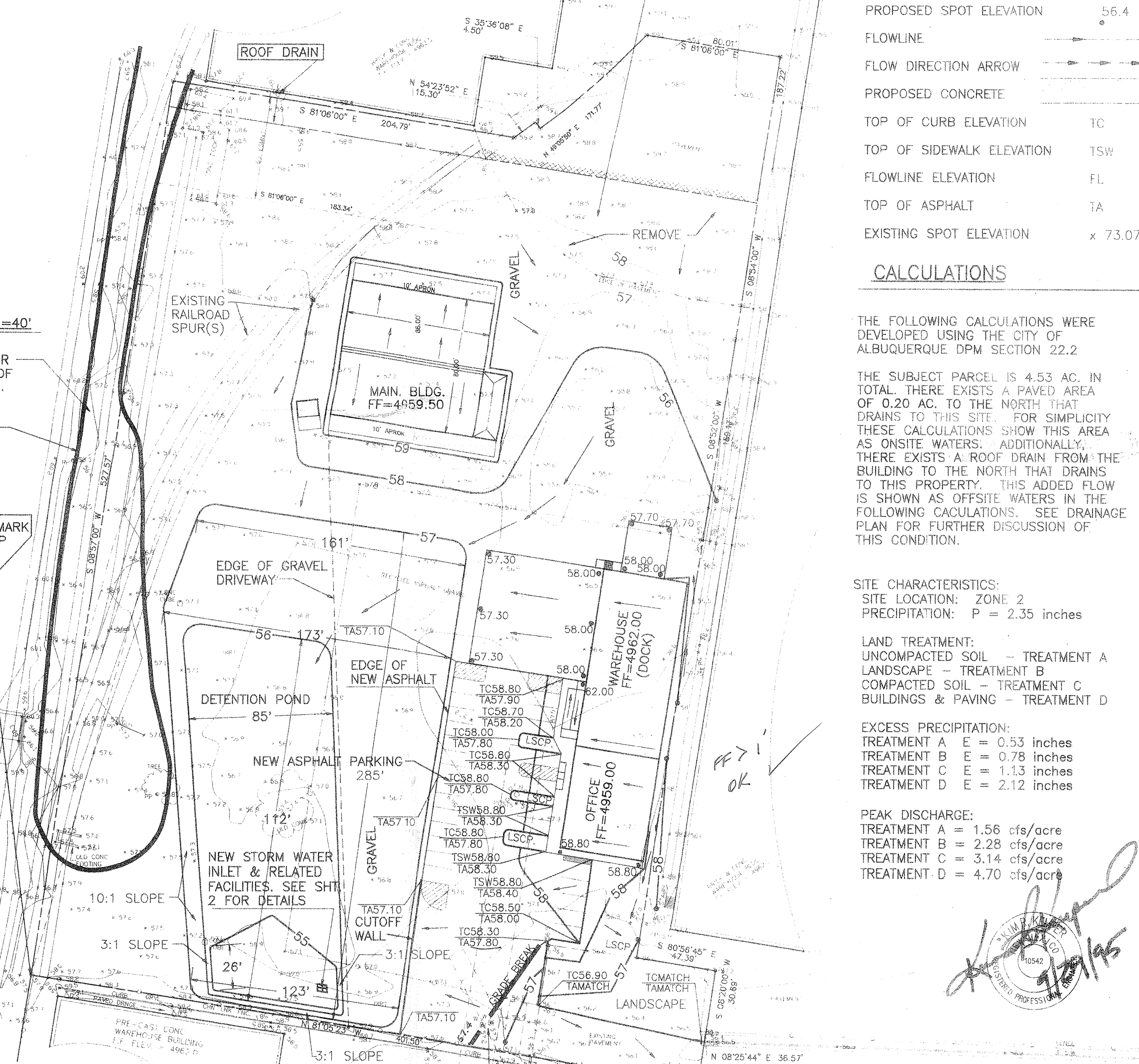
DRAINAGE PLAN

THE SUBJECT SITE IS LOCATED JUST NORTH AND WEST OF THE INTERSECTION OF BROADWAY BLVD. AND MOUNTAIN RD. AS SHOWN ON PANEL 28 OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD BOUNDARY AND FLOODWAY 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 OFFICE SPACE, WAREHOUSE SPACE, AND A VEHICLE MAINTAINANCE BLDG. THE SITE CURRENTLY ACCEPTS STORM WATER FROM TWO LOCATION TO THE NORTH. FIRST, A PORTION OF THE PAVED AREA SHEET FLOWS TO THIS PROPERTY AND 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 DRAINAGE PLAN INCLUDES THE DETENTION OF STORM WATERS WITH A INLET AND PUMP TO DISCHARGE RUNOFF TO THE EXISTING STORM SEWER SYSTEM IN ROSEMONT AND BROADWAY. THE VOLUME DETAINED IS WELL IN EXCESS OF THE 100–YR, 24–HR RUNOFF VOLUME. SEE SHEET 2 OF 2 FOR PUMP SYSTEM AND DISCHARGE DETAILS.

THE EXISTING TOPOGRAPHY WAS PREPARED FROM A SURVEY PERFORMED IN AUGUST 1995 BY RIO GRANDE SURVEYING. A SUBSEQUENT FIELD REVIEW BY THIS OFFICE REVEALED THAT ALL THE INFORMATION SHOWN HEREON IS CONSISTANT WITH THE ACTUAL FIELD CONDITIONS.



DETENTION POND
POND BOTTOM ELEVATION = 4955.0, AREA WITHIN 55 CONTOUR = 2,780 SF
AREA WITHIN 56 CONTOUR = 17,400 SF., 57 CONTOUR AREA = 43,000 SF
VOLUME OF STORAGE AT WATER SURFACE ELEV. = 56.0 – APPROX 10,100 CF
VOLUME OF STORAGE AT WATER SURFACE ELEV. = 57.0 – APPROX 40,300 CF
WATER SURFACE ELEVATION AT DESIGN STORM – APPROX 4956.75
AT ELEV. 4957.4 POND WILL BREACH OVER NEW ASPHALT AND SURFACE FLOW TO EXISTING STORM SEWER FACILITIES.

ADJUST VALVE BOXES AS REQ'D TO MATCH NEW ASPHALT ELEV.

ROSEMONT AVENUE N.E.

BROADWAY STREET N.E.

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

GENERAL NOTES

1. 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.
2. 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.
3. 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.
4. 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.
5. THE CONTRACTOR SHALL OBTAIN ANY AND ALL PERMITS REQUIRED BY CITY OF ALBUQUERQUE FOR THE COMPLETION OF THE WORK PRIOR TO BEGINNING CONSTRUCTION.

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 CACULATIONS. 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

	EXISTING		PROPOSED	
TOTAL AREA	= 4.73 AC.			
TREATMENT A	= 0.00 AC. =	0.0%	0.00 AC. =	0.0%
TREATMENT B	= 0.00 AC. =	0.0%	0.14 AC. =	3.0%
TREATMENT C	= 3.96 AC. =	83.7%	2.88 AC. =	60.9%
TREATMENT D	= 0.77 AC. =	16.3%	1.71 AC. =	36.1%

ONSITE – EXCESS PRECIPITATION & VOLUMETRIC RUNOFF:
EXISTING RUNOFF:
WEIGHTED E=[(0.53)(0.00)+(0.78)(0.00)+(1.13)(3.96)+(2.12)(0.77)]/4.73
= 1.29 inches
V100–6hr = (1.29)(4.73)/12 = 0.5085 acre ft = 22,150 cf

DEVELOPED 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

ONSITE – PEAK DISCHARGE:
EXISTING DISCHARGE:
Q100 = (1.56)(0.00)+(2.28)(0.00)+(3.14)(3.96)+(4.70)(0.77) = 16.1 cfs
DEVELOPED DISCHARGE:
Q100 = (1.56)(0.00)+(2.28)(0.14)+(3.14)(2.88)+(4.70)(1.71) = 17.4 cfs

RESULTS:
DEVELOPED VOLUMETRIC RUNOFF:
25,420 – 22,150 = 3,270 cf INCREASE IN RUNOFF VOLUME
DEVELOPED PEAK DISCHARGE:
17.4 – 16.1 = 1.3 cfs INCREASE IN PEAK DISCHARGE

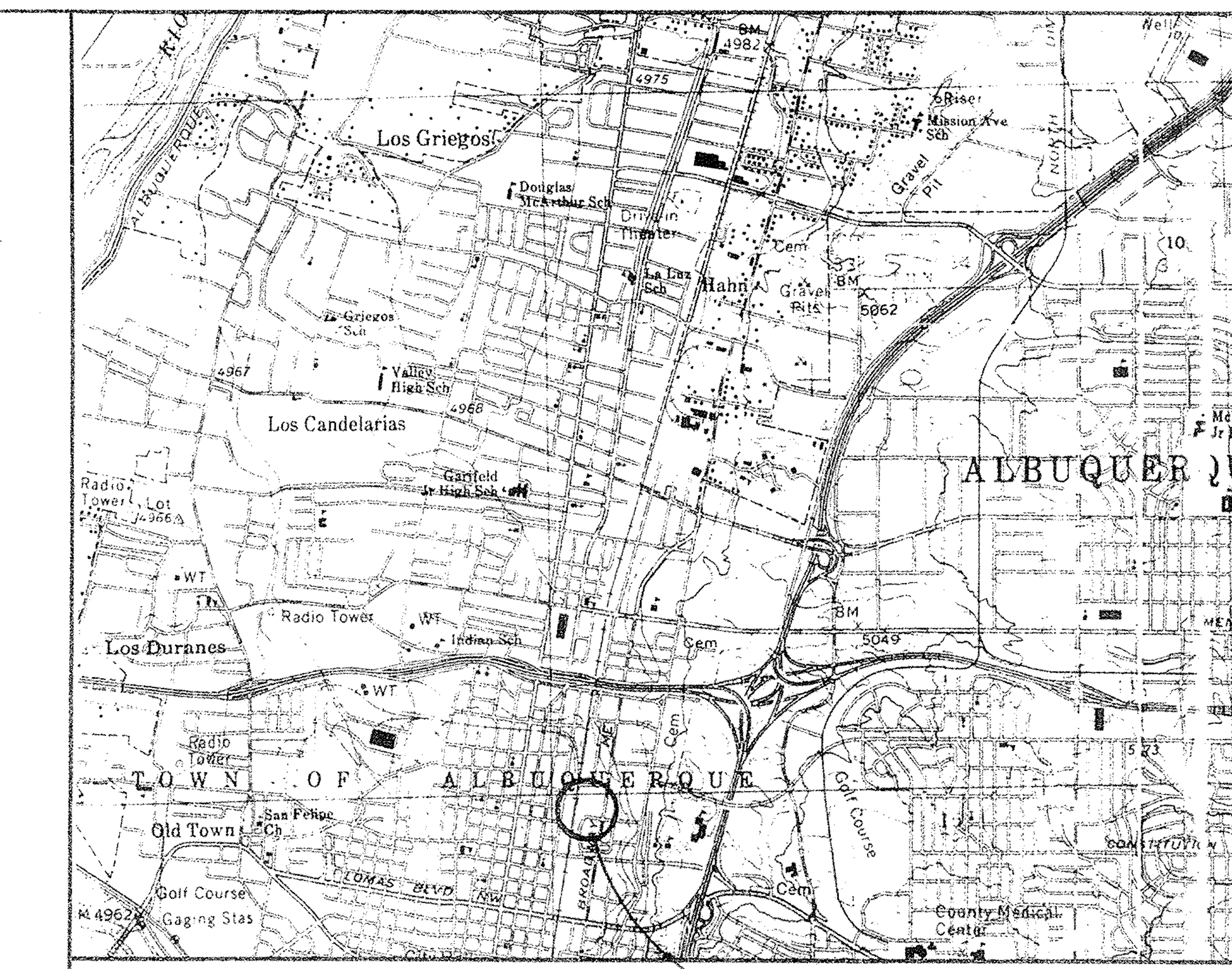
OFFSITE – ROOF DRAIN FROM NORTH BLDG.
OFFSITE – PEAK DISCHARGE:
Q100 = (4.70)(1.07) = 5.0 cfs – 5.0/3 = 1.7 cfs
OFFSITE – EXCESS PRECIPITATION & VOLUMETRIC RUNOFF:
V100–6hr = (2.12)(1.07) = 0.189 – 0.189/3 = 0.063 acre–ft = 2,750 cf
DETENTION PONDING REQUIREMENTS:
ONSITE
V100–24hr = 0.5834 + (1.71)(2.75–2.35)/12 = 0.6404 acre–ft
OFFSITE
V100–24hr = 0.189 + (1.07)(2.75–2.35)/12 = 0.2247/3 = 0.0749 acre–ft
TOTAL POND REQUIRED = 0.6404 + 0.0749 = 0.7153 acre–ft = 31,160 cf

KIMR KEMPER NEW MEXICO 10542 REGISTERED PROFESSIONAL ENGINEER
9/29/95

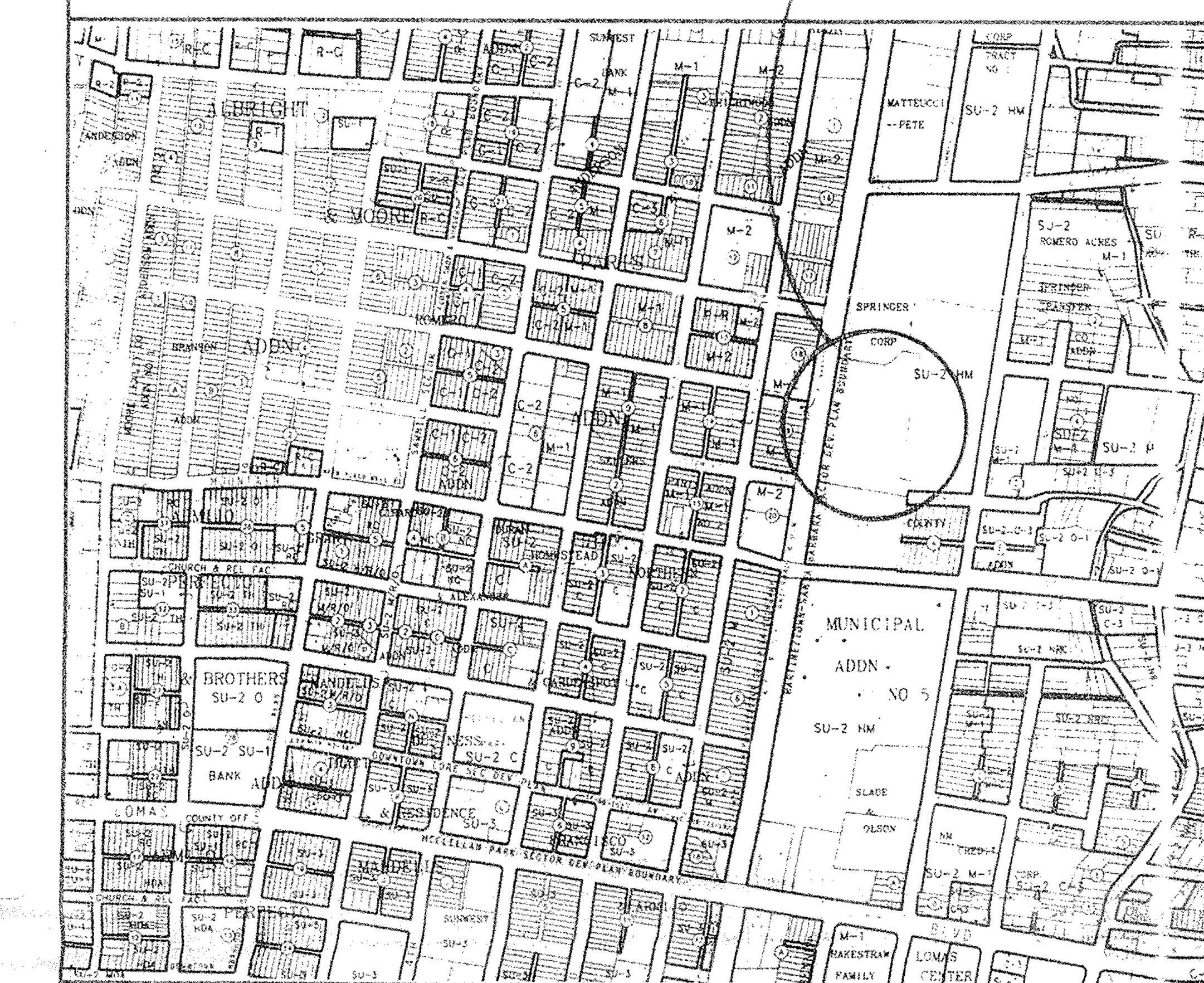
LEGAL DESCRIPTION

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.

OCT - 3 1995



LOCATION MAP — PROJECT LOCATION



ZONE MAP J–14

FLOOD BOUNDARY MAP — PROJECT LOCATION
Zone AO Depth 1

ALBUQUERQUE M
GRADING AND DR

KEMPER–V
CONSULTING ENGI
3700 COORS RD. N.W. • ALBUQUERQUE, NEW M

Designed	KRK	Drawn	SE	Checked	
File	DURABILT\AMS–DR1	Date	SEPTEMBER		

– refueling islands? NONE
– detention basin – oil separator? NONE
– Can outlet pipe be core drilled through curb instead of going over curb? for repair purposes will leave as proposed