

CALCULATIONS

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

SITE CHARACTERISTICS

SITE LOCATION: ZONE 2
PRECIPITATION: P1440 = 2.75 inches
P360 = 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	= 1.00 AC.	
TREATMENT A	= 1.00 AC. = 100.0%	0.00 AC. = 0.0%
TREATMENT B	= 0.00 AC. = 0.0%	0.17 AC. = 17.0%
TREATMENT C	= 0.00 AC. = 0.0%	0.06 AC. = 6.0%
TREATMENT D	= 0.00 AC. = 0.0%	0.77 AC. = 77.0%

ONSITE - EXCESS PRECIPITATION & VOLUMETRIC RUNOFF

EXISTING RUNOFF

V100-6hr = $(0.53)(1.00)/12 = 0.044$ acre ft = 1,920 cf

DEVELOPED RUNOFF

WEIGHTED E = $[(0.53)(0.00) + (0.78)(0.17) + (1.13)(0.06) + (2.12)(0.77)]/1.00$
= 1.83 inches

V100-6hr = $(1.83)(1.00)/12 = 0.152$ acre ft = 6,620 cf

V100-24hr = $0.152 + 0.77(2.75 - 2.35)/12 = 0.177$ acre ft = 7,710 cf

ONSITE - PEAK DISCHARGE

EXISTING DISCHARGE

Q100 = $(1.56)(1.00) = 1.56$ cfs

DEVELOPED DISCHARGE

Q100 = $(1.56)(0.00) + (2.28)(0.17) + (3.14)(0.06) + (4.70)(0.77) = 4.20$ cfs

RESULTS

DEVELOPED VOLUMETRIC RUNOFF

6,620 - 1,920 = 4,700 cf INCREASE IN RUNOFF VOLUME

DEVELOPED PEAK DISCHARGE

4.20 - 1.56 = 2.64 cfs INCREASE IN PEAK DISCHARGE

OFFSITE CONDITIONS: ALTHOUGH THE SUBDIVISION DRAINAGE PLAN PROVIDES FOR THE ELIMINATION OF "LOT TO LOT" FLOW, DUE TO THE UNDEVELOPED CONDITION OF THE 1.0 ACRE SITE EAST OF THE SUBJECT PARCEL, THIS FLOW WILL BE CONSIDERED IN THIS PLAN. IT IS NOTED THAT DEVELOPMENT PLANS FOR THE 1.5 ACRE PARCEL AT THE FAR EASTERN PORTION OF THE SUBDIVISION ARE CURRENTLY BEING COMPLETED.

OFFSITE - EXCESS PRECIPITATION & VOLUMETRIC RUNOFF

DEVELOPED RUNOFF

WEIGHTED E = $[(0.53)(0.87) + (0.78)(0.00) + (1.13)(0.00) + (2.12)(0.13)]/1.00$
= 0.74 inches

V100-6hr = $(0.74)(1.00)/12 = 0.061$ acre ft = 2,670 cf

V100-24hr = $0.064 + 0.13(2.75 - 2.35)/12 = 0.065$ acre ft = 2,850 cf

TOTAL V100-24hr RETENTION = 7,710 + 2,850 = 10,560 cf

POND CALCULATIONS

TOTAL DETENTION POND VOLUME AT ELEV 73.0 = 3,320± cf

TOTAL DETENTION POND VOLUME AT ELEV 73.6 = 11,100± cf

TOTAL DETENTION POND VOLUME AT ELEV 73.8 = 13,700± cf (BREACH)

DRAINAGE PLAN

THIS SITE IS LOCATED ON SECOND STREET NW BETWEEN MONTANO AND GRIEGOS. THIS PARCEL IS PART OF A RECENT SUBDIVISION AND AS SUCH IS GOVERNED BY THE PROVISIONS INCLUDED IN THE SUBDIVISION DRAINAGE PLAN, FILE F15-D3. SPECIFICALLY, THE SUBDIVISION PLAN CALLS FOR THE DETENTION OF THE 100yr-24hr EVENT WITH A PUMP DISCHARGE TO SECOND STREET. THIS PLAN COMPLIES WITH ALL CONDITIONS SET FORTH IN THE APPROVED SUBDIVISION PLAN FOR THE DEVELOPMENT OF EACH LOT.

THIS PLAN INCLUDES THE PROVISION OF OFFSITE FLOWS FROM THE ADJACENT PARCEL TO THE EAST. IT IS EXPECTED THAT ONCE DEVELOPMENT OF THAT PARCEL OCCURS, IN ACCORDANCE WITH THE SUBDIVISION PLAN, STORM WATERS WILL NO LONGER ENTER THE SUBJECT SITE.

THE EXISTING SURVEY INFORMATION SHOWN HEREON WAS PREPARED FROM A FIELD SURVEY DONE BY RIO GRANDE SURVEY CO., INC., IN JANUARY 1998. A SUBSEQUENT FIELD REVIEW BY THIS OFFICE REVEALED THAT ALL THE INFORMATION SHOWN IS CONSISTENT WITH THE ACTUAL CONDITIONS THAT EXIST IN THE FIELD.

LEGAL DESCRIPTION

LOT C-5 LAND OF MEL SANCHEZ AND LATH & PLASTER SUPPLY CO., INC. AS SHOWN ON THE PLAT FILED AT THE OFFICE OF THE COUNTY CLERK, BERNALILLO COUNTY, NEW MEXICO ON JUNE 12, 1998 BK. 98C PAGE 163.

GENERAL LEGEND

EXISTING CONTOUR

PROPOSED CONTOUR

EXISTING SPOT ELEVATION x 48.55

PROPOSED SPOT ELEVATION 56.4

FLOWLINE

FLOW DIRECTION ARROW

PROPOSED CONCRETE

TOP OF CURB ELEVATION TC

FLOWLINE ELEVATION FL

TOP OF ASPHALT TA

POWER POLE PP

ROOF DRAIN/DOWN SPOUT DS

APPROX. WATER SURFACE LOCATION AT THE 100yr-24hr EVENT (73.55±)

6" BARRIER CURB (TYP.)

INSTALL NEW PUMP INLET STRUCTURE AT CORNER OF NEW CURBING. SEE DETAILS THIS SHEET.

CONNECT DISCHARGE LINE TO EXISTING PIPE WITHIN DRAINAGE EASEMENT.

EXISTING STORM WATER DISCHARGE PIPE

6" CONC. WALL BASE OF WALL = 74.0

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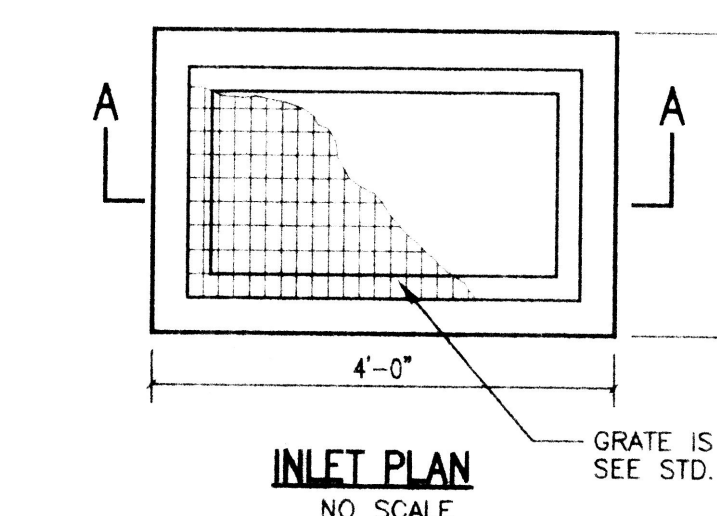
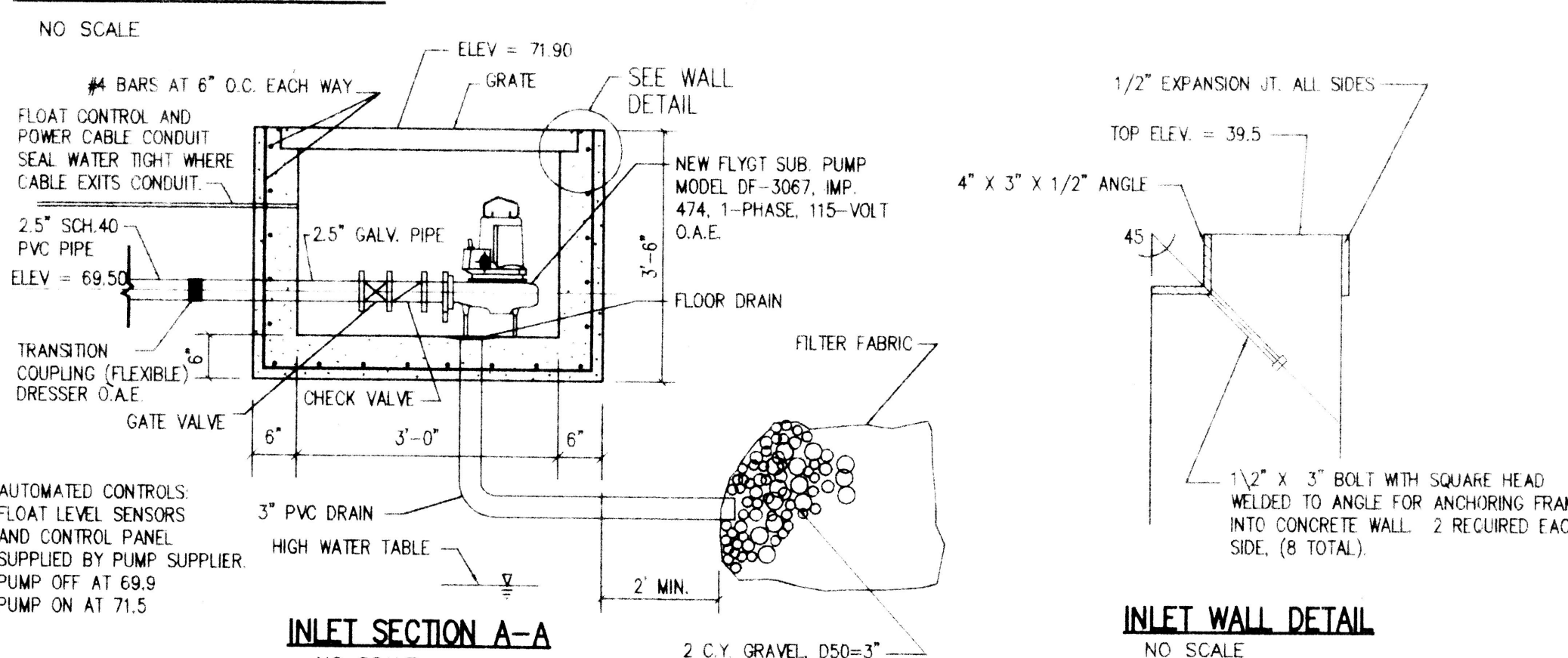
6" CONC. WALL BASE OF WALL = 74.0

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 THEREON, 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 THE CITY OF ALB. FOR THE COMPLETION OF THE WORK PRIOR TO BEGINNING CONSTRUCTION.

PROPOSED SITE IMPROVEMENTS

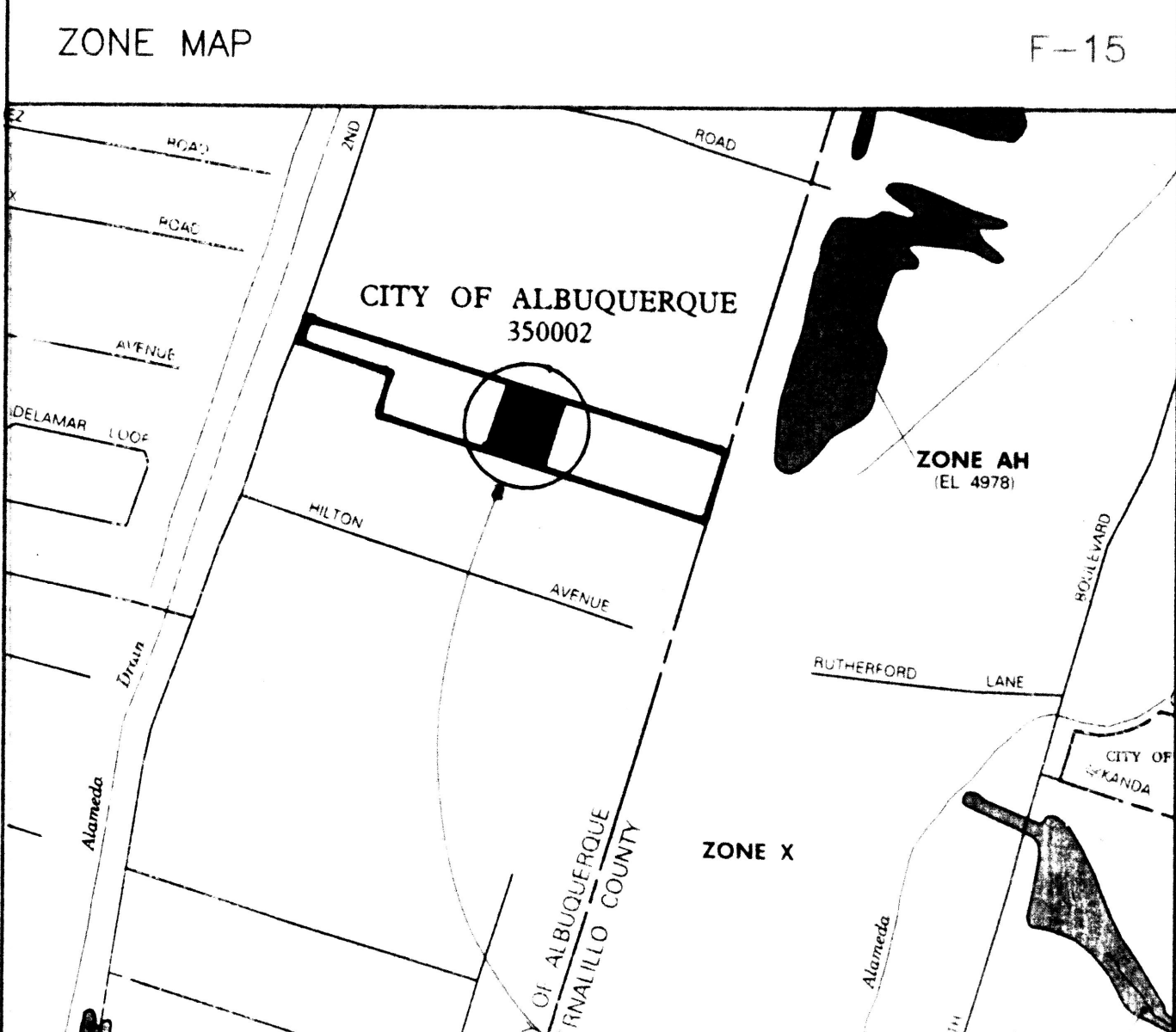
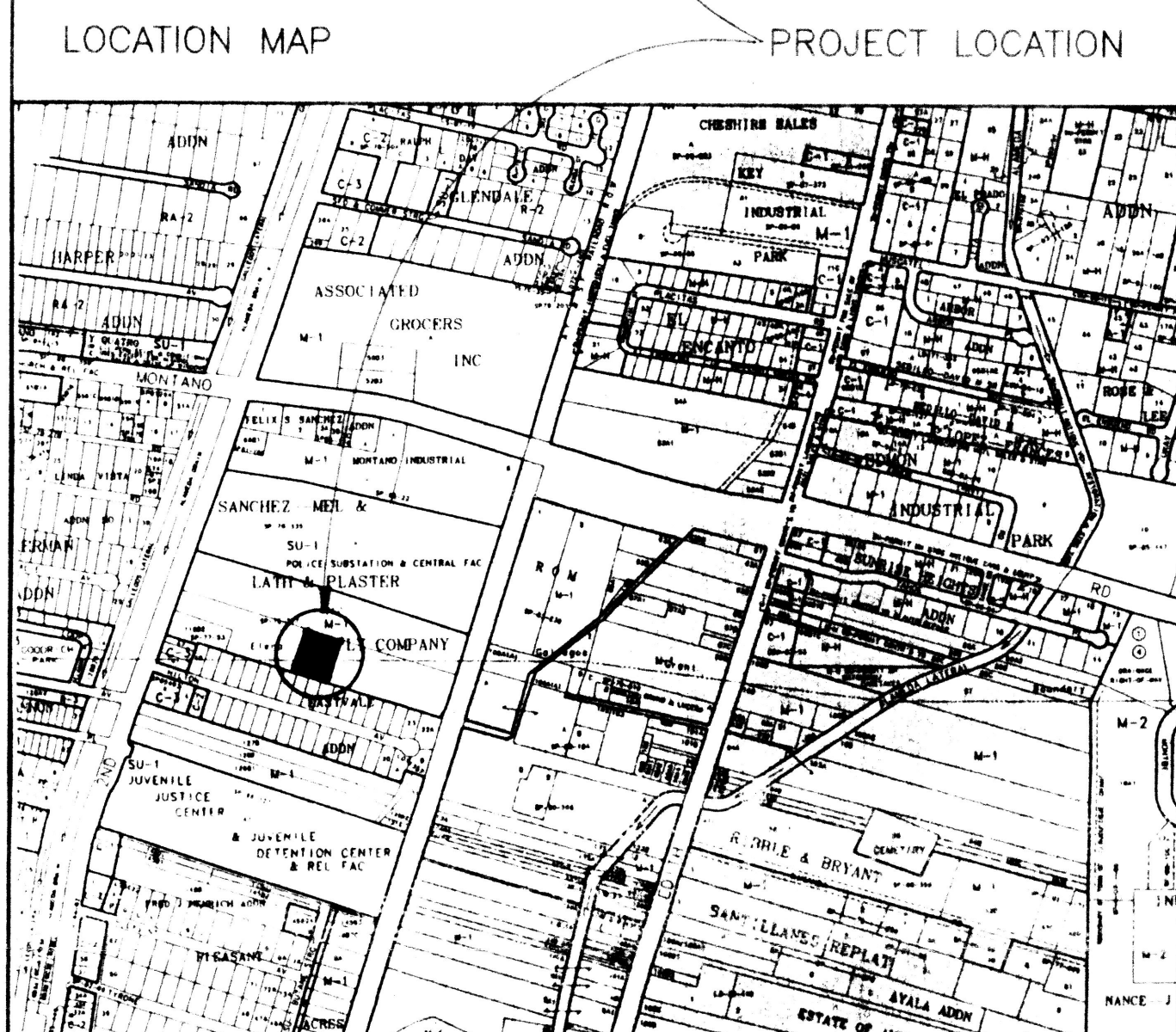
PUMP INLET



PUMP DATA:
STATIC LIFT: 0 FT. TO 2.2 FT. (POND LEVEL VARIATION)
TOTAL EQUIVALENT FEET OF DISCHARGE PIPE = 664'
DISCHARGE RATE = 60 gpm (EVACUATION IN 21.0± hrs)
SYSTEM HEAD LOSS = 17.0'
TOTAL DYNAMIC LOSS = 17.0' TO 19.2'
PUMP SELECTION TO OPERATE BETWEEN 60 gpm AND 65 gpm (APPROX)

BENCH MARK

A.C.S. STA. "NM47-8", A NMSHD BRASS CAP LOCATED IN THE MEDIAN OF SECOND STREET NW NORTH OF MONTANO ROAD AT SECOND STREET.
ELEVATION = 4974.639



OCT 14 1998	
HYDROLOGY SECTION	
NOEL COMPANY, INC	
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 NOEL G&D	Date OCTOBER 12, 1998