



Timothy M. Keller, Mayor

February 5, 2018

Fred C. Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. N.E
Albuquerque, NM, 87108

**RE: Janet Kahn School of Integrated Arts Phase I
Grading and Drainage Plan & Updated Drainage Management Plan
Engineer's Stamp Date: 01/25/18
Hydrology File: H20D028**

Dear Mr. Arfman:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the information provided in your resubmittal received 01/25/2018, the Grading and Drainage Plan & Updated Drainage Management Plan **is not** approved for Building Permit, Grading Permit, and SO-19 Permit. The following comments need to be addressed for approval of the above referenced project:

Updated Drainage Management Plan:

1. Please provide a drainage area for Phase I, Phase II-A through II-C, and Phase II-D through Completion.
2. Please provide the drainage calculations for Phase I, Phase II-A through II-C, and Phase II-D through Completion.

Grading and Drainage Plan:

1. Per the DPM Chapter 22 Section 7, the Grading and Drainage Plans must be on **24"x36"**.
2. The site currently shows more than 1 acre of disturbance is being proposed. An Erosion and Sediment Control Plan is required and has to be submitted to the storm water quality engineer (Curtis Cherne, PE, ccherne@cabq.gov). Hydrology's approval for Grading or Building Permit will not be given until the submittal of the ESC Plan.

CITY OF ALBUQUERQUE



Timothy M. Keller, Mayor

3. Please provide a Private Facility Drainage Covenant per Chapter 17 of the DPM for first flush ponds.
4. Sheet CG-100. Please place label Embudo Arroyo and show the flood zone within the channel.
5. Sheet CG-100. The vicinity map is the wrong project, please update the map.
6. Sheet CG-100. Please provide the volume for the temporary first flush pond just the east of the existing concrete rundown. Also please explain when this will be removed (i.e. during Phase II-A).
7. Sheet CG-101 & CG-102. Please provide the existing contours to insure the proposed contours are tying into them.
8. Sheet CG-101. Please provide a few grades at the start of the existing concrete rundown to insure drainage flow from the temporary first flush pond.
9. Sheet CG-501. Please show the first flush ponds in the Private Storm Sewer Plan.
10. Sheet CG-501. Question. Why is there a pipe size change when there are no additional inlets for new drainage into the system?

PO Box 1293

Albuquerque

NM 87103

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

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 (REV 09/2015)

Project Title: _____ **Building Permit #:** _____ **City Drainage #:** _____
DRB#: _____ **EPC#:** _____ **Work Order#:** _____
Legal Description: _____
City Address: _____

Engineering Firm: _____ **Contact:** _____
Address: _____
Phone#: _____ **Fax#:** _____ **E-mail:** _____
bryanb@iacivil.com

Owner: _____ **Contact:** _____
Address: _____
Phone#: _____ **Fax#:** _____ **E-mail:** _____

Architect: _____ **Contact:** _____
Address: _____
Phone#: _____ **Fax#:** _____ **E-mail:** _____

Other Contact: _____ **Contact:** _____
Address: _____
Phone#: _____ **Fax#:** _____ **E-mail:** _____

Check all that Apply:

DEPARTMENT:

☒ HYDROLOGY/ DRAINAGE
☐ TRAFFIC/ TRANSPORTATION
☐ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

☒ ENGINEER ARCHITECT CERTIFICATION
☐ CONCEPTUAL G & D PLAN
☒ GRADING PLAN
☐ DRAINAGE MASTER PLAN
☒ DRAINAGE REPORT Updated Drainage Management Plan
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ TRAFFIC IMPACT STUDY (TIS)
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
☐ OTHER (SPECIFY) _____

CHECK 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
☐ PRE-DESIGN MEETING
☐ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: ☐ Yes ☒ No

DATE SUBMITTED: January 25, 2018 By: Fred C. Arfman

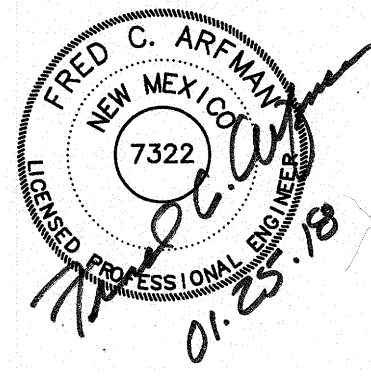
COA STAFF: _____ ELECTRONIC SUBMITTAL RECEIVED: _____

January 25, 2018

Updated Drainage Management Plan

for

A.P.S. Janet Kahn
Elementary School
of Integrated Arts
(Formerly Eubank Elementary School)



by



ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates

Thomas O. Isaacson, PE(RET.) & LS(RET.)
Fred C. Arfman, PE
Åsa Nilsson-Weber, PE

***Janet Kahn School of Integrated Arts
(Formerly known as Eubank Elementary School)***

The site is located at 9717 Indian School Rd. NE, just west of the intersection of Eubank Blvd. and Indian School Rd. NE.

**Project History
Master Drainage Plan (1994 / 2000):**

The Master Drainage Plan (MDP) for this property - Eubank Elementary School was prepared in 1994 and updated March of 2000 (for playground, bus bay and parking lot expansion) by Jeff Mortensen & Associates, Inc. (found in COA Hydrology File H20-D28) and provided for general information on the following pages.

Per the 1994 MDP, the site consists of a 10.1 acre property located in Precipitation Zone 3. The plan quantifies fully developed runoff generated onsite (Basins A, B, C and D) as well as offsite areas which impact the project site (Basins E and F). The MDP allows free discharge of fully developed runoff from the site into Indian School Road NE via driveways and private entrances and into the Embudo Arroyo.

Discharge to Indian School Road is accepted into the public storm drain and conveyed to the Embudo Arroyo.

1994 Master Drainage Plan (MDP) Peak Discharge (100-year 6-hour storm)

ON-SITE

Basin A	1.0 ac	Q=3.8	cfs	to Embudo Arroyo – west rundown
Basin B	1.1 ac	Q=4.3	cfs	to Embudo Arroyo – center rundown
Basin C	3.5 ac	Q=12.3	cfs	to Embudo Arroyo – center rundown
Basin D	4.5 ac	Q=16.9	cfs	to Indian School Road
TOTAL	10.1 ac	Q=37.3	cfs	

Off-site flow from the properties to the east are accepted and conveyed through the site.

OFF-SITE

Basin E (offsite)	1.1 ac	Q=5.2	cfs	to Embudo Arroyo – center rundown
Basin F (offsite)	0.7 ac	Q=3.5	cfs	to Indian School Road
TOTAL OFFS(TE	1.8 ac	Q=8.7	cfs	

In 2000, the Master Drainage Plan was updated to accommodate the expansion of the SE parking lot, and the addition of a bus bay and a paved playground.

2000 Update to MDP Peak Discharge (100-year 6-hour storm)

ON-SITE

Basin A	1.0 ac	Q=4.0	cfs	to Embudo Arroyo – west rundown
<i>Basin B</i>				<i>(eliminated – merged with Basin C)</i>
Basin C	4.7 ac	Q=18.7	cfs	to Embudo Arroyo – center rundown
Basin D	4.5 ac	Q=18.5	cfs	to Indian School Road
TOTAL	10.1 ac	Q=41.2	cfs	

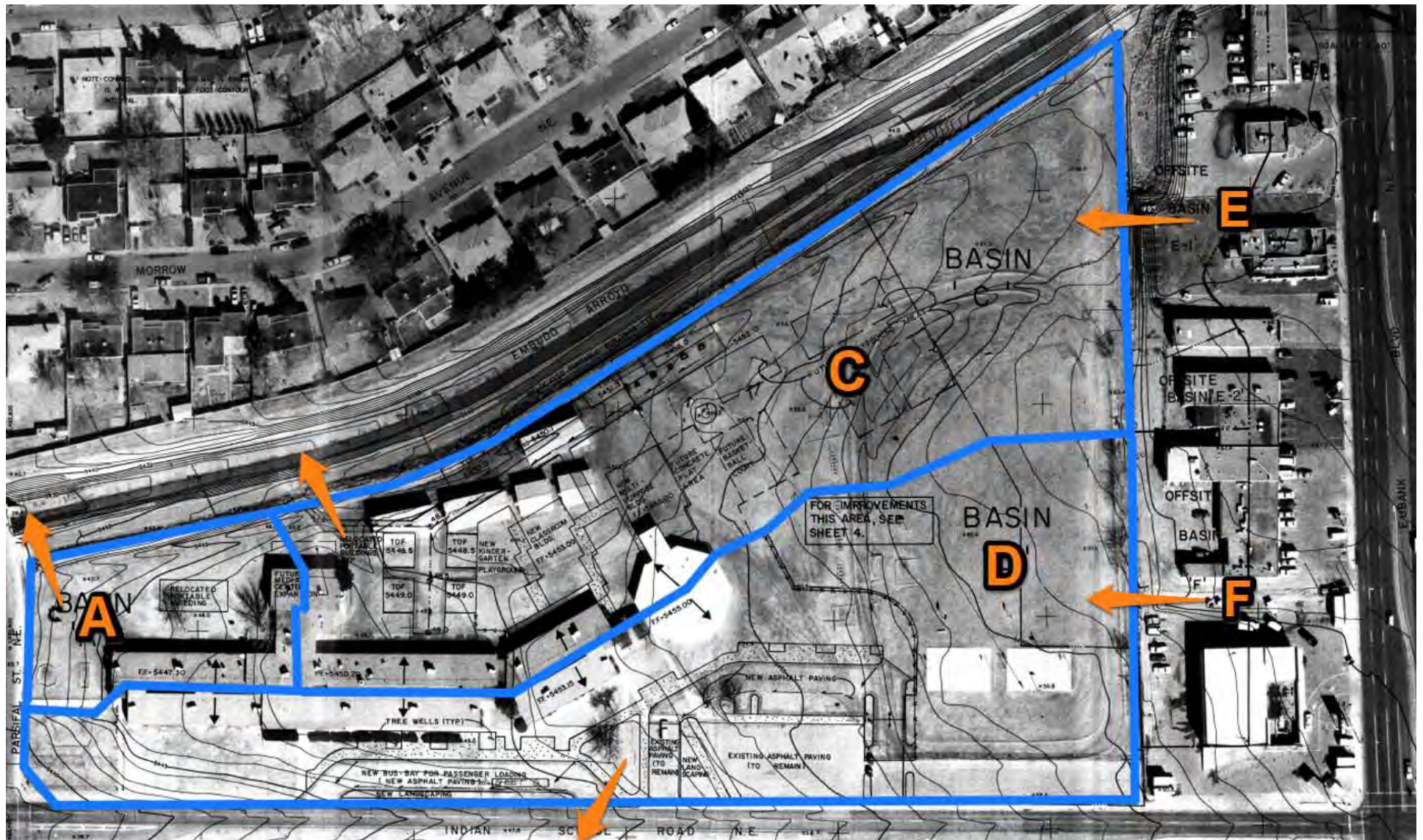
Off-site flow from the properties to the east are accepted and conveyed through the site (unchanged).

OFF-SITE

Basin E (offsite)	1.1 ac	Q=5.2	cfs	to Embudo Arroyo – center rundown
Basin F (offsite)	0.7 ac	Q=3.5	cfs	to Indian School Road
TOTAL OFFS(TE	1.8 ac	Q=8.7	cfs	

The following two pages show the updated drainage master plan basins and the 1994 & 2000 basin calculations for general reference. See Hydrology File H20-D28 for additional information.

2000 Update to MDP Peak Discharge (100-year 6-hour storm)



2000 Update to MDP Peak Discharge (100-year 6-hour storm)



VICINITY MAP
SCALE: 1" = 750'



AIR PHOTO
SCALE: 1" = 400'



STORM DRAINAGE FACILITIES MAP
SCALE: 1" = 400'

LEGAL DESCRIPTION

EUBANK ELEMENTARY SCHOOL
STREET ADDRESS
9717 INDIAN SCHOOL ROAD N.E.

DRAINAGE PLAN

The following items concerning the Eubank Elementary School Master Drainage Plan are contained herein:

1. Vicinity Map
2. Storm Drain Facilities Map
3. A.M.D.S. Map
4. Existing Conditions
5. Developed Conditions
6. Calculations

It is the intent of this plan to: 1) identify and quantify runoff peak discharge and volume under existing conditions; 2) calculate changes in runoff peak discharge and volume due to proposed development; and 3) present measures to obtain favorable drainage conditions under this development scenario.

As indicated by the Vicinity Map, the site is located at the northeast corner of the intersection of Indian School Road N.E. and Parsipal Street N.E. Both streets are fully improved public roadways.

As shown by Panel 24 of 59 of the National Flood Insurance Rate Program Flood Insurance Rate Map for the City of Albuquerque, New Mexico, dated October 24, 1983, this site does not lie in a designated flood hazard zone. The site, however, does border the Eubank Arroyo, a fully improved drainage channel, in which the 100-year flood zone is confined to the improved channel.

Existing Conditions

Sheet 2 shows the existing site conditions, currently developed as an elementary school. The site contains two permanent buildings, several portable buildings, a parking lot, and playground equipment. The site is characterized by four drainage basins: A, B, C, & D.

Drainage Basin A is generally characterized by a portion of the main building and playground equipment at the northwest corner of the site. The runoff from this basin discharges directly into the Eubank Arroyo by means of a side inlet at the northwest corner of the site.

Drainage Basin B is comprised of the central portion of the site bordered by the main building and the portable building. This portion of the site is not utilized for any specific purpose. The runoff from this basin is directed to the north where another side inlet allows free discharge directly into the Eubank Arroyo.

Drainage Basin C covers the remaining northern portion of the site containing playground equipment, a portion of the track, and is generally open. This basin drains to a flowline along the north fence line where it freely discharges into the Eubank Arroyo via the same side inlet utilized by Basin B.

Drainage Basin D is the southern portion of the site that borders Indian School Road N.E. This basin contains maintained lawn areas, playground equipment, and all of the parking facilities for the school. This basin is allowed to freely discharge into Indian School Road N.E. by sheetflow.

Offsite flows enter the site from the commercial properties along the east side. It is apparent that these flows enter Drainage Basins C and D, where they discharge into the Eubank Arroyo and Indian School Road N.E., respectively, with the runoff generated within each basin. These offsite basins have been designated "E" and "F".

Developed Conditions

Drainage Basin A will remain mostly unchanged. A portable classroom building will be relocated into the Basin, and a portion of the future media center expansion will impact the basin. No additional changes are proposed since the runoff will continue to discharge into the Eubank Arroyo via the existing side inlet at the northwest corner of the site.

Drainage Basin B will be incorporated into Basin C due to the extensive construction proposed in the basin. An asphalt concrete random will be built to convey the developed runoff and the offsite flows developed in Offsite Basin E. The construction of the random will reduce the amount of sediment currently entering the Eubank Arroyo. The random will discharge directly into the existing side inlet to the Eubank Arroyo with a smooth paving connection.

Drainage Basin D will be impacted with the development of additional parking and the construction of a new bus-bay. Minimal landscaping is expected with the new development. Basin D will continue to discharge the runoff directly into Indian School Road N.E. by sheetflow per the historical drainage patterns already established. As shown by the Storm Drain Facilities Map, where the Eubank Arroyo crosses Indian School Road N.E. at AP1044 downstream from the site, inlets have been constructed to convey storm runoff into the Eubank Arroyo.

The simulations which appear herein analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Procedure for 40-acre and Smaller Basins, as set forth in the Revision of Section 22.2, Hydrology of the Development Process Manual, Volume 2, Design Criteria, dated January, 1993, has been used to quantify the peak rate of discharge and volume of runoff generated. The increase of the volume of runoff (10,670 cf) and peak discharge (3.5 cfs) does not impact any downstream flood hazard zones. It has also been demonstrated that the storm runoff developed on this site discharged directly, or indirectly, via inlets in Indian School Road N.E., into the Eubank Arroyo, a fully improved drainage channel. The site lies in an infill area where the watershed is fully developed. This minor increase of runoff is not expected to negatively impact the performance of the Eubank Arroyo, which is believed to be sized for a fully developed watershed. Based upon the evaluations above, the continued free discharge of runoff from this site is appropriate.

INDEX OF DRAWINGS

1. MASTER DRAINAGE PLAN INDEX OF DRAWINGS
2. MASTER DRAINAGE PLAN EXISTING CONDITIONS
3. MASTER DRAINAGE PLAN DEVELOPED CONDITIONS
4. GRADING PLAN
5. BUS BAY
6. CALCULATIONS, SECTIONS AND DETAILS

CALCULATIONS

Site Characteristics

1.	Precipitation Zone =	3
2.	$P_{100} = P_{24} =$	2.60
3.	Total Area (A_T) =	10.1 Acre
4.	Existing Land Treatment	
	A. Basin "A" $A_{TA} =$	42,000 sf/1.0 acre
	<u>Treatment</u>	<u>Area (sf/aci)</u>
	C	32,000/0.76
	D	9,000/0.24

B. Basin "B" $A_{TB} =$	1.1 Ac/48,750 sf
Treatment	Area (sf/aci)
C	33,000/0.76
D	15,750/0.34

C. Basin "C" $A_{TC} = 3.5$ Ac/153,400 sf	
Treatment	Area (sf/aci)
C	146,200/3.36
D	7,200/0.14

D. Basin "D" $A_{TD} = 4.5$ Ac/196,000 sf	
Treatment	Area (sf/aci)
B	33,300/0.75
C	106,500/2.44

E. Basin "E" $A_{TE} =$	1.1 Ac/47,750 sf
Treatment	Area (sf/aci)
C	9,250/0.19
D	19,500/0.91

F. Basin "F" $A_{TF} =$	0.7 Ac/29,550 sf
<u>Treatment</u>	<u>Area (sf/ac)</u>
D	29,550/0.7

Existing Condition

A. Basin "A"

1. Volume

$$V_{100} = \frac{(E_p A_p + E_p A_q + E_p A_c + E_p A_d) / A_T}{(1.29(0.76) + 2.36(0.24)) / 3.0} = 1.55 \text{ in.}$$

$$V_{100} = (E_p / 12) A_T$$

$$V_{100} = (1.55 / 12) 42 = 0.128 \text{ ac.ft.} = 5,630 \text{ cf}$$

2. Peak Discharge

$$Q_p = Q_{PA} A_p + Q_{PB} A_q + Q_{PC} A_c + Q_{PD} A_d$$

$$Q_p = Q_{100} = 3.45(0.76) + 5.02(0.24) = 3.8 \text{ cfs}$$

B. Basin "B"

1. Volume

$$E_p = (E_p A_p + E_p A_q + E_p A_c + E_p A_d) / A_T$$

$$E_p = (1.29(0.76) + 2.36(0.24)) / 1.1 = 1.62 \text{ in.}$$

$$V_{100} = (E_p / 12) A_T$$

$$V_{100} = (1.62 / 12) 1.1 = 0.106 \text{ ac.ft.} = 4,630 \text{ cf}$$

2. Peak Discharge

$$Q_p = Q_{PA} A_p + Q_{PB} A_q + Q_{PC} A_c + Q_{PD} A_d$$

$$Q_p = Q_{100} = 3.45(0.76) + 5.02(0.24) = 4.3 \text{ cfs}$$

C. Basin "C"

1. Volume

$$E_p = (E_p A_p + E_p A_q + E_p A_c + E_p A_d) / A_T$$

$$E_p = (1.29(0.76) + 2.36(0.24)) / 3.5 = 1.33 \text{ in.}$$

$$V_{100} = (E_p / 12) A_T$$

$$V_{100} = (1.33 / 12) 3.5 = 0.388 \text{ ac.ft.} = 16,900 \text{ cf}$$

2. Peak Discharge

$$Q_p = Q_{PA} A_p + Q_{PB} A_q + Q_{PC} A_c + Q_{PD} A_d$$

$$Q_p = Q_{100} = 3.45(1.10) + 5.02(0.14) = 12.3 \text{ cfs}$$

D. Basin "D"

1. Volume

$$E_p = (E_p A_p + E_p A_q + E_p A_c + E_p A_d) / A_T$$

$$E_p = (0.52(0.75) + 1.29(2.44) + 2.36(1.11)) / 4.5 = 1.54 \text{ in.}$$

$$V_{100} = (E_p / 12) A_T$$

$$V_{100} = (1.54 / 12) 4.5 = 0.578 \text{ ac.ft.} = 25,160 \text{ cf}$$

2. Peak Discharge

$$Q_p = Q_{PA} A_p + Q_{PB} A_q + Q_{PC} A_c + Q_{PD} A_d$$

$$Q_p = Q_{100} = 2.65(0.75) + 2.45(2.44) + 5.02(1.11) = 16.9 \text{ cfs}$$

E. Offsite Basin "E"

1. Volume

$$E_p = (E_p A_p + E_p A_q + E_p A_c + E_p A_d) / A_T$$

$$E_p = (1.29(0.75) + 2.36(0.24)) / 1.1 = 2.18 \text{ in.}$$

$$V_{100} = (E_p / 12) A_T$$

$$V_{100} = (2.18 / 12) 1.1 = 0.200 \text{ ac.ft.} = 8,700 \text{ cf}$$

2. Peak Discharge

$$Q_p = Q_{PA} A_p + Q_{PB} A_q + Q_{PC} A_c + Q_{PD} A_d$$

$$Q_p = Q_{100} = 3.45(0.75) + 5.02(0.24) = 5.2 \text{ cfs}$$

F. Offsite Basin "F"

1. Volume

$$E_p = (E_p A_p + E_p A_q + E_p A_c + E_p A_d) / A_T$$

$$E_p = (2.36(0.7)) / 0.7 = 2.36 \text{ in.}$$

$$V_{100} = (E_p / 12) A_T$$

$$V_{100} = (2.36 / 12) 0.7 = 0.138 \text{ ac.ft.} = 6,000 \text{ cf}$$

2. Peak Discharge

$$Q_p = Q_{PA} A_p + Q_{PB} A_q + Q_{PC} A_c + Q_{PD} A_d$$

$$Q_p = Q_{100} = 5.02(0.7) = 3.5 \text{ cfs}$$

G. Developed Land Treatment

A. Basin "A"

Treatment	Area (sf/aci)	$\frac{h}{ft}$
C	29,600/0.68	68.0
D	12,400/0.32	32.0
D	56,850/1.11	55.5

B. Basin "B" was eliminated

C. Basin "C"

1. Volume

$$E_p = (E_p A_p + E_p A_q + E_p A_c + E_p A_d) / A_T$$

$$E_p = (0.92(0.38) + 1.29(2.02) + 2.36(2.10)) / 4.5 = 1.76 \text{ in.}$$

$$V_{100} = (E_p / 12) A_T$$

$$V_{100} = (1.76 / 12) 4.5 = 0.660 \text{ ac.ft.} = 28,760 \text{ cf}$$

2. Peak Discharge

$$Q_p = Q_{PA} A_p + Q_{PB} A_q + Q_{PC} A_c + Q_{PD} A_d$$

$$Q_p = Q_{100} = 2.65(0.38) + 2.45(2.02) + 5.02(2.10) = 18.5 \text{ cfs}$$

D. Basin "D"

1. Volume

$$E_p = (E_p A_p + E_p A_q + E_p A_c + E_p A_d) / A_T$$

$$E_p = (1.29(0.68) + 2.36(0.32)) / 1.0 = 1.63 \text{ in.}$$

$$V_{100} = (E_p / 12) A_T$$

$$V_{100} = (1.63 / 12) 1.0 = 0.136 \text{ ac.ft.} = 5,920 \text{ cf}$$

2. Peak Discharge

$$Q_p = Q_{PA} A_p + Q_{PB} A_q + Q_{PC} A_c + Q_{PD} A_d$$

$$Q_p = Q_{100} = 3.45(0.68) + 5.02(0.32) = 4.0 \text{ cfs}$$

H. Comparison

A. Basin "A"

1. $\Delta V_{100} = 5,920 - 5,630 = 290 \text{ cf (increase)}$

2. $\Delta Q_{100} = 4.0 - 3.8 = 0.2 \text{ cfs (increase)}$

B. Basin "B"

1. $\Delta V_{100} = 4,630 - 0 = 4,630 \text{ cf (decrease)}$

2. $\Delta Q_{100} = 4.3 - 0 = 4.3 \text{ cfs (decrease)}$

C. Basin "C"

1. $\Delta V_{100} = 28,720 - 16,900 = 11,820 \text{ cf (increase)}$

2. $\Delta Q_{100} = 18.7 - 12.3 = 6.4 \text{ cfs (increase)}$

D. Basin "D"

1. $\Delta V_{100} = 28,750 - 25,160 = 3,590 \text{ cf (increase)}$

2. $\Delta Q_{100} = 18.5 - 14.0 = 4.5 \text{ cfs (increase)}$

E. Site Total

1. $\Delta V_{100} = 290 + 11,820 + 3,590 - 4,630 = 10,670 \text{ cf (net increase)}$

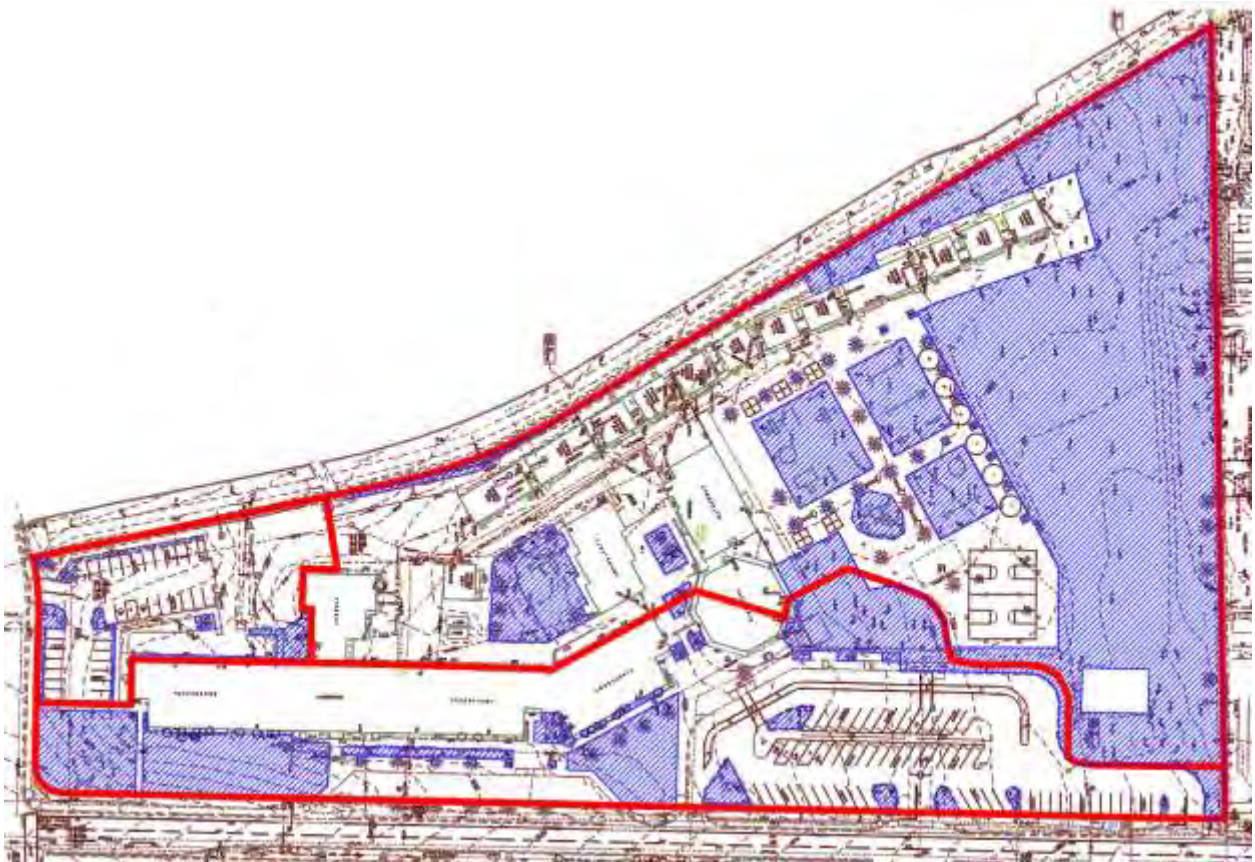
2. $\Delta Q_{100} = 0.2 + 6.4 + 1.0 - 4.3 = 3.3 \text{ cfs (net increase)}$

Proposed Janet Kahn School of Integrated Arts Campus Master Plan

Current Conditions

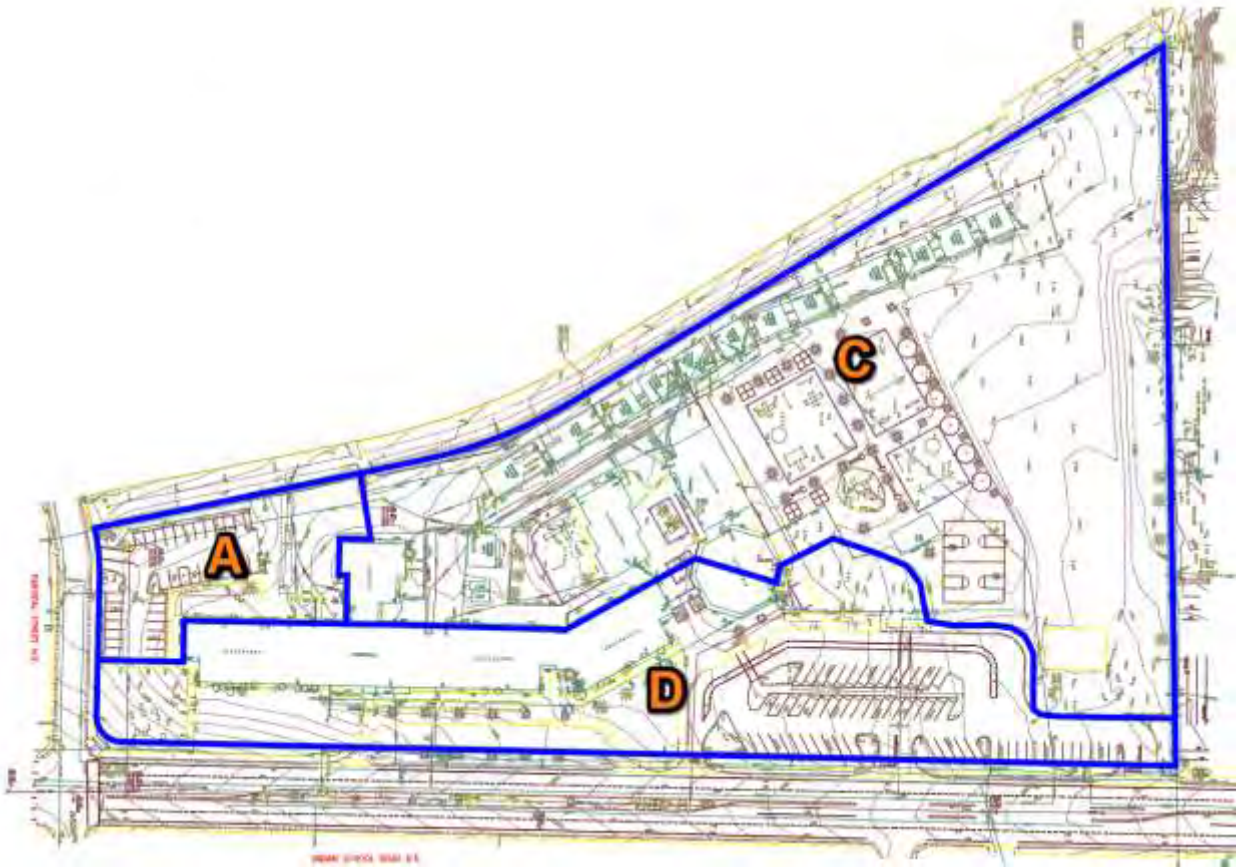
The current condition of the school property has been analyzed using the current topographic survey and site observation. The current land treatments are:

Land Treatment B = 5.0%, Treatment C = 37.0%, Treatment D = 58.0%



The hatched area represents the unpaved portion of the property.

The exhibit below reflects the current drainage sub-basins



Based on these existing conditions, the existing Master Drainage Plan sub-basins A, C and D are recalculated as follows:

BASIN NO.	E:A	DESCRIPTION	Draining to Arroyo - west rundown
Area of basin flows =	34078	SF	= 0.78 Ac.
The following calculations are based on Treatment areas as shown in table to the right		LAND TREATMENT	
Sub-basin Weighted Excess Precipitation (see formula above)		A = 0%	
Weighted E =		1.94 in.	
Sub-basin Volume of Runoff (see formula above)		B = 12%	
V ₃₆₀ =		5512 CF	
Sub-basin Peak Discharge Rate: (see formula above)		C = 23%	
Q _P =		3.4 cfs	
D = 65%			
BASIN NO.	E:C	DESCRIPTION	Draining to Arroyo - mid-point rundown
Area of basin flows =	267833	SF	= 6.1 Ac.
The following calculations are based on Treatment areas as shown in table to the right		LAND TREATMENT	
Sub-basin Weighted Excess Precipitation (see formula above)		A = 0%	
Weighted E =		1.81 in.	
Sub-basin Volume of Runoff (see formula above)		B = 0%	
V ₃₆₀ =		40494 CF	
Sub-basin Peak Discharge Rate: (see formula above)		C = 51%	
Q _P =		25.9 cfs	
D = 49%			
BASIN NO.	E:D	DESCRIPTION	Draining to Indian School Blvd.
Area of basin flows =	137143	SF	= 3.1 Ac.
The following calculations are based on Treatment areas as shown in table to the right		LAND TREATMENT	
Sub-basin Weighted Excess Precipitation (see formula above)		A = 0%	
Weighted E =		2.04 in.	
Sub-basin Volume of Runoff (see formula above)		B = 13%	
V ₃₆₀ =		23365 CF	
Sub-basin Peak Discharge Rate: (see formula above)		C = 12%	
Q _P =		14.2 cfs	
D = 75%			

	DESCRIPTION	OVERALL PROPERTY - Existing Conditions
Area of basin flows =	439956	SF = 10.1 Ac.
The following calculations are based on Treatment areas as shown in table to the right		LAND TREATMENT
Sub-basin Weighted Excess Precipitation (see formula above)		A = 0%
Weighted E =		1.89 in.
Sub-basin Volume of Runoff (see formula above)		B = 5%
V ₃₆₀ =		69370 CF
Sub-basin Peak Discharge Rate: (see formula above)		C = 37%
Q _P =		43.6 cfs
		D = 58%



Proposed Conditions

The Campus Master Plan prepared by Van H. Gilbert Architect PC dated October 2016, details the construction in phases to allow a complete campus replacement plan to occur in two major phases while keeping the facility open in the interim.

Phase I:

Phase I focuses on the east end of the property which is currently used for portable classrooms, playground areas and parking. Construction will include a new gymnasium, cafeteria and classroom facilities, service access drive along the east boundary and associated pedestrian walks, landscaping and parking improvements.

6. PHASING PLANS - PHASE 1 - COMPLETED



Phase II-A through II-C:

Phase II will begin with the demolition of the existing gymnasium and cafeteria buildings and the construction of a new main classroom building and play areas. It is at the completion of Phase II-C that the site is expected to have the greatest impermeable area.

6. PHASING PLANS - PHASE 2C



Phase II-D through Completion:

The second half of Phase II will begin with the demolition of the remainder of the existing buildings/portables and west paved parking, followed by the construction of the remainder of new playground areas and multipurpose field, track, new west parking and associated walks and landscaping.

7. FINAL MASTER PLAN



PHASING PLANS - PROJECT COMPLETION

West Kohn School of Integrated Arts
Master Plan

Van H. Gilbert Architect PC
25

At the completion of the Phase II construction (total campus replacement), the property will consist of the following land treatments (approximate):

Land Treatment B = 10.0%, Treatment C = 30.0%, Treatment D = 60.0%

	DESCRIPTION	FULLY REDEVELOPED CONDITION
Area of basin flows =	439956 SF	= 10.1 Ac.
The following calculations are based on Treatment areas as shown in table to the right		
Sub-basin Weighted Excess Precipitation (see formula above)		LAND TREATMENT
Weighted E =	1.90 in.	A = 0%
Sub-basin Volume of Runoff (see formula above)		B = 10%
V ₃₆₀ =	69476 CF	C = 30%
Sub-basin Peak Discharge Rate: (see formula above)		D = 60%
		FIRST FLUSH VOL.
Q _P =	43.5 cfs	7479 CF

Total discharge (43.5 cfs) shall not exceed current conditions (43.6 cfs).



Conclusion:

The most current Master Drainage Plan for the property (dated 1994, amended 2000) shows the campus property discharging a maximum of 41.2 cfs during the 100-year 6-hour storm event.

The proposed full campus replacement project site is anticipated to generate approximately 43.5 cfs – an increase of 2.3 cfs from the approved MDP (and 0.1 cfs less than the current condition).

Requirements:

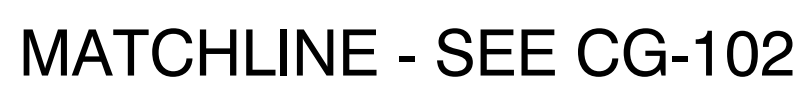
The full campus replacement project shall continue to free discharge to the Embudo Arroyo via the existing surface rundowns at the NW corner (Basin A) and midpoint (Basin C) of the site and via the Indian School Road storm drain system (Basin D).

Off-site Basins

The two master planned off-site basins along the east boundary currently drain through the property. These basins will be addressed as part of Phase I construction as follows:

In order to limit the passing of sediment onto the school pavement, a retaining / deflection wall with an adjacent alley gutter will be constructed approximately 2' in from the east property boundary. The alley gutter will accept off-site flow and be sloped to deflect flow north to an existing unused rundown into the Embudo Arroyo at the NE corner of the property and south to discharge to Indian School Road at the existing access drive entrance.

This project currently free discharges with no first flush ponding. As the property develops, on-site retention ponding will be provided for retention of the required first flush volume.



CG-101

MATCHLINE - SEE CG-101

Van H. Gilbert Architect PC

ARCHITECTURE • INTERIORS • PLANNING



2428 Baylor Dr SE Albuquerque, NM 87106
Tel 505-247-9985 Fax 505-247-1826
E-mail info@vhgarchitect.com
Web Site www.vhgarchitect.com

CONSULTANTS

CIVIL ENGINEER
Isaacson & Arfman, P.A.
128 Monroe Street, NE
Albuquerque, NM 87108
Phone 505-268-8828

STRUCTURAL ENGINEER
Chavez Greives Consulting Engineers Inc.
4700 Lincoln Rd NE Suite 102
Albuquerque, NM 87109
Phone 505-344-4080

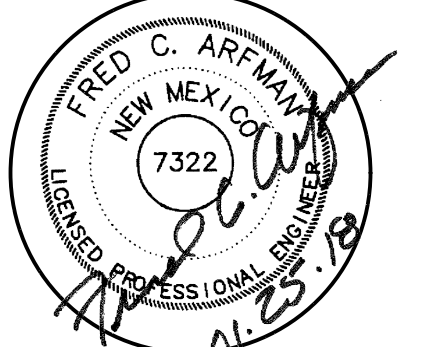
MECHANICAL/ELECTRICAL ENGINEER
Bridgers & Paxton
4800-C Montgomery Blvd
Albuquerque, NM 87109
Phone 505-883-4111

KEYED NOTES

THESE NOTES ARE REFERENCED ON SHEETS CG-101 AND CG-102. NOT ALL NOTES ARE USED ON EACH SHEET. UNDERLINED NOTES INDICATE ASSOCIATED DETAIL ON SHEET CG-501.

- SPOT ELEVATIONS WITHIN GUTTER AREA REPRESENT FLOWLINE UNLESS NOTED. ADD 0.5' TYPICAL FOR TOP OF CURB / TOP OF ADJACENT WALK ELEVATIONS.
- PROVIDE 4" WIDE TRANSITION TO DIP FROM STANDARD 4" HIGH CONCRETE ROLL CURB AND CONCRETE WALK TO DRAINAGE CHANNEL USED TO PASS FLOW INTO / OUT OF FIRST FLUSH POND. CONSTRUCT TO ELEVATIONS SHOWN.
- CONSTRUCT PAVING, CURBS, AND WALKS AT ELEVATIONS SHOWN. SEE ARCHITECTURAL SITE PLAN AND SITE DETAILS. NOTE: PAVEMENT SLOPES AND CROSS-SLOPES VARY THROUGHOUT TO ACHIEVE ADA COMPLIANT PEDESTRIAN ACCESS. STREET STORMWATER CAPACITIES, PIPE COVERAGE, ETC. SEE LEGEND FOR 1" AND 0.5" CONTOUR LINETYPES PROVIDED TO CLARIFY DRAINAGE CONCEPT.
- HATCHED AREA INDICATES APPROXIMATE EXTENTS OF EXISTING ASPHALT PAVEMENT TO REMAIN. TRANSITIONS BETWEEN NEW AND EXISTING PAVEMENT SHALL BE SMOOTH.
- SLOPES WITHIN HANDICAP PARKING LIMITS SHALL BE ADA COMPLIANT. MAX. SLOPE = 2% IN ANY DIRECTION. CONTRACTOR SHALL VERIFY AND COORDINATE WITH ARCHITECT IF NOT COMPLIANT. IF NECESSARY, REMOVE AND REPLACE EXISTING ASPHALT AND TAPER TO EXISTING TO ACHIEVE ADA COMPLIANCE.
- CONSTRUCT ADA COMPLIANT HANDICAP ACCESS RAMP.
- CONSTRUCT GRADE TRANSITION WALL WITH CONCRETE ALLEY GUTTER AT ELEVATIONS SHOWN TO DIRECT OFF-SITE FLOW NORTH AND SOUTH. RETAINING HEIGHT VARIES. STRUCTURAL DESIGN TO BE PROVIDED BY WALL CONTRACTOR.
- CONSTRUCT FIRST FLUSH RETENTION BASIN TO TOP ELEVATION. BOTTOM ELEVATION AND VOLUME SHOWN. NOTE: FIRST FLUSH BASINS WILL BE INSPECTED AS PART OF ENGINEER'S CERTIFICATION FOR CERT. OF OCCUPANCY.
- CONSTRUCT PERCOLATION TRENCH.
- ROOF DISCHARGE TO BE RELEASED AT GRADE. CONSTRUCT 3'X3'X12" DEEP GROUTED COBBLE PAD (SEE CG-501 FOR DETAIL) AT OUTLET WITHIN LANDSCAPED AREA.
- TOP OF CONCRETE MOW STRIP = 61.3 UNLESS NOTED. SLOPE TO DRAIN @ 2% SEE ARCHITECTURAL.
- PROVIDE 3' WIDE CURB OPENING.
- PROVIDE RECTANGULAR OPENINGS (MIN. 6" WIDE X 4" HIGH @ 10' O.C.) THROUGH WALL AT FLOWLINE ELEVATION SHOWN TO PASS FLOW.
- CONSTRUCT PRIVATE STORM DRAIN SYSTEM. SEE SHEET CG-501 FOR SIZE / SLOPE / INLET / MATERIAL.
- CONSTRUCT COVERED SIDEWALK CULVERT (WIDTH PER PLAN) PER C.O.A. STD. DWG. 2236.
- SEE ARCHITECTURAL PLANS FOR EXTENDED / RETAINING STEMMALLS TO ACHIEVE GRADES SHOWN.
- CONSTRUCT STAIR WITH HANDRAILS. SEE ARCHITECTURAL.
- CONSTRUCT 1:16 (MAX.) ACCESS RAMP. SEE ARCHITECTURAL.
- INSTALL GROUTED COBBLE EROSION PROTECTION (OR APS APPROVED EQUAL) TO EXTENTS SHOWN.
 - TRANSITION SLOPES > 3:1
 - SIDEWALK CULVERTS
 - AT CONCENTRATED FLOW TRANSITIONS FROM PAVEMENT TO UNPAVED
 - WITHIN DRAINAGE SWALES
- SEE CG-501 FOR DETAIL. NOTE: PER A.P.S. STANDARDS, ALL ROCK EROSION PROTECTION WITHIN THE SCHOOL SITE IS 6" DIA. DIA. ROUNDED ROCK EMBEDDED IN CONCRETE. NO LOOSE COBBLE SWALES OR EROSION PROTECTION SHALL BE ALLOWED ON A.P.S. DISTRICT PROPERTIES. (TYPICAL)
- DEPRESS LANDSCAPING FOR WATER HARVESTING (MAX. 12" DEEP). NOTE: NO WATER HARVESTING SHALL OCCUR WITHIN 10' OF BUILDINGS.
- CONSTRUCT 2' WIDE CONCRETE ALLEY GUTTER.
- CONSTRUCT CONCRETE HEADWALL AT STORM DRAIN OUTFALL. SEE CG-501 FOR DETAIL.

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 www.isaacson.com
2183 CG-101.dwg Jan 24, 2018



PROJECT

Albuquerque Public Schools

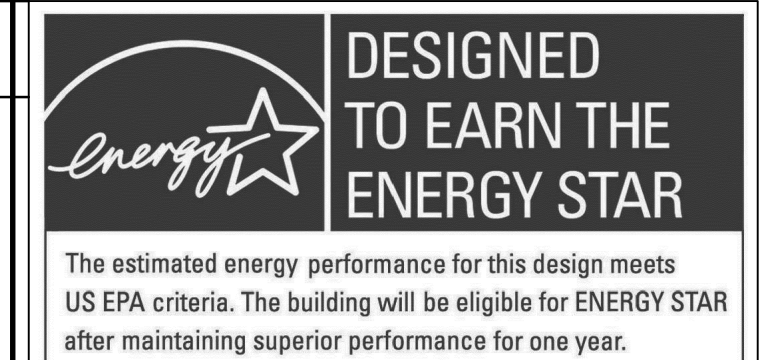
Janet Kahn School of Integrated Arts- Phase 1

9717 Indian School Road NE, Albuquerque, NM 87112

Construction Documents

LEGEND

- PROPOSED CONTOUR - 1' INCREMENT
- PROPOSED CONTOUR - 0.5' INCREMENT
- PROPOSED SPOT ELEVATION
- FLOW ARROW
- F.F.=XXXX.XX FINISH FLOOR ELEVATION
- EXISTING ELEVATION (+) TO MATCH. PROVIDE SMOOTH TRANSITION.
- ROCK EROSION CONTROL
- PERCOLATION TRENCH
- PROPOSED STORM DRAIN (SEE CG-501)
- FLOWLINE ELEVATION
- INVERT ELEVATION
- RETAINING WALL
- 'FIRST FLUSH' RETENTION BASIN



Mark	Date	Description
Date	13 MARCH, 2017	
Project Number	IA 2183	
Drawn By	BJB	
Checked By	FCA	
Copyright ©	VAN H. GILBERT ARCHITECT	
PC		
SHEET TITLE		

Grading & Drainage Plan
2 of 2

CG-102

SHEET

CIVIL GENERAL NOTES

- THE CONTRACTOR SHALL ABIDE BY ALL STATE, LOCAL, AND FEDERAL LAWS, CODES, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS, INCLUDING EPA AND ADA REQUIREMENTS.
- ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL EXCEPT AS OTHERWISE STATED ON OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS.
- NO WORK SHALL BE PERFORMED WITHOUT THE APPROPRIATE PERMITS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS FOR THE PROJECT PRIOR TO COMMENCING CONSTRUCTION, OR PRIOR TO OCCUPANCY, AS APPROPRIATE.
- COORDINATE ALL SITE WORK WITH SITE PLAN, UTILITY PLAN, DEMOLITION PLAN, AND LANDSCAPE PLAN.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING OBSTRUCTIONS, AND CONDITION OF ALL EXISTING INFRASTRUCTURE PRIOR TO CONSTRUCTION. REPORT ALL DISCREPANCIES TO THE ARCHITECT AND VERIFY THE ARCHITECT'S INTENT BEFORE PROCEEDING.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE SAFETY.
- THE CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS ON SITE AT ALL TIMES.
- CONTRACTOR SHALL OBTAIN ALL REQUIRED INSPECTIONS OF THE WORK.
- CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT LIMITS. ANY DAMAGE TO ADJACENT STRUCTURES RESULTING FROM THE CONSTRUCTION PROCESS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
- CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS. EQUIPMENT SHALL ONLY OBSTRUCT DESIGNATED TRAFFIC LANES IF APPROPRIATE BARRICADING PERMITS HAVE BEEN OBTAINED. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL IN THE RIGHT-OF-WAY.
- THE CONTRACTOR SHALL PROVIDE A CONSTRUCTION TRAFFIC CONTROL AND SIGNING PLAN THAT CONFORMS TO THE LATEST EDITION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND LOCAL REQUIREMENTS. THE CONTRACTOR SHALL OBTAIN BARRICADING PERMITS FROM THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION WORK ON OR ADJACENT TO EXISTING STREETS.
- THE CONTRACTOR SHALL MAINTAIN ALL BARRICADING AND CONSTRUCTION SIGNING AT ALL TIMES. THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADING AT THE END AND BEGINNING OF EACH DAY.
- EXISTING UTILITY LINES ARE SHOWN IN AN APPROXIMATE MANNER ONLY AND MAY BE INCOMPLETE OR OBSOLETE. SUCH LINES MAY OR MAY NOT EXIST WHERE SHOWN OR NOT SHOWN. CONTRACTOR SHALL CONTACT NM-811 FOR UTILITY LINE SPOTS FIVE WORKING DAYS PRIOR TO CONDUCTING SITE FIELD WORK. CONTRACTOR SHALL FIELD VERIFY AND LOCATE ALL UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR IS

- FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF NECESSARY DRY UTILITY ADJUSTMENTS.
- ALL SITE PREPARATION, GRADING OPERATIONS, FOUNDATION CONSTRUCTION, AND PAVEMENT INSTALLATION WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT WHICH WILL BE PROVIDED BY THE OWNER OR ARCHITECT.
- ALL TRASH, DEBRIS, & SURFACE VEGETATION SHALL BE CLEARED AND LEGALLY DISPOSED OF OFFSITE.
- VIBRATORY COMPACTION SHALL NOT BE USED OVER IN-PLACE UTILITIES.
- SOIL TESTING AND INSPECTION SERVICES DURING SITE OPERATIONS ARE REQUIRED. CONTRACTOR SHALL ALLOW TESTING LABS TO INSPECT AND APPROVE COMPACTED SUBGRADES, BACKFILL, AND FILL LAYERS BEFORE FURTHER CONSTRUCTION WORK IS DONE. SHOULD COMPACTION TESTS INDICATE INADEQUATE DENSITY, CONTRACTOR SHALL PROVIDE ADDITIONAL COMPACTION AND TESTING AT THE CONTRACTOR'S SOLE EXPENSE.
- CONTRACTOR SHALL PROVIDE CONSTRUCTION STAKING. CONTRACTOR SHALL LOCATE AND PRESERVE ALL BOUNDARY CORNERS AND REPLACE ANY LOST OR DISTURBED CORNERS AT CONTRACTOR'S SOLE EXPENSE. PROPERTY CORNERS SHALL ONLY BE RESET BY A REGISTERED LAND SURVEYOR.
- ADJUST ANY RIMS OF EXISTING UTILITY FEATURES AS NECESSARY TO MATCH NEW GRADES. UTILITIES IN PAVED AREAS SHALL BE HS-25 TRAFFIC RATED.
- CONTRACTOR SHALL COMPLY WITH LOCAL REGULATIONS FOR RESEEDING OF DISTURBED AREAS.
- SEE ARCHITECTURAL FOR INFORMATION REGARDING PROTECTION OF EXISTING TREES AND LANDSCAPING TO REMAIN.

APS NOTES:

- ALL ROOF DRAIN DISCHARGE AND SITE DRAINAGE SWALES WITHIN NON-PAVED AREAS SHALL BE PAVED (GROUTED COBBLE OR CONCRETE) PER A.P.S. STANDARDS.
- ALL COBBLE EROSION PROTECTION TO BE 6" AVG. DIA. ROUNDED ROCK EMBEDDED IN CONCRETE PER A.P.S. STANDARDS. NO LOOSE COBBLE SWALES OR EROSION PROTECTION SHALL BE ALLOWED ON A.P.S. DISTRICT PROPERTIES.
- ALL STORM DRAIN INLETS WITHIN NON-PAVED AREAS SHALL INCLUDE AN 18" WIDE (MINIMUM) GROUTED COBBLE APRON IN ADDITION TO THE STANDARD CONCRETE APRON.
- SIDEWALK CULVERTS SHALL NOT BE USED ON A.P.S. DISTRICT PROPERTIES WITHOUT WRITTEN APPROVAL FROM A.P.S. DIRECTOR-FACILITIES DESIGN AND CONSTRUCTION: KAREN ALARID, AIA

Karen Alarid, AIA Date

GRADING NOTES

- GRADING SHALL BE PERFORMED AT THE ELEVATIONS AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN.
- PROPOSED SPOT AND CONTOUR ELEVATIONS SHOWN REPRESENT TOP OF FINISH MATERIAL (I.E. TOP OF CONCRETE, FINISH FLOOR, TOP OF PAVEMENT MATERIAL, TOP OF LANDSCAPING MATERIAL, ETC.). CONTRACTOR SHALL GRADE, COMPACT SUBGRADE AND DETERMINE EARTHWORK ESTIMATES BASED ON ELEVATIONS SHOWN MINUS FINISH MATERIAL THICKNESSES.
- IF FIELD GRADE ADJUSTMENTS ARE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT.
- THE ENVIRONMENTAL PROTECTION AGENCY (EPA) AND THE CITY OF ALBUQUERQUE REQUIRE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP), AN NPDES PERMIT, AND AN EROSION AND SEDIMENT CONTROL (ESC) PERMIT FOR PROJECTS WHERE CONSTRUCTION ACTIVITIES MEET THE EPA THRESHOLD (SWPPP, NPDES PERMIT, AND ESC PLAN BY OTHERS). A CURRENT CITY-APPROVED ESC PERMIT MUST BE INCLUDED WITH THE CONTRACTOR'S SUBMITTAL FOR A ROUGH GRADING, GRADING, PAVING, BUILDING, OR WORK ORDER PERMIT. CONTRACTOR SHALL COORDINATE WITH OWNER TO DETERMINE WHO WILL PREPARE ESC, SWPPP AND INSPECT REQUIRED ELEMENTS.
- MEASURES REQUIRED FOR EROSION AND SEDIMENT CONTROL SHALL BE INCIDENTAL TO THE PROJECT COST.
- ALL NEW PAVEMENT SURFACES SHALL BE CONSTRUCTED WITH POSITIVE SLOPE AWAY FROM BUILDINGS AND POSITIVE SLOPE TOWARD EXISTING AND/OR PROPOSED DRAINAGE PATHS. PAVING, ROADWAY GRADES AND BUILDING PAD ELEVATION SHALL BE 10.00' FROM PLAN ELEVATION.
- GRADES BETWEEN NEW AND EXISTING ARE SHOWN AS 'MATCH' OR '+', TRANSITIONS SHALL BE SMOOTH.
- PAVEMENT GRADES IN MARKED HANDICAPPED PARKING AREAS SHALL NOT EXCEED 2.0% IN ANY DIRECTION. FOR ALL ACCESSIBLE ROUTES, MAXIMUM ALLOWABLE CROSS SLOPE IS 2.0% AND MAXIMUM LONGITUDINAL SLOPE WITHOUT RAMP IS 5.0%. FOLLOW ALL ADA ACCESSIBILITY GUIDELINES OR CITY CODES, WHICHEVER IS MORE STRINGENT.
- SIDESLOPES STEEPER THAN 3:1 BUT LESS THAN 2:1 MUST HAVE PERMANENT EROSION PROTECTION INSTALLED, TYPICAL NO SLOPE SHALL BE STEEPER THAN 2:1.
- POND DESIGN PARAMETERS AND STORMWATER CONTROL MEASURES SHOWN ON THIS PLAN (TOP OF POND, BOTTOM OF POND, SIZE OF ORIFICE, AREA OF POND, ETC.) TO BE STRICTLY ADHERED TO FOR CERTIFICATION PURPOSES. SEE DETAIL SHEET FOR ADDITIONAL INFORMATION.
- POST-CONSTRUCTION MAINTENANCE FOR PRIVATE STORMWATER FACILITIES WILL BE THE RESPONSIBILITY OF THE FACILITIES OWNER. ENGINEER RECOMMENDS THAT OWNER INSPECT SITE YEARLY AND AFTER EACH RAINFALL TO IDENTIFY NEW AREAS OF EROSION AND INSTALL ADDITIONAL EROSION PROTECTION AS NEEDED BASED ON ACTUAL OCCURRENCES.
- FOR ENGINEER'S CERTIFICATION OF SUBSTANTIAL COMPLIANCE (FOR CERTIFICATE OF OCCUPANCY) CONTRACTOR SHALL PROVIDE AN AUTOCAD FORMAT AS-BUILT SURVEY PREPARED BY A LICENSED SURVEYOR WHICH INCLUDES:
 - AS-BUILT SPOT ELEVATIONS AT EACH DESIGN SPOT ELEVATION SHOWN ON THE APPROVED PLAN;
 - TOP AND BOTTOM ELEVATIONS AS REQUIRED TO DEFINE THE PERIMETER OF PONDS (TO BE USED BY ENGINEER TO CALCULATE AS-BUILT VOLUME PROVIDED);
 - STORM DRAIN RIMS AND INVERTS;
 - ALL CONSTRUCTION INCLUDING DRAIN INLETS, PIPES AND PONDS SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLAN IN ORDER TO RECEIVE ENGINEER'S CERTIFICATION.

- ENGINEER'S CERTIFICATION CANNOT BE PROVIDED UNTIL ALL SITE DRAINAGE IMPROVEMENT WORK IS COMPLETE AND PERMANENT EROSION PROTECTION IS INSTALLED PER PLAN. LANDSCAPING IS NOT REQUIRED FOR CERTIFICATION.
- GRADING OF FIRST FLUSH BASINS WILL BE INSPECTED AS PART OF ENGINEER'S CERTIFICATION FOR CERTIFICATE OF OCCUPANCY. DURING LANDSCAPING, FIRST FLUSH BASINS WILL BE SMOOTHLY INTEGRATED INTO LANDSCAPING WHILE MAINTAINING REQUIRED TOP AND BOTTOM ELEVATION, VOLUME AND INLET / OVERFLOW ELEVATIONS.
- SITE CONSTRUCTION LAYOUT / STAKING SHALL BE COORDINATED WITH THE ARCHITECT USING THE ARCHITECT PROVIDED SITE PLAN, UPON WRITTEN REQUEST COORDINATED THROUGH THE PROJECT ARCHITECT. THE ELECTRONIC FILE OF THE GRADING AND DRAINAGE WILL BE PROVIDED TO THE CONTRACTOR FOR VERTICAL CONTROL. DO NOT USE THIS PLAN FOR PROJECT STAKING AS THERE IS NO CERTAINTY THAT IT IS USING THE MOST CURRENT SITE BASE.

STORM DRAIN NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE INSTALLATION OF ALL WORK RELATED TO PROPOSED STORM DRAINS SHOWN ON THIS PLAN INCLUDING: TRENCHING, BACKFILL, SUPPORTS, INLET AND MANHOLE COLLARS, MANHOLES, WATER QUALITY FEATURES, EROSION CONTROL FEATURES, TESTING, CLEANING, AND STERILIZING. ANY WORK NOT ACCEPTED BY THE ARCHITECT OR ENGINEER DUE TO IMPROPER WORKMANSHIP OR LACK OF PROPER COORDINATION SHALL BE REMOVED AND CORRECTLY INSTALLED AT THE CONTRACTOR'S EXPENSE, AS DIRECTED.
- MINIMUM COVER FOR STORM DRAIN PIPES SHALL BE 12", UNLESS OTHERWISE NOTED.
- STORM DRAINS SHALL BE INSTALLED AFTER COMPLETION OF THE SITE ROUGH GRADING.
- STORM DRAINS SHALL BE INSTALLED PRIOR TO SURFACE IMPROVEMENTS SUCH AS PAVEMENT, SIDEWALKS, AND LANDSCAPING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTIONS TO ROOF DOWNSPOUTS AND ALL NECESSARY FITTINGS. FITTING COSTS SHALL BE INCIDENTAL.
- TRENCHING, BORING, AND JACKING SHALL BE CONSTRUCTED IN ACCORDANCE WITH COA SPEC. SECT. 700.
- ALL BACKFILL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY PER ASTM D-1557.
- ALL INLET AND AREA DRAIN RINGS & GRATES, MANHOLE RINGS & COVERS, AND OTHER SURFACE ITEMS FOR THE STORM DRAINS SHALL BE ADJUSTED TO FINISHED GRADE, UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL STORM DRAIN CROSSINGS OF WATER AND SEWER LINES SHALL HAVE 18" MIN CLEARANCE. IF 18" CLEARANCE IS NOT POSSIBLE, CONTACT THE ARCHITECT IMMEDIATELY.
- RCP PIPES, PP PIPES, CONCRETE INLETS, MANHOLES, AND CLEANOUTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH COA SPEC. SECT. 900.
- HDPE PIPE SHALL BE ADS N-12 (WATERTIGHT) OR ENGINEER APPROVED EQUIVALENT. HDPE PIPE SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- PVC PIPES SHALL BE PVC SDR-35, INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- STORM DRAINS SHALL BE INSTALLED AT INVERTS AND SLOPES SPECIFIED ON THE PLANS. THE PIPE SHALL DRAIN AT A CONSTANT SLOPE BETWEEN FITTINGS AND MANHOLES. THE PIPE SHALL DRAIN TOWARD THE OUTLET AT ALL LOCATIONS.

