

File 017/028

DRAINAGE CALCULATIONS

DISCUSSION

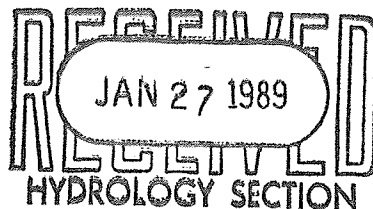
This site (Tract I-C, Academy Park, Unit 4) contains .74 acres undeveloped land which now drains to the west along the south boundary of the Albuquerque Publishing Company property. Soils at the site are classified as group "B" and the site itself is out of the flood plan. After meeting with the City of Albuquerque Hydrology staff, it was decided that since an easement (to drain west across private property) was signed, all drainage will be directed to the west end. The 100-year run-off storm was used for all calculations (except temporary erosion control facilities).

CALCULATIONS

TOTAL AREA	32046 sq.ft
AREA DRAINING TO WEST END	32046 sq.ft
LANDSCAPE & UNPAVED AREAS	3000 sq.ft
DEVELOPED SITE IS 90% IMPERVIOUS	
COEFFICIENT OF RUNOFF	C = .84
100-YEAR, 6 HR. PRECIP.	2.2 INCHES

RUN-OFF CALCULATION:

TIME OF CONCENTRATION (LESS THAN 10 MIN)
INTENSITY I = $(2.2)(6.84)(10^{-.5}) = 4.65$
 $Q(100 \text{ YR}) = (.84)(4.65)(32046/43560)$
 $= 2.87 \text{ cfs}$





City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

KEN SCHULTZ
MAYOR

CLARENCE V. LITHGOW
CHIEF
ADMINISTRATIVE OFFICER

DAN WEAKS
DEPUTY CAO
PUBLIC SERVICES

FRED E. MONDRAGON
DEPUTY CAO
DEVELOPMENT & ENTERPRISE SERVICES

RAY R. BACA
DEPUTY CAO
PUBLIC SAFETY

July 17, 1989

Jim J. Kapuranis, P.E.
J.J.K. Associates
4009 Parsifal, NE
Albuquerque, New Mexico 87111

RE: REVISED DRAINAGE PLAN FOR INDUSTRIAL WATER ENGINEERING,
INC. (D-17/D28) REVISION 2 DATED JUNE 1, 1989

Dear Mr. Kapuranis,

Based on the information provided on your resubmittal of June 2, 1989, revisions as indicated are acceptable.

Please advise your client that once the concerns listed below are satisfied, a reinspection must be requested.

1. Roof drains on south side of building must be extended or provisions made so as to allow the runoff to enter onto the asphalt area.
2. Swale on the north side of building must be constructed with a well defined inverted crown.
3. Well defined swale routing the runoff away from the building to the west.

If I can be of further assistance, please call me at 768-2650.

Cordially,

Bernie J. Montoya
Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj
(WP+1004)

DRAINAGE INFORMATION SHEET

PROJECT TITLE: J.W.E. Inc. ZONE ATLAS/DRNG. FILE #: D-17-7

LEGAL DESCRIPTION: LOT 1-C UNIT 4

CITY ADDRESS: ALBUQUERQUE, N.M.

ENGINEERING FIRM: JJK ASSOCIATES CONTACT: JIM J. KAPURANIS

ADDRESS: 4009 PARSONS AVE NE PHONE: 299-3722
87112

OWNER: LES NORMAN CONTACT: SAME

ADDRESS: 2300 BUENA VISTA SE PHONE: 842-1216
SUITE 135

ARCHITECT: BOB ROCHELEAU CONTACT: SAME
87106

ADDRESS: 4820 BASIN NE PHONE: 299-9057
87111

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: GAROLD A. MARTIN CONTACT: SAME

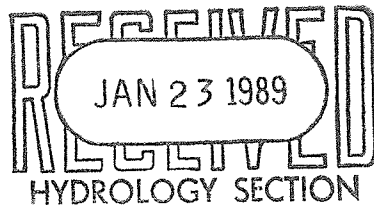
ADDRESS: P.O. Box 36960 PHONE: 881-4646

PRE-DESIGN MEETING:

☒ YES

☐ NO

☐ COPY OF CONFERENCE RECAP SHEET PROVIDED.



DRB NO. _____

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT

☒ DRAINAGE PLAN

☐ CONCEPTUAL GRADING & DRAINAGE PLAN

☐ GRADING PLAN

☐ EROSION CONTROL PLAN

☐ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL

☐ PRELIMINARY PLAT APPROVAL

☐ SITE DEVELOPMENT PLAN APPROVAL

☐ FINAL PLAT APPROVAL

☒ BUILDING PERMIT APPROVAL

☒ FOUNDATION PERMIT APPROVAL

☐ CERTIFICATE OF OCCUPANCY APPROVAL

☐ ROUGH GRADING PERMIT APPROVAL

☐ GRADING/PAVING PERMIT APPROVAL

☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: 12/23/89

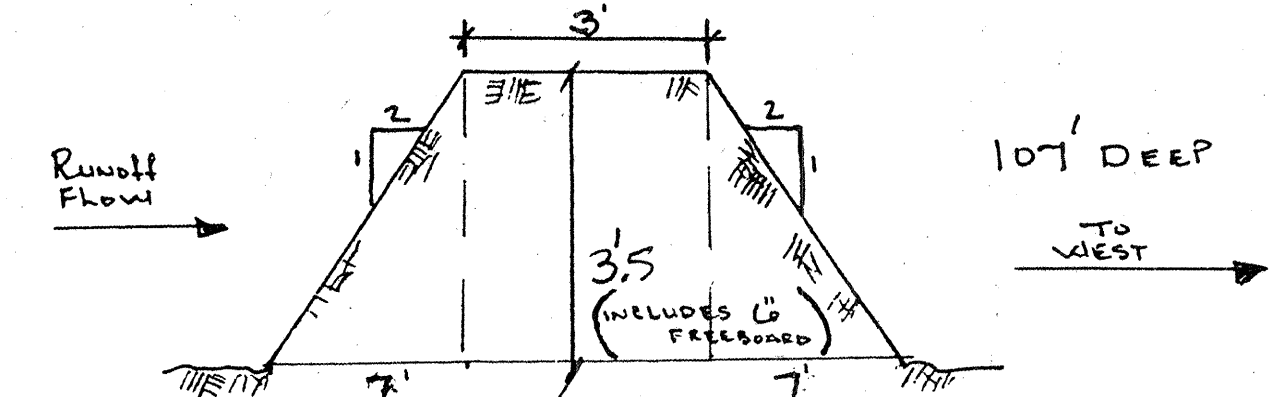
BY: Jim J. Kapuranis

EROSION CONTROL PLAN

NOTE:

Contractor to place berm along west slope extended 107 ft. (north to south) with the cross section dimensions shown above. The contractor shall roll compact berm to place.

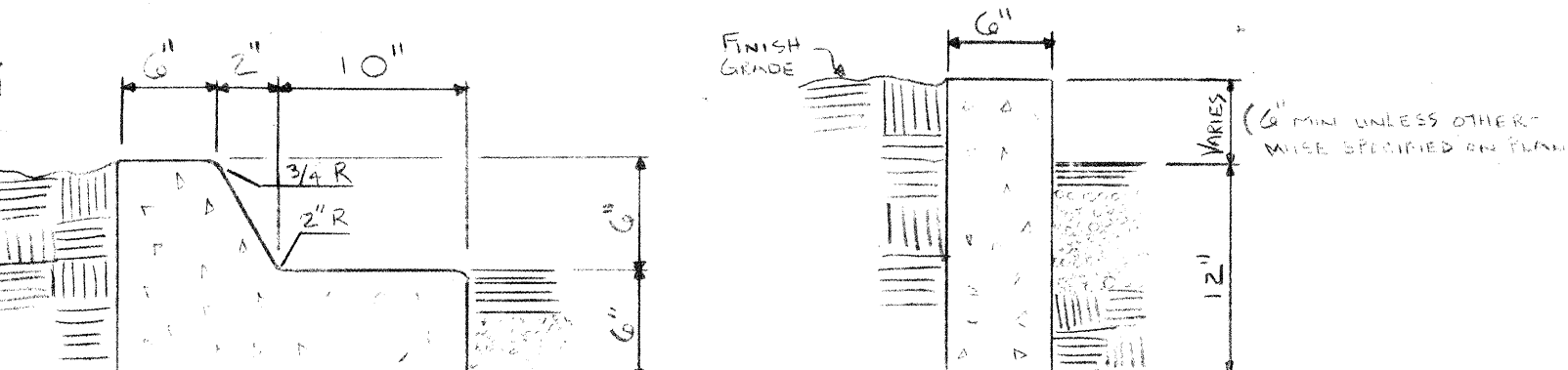
- o 10-year run-off event (NOAA atlas 2) = .657 (2.2") = 1.44"
- o Volume of run-off = 32046 sq.ft. x 1.44"/12 x .84 = 3230 cu.ft.
- o Berm Section Calculation:



o Total Volume = 107 ft. x ((2x.5x7x3.5)+(9)) = 3584 cu.ft. > 3230 cu.ft. OK

REVISED GRADING DRAINAGE PLAN

JAN 27, 1989 ALH
FEB 8, 1989 JJK



CURB & GUTTER CURB DETAILS

HEADER CURB

HYDROLOGY WORK

DRAINAGE CALCULATIONS

DISCUSSION

This site (Tract I-C, Academy Park, Unit 4) contains .74 acres undeveloped land which now drains to the west along the south boundary of the Albuquerque Publishing Company property. Soils at the site are classified as group 2 and the site itself is out of the flood plain. After meeting with the City of Albuquerque Hydrology staff, it was decided that since an easement (to drain west across private property) was not signed, the only alternative was to pond the developed 100-year run-off. The pond is sized for the 100-year run-off from the entire site.

CALCULATIONS

TOTAL AREA	32046 sq.ft.
NORTH BUILDING (HALF)	4100 sq.ft.
AREA DRAINING TO POND	27946 sq.ft.
LANDSCAPE & UNPAVED AREAS	3000 sq.ft.
DEVELOPED SITE IS 90% IMPERVIOUS	
COEFFICIENT OF RUNOFF	C = .84
100-YEAR, 6 HR. PRECIP.	2.2 INCHES
POND VOLUME = (.84) (2.2/12) (27946)	= 4303 cu.ft.

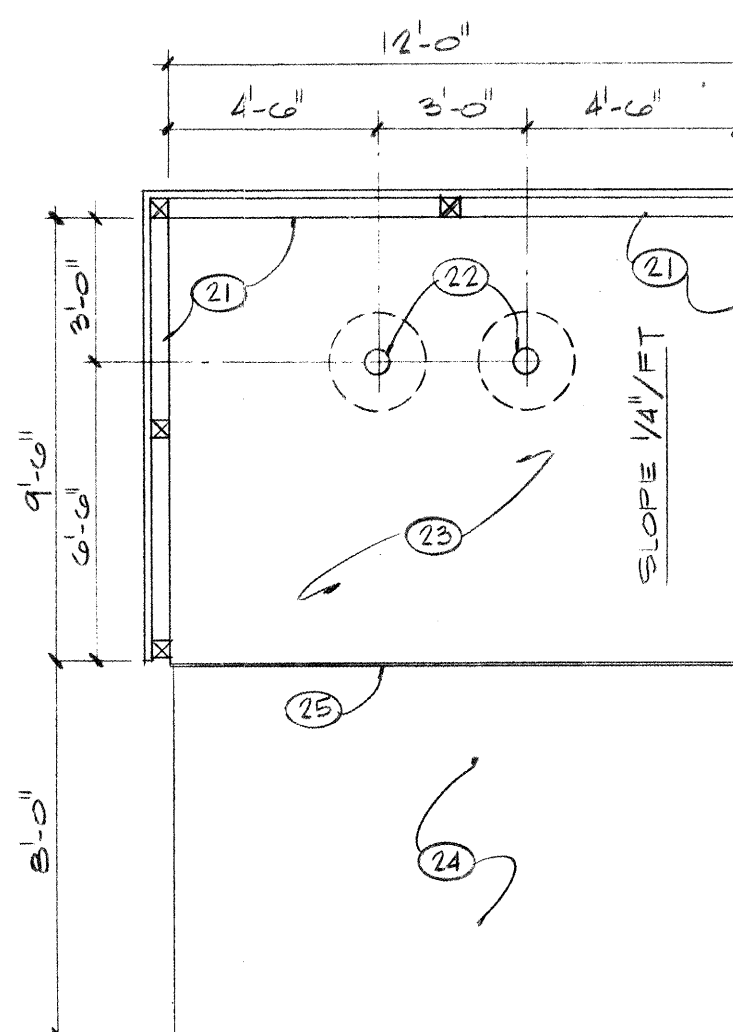
POND VOLUME: (AS SHOWN THIS SHEET)

ELEV.	AREA (sq.ft.)	H (FT)	V (cu.ft.)
30.00	3154	0.0	0
29.00	2044	1.0	2599
28.00	1134	1.0	1589
27.50	812	.5	486

AVAILABLE POND VOLUME = 4674 cu.ft. OK

GENERAL NOTES EARTHWORK

- GENERAL. Footings and interior slabs on grade are to be placed on engineered fill on prepared subgrade. Exterior slabs on grade are to be placed on engineered fill or prepared subgrade as required by the site grading.
- SITE CLEARING. All vegetation and other organic matter, rocks, clods, existing construction and any other unseizable material shall be removed from the site and properly disposed.
- BACKFILL. Backfill should be placed as soon as possible after footings have been constructed but not without the proper approval of the engineer. Material for backfill shall meet the same requirements as fill material.
- FILL. All material shall be subject to the approval of the engineer. General fill shall be a non-expansive material with plasticity index not exceeding 10 and liquid limit not exceeding 40 with approved gradation. Site materials meeting the specified requirements may be used. The top 6 inches of fill beneath interior slabs on grade shall be an imported cohesionless material with plasticity index not exceeding 6. All fill material shall be clean, free of organic frozen matter, and any other unsuitable material.
- PREPARATION OF SUBGRADE. The top 8" of existing material at the bottom of the excavation shall be scarified, moistened to its optimum moisture content (1-2 percentage points) and compacted to not less than 90% of nominal maximum density. Proof roll prepared subgrade below bottom of footing elevations with a minimum of 10 passes of a 10T vibratory roller.
- PLACING AND COMPACTION. Fill, interior and exterior backfill adjacent to the building walls shall be placed in uniform layers not to exceed 8 inches in thickness before compaction. Other exterior backfill shall be placed in layers not to exceed 12 inches before compaction. Fill beneath the elevations of the bottoms of the footings shall be not less than 95 percent compacted. Other fill adjacent to the building shall be compacted not less than 90 percent of nominal maximum density.



REFUSE BIN ENCLOSURE PLAN

LANDSCAPE SCHEDULE

- (A) PINUS PONDEROSA 10'-0" HIGH
- (B) HONEY LOCUST 1.5' CAL.
- (C) SILVER MAPLE 1.5' CAL.
- (D) BROADLEAF JULIPER 2'-3" SPREAD
- (E) QUINCE FLOWERING PLUM 1.5' CAL.
- (F) SOD-KENTUCKY BLUEGRASS

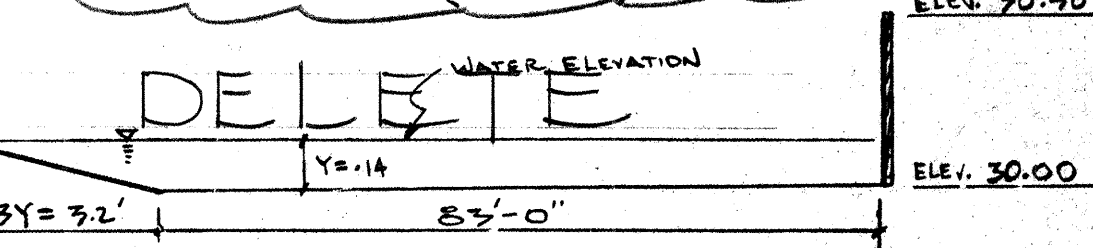
NOTE
ALL LANDSCAPING & EXTERIOR IRRIGATION FURNISHED & INSTALLED BY OWNER. GENERAL CONTRACTOR TO PROVIDE SPRINKLER BOX ONLY FOR IRRIGATION SYSTEM

PLAN NOTES

- Existing Public Service Co. of New Mexico pad mount transformer
- Refuse enclosure, provide six cu. yd. lift bin
- 10' wide utility easement
- Concrete apron and curb cut per city standards
- Existing conc. curb and gutter
- Existing 8" VCP sanitary sewer line
- Existing 12" C.I. water line
- Owner sign (by owner)
- 6" wide conc. header curb
- 4" wide painted parking stripes
- Bituminous pavement (2" asphalt over compacted subgrade)
- New concrete curb & gutter
- Concrete walk
- Handicapped access ramp
- Kentucky Bluegrass sod
- Concrete Stoop
- Concrete ramp
- DELETE
- Edge of pavement
- Electrical meter and safety disconnect switch
- 6'-0" high cedar fence with 4x4 cedar post
- 4" o.d. conc filled pipe with 8" conc. all around, embedded in 2'-0" conc. footing
- 4" conc slab
- 6" conc apron
- 1/2 expansion joint
- Irrigation System valve box
- Roof Drains

EMERGENCY SPILLWAY:

TIME OF CONCENTRATION (LESS THAN 10 MIN)
INTENSITY I = (2.2) (6.84) (10^-5) = 4.65
Q (100-YR) = (.84) (1.55) (27946) (4.65) = 1589 CFS
Q (100-YR) = (.84) (4.65) (27946) (4.65) = 3225 CFS
SPILLWAY IS A WEIR: (WORST CASE)



Q = (.577) L Y^1.5
= (.577) [(83) (Y^1.5) + (23Y) (Y/2)^1.5]

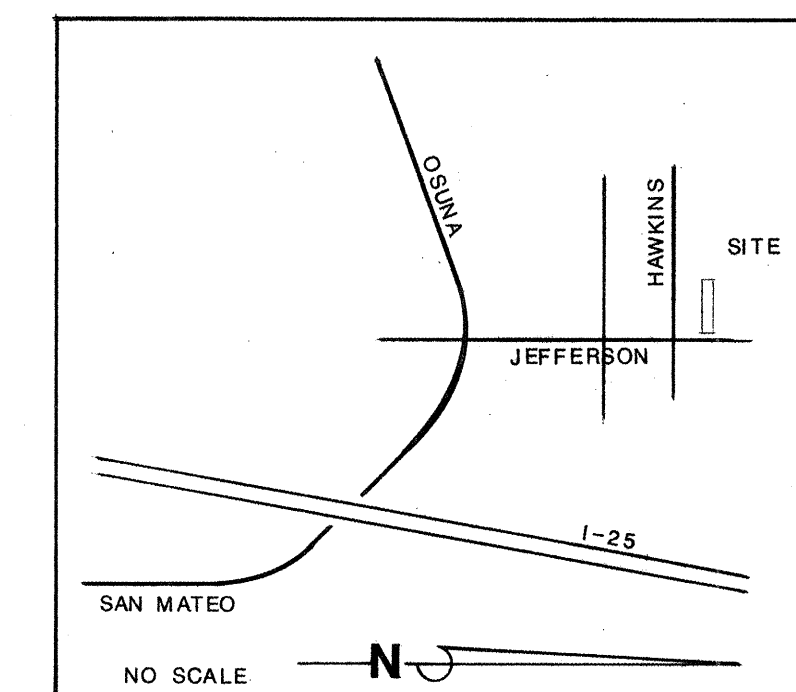
BY TRIAL AND ERROR Y = .14 feet

THEREFORE THE MAXIMUM WATER ELEVATION = 5130.14 FEET TFL THE POND WAS FULL WHEN THE 100-YEAR STORM HIT.

DESIGN CRITERIA

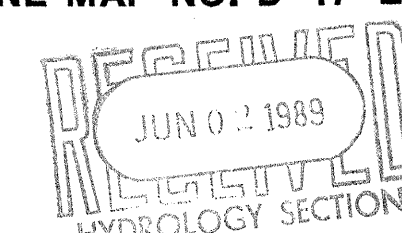
BUILDING CODE UBC-1985
SEISMIC ZONE 2
OCCUPANCY GROUP B-2
TYPE OF CONSTRUCTION II
AREA OF CONSTRUCTION
WAREHOUSE 3204 SQ.FT.
ANCILLARY 936 SQ.FT.
USEABLE OFFICE 2082 SQ.FT.
TOTAL OFFICE 3018 SQ.FT.

PARKING REQUIRED 12 PARKING PROVIDED 13



LEGAL DESCRIPTION

LOT 1-C UNIT 4
INTERSTATE INDUSTRIAL PARK
ZONE MAP NO. D-17-Z



INDUSTRIAL WATER ENGINEERING, INC.

Project No. 8810
Robert L. Rocheleau - Architect
ARCHITECTS
4820 Basin St. N.E. (505) 299-9057
Albuquerque, New Mexico 87111

SITE PLAN/GRADING PLAN

Job No. Sheet Of 17
Drawn By: Date: 11-28-88
Checked By: Scale: AS SHOWN

C 1

GRADING PLAN SCALE: 1"=20'-0"

GRADING PLAN LEGEND

- 5130 --- EXISTING CONTOURS, CITY DATUM
- 38 --- PROPOSED CONTOUR
- X 35.18 X TC/33.67 PROPOSED GRADE, TOP OF CURB
- FENCE ---

SITE PLAN SCALE: 1"=20'-0"

