

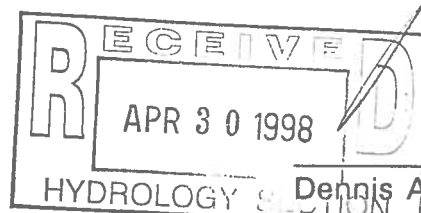
**DRAINAGE REPORT**  
**FOR**  
**RELIABLE MITSUBISHI MOTORS**

Albuquerque, New Mexico

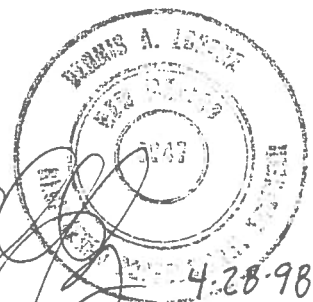
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## PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Drainage Report outlines the drainage management criteria for controlling developed runoff from the project site. The project consists of the expansion of the existing inventory lot for Reliable Mitsubishi Motors. Paving, landscaping, utility, grading, and drainage improvements will be provided to support the project. The scope of this plan is to provide drainage criteria for the safe management of excess runoff. The report is presented to obtain Site Plan and Building Permit approval.

## SITE DESCRIPTION

The project site is approximately 4.01 acres in size and is located on Coors Bypass NW, at Eagle Ranch Road NW (See Figure 1). The site consists of an undeveloped portion of the Reliable Mitsubishi Motors site. The developed portion of the site contains approximately 1.89 acres, which operates as an auto dealership. Site terrain slopes west to east at approximately 2 percent. The site is presently described as a Portion of Lot 7, tract N-1A, Seven Bar Ranch. The site is bounded on the north by Coors Bypass, on the south by a private drive, and on the west by Eagle Ranch Road.

## EXISTING CONDITIONS

The site presently drains easterly to an existing depression located along Coors Bypass. The developed portion of the site drains easterly to an existing detention pond located at the intersection of Coors Bypass and the private drive. The pond detains 3221 cf, and drains to a 48 inch storm drain in Coors Bypass at a controlled discharge rate of 3.36 cfs. No off-site flows impact the site. All off-site runoff is intercepted by the existing perimeter streets.

As shown by the attached FIRM Panel (Figure 2) this site does not lie within a designated flood hazard zone.

## SUMMARY OF EXISTING DRAINAGE PLANS

Per the **Grading and Drainage Plan for Mitsubishi, Lot 7, Seven Bar Ranch (B-13/D3C)**, prepared by Easterling & Associates, Inc., 11-2-89, the allowable discharge rate for Lot 7 is 10.5 cfs. The Plan also allocates 3.36 cfs for the developed portion of Lot 7, which leaves the remainder (7.14 cfs) for undeveloped portion. The remaining portion is to be routed through a detention pond which discharges either into Coors Bypass or directly into the 48 inch storm drain.

COOR ONTO

## PROPOSED CONDITIONS

As shown by the Plan, the project consists of the expansion of the auto storage lot, with associated paving, utility, landscaping and drainage improvements. The Plan shows the elevations required to properly grade and construct the recommended improvements.

The direction of drainage flows are given by flow arrows and on-site drainage basins are identified.

In accordance with the approved Masterplan, the proposed parking lot will drain to a detention pond to be located along Coors Bypass. The pond will route all excess runoff through a 12 inch outlet pipe to Coors Bypass at a controlled rate not to exceed 7.14 cfs.

## **PROJECT PHASING**

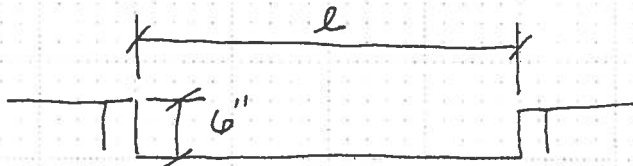
The project is to be constructed in 2 phases. Phase One consists of the auto storage parking lot. Phase Two will be developed at a later date as either an expansion of the parking lot, or a small building. In order to properly anticipate Phase Two development, the Phase One detention pond will be designed to accept developed flow from Phase Two. Development of Phase Two will require the submittal of a site specific grading and drainage plan which demonstrates compliance with this Plan.

## **TEMPORARY EROSION CONTROL PLAN**

1. Temporary Erosion Control is required to limit the discharge of sediment into the public street and/or storm drainage system and to protect adjacent properties from excess runoff during construction. After the initial site clearing, the temporary erosion control facilities should be constructed to direct excess runoff and sediment to the outfall locations. Earthen erosion control berms or silt fencing should then be placed along the downstream project boundaries to direct runoff to the project outfall.
2. An interim depression is recommended on Phase Two to provide a ponding area for undeveloped runoff from Phase Two. The intent of the depression is to limit the discharge of sediment into the parking lot and detention pond.
3. The Contractor shall obtain a Top Soil Disturbance Permit from Environmental Health prior to performing any earthwork related operations.
4. It is the Contractor's responsibility to properly maintain all temporary erosion control facilities during the construction phase of the project.

① POND INLET RUNDOWN

$$Q_{100} = 14.53 \text{ CFS}$$



$$L = \frac{Q}{CH^{3/2}} = 16.4 \text{ FT}$$

USE  $L = 17'$  MIN

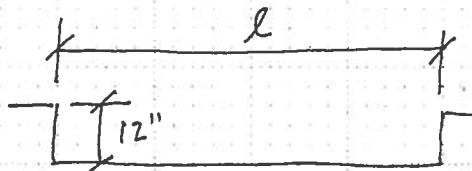
$$Q = CLH^{3/2}$$

$$H = 0.5'$$

$$C = 2.50 \left[ \begin{array}{l} \text{BRATER} \\ \text{KING} \end{array} \right]$$

$$Q = 14.53 \text{ CFS}$$

② EMERGENCY SPILLWAY



$$L = \frac{Q}{CH^{3/2}} = 5.8'$$

USE  $L = 6'$  MIN.

$$Q = CLH^{3/2}$$

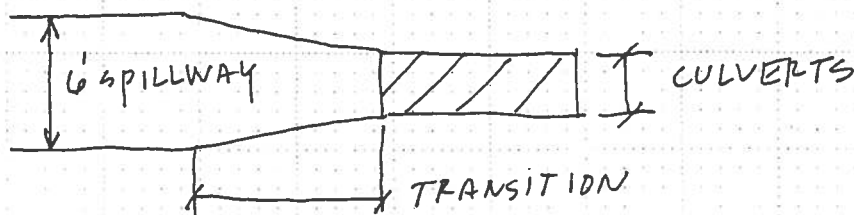
$$H = 1'$$

$$C = 2.5$$

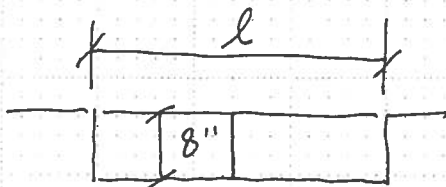
$$Q = 14.53 \text{ CFS}$$

③ SIDEWALK CULVERTS

CHECK FOR CHANNEL FLOW



BY MANNINGS :



ASSUME 2-18" CULVERTS :

MAN-MADE CHANNELS

VARIABLES LIST:

Y - FLOW DEPTH	B - CHANNEL BOTTOM WIDTH	S - CHANNEL SLOPE
Q - FLOWRATE	M - CHANNEL SIDE SLOPE	N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y,Q,B,M,S OR N) ? Y

Q (CFS) ? 14.53  
 B (FT) ? 3  
 M (FT/FT) ? 0  
 S (FT/FT) ? .01  
 N (FT<sup>1/6</sup>) ? .013

RESULTS

Y=	0.70 FT	←
A=	2.09 SF	
P=	4.39 FT	
V=	6.96 FPS	
F=	1.47	

SUPER-CRITICAL FLOW

# POND ROUTING

- ① PER DMP  $Q_{ALLOW}$  FOR LOT 7 = 10.5 CFS  
DEVELOPED PORTION USED 3.36 CFS.

$$Q_{ALLOW} = 10.5 - 3.36 = 7.14 \text{ CFS.}$$

DESIGN POND FOR FULLY DEVELOPED  
SITE { ANTICIPATE PHASE TWO DEV  
AT A=0% ; B=7% , C=8% ; D=85% }

- ② SIZE OUTLET PIPE

$$Q_{ALLOW} = 7.14 \text{ CFS.}$$

$$\text{ASSUME } h_{MAX} = 2.5 \text{ FT}$$

$$Q = CA\sqrt{2gh}$$

$$C = 0.6$$

DIA	AREA (SF)	Q
8"	0.34	2.4
12"	0.79	5.3
15"	1.23	8.1
10"	0.55	3.8

TRY 2-10" PIPES  $Q_{OUT} \approx 7.6 \text{ CFS @ } h = 2.5 \text{ FT}$

## ③ ROUTE RES TABLE

ELEV	AREA(SF)	VOL (AF)	h(FT)	QOUT(CFS)
50.0	2357	0	0	0
51.0	3580	0.06814	0.58	4.03
52.0	5110	0.1679	1.58	6.66
52.5	7294	0.2391	2.08	7.64

PER AHYMO:

$$Q_{OUT} = 6.75 \text{ CFS}$$

$$VOL = 0.1742 \text{ AF} = 7588 \text{ CF}$$

$$MAX \text{ WSE} = 52.04$$

$$VOL \text{ PROVIDED BY DESIGN} =$$

$$10414 \text{ CF @ } 52.50$$