

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director



Mayor Timothy M. Keller

April 26, 2019

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

**RE: Tin Can Alley
6100 Alameda NE
Grading & Drainage Plan and Drainage Report
Engineer's Stamp Date: 04/22/19
Hydrology File: C18D086**

Dear Mr. Walla:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the information provided in your resubmittal received 04/22/2019, the Grading & Drainage Plan and Drainage Report **is not** approved for Building Permit. The following comments are based on a meeting with Larry Kennedy from your office on 04/25/2019 and markups which I provided to him:

1. The HGL in the manhole in Alameda is 5231.1. Starting here and traveling through the proposed storm system, the HGL at the inlet (note 15) is 35.37 and rim of 35.75. This means that the proposed underground detention and all downstream storm sewer will not be able to discharge into the storm system and will easily go over the waterblock of 32.50 at San Pedro. Therefore, we propose two solutions.
 - a. Do a complete study for the installation of inlet(s) on San Pedro along with the upsizing of the existing 48-inch pipe to probably a 60-inch and a manhole. This infrastructure will have to go back to the DRB for a revised Infrastructure List approval. This option seems to be costly and more time consuming so I suggest the second option.
 - b. This option eliminates the underground detention facility and installs instead a retention pond along San Pedro for the ultimate development. The total allowable discharge to Alameda is $3.82 \text{ cfs/ac} \times 4.345 \text{ ac} = 16.59 \text{ cfs}$. Basin II is free discharge of 4.37 cfs and a remainder allowable discharge of 12.22 cfs. Basin III & IV have a 100 yr – 6 hr runoff of 15.9 cfs. 15.9 minus 12.2 leaves 3.7 cfs for retention. We will allow for the 100 yr – 6 hr volume to be used instead of the 10 day. So using the DPM, the area for retention is $3.7 \text{ cfs} / 4.49 \text{ cfs/ac} = 0.82 \text{ ac}$. The volume of retention is therefore $2.58''$ (excess type D) $\times 0.82 \text{ ac} = 7,717 \text{ cf}$. Therefore a pond $20' \times 80' \times 5'$ (depth) will provide a volume of 8,000 cf. This

CITY OF ALBUQUERQUE

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pond will be walled with a security fence around it so no one falls in. A waterblock will need to be created at the curb return just to the east of the proposed underground detention. (Location provided on plans) Basin III will stop at this waterblock and Basin IV will extend to the south. Not only does the underground detention facility be eliminated, but two additional inlets and pipes are eliminated as well. (Marked on the plans) The inlet just to the east of the new waterblock, needs to be lowered a bit. This maybe lowered to say TG 37.50. (Please check to ensure that this is enough so that the runoff does not just go over the new waterblock) From this inlet, the outflow pipe can then connect to the most easterly of the existing three inlets. This pipe should be able to discharge the allowable 12.22 cfs. The only other new pipe is from the inlet by the San Pedro entrance and goes to the retention pond. This option also has the benefit of lowering the elected Payment-in-Lieu amount. Please verify the correct amount. By my calculation, for 0.82 ac @ 90% impervious will need a stormwater quality volume of 910 cf. Since this will be handled within the required retention pond volume it can be subtracted from the site's deficit volume amount. The total site stormwater quality volume is 3655 cf – 1155 cf (provided) – 910 cf (retention pond) = 1,590 cf. The Payment-in-Lieu amount is 1590 cf * \$8/cf = \$12,720. This is a savings of \$7,280. Along with the savings of the revised storm sewer system, this is a better option than the first one.

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2. Please reflect the Grading and Drainage Plans for whichever option that you chose.
3. Please reflect the Drainage Report for whichever option that you chose.
4. Please add the calculations for the temporary retention pond to the Drainage Report.

Please provide a Drainage Covenant for the proposed retention pond, stormwater quality ponds, and private storm pipes per Chapter 17 of the DPM. Also a separate Drainage Covenant for the proposed temporary retention pond. Both covenants must be submitted prior to Certificate of Occupancy approval. Please submit this on the 4th floor of Plaza de Sol. A \$25 fee will be required.

Standard review fee of \$300 will be required at the time of 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



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@wallaengineering.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 ☒ DRB SITE _____ ADMIN SITE

IS THIS A RESUBMITTAL? ☒ Yes _____ No

DEPARTMENT _____ TRANSPORTATION ☒ HYDROLOGY/DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

- ☐ ENGINEER/ARCHITECT CERTIFICATION
☐ PAD CERTIFICATION
☐ CONCEPTUAL G & D PLAN
☒ 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:

- ☒ 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
☐ 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: 4-22-19 **By:** MIKE WALLA

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____



**Drainage Report
For**

**Alameda & San Pedro Mixed Use
Tin Can Alley**

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

April 22, 2019

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.

A circular professional engineer seal for the State of New Mexico is shown. The seal contains the text "M. L. WALLA", "NEW MEXICO", "1913", and "PROFESSIONAL ENGINEER". Overlaid on the seal is a blue ink signature of Mike J. Walla. Below the seal, the text "Mike J. Walla" and "PE No. 11030" is printed.

Mike J. Walla
PE No. 11030

Project # S48-0218

6 5 0 1 A m e r i c a s P a r k w a y N E • S u i t e 3 0 1
A l b u q u e r q u e • N e w M e x i c o • 8 7 1 1 0
(5 0 5) 8 8 1 - 3 0 0 8 • F a c s i m i l e (5 0 5) 8 8 1 - 4 0 2 5

M i k e J . W a l l a P . E . •

L a r r y E . K e n n e d y

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Runoff Calculations - Overall Site and Phase I
AHYMO Model Input File
AHYMO Model Output
Orifice Calculations
Pipe Calculations
Weir Calculation
HGL diagram at westernmost Catch Basin

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. The Tin Can Alley project will occupy the Lot 2-A portion of the site but the site improvements associated with this project will extend into the west adjacent lot (Lot 1-A) in order to construct parking, drive access from San Pedro Blvd. NE and an underground runoff storage tank that will service this project and the future projects east of this lot in this development.



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Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

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DRB#: 1000682 **EPC#:** _____ **Work Order#:** _____
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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@wallaengineering.com
Other Contact: JOE SLAGLE ARCHITECT **Contact:** JOE SLAGLE
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DEPARTMENT _____ TRANSPORTATION ☒ HYDROLOGY/DRAINAGE

Check all that Apply:

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

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____ CERTIFICATE OF OCCUPANCY
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____ CLOMR/LOMR
____ FLOODPLAIN DEVELOPMENT PERMIT
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____ STREET LIGHT LAYOUT
____ OTHER (SPECIFY) _____
____ PRE-DESIGN MEETING?

DATE SUBMITTED: 4-22-19 **By:** MIKE WALLA

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

National Flood Hazard Layer FIRMette



35°11'15.28"N



USGS The National Map, Orthoimagery, Data refreshed October 2017

0 250 500 1,000 1,500 2,000 Feet 1:6,000

35°10'45.87"N

Legend

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

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) Zone AE, 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 X

OTHER AREAS

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

GENERAL STRUCTURES

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

OTHER FEATURES

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 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



The pin displayed on the map is an approximate point selected by the user and does not represent 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.

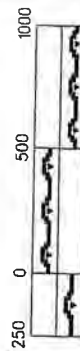


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Planning Department
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GRAPHIC SCALE IN FEET



Zone Atlas Page C-18-Z

Map Amended through
December 20, 1999



LEGAL DESCRIPTION

The current legal description of the subject property is:

**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 overall 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 a residential development currently under construction 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 to 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 downstream facilities except under high flow rates where it will temporarily pond in the parking area on the west side of paved lot. 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. Some first flush runoff will be directly released to public facilities and through shrouded inlets and this volume will be accounted for in a Fee-in-Lieu arrangement with the City of Albuquerque in order to allow direct discharge to 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 are included in the Appendix of this report. The overall site was modelled using AHYMO software and the size of the storage tank servicing Basin II and Basin III as well as ponding required in Basin I was determined based on that model. The portion of the site that fronts on Signal Ave. (Basin I) will also be sloped to drain towards Signal but will be collected onsite and piped directly to the storm drain in Signal through a shrouded inlet with an orifice plate to restrict flow. The site will be required to hold a small amount of runoff in the parking area and this design will further detailed in the Phase II drainage plan for this portion of the project.

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 approved by DRB, 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

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

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:

Albuquerque

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

EQUATION 6.8 $t_b = (2.107 * E * A_T / Q_p) - (0.25 * A_D / A_T)$

Albuquerque

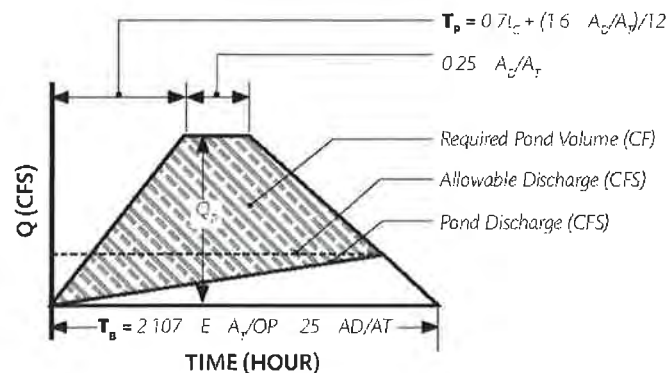
Where t_b is in hours, E is the excess precipitation in inches (from [TABLE 6.7](#)), Q_p is the peak flow in cfs, A_D is the area in treatment D, and A_T is the total area in acres. Using the time of concentration, t_c (hours), the time to peak in hours is:

NM 87103

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

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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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Albuquerque

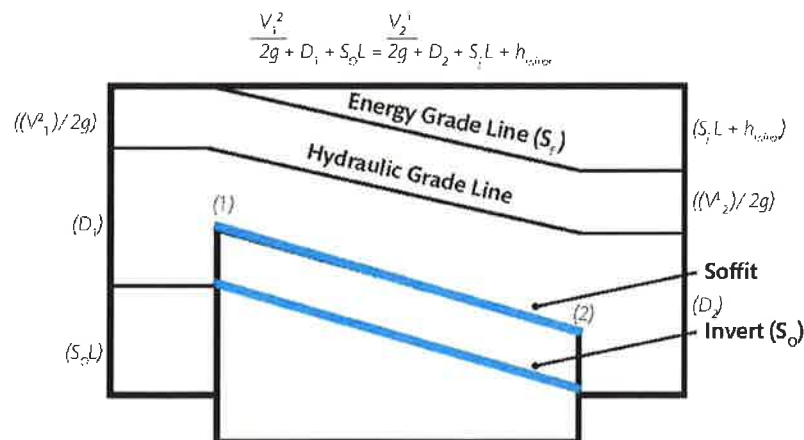
NM 87103

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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



where:

D = Vertical distance from invert to H.G.L.

S_o = Invert slope

L = Horizontal projected length of conduit

S_f = Average friction slope between Sections 1 and 2

V = Average velocity (g/A)

h_{minor} = Minor head losses

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Minor losses have been included in the Bernoulli equation because of their 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 $(V^2/2g + D)$ in the above equation and the result rearranged,

$$\text{EQUATION 6.38 } L = \frac{E_2 - E_1}{S_o - S_f}$$

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.

PO Box 1293

17. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

Albuquerque

18. Standard review fee of \$300 will be required at the time of resubmittal.

NM 87103

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.

www.cabq.gov

Sincerely,

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



April 21, 2019

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 - Tin Can Alley**
6100 Alameda NE
Albuquerque, New Mexico

Ms. Brissette,

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

1. The Overall G&D Plan has been modified to indicate the extent of site improvements included in this Phase I portion of the work. This scope will be included in the Building Permit.
2. A note has been added to the Overall G&D Plan to indicate that all of the public ROW work will be constructed under CPN # 766382.
3. Future Phase work in the development has been indicated with a lighter line type on the Overall G&D Plan.
4. All parking spaces are now indicated on the Overall G&D Plan, including ADA spaces.
5. Trash enclosures have been identified (they were previously shown on the plan but not labelled) on the Overall G&D Plan as well as the Phase I G&D Plan. The sanitary sewer drain is noted on the plan now as well as indicated on the Site Utility Plan.
6. Detail 5/C201 is now referenced in keyed note 15 on the Plan and is located at the north side of the patio east of the Tin Can Alley Building.
7. Phase I calculations have been added for this project.
8. The project Owner has opted to pay a Fee-in-Lieu for first flush storm water volume that will not be stored on site and instead direct discharged to downstream facilities through shrouded inlets. This volume has been calculated as 2500 CF resulting in a Fee-in-Lieu total of \$20,000.00.
9. A weir calculation has been included in the report resulting in a reduction in size of the curb cuts to 2'-0" wide.
10. An AHYMO model for the Overall site has been used to more accurately depict the storm runoff for this development and the underground storage facility has been adjusted accordingly.

6 5 0 1 A m e r i c a s P a r k w a y N E • S u i t e 3 0 1
A l b u q u e r q u e • N e w M e x i c o • 8 7 1 1 0
(5 0 5) 8 8 1 - 3 0 0 8 • F a c s i m i l e (5 0 5) 8 8 1 - 4 0 2 5

M i k e J . W a l l a P . E . • L a r r y E . K e n n e d y



11. The retention provided has been accounted for in the model and a Fee-in-Lieu will be paid to make up the difference.
12. The underground detention system has been indicated in plan and detailed in the current plan set.
13. Orifice plate calculations and details have been added.
14. The Phase I scope of work will provide for a concrete curb and gutter around the perimeter of all proposed paving. All associated runoff from these paved areas will be directed through the drainage facility improvements.
15. An HGL diagram has been added to describe the revised storm drain system between the catch basin on the western end of the site and the runoff outlet in Alameda Blvd.
16. A Declaration of Easements, Covenants and Restrictions for this property, recorded September 28, 2018 describes the responsible parties for construction and maintenance of all site improvements, including drainage facilities on this site. This has been reviewed and approved by the DRB.
17. Engineer's Certification, per the DPM Checklist, will be performed prior to issuance of the Certificate of Occupancy for this project.
18. The review fee will be paid upon resubmittal for Building Permit.

Please contact me if you have questions regarding this information.

Sincerely,
Walla Engineering Ltd. by,

A blue ink handwritten signature, appearing to read "Michael J. Walla", is written over the typed name.

Michael J. Walla P.E.
President

MJW/Hs

DECLARATION EASEMENTS, COVENANTS AND RESTRICTIONS

Old Republic Title Company 1805072 CO

DECLARATION EASEMENTS, COVENANTS AND RESTRICTIONS

THIS DECLARATION EASEMENTS, COVENANTS AND RESTRICTIONS (this "Declaration") is made and executed as of the 28 day of September, 2018, by GREEN JEANS WEST, LLC, a New Mexico limited liability company ("Declarant").

Introductory Provisions

Declarant is owner of fee simple title to "Lot 1-A," "Lot 2-A," "Lot 4-A" and "Lot 6-A" (herein so called) as shown on the Plat of Lots 1-A, 2-A, 4-A & 6-A, Block 29, Lot A, Unit B, North Albuquerque Acres, within projected Section 13, T. 11 N., R. 3 E., N.M.P.M., within the Elena Gallegos Grant, City of Albuquerque, Bernalillo County, New Mexico, filed in the Office of the County Clerk of Bernalillo County, New Mexico on 9/28, 2018, as Document No. 20180854116. Declarant desires to impose covenants, conditions, restrictions and easements upon the Lots by this Declaration for the future development and use of the Lots.

NOW, THEREFORE, Owner does hereby declare and establish the following:

Declaration

1. **Definitions.** The following definitions (and additional provisions contained below) shall be applicable to this Declaration:

A. "Lot" means "Lot 1-A," "Lot 2-A," "Lot 4-A" and "Lot 6-A," individually, which may be referred to together as the "Lots."

B. "Development" means all Lots, together.

C. "Owner" means Declarant, and all subsequent owners of fee simple title to any of the Lots, and "Owners" shall mean the Owners of all Lots. If two or more parties are Owners as tenants in common of a single Lot, they shall be considered to constitute a single "Owner," it being intended that references herein to "Owners" shall mean the Owners of all Lots.

D. "Building" means any permanently enclosed structure.

E. "Governmental Requirements" shall mean all applicable laws, rules, regulations, and ordinances, and all orders of any governmental agency with jurisdiction over the Development.

2. **Construction, Maintenance, Repair and Restoration.**

A. **Construction, Maintenance and Repair of Lots.** Owners shall be responsible for the cost and expense of construction, maintenance and repair relating to improvements and facilities located on their respective Lots. All construction shall be in a first class, good and workmanlike manner, and in compliance with all Governmental Requirements. Prior to the commencement of construction of improvements and facilities on an Owner's Lot, the Owner shall keep the Lot neat and free of refuse and debris, and in compliance with all Governmental Requirements. During the construction of improvements and facilities on an Owner's Lot, the Owner shall cause the construction site to be maintained in a good and orderly condition, consistent with first class workmanlike habits of construction, and in compliance with all Governmental Requirements. Upon completion of construction of improvements and facilities

on any Lot, the Owner of such Lot shall maintain and keep, or cause to be maintained and kept, all such improvements and facilities, including without limitation service areas and loading docks, any outside sales or storage areas, canopies, paved areas, lighting, landscaped areas, and signage, in a first-class, safe, neat and clean condition and state of repair, in compliance with all Governmental Requirements, and in compliance with the provisions of this Declaration. Such maintenance shall include, but not be limited to the following: (i) Maintaining all paved surfaces and curbs in a smooth and evenly covered condition, including, without limitation, replacement of base, skin patch, resurfacing and resealing; (ii) Periodically removing papers, debris, filth, refuse, ice and snow (2" on surface) to the extent necessary to keep the Lot in a first class, clean and orderly condition; (iii) Maintaining, cleaning and replacing any appropriate directional, stop or handicapped parking signs or markers; re-striping parking lots and drive lanes as necessary to maintain parking space designation and traffic direction; and keeping clearly marked fire lanes, loading zones, no parking areas and pedestrian cross-walks; (iv) Maintaining, cleaning and replacing lighting facilities, including light standards, wires, conduits, lamps, ballasts and lenses, time clocks and circuit breakers; (v) Maintaining (and replacing, if necessary) all landscape plantings, trees and shrubs in an attractive and thriving condition, trimmed and weed-free; maintaining and replacing landscape planters, including those adjacent to exterior walls of Buildings; providing water for landscape irrigation through a properly maintained system, including performing any seasonal (start up and/or winterization) maintenance thereto, and any modifications to such system to satisfy governmental water allocation or emergency requirements; (vi) Keeping the access points, driveways, parking spaces and traffic lanes free from any obstructions, including those caused by the sale or display of merchandise; and (vii) Maintaining, cleaning and replacing (as necessary) sidewalks, including those adjacent and contiguous to Buildings. The standard of maintenance and repair shall be comparable to other first class shopping centers in and around Albuquerque, New Mexico.

B. Restoration of Lots. In the event any of the Buildings or other improvements on a Lot are damaged or destroyed by fire or any other casualty, the Owner of such Lot shall, at its sole cost and expense, either repair or restore, or cause to be repaired or restored, such improvements and facilities to their prior condition with reasonable commercial diligence; or shall demolish all damaged improvements, remove all debris, and restore the affected Lot (or portion thereof) to clean, level, grade, and shall maintain appropriate ground cover plantings so as to maintain a neat and attractive appearance, in compliance with all Governmental Requirements, but in the event of such demolition, the Owner shall be obligated to reconstruct the driveway and parking areas on such Owner's Lot. In the event any of the improvements or facilities on a Lot are taken by condemnation or conveyance in lieu thereof, the Owner of such Lot shall, with reasonable commercial diligence and at its sole cost and expense, either restore the remaining improvements and facilities to a functional condition, compatible and integrated with and complementary to the remaining improvements and facilities; or shall demolish all damaged improvements, remove all debris, and restore the affected Lot (or portion thereof) to clean, level grade, and shall maintain appropriate ground cover plantings so as to maintain a neat and attractive appearance, in compliance with all Governmental Requirements.

C. Minimal Interference. Construction, maintenance, repair and/or restoration activities on a Lot shall not materially interfere with any Owner's access or use related thereto.

3. Use of Lots. The Lots shall not be used in a manner which violates Governmental Requirements or creates a public nuisance.

4. Insurance and Indemnification.

A. General Coverage and Limits. Each Owner shall at all times maintain, or cause to be maintained, a policy or policies of liability insurance against claims for bodily injury, death or property damage occurring on, in or about such Owner's Lot with a "Combined Single Limit" (covering bodily injury liability and property damage) with commercially reasonable limits of not less than Two Million Dollars (\$2,000,000.00). Such insurance may be in the form of blanket liability coverage applicable to the Owner's Lot, and such coverage limit may be satisfied with underlying and umbrella policies totaling not less than the amount set forth above. An Owner shall, upon written request, provide the other Owner with evidence of such coverage, a description of any plan of insurance being used and an additional insured endorsement (ISO endorsement CG 20 26 07 04, or equivalent). In response to inflation and/or loss and coverage trends in the commercial real estate industry, an Owner may elect for the coverage limits described above to be adjusted to an increased amount which is commercially reasonable for properties similar to the Development, located in and around Albuquerque, New Mexico, which election shall be exercised by written notice given not less than thirty (30) days in advance of the proposed effective date of the change.

B. Additional Policy Provisions. All policies of insurance required under this Declaration shall provide that the Owners of the other Lots shall be included as an additional insured, and shall contain a provision that the insurance company will give the Owner of the other Lot thirty (30) days advance written notice prior to cancellation or lapse, or the effective date of any reduction in the amounts or scope of coverage. Each Owner shall deliver to the other Owner a statement from the applicable insurer that such insurance insures the performance by the Owner insured thereunder of the indemnity agreements to limits not less than those specified above. An Owner shall promptly notify the other Owner of any asserted claim with respect to which the Owner receiving notice is or may be indemnified against hereunder, and shall deliver to such Owner copies of process and pleadings.

C. Indemnification. Each Owner hereby agrees to indemnify, defend and save the other Owner harmless from any and all liability, damage, expense, causes of action, suits, claims or judgments arising from injury to person or property and occurring on the Owner's Lot, except to the extent caused by the negligence or intentional misconduct of the other Owner. To the extent, if at all, any indemnity, hold harmless or insurance provision of this Declaration is invalidated pursuant to the terms of §56-7-1 N.M.S.A. 1978, as amended, the remaining indemnity, hold harmless and insurance provisions of this Declaration shall remain in full force and effect.

5. Easements. Declarant hereby declares and establishes the following easements for the Development:

A. Ingress, Egress and Parking. A perpetual, nonexclusive easement in the Lots, for ingress and egress of vehicular and pedestrian traffic over and across all access points, driveways, vehicular traffic lanes, and for the parking of motor vehicles in the areas designated for parking, as may be established consistent with the approved site plan for the Lots, for use by the Owners, and any lessees of the Owners, and their respective employees, customers, subtenants, licensees, concessionaires and invitees. Notwithstanding the foregoing (a) all parking requirements mandated by Governmental Requirements for each Lot shall be satisfied on such Lot and (b) employees of any business on a Lot shall park on the Lot where they are employed. Once the easement areas established in this subsection are substantially completed, such easement areas shall be kept open at all times for the free use as intended in this Declaration;

provided, however, that the Owner of a Lot may close or otherwise impair the use of same for brief periods as may be reasonably required for repair or maintenance. Such closure or impairment for repair or maintenance shall require in each instance at least ten (10) days' written notice to the other Owners, and shall not exceed more than ten (10) days in any calendar year. In addition, no access easement area connecting to a public thoroughfare, or any easement area which is the only convenient means to obtain access from a Lot to an access easement area connecting to a public thoroughfare, shall be totally closed so as to prevent access from the public thoroughfare to any Lot.

B. Drainage. A perpetual, nonexclusive easement for storm drainage and the discharge of water from the over and across the Lots, provided that such drainage and discharge shall be in compliance with Governmental Regulations.

C. Utilities. A perpetual, nonexclusive easement for extension of underground utilities, including without limitation, electric, gas, cable, water and sanitary sewer, under the surface of the Lots, and a temporary, nonexclusive easement for construction over and across the Lots, as may be necessary for the purpose of construction and installation of utilities; provided that the Owner of a Lot undertaking construction shall at all times minimize any interference with access, traffic flow and parking on the other Lot. The Owner installing such utilities shall promptly restore or repair any and all improvements on the Lots which are removed, damaged or affected by the use of this easement for utilities.

D. No Public Grant. The easements granted under this Declaration are not intended to, and shall not be construed as creating, any easement or access rights to any government or governmental authority, for public road right-of-way purposes; nor shall any of the rights and easements hereby created benefit or be an appurtenance to any property other than the Development.

6. Enforcement

A. If an Owner fails to comply with any obligation set forth herein (a "Defaulting Owner"), then any other Owner (the "Affected Owner"), at its option and after thirty (30) days prior written notice to the Defaulting Owner, in addition to any other remedies the Affected Owner may have at law or in equity, may proceed to perform such defaulted obligation on behalf of such Defaulting Owner (and shall have a license to enter the Defaulting Owner's Lot to do so) by the payment of money or other action for the account of the Defaulting Owner. The foregoing right shall not be exercised if within the thirty (30) day notice period (i) the Defaulting Owner cures the default, or (ii) if curable, the default cannot be reasonably cured within that time period but the Defaulting Owner begins to cure such default within such time period and thereafter diligently and continuously pursues such action to completion. The thirty (30) day notice period shall not be required if an emergency exists or if such default causes interference with the construction, operation or use of the Affected Owner's Lot which requires immediate attention; and in such event, the Affected Owner shall give such notice to the Defaulting Owner as is reasonable under the circumstances.

B. Within ten (10) days of written demand therefor (including providing copies of invoices reflecting costs) the Defaulting Owner shall reimburse the Affected Owner for any sum reasonably expended by the Affected Owner due to the default or in correcting the same, together with interest thereon at the rate of Twelve Percent (12%) per annum (the "Default Interest Rate"), and if such reimbursement is not paid within said ten (10) days and collection is required, the Affected Owner shall be entitled to file suit to recover the amount so expended, as well as

interest as provided above and reasonable costs of collection, including without limitation, reasonable attorneys' fees, expenses and costs of court.

C. Any claim of an Affected Owner for reimbursement, together with interest accrued thereon and collection costs, shall constitute a personal obligation and liability of the Defaulting Owner and shall be secured by an equitable charge and lien on the Lot of the Defaulting Owner and all improvements located thereon. Such lien shall attach and be effective from the date of recording of the Lien Notice hereinafter described. Upon such recording, such lien shall be superior and prior to all other liens encumbering the Lot involved, except that such lien shall not be prior and superior to any mortgages or deeds of trust of record prior to the recording of such Lien Notice, or any renewal, extension or modification (including increases) of previously recorded mortgages or deeds of trust; and any purchaser at any foreclosure sale, as well as any grantee by deed in lieu of foreclosure under any such mortgage or deed of trust shall take title subject only to liens accruing pursuant to this section after the date of such foreclosure sale or conveyance in lieu of foreclosure. To evidence a lien accruing pursuant to this section, the Affected Owner curing the default of a Defaulting Owner or the Affected Owner performing such maintenance, as the case may be, shall prepare a written notice (a "Lien Notice") setting forth (i) the amount owing and a brief statement of the nature thereof; (ii) the Lot to which the payment(s) relate; (iii) the name of the owner or reputed owner owning the Lot involved; and (iv) reference to this Amended Declaration as the source and authority for such lien. The Lien Notice shall be signed and acknowledged by the Affected Owner desiring to file the same and shall be recorded in the real estate records in Bernalillo County, New Mexico. A copy of such Lien Notice shall be mailed to the Defaulting Owner within thirty (30) days after such recording. Any such lien may be enforced by judicial foreclosure upon the Lot to which the lien attached in like manner as a mortgage on real property is judicially foreclosed under the laws of the State of New Mexico. In any foreclosure, the Lot being foreclosed shall be required to pay the reasonable costs, expenses and attorneys' fees in connection with the preparation and filing of the Lien Notice, as provided herein, and all reasonable costs, expenses and attorneys' fees in connection with the foreclosure.

D. In the event any Affected Owner shall institute any action or proceeding against another owner relating to the provisions of this Amended Declaration or any default hereunder or to collect any amounts owing hereunder or in the event an arbitration proceeding is commenced hereunder by agreement of the parties to any dispute, then and in such event the unsuccessful litigant in such action or proceeding shall reimburse the successful litigant therein for such reasonable costs and expenses incurred in connection with any such action or proceeding and any appeals therefrom, including attorneys' fees and court costs.

E. Any remedies provided for in this section are cumulative and shall be deemed additional to any and all other remedies to which any party may be entitled in law or in equity and shall include the right to restrain by injunction any violation or threatened violation by any party of any of the terms, covenants, or conditions of this Declaration and by decree to compel performance of any such terms, covenants, or conditions, it being agreed that the remedy at law for any breach of any such term, covenant, or condition is not adequate.

7. Miscellaneous.

A. Compliance with Laws. All easements provided under this Declaration shall be subject to Governmental Requirements. Each Owner shall comply with all Governmental Requirements with respect such Owner's Lot, and each Owner (an "**Indemnifying Owner**") shall indemnify, defend and hold harmless the other Owner, and such Owner's successors, assigns, heirs, grantees, devisees, tenants, licensees, invitees and agents from any and all loss, cost, damage, claim or liability to the extent arising out of the noncompliance by the Indemnifying Owner with Governmental Requirements, except to the extent such indemnity is prohibited by Section 56-7-1 NMSA 1978 Comp.

B. Binding Effect: Running with the Land. All the covenants, terms, agreements, conditions, and restrictions set forth in this Declaration are intended to be and shall be construed as covenants running with the land, binding upon, inuring to the benefit of and enforceable by the parties hereto, their respective successors in interest, grantees and assignees, upon the terms, provisions and conditions herein set forth. This Declaration shall bind and inure to the benefit of the parties hereto, their respective heirs, representatives, lessees, successors and assigns. The singular number includes the plural and the masculine gender includes the feminine and neuter.

C. Modification. This Declaration may be modified only by written instrument executed by the Owner(s) of fee simple title to the Lots.

DECLARANT:

GREEN JEANS WEST, LLC,
a New Mexico limited liability company

By:

Roy Solomon, Manager

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss.

This instrument was acknowledged before me on the 28 day of September 2018 by Roy Solomon, Manager of GREEN JEANS WEST, LLC, a New Mexico limited liability company.

Notary Public

Notary's Printed Name:

My Commission Expires:



SECTION II

Runoff Calculations

AHYMO Model Input

AHYMO Model Output

Pipe Calculations

Weir Calculation

HGL diagram @ westernmost Catch Basin



RUNOFF CALCULATIONS

OVERALL SITE

6 5 0 1 A m e r i c a s P a r k w a y N E S u i t e 3 0 1
A l b u q u e r q u e N e w M e x i c o 8 7 1 1 0
(5 0 5) 8 8 1 - 3 0 0 8 F a c s i m i l e (5 0 5) 8 8 1 - 4 0 2 5

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OVERALL SITE

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	AREA	AREA	P6	Q	Q	V6	V24	V4day	V10day
TRTMNT	(ACRE)	%		(CFS/AC)	(CFS)	(CF)	(CF)	(CF)	(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	AREA	AREA	P6	Q	Q	V6	V24	V4day	V10day
TRTMNT	(ACRE)	%		(CFS/AC)	(CFS)	(CF)	(CF)	(CF)	(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	AREA	AREA	P6	Q	Q	V6	V24	V4day	V10day
TRTMNT	(ACRE)	%		(CFS/AC)	(CFS)	(CF)	(CF)	(CF)	(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	AREA	AREA	P6	Q	Q	V6	V24	V4day	V10day
TRTMNT	(ACRE)	%		(CFS/AC)	(CFS)	(CF)	(CF)	(CF)	(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

Total First Flush Required = 835 CF
No retention ponding provided - Fee-in-lieu

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 requires Fee-in-Lieu

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) Discharged to downstream facilities via Fee-in-Lieu

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 - Fee-in-lieu

Allowable Discharge per Basin: Rate = 3.82 CFS per Acre

Basin I	$0.915 \text{ AC} \times 3.82 \text{ CFS/AC} = 3.50 \text{ CFS}$
Basin II	$0.955 \text{ AC} \times 3.82 \text{ CFS/AC} = 3.65 \text{ CFS}$
Basin III	$3.055 \text{ AC} \times 3.82 \text{ CFS/AC} = 11.67 \text{ CFS}$
Basin IV	$0.332 \text{ AC} \times 3.82 \text{ CFS/AC} = 1.27 \text{ CFS}$
Total	$= 20.08 \text{ CFS}$

Total = 20.08 CFS



RUNOFF CALCULATIONS

PHASE I

6 5 0 1 A m e r i c a s P a r k w a y N E S u i t e 3 0 1
A l b u q u e r q u e N e w M e x i c o 8 7 1 1 0
(5 0 5) 8 8 1 - 3 0 0 8 F a c s i m i l e (5 0 5) 8 8 1 - 4 0 2 5

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PHASE I CALCULATIONS

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	AREA	AREA	P6	Q	Q	V6	V24	V4day	V10day
TRTMNT	(ACRE)	%		(CFS/AC)	(CFS)	(CF)	(CF)	(CF)	(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	AREA	AREA	P6	Q	Q	V6	V24	V4day	V10day
TRTMNT	(ACRE)	%		(CFS/AC)	(CFS)	(CF)	(CF)	(CF)	(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

PHASE I CONDITIONS - BASIN I

LAND	AREA	AREA	P6	Q	Q	V6	V24	V4day	V10day
TRTMNT	(ACRE)	%		(CFS/AC)	(CFS)	(CF)	(CF)	(CF)	(CF)
A	0.000	0%	0.66	1.87	0.00	0	0	0	0
B	0.915	26%	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	74%	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 II

LAND	AREA	AREA	P6	Q	Q	V6	V24	V4day	V10day
TRTMNT	(ACRE)	%		(CFS/AC)	(CFS)	(CF)	(CF)	(CF)	(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	0.212	22%	1.29	3.45	0.73	993	993	993	993
D	0.558	58%	2.36	5.02	2.80	4,780	5,793	6,502	6,705
TOTALS	0.955	100%			4.01	6,391	7,404	8,113	8,315

PROPOSED CONDITIONS - BASIN III

LAND	AREA	AREA	P6	Q	Q	V6	V24	V4day	V10day
TRTMNT	(ACRE)	%		(CFS/AC)	(CFS)	(CF)	(CF)	(CF)	(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	0.474	16%	1.29	3.45	1.64	2,220	2,220	2,220	2,220
D	2.403	79%	2.36	5.02	12.06	20,586	24,947	28,000	28,873
TOTALS	3.055	100%			14.16	23,400	27,762	30,815	31,687

PROPOSED CONDITIONS - BASIN IV

LAND	AREA	AREA	P6	Q	Q	V6	V24	V4day	V10day
TRTMNT	(ACRE)	%		(CFS/AC)	(CFS)	(CF)	(CF)	(CF)	(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	0.100	30%	1.29	3.45	0.35	468	468	468	468
D	0.000	0%	2.36	5.02	0.00	0	0	0	0
TOTALS	0.332	100%			0.95	1,243	1,243	1,243	1,243

Allowable discharge to Alameda: 4.342 Acres X 3.82 CFS/AC = 16.59 CFS

Calculated direct discharge to Alameda: Basin II + Basin IV = 4.01 CFS + 0.95 CFS = 4.96 CFS

Basin III discharge allowed: 16.59 CFS - 4.96 CFS = 11.63 CFS

Use 18" dia PVC discharge pipe with orifice - Capacity = 11.24 CFS

First Flush Calculations: Phase I

Basin II First Flush Pond Required: Trtmnt D Area = 0.558 AC x 0.34in = 689 CF

No ponding available - catch basin outlet is shrouded

Basin III First Flush Pond Required: Trtmnt D Area = 2.403 AC x 0.34in = 2966 CF

Ponding provided in parking islands:

4 each @ 210 SF x 1'-0" deep = 840 CF

5 each @ 63 SF x 1'-0" deep = 315 CF

Total ponding provided = 1155 CF

Remaining required First Flush ponding (2500 CF) Total Fee-in-Lieu: Phase I

2500 CF x \$8.00/CF = **\$20,000.00**

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

AHYMO MODEL

INPUT FILE

```

                                TCA190322
*S*    PROJECT NAME: MIXED USE DEVELOPMENT AT ALAMEDA AND SAN PEDRO
*S*    DATE: MARCH 22, 2019
*S*
*S*    INPUT FILE NAME: TCA190322.hym
*S*    OUTPUT FILE NAME: TCA190322.out
*S*
*****
*
*
*S*
*****
*    24-hr, 100 year storm event
RAINFALL      TYPE=13  RAIN QUARTER=0.0  RAIN ONE=2.14
               RAIN SIX=2.60  RAIN DAY=3.10  DT=0.05 HRS
*
*S**** COMPUTE ALLOWABLE FLOW RATE
*S**** BASIN 117.32
COMPUTE NM HYD      ID=1 HYD NO=117.32 DA=0.00678 SQ MI
                   PER A=0 PER B=34 PER C=16 PER D=50
                   TP=0.1333 HR MASS RAIN=-1
PRINT HYD          ID=1 CODE=20
*
*
*S**** BASIN 117.31
COMPUTE NM HYD      ID=2 HYD NO=117.31 DA=0.00143 SQ MI
                   PER A=0 PER B=34 PER C=16 PER D=50
                   TP=0.1333 HR MASS RAIN=-1
PRINT HYD          ID=2 CODE=20
*
*
*S****PROPOSED CONDITIONS
*S****SUBBASIN I
COMPUTE NM HYD      ID=3 HYD NO=I DA=0.00143 SQ MI
                   PER A=0 PER B=13 PER C=13 PER D=74
                   TP=0.1333 HR MASS RAIN=-1
PRINT HYD          ID=3 CODE=20
*
*
*
*S**** SUBBASIN II
COMPUTE NM HYD      ID=4 HYD NO=II DA=0.00149 SQ MI
                   PER A=0 PER B=9.5 PER C=9.5 PER D=81
                   TP=0.1333 HR MASS RAIN=-1
PRINT HYD          ID=4 CODE=20
*
*
*
*S**** SUBBASIN III
COMPUTE NM HYD      ID=5 HYD NO=III DA=0.00477 SQ MI
                   PER A=0 PER B=3 PER C=3 PER D=94
                   TP=0.1333 HR MASS RAIN=-1
PRINT HYD          ID=5 CODE=20
*
*
*
*S**** SUBBASIN IV
COMPUTE NM HYD      ID=6 HYD NO=IV DA=0.00052 SQ MI
                   PER A=0 PER B=35 PER C=35 PER D=30
                   TP=0.1333 HR MASS RAIN=-1
PRINT HYD          ID=6 CODE=20
*

```

TCA190322

*
*
*

*S SUBBASIN III UNDERGROUND STORAGE

ROUTE RESERVOIR ID=9 HYD=STRG.III INFLOW ID=5 CODE=1
OUTFLOW(CFS) STORAGE(AC FT) ELEV(FT)

0.01	0	0.0
1.13	0	0.5
3.73	0	1.0
5.30	0	1.5
6.50	0	2.0
7.52	0	2.5
8.41	0	3.0
9.22	0	3.5
9.96	0.0001	4.0
10.65	0.0315	4.5
11.29	0.0350	5.0

*
*

PRINT HYD ID=9 CODE=20

*
*
*
*

*S SUBBASIN I STORAGE

ROUTE RESERVOIR ID=10 HYD=STRG.I INFLOW ID=3 CODE=1
OUTFLOW(CFS) STORAGE(AC FT) ELEV(FT)

0.00	0	0
0.83	0.00010	0.5
1.59	0.00020	1.0
2.08	0.00030	1.5
2.47	0.00040	2.0
2.81	0.00050	2.5
3.11	0.00060	3.0
3.28	0.00066	3.3
3.39	0.00088	3.5
3.54	0.00198	3.8

*
*

PRINT HYD ID=10 CODE=20



AHYMO OUTPUT

6 5 0 1 A m e r i c a s P a r k w a y N E • S u i t e 3 0 1
A l b u q u e r q u e • N e w M e x i c o • 8 7 1 1 0
(5 0 5) 8 8 1 - 3 0 0 8 • F a c s i m i l e (5 0 5) 8 8 1 - 4 0 2 5

M i k e J . W a l l a P . E . • L a r r y E . K e n n e d y

AHYMO PROGRAM SUMMARY TABLE (AHYMO-S4)
 INPUT FILE = objects\03579 Solomon Alameda & San Pedro\4. ENG\Modeling\AHYMO\TCA190322.txt USER NO.= AHYMO-S4TempUser05901704
 - Ver. S4.02a, Rel: 02a RUN DATE (MON/DAY/YR) =03/22/2019

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
S	PROJECT NAME: MIXED USE DEVELOPMENT AT ALAMEDA AND SAN PEDRO										
S	DATE: MARCH 22, 2019										
S	INPUT FILE NAME: TCA190322.hym										
S	OUTPUT FILE NAME: TCA190322.out										
S											
S											
S	RAINFALL TYPE=13										
S	***** COMPUTE ALLOWABLE FLOW RATE										
S	***** BASIN 117.32										
S	COMPUTE NM HYD	117.32	-	1	0.00678	16.88	0.702	1.94076	1.500	3.890 PER IMP=	50.00
S	***** BASIN 117.31										
S	COMPUTE NM HYD	117.31	-	2	0.00143	3.58	0.148	1.94076	1.500	3.906 PER IMP=	50.00
S	*****PROPOSED CONDITIONS										
S	*****SUBBASIN I										
S	COMPUTE NM HYD	I	-	3	0.00143	4.07	0.183	2.39737	1.500	4.447 PER IMP=	74.00
S	***** SUBBASIN II										
S	COMPUTE NM HYD	II	-	4	0.00149	4.37	0.200	2.52117	1.500	4.582 PER IMP=	81.00
S	***** SUBBASIN III										
S	COMPUTE NM HYD	III	-	5	0.00477	14.72	0.700	2.75109	1.500	4.823 PER IMP=	94.00
S	***** SUBBASIN IV										
S	COMPUTE NM HYD	IV	-	6	0.00052	1.21	0.045	1.61919	1.500	3.622 PER IMP=	30.00
S	***** SUBBASIN III UNDERGROUND STORAGE										
S	ROUTE RESERVOIR	STRG.III	5	9	0.00477	11.24	0.851	3.34507	1.600	3.683 AC-FT=	0.035
S	***** SUBBASIN I STORAGE										
S	ROUTE RESERVOIR	STRG.I	3	10	0.00143	3.38	0.183	2.39719	1.550	3.690 AC-FT=	0.014



ORIFICE CALCULATIONS

6 5 0 1 A m e r i c a s P a r k w a y N E S u i t e 3 0 1
A l b u q u e r q u e N e w M e x i c o 8 7 1 1 0
(5 0 5) 8 8 1 - 3 0 0 8 F a c s i m i l e (5 0 5) 8 8 1 - 4 0 2 5

M i k e J . W a l l a P . E .

L a r r y E . K e n n e d y

Orifice Calculations

$$Q = 0.6 \cdot A \cdot (2 \cdot g \cdot h)^{0.5}$$

Q: Flow Capacity (cfs)

A: Open Area (sq. ft.)

g: Gravity (ft / s²)

h: Head (ft) to Centroid of Orifice

Rating Curve for Subbasin III Storage

$$A = 1.1071 \text{ sq. ft.}$$

Depth (ft)	Head (ft)	Q (cfs)
0.0	0	0
0.5	0.21	1.13
1.0	0.49	3.73
1.5	0.99	5.30
2.0	1.49	6.50
2.5	1.99	7.52
3.0	2.49	8.41
3.5	2.99	9.22
4.0	3.49	9.96
4.5	3.99	10.65
5.0	4.49	11.29

Rating Curve for Subbasin I Storage

$$A = 0.3927 \text{ sq. ft.}$$

Depth (ft)	Head (ft)	Q (cfs)
0.0	0	0
0.5	0.26	0.83
1.0	0.71	1.59
1.5	1.21	2.08
2.0	1.71	2.47
2.5	2.21	2.81
3.0	2.71	3.11
3.3	3.01	3.28
3.5	3.21	3.39
3.8	3.51	3.54



PIPE CALCULATIONS

6 5 0 1 A m e r i c a s P a r k w a y N E S u i t e 3 0 1
A l b u q u e r q u e N e w M e x i c o 8 7 1 1 0
(5 0 5) 8 8 1 - 3 0 0 8 F a c s i m i l e (5 0 5) 8 8 1 - 4 0 2 5

M i k e J . W a l l a P . E . L a r r y E . K e n n e d y



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Albuquerque • New Mexico • 87110
881-3008 • Facsimile 881-4025

SHEET NO. _____ OF _____
JOB ALAMEDA & SAN PEDRO
SUBJECT OUTLET @ BASIN I
CLIENT SAGLE JOB NO. _____
BY MTU DATE 12/18
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), τ	1.1738	psf ▼



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SHEET NO. _____ OF _____
JOB ALAMEDA & SAN PEDRO MIXED USE
SUBJECT Basin II Outlet
CLIENT SLAGUE JOB NO. _____
BY MTO DATE 12/8
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), τ	0.5869	psf ▼



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SHEET NO. _____ OF _____
JOB ALAMEDA / SAN PEDRO MIXED USE
SUBJECT STORM WATER OUTLET PIPE
CLIENT SAGE JOB NO. _____
BY WJO 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), τ	0.5018	psf ▼



WIER CALCULATION

6 5 0 1 A m e r i c a s P a r k w a y N E S u i t e 3 0 1
A l b u q u e r q u e N e w M e x i c o 8 7 1 1 0
(5 0 5) 8 8 1 - 3 0 0 8 F a c s i m i l e (5 0 5) 8 8 1 - 4 0 2 5

M i k e J . W a l l a P . E .

L a r r y E . K e n n e d y

WEIR CALCULATION @ BMP

Rectangular Contracted Weir

This calculator finds the water flow rate for a rectangular contracted weir. A rectangular contracted weir has a rectangular opening where the sides are straight up and down. A contracted weir means that the ditch leading up to the weir is wider than the weir opening itself.

The length is found by measuring the bottom width of the weir and the height is determined from measuring the water height above the bottom of the weir.

Learn more about the units used on this page.

Length:

2 ft ▼

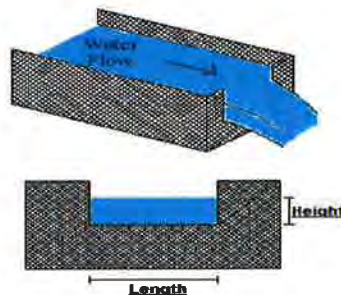
Height:

.5 ft ▼

Calculate

Flow Rate:

2.26 cfs ▼



* Note: 1 point = 1/100 ft.

The Equation

The Equation used to determine the flow rate (Q) of a Rectangular Contracted Weir is:

$$Q = \frac{3.247 \cdot L \cdot H^{1.48} - 0.566 \cdot L^{1.9}}{1 + 2L^{1.87}} \cdot H^{1.9}$$

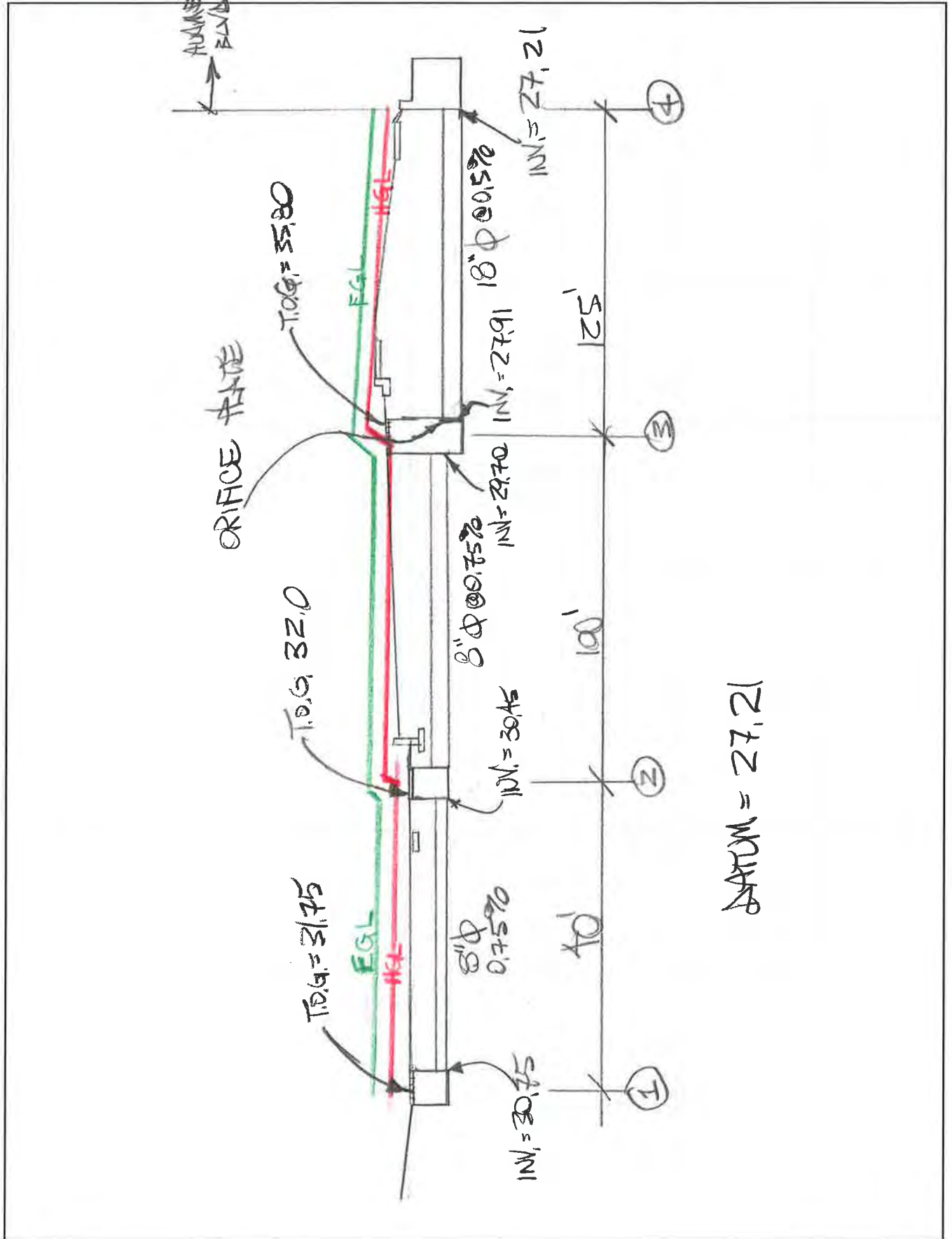
Where:

Q = Flow Rate in cfs.

L = Bottom width of the weir in feet.

H = Height of the upstream water above the weir crest in feet.

2'0" WIDE CURB OPENING IS CAPABLE OF
HANDLING ANTICIPATED FLOW AT ALL
LOCATIONS



HYDRAULIC GRADE LINE

$$\frac{P}{\gamma} + Z$$

ENERGY GRADE LINE

$$\frac{P}{\gamma} + \frac{V^2}{2g} + Z$$

$$\frac{V_1^2}{2g} + \Delta_1 + S_0 L = \frac{V_2^2}{2g} + \Delta_2 + S$$

STARTING @ WEST END

① 8" ϕ PIPE @ 0.75% SLOPE

$$V_{MAX} = 4.29 \text{ FT/SEC} - \text{SEE}$$

$$\frac{V^2}{2g} = \frac{(4.29)^2}{2(32.2)} = 0.286 \text{ FT} = 3.4 \text{ IN}$$

$$S_0 L = 0.0075(40') = 0.3 \text{ FT} = 3.6 \text{ IN}$$

POINT	$V^2/2g$	Δ	S/L	HGL	BGL
1	3.4" IN	8"	3.6"	11.6" IN (28.18)	15" IN (28.46)
2	3.4" IN	8"	9"	17" IN (28.63)	20.4" IN (28.91)
3	7.7" IN	48"	8.55"	56.6" IN (31.93)	64.3" IN (32.57)
4	7.7" IN	18"	6"	24" IN (29.21)	31.7" IN (29.85)

② 8" APE @ 0.75% SLOPE

$$V^2/2g = \frac{4.29^2}{2(32.2)} = 3.41'$$

$$S/L = .0075(100') = 0.75' = 9"$$

③ 18" ϕ APE 0.57% SLOPE $V = 6.43$ ft/s

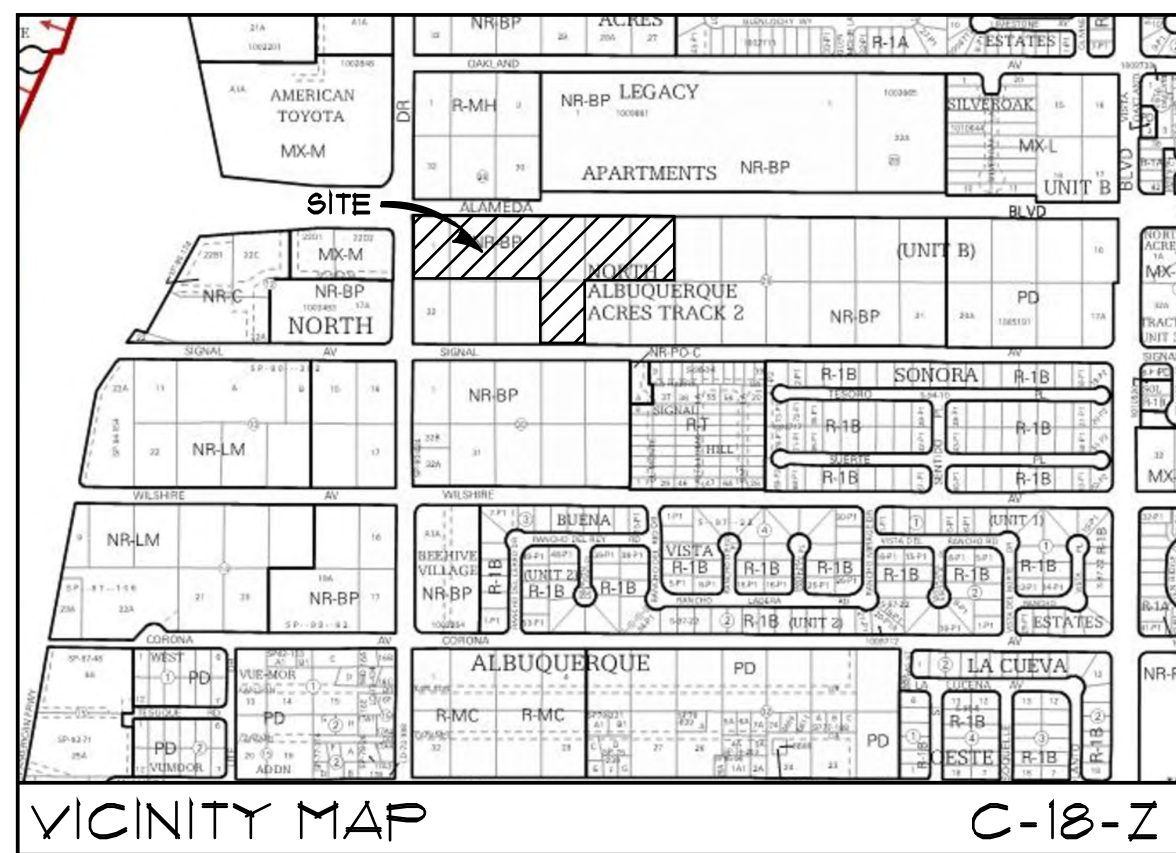
$$V^2/2g = \frac{(6.43)^2}{2(32.2)} = 0.642' = 7.7"$$

$$D = 4' (\text{TANK}) = 48"$$

$$S/L = 0.0057(125') = 0.7125' = 8.55"$$

④ $V^2/2g = 7.7"$
 $D = 18"$

$$S/L = .2\% (25') = 0.5' = 6"$$



DRAINAGE NOTES

- FLOOD PLAIN DESIGNATION ZONE X PER FIRM MAP 350002, OCTOBER 2011
- 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

DRAINAGE POINTS

- A 431 CFS
- B 121 CFS
- C 1124 CFS
- D 338 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. "5-C18 1988", HAVING AN ELEVATION OF 5232.41, NAVD 1988

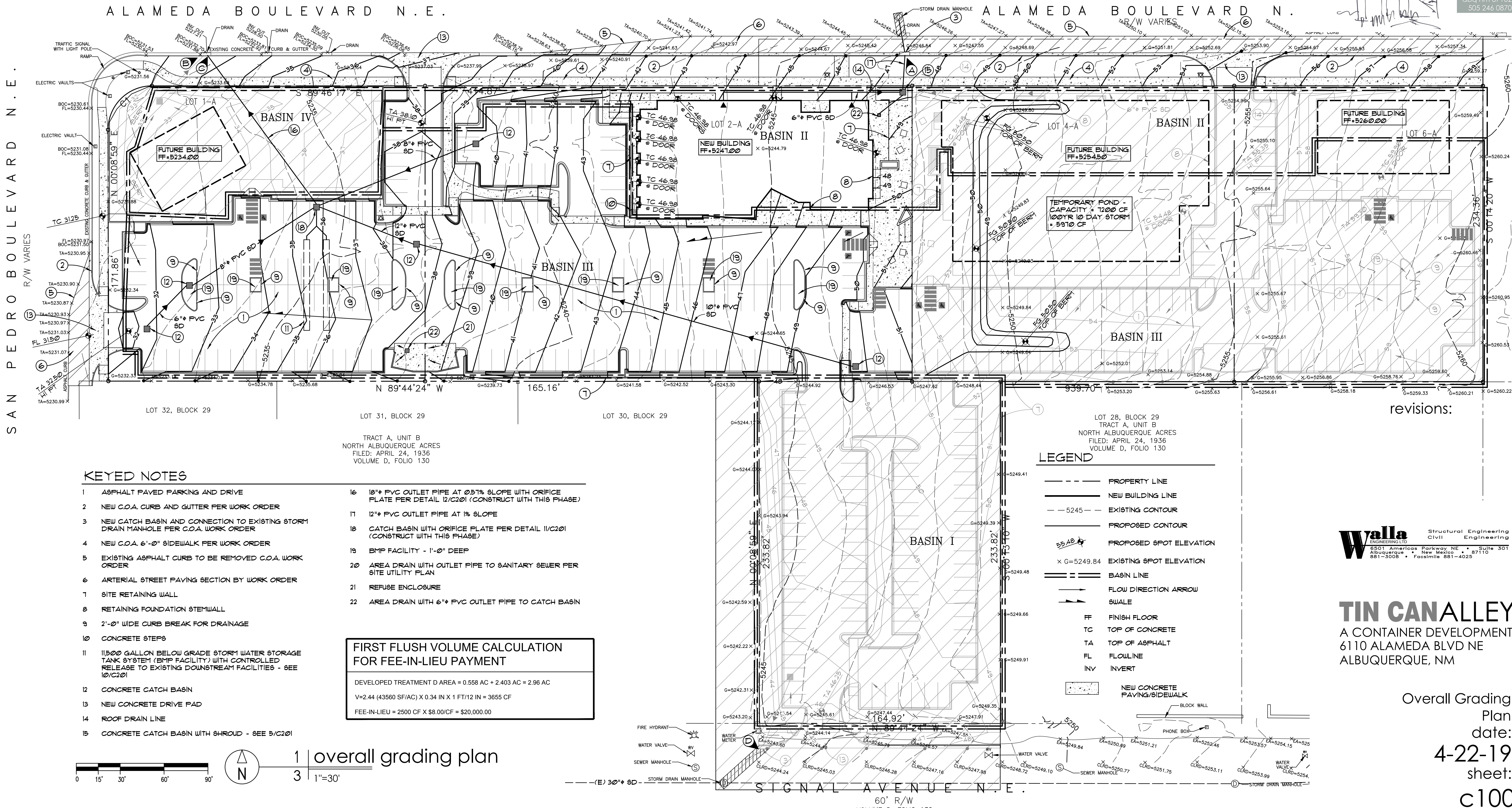
GENERAL NOTES

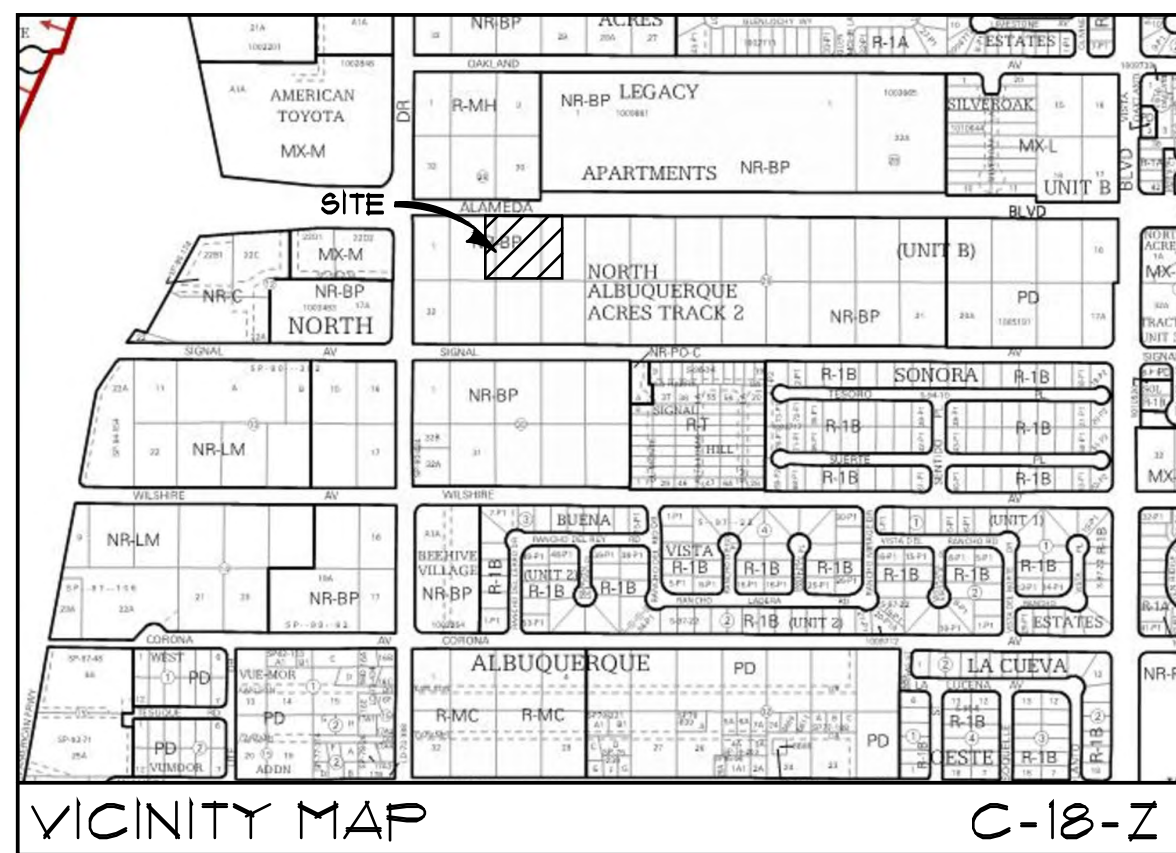
- THE HATCHED AREAS OF THIS PLAN INDICATE FUTURE WORK ON THIS SITE NOT TO BE CONSTRUCTED THIS PERMIT
- ALL WORK INDICATED IN THE PUBLIC RIGHT-OF-WAY WILL BE CONSTRUCTED UNDER CFN #166382
- A DECLARATION OF EASEMENT, COVENANTS AND RESTRICTIONS FOR A PERPETUAL, NON-EXCLUSIVE STORM DRAINAGE DISCHARGE EASEMENT ACROSS THE LOTS HAS BEEN RECORDED FOR THIS DEVELOPMENT - INCLUDED IN THIS DECLARATION THE OWNERS HAVE AGREED TO BE RESPONSIBLE FOR MAINTENANCE OF ALL DRAINAGE RELATED IMPROVEMENTS ON THIS SITE

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.

joe slagle architect

413 2nd st. sw
alb. nm 87102
505 246 0870





DRAINAGE NOTES

- FLOOD PLAIN DESIGNATION ZONE X PER FIR1 MAP 350002, OCTOBER 2011
- SUBJECT SITE IS WITHIN THE NORTH ALBUQUERQUE ACRES MASTER DRAINAGE PLAN - DESIGN ANALYSIS REPORT "ALAMEDA BLVD. - SAN PEDRO TO WYOMING, PROJECT #166391" BY THOMPSON ENGINEERING DATED JANUARY, 2012 - THE ALLOWABLE DISCHARGE FOR THIS SITE IS 3.82 CFS/AC
- 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

- 4.31 CFS
- 121 CFS
- 1124 CFS
- 3.38 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. "5-C-18 1988", HAVING AN ELEVATION OF 5232.41, 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.

GENERAL NOTES

- THE HATCHED AREAS OF THIS PLAN INDICATE FUTURE WORK ON THIS SITE NOT TO BE CONSTRUCTED THIS PERMIT
- ALL WORK INDICATED IN THE PUBLIC RIGHT-OF-WAY WILL BE CONSTRUCTED UNDER CFN #166382
- A DECLARATION OF EASEMENT, COVENANTS AND RESTRICTIONS FOR A PERPETUAL, NON-EXCLUSIVE STORM DRAINAGE DISCHARGE EASEMENT ACROSS THE LOTS HAS BEEN RECORDED FOR THIS DEVELOPMENT - INCLUDED IN THIS DECLARATION THE OWNERS HAVE AGREED TO BE RESPONSIBLE FOR MAINTENANCE OF ALL DRAINAGE RELATED IMPROVEMENTS ON THIS SITE



joe slagle architect

413 2nd st. sw
albq nm 87102
505 246 0870

KEYED NOTES

- ASPHALT PAVED PARKING AND DRIVE PER DETAIL 1/C201
- NEW C.O.A. CURB AND GUTTER PER WORK ORDER
- NEW CATCH BASIN AND CONNECTION TO EXISTING STORM DRAIN MANHOLE PER C.O.A. WORK ORDER
- NEW C.O.A. 6'-0" SIDEWALK BY WORK ORDER
- EXISTING ASPHALT CURB TO BE REMOVED BY WORK ORDER
- ARTERIAL STREET PAVING SECTION BY WORK ORDER
- SITE RETAINING WALL PER DETAIL 2/C201
- RETAINING FOUNDATION STEMWALL
- 2'-0" WIDE CURB BREAK FOR DRAINAGE
- CONCRETE STEPS PER DETAIL 3/C201
- REFUSE ENCLOSURE
- CONCRETE CATCH BASIN PER DETAIL 4/C201
- NEW CONCRETE DRIVE PAD PER C.O.A. STD. DRAWING 2426 AND 2420
- ROOF DRAIN LINE
- CONCRETE CATCH BASIN WITH SHROUD PER DETAIL 5/C201
TG = 4735
INV IN = 44.85
INV OUT = 44.80
- 12" PVC OUTLET PIPE AT 1% SLOPE CONNECT TO BACK OF CURB INLET PER C.O.A. STANDARD DUG. #231
- BMP FACILITY - 1'-0" DEEP - SEE DETAIL 6/C201 FOR HEADER CURB
- AREA DRAIN WITH 6" PVC OUTLET TO CATCH BASIN
- TYPICAL SITE CONCRETE CURB AND GUTTER PER DETAIL 8/C201
- SITE RETAINING WALL PER 9/C201
- AREA DRAIN WITH OUTLET PIPE TO SANITARY SEWER PER SITE UTILITY PLAN

revisions:

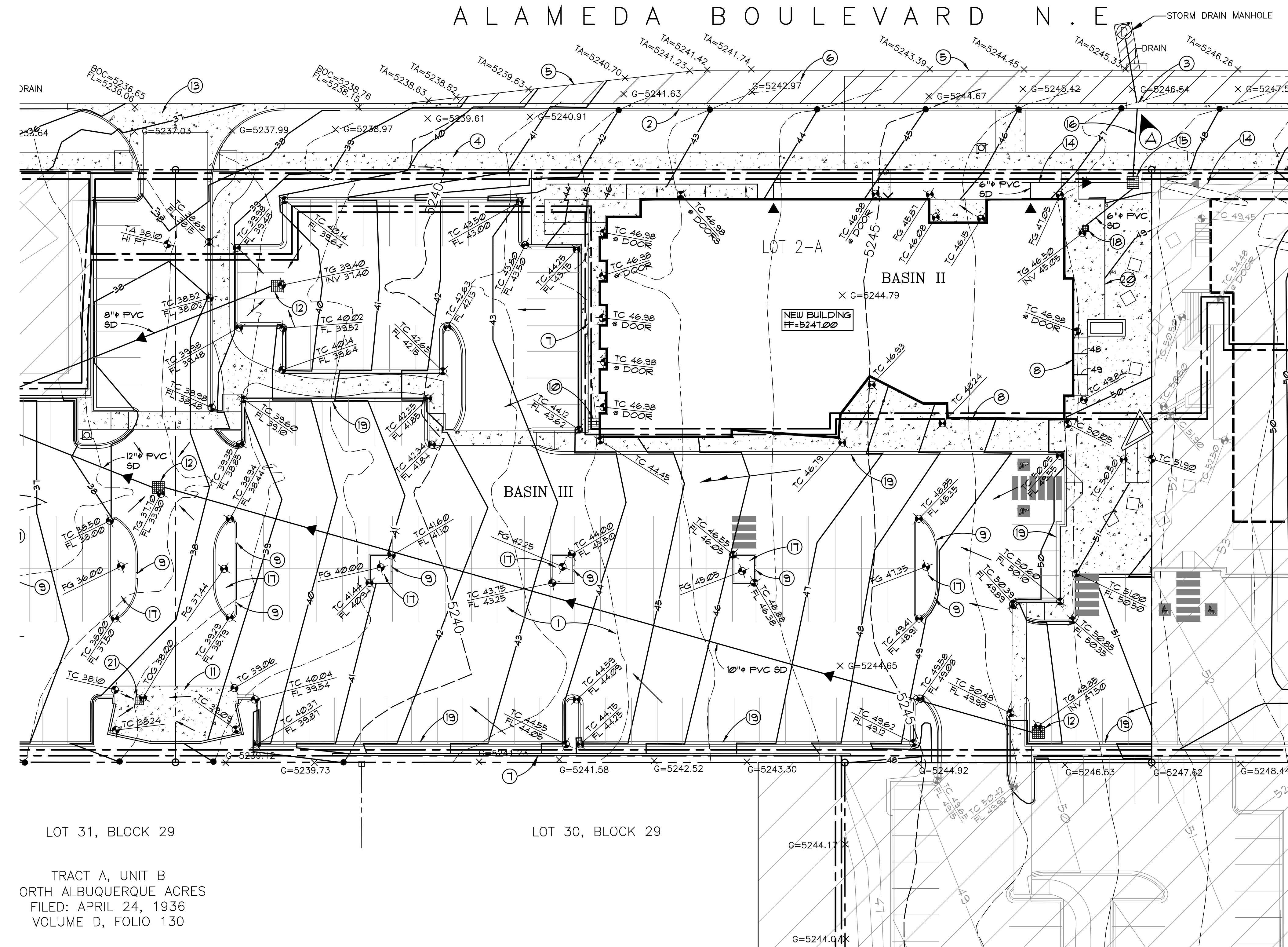
LEGEND

- PROPERTY LINE
- NEW BUILDING LINE
- 5245 - - - EXISTING CONTOUR
- PROPOSED CONTOUR
- 55.80 PROPOSED SPOT ELEVATION
- x 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

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Civil Engineering
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TIN CANALLEY
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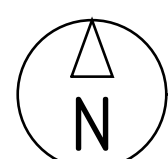
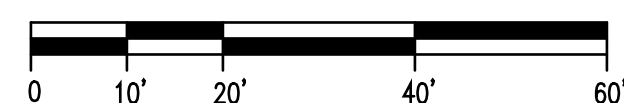
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date:
4-22-19
sheet:
c101



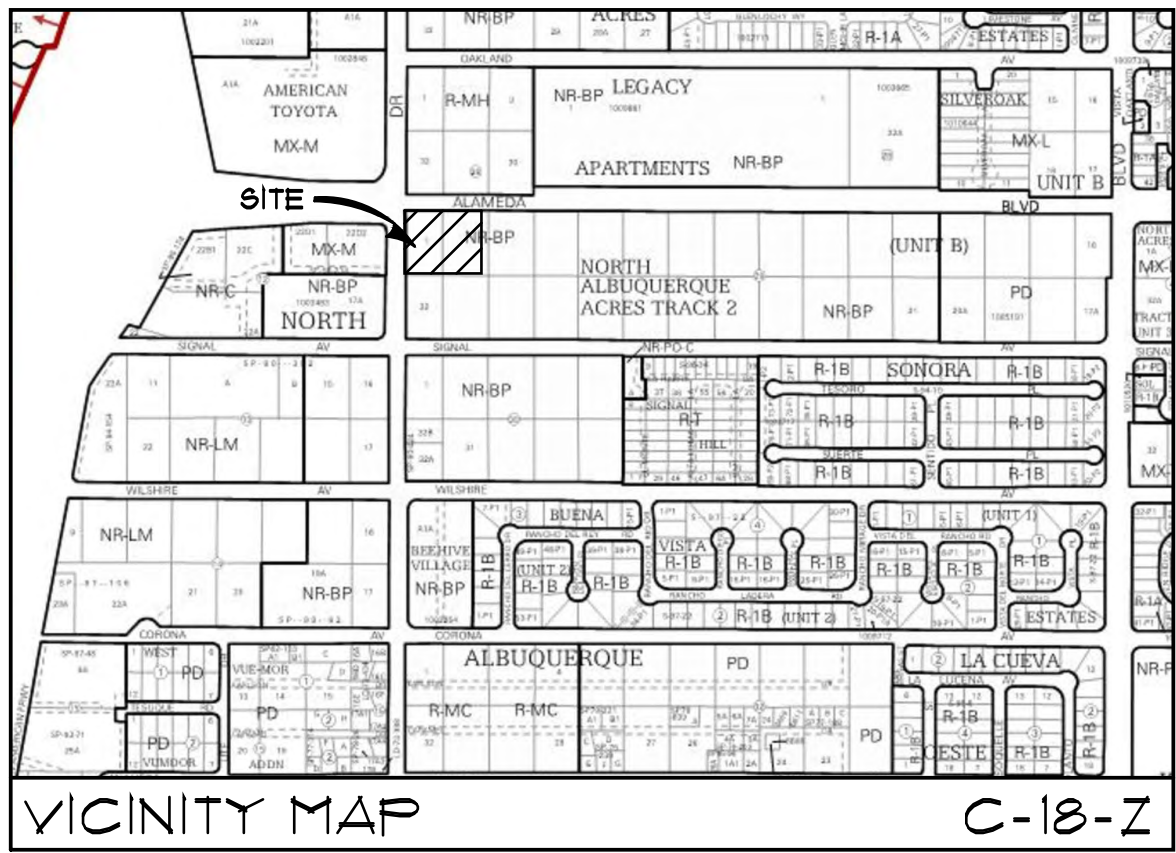
LOT 31, BLOCK 29

LOT 30, BLOCK 29

TRACT A, UNIT B
ORTH ALBUQUERQUE ACRES
FILED: APRIL 24, 1936
VOLUME D, FOLIO 130



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



DRAINAGE NOTES

- 1 FLOOD PLAIN DESIGNATION ZONE X PER FIR1 MAP 350002, OCTOBER 2011
- 2 SUBJECT SITE IS WITHIN THE NORTH ALBUQUERQUE ACRES MASTER DRAINAGE PLAN - DESIGN ANALYSIS REPORT "ALAMEDA BLVD. - SAN PEDRO TO WYOMING, PROJECT #166391" 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 4.31 CFS
- B 121 CFS
- C 1124 CFS
- D 3.38 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. "5-C18 1988", HAVING AN ELEVATION OF 5232.41, 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.

GENERAL NOTES

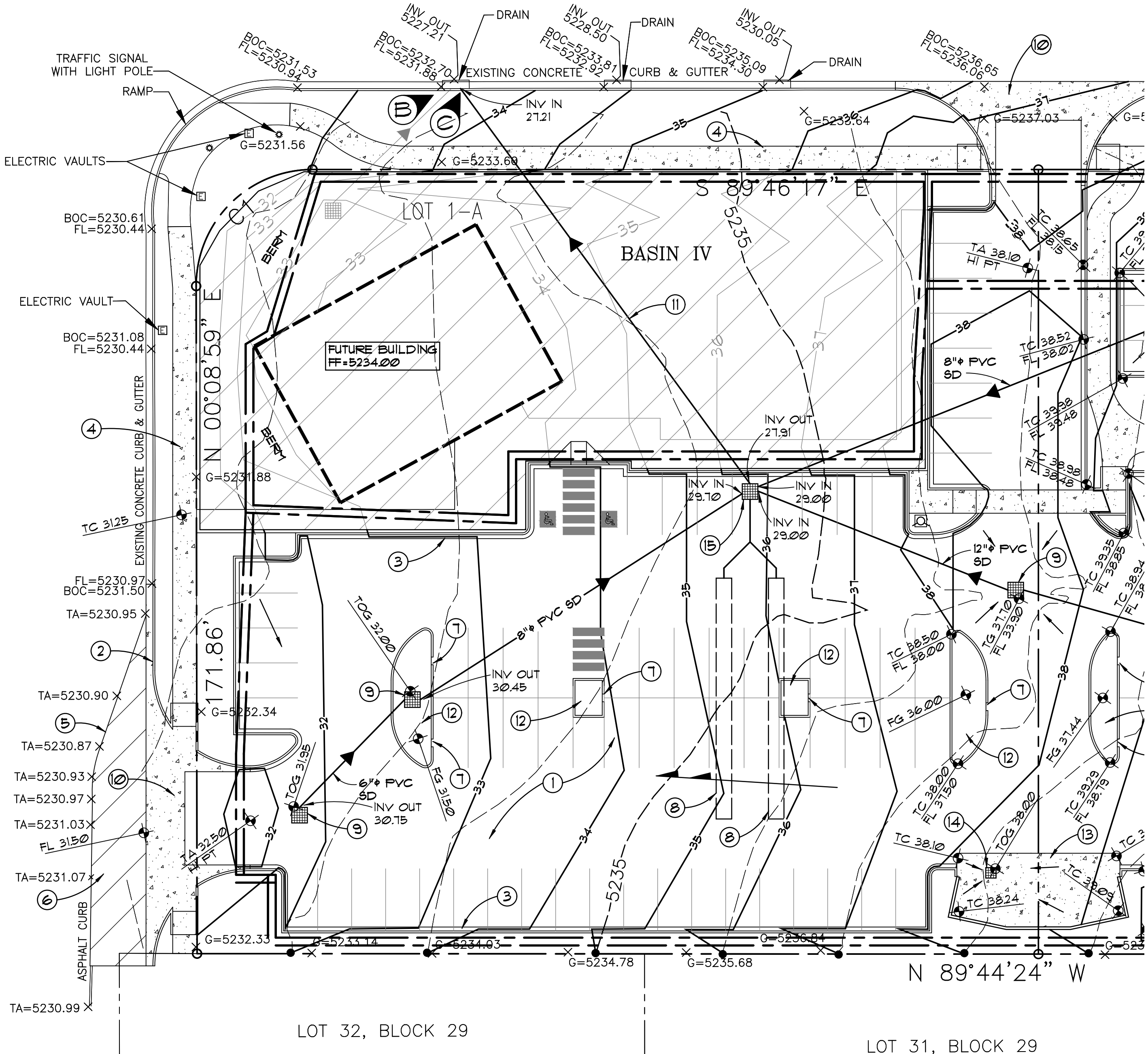
- A THE HATCHED AREAS OF THIS PLAN INDICATE FUTURE WORK ON THIS SITE NOT TO BE CONSTRUCTED THIS PERMIT
- B ALL WORK INDICATED IN THE PUBLIC RIGHT-OF-WAY WILL BE CONSTRUCTED UNDER CFN #166382
- C A DECLARATION OF EASEMENT, COVENANTS AND RESTRICTIONS FOR A PERPETUAL, NON-EXCLUSIVE STORM DRAINAGE DISCHARGE EASEMENT ACROSS THE LOTS HAS BEEN RECORDED FOR THIS DEVELOPMENT - INCLUDED IN THIS DECLARATION THE OWNERS HAVE AGREED TO BE RESPONSIBLE FOR MAINTENANCE OF ALL DRAINAGE RELATED IMPROVEMENTS ON THIS SITE



ALAMEDA BOULEVARD N.E.

SAN PEDRO BOULEVARD N.E.

R/W VARIES



TRACT A, UNIT B
NORTH ALBUQUERQUE ACRES
FILED: APRIL 24, 1936
VOLUME D, FOLIO 130

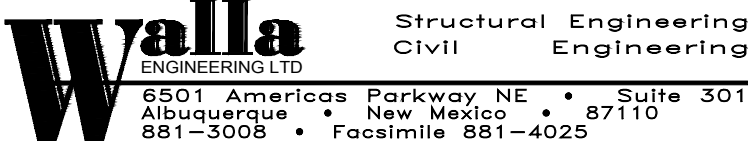
KEYED NOTES

- 1 ASPHALT PAVED PARKING AND DRIVE PER DETAIL 1/C201
- 2 NEW C.O.A. CURB AND GUTTER PER WORK ORDER
- 3 TYPICAL SITE CONCRETE CURB AND GUTTER PER DETAIL 8/C201
- 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 2'-0" WIDE CURB BREAK FOR DRAINAGE
- 8 11500 GALLON BELOW GRADE STORM WATER STORAGE TANK SYSTEM (BMP FACILITY) WITH CONTROLLED RELEASE TO EXISTING DOWNSTEAM FACILITIES - SEE 10/C201
- 9 CONCRETE CATCH BASIN PER DETAIL 4/C201
- 10 NEW CONCRETE DRIVE PAD PER C.O.A. STD. DRAWING 2426 AND 2420
- 11 18" PVC OUTLET PIPE AT 0.51% SLOPE
- 12 BMP FACILITY - 1'-0" DEEP - SEE DETAIL 6/C201 FOR HEADER CURB
- 13 REFUSE ENCLOSURE
- 14 AREA DRAIN WITH OUTLET PIPE TO SANITARY SEWER PER SITE UTILITY PLAN
- 15 CATCH BASIN WITH ORIFICE PLATE PER DETAIL 11/C201 (CONSTRUCT WITH THIS PHASE)

LEGEND

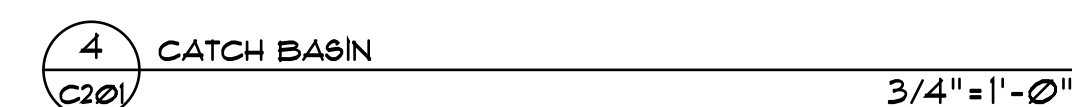
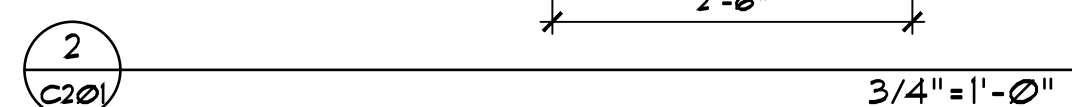
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- NEW CONCRETE PAVING/SIDEWALK
4" THICK, 4000 PSI, AIR-ENTRAINED

revisions:

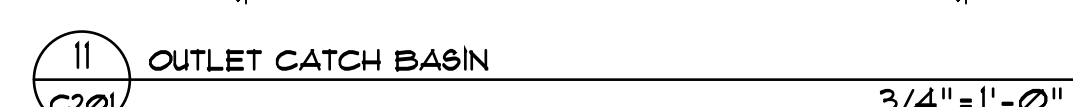
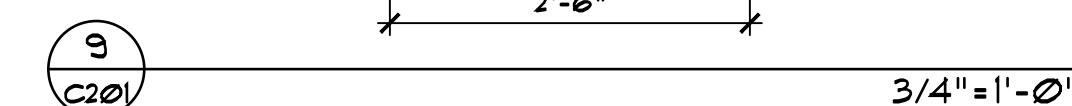
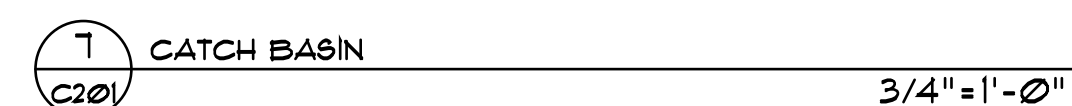


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