

## DRAINAGE PLAN

THE SUBJECT SITE IS LOCATED JUST NORTH AND WEST OF THE INTERSECTION OF BROADWAY BLVD. AND MOUNTAIN RD. AS SHOWN ON PANEL 332 OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP, A PORTION OF THIS SITE IS WITHIN A DESIGNATED FLOOD HAZARD AREA. THE APPROXIMATE LIMITS OF THIS BOUNDARY ARE SHOWN ON THE SITE PLAN BELOW. THE IMPROVEMENTS TO THE SITE INCLUDE THE CONSTRUCTION OF ADDITIONAL WAREHOUSE SPACE. THE ORIGINAL PROJECT WAS COMPLETED (AND CERTIFIED) IN 1996, FILE J14/D112. THE SITE CURRENTLY ACCEPTS STORM WATER FROM TWO OFFSITE LOCATIONS TO THE NORTH. FIRST, A PORTION OF THE PAVED AREA SHEET FLOWS TO THIS PROPERTY AND SECOND, A ROOF DRAIN ALSO DISCHARGES TO THE SITE. THE PAVED AREA IS INCLUDED IN THE ONSITE CALCULATIONS. THE ROOF DRAIN IS SHOWN AS OFFSITE FLOWS. THE FLOW FROM THE ROOF DRAIN WAS ESTIMATED BY CALCULATING THE TOTAL BUILDING AREA AND THEN DIVIDING BY THE NUMBER OF ROOF DRAINS OBSERVED IN THE FIELD. (3 TOTAL DRAINS - 2 DRAIN TO THE NORTH AND 1 TO THE SUBJECT SITE).

THIS PLAN UTILIZES THE EXISTING PONDING AREA TO CONTROL RUNOFF. AS THE CALCULATIONS SHOW, THE POND HAS AMPLE CAPACITY TO CONTAIN THE 100yr-24hr EVENT AFTER DEVELOPMENT. FURTHER, THE EXISTING PUMP SYSTEM IS CAPABLE OF EVACUATING THE POND IN APPROX. 18 HOURS. SEE FILE J14/D112 FOR PUMP SYSTEM DETAILS.

THE EXISTING TOPOGRAPHY WAS PREPARED FROM A SURVEY PERFORMED IN APRIL 1996 BY RIO GRANDE SURVEYING. A RECENT FIELD REVIEW BY THIS OFFICE REVEALED THAT ALL THE INFORMATION SHOWN HEREON IS CONSISTENT WITH THE ACTUAL FIELD CONDITIONS.

## BENCH MARK

CITY OF ALBUQUERQUE CONTROL STATION 13-J14. A SQUARE CHISEL CUT ON TOP OF THE NNE CURB RETURN AT THE INTERSECTION OF ODELIA AND BROADWAY. ELEVATION = 4960.17

## GENERAL LEGEND

EXISTING CONTOUR	61
PROPOSED CONTOUR	61
PROPOSED SPOT ELEVATION	56.4
FLOWLINE	
FLOW DIRECTION ARROW	
PROPOSED CONCRETE	
TOP OF CURB ELEVATION	TC
TOP OF SIDEWALK ELEVATION	TSW
FLOWLINE ELEVATION	FL
TOP OF ASPHALT	TA
EXISTING SPOT ELEVATION	x 73.07
RECORD DRAWING ELEV	x 58.29

## CALCULATIONS

THE FOLLOWING CALCULATIONS WERE DEVELOPED USING THE CITY OF ALBUQUERQUE DPM SECTION 22.2

THE SUBJECT PARCEL IS 4.53 AC. IN TOTAL. THERE EXISTS A PAVED AREA OF 0.20 AC. TO THE NORTH THAT DRAINS TO THIS SITE. FOR SIMPLICITY THESE CALCULATIONS SHOW THIS AREA AS ONSITE WATERS. ADDITIONALLY, THERE EXISTS A ROOF DRAIN FROM THE BUILDING TO THE NORTH THAT DRAINS TO THIS PROPERTY. THIS ADDED FLOW IS SHOWN AS OFFSITE WATERS IN THE FOLLOWING CALCULATIONS. SEE DRAINAGE PLAN FOR FURTHER DISCUSSION OF THIS CONDITION.

SITE CHARACTERISTICS:  
SITE LOCATION: ZONE 2  
PRECIPITATION: P = 2.35 inches

LAND TREATMENT:  
UNCOMPACTED SOIL - TREATMENT A  
LANDSCAPE - TREATMENT B  
COMPACTED SOIL - TREATMENT C  
BUILDINGS & PAVING - TREATMENT D

EXCESS PRECIPITATION:  
TREATMENT A E = 0.53 inches  
TREATMENT B E = 0.78 inches  
TREATMENT C E = 1.13 inches  
TREATMENT D E = 2.12 inches

PEAK DISCHARGE:  
TREATMENT A = 1.56 cfs/acre  
TREATMENT B = 2.28 cfs/acre  
TREATMENT C = 3.14 cfs/acre  
TREATMENT D = 4.70 cfs/acre

## GENERAL NOTES

- PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS POSSIBLE TO RESOLVE THE CONFLICT WITH A MINIMUM AMOUNT OF DELAY.
- ALL WORK ON THIS PLAN SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
- IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE LOCATION ONLY, AND LINES MAY EXIST WHERE NONE ARE SHOWN. THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE UTILITY OWNER OR FROM EXISTING PLANS, AND THIS INFORMATION MAY BE INCOMPLETE, OR OBSOLETE AT THE TIME OF CONSTRUCTION. THE ENGINEER HAS NOT UNDERTAKEN ANY FIELD VERIFICATION OF THESE LOCATIONS, LINE SIZES OR MATERIAL TYPE. MAKES NO REPRESENTATION THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE OR UNDERGROUND INSTALLATION IN OR NEAR THE AREA IN ADVANCE OF AND DURING ANY EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES AND UNDERGROUND FACILITIES. IN PLANNING AND CONDUCTING EXCAVATIONS, THE CONTRACTOR SHALL COMPLY WITH ALL STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
- THE CONTRACTOR SHALL INSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHTS-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND BY WETTING THE SOIL TO KEEP IT FROM BLOWING.
- THE CONTRACTOR SHALL OBTAIN ANY AND ALL PERMITS REQUIRED BY CITY OF ALBUQUERQUE FOR THE COMPLETION OF THE WORK PRIOR TO BEGINNING CONSTRUCTION.

	EXISTING	PROPOSED
TOTAL AREA	= 4.73 AC.	
TREATMENT A	= 0.00 AC. = 0.0%	0.00 AC. = 0.0%
TREATMENT B	= 0.14 AC. = 0.0%	0.14 AC. = 3.0%
TREATMENT C	= 2.88 AC. = 60.9%	2.71 AC. = 57.3%
TREATMENT D	= 1.71 AC. = 36.1%	1.88 AC. = 39.7%

ONSITE - EXCESS PRECIPITATION & VOLUMETRIC RUNOFF:

EXISTING RUNOFF:  
WEIGHTED E =  $[(0.53)(0.00) + (0.78)(0.14) + (1.13)(2.88) + (2.12)(1.71)] / 4.73$   
= 1.48 inches  
V100-6hr =  $(1.48)(4.73) / 12 = 0.5834$  acre ft = 25,420 cf

DEVELOPED RUNOFF:  
WEIGHTED E =  $[(0.53)(0.00) + (0.78)(0.14) + (1.13)(2.71) + (2.12)(1.88)] / 4.73$   
= 1.51 inches  
V100-6hr =  $(1.51)(4.73) / 12 = 0.5964$  acre ft = 25,980 cf

ONSITE - PEAK DISCHARGE:  
EXISTING DISCHARGE:  
Q100 =  $(1.56)(0.00) + (2.28)(0.14) + (3.14)(2.88) + (4.70)(1.71) = 17.4$  cfs  
DEVELOPED DISCHARGE:  
Q100 =  $(1.56)(0.00) + (2.28)(0.14) + (3.14)(2.71) + (4.70)(1.88) = 17.7$  cfs

RESULTS:  
DEVELOPED VOLUMETRIC RUNOFF:  
25,980 - 22,420 = 3560 cf INCREASE IN RUNOFF VOLUME  
DEVELOPED PEAK DISCHARGE:  
17.7 - 17.4 = 0.3 cfs INCREASE IN PEAK DISCHARGE

OFFSITE - ROOF DRAIN FROM NORTH BLDG.  
OFFSITE - PEAK DISCHARGE:  
Q100 =  $(4.70)(1.07) = 5.0$  cfs - 5.0/3 = 1.7 cfs  
OFFSITE - EXCESS PRECIPITATION & VOLUMETRIC RUNOFF:  
V100-6hr =  $(2.12)(1.07) = 0.189$  - 0.189/3 = 0.063 acre-ft = 2,750 cf

DETENTION PONDING REQUIREMENTS:  
ONSITE  
V100-24hr =  $0.5964 + (1.88)(2.75-2.35) / 12 = 0.6591$  acre-ft  
OFFSITE  
V100-24hr =  $0.189 + (1.07)(2.75-2.35) / 12 = 0.2247 / 3 = 0.0749$  acre-ft  
TOTAL POND REQUIRED = 0.6591 + 0.0749 = 0.7340 acre-ft = 31,970 cf

## LEGAL DESCRIPTION

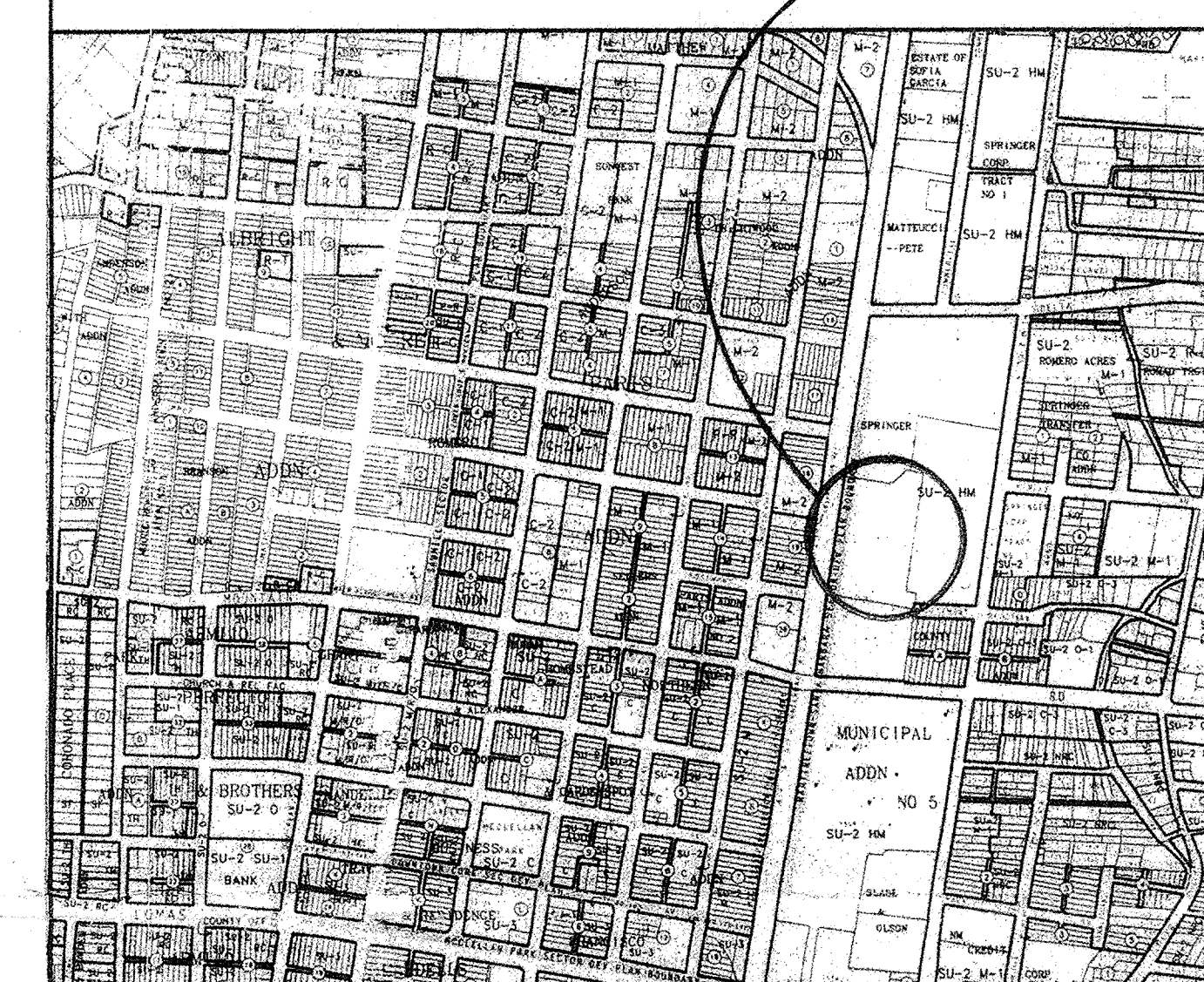
PARCEL A-1-A-1 LANDS OF SPRINGER CORPORATION LYING SITUATE WITHIN SECTION 17, T.10 N., R. 3 E., N.M.P.M. BERNALILLO COUNTY, NEW MEXICO. FILED OCTOBER 11, 1991 AT THE OFFICE OF THE COUNTY CLERK, BERNALILLO COUNTY, NEW MEXICO.

THIS SITE IS IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED GRADING AND DRAINAGE PLAN WITH ENGINEERS SEAL DATED 3/30/98 (WITH THE REVISIONS AS REFLECTED IN THE RECORD DRAWING ELEVATIONS SHOWN HEREON). THE SITE DRAINAGE WILL FUNCTION AS ORIGINALLY PROPOSED.



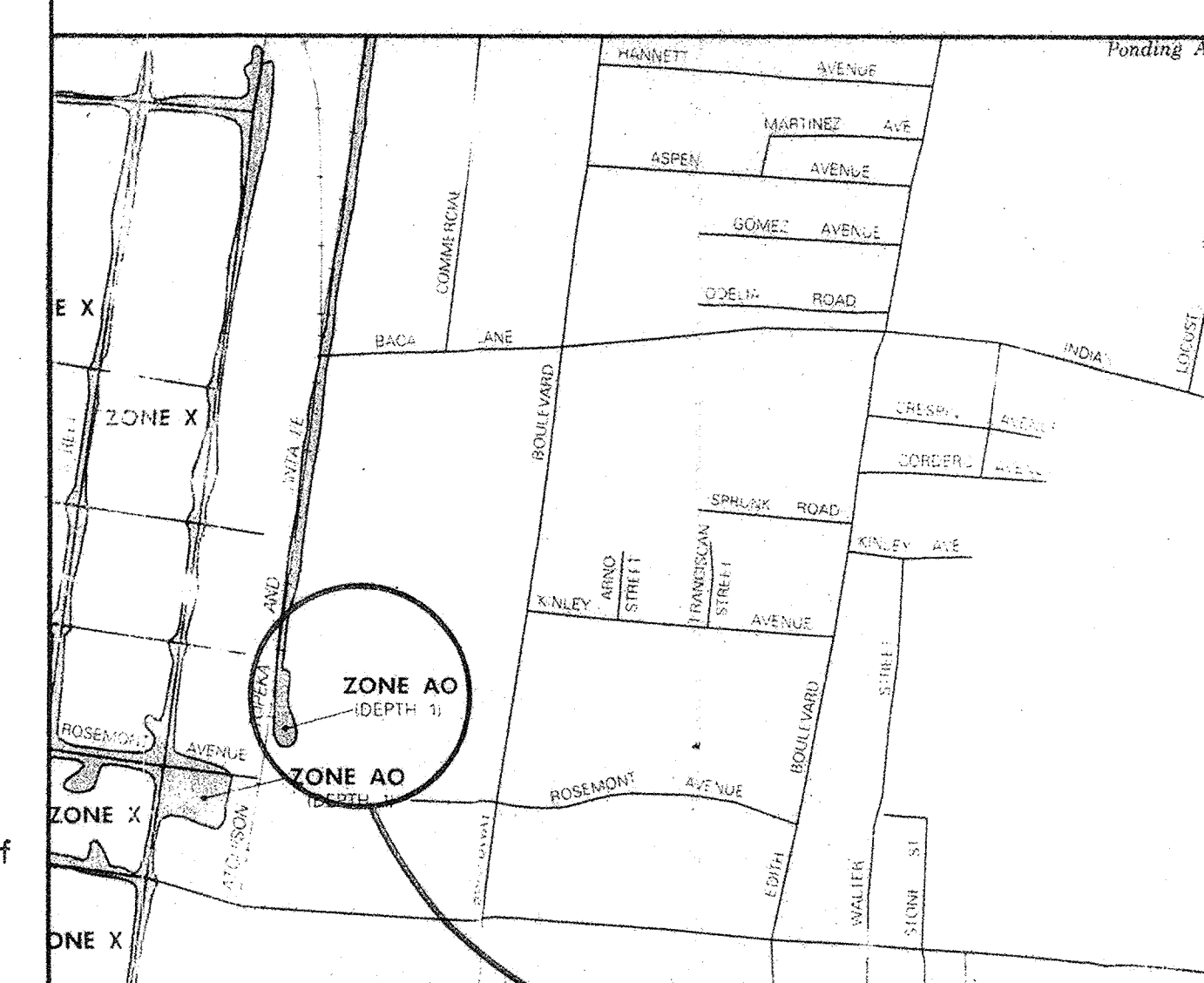
LOCATION MAP

PROJECT LOCATION



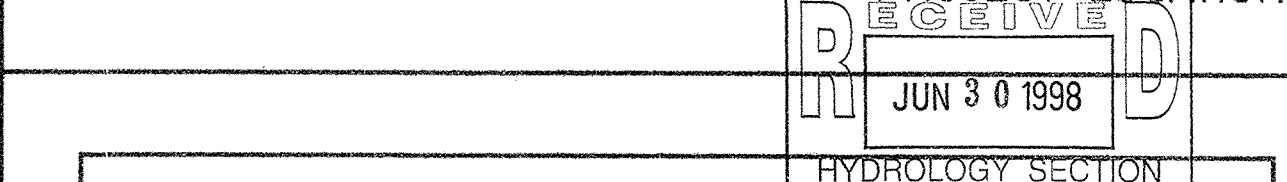
ZONE MAP

J-14



F.I.R.M.

PROJECT LOCATION



ALBUQUERQUE MAIL SERVICE			
GRADING AND DRAINAGE PLAN			
KEMPER-VAUGHAN			
CONSULTING ENGINEERS			
3700 COORS RD. N.W.	ALBUQUERQUE, NEW MEXICO 87120	(505) 831-4520	
Designed KRK	Drawn KRK	Checked KRK	Sheet 1 of 1
File ALB-MAIL ADDITION	Date MARCH 1998		

