 CFS

First Flush Calculations:
Basin I First Flush Pond Required: Trtmnt D Area = 0.677 AC x 0.34in = 835 CF

	contour	area	volume
Pond 1 Capacity:	43	3000 sf	
	42	1710 sf	2355 cf
	41	540 sf	1125 cf
	Total Volume = 3480 CF		
Total First Flush Capacity =		3480 CF	> 835 CF OK

Basin II First Flush Pond Required: Trtmnt D Area = 0.770 AC x 0.34in = 950 CF

No ponding available - catch basin outlet is shrouded

Basin III First Flush Pond Required: Trtmnt D Area = 2.877 AC x 0.34in = 3542 CF

Ponding provided in parking islands:
5 each @ 210 SF x 1'-0" deep = 1050 CF
5 each @ 63 SF x 1'-0" deep = 315 CF
Total ponding provided = 1365 CF
Remaining required First Flush ponding (2177 CF) provided in underground storage tank

Basin IV First Flush Pond Required: Trtmnt D Area = 0.100 AC x 0.34in = 123 CF

No ponding is available - catch basin outlet is shrouded

Allowable Discharge per Basin: Rate = 3.82 CFS per Acre

Basin I	0.915 AC x 3.82 CFS/AC	= 3.50 CFS
Basin II	0.955 AC x 3.82 CFS/AC	= 3.65 CFS
Basin III	3.055 AC x 3.82 CFS/AC	= 11.67 CFS
Basin IV	0.332 AC x 3.82 CFS/AC	= 1.27 CFS
	Total	= 20.08 CFS

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SHEET NO. _____ OF _____
JOB ALAMEDA & SAN PEDRO
SUBJECT OUTLET @ BASIN I
CLIENT SIAGLE JOB NO _____
BY MJW DATE 12/8
CHECKED BY _____ DATE _____

BASIN I OUTLET PIPE
AND BASIN IV OUTLET PIPE

Alameda & San Pedro Mixed Use

Outlet Pipe - Basin I

Set units: m | mm | ft | in

Pipe diameter, d_0	8 in
Manning roughness, n ? (http://www.engineeringtoolbox.com/mannings-roughness-d_799.html)	.01
Pressure slope (possibly ? (../pressureslope.php) equal to pipe slope), S_0	3 % rise/run
Percent of (or ratio to) full depth (100% or 1 if flowing full)	94 %

Results

Flow, Q	2.9266	cfs
Velocity, v	8.5948	ft/sec
Velocity head, h_v	1.1481	ft
Flow area	49.0343	sq. in.
Wetted perimeter	21.1733	in
Hydraulic radius	2.3159	in
Top width, T	3.7998	in
Froude number, F	1.46	
Shear stress (tractive force), tau	1.1738	psf

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SHEET NO. ____ OF ____
JOB ALAMEDA & SAN PEDRO MIXED USE
SUBJECT BASIN II OUTLET
CLIENT EAGLE JOB NO ____
BY MJW DATE 12/18
CHECKED BY ____ DATE ____

BASIN II OUTLET PIPE

Alameda & San Pedro Mixed Use

Outlet Pipe - Basin II

Set units: m | mm | ft | in

Pipe diameter, d_0	12 in
Manning roughness, n ? (http://www.engineeringtoolbox.com/mannings-roughness-d_799.html)	.01
Pressure slope (possibly ? (../pressureslope.php) equal to pipe slope), S_0	1.0 % rise/run
Percent of (or ratio to) full depth (100% or 1 if flowing full)	94 %

Results

Flow, Q	4.9817	cfs
Velocity, v	6.5024	ft/sec
Velocity head, h_v	0.6571	ft
Flow area	110.3271	sq. in.
Wetted perimeter	31.7599	in
Hydraulic radius	3.4738	in
Top width, T	5.6997	in
Froude number, F	0.90	
Shear stress (tractive force), tau	0.5869	psf

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SHEET NO _____ OF _____
JOB ALAMEDA/SAN PEDRO MIXED USE
SUBJECT STORM WATER OUTLET PIPE
CLIENT STATE JOB NO _____
BY MJB DATE 12/18
CHECKED BY _____ DATE _____

BASIN III OUTLET PIPE FROM TANK

Alameda & San Pedro Mixed Use

Outlet Pipe ~ BASIN III

Set units: m | mm | ft | in

Pipe diameter, d_0	18 in
Manning roughness, n ? (http://www.engineeringtoolbox.com/mannings-roughness-d_799.html)	.01
Pressure slope (possibly ? (../pressureslope.php) equal to pipe slope), S_0	0.57 % rise/run
Percent of (or ratio to) full depth (100% or 1 if flowing full)	94 %

Results

Flow, Q	11.0889	cfs
Velocity, v	6.4328	ft/sec
Velocity head, h_v	0.6431	ft
Flow area	248.2360	sq. in.
Wetted perimeter	47.6399	in
Hydraulic radius	5.2107	in
Top width, T	8.5495	in
Froude number, F	0.73	
Shear stress (tractive force), tau	0.5018	psf

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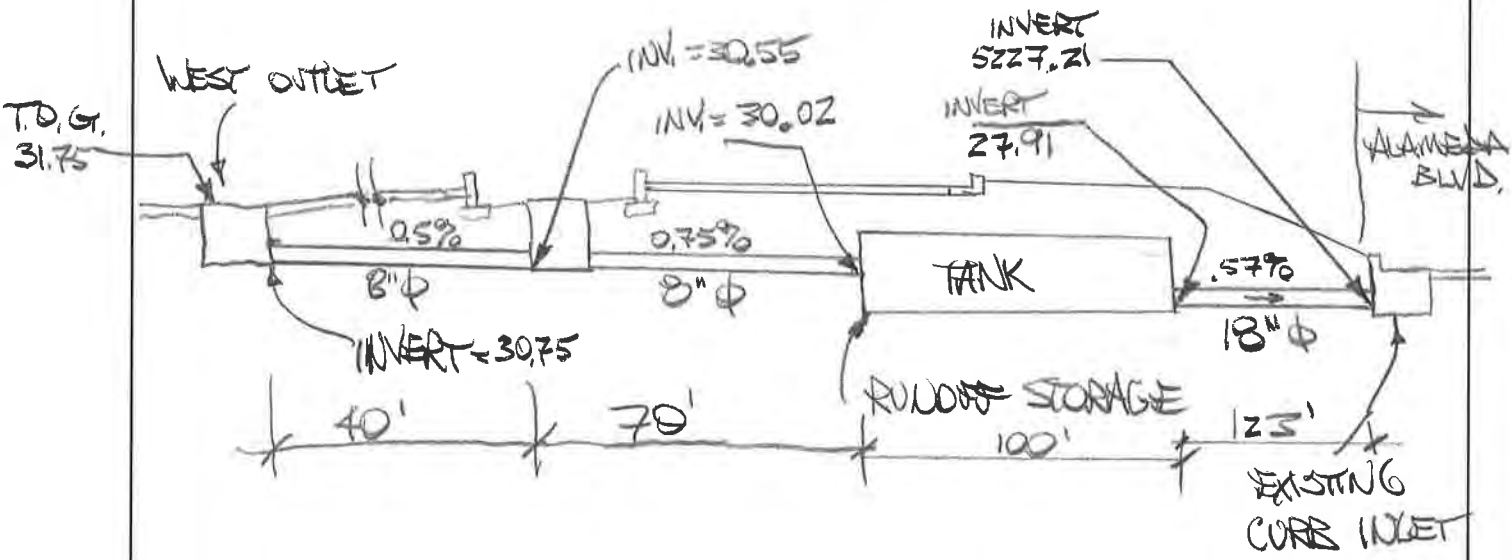
SHEET NO. _____ OF _____
JOB ALAMEDA/SAN PEDRO MIXED USE
SUBJECT _____
CLIENT EAGLE JOB NO _____
BY MATW DATE _____
CHECKED BY _____ DATE _____

CHECK FALL OF WEST OUTLET



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SHEET NO. _____ OF _____
JOB ALAMEDA & SAN MATEO
SUBJECT _____
CLIENT _____ JOB NO _____
BY _____ DATE _____
CHECKED BY _____ DATE _____

BASIN III HYDROGRAPH

$$t_D = (121 \times E \times A_T/Q_P) - (15 \times A_D/A_T)$$

WHERE $A_D = 2.877$ AC

$A_T = 3.055$ AC

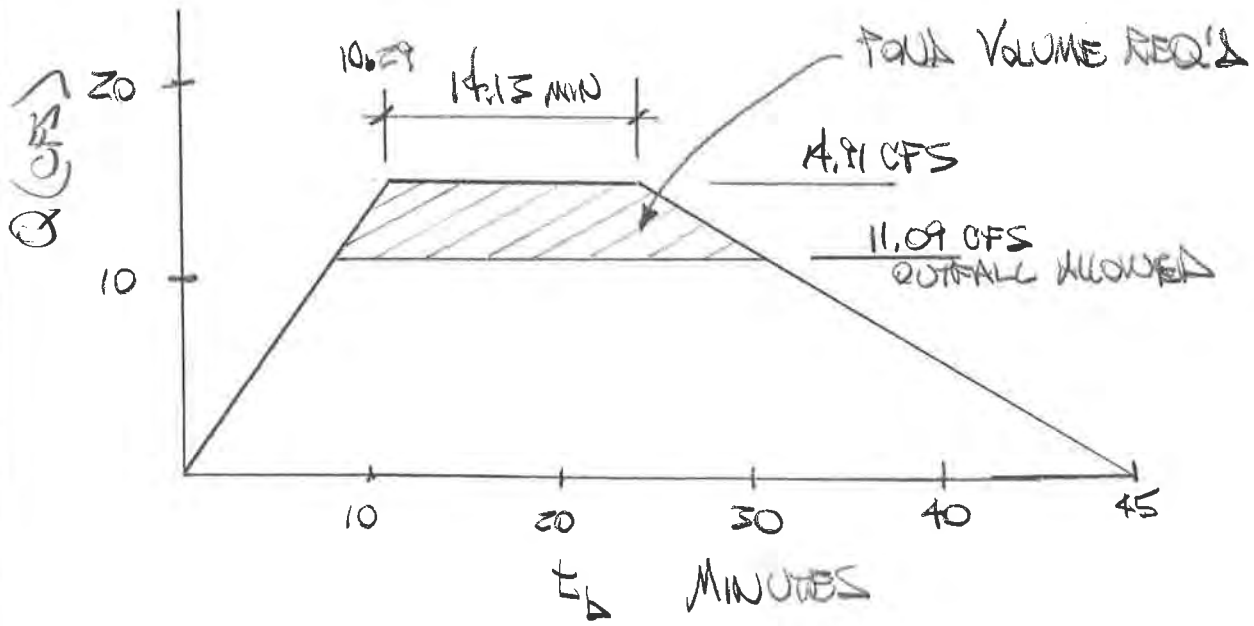
$E = 2.36$ IN

$Q_P = 14.91$ CFS

$$t_D = \left(121 \times 2.36^{IN} \times \frac{3.055\ AC}{14.91\ CFS}\right) - \left(15 \times \frac{2.877}{3.055}\right) = 11.30\ MIN$$

$$t_p = (0.7 \times t_c) + 8 - (5 \times A_D/A_T)$$

$$= (0.7 \times 10) + 8 - \left(5 \times \frac{2.877}{3.055}\right) = 10.29\ MIN$$



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SHEET NO. _____ OF _____
JOB ALAMEDA & SAN MATEO
SUBJECT _____
CLIENT _____ JOB NO _____
BY _____ DATE _____
CHECKED BY _____ DATE _____

HYDROGRAPH AREA → PONDING REQ'D FOR DETENTION

$14.13\ MIN \times (14.91 - 11.09\ CFS) = 3.82 \times 14.13\ (60\ S/MIN) = 3239\ CF$

$+ 3.82 \times \left(\frac{2.1\ MIN}{2}\right)(60) = 241\ CF$

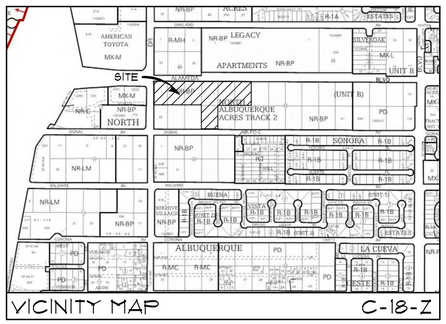
$+ 3.82 \times \left(\frac{6.2\ MIN}{2}\right)(60) = 1421\ CF$

TOTAL = 4901 CF

FIRST FLUSH ONSITE POND VOLUME = 1365 CF

NET DETENTION REQ'D = 4901 - 1365
= 3536 CF

CONVERT TO GALLONS = 26,449 GAL.



DRAINAGE NOTES

1 FLOOD PLAIN DESIGNATION ZONE X PER FIRM MAP 350002, OCTOBER 2017

2 SUBJECT SITE IS WITHIN THE NORTH ALBUQUERQUE ACRES MASTER DRAINAGE PLAN - DESIGN ANALYSIS REPORT " ALAMEDA BLVD. - SAN PEDRO TO WYOMING, PROJECT #663.91" BY THOMPSON ENGINEERING DATED JANUARY, 2012 - THE ALLOWABLE DISCHARGE FOR THIS SITE IS 3.82 CFS/AC

DRAINAGE POINTS

A 4.35 CFS

B 1.11 CFS

C 11.09 CFS

D 2.93 CFS

LEGAL DESCRIPTION

REMAINING PORTIONS OF LOTS 1, 2 AND 3 AND ALL OF LOTS 4, 5, 6 AND 28 IN BLOCK 29 TRACT A UNIT B NORTH ALBUQUERQUE ACRES CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO JUNE, 2018

BASIS OF ELEVATIONS

ELEVATIONS ARE BASED ON CITY OF ALBUQUERQUE STATION No. "9-C18 1985", HAVING AN ELEVATION OF 5232.47 , NAVD 1988

MAINTENANCE OF THE ONSITE DRAINAGE FACILITIES IS THE RESPONSIBILITY OF THE PROPERTY OWNER. THESE FACILITIES INCLUDE DRAINAGE POND(S), FIRST FLUSH PONDS, CATCH BASINS (INLETS), STORM DRAIN LINES, AND UNDERGROUND STORAGE TANKS. THE EXECUTED COVENANT FOR THIS PROPERTY DEFINES THESE RESPONSIBLE PARTIES.

Walla ENGINEERING LTD
Structural Engineering
Civil Engineering
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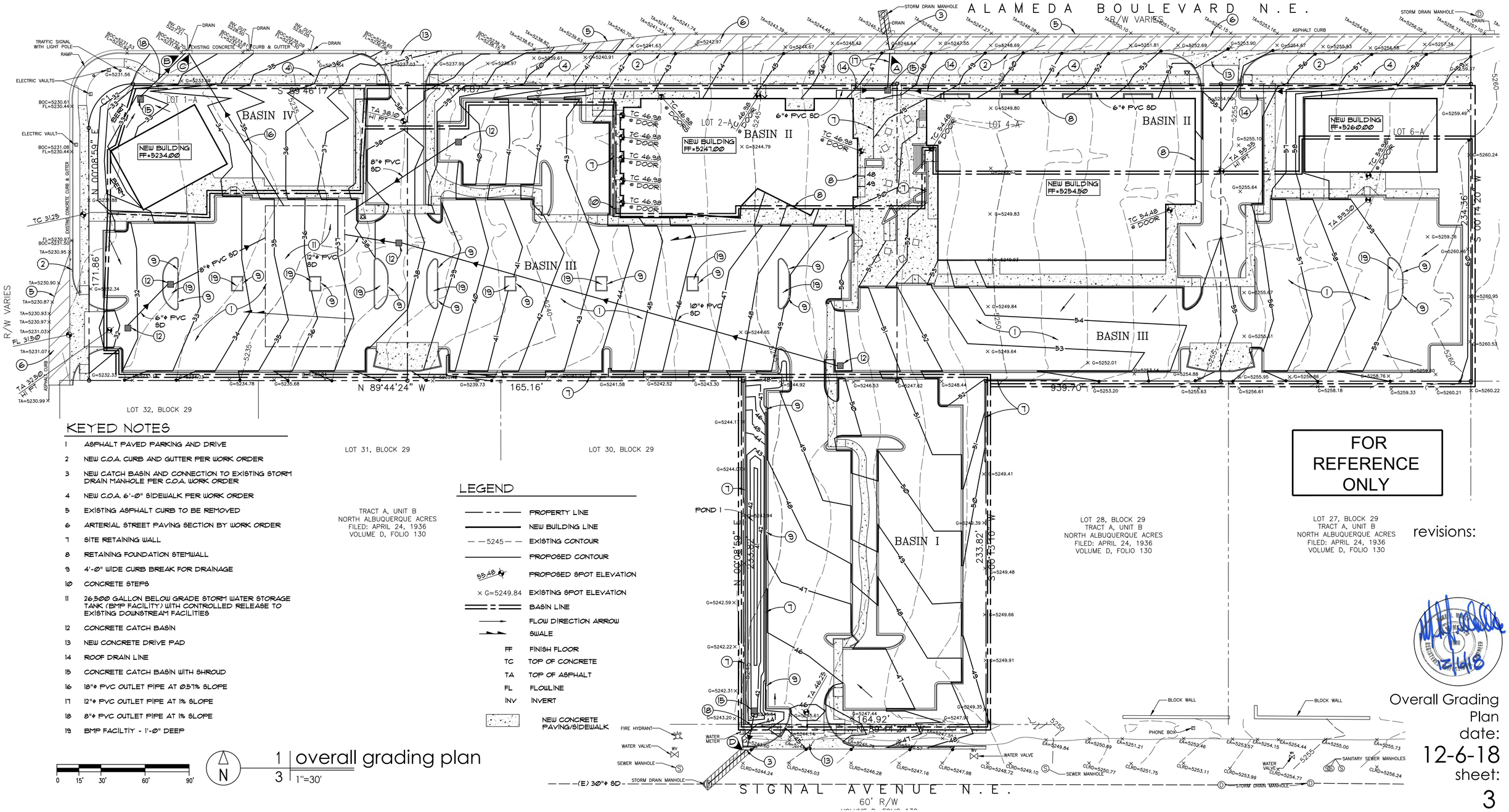
joe slagle architect
413 2nd st sw
abq nm 87102
505 246 0870

A MIXED USE DEVELOPMENT
at alameda and san pedro ne. abq, nm



KEYED NOTES

1 ASPHALT PAVED PARKING AND DRIVE

2 NEW C.O.A. CURB AND GUTTER PER WORK ORDER

3 NEW CATCH BASIN AND CONNECTION TO EXISTING STORM DRAIN MANHOLE PER C.O.A. WORK ORDER

4 NEW C.O.A. 6'-0" SIDEWALK PER WORK ORDER

5 EXISTING ASPHALT CURB TO BE REMOVED

6 ARTERIAL STREET PAVING SECTION BY WORK ORDER

7 SITE RETAINING WALL

8 RETAINING FOUNDATION STEMWALL

9 4'-0" WIDE CURB BREAK FOR DRAINAGE

10 CONCRETE STEPS

11 26,500 GALLON BELOW GRADE STORM WATER STORAGE TANK (BMP FACILITY) WITH CONTROLLED RELEASE TO EXISTING DOWNSTREAM FACILITIES

12 CONCRETE CATCH BASIN

13 NEW CONCRETE DRIVE PAD

14 ROOF DRAIN LINE

15 CONCRETE CATCH BASIN WITH SHROUD

16 18"ϕ PVC OUTLET PIPE AT 0.57% SLOPE

17 12"ϕ PVC OUTLET PIPE AT 1% SLOPE

18 8"ϕ PVC OUTLET PIPE AT 1% SLOPE

19 BMP FACILTIY - 1'-0" DEEP

LEGEND

PROPERTY LINE

NEW BUILDING LINE

5245 EXISTING CONTOUR

PROPOSED CONTOUR

5548 PROPOSED SPOT ELEVATION

× G=5249.84 EXISTING SPOT ELEVATION

BASIN LINE

FLOW DIRECTION ARROW

SWALE

FF FINISH FLOOR

TC TOP OF CONCRETE

TA TOP OF ASPHALT

FL FLOWLINE

INV INVERT

NEW CONCRETE PAVING/SIDEWALK

0 15' 30' 60' 90'

N

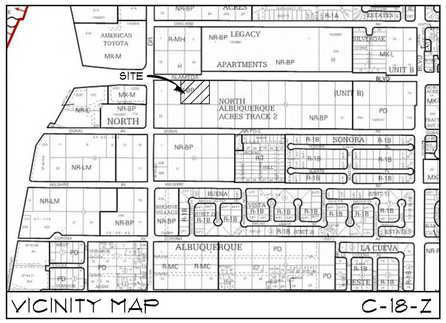
1 | 3 overall grading plan 1"=30'

FOR REFERENCE ONLY

revisions:

12-6-18

Overall Grading Plan
date: 12-6-18
sheet: 3



VICINITY MAP C-18-Z

DRAINAGE NOTES

1 FLOOD PLAIN DESIGNATION ZONE X PER FIRM MAP 35001, OCTOBER 2017

2 SUBJECT SITE IS WITHIN THE NORTH ALBUQUERQUE ACRES MASTER DRAINAGE PLAN - DESIGN ANALYSIS REPORT " ALAMEDA BLVD. - SAN PEDRO TO WYOMING, PROJECT "1663.91" BY THOMPSON ENGINEERING DATED JANUARY, 2012 - THE ALLOWABLE DISCHARGE FOR THIS SITE IS 3.82 CFS/AC

3 THIS PLAN IS ONE PORTION OF THE OVERALL SITE GRADING AND DRAINAGE PLAN APPROVED BY C.O.A. HYDROLOGY AND DRB PREPARED BY WALLA ENGINEERING DATED 12/6/18

DRAINAGE POINTS

A 4.35 CFS

B 1.11 CFS

C 11.09 CFS

D 2.93 CFS

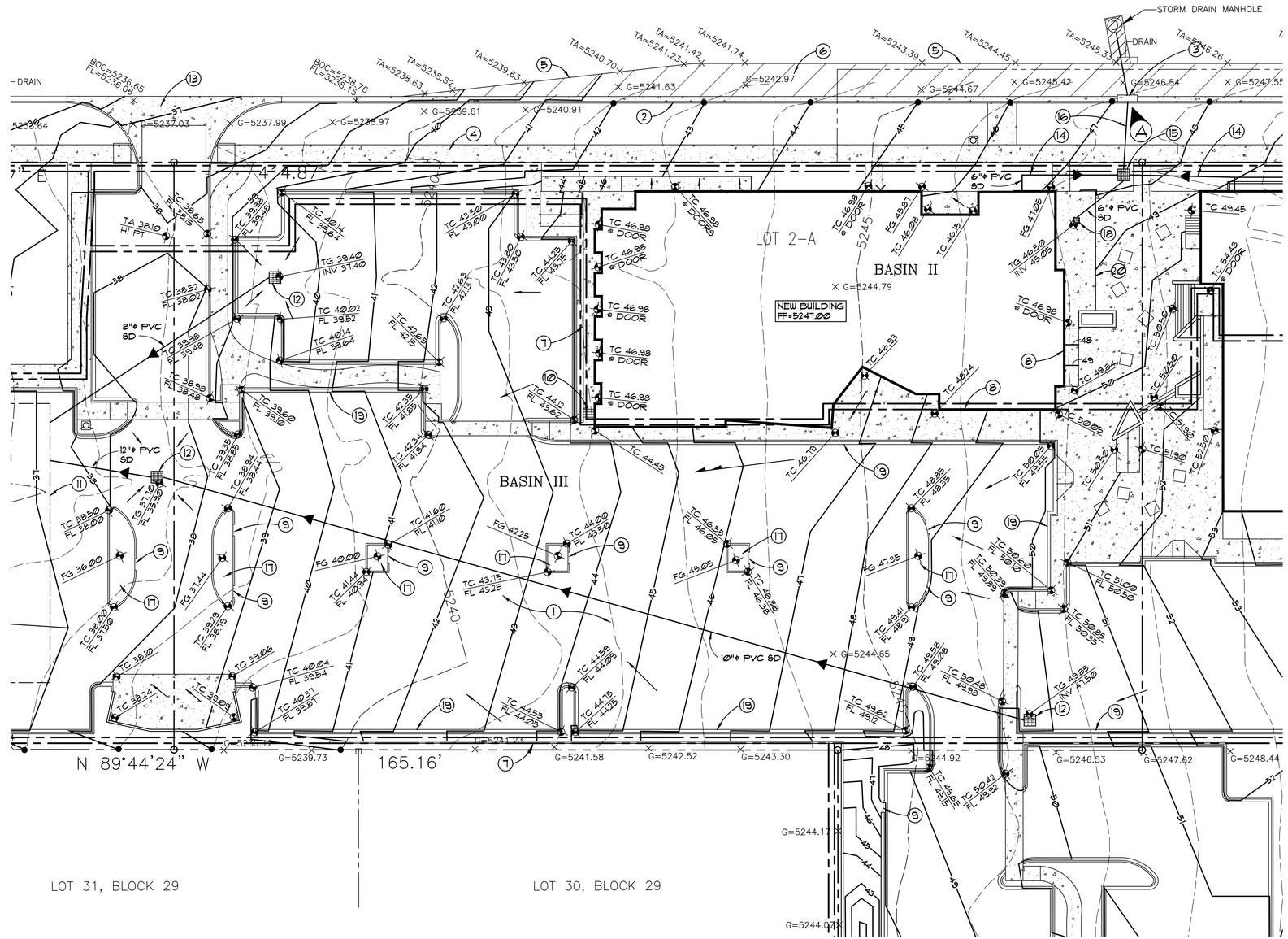
LEGAL DESCRIPTION

REMAINING PORTIONS OF LOTS 1, 2 AND 3 AND ALL OF LOTS 4, 5, 6 AND 29 IN BLOCK 29 TRACT A UNIT B NORTH ALBUQUERQUE ACRES CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO JUNE, 2018

BASIS OF ELEVATIONS

ELEVATIONS ARE BASED ON CITY OF ALBUQUERQUE STATION No. "9-C18 1985", HAVING AN ELEVATION OF 5232.47 , NAVD 1988

MAINTENANCE OF THE ONSITE DRAINAGE FACILITIES IS THE RESPONSIBILITY OF THE PROPERTY OWNER. THESE FACILITIES INCLUDE DRAINAGE POND(S), FIRST FLUSH PONDS, CATCH BASINS (INLETS), STORM DRAIN LINES, AND UNDERGROUND STORAGE TANKS. THE EXECUTED COVENANT FOR THIS PROPERTY DEFINES THESE RESPONSIBLE PARTIES.



KEYED NOTES

1 ASPHALT PAVED PARKING AND DRIVE PER DETAIL 1/C201

2 NEW C.O.A. CURB AND GUTTER PER WORK ORDER

3 NEW CATCH BASIN AND CONNECTION TO EXISTING STORM DRAIN MANHOLE PER C.O.A. WORK ORDER

4 NEW C.O.A. 6'-0" SIDEWALK BY WORK ORDER

5 EXISTING ASPHALT CURB TO BE REMOVED BY WORK ORDER

6 ARTERIAL STREET PAVING SECTION BY WORK ORDER

7 SITE RETAINING WALL PER DETAIL 2/C201

8 RETAINING FOUNDATION STEMWALL

9 4'-0" WIDE CURB BREAK FOR DRAINAGE

10 CONCRETE STEPS PER DETAIL 3/C201

11 26,500 GALLON BELOW GRADE STORM WATER STORAGE TANK (BMP FACILITY) WITH CONTROLLED RELEASE TO EXISTING DOWNSTREAM FACILITIES

12 CONCRETE CATCH BASIN PER DETAIL 4/C201

13 NEW CONCRETE DRIVE PAD PER C.O.A. STD. DRAWING 2426 AND 2420

14 ROOF DRAIN LINE

15 CONCRETE CATCH BASIN WITH SHROUD PER DETAIL 5/C201
TG = 47.35
INV IN = 44.85
INV OUT = 44.80

16 12"ø PVC OUTLET PIPE AT 1% SLOPE

17 BMP FACILITY - 1'-0" DEEP - SEE DETAIL 6/C201 FOR HEADER CURB

18 CONCRETE CATCH BASIN PER DETAIL 7/C201

19 TYPICAL SITE CONCRETE CURB AND GUTTER PER DETAIL 8/C201

20 SITE RETAINING WALL PER 9/C201

LEGEND

- PROPERTY LINE
- NEW BUILDING LINE
- 5245 EXISTING CONTOUR
- PROPOSED CONTOUR
- 5548 PROPOSED SPOT ELEVATION
- × G=5249.84 EXISTING SPOT ELEVATION
- BASIN LINE
- FLOW DIRECTION ARROW
- SWALE
- FF FINISH FLOOR
- TC TOP OF CONCRETE
- TA TOP OF ASPHALT
- FL FLOWLINE
- INV INVERT
- SD STORM DRAIN
- TOG TOP OF GRATE
- FG FINISH GRADE
- NEW CONCRETE PAVING/SIDEWALK 4" THICK, 4000 PSI, AIR-ENTRAINED

0 10' 20' 40' 60'

N

1 | grading and drainage plan
c101 | 1"=20'

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revisions:

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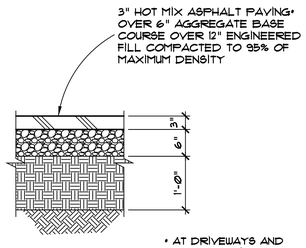
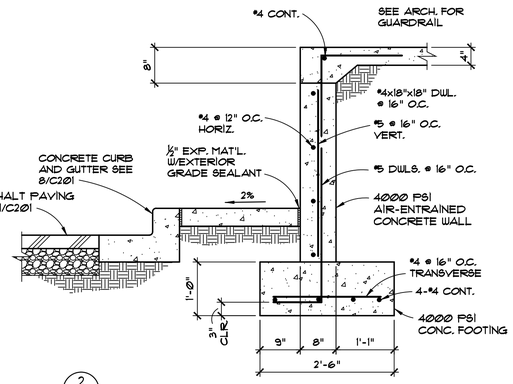
TIN CANALLEY

A CONTAINER DEVELOPMENT
6110 ALAMEDA BLVD NE
ALBUQUERQUE, NM

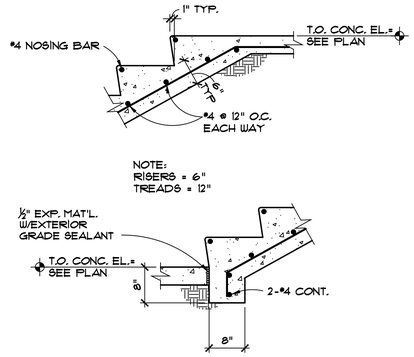
Grading and Drainage Plan
date:
2-20-19
sheet:
c101



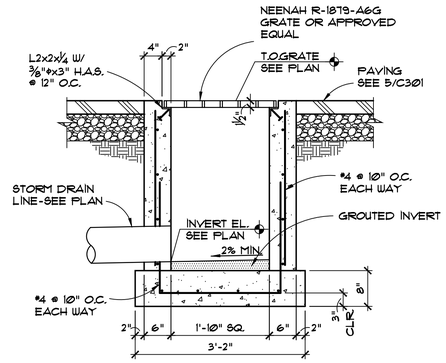
1 C30I ASPHALT PAVING SECTION 3/4"=1'-Ø"



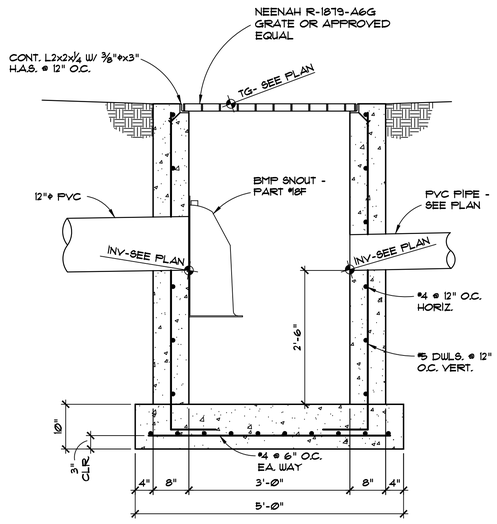
2 C20I 3/4"=1'-Ø"



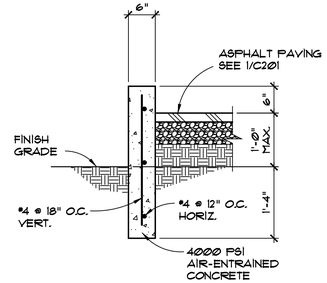
3 C20I TYPICAL CONCRETE STEP SECTION 3/4"=1'-Ø"



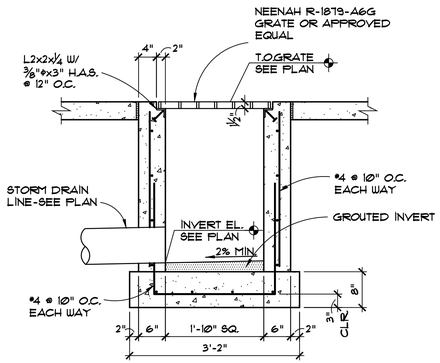
4 C20I CATCH BASIN 3/4"=1'-Ø"



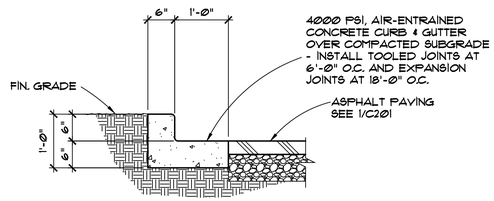
5 C30I OIL/WATER SEPARATION CATCH BASIN 3/4"=1'-Ø"



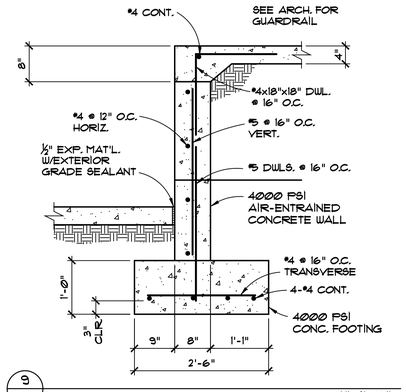
6 C30I HEADER CURB AT BMP FACILITY 3/4"=1'-Ø"



7 C30I CATCH BASIN 3/4"=1'-Ø"



8 C30I TYPICAL SITE CURB AND GUTTER SECTION 3/4"=1'-Ø"



9 C20I 3/4"=1'-Ø"

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