



DRAINAGE MANAGEMENT PLAN

Introduction/Purpose

This submittal describes the drainage scheme for Drainage Area Six (DA6) within the Mesa del Sol Innovation Park. This drainage management plan will serve as guidelines for ultimate pond sizing and drainage calculations for the block. This plan will provide a framework diagram for future hydrology submittals including but not limited to sites specific grading plans and work order approvals.

Existing Conditions

The drainage area at the northeast end of the Innovation Park (referred to here after as DA6) within Mesa del Sol is currently undeveloped and slopes 0.5% to 1.0%, generally from the northwest to southeast. The final outfall for this current drainage is a series of playas that extend down the middle of the proposed Innovation Park to the south of DA6. The block being analyzed will be bound by Watson Drive to the west, Crick Crossing to the north along with a portion of Hawking Drive, Hawking Drive to the east, and Fritts Crossing to the south.

Offsite Drainage

Any and all drainage from the west of the block will be mitigated and rerouted around the block to the south toward the current playa system. Flow generated to the east of DA6 will continue along the historic path to a series of aforementioned playas to the south. The drainage to the north will be retained on site and will be explained in a separate Drainage Area submittal. All drainage generated onsite will be retained under the 100yr 10day storm event and not effect surrounding areas.

Proposed Site Grading

The slope of the DA6 basin under proposed conditions is similar to existing conditions. The DA6 will have one centrally located permanent retention pond within the open space/drainage tract. This pond has been designed to retain the 100 year, 10 day storm generated by the Drainage Area.

Drainage generated by the roads within the DA6 basin will be conveyed to the regional retention pond via surface flow to storm drain systems within the block. Each site will be analyzed on a site by site basis for future submittals. The drainage for each site will be discharged directly to the pond by either direct storm drain or surface flow. The flow generated by each sub-basin is shown within the table labeled MESA DEL SOL - DEVELOPED HYDRAULIC CALCULATIONS. In addition the capacity of each road based on Manning's equation is shown on the overall drainage map.

The regional retention pond will be subject to future site planning considerations which will incorporate water quality facilities, along with aesthetically pleasing features such as a trail system, pedestrian amenities, and sedimentation basin facilities. In addition, infiltration basins will be installed in the retention pond to manage nuisance flows and provide a positive discharge of ponded water over time; however, the infiltration does not reduce the 100 year, 10 day stored ponding volume requirements.

The pond is sized in accordance with the methodology outlined in the DPM section 22.2. Developed land treatments for the majority of this drainage area were assumed to be 90% treatment D and 10% treatment B (See MESA DEL SOL - DEVELOPED HYDRAULIC CALCULATIONS for basin calculations and land treatments). For DA6, the volume of retention required (Vr) is 526,610 CF and the volume of retention provided (Vp) is 547,700 CF.

Floodplain

In accordance with FEMA Community Map Panel #3500100555 E, the site is not located within a floodplain.

Conclusion

This drainage submittal has been prepared in accordance with City of Albuquerque requirements. This plan demonstrates the proposed grading and drainage concepts. The implementation of these concepts would result in the safe retention of the 100 yr, 10 day storm event. Individual sites will be subject to separate hydrology approval in conjunction with the guidelines set forth in this drainage management plan. This drainage management plan is submitted in support of future development within the block, including building sites and roads.

MESA DEL SOL - DEVELOPED HYDRAULIC CALCULATIONS

Ultimate Development Conditions Basin Data Table

BASIN ID	Area (SQ. FT)	Area (AC.)	This table is based on the DPM Section 22.2, Zone 2 Land Treatment Percentages				Q(100) (cfs/ac.)	Q(100) (cfs)	WT E (Inches)	V(100) _{Base} (CF)	V(100) _{Today} (CF)
			A	B	C	D					
DRAINAGE AREA 6											
Basin 6A (Surrounding Roads)	620000	14.23	0.0%	0.0%	0.0%	100.0%	4.70	66.90	2.12	109533	192200
Basin 6A1	137082	3.15	0.0%	0.0%	0.0%	100.0%	4.70	14.79			
Basin 6A2	108726	2.50	0.0%	0.0%	0.0%	100.0%	4.70	11.73			
Basin 6A3	161505	3.68	0.0%	0.0%	0.0%	100.0%	4.70	16.35			
Basin 6A4	121783	2.80	0.0%	0.0%	0.0%	100.0%	4.70	13.14			
Basin 6A5	100905	2.32	0.0%	0.0%	0.0%	100.0%	4.70	10.89			
Total								66.90			
Basin 6B (Open Space /Regional Retention Pond)	121778	2.80	0.0%	50.0%	50.0%	0.0%	2.71	7.68	0.96	9692	9692
Basin 6C	332648	7.64	0.0%	10.0%	0.0%	90.0%	4.46	34.04	1.99	55053	94971
Basin 6D	292456	6.71	0.0%	10.0%	0.0%	90.0%	4.46	29.93	1.99	48401	83496
Basin 6E	284417	6.53	0.0%	10.0%	0.0%	90.0%	4.46	29.11	1.99	47071	81201
Basin 6F	227841	5.23	0.0%	10.0%	0.0%	90.0%	4.46	23.32	1.99	37708	65049
Total	1879140.50	43.14						190.87		307458	526608