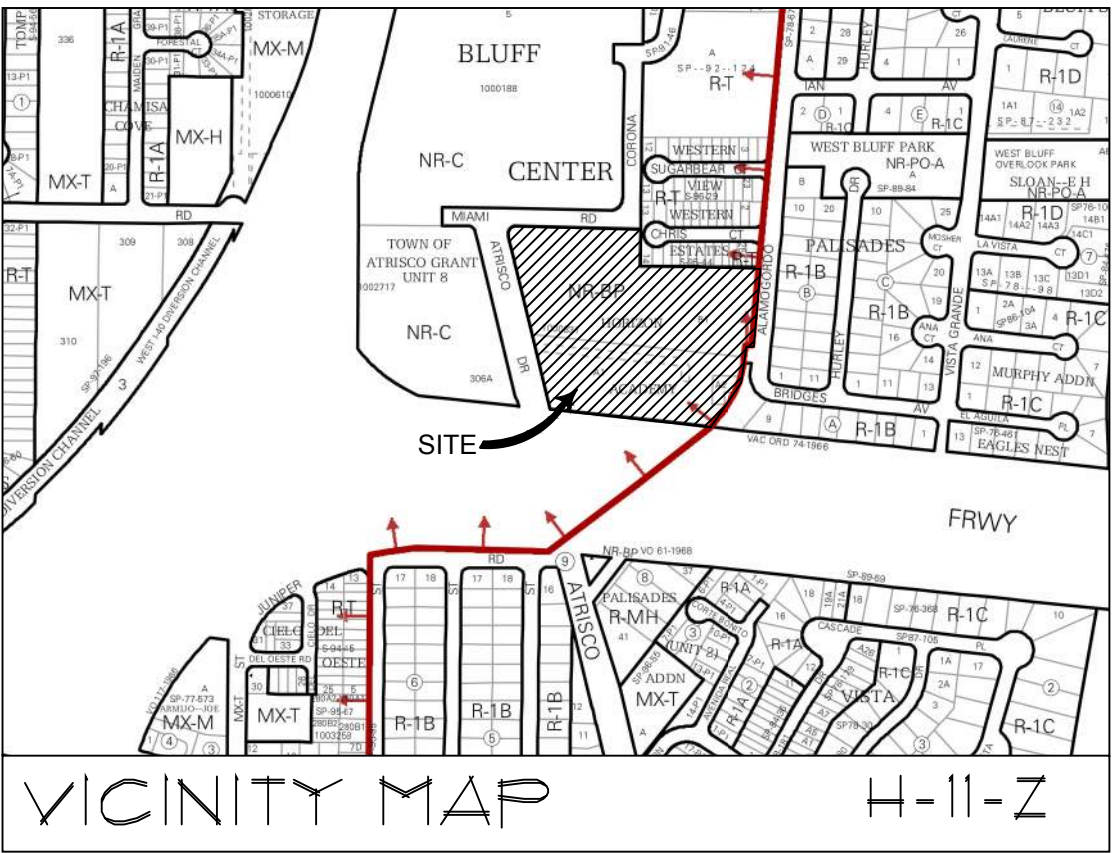




LEGAL DESCRIPTION

TRACTS "A-1" , "A-2" & "B-1" HORIZON ACADEMY SUBDIVISION WITHIN TOWN OF ATRISCO GRANT PROJECTED SECTION 10, T. 10 N., R. 2 E., N.M.P.M. ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO

BASIS OF ELEVATIONS

ELEVATIONS ARE BASED ON CITY OF ALBUQUERQUE STATION NO. "16+141" HAVING AN ELEVATION OF 51022.50, NAVD 1988

SURVEY NOTE

TOPOGRAPHIC SURVEY IS AND AS-BUILT OF CURRENT IMPROVEMENTS PROVIDED BY HARRIS SURVEYING, INC. DATED FEBRUARY 2024



Grading & Drainage Design Narrative

Subject Property: Christine Duncan Charter School, 1900 Atrisco Drive NW, Albuquerque, NM

Area of Site: 2.283 Acre

Reference: City of Albuquerque Development Process Manual (DPM)

Project Description: The development includes the installation of 4 new portable classroom buildings, two storage Connex structures a children's play area and some asphalt paving on the previously unimproved east border of an existing school campus. The work also includes the excavation of a large portion of the area east of the campus to create a play field which will be depressed to create a storm runoff ponding area.

Predeveloped Conditions: The east end of the school property was previously unimproved with a slight prevailing surface slope directing runoff from east to west, toward the improved portion of the school campus. There were no structures on this east area of the school property. Surface conditions were estimated to be land treatment A since it was unimproved with minimal slope.

Developed Runoff: The new portable buildings and paved areas were constructed to direct runoff back to the east so that runoff would flow to the newly constructed pond but approximately 25% of the runoff from this developed building and paving area will flow west thru the rest of the campus. However, this volume is still considerably less than the original site runoff affecting the school campus in the predevelopment condition. The new ponding area created with this development is substantially larger and with more storage capacity than what is required for this development and will significantly reduce the runoff from the school property to downstream public facilities.

Offsite Impact: The nature of the new grading and the configuration of the new pond assures that no adjacent properties will be adversely affected regarding storm runoff from the subject site.

Hydrology Calculations

Christine Duncan Charter School – Site Area = 2.283 acres

Design Criteria: City of Albuquerque Development Process Manual – June 2020

Chapter 6 Drainage, Flood Control, and Erosion Control

Procedure for 40-Acre and Smaller Basins

Precipitation Zone 1 per Section 6-2(A)(1), Table 6.2.7 and Figure 6.2.3

Excess Precipitation, E, per Table 6.2.13

Peak Discharge for Small Watersheds: per Table 6.2.14

PRE-DEVELOPED CONDITIONS – Project Site - Assumed

Land Treatment	Area (ac)	Excess Precip. "E" (in)	Peak Q (cfs/ac)	Coefficient C
A	2.283	0.55	1.54	0.34
B	0.000	0.73	2.16	0.47
C	0.000	0.95	2.87	0.63
D	0.000	2.24	4.12	0.90

Weighted E: 0.55 in

$V_{360} = 0.55 \times 2.283 \times 43560 / 12 = 4558 \text{ CF}$

Total Qp = $(2.283 \times 1.54) = 3.516 \text{ CFS}$

POST-DEVELOPED CONDITIONS – Project Site – Current

Land Treatment	Area (ac)	Excess Precip. "E" (in)	Peak Q (cfs/ac)	Coefficient C
A	0.000	0.55	1.54	0.34
B	1.772	0.73	2.16	0.47
C	0.138	0.95	2.87	0.63
D	0.373	2.24	4.12	0.90

Weighted E: $[(1.772 \times 0.73) + (0.138 \times 0.95) + (0.373 \times 2.24)] / 2.283 = 0.99 \text{ in}$

$V_{360} = 0.99 \times 2.283 \times 43560 / 12 = 8204 \text{ CF}$

Total Qp = $(0.373 \times 4.12) + (0.138 \times 2.87) + (1.772 \times 2.16) = 5.76 \text{ CFS}$

Rational Method Check: 12-minute Peak Intensity, I = 4.58 in/hr

$Q = CIA = (0.47 \times 4.58 \times 1.772) + (0.63 \times 4.58 \times 0.138) + (0.90 \times 4.58 \times 0.373) = 5.75 \text{ CFS OK}$

Storm Water Quality Volume, (SWQV)

Impervious Area = 0.373 ac

BMP Volume Required: $0.26" \times 0.373 \times 43560 / 12 = 352 \text{ CF}$

Storm Runoff Ponding Provided:

Contour	Area (SF)	Volume (CF)
5103	52750	
5102	45150	48950
5101	42000	43575
5100	38000	40000
5099	32040	35020
5098	29750	30895
5097	13200	21475
5096	5000	9100
Total Volume =		229,015 CF

LEGEND

- 5103 EXISTING CONTOUR
- FF FINISH FLOOR
- FL FLOW LINE
- TA TOP OF ASPHALT
- CB BACK OF CURB
- LIMIT OF NEW WORK
- FLOW DIRECTION ARROW
- SWALE
- ASPHALT PAVED SURFACE
- ▲ ROOF DRAIN/DOWNSPOUT



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CONTRACTOR



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MEXICO 87120

MARK	DATE	REVISION

PROJECT NO:	D75-0224
CAD DWG FILE:	C-101.DWG
DRAWN BY:	LEK
CHECKED BY:	MJW

SHEET TITLE

GRADING and
DRAINAGE PLAN