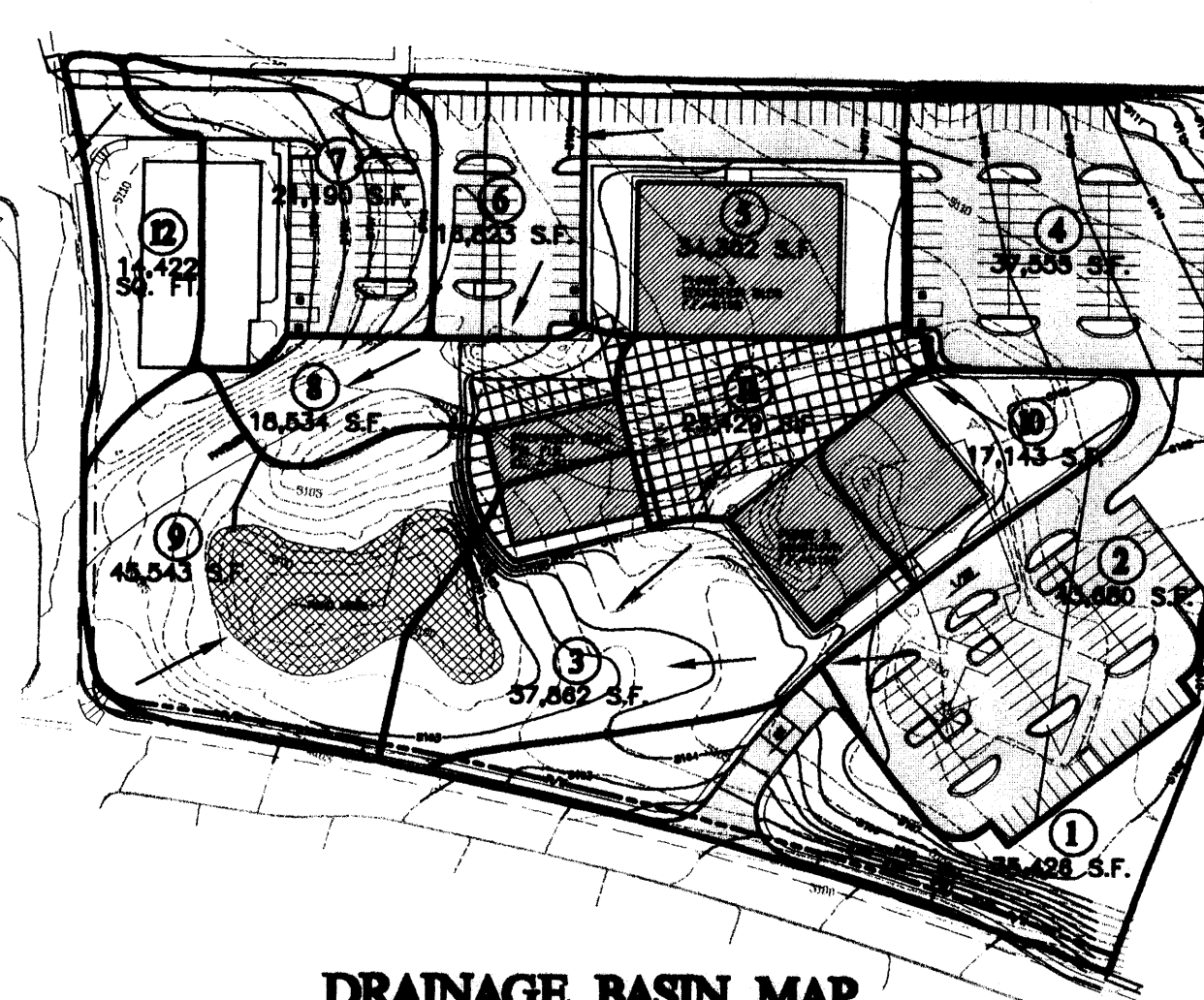


GRADING PLAN

SCALE: 1" = 40'



DRAINAGE BASIN MAP

Hydrologic Calculations - COA DPM 22.2											
Mesa View Church											
January 7, 2002											
Precipitation (in)	P60	P360	P1440	P4days	P10days	Six Hour Storm					
Zone 1	1.87	2.2	2.86	3.12	3.67	A	B	C	D		
Table 8	0.44	0.67	0.99	1.97		A	B	C	D		
Discharge (cfs/ac)	A	B	C	D		A	B	C	D		
Table 9	1.29	2.03	2.87	4.37		1.29	2.03	2.87	4.37		
Areas and Land Treatments:											
Land Treatments - Existing Conditions						Land Treatments - Fully Developed Conditions					
	A	B	C	D	Area (sf)	A	B	C	D	Area (sf)	
Subbasin 1	0	33,655	0	1,771	35,426	0	31,883	0	3,643	35,426	
Subbasin 2	0	17,472	21,840	4,368	43,680	0	4,368	0	39,312	43,680	
Subbasin 3	0	37,862	0	0	37,862	0	37,862	0	0	37,862	
Subbasin 4	37,555	0	0	0	37,555	0	5,633	0	31,922	37,555	
Subbasin 5	27,442	0	6,860	0	34,302	0	5,145	0	29,157	34,302	
Subbasin 6	0	2,523	0	14,300	16,823	0	2,523	0	14,300	16,823	
Subbasin 7	0	3,178	0	18,012	21,190	0	3,178	0	18,012	21,190	
Subbasin 8	0	8,340	0	10,194	18,534	0	18,534	0	0	18,534	
Subbasin 9	0	40,298	0	4,478	44,776	0	44,775	0	0	44,775	
Subbasin 10	0	12,000	3,429	1,714	17,143	0	10,286	0	6,857	17,143	
Subbasin 11	0	19,915	0	5,514	25,429	0	1,171	0	22,258	23,429	
Subbasin 12	0	4,327	0	10,095	14,422	0	4,327	0	10,095	14,422	
					345,141					345,141	
Peak Flow Rates Generated:											
Peak Flow Rate - Existing Conditions						Peak Flow Rate - Developed Conditions					
	A	B	C	D	Q (cfs)	A	B	C	D	Q (cfs)	
Subbasin 1	0.00	1.57	0.00	0.18	1.75	0.00	1.49	0.00	0.36	1.84	
	draining to Montano					draining to Montano					
Subbasin 2	0.00	0.81	1.44	0.44	2.69	0.00	0.20	0.00	3.94	4.15	
Subbasin 3	0.00	1.76	0.00	0.00	1.76	0.00	1.76	0.00	0.00	1.76	
Subbasin 4	1.11	0.00	0.00	0.00	1.11	0.00	0.26	0.00	3.20	3.46	
Subbasin 5	0.81	0.00	0.45	0.00	1.26	0.00	0.24	0.00	2.93	3.16	
Subbasin 6	0.00	0.12	0.00	1.43	1.55	0.00	0.12	0.00	1.43	1.55	
Subbasin 7	0.00	0.15	0.00	1.81	1.96	0.00	0.15	0.00	1.43	1.55	
Subbasin 8	0.00	0.39	0.00	1.02	1.41	0.00	0.86	0.00	0.00	0.86	
Subbasin 9	0.00	1.08	0.00	0.45	2.33	0.00	2.09	0.00	0.00	2.09	
Subbasin 10	0.00	0.58	0.23	0.17	0.98	0.00	0.48	0.00	0.69	1.17	
Subbasin 11	0.00	0.93	0.00	0.35	1.28	0.00	0.05	0.00	2.23	2.28	
	draining to Pond					draining to Pond					
Subbasin 12	0.00	0.20	0.00	1.01	1.21	0.00	0.20	0.00	1.01	1.21	
	draining to Taylor Ranch					draining to Taylor Ranch					
	Unattenuated Peak Flow Rate					Unattenuated Peak Flow Rate					
	19					25					

Peak Volumes											
Six Hour						Ten Day					
Subbasin	Runoff Volume - Existing Conditions	100 yr V (cu-ft)	Runoff Volume - Developed Conditions	100 yr V (cu-ft)		Subbasin	Runoff Volume - Existing Conditions	100 yr V (cu-ft)	Runoff Volume - Developed Conditions	100 yr V (cu-ft)	
Subbasin 1	0 1,879 0 291 2,170	2,170	0 1,780 0 582 2,362	2,362		Subbasin 1	0 1,879 0 291 2,170	2,170	0 1,780 0 582 2,362	2,362	
	draining to Montano						draining to Montano				
Subbasin 2	0 976 1,802 717 3,494	3,494	0 244 0 6,454 6,698	6,698		Subbasin 2	0 976 1,802 717 3,494	3,494	0 244 0 6,454 6,698	6,698	
Subbasin 3	0 2,114 0 0 2,114	2,114	0 2,114 0 0 2,114	2,114		Subbasin 3	0 2,114 0 0 2,114	2,114	0 2,114 0 0 2,114	2,114	
Subbasin 4	1,377 0 0 0 1,377	1,377	0 315 0 5,240 5,555	5,555		Subbasin 4	1,377 0 0 0 1,377	1,377	0 315 0 5,240 5,555	5,555	
Subbasin 5	1,006 0 566 0 1,572	1,572	0 287 0 4,787 5,074	5,074		Subbasin 5	1,006 0 566 0 1,572	1,572	0 287 0 4,787 5,074	5,074	
Subbasin 6	0 141 0 2,348 2,489	2,489	0 141 0 2,348 2,489	2,489		Subbasin 6	0 141 0 2,348 2,489	2,489	0 141 0 2,348 2,489	2,489	
Subbasin 7	0 177 0 2,957 3,134	3,134	0 177 0 2,957 3,134	3,134		Subbasin 7	0 177 0 2,957 3,134	3,134	0 177 0 2,957 3,134	3,134	
Subbasin 8	0 466 0 1,673 2,139	2,139	0 1,035 0 1,035	1,035		Subbasin 8	0 466 0 1,673 2,139	2,139	0 1,035 0 1,035	1,035	
Subbasin 9	0 2,250 0 735 2,985	2,985	0 2,500 0 2,500	2,500		Subbasin 9	0 2,250 0 735 2,985	2,985	0 2,500 0 2,500	2,500	
Subbasin 10	0 670 263 281 1,234	1,234	0 574 0 1,126 1,700	1,700		Subbasin 10	0 670 263 281 1,234	1,234	0 574 0 1,126 1,700	1,700	
Subbasin 11	0 1,112 0 577 1,689	1,689	0 65 0 3,654 3,719	3,719		Subbasin 11	0 1,112 0 577 1,689	1,689	0 65 0 3,654 3,719	3,719	
	draining to Pond						draining to Pond				
Subbasin 12	0 242 0 1,657 1,899	1,899	0 242 0 1,657 1,899	1,899		Subbasin 12	0 242 0 1,657 1,899	1,899	0 242 0 1,657 1,899	1,899	
	draining to Taylor Ranch						draining to Taylor Ranch				
	26,296						38,278				
	Unattenuated Peak Flow Rate						Unattenuated Peak Flow Rate				
	156,494						225,285				

POND CAPACITY DATA

Pond	Elevation	Area	Volume
5097	326	0	0
5098	4,486	2,406	2,406
5099	8,728	6,607	9,013
5100	12,123	10,426	19,439
5101	19,494	15,809	35,247
5102	41,166	30,330	65,577
5103	58,625	49,896	115,473
5104			

Normal pond storage at elevation 5,101 feet.....	35,247	cf
Maximum pond capacity to overflow.....	115,473	
Pond capacity from normal water surface to overflow.....	80,226	cf
Current retained runoff in pond for 100-yr rainfall event.....	29,158	cf
Total runoff volume under current conditions.....	64,405	cf
Maximum water surface for existing 100-yr rainfall event.....	5,101.96	feet
Total proposed retained runoff in pond for 100-yr event.....	40,948	cf
Total runoff volume under proposed conditions.....	76,195	cf
Maximum water surface for proposed 100-yr rainfall event.....	5,102.35	feet

Site Location - As shown by the Vicinity Map (Zone Atlas Map E-11), the 8.07-acre site on the west side of Albuquerque is located northeast of the intersection of Montano Road and Taylor Ranch Drive and about 2,200 feet west of Coors Boulevard. At present, the site is developed with a 10,000 square foot church building, a 2,500 square foot outbuilding, and associated paved driveway and parking facilities. A large portion of the undeveloped property on the site is landscaped as a park with a permanent pond as shown. The vast majority of the surrounding area is currently developed, thereby making this a modification to an existing site within an infill area. The proposed improvements consist of a 7,020 square foot Sunday school building with adjacent asphalt paving and drainage facilities for Phase One, a 12,600 square foot sanctuary building with associated parking for Phase Two, and a 13,042 square foot education building with associated parking for Phase Three. The existing driveway from Taylor Ranch Drive is to be abandoned and all access is to be routed to the existing entrance located north of the existing church under Phase One conditions. The proposed driveway located on Montano Road in proposed to be constructed under the Phase Two construction.

Address - Mesa View United Methodist Church, 4701 Montano Road NW, Albuquerque, New Mexico 87120.

Legal Description - Tracts 27-A1 and 27-A2, Taylor Ranch, New Mexico.

Temporary Benchmark - A temporary benchmark for use in construction of the site will be the finish floor elevation of the main church building at elevation 5,110.76 feet. For horizontal datum, a chiseled "X" on the block wall near the northwestern corner of the site. According to the plat, ACS control station "3-E10" is located at a bearing of N.83deg00'13" and distance of 8,805.16 feet.

Flood Zone - As shown by Plan 114 of 825 of the National Flood Insurance Program Flood Insurance Rate Maps (FIRM) for the City of Albuquerque, New Mexico, dated September 20, 1996, this site does not lie within a designated flood hazard zone.

Existing Conditions - Currently, the properties to the north and east of the project site drain to either Taylor Ranch Drive or Montano Road. No offsite runoff impacts the site. The street slopes are on the order of one-percent and support adequate capacity to carry the fully developed 100-year design flood from the site. The existing pond on the project site acts as a retention facility during significant rainfall events. Most of the subject property discharges through the park area into the pond. The normal water surface of the pond is maintained at elevation 5,101-feet storing approximately 35,247 cubic-feet of water. The maximum capacity of the pond before overtopping occurs was estimated as 115,473 cubic-feet of water at elevation 5,103 feet. All overflow will discharge to Montano Road. The existing 100-year runoff was estimated as 64,405 cubic-feet at an elevation of 5,101.96-feet.

Proposed Grading - The Grading and Drainage Plan shows 1) existing and proposed grades indicated by spot elevations and contours at one-foot intervals with continuity between existing and proposed grades; 2) the limit of existing and proposed improvements. The proposed building pads will be set to correspond to finish floor elevations of 5,108-feet to maintain positive drainage around the buildings. The additional northern parking area on both sides of the Phase Three building will be graded to drain from both ends to the proposed four-foot curb cut and then to the south across the grass-lined swale to the pond as shown on the plan. The grading of the site will maintain the drainage to the existing pond. The proposed condition 100-year rainfall runoff will generate approximately 76,195-cubic feet of volume in the pond at a maximum elevation of 5,102.35-feet. The increase in water surface elevation due to the proposed construction was estimated to be less than five-inches. This will leave about 0.65-foot of freeboard constituting 39,278 cubic-feet of additional storage volume before overtopping.

The Phase Two construction will include the construction of the additional driveway as shown on the Plan. The runoff from this parking facility will discharge through a sidewalk culvert into the pond. The increase in discharge to Montano Road was estimated to be approximately 0.11-cfs.

Hydrologic Methods - The drainage basin map shows twelve separate subbasins 1 through 12 to assess peak flow rates at various points around the project site culminating at the pond or Montano Road. The spreadsheet calculations analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The process outlined in the DPM, Section 22.2 was used to quantify the peak flow rates and volumes. As shown by these calculations, the fully developed commercial improvements will result in a minimal increase in runoff generated by the site. Also, by draining the majority of the site toward the existing pond, only a minimal increase in runoff to Montano Road will be found due to the proposed improvements to the site. As noted on the Plan, only subbasin one will continue to discharge onto Montano Road as is the case under current conditions.

The subject property improvements increase the existing peak runoff by about six cubic feet per second and about 12,000 cubic feet of volume in the Pond as shown on the calculations. A spreadsheet for Precipitation Zone 1 is included on this plan. This spreadsheet outlines the peak runoff and volume generated for each subbasin for existing and proposed fully developed conditions.

Erosion Control Measures - The contractor shall ensure that no soil erodes from the site into public right-of-way or onto private property. This can be achieved by constructing temporary berms at the property lines and wetting the soil to keep it from blowing. The contractor shall promptly clean up any material excavated within the public right-of-way so that the excavated material is not susceptible to being washed down the street. The contractor shall secure "Topsoil Disturbance Permits" prior to beginning construction.

DESIGNED BY: M.H.B.

DRAWN BY: T.D.S.

CHECKED BY:

REVISION

BY

DATE

MARK

Mark H. Burak, P.E.

1512 Sagebrush Trail SE

Albuquerque, New Mexico, 87123

(505) 296-0461

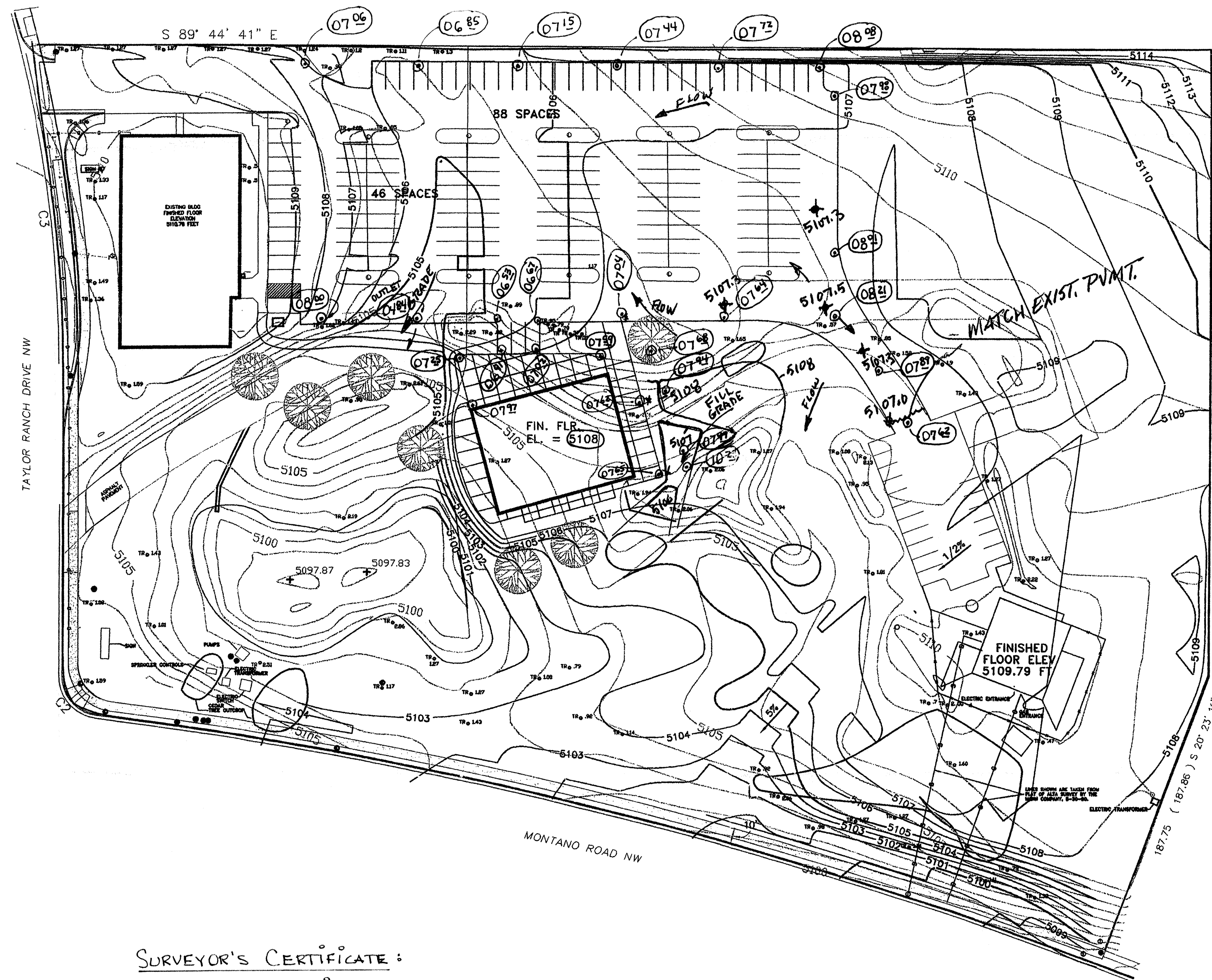
MESA VIEW CHURCH

GRADING AND DRAINAGE PLAN

DRAWING NUMBER

C1

1 OF 1



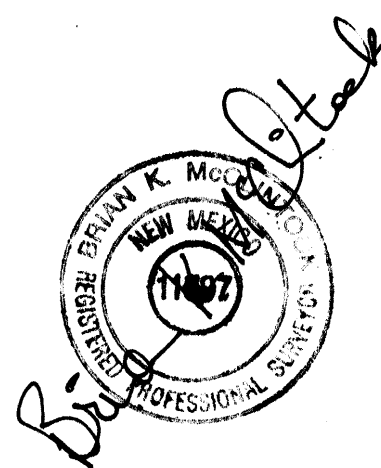
SURVEYOR'S CERTIFICATE :

THE ASBUILT ELEVATIONS, SHOWN HEREON BY THE CIRCLED NUMBERS, WERE TAKEN IN THE FIELD ON NOVEMBER 22ND, 2002. THE ELEVATIONS SHOWN ARE BASED OFF THE BUILDING F/F ELEVATION OF 5108.00 AND ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Brian K. McClintock

BRIAN K. MCCLINTOCK, NMPS No 11597

DATED: 11/22/2002



Engineer's Certification	
Mesa View Church Addition - Phase One	
This site was surveyed on November 22, 2002 by Brian K. McClintock, NMPS No. 11597 to confirm post-construction design elevations and drainage for the project's first phase. I, Mark H. Burak, P.E. have assessed the "as constructed" conditions and have found the site to be in substantial compliance with the approved plan stamped 01/08/02.	
<i>Mark H. Burak</i> Mark H. Burak, P.E. # 10987	December 1, 2002

