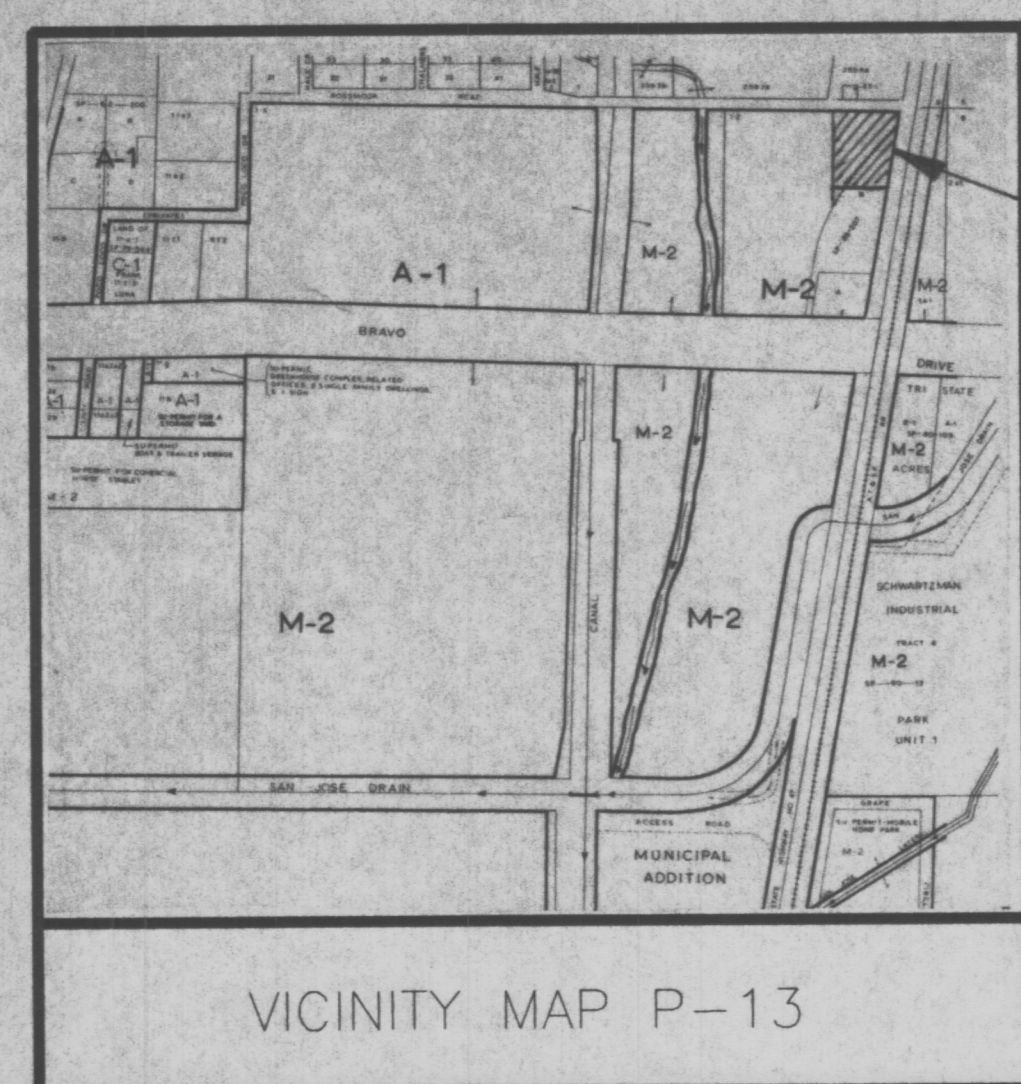


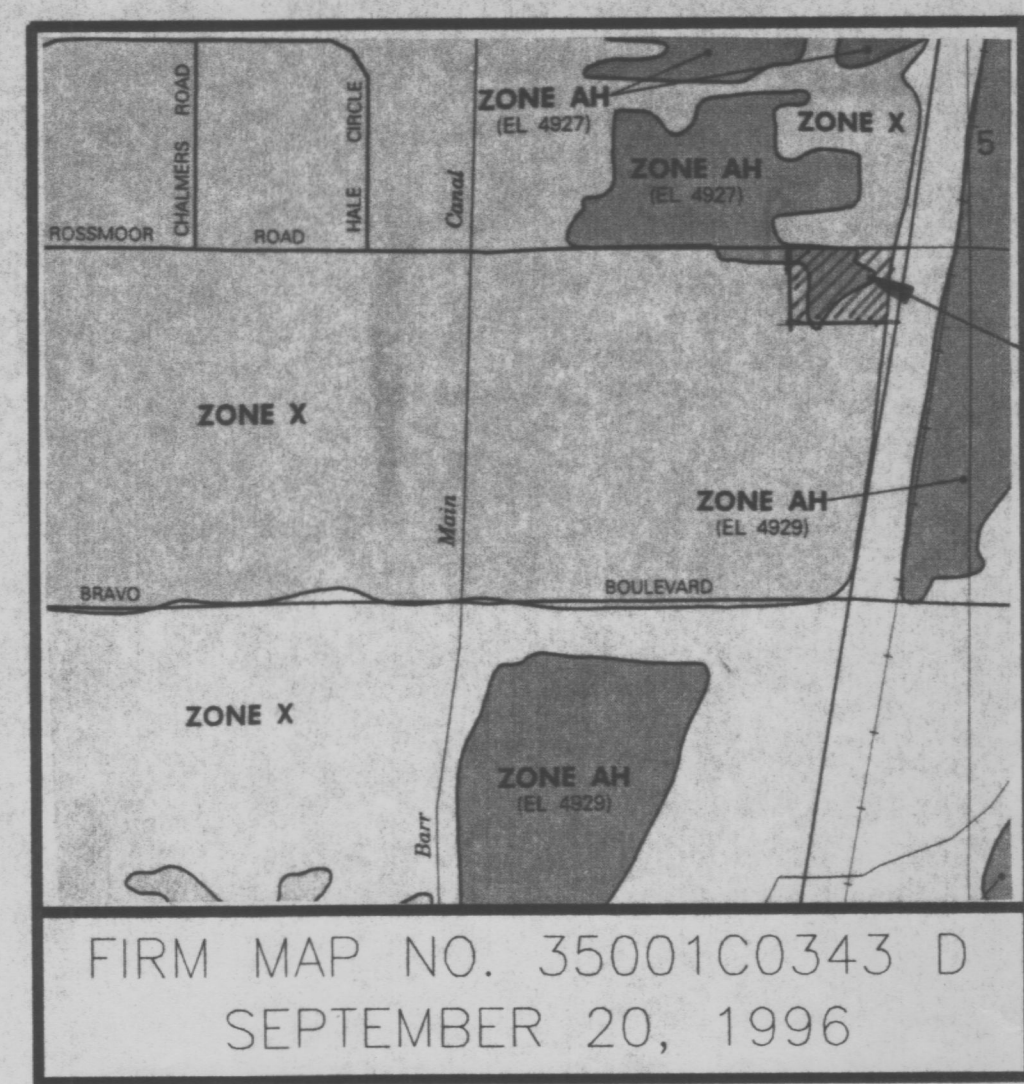
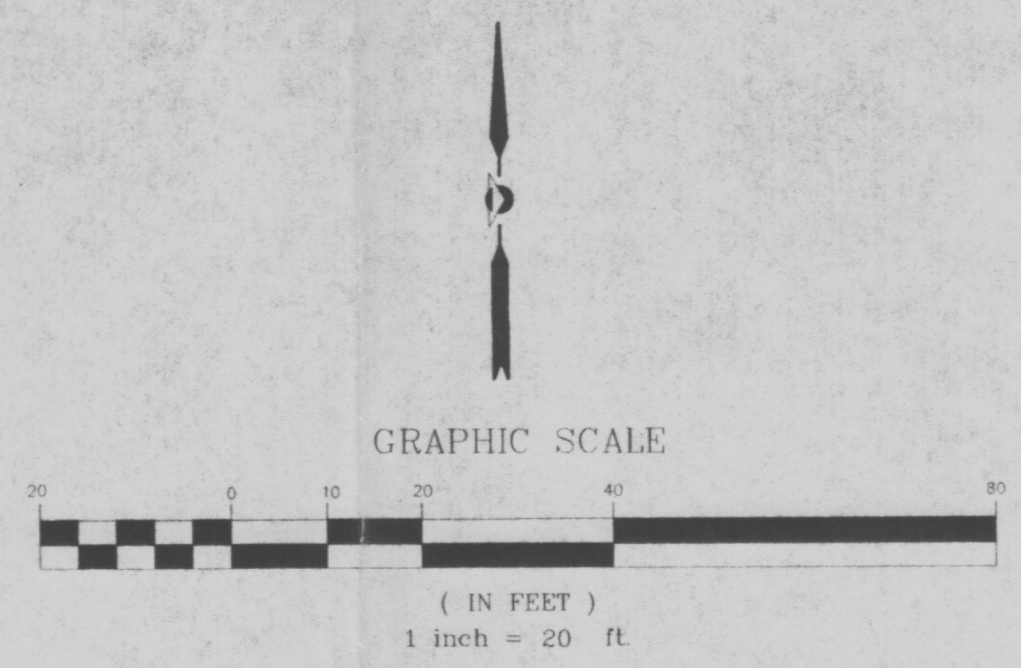
# DRAINAGE AND GRADING PLAN <sup>3601</sup> ~~821~~ Second street SW

## FOR

### TRACT B-1-A, LANDS OF JOSEPH GREVEY



PROJECT LOCATION



PROJECT LOCATION

**DRAINAGE PLAN**  
THE FOLLOWING ITEMS CONCERNING TRACT B-1-A, LANDS OF JOSEPH GREVEY, WITHIN SECTION 7, T 9 N, R 3 E, NMPM, BERNALILLO COUNTY, GRADING AND DRAINAGE PLAN ARE CONTAINED HEREON:

1. VICINITY MAP
2. GRADING AND DRAINAGE PLAN
3. FLOODMAP
4. DRAINAGE CALCULATIONS

**EXISTING CONDITIONS**  
AS SHOWN BY THE VICINITY MAP, THE SITE CONTAINS APPROXIMATELY 1.19 ACRES AND IS LOCATED AT THE SOUTHWEST CORNER OF SECOND STREET SW AND ROSSMOOR ROAD SW. THE SITE CURRENTLY IS UNDEVELOPED. THE SITE TOPOGRAPHY SLOPES FROM A EAST TO WEST DIRECTION. THE SITE IS SPARSELY COVERED WITH MINIMAL NATIVE VEGETATION.

THERE IS CURRENTLY NO MASTER DRAINAGE PLAN FOR THIS AREA OF THE SOUTH VALLEY. ACCORDING TO THE FLOOD INSURANCE RATE MAP, PANEL 35001C0343 D, DATED SEPTEMBER 20, 1996, A PORTION OF THIS SITE LIES IN A 100-YEAR FLOODPLAIN DESIGNATED ZONE AH (ELEVATION 4927).

**PROPOSED CONDITIONS**  
AS SHOWN BY THE PLAN, THE PROJECT CONSISTS OF A 6000SF OFFICE/WORKSHOP BUILDING. THE PLAN SHOWS THE PROPOSED ELEVATIONS REQUIRED TO PROPERLY GRADE THE REQUIRED PAVING AND BUILDING IMPROVEMENTS. THE MAIN FRONT PARKING LOT WILL BE ASPHALT PAVED, GRAVEL IS PROPOSED ALONG THE SERVICE AREAS. LANDSCAPING IS PROPOSED ALONG THE EAST AND NORTH SIDE OF THE SITE, WHICH ARE ALSO THE STREET FRONTS.

ALL DRAINAGE FLOWS WILL BE MANAGED ONSITE AND DIVERTED TO THE EAST AND SOUTH PORTION OF THE SITE WHERE RETENTION PONDING IS PROPOSED WITHIN THE LANDSCAPED AREA.

THE CALCULATIONS WHICH APPEAR HEREON, ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6 HOUR RAINFALL RUNOFF FOR PEAK FLOWS AND STORM DURATION FOR VOLUME REQUIREMENTS. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS AS SET FORTH IN THE REVISION OF SECTION 22.7 HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993. THIS D.P.M. PROCEDURE IS USED FOR ANALYZING ONSITE FLOWS.

**DOWNSTREAM CAPACITY**  
THERE ARE CURRENTLY NO DOWNSTREAM DRAINAGE IMPROVEMENTS IN EXISTENCE TO SERVE THIS SITE, RETENTION PONDING IS PROPOSED.

**EROSION CONTROL**  
TEMPORARY EROSION CONTROL WILL BE REQUIRED DURING THE CONSTRUCTION PHASE TO PROTECT DOWNSTREAM PROPERTY AND IMPROVEMENTS FROM SEDIMENT AND UNCONTROLLED RUNOFF. THE CONTRACTOR SHALL INCLUDE TEMPORARY EARTH BERMING ALONG THE PROJECT BOUNDARIES TO HOLD RUNOFF DURING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY MAINTAIN THESE FACILITIES DURING THE CONSTRUCTION PHASE OF THE PROJECT.

**OFFSITE FLOWS**  
OFFSITE FLOWS FROM SECOND STREET AND ROSSMOORE DRAIN ONTO THIS SITE. THIS OFF SITE FLOW WILL CONTINUE TO BE ACCEPTED INTO THIS SITE.

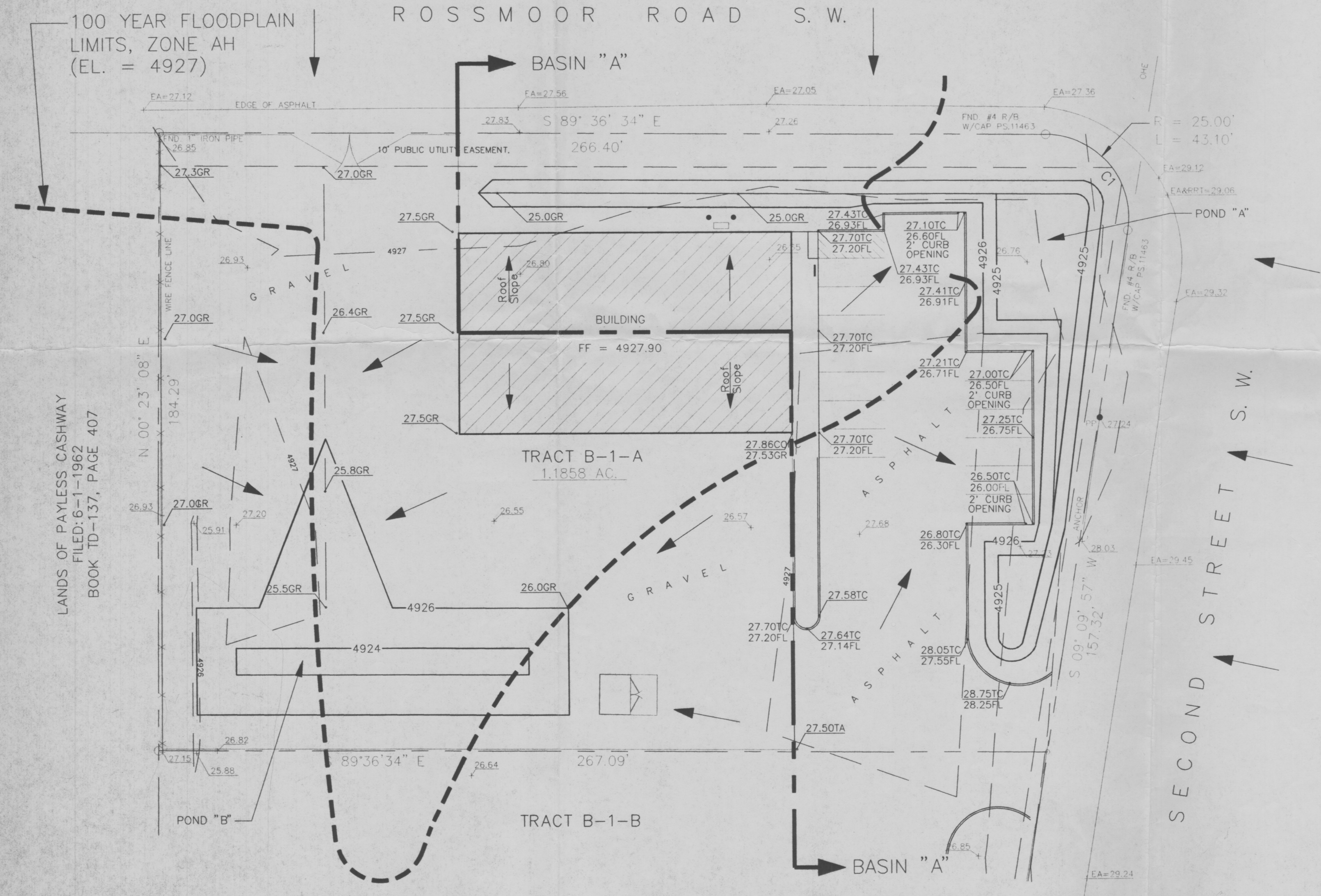
- DRAINAGE CALCULATIONS**
1. PRECIPITATION ZONE = 2
  2. DESIGN STORM = DEPTH (INCHES) AT 100-YEAR STORM  
6-HOUR = 2.35 INCHES  
10 DAY = 3.95 INCHES
  3. PEAK DISCHARGE (CFS/ACRE) FIR 100-YEAR, ZONE 2, TABLE A-9:  
 $Q = 1.56 \text{ CFS/ACRE SOIL UNCOMPACTED "A"}$   
 $Q = 2.28 \text{ CFS/ACRE LANDSCAPED "B"}$   
 $Q = 3.14 \text{ CFS/AC COMPACTED SOIL "C"}$   
 $Q = 4.70 \text{ CFS/ACRE IMPERVIOUS AREA "D"}$   
FOR WATERSHEDS LESS THAN OR EQUAL TO 40 ACRES
  4. EXCESS PRECIPITATION, E (INCHES), 6 HOUR STORM, ZONE 2, TABLE A-8:  
 $E = 0.53 \text{ INCHES SOIL UNCOMPACTED "A"}$   
 $E = 0.78 \text{ INCHES LANDSCAPED "B"}$   
 $E = 1.13 \text{ INCHES COMPACTED SOIL "C"}$   
 $E = 2.12 \text{ INCHES IMPERVIOUS AREA "D"}$
  5. EXISTING CONDITIONS ONSITE, BASIN "A"  
TREATMENT AREA(ACRES)  
A 0.52  
B 0  
C 0  
D 0  
TYPE "A" SOILS SINCE UNDISTURBED  
 $Q(\text{EXISTING}) = (1.56 \times 0.52) = 0.81\text{CFS EXISTING ONSITE FLOW}$   
 $V(\text{EXISTING}-6\text{HR}) = ((0.53 \times 0.52) / 12) \times 43,560 = 1,000\text{CF}$   
 $= 0.023\text{AC}-\text{FT EXISTING ONSITE VOLUME}$

**UTILITY PRECAUTIONS**  
THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.

6. EXISTING CONDITIONS ONSITE, BASIN "B"  
TREATMENT AREA(ACRES)  
A 0.67  
B 0  
C 0  
D 0  
TYPE "A" SOILS SINCE UNDISTURBED  
 $Q(\text{EXISTING}) = (1.56 \times 0.67) = 1.05\text{CFS EXISTING ONSITE FLOW}$   
 $V(\text{EXISTING}-6\text{HR}) = ((0.53 \times 0.67) / 12) \times 43,560 = 1,289\text{CF}$   
 $= 0.030\text{AC}-\text{FT EXISTING ONSITE VOLUME}$
7. PROPOSED CONDITIONS ONSITE, BASIN "A"  
EAST PAVED PARKING LOT AND SIDEWALK = 0.23AC, TYPE "D"  
ONE HALF BUILDING = 0.07AC, TYPE "D"  
LANDSCAPED AREA = 0.22AC, TYPE "B"  
TREATMENT AREA(ACRES)  
A 0  
B 0.22  
C 0  
D 0.30  
 $Q(\text{PROPOSED}) = (2.28 \times 0.22) + (4.70 \times 0.30) = 1.91\text{CFS PROPOSED ONSITE FLOW FROM BASIN "A"}$   
 $V(\text{PROPOSED}) = ((0.78 \times 0.22) + (2.12 \times 0.30)) / 12 = 0.067\text{AC}-\text{FT} = 2,931\text{CF PROPOSED ONSITE VOLUME FROM BASIN "A" FOR 6 HOUR STORM}$   
 $V(10 \text{ DAY}) = V(6\text{HR}) + A("D") \times (P(10) - P(6)) / 12 = 0.067 + 0.30 \times (3.95 - 2.35) / 12 = 0.107\text{AC}-\text{FT} = 4,660\text{CF}$   
 $V(\text{REQUIRED}) = V(10\text{DAY}) - V(\text{EXISTING}) = 4,660\text{CF} - 1,000\text{CF} = 3,660\text{CF REQUIRED}$
8. PROPOSED CONDITIONS ONSITE, BASIN "B"  
SOUTHWEST GRAVEL AREA = 0.60AC, TYPE "C", USE TYPE "D" FOR FUTURE ASPHALT PAVING  
ONE HALF BUILDING = 0.07AC, TYPE "D"  
NO LANDSCAPING  
TREATMENT AREA(ACRES)  
A 0  
B 0  
C 0  
D 0.67  
 $Q(\text{PROPOSED}) = (4.70 \times 0.67) = 3.15\text{CFS PROPOSED ONSITE FLOW FROM BASIN "A"}$   
 $V(\text{PROPOSED}) = (2.12 \times 0.67) / 12 = 0.12\text{AC}-\text{FT} = 5,156\text{CF PROPOSED ONSITE VOLUME FROM BASIN "B" FOR 6 HOUR STORM}$   
 $V(10 \text{ DAY}) = V(6\text{HR}) + A("D") \times (P(10) - P(6)) / 12 = 0.12 + 0.67 \times (3.95 - 2.35) / 12 = 0.209\text{AC}-\text{FT} = 9,119\text{CF}$   
 $V(\text{REQUIRED}) = V(10\text{DAY}) - V(\text{EXISTING}) = 9,119\text{CF} - 1,289\text{CF} = 7,830\text{CF REQUIRED}$
9. WEIR OPENING ANALYSIS:  
 $Q = C \times L \times (H)^{3/2}$   
 $Q = 1.91\text{CFS worst case}$   
 $C = 3.0, H = 0.5\text{ft}$   
 $L = Q / C \times (H)^{3/2} = 1.91 / 3.0 \times (0.5)^{3/2}$   
 $L = 1.8 \text{ FEET, USE 2 FOOT WIDE CURB OPENING}$
10. SIZE BASIN "A" POND VOLUME:  
POND A:  
CONTOUR(ft) AREA(sf) AVG AREA(sf) DEPTH(ft) VOLUME(cf)  
4925 1374 2668 1 2668  
4926 3962 4470 0.5 2235  
4926.5 4978 (Approx. Spillway A) 4,903CF  
 $VOL(\text{PROVIDED}) = 4,903\text{CF} > 3,660\text{CF} = VOL(\text{REQUIRED}) \text{ OK}$
11. SIZE BASIN "B" POND VOLUME:  
POND B:  
CONTOUR(ft) AREA(sf) AVG AREA(sf) DEPTH(ft) VOLUME(cf)  
4924 192 1401 2 2802  
4925 2610 3609 1 3609  
4926 4608 6766 0.5 3383  
4926.5 8924 (Approx. Spillway El) 8,393CF  
 $VOL(\text{PROVIDED}) = 8,393\text{CF} > 7,830\text{CF} = VOL(\text{REQUIRED}) \text{ OK}$

RECEIVED  
OCT 22 1998  
HYDROLOGY SECTION

RECEIVED  
OCT 22 1998  
HYDROLOGY SECTION



LEGEND

- 96.43Gr PROPOSED GRADE ELEVATION
- 96.43 TC PROPOSED TOP OF CURB
- 95.93 FL PROPOSED FLOWLINE OF CURB
- DIRECTION OF FLOW
- 4927 EXISTING CONTOUR ELEVATION
- 26.69 EXISTING SPOT ELEVATION
- 98.77 TW PROPOSED TOP OF WALL
- 97.6 BW PROPOSED BOTTOM OF WALL

- GENERAL NOTES:**
1. ADD 4900 TO SPOT ELEVATIONS TO SHOW TRUE ELEVATION.
  2. CONTOUR INTERVAL IS ONE (1) FOOT.
  3. ELEVATIONS ARE BASED ON CITY OF ALBUQUERQUE CONTROL STATION "ACS 6-F13", HAVING AN ELEVATION OF 4932.90 FEET ABOVE SEA LEVEL.
  4. UTILITIES SHOWN HEREON ARE IN THEIR APPROXIMATE LOCATION BASED ONLY ON ABOVE GROUND EVIDENCE FOUND IN THE FIELD AND AS-BUILT INFORMATION PROVIDED BY THE CLIENT. UTILITIES SHOWN HEREON, WHETHER INDICATED AS ABANDONED OR NOT, SHALL BE VERIFIED BY OTHERS FOR EXACT LOCATION AND/OR DEPTH PRIOR TO EXCAVATION.
  5. THIS IS NOT A BOUNDARY SURVEY BEARINGS AND DISTANCES AND FOUND PROPERTY CORNERS ARE FOR INFORMATIONAL PURPOSES ONLY.

FILE 981401

DRAINAGE AND GRADING PLAN  
FOR  
TRACT B-1-A  
LANDS OF JOSEPH GREVEY

Aldaz Engineering & Surveying, Inc.  
1605 BLAIR DRIVE NE  
ALBUQUERQUE, NEW MEXICO 87112 PH: (505)237-1456

DATE/REVISIONS:

SHEET NUMBER: