CITY OF ALBUQUERQUE

Planning Department Alan Varela, Director



Mayor Timothy M. Keller

January 5, 2024

Kelly M. Klein, P.E. Bohannan Huston, Inc. 7500 Jefferson St NE Albuquerque, NM 87109

RE: Los Altos Park – Phase 2 Renovations Grading Plans & Drainage Management Plans Engineer's Stamp Date: 12/19/23 Hydrology File: K20D037A

Dear Ms. Klein:

PO Box 1293 Based upon the information provided in your submittal received 12/21/2023, the Grading Plans and Drainage Report are approved for Grading Permit, Paving Permit, and Work Order. Please place this stamp approved Grading Plans in the Work Order set of construction drawings.

Albuquerque As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Dough Hughes, PE, jhughes@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

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

www.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 (DTIS)

Project Title: Los Altos Park Renovation CPN 759683	Hydrology File # N/A
Legal Description: TRACT 4 MUNICIPAL ADDN NO 2 CONT 3	1.84 AC
City Address, UPC, OR Parcel: 10100 Lomas Blvd NE, Alb	puquerque, NM
Applicant/Agent: Bohannan Huston, Inc	Contact: Kelly Klein
Address: 7500 Jefferson St NE, Albuquerque, NM 87109	Phone: 505-823-1000
Email:	
Applicant/Owner: City of Albuquerque CIP	Contact: ANTHONY VILLANUEVA
Address:	Phone:
Email: avillanueva@cabq.gov	
(Please note that a DFT SITE is one that needs Site Plan	Approval & ADMIN SITE is one that does not need it.)
TYPE OF DEVELOPMENT: PLAT (#of lots)	RESIDENCE
✓ DFT SITE	ADMIN SITE
RE-SUBMITTAL: YES NO	
DEPARTMENT: TRANSPORTATION	HYDROLOGY/DRAINAGE
Check all that apply under Both the Type of Submitta	al and the Type of Approval Sought:
TYPE OF SUBMITTAL:	TYPE OF APPROVAL SOUGHT:
ENGINEER/ARCHITECT CERTIFICATION	✓ BUILDING PERMIT APPROVAL
PAD CERTIFICATION	CERTIFICATE OF OCCUPANCY
CONCEPTUAL G&D PLAN	CONCEPTUAL TCL DFT APPROVAL
🖌 GRADING & DRAINAGE PLAN	PRELIMINARY PLAT APPROVAL
✔ DRAINAGE REPORT	FINAL PLAT APPROVAL
DRAINAGE MASTER PLAN	✓ SITE PLAN FOR BLDG PERMIT DFT
CLOMR/LOMR	APPROVAL
TRAFFIC CIRCULATION LAYOUT (TCL)	SIA/RELEASE OF FINANCIAL GUARANTEE
	FOUNDATION PERMIT APPROVAL
TRAFFIC CIRCULATION LAYOUT FOR DFT	GRADING PERMIT APPROVAL
TRAFFIC IMPACT STUDY (TIS)	SO-19 APPROVAL
STREET LIGHT LAYOUT	PAVING PERMIT APPROVAL
OTHER (SPECIFY)	GRADING PAD CERTIFICATION
	WORK ORDER APPROVAL
	CLOMR/LOMR
	OTHER (SPECIFY)

DATE SUBMITTED: 12-19-2023

Bohannan A Huston great people supporting great communities

December 19, 2023

New Mexico: Albuquerque | Las Cruces Colorado: Denver | Grand Junction 800.877.5332 bhinc.com

Renee Brissette, PE, CFM Senior Engineer, Hydrology Planning Department 415 Silver Ave NE, 87102

Re: Comment Response Letter – Los Altos Park Phase 2 Renovations Grading & Drainage Management Plans (Hydrology File: K20D037A)

Dear Renee,

Enclosed for your review are responses to your comment letter dated October 31, 2023, for the above-mentioned site. Below is a brief description of how the comments were addressed:

General:

- 1. Since this project discharges into a NMDOT facility, we have reached out to Tim Trujillo for review and concurrence. Tim Trujillo provided the following comments:
 - 1. <u>Flood zone note is labeled X but it's AO. Hope this doesn't require any sort of CLOMR but just a heads</u> <u>up.</u> Per our discussions, the FEMA Flood Zone Map is located on the DMP sheets for reference. The majority of the site is Zone X. The exceptions are two "fingers" that are zoned AO that extend into the site. These "fingers" extend along a portion of the existing Loop Road and along a portion of an existing dirt channel. It is our understanding that a CLOMR may not be required since there are no permanent structures within the AO zone and we are not requesting at this time to "remap" the AO floodplain. The Lomas Blvd improvements and the onsite SD/swale system will ultimately convey the flow to the NMDOT culverts. Overall, the proposed drainage patterns are consistent with the existing drainage patterns and ultimately discharge at the same location. Since there are improvements being made in the AO floodzone, we have included a Floodplain Permit Application Form.
 - 2. <u>Flow at AP 9 is more in the developed condition. Has the flow been routed through the ponds?</u> **AP9 in** existing and proposed conditions was pointing at different locations. AP9 in the proposed conditions has been updated to point at same location as in existing condition.
 - 3. <u>Could you provide the details on Wier 2?</u> Details for Weir 2 is shown in Sheet CG107.
 - 4. <u>Can our box culvert still be accessed? Look like there is a gate but just want to make sure.</u> There is a maintenance ramp proposed at the northwest corner of Pond-4.
 - 5. <u>I know we discussed this but didn't get any feedback from Maintenance.... Is there a gate in front of the CBC?</u> Grate on box culvert openings is a future design option. They keynote has been edited to reflect "Future". If gates/grates will be installed on the box culverts, a proposed design will be submitted to NMDOT for review and approval.
 - 6. <u>Will there be any sort of floatable control in Pond 4?</u> There is no floatable control proposed in Pond-4. However, the pond has a sump condition to allow trash to settle at the bottom. Periodic maintenance will be required and a maintenance road is provided for truck access.

7. <u>Did the dirt jump part of the park go away</u>? **The dirt jump part of the park is not being built with this** phase. We have the area graded for future construction.

Grading Plans:

- 2. Sheet CG101. There is an existing median curb cut. Is this going to be closed off? IF so, then please include Existing Top of Curb (TC) at the four locations where they are closing the curb cut.
 - The existing median curb cut does not have enough capacity to convey the north half of Basin 9 flows. It is also not located at the sump condition. A quick analysis was performed, and it was found that <u>if</u> the curb cut remains open, it only conveys 0.4 cfs to the south half of Basin 9 where it then drains to inlet 1 (IN 1) at sump condition. Both the south half street section at Lomas and the proposed sump inlet (IN 1) have capacity for that additional flow. Additionally, if the 0.4cfs remains in the northern half of the street, the existing inlet 15 (EX IN 15) also has capacity to accept this flow. Therefore, to reduce the necessary traffic control measure requirements and construction cost it is decided to keep that existing median curb cut in place.
- 3. Sheet CG101. Please provide TC elevations for the proposed inlets and the start and finish of the close off of the concrete rundown.
 - Closing off of the concrete rundown and installing the offsite inlets will be detailed in the Offsite Public Work Order construction drawings. These offsite construction drawings are currently being routed through the DRC. When installing the curb to close off the rundown, we will match existing conditions.
- 4. Sheet CG101. Based on my review of Off-Site Basin 9 (See below), I would recommend keeping the two existing inlets and pipes on the east bound lane of Lomas. Since the slump condition of the Lomas is at the existing median cut and concrete rundown, I would proposed installing the two inlets here, place junction boxes at the outfalls of the existing lines and then tie them into another junction box which will then be tied to the inlet in the proposed parking lot.
 - Thank you for the discussions we had concerning the low point in Lomas Blvd. Per our discussions, we added additional surveyed spot elevations on Sheet CG101 to define the sump location clearly. The sump condition of Lomas is located at the existing inlet locations. Since the existing median curb cut and concrete rundown are not located at the sump location, we are not proposing new inlets in those locations.
 - As mentioned in comment #2, an analysis shows that the Lomas street sections within Basin 9 have enough capacity to convey the flow to the existing inlet locations (IN 1 and EX IN 15). However, the existing inlet at eastbound Lomas Blvd (IN 1) does not have enough grate capacity to capture its respective flows.

Therefore, we are proposing to replace that old style existing inlet with a new double grate, double wing, type A inlet which can accommodate the total proposed flow at that location.

- 5. Sheet CG102. Please fix the west match line to read "See Sheet CG101" and not CG103.
 - Updated
- 6. Sheet CG104. Please provide a maintenance ramp for Pond 4 with a gate and drive pad off the drive line within the parking lot.
 - There is a grade difference of 18ft from the parking lot to the bottom of the pond and a retaining wall is planned at that proposed condition. A maintenance ramp at this location will not be feasible. However, at the northwest corner of Pond 4, the proposed grades will allow for a ramp. This location has been discussed with the client team and is shown on the CG104.
- 7. Sheet DMP 101 & 102. Offsite Basin 9 is more complicated than what is shown. There are two existing inlets on the south side of both lanes (one a median inlet) which collects some flows but there is more that appears to just bypass the inlets and goes to rundowns that appears to be in the slump condition and not the existing inlets. The median curb cut and the rundown into the Park are both being closed off. These are the two areas that should have inlets installed and not have the closed off. Please review this drainage area.
 - The actual existing sump condition in Lomas is located at the existing inlets (IN 1 and EX IN 15) (see discussions on comments 2 and 4). Spot elevations are provided in Sheet CG101 to define the sump location clearly. Please refer to the proposed conditions Lomas Blvd inlet schematics on Sheet DMP106 for detailed drainage of this area.
- 8. Sheet DMP 103. I would add some more Analysis Points at the inlet in Basin 11 and then at the outfall in Pond 4.
 - Basin 11 is shown in the Proposed Conditions Table. Basin 11 has two inlets and the flow captured in these inlets are shown on sheet DMP 104. Analysis point AP8A was added at the outfall pipe reflecting the flows from Basin 11 and Basin 12 and Basin 11. In addition, Analysis Point AP9 is added at the outfall of Pond 4.
- 9. Sheet DMP 104. Please show the Drainage Areas lightly on this plan so that one can flip between DMP 103 and 104 easily.
 - Sheet DMP104 has been updated to show drainage areas lightly. Also, the storm drain layout at the pump track location has been changed to avoid pipe

Renne Brissette Hydrology Planning Department Page 4

crossing conflicts with the existing utilities running through the site. The Storm Drain Pipe Table and Inlet Table have been updated accordingly to reflect these changes.

With this comment response letter, we are requesting Grading and Drainage approval. If you have any questions or require further information, please feel free to contact me.

Sincerely,

Kelly M.K.

Kelly Klein, P.E. Project Manager Community Development & Planning

KMK/SMS Enclosures

Floodplain Development Permit Application

Planning Dept., City of Albuquerque

Section 1: General Provisions (Applicant to read and sign)

- 1. No work of any kind may start in a Special Flood Hazard Area, SFHA, until a permit is issued.
- 2. Applicant is hereby informed that other permits may be required to fulfill local, state, and federal regulatory requirements.
- 3. Applicant hereby gives consent to the Floodplain Administrator and his/her representative to make reasonable inspections required to verify compliance.
- 4. Applicant must provide a Critical Habitat for Threatened & Endangered Species report prior to any work in a SFHA.
- 5. Applicant must provide the Base Flood Elevation, BFE, and must provide engineering calculations demonstrating that the development will not increase the BFE or result in increased flood risk on any neighboring property.
- 6. If this application is for a building the floodplain must be removed by first constructing any required storm drain and/or channel modifications and second acquiring a Letter of Map Revision, LOMR, from FEMA before a building permit will be issued. If storm drain and channel modifications are not involved then a draft Elevation Certificate must be submitted prior to Building Permit and a Final Elevation Certificate must be submitted prior to Certificate of Occupancy.
- 7. A Conditional Letter of Map Revision, CLOMR, is required prior to any work in the FLOODWAY, if applicable.
- 8. The applicant certifies that all statements herein and in attachments to this application are, to the best of my knowledge, true and accurate.

Applicant Signature Kelly M. K.	Date12-19-2023
Applicant Printed NameKelly Klein	Phone #: (505) 823-1000
Owner Signature	Date
Owner Printed Name Anthony Villanueva	Phone #: (505) 768-3826
Applicant is (check one): Owner Builder	Engineer/ArchitectX
Section 2: Proposed Development in Special Flo Applicant)	ood Hazard Area (to be completed

by

Project address/Legal Disc/Location: 10100 Lomas Blvd NE, Albuquerque, NM

TRACT 4 MUNICIPAL ADDN NO 2 CONT 31.84 AC

Section 2 (Cont.) - Description of Work in Special Flood Hazard Area (SFHA):

A. Building Development and Building Type

<u>ACTIVITY</u>	STRUCTURE TYPE
New Building	Residential (1-4 Family)
Addition	Residential (More than 4 Family)
Alteration	X_Non Residential (Flood-proofing?Yes)
Relocation	Combined Use (Residential & Commercial)
Demolition	Manufactured Home (In Mobile Home Park?Yes)
X_Replacement	
If an addition or alteration:	
Estimated Cost of Project	\$
Estimated Value of structure before ad	ldition/alteration. \$
Percent of value (new construction /ex	xisting value)%
B. Other Development Activities	
<u>X</u> Clearing <u>X</u> Grading	X Utilities X Paving
Watercourse Alteration (Bridge of	or Channel Modification)
<u>X</u> Drainage Improvements (Storm of	drain or culverts)
X Road, Street or Bridge Construct	tion
Subdivision	
X Walls or Fences	
Storage of Materials/Equipment	for more than a year. (Materials Volume (cu. Ft.))
Other (Please Specify)	
Is there a Grading & Drainage Plan	associated with this work? Yes X No

Drainage file Number: _____

Section 3: Floodplain Determination (Completed by the Floodplain Administrator)

_____The proposed development is located on FIRM Panel:_____

_____The proposed development is located in Zone X and NO FLOODPLAIN DEVELOPMENT PERMIT IS REQUIRED.

_____A portion of the proposed development is located in a SFHA but not any buildings so an approved G&D Plan is required (Engineer's Stamp Date_____) prior to issuance of a Floodplain Development Permit and no Building Permit will be issued for this construction.

_____A portion of the proposed Building is located in a SFHA but the project does not include any storm drain improvements and/or channel modifications so:

- 1. Approved G&D Plan is required (Engineer's Stamp Date_____) prior to issuance of a Floodplain Development Permit,
- 2. Draft Elevation Certificate (Date_____) is required prior to issuance of a Building Permit, and
- 3. Final Elevation Certificate and Engineer's Certification is required prior to Certificate of Occupancy.

_____A portion of the proposed Building is located in a SFHA and the project includes storm drain improvements and/or channel modifications that will change the floodplain location so

- 1. An Approved Grading and Drainage Plan is required (Engineer's Stamp Date____) prior to issuing a Flood Plain Development Permit and a Grading Permit and/or a Work Order.
- The improvements must be constructed and an Approved Engineer's Certification (Engineer's Stamp Date_____) and an Approved LOMR Request (Engineer's Stamp Date_____) must be approved by Hydrology prior to approval of the LOMR application to FEMA.
- 3. The Floodplain must be removed by a LOMR from FEMA (Date_____) prior to issuance of a Building Permit.

_A portion of the proposed development is located in a FLOODWAY so:

- 1. Approved G&D Plan (Engineer's Stamp Date____) and an Approved CLOMR Request (Date____) is required prior to approval of the application to FEMA, and
- 2. CLOMR from FEMA (Date_____) is required prior to issuance of a Floodplain Development Permit, a Grading Permit, and/or a Work Order.
- 3. The improvements must be constructed and an Approved Engineer's Certification (Engineer's Stamp Date_____) and an Approved LOMR Request (Engineer's Stamp Date_____) must be approved by Hydrology prior to approval of the LOMR application to FEMA (Date_____).
- 4. The Floodplain must be removed by a LOMR from FEMA (Date_____) prior to issuance of a Building Permit.

Drainage File Number:_____ Floodplain Permit Number:_____

 Signed:
 Date:

Printed Name: _____

Rev. March 2018



City of Albuquerque

Planning Department Floodplain Development Permit

Project Title Los Altos Park Renovation CPN 759683

Project Location (Major Cross Streets/Arroyo or address) 10100 Lomas Blvd NE, Albuquerque, NM

Property Owner: (Note: If applying for a Building Permit, the "Company" or "Owner" name on this form must match the "Owner" name on the Building Permit.)

Company Name or Owner Name: City of Albuquerque CIP

Responsible Person: (Note: Name below may be the same as Owner Name above if there is no Company Name) Name: Anthony Villanueva

Phone Number: 505-768-3826

E-mail: avillanueva@cabq.gov

Site Contact: (if different than Property Owner info above.)

Name: Kelly Klein, Bohannan Huston Inc.

Phone: 505-823-1000

e-mail: kklein@bhinc.com

For City personnel use only:

City Personnel Signature: _____ Date_____

Description of Work _____

Check all that apply:

Final Elevation Certificate required prior to Certificate of Occupancy

No Building Permits will be allowed until FEMA issues a LOMR removing the SFHA.

A LOMR must be obtained from FEMA prior to release of Financial Guarantees.



BASIN	AREA	UNITS		% LAND TR	EATMENT		DISCHAR	GE (CFS)	VOLUME	E (AC-FT)
I.D.	(AC)	#	Α	В	С	D	10 YR	100YR	10 YR	100Y
Onsite									6 HOUR STORM	
Offsite Basin-1	7.4	-	0.0%	0.0%	10.0%	90.0%	19.9	32.3	0.9	1.5
Offsite Basin-2	36.0	152.0	0.0%	28.0%	28.0%	44.0%	72.1	128.4	2.9	5.0
Offsite Basin-3	1.7	-	0.0%	0.0%	100.0%	0.0%	2.9	5.4	0.1	0.2
Offsite Basin-4	5.1	-	0.0%	0.0%	10.0%	90.0%	13.7	22.3	0.6	1.0
Offsite Basin-5A	2.4	-	0.0%	0.0%	10.0%	90.0%	6.4	10.4	0.3	0.5
Offsite Basin-5B	1.1	-	0.0%	0.0%	10.0%	90.0%	3.0	4.8	0.1	0.2
Offsite Basin-5C	1.4	-	0.0%	0.0%	10.0%	90.0%	3.7	6.1	0.2	0.3
Offsite Basin-6	0.4	-	0.0%	0.0%	61.0%	39.0%	0.9	1.6	0.0	0.1
Offsite Basin-7	3.4	-	0.0%	0.0%	8.0%	92.0%	9.3	15.1	0.4	0.7
Offsite Basin-8	0.6	-	0.0%	0.0%	4.0%	96.0%	1.7	2.8	0.1	0.1
Offsite Basin-9	1.4	-	0.0%	0.0%	0.0%	100.0%	3.9	6.2	0.2	0.3
Offsite Basin-10	1.4	-	0.0%	0.0%	20.0%	80.0%	3.6	6.0	0.2	0.3
Offsite Basin-11	1.6	-	0.0%	0.0%	59.0%	41.0%	3.5	6.1	0.1	0.2
TOTAL	68.8	152.0					144.7	247.6	6.2	10.4



1.42

3.98

3.37

0.89

3.55

3.59

2.63

7.37

6.07

1.45

7.32

7.66

23.23 43.69

0.04

0.13

0.09

0.11 0.22

0.04 0.07

0.09 0.22

0.78 1.49

0.08

0.23

0.21

AP-7

AP-8

AP-9

AP-10

AP7

Offsite Basin-9, Existing Basin-10

Existing Basin-5 0.80

Existing Basin-6 2.25

Existing Basin-7 1.74

Existing Basin-8 0.33

Existing Basin-9 2.59

Existing Basin-10 2.82

TOTAL 13.54

0.0%

0.0%

0.0%

0.0%

0.0%

0.0%

5.0%

92.0%

30.5% 30.5% 39.0%

5.0%

0.0% 93.0%

50.0% 50.0%

0.0% 66.0% 34.0% 0.0%

8.0%

7.0%

90.0%

0.0%

Offsite Basin-5B

Offsite Basin-5A

Offsite Basin-10

(AP2)

Offsite Basin-5C

AP4 Offsite Basin-8

Ex Basin-7

AP8

Ex Basin-5

a state same

Q(cfs) 9.68 AP-4, AP-6, Offsite Basin-10, Qin of AP-2, Existing Basin-2, Existing Basin-3, Existing Basin-5, Existing 265.81 Basin-6, Existing Basin-7, Existing Basin-8 265.81 273.13 AP8, Existing Basin-9 13.86

1-40

City of Albuquerqu Planning Department Development Review Services HYDROLOGY SECTION **APPROVED** 01/05/24 DATE:___ Pressel BY:____ K20D037A HydroTrans #

PROVAL OF GRADING & DRAINAGE PLAN(S) SHALL EXPL 2) YEARS AFTER THE APPROAL DATE BY THE CITY IF N G PERMIT HAS BEEN PULLED ON THE DEVE





			Pon	d Table				-
POND	SWQV (CF)	Detention Volume (CF)	Total Volume Required (CF)	Total Volume Provided (CF)	Qin (CFS)	Qout (CFS)	Pond Outlet	
Pond-1	3554	1,442	4,996	7,147	12.3	10.4	1-18"	
Pond 2&3	695	194	889	1,622	4.03	3.58	Sidewalk Culvert	
Pond-4	3470	13,504	16,974	16,485	280.7	257.0	Weir	

BASIN	AREA		% LAND	TREATMENT		DISCHA	RGE (CFS)	VOLUME	(AC-FT)	SWQV	
I.D.	(AC)	Α	В	С	D	10 YR	100YR	10 YR	10 YR 100YR		
Onsite								6 HOUR	STORM	(CF)	
B1	1.10	0.0%	0.0%	62.0%	38.0%	2.31	4.03	7.64	0.15	695	
B2	0.23	0.0%	0.0%	82.0%	18.0%	0.44	0.79	0.47	0.03	69	24
B3	0.66	0.0%	0.0%	43.0%	57.0%	1.53	2.59	3.34	0.11	625	111
B4	0.94	0.0%	0.0%	14.0%	86.0%	2.49	4.06	7.28	0.19	1,349	12
B5	1.00	0.0%	0.0%	24.0%	76.0%	2.55	4.20	7.85	0.19	1,273	
B6	0.67	0.0%	0.0%	85.0%	15.0%	1.24	2.25	2.71	0.07	167	
B7	1.69	0.0%	0.0%	40.0%	60.0%	3.98	6.71	19.24	0.28	1,691	
B8A	1.32	0.0%	0.0%	25.0%	75.0%	3.34	5.52	13.04	0.24	1,656	
B8B	0.10	0.0%	0.0%	8.0%	92.0%	0.27	0.44	0.21	0.02	154	14
B9	1.39	0.0%	0.0%	94.0%	6.0%	2.43	4.52	9.83	0.14	139	-
B10	1.64	0.0%	0.0%	94.0%	6.0%	2.86	5.32	13.38	0.16	164	10
B11	0.68	0.0%	0.0%	18.0%	82.0%	1.77	2.90	3.99	0.13	931	100
B12	0.54	0.0%	0.0%	83.0%	17.0%	1.02	1.84	1.90	0.06	154	
B13	1.64	0.0%	60.0%	40.0%	0.00%	2.15	4.52	9.88	0.13	0	100
OTAL	13.59					28.38	49.72	100.78	1.89	9,068	

	Analysis Points Table - Proposed Offsite Drainage		.3
ΑΡ	Contributing Basins	Q(cfs)	and and the second
AP-1	Offsite Basin-1, Offsite Basin-2, Offsite Basin-3	166.14	a contraction
AP-2	Offsite Basin-4, Offsite Basin-6, Offsite Basin-7	39.02	
AP-3	AP-1, Offsite Basin-5A, Offsite Basin-5B,Offsite Basin-5C	187.44	
AP-4A	Bypass of AP-2 and AP-3, Offsite Basin-8	162.44	and the second se
AP-4B	Street flow at Lomas Blvd Eastbound after AP-4A	21.80	and the second second
AP-5A	Street flow at Lomas Blvd Westbound, Bypass of	25.24	
AP-5B	Bypass of AP-5A, North half of Offsite Basin-9	18.99	
AP-5B	Analysis Points Table - Proposed Onsite Drainage	18.99	
AP-5B	Bypass of AP-5A, North half of Offsite Basin-9 Analysis Points Table - Proposed Onsite Drainage Contributing Basins	18.99 Q(cfs)	
AP-5B AP AP-6	An 4b, Orisite basin 5, basin 6b Bypass of AP-5A, North half of Offsite Basin-9 Analysis Points Table - Proposed Onsite Drainage Contributing Basins Offsite Basin-11, Qout of Pond-3	18.99 Q(cfs) 9.68	
AP-5B AP AP-6 AP-7	Analysis Points Table - Proposed Onsite Drainage Analysis Points Table - Proposed Onsite Drainage Contributing Basins Offsite Basin-11, Qout of Pond-3 AP-4A, Qin of AP-4B, Qin of AP-2, AP-6, Offsite Basin-10, Basin-2, Basin-6, Qout of Pond-1	18.99 Q(cfs) 9.68 238.17	
AP-5B AP AP-6 AP-7 AP-8	Analysis Points Table - Proposed Onsite Drainage Analysis Points Table - Proposed Onsite Drainage Contributing Basins Offsite Basin-11, Qout of Pond-3 AP-4A, Qin of AP-4B, Qin of AP-2, AP-6, Offsite Basin-10, Basin-2, Basin-6, Qout of Pond-1 AP-7	18.99 Q(cfs) 9.68 238.17 238.17	
AP-5B AP AP-6 AP-7 AP-8 AP-8A	Ani-4b, Orisite basin 9, basin 6b Bypass of AP-5A, North half of Offsite Basin-9 Analysis Points Table - Proposed Onsite Drainage Contributing Basins Offsite Basin-11, Qout of Pond-3 AP-4A, Qin of AP-4B, Qin of AP-2, AP-6, Offsite Basin-10, Basin-2, Basin-6, Qout of Pond-1 AP-7 Qin of AP-5A, Qin of AP-5B, Basin-11, Basin-12	18.99 Q(cfs) 9.68 238.17 238.17 32.74	
AP-5B AP-6 AP-7 AP-8 AP-8A AP-8A AP-9A	Ani-4b, Orisite basin 9, basin 6b Bypass of AP-5A, North half of Offsite Basin-9 Analysis Points Table - Proposed Onsite Drainage Contributing Basins Offsite Basin-11, Qout of Pond-3 AP-4A, Qin of AP-4B, Qin of AP-2, AP-6, Offsite Basin-10, Basin-2, Basin-6, Qout of Pond-1 AP-7 Qin of AP-5A, Qin of AP-5B, Basin-11, Basin-12 AP-8, AP-8A, Basin-9, Basin-10	18.99 Q(cfs) 9.68 238.17 238.17 32.74 280.74	
AP-5B AP-6 AP-7 AP-7 AP-8 AP-8A AP-9A AP-9	An 4b, Onsite basin 9, basin 6b Bypass of AP-5A, North half of Offsite Basin-9 Analysis Points Table - Proposed Onsite Drainage Contributing Basins Offsite Basin-11, Qout of Pond-3 AP-4A, Qin of AP-4B, Qin of AP-2, AP-6, Offsite Basin-10, Basin-2, Basin-6, Qout of Pond-1 AP-7 Qin of AP-5A, Qin of AP-5B, Basin-11, Basin-12 AP-8, AP-8A, Basin-9, Basin-10 Qout of Pond-4	18.99 Q(cfs) 9.68 238.17 238.17 32.74 280.74 257.00	





SWALE		Swale Type		SWALE CAPAC	DEPTH OF FLO	N						
#				(CFS)	(cfs)	(ft)						
SWALE 1	Trapezoid SV	VALE 3:1 side slopes d=2.0' n=0.	197.0	180.4	1.92							
SWALE 2	Trapezoid SWA	LE 4:1 & 3:1 side slopes d=3.0' n	404.9	2.30								
SWALE 3	V SWAL	E 3:1 side slopes d=1.0' n=0.035	S=4.11%	22.0	6.7	0.65						
			WEIR TABL	E								
	SWALE	WEIR DIMENSIONS		Y ACTUAL FLOW	DEPTH OF FLOW							
	#		(CFS)	(cfs)	(ft)	(ft/sec)						
		Battom Langth-59' Donth-0.67'	76.6	72.6	0.62	1.07						



DRAINAGE NARRATIVE

INTRODUCTION:

The project is located on the southwest corner of Lomas Blvd and Eubank Blvd intersection. This project is the second phase of the Los Altos Park renovation which entails improving the western half of The Phase 2 renovation includes the construction of new Loop Road, mitigation of offsite drainage through the site, site amenities (such as horseshoe pits, playgrounds, dog park, BMX pump track), add reconfiguration of pool parking lot and sidewalks. The drainage management plan presented herein represents the final drainage plan in fully developed conditions.

FLOOD ZONE:

The site is located in a FEMA floodplain Zone X (an area of minimal flood hazard) as shown on firm 35001C0358H.

METHODOLOGY:

All analysis was completed for existing and fully developed conditions and includes offsite flows. The runoff flow rates and volumes for the basins were computed for the 100 yr - 24 hr storm in accorda Albuquerque Development Manual (DPM), chapter 6, dated June 15, 2020. The site is located within zone 3. Since the site has been divided into basins less than 40 acres in size, the rational method is hydrology of the existing and proposed basins.

EXISTING CONDITIONS:

The existing site is currently developed and, as such, currently contains mostly C and D land treatment types. Sheet DMP102, Existing Conditions Table defines these land treatment types and quantifier values. The Phase 1 renovation of the park is completed and no drainage from Phase 1 enters the Phase 2 site area. However, there are significant offsite flows that enter the Phase 2 site from the north discussed further in the section below. The site slopes mainly from the east to the west with slopes ranging from 1% to 10% with some steeper slopes near the existing drainage channels. There is an existe into an eastern and western section. Flows from the east side of the site travel through 2 existing 8' x 8' concrete box culverts (CBC) under the existing road. Flows then continue through the wester existing arroyo before ultimately discharging through another set of 3 existing 8' x 8' CBC's to the I-40 drainage channel.

OFFSITE BASINS- EXISTING CONDITIONS:

The offsite basins were delineated using publicly available data from 2010 MRCOG LiDAR NMSPC. The accuracy of the offsite data is to the nearest 2' contour interval. The offsite data was used to iden around and entering the site and for quantifying these flows based on the basin delineations as shown on the Offsite Drainage Management Plan (Sheet DPM101).

There are 11 offsite basins that affect the site. Sheet DMP101, Offsite Conditions Table defines the land treatment types and quantifies the associated flow values for these offsite basins. A summary o the site is described below.

Offsite basin 1 consists of commercial development and drains west to the Westerfeld Drive. The flow from offsite basin 1 combines with offsite basin 2. Offsite basin 2 is the largest offsite basin and converse development. Offsite basin 3 is a park area located withing offsite basin 2. The combined flow from these 3 basins is captured and conversed within the residential streets. There are no storm drains in total flow surface drains to the end of Westerfeld Drive (labeled as AP1 in Sheet DMP 101) and continues to flow south toward Lomas Blvd through an existing asphalt channel.

Offsite basin 5 is divided into 3 sub-basins (offsite basin 5A, offsite basin 5B and offsite basin 5C). Total flow from these three basins combines with flow from AP1 and continues to flow south toward Lo

existing asphalt channel (labeled as AP3 in Sheet DMP 101).

Offsite basin 4 and offsite basin 6 are also commercial development. Both basins surface drains toward Lomas Blvd.

It was observed during site visit that there exists a high point at Eubank Blvd and Lomas Blvd intersection. Therefore, it is assumed that no offsite flow from east of Eubank Blvd drains west and enters I

Lomas Blvd is divided into 3 offsite basins (Offsite Basin 7, Offsite Basin 8, and Offsite Basin 9). Offsite basin 7 drains from east to west with combined flow from offsite basin 4 and offsite basin 6. Some by 2 existing inlets located at southeast corner of Lomas Blvd and Westerfeld's asphalt channel intersection (labeled as AP2 in Sheet DMP 101). Bypass from AP2 combines with AP3 and enters offsite basin 4 and offsite basin 6. Some another existing inlet located northeast corner of Loop Road and Lomas Blvd intersection (labeled as AP4 in Sheet DMP 101). There are various median curb cuts in Lomas to allow drainage to reach AF undersized and ineffective in passing and conveying flows as intended. Overall, in the existing conditions, neither the existing inlets, curb cuts, nor the street section of Lomas Blvd have enough capacit and the total flow overtops the southern 8" curb of Lomas Blvd and enters the project site at the existing parking lot located south of offsite basin 8 and is causing site erosion. The flow that is remaining through the Lomas Blvd and Easterday intersection into offsite basin 9.

Offsite basin 9 drains southeast to the existing inlets in sump condition in Lomas Blvd located approximately midway within the basin boundary. Since the existing inlets upstream are undersized, and fl flow appears to be overtopping the 8" curb and is again causing erosion on back side of the curb. Prior projects installed median curb cuts, a concrete rundown, and an asphalt rundown within Basin 9 the site's boundary to help mitigate these offsite flows. These measures have failed to adequately capture and convey the runoff and have not resolved the erosion.

Offsite basin 10 and offsite basin 11 are located south of Lomas Blvd. Offsite basin 11 sheet flows east to west toward offsite basin 10. The flow enters offsite basin 10 through existing sidewalk culverts of offsite basin 11. The combined flow from offsite basin 10 and offsite basin 11 is then captured and conveyed by existing storm drain network installed withing offsite basin 10 and daylight into the ex on the East side of Loop Road.

PROPOSED CONDITIONS - Managing Offsite Flows

As mentioned in the existing conditions above, the offsite flows are greater than the street capacity of Lomas Blvd and greater than what can be accepted by the existing on-grade inlets in Lomas Blvd. new inlet series and storm drain pipe should be constructed in the Westerfeld Dr. drainage easement to capture and convey the larger offsite flows from the northern basins before they enter Lomas Blvd. available funding, this ultimate buildout is not part of this project's construction, but it is identified as "Future" on Sheet DMP 104. In this final condition, the offsite flows originating from the residentia developments north of Lomas will be captured in 3 NMDOT inlets and 2 Type A inlets so that significantly less flow enters Lomas Blvd. Once the flows are captured, a 54" storm drain will convey the off the east side of Lomas. Any residual flow entering Lomas will be captured by the on-grade inlets installed in Lomas Blvd with this project.

In the proposed conditions of this project, an interim drainage solution is proposed until a future storm drain system can be funded and constructed. This solution is outlined below:

- In the proposed conditions of this project, the offsite flow is allowed to continue to flow into Lomas Blvd. A weir will be installed on the northern boundary of the site to accept the 10yr flows. T captured by a rip-rap lined swale constructed on site and conveyed to the existing CBCs on the east side of Loop Road. In a larger storm event, the offsite flows will overrun the weir and be allow the curb in Lomas Blvd and flow into the site. Behind the back of curb is a proposed rip-rap lined swale. To manage the offsite flows through the site, this rip rap lined swale will be sized for the
- In the proposed conditions of the project, existing on grade inlets in Lomas Blvd will be replaced with additional and larger inlets. The new inlets will capture offsite flow as listed on sheet DMP 1 of these inlets and weir were designed to help capture the majority of flows prior to entering the Lomas/Easterday intersection. These inlets will be connected to the onsite storm drain systems into the downstream NMDOT 8' x 8' CBC's.
- Existing surveyed topography specifically identified the low spot in Lomas within Basin 9 as the location of the inlet 1 & existing inlet 15. At this sump condition, EX inlet 15 was found to have en the flows from the north side of Lomas Blvd (even if the existing median curb cut is closed.) However, the existing inlet on the south side of Lomas does not have enough capacity to capture the with a larger grate capacity and double wing will be installed to replace the old style inlet.

PROPOSED CONDITIONS- Managing Onsite Flows

In the proposed conditions, the drainage pattern will follow the existing drainage patterns. Based on the proposed grading, the site is divided into 13 onsite basins. Sheet DMP 103, Proposed Conditions land treatments and associated developed flow.

The site will mitigate the proposed drainage through internal storm drain networks and detention ponds. The proposed onsite storm drain network will capture some offsite flows as well as onsite flow discharge to the existing NMDOT Concrete Box Culvert east of Loop Road at AP7. There are 4 onsite detention ponds. In addition to detaining the proposed flow, the ponds contain additional volume of there are 2 main detention ponds labeled as Pond 1 and Pond 4. Pond 1 is in the middle of the site and will detain some of the developed flow. Pond 4 is at the downstream end of the site and will be the developed flows, retain the required stormwater quality volume, and release the proposed flows to less than existing flow conditions.

Ponds 2 and 3 are located in Basin 1. These ponds detain the developed flow from Basin 1 to match the existing flows at AP6. Flows at AP6 flow into the parking lot, eventually discharging into an exist 16). These ponds are shallow and also function as stormwater quality ponds.

Basin 2 will drain to the playground located in basin 6. A "fibar screened" inlet will be installed under the playground surface to capture in the developed flows entering the playground. Once capturec conveyed by the proposed onsite storm drain system.

Basin 3 will combine with basin 8A and will be captured by the proposed inlet at sump at Loop Road and discharge to Pond 1. Basin 5 will also surface drain to Pond 1. Pond 1 has enough volume to reta Discharge is controlled through an orifice-controlled outlet to maintain the historic discharge. The outlet pipe is part of the proposed storm drain system.

Basin 9 is a proposed dog park which will surface drain northwest to the proposed Pond 4. To keep the contaminates associated with a dog park from entering the downstream drainage facilities, a 6" k hold the first flush of runoff before directly discharging into Pond 4.

Basin 11 and 12 will consist BMX pump track and parking lot. The flow from these basins will be captured by inlets located in the parking lot and conveyed by a storm drain that discharges directly into The entire developed flow from the site, including the offsite flow from Lomas Blvd and north of Lomas Blvd, will drain to AP9 and exit through the existing 8' x 8' NMDOT box culvert.

Basin 13 remains mostly undeveloped and drains to AP10 where it is captured by existing inlet and discharge to I-40 channel.

CONCLUSIONS:

The drainage management plan is detailed in sheets DMP 101- DMP 106.

The site releases 257 cfs at the downstream NMDOT 8' x8' CBCs. This is less than the existing flow of 273 cfs. The reduction in flow at this point is due to onsite detention ponds. These detention pond stormwater quality.

				Section_4	A-A (LOMAS E	ILVD)				
he existing Los Altos Park. tional parking lots and the	POINT [1.0 2.0	DIST ELEV 3.6 0.7 4.2 0.0	PO	G'S N = 0.6 INT DIST 3.0 6.2 4.0 49.4	017 SLOPE F ELEV 2 0.1 4 1.0	= = 0.025 POII 5	NT DIST .0 50.3 .0 50.9	ELEV 1.0 1.5		
	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS) (TOPWID PLUS DBSTRUCTIONS	TOPWID WATER	TOTAL ENERGY (FT)	FROUDE NO.
ice with the city of sed in this analysis for the	0.050 0.150 0.250 0.350	0.050 0.150 0.250 0.350	0.020 0.191 0.765 1.857	0.024 0.400 2.133 6.784	0.839 3.226 8.443 13.660	1.160 2.098 2.788 3.654	1.716 4.057 9.230 14.403	0.816 3.157 8.330 13.503	0.071 0.218 0.371 0.558	1.293 1.504 1.622 1.737
the associated flow 1. These flows are sting road that divides the n portion of the site via an	<u>0.450</u> 0.550 0.650	0.450 0.550 0.650	3.466 5.592 8.235	15.472 29.186 48.825 Q _{Total} = 18.2	18.877 24.094 29.311 2 cfs	4.464 5.219 5.929	19.575 24.748 29.921	18.675 23.848 29.021	0.760 0.974 1.197	1.827 1.900 1.962
				Section_B	-в (LOMAS B	LVD)				
fy the drainage patterns	POINT	DIST ELEV	MANNIN PC	NG'S N = 0. DINT DIS	017 SLOP T ELEV	E = 0.008 POI	NT DIST	ELEV		
the key basins affecting	1.0 2.0 3.0	0.50.50.70.01.50.1		 4.0 32. 5.0 34. 6.0 34. 	5 0.5 5 0.6 7 1.2	7	7.0 35.1	1.2		
is residential basin. The mas Blvd through the	WSEL	DEPTH INC	FLOW AREA SOLET	FLOW RATE (CES)	WETTED PER (FT)	FLOW VEL (EPS)	TOPWID PLUS OBSTRUCTIONS	TOPWID WATER	TOTAL ENERGY (ET)	FROUDE NO.
mas Blvd.	0.050 0.150 0.250 0.350	0.050 0.150 0.250 0.350	0.018 0.410 1.558 3.466	0.011 0.449 2.637 7.644	0.746 7.796 15.463 23.131	0.646 1.097 1.693 2.206	1.169 8.146 15.741 23.336	0.709 7.686 15.281 22.876	0.056 0.169 0.295 0.426	0.720 0.838 0.935 0.999
of the flow gets captured sin 8 and drains to I. These curb cuts are to contain these flows g in Lomas Blvd travels	0.490	0.490	7.403	21.431	32.853	2,895	32.957	32,497	0.551	1.048
w continues into Basin 9, long the northern edge of			MANNT	Section_	_C-C (LOMAS	BLVD) PF = 0.014				
ocated southwest corner sting box culvert entrance	POINT 1.0 2.0	DIST ELEV 6.0 0.7 6.6 0.0	P	DINT DIS 3.0 8. 4.0 39.	5T ELEV 6 0.1 8 1.4	P01 5 6	INT DIST 5.0 40.5 5.0 41.1	ELEV 1.4 1.9		
n ultimate conditions. a	WSEL FT.	DEPTH	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS	TOPWID WATER	TOTAL ENERGY (FT)	FROUDE NO.
d. Due to limited and commercial ite flows to the CBCs on	0.050 0.150 0.250 0.350 0.450	0 0.050 0 0.150 0 0.250 0 0.350 0 0.450	0.020 0.186 0.580 1.236 2.153	0.018 0.318 1.348 3.635 7.574	0.839 2.713 5.367 8.021 10.675	0.859 1.711 2.322 2.941 3.518	1.516 3.344 5.952 8.561 11.170	0.816 2.644 5.252 7.861 10.470	0.061 0.196 0.334 0.485 0.643	0.957 1.139 1.232 1.308 1.368
e flows will then be ed to overflow the top of .00yr storm event.	0.550 0.650	0.550 0.650	3.330 4.768	13.515 21.782	13.328 15.982	4.059 4.568	13.778 16.387	13.078 15.687	0.806 0.975	1.418 1.461
 Placement and sizing ind eventually discharge 			MANNTNG	Section_D-	D (LOMAS BL)	/D) = 0.005				
ugh capacity to handle flows. A new Type A inlet	POINT D 1.0 2.0	IST ELEV 0.0 0.5 0.5 0.0	POI 3 4	NT DIST 5.0 1.5 5.0 33.3	ELEV 0.0 1.0	POIN 5.	T DIST 0 35.3 0 35.9	ELEV 1.1 1.7		
Table defines proposed	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS) O	TOPWID PLUS BSTRUCTIONS	TOPWID WATER	TOTAL ENERGY (FT)	FROUDE NO.
; that will ultimately or stormwater quality. he final pond to detain	0.050 0.100 0.200 0.300	0.050 0.100 0.200 0.300	0.089 0.265 0.875 1.830	0.057 0.251 1.246 3.340	2.667 4.415 7.909 11.404	0.641 0.947 1.424 1.825	2.647 4.373 7.827 11.280	2.647 4.373 7.827 11.280	0.056 0.114 0.232 0.352	0.616 0.679 0.751 0.799
ng storm drain inlet (EX IN	0.400 0.500	0.400 0.500	3.131 4.777	6.840 12.018 Q _{Total} = 2.75	14.898 18.393 5 cfs	2.185 2.516	14.733 18.187	14.733 18.187	0.474 0.598	0.836 0.866
the flows will be										
rm will be constructed to				Section	E_E (LOMAS	BLVD)				
ond 4.	POINT 1.0 2.0	DIST ELEV 4.0 0.7	MANNIN	NG'S N = 0. DINT DIS 3.0 6.	017 SLOP T ELEV 6 0.1	E = 0.005 POI 5	NT DIST 5.0 50.7	ELEV 1.4		
	WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	TOPWID	TOTAL	FROUDE
	FT.	ĨNC	AREA SQ.FT.	RATE (CFS)	PER (FT)	VEL (FPS)	PLUS OBSTRUCTIONS	WATER 5	ENERGY (FT)	NO.
also contain volume for	0.050	0.050	0.020 0.187	0.011 0.187	0.839 2.885	0.519 0.998	1.686	0.816 2.816	0.054 0.166 0.278	0.578 0.682 0.736
also contain volume for	0.150 0.250 0.350	0.250 0.350 0.350	0.642 1.444 2 502	0.858 2.472 5 355	6.398 9.911 13 424	1.335 1.712 2 065	7.154 10.622 14 001	9.752 13 221	0.396 0.516	0.784 0.222



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0.5	RMATION		DATE	DATE	DATE	DATE	RMA IIUN	UAIE		
Wing opening* $C=0.6$ $A=2.0$ sf $O=1$ 2*(64 4*H) ≥ 0 5	NFOR						INF C			
*not included in the orifice calcs										
COMMENTS: inlet w/ two wing openings ate analysis	AS-BUIL	ONTRACTOR	ork Taked by	USPECTOR'S CCEPTANCE BY	ELD ERIFICATION BY	RAWINGS ORRECTED BY	AICKU-F		ö	
$cfs \ll Flow$ is under TC Elevation (d=0.5')>>		0	50	4	<u> </u>	- 00		: 2	z	9/23
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ng opening 1.6	ENCI									
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99 cfs is provided at this depth			ATE							
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<u>RIFICE:</u> Q=C*A*(2*G*H)^0.5 ate opening Wing opening*			Z							S P
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$= 0.6*3.72*(64.4*H)^{0.5} \qquad Q = 1.2*(64.4*H)^{0.5} \\ + not included in the orifice calcs$	SEA		/	JEL .	LY I	M. K	LEIN			S A
Q (CFR)	SAL			No	El 2	4834	96	H	2	L C
COMMENTS: 0.00 Flow at modified single "A" inlet without wing openings	CTUF			CENSED	12-1	9-20	23	INI'WEI		
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D ON THE DEVELOPMENT.		9. INLET TO BE INSTALLED WITH OFFSI	TE PLANS. SEE	CPN#765262.	.	₹ Ö	NOF STA		FIEL		REC	N N		23
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		 REMOVE AND REPLACE EXISTING W INSTALL EARTHEN BERM ALONG FEM 	IRE TIED RIP RA NCELINE PER DE	P TO MATCH NEW GRADES. TAIL "B" SHEET CG107.										ATE
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		LINE ON EXISTING VALLEY GUTTER PART MATCH EXISTING ASPHALT GRADES	CONTRACTOR 1	TO ENSURE POSITIVE DRAIN.	AGE.	Σ								
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		23. MATCH EXISTING. NEAT CUT EXISTIN EXISTING ASPHALT.	IG ASPHALT WH	IERE PROPOSED GRADES M	EET									Ш
		24. INSTALL RIP RAP EROSION PAD PER25. ADJUST RIM TO NEW GRADES.	DETAIL "D" SHE	ET CG107.										AS AS
		26. CONNECT TO EXISTING STORM DRA	IN MANHOLE. CO	ONTRACTOR TO ENSURE	-									ЦЦ
		27. INSTALL PREFABRICATED STORM DR	RAIN FITTING. SE	EE PLAN FOR SIZE.		_	ATE							י 7
		28. FUTURE BUILDING PAD. GRADES PEI	R PLAN.							_				0
		29. CONSTRUCT TURN DOWN EDGE ON EXTEND TURN DOWN EDGE 3' BEYOI	Shotcrete. Se ND WIDTH of S\	EE DETAIL "H", SHEET CG107 WALE										'AT
		30. INSTALL GUARDRAIL (REFER TO SHE	ET CG108 FOR	DETAILS). 07										S
		32. INSTALL CUTOFF WALL PER COA ST) 2415C.		:		m							л Ш
		33. INSTALL SWALE PER DETAIL "K" SHE	ET CG109.		ļ									х Х
2.90		34. STORM DRAIN TO BE INSTALLED WIT 35. INSTALL MOUNTABLE ROLL CURB & (GUTTER PER CO	ON OF BMX POMP TRACK. DA DETAIL 2415B		24				_				AR A
		36. PROPOSED STRIPING PER LANDSCA	PE PLANS.				NO.							РA
		37. MOW STRIP. REFER TO LANDSCAPE 38. INSTALL GRATE ON BOX CULVERT O	PLANS AND DET PENINGS EUTU	TAIL. RE (DESIGNED BY OTHERS)	_									SO
	TAN TAN	39. SEE SHEET CG109 FOR PLAYGROUN	D GRADING SEC	CTION.										L L
	C T	40. INSTALL SPEED HUMP. SEE SHEET C		TIONAL DETAILS.		NE /		1	YN	M. K.	E			∢ ທ
		41. INSTALL 12 WIDE VALLEY GUTTER. S42. INSTALL FIBAR SCREENED INLET PER	R DETAIL "J" SH	EET CG109.). -		(N	XIII	ME	E.	7		Ő
	NE	43. INSTALL TYPE "A" SINGLE GRATE DO 44. INSTALL BIKE OR PEDESTRIAN RATE	UBLE WING PEF D 18" STORM DF	R C.O.A. STD. DWG. 2201A. RAIN STRUCTURE (NYLOPLA)	ST OR			LICE	(24	4834	MEED			
	SE	APPROVED EQUAL WITH 18" DROP IN CONSTRUCTION OF BMX PUMP TRAC 45 INSTALL CMP FND STRUCTURE (SIZE	NGRATE). GRAT CK. FPFR PLAN)	E TO BE INSTALLED WITH			\	SED	12-1 8055	9-202		/		
3		 INSTALL CONCRETE SPLASH PAD. CO TO DEPRESSED AREA. INSTALL 10' WIDE GRAVEL MAINTEN 	ONSTRUCT LAN	DSCAPE SWALE FROM SPLA	SH PAD				OFE	55101	/			
	U H C	48. INSTALL STORM DRAIN CLEANOUT P 49. INSTALL STORM DRAIN STRUCTU 50. INSTALL SUPEYMALK 101 CLU VERT DE	ER DETAIL "M", : IRE (NYLOPLAS	SHEET CG109. TOR APPROVED EQUAL)										
		50. INSTALL SIDEWALK 12" COLVERT PE SIDEWALK . KEEP 12" OPENING IN TH SIDEWALK CULVERT.	IE WALL TO ALL	W PASSAGE OF FLOW FRO										
		51. TEMPORARY UNPAVED ROAD TO TH 52. INSTALL TURNED BLOCK.	E MAINTENANCI	E RAMP.	-									83
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