FEBRUARY 7, 2012

SUPPLEMENTAL INFORMATION

FOR

Mountain Mahogany Community School

IA Project No. 1903

BY

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The Mountain Mahogany Charter School site is a developed school property located within C.O.A. Vicinity Map F-14. The site is bound by 4th Street to the west, the Gallegos Lateral to the east and developed residential properties to the north and south. The proposed construction includes a new administration building and classroom additions with associated site walks and landscaping.

Off-site: no off-site drainage affects this property.

Flood hazard: per Bernalillo County FIRM Map #35001C0119G, dated September 26, 2008, the site is located within Floodzone 'X' (shaded) designated as 'areas of 0.2% annual chance flood; areas of 1% chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

Drainage plan concept: the Mountain Mahogany Charter School site utilizes retention ponds throughout the site to store the 100-year, 10-day storm event as required. In addition, every building discharges roof drainage to large above ground rain barrels totaling over 8,000 gallons (=1,070 CF = 40 CY). Although these rain barrels do not count towards stormwater storage, they will assuredly have an impact. The proposed site demolition and new construction will not alter existing drainage patterns significantly. Site discharge will continue to be captured within localized water harvesting basins with all overflow passing to the east recreation field / retention pond.

This analysis includes calculations for the EXISTING condition, the PROPOSED condition and also provides a conceptual analysis for FUTURE additions to show that there is adequate volume available should the school seek to add additional impervious area.

In order to generate the volumes required for each of the conditions, land treatment areas were calculated (see Land Treatment Maps) and the resulting percentages were entered into the DPM calculations to obtain the volume generated for the 100-year 6-hour storm event. The 100-year 10-day volume was then calculated per the DPM to determine the required ponding volume.

Site pond depths were calculated using Civil 3D as follows. A surface was generated based on the provided topographic survey. A second surface (a level plane) was generated to represent water surface elevation and moved vertically until the required volume was achieved. See the attached Volume maps for the portions of ponding .

In summary, the existing condition provides a pond volume of at a water surface elevation of 4972.4.

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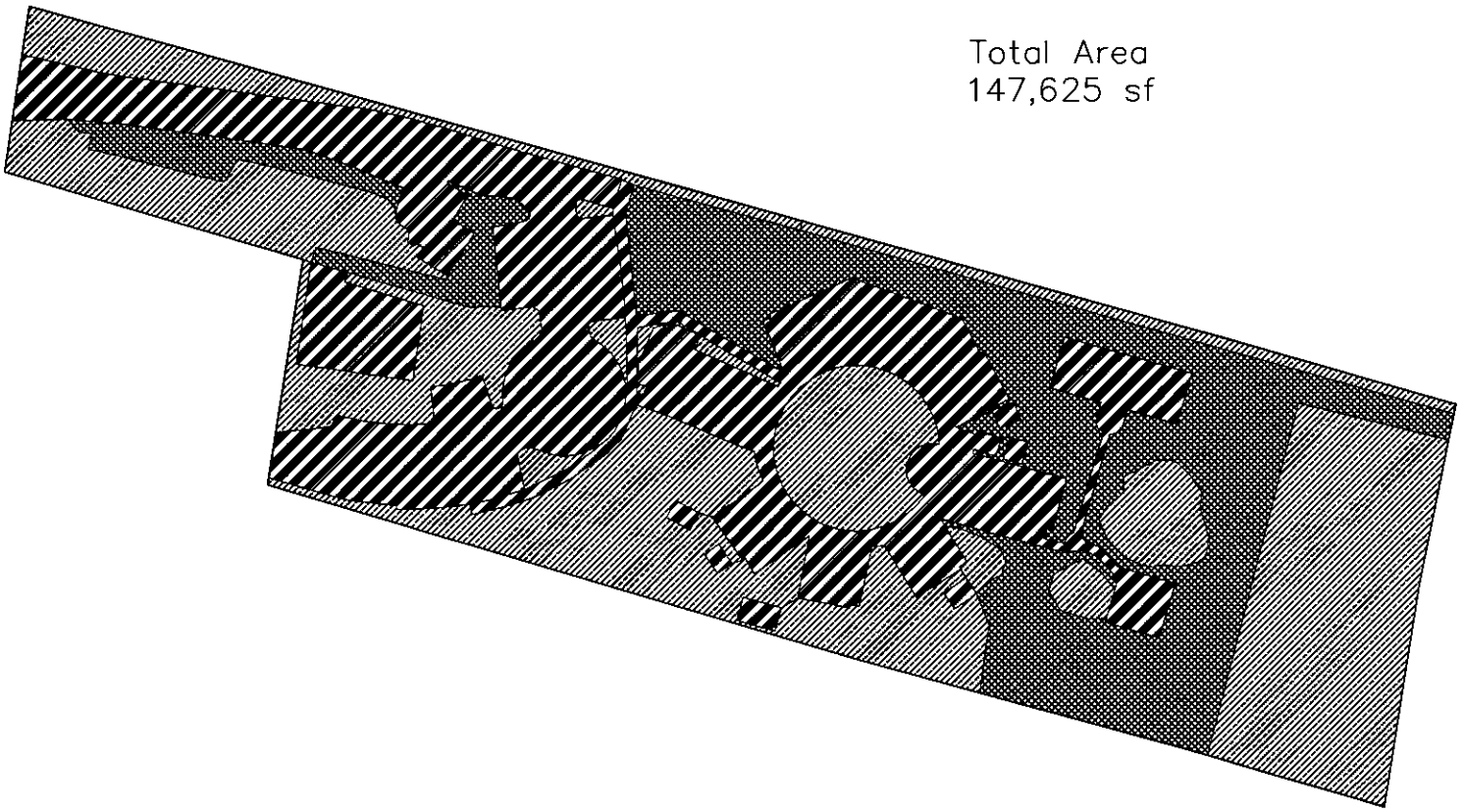
1903 C-701-LAND AREA.dwg 07.2012

PROJECT Mountain Mahogany, Private School

JOB NO. 1903 BY BJB DATE Feb. 3, 2012



EXISTING CONDITIONS

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PROJECT Mountain Mahogany Private School

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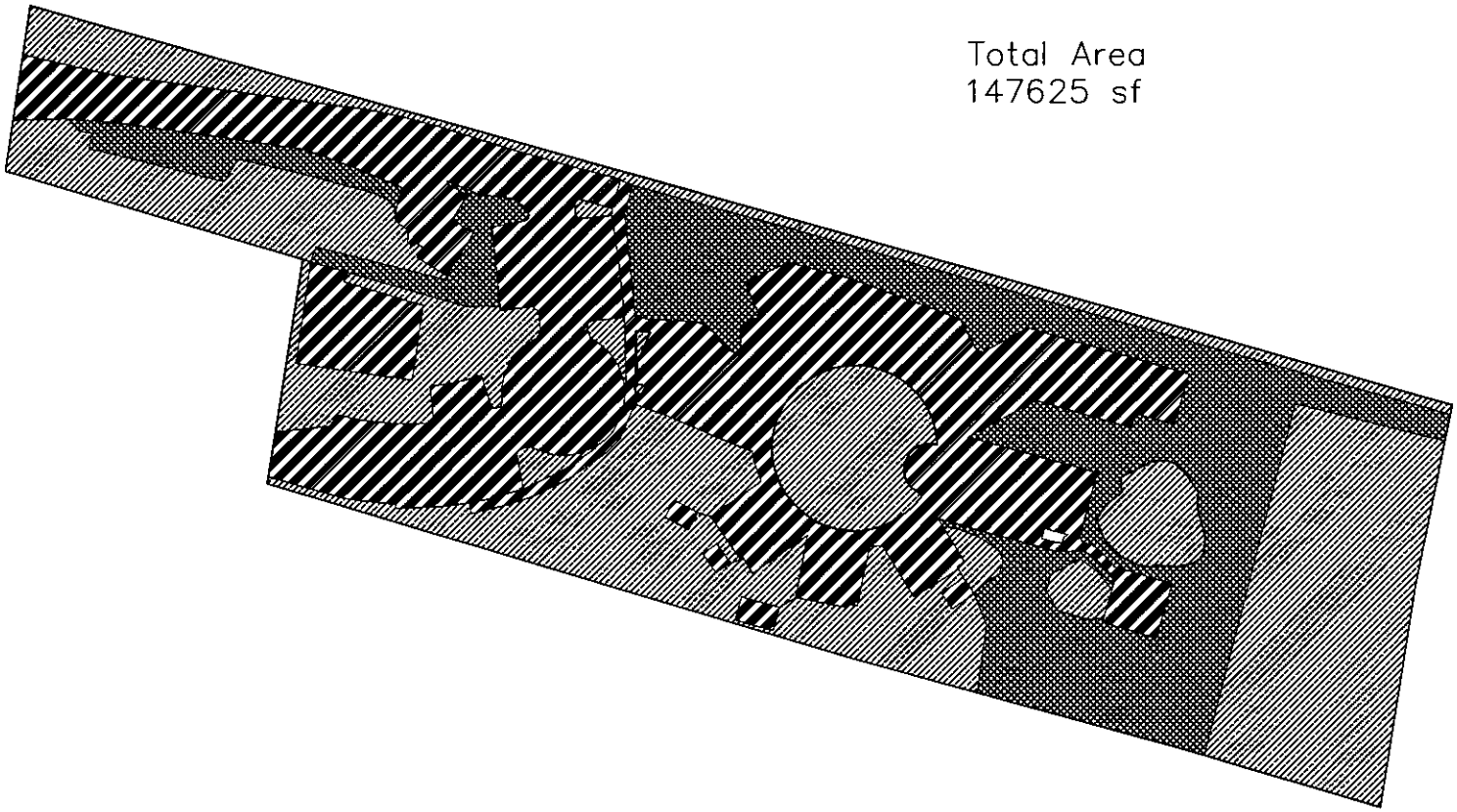

PROPOSED CONDITIONS

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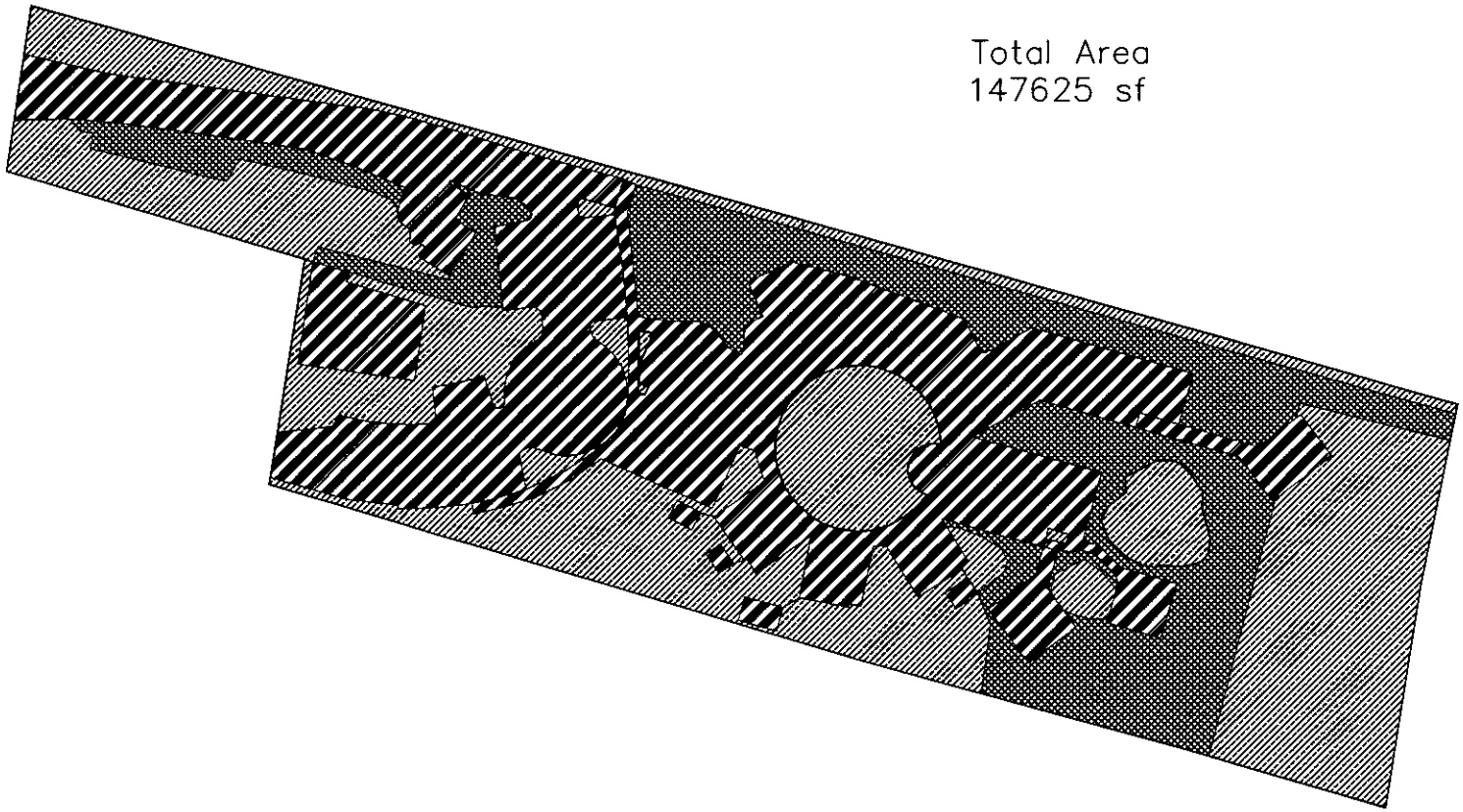


FUTURE CONDITIONS

The 100-year 6-hour storm event for EXISTING, PROPOSED and FUTURE impervious conditions are provided in the table below.

EXISTING CONDITIONS		DESCRIPTION		Approximately 33% impervious	
Area of basin flows =	147624	SF	=	3.4 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 =	1.31 in.			B =	42%
Sub-basin Volume of Runoff (see formula above)				C =	25%
V_{360} =	16079 CF			D =	33%
Sub-basin Peak Discharge Rate: (see formula above)					
Q_P =	11.1 cfs				

PROPOSED CONDITIONS		DESCRIPTION		Approximately 35% impervious	
Area of basin flows =	147624	SF	=	3.4 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 =	1.33 in.			B =	42%
Sub-basin Volume of Runoff (see formula above)				C =	23%
V_{360} =	16351 CF			D =	35%
Sub-basin Peak Discharge Rate: (see formula above)					
Q_P =	11.3 cfs				

FUTURE CONDITIONS		DESCRIPTION		Approximately 38% impervious	
Area of basin flows =	147624	SF	=	3.4 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 =	1.37 in.			B =	40%
Sub-basin Volume of Runoff (see formula above)				C =	21%
V_{360} =	16843 CF			D =	38%
Sub-basin Peak Discharge Rate: (see formula above)					
Q_P =	11.5 cfs				

The required storage volume for the site is based on the 100-year 10-day storm event. The following tables and graphics will clearly show that this site has ponding volume available in it's existing condition to store a significant volume without impacting the surrounding properties

EXISTING CONDITIONS: 32.8% D

100-year 10-day

V_{360} (from previous calculation)		16079
Area Treatment D (SF)		48421
Zone		2
For 10 Day Storms: $V_{10day} = V_{360} + A_D * (P_{10day} - P_{360})*43560$ SF/AC		
V_{360}	=	16079
A_D (SF)	=	48421
Zone	=	2
P_{10day}	=	3.95
P_{360}	=	2.35
V_{360}	=	16079
+ imp. area	=	6456
Total Pond Volume ($V_{10\,day}$)	=	22535

22,535 CF = 835 CY

Water Surface Elevation = 4972.4

PROPOSED CONDITIONS: 35.0% D

100-year 10-day

V_{360} (from previous calculation)		16351
Area Treatment D (SF)		51668
Zone		2
For 10 Day Storms: $V_{10day} = V_{360} + A_D * (P_{10day} - P_{360})*43560$ SF/AC		
V_{360}	=	16351
A_D (SF)	=	51668
Zone	=	2
P_{10day}	=	3.95
P_{360}	=	2.35
V_{360}	=	16351
+ imp. area	=	6889
Total Pond Volume ($V_{10\,day}$)	=	23240

23,240 CF = 861 CY

Water Surface Elevation = 4972.5

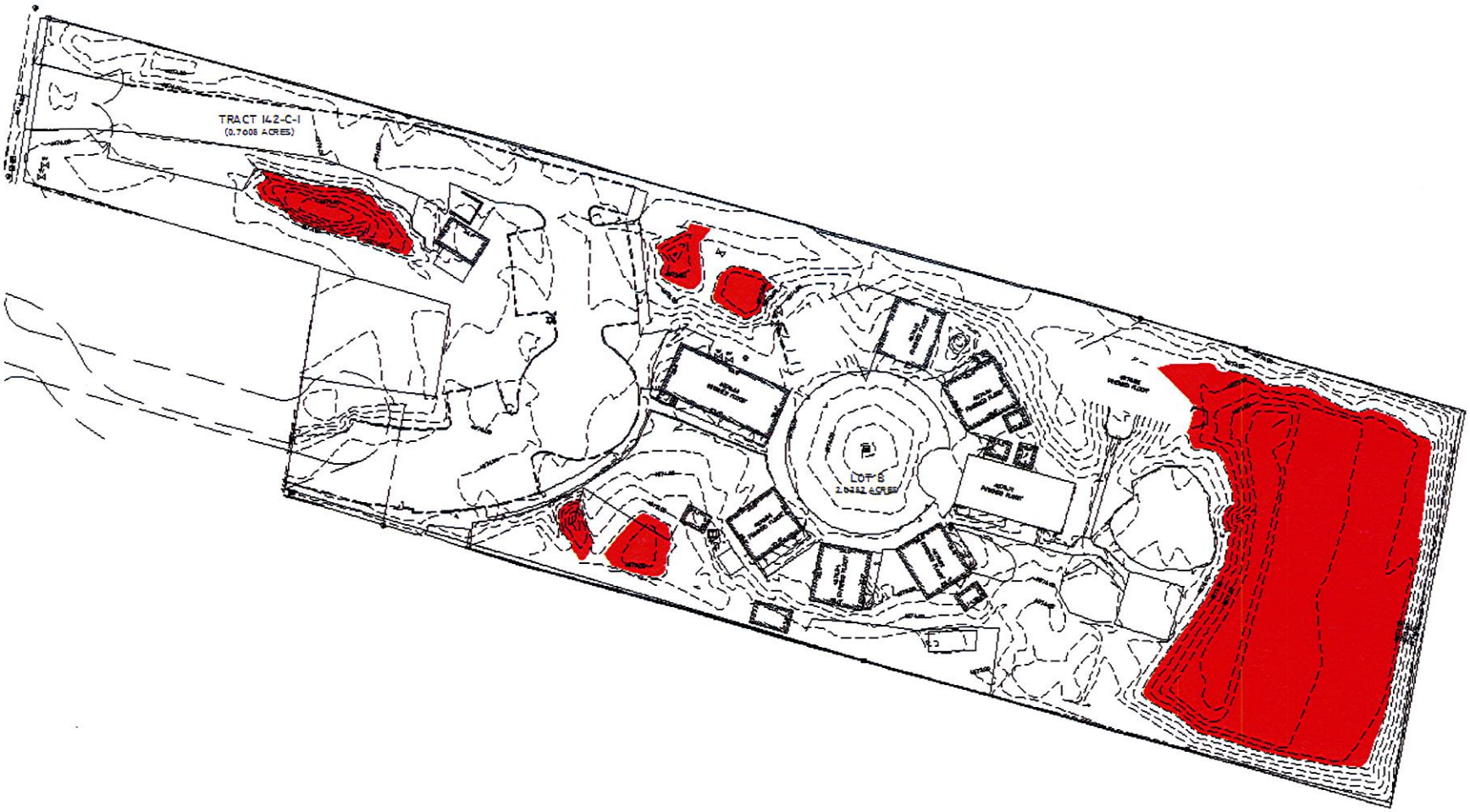
MAXIMUM CONDITIONS: 38.4% D

100-year 10-day

V_{360} (from previous calculation)		16843
Area Treatment D (SF)		56688
Zone		2
For 10 Day Storms: $V_{10day} = V_{360} + A_D * (P_{10day} - P_{360})*43560$ SF/AC		
V_{360}	=	16843
A_D (SF)	=	56688
Zone	=	2
P_{10day}	=	3.95
P_{360}	=	2.35
V_{360}	=	16843
+ imp. area	=	7558
Total Pond Volume ($V_{10\,day}$)	=	24401

24,401 CF = 904 CY

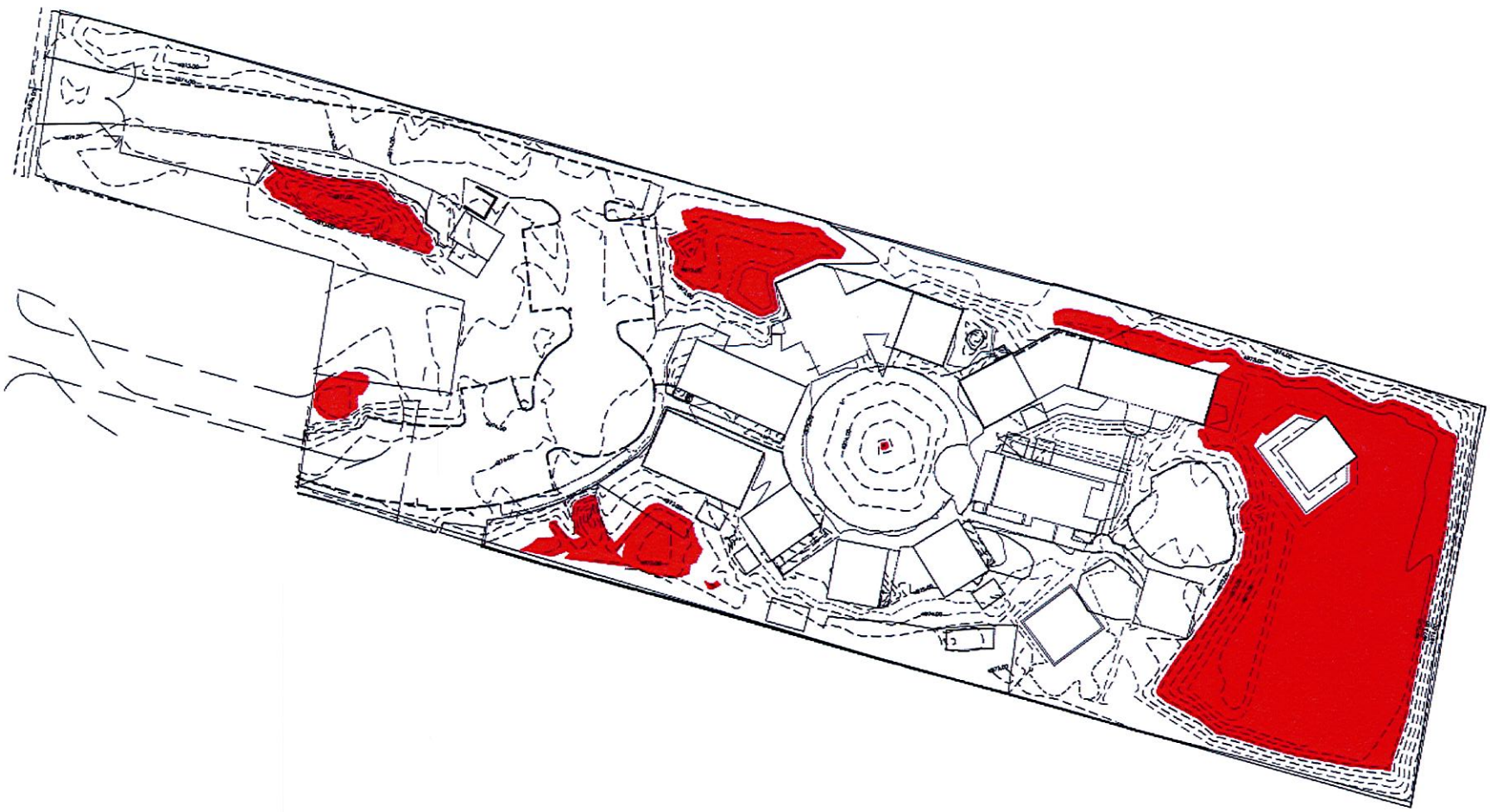
Water Surface Elevation = 4972.7



Existing Conditions (32.8% impervious):

Required 100-year 10-day volume = 22,535 CF = 835 CY

Water Surface Elevation = 4972.4



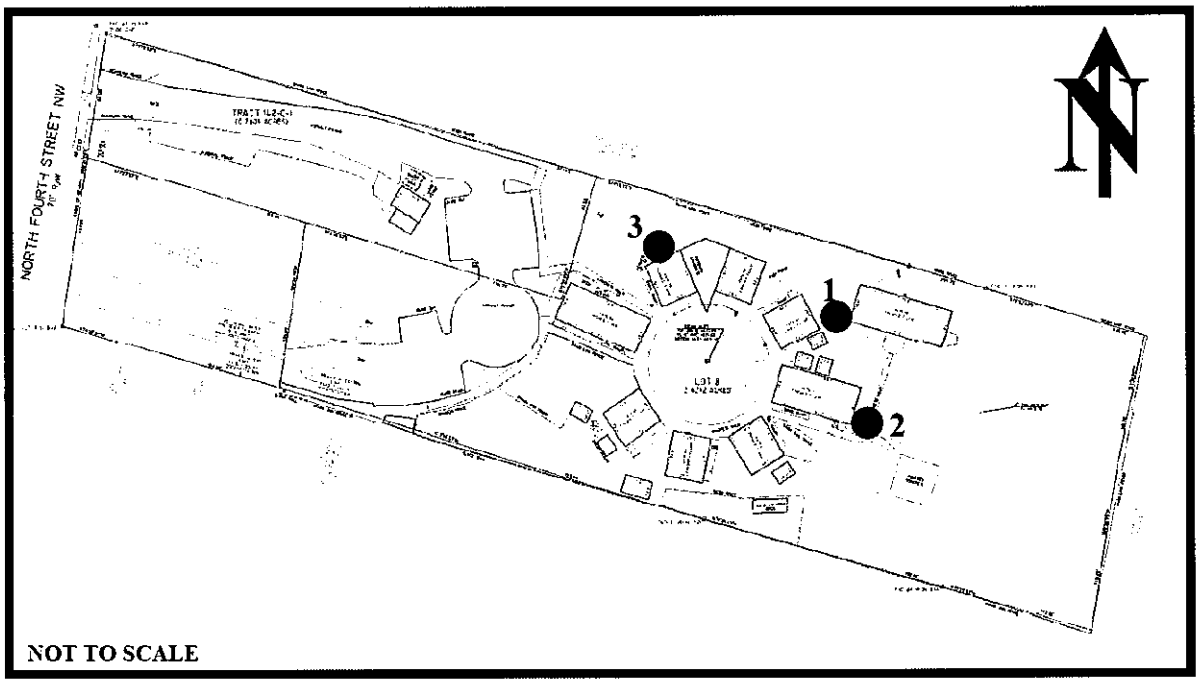
Future Conditions (38.4% impervious):

Required 100-year 10-day volume = 24,401 cf = 904 cy

Water Surface Elevation = 4972.7

In conclusion, the Mountain Mahogany Charter School site, based on existing topographic survey information, has volume available to store the 100-year 10-day storm event for the proposed condition as well as future additions shown. All of the existing and proposed buildings are elevated at least 2.0' above the future condition water surface elevation of 4972.7.

It is important to note that the future condition water surface elevation of 4972.7 does not take into account the existing french drains and proposed percolation pits which will improve the infiltration rate of the ponded waters through the shallow clay lenses to the sand strata below. See the following pages for excerpts from the soils report.



SITE PLAN

● TEST HOLE LOCATION

LOG OF TEST HOLE NO.: 1

Project:	5014 4th St NW, Albuquerque, NM
Date Drilled:	1.13.2012
Drilling Method:	Hand Auger
Surface Elevation:	Not Available
Depth to Groundwater:	Not Encountered
Bottom of Hole:	Test Hole 1: 10 ft Test Hole 2: 10 ft

Depth (feet)	N-Value (blows/ft)	Sample Type	Unified Class.	Description	Dry Density (pcf)	Moisture Content (%)
		B	SM	SAND, silty, fine to medium grained, moist, brown		12.5
2		B	CL	CLAY, sandy, fine grained, moist, dark-brown		28.5
		B	SP-SM	SAND, slightly silty, fine to coarse grained, moist, light-brown to gray		6.7
5				- lenses of very moist, gray, smelly clay		
		B		- dry sand at 8 ft		4.0
10				**Bottom of Hole at 10 Feet**		

LOG OF TEST HOLE NO.: 2

Depth (feet)	N-Value (blows/ft)	Sample Type	Unified Class.	Description	Dry Density (pcf)	Moisture Content (%)
2		B	CL	CLAY with lenses of sand		20.0
		B				24.3
5		B	SP-SM	SAND, slightly silty, fine to medium grained, medium moist, light-brown		3.1
		B	SM	SAND, fine to medium grained, medium moist, light-brown, trace caliche		3.1
10				**Bottom of Hole at 10 Feet**		

LOG OF TEST HOLE NO.: 3

Project:	5014 4th St NW, Albuquerque, NM
Date Drilled:	1.13.2012
Drilling Method:	Hand Auger
Surface Elevation:	Not Available
Depth to Groundwater:	Not Encountered
Bottom of Hole:	5 ft

Depth (feet)	N-Value (blows/ft)	Sample Type	Unified Class.	Description	Dry Density (pcf)	Moisture Content (%)
2		B	CH	CLAY with lenses of sand		23.9
5			SP	SAND, fine to medium grained, slightly moist, light-brown		
10				**Bottom of Hole at 5 Feet**		