



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 2, 2001

Joe Kelley, P.E.
JC Engineering
1924 Roanoke Dr NE
Rio Rancho, New Mexico 87124-5532

RE: MASTHEAD ST. TRACT 4AA-5A-2A (Phase 1) (D-17/D3P1)
(5120 Masthead St NE)
ENGINEERS CERTIFICATION FOR CERTIFICATE OF OCCUPANCY
ENGINEERS STAMP DATED 4/17/2001
ENGINEERS CERTIFICATION DATED 10/1/2001

Dear Mr. Kelley:

Based upon the information provided in your Engineers Certification resubmittal dated 10/1/2001, the above referenced site is approved for Permanent Certificate of Occupancy for Phase 1 only. Engineers Certification is still required prior to issuance of Certificate of Occupancy for Phase 2 regarding this site

If I can be of further assistance, please contact me at 924-3981.

Sincerely,

Teresa A. Martin
Hydrology Plan Checker
Public Works Department

BUB

C: Vickie Chavez, COA
approval file
drainage file



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 20, 2001

Mr. Joe Kelley, P.E.
JC Engineering
1924 Roanoke Dr NE
Rio Rancho, NM 87124

**RE: Revised Grading and Drainage Plan for 5120 Masthead St. NE,
Tract 4AA-5A-2A Journal Center, (D17/D003P1), Engineer stamp dated
4/17/01.**

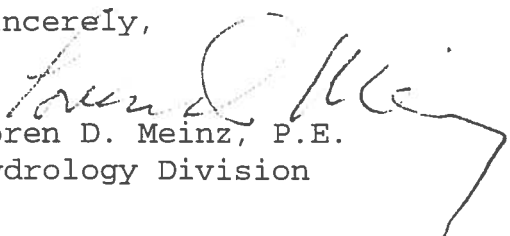
Dear Mr. Kelley,

The referenced revised plan is approved for Grading and Drainage, Site Plan for Building Permit, and for Building Permit. Please attach a copy of the final grading plan to the construction plan set for Building Permit.

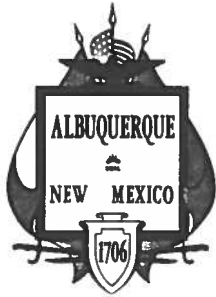
Prior to Certificate of Occupancy, please provide Engineer Certification per the DPM checklist for the Grading and Drainage construction for Hydrology approval.

If you have any questions, please call me at 924-3980.

Sincerely,


Loren D. Mainz, P.E.
Hydrology Division

c: Terri Martin
file



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

orig Approval

April 16, 2001

Mr. Joe Kelley, P.E.
JC Engineering
1924 Roanoke Dr NE
Rio Rancho, NM 87124

**RE: Grading and Drainage Plan for 5120 Masthead St. NE, Tract
4AA-5A-2A Journal Center, (D17/D003P1), Engineer stamp dated
4/13/01.**

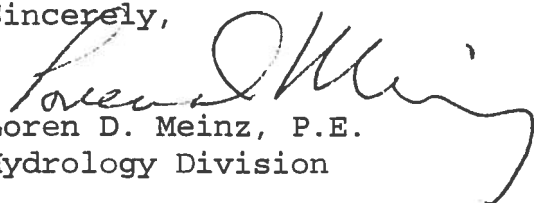
Dear Mr. Kelley,

The referenced plan is approved for Grading and Drainage, Site Plan for Building Permit, and for Building Permit. Please attach a copy of the final grading plan to the construction plan set for Building Permit.

Prior to Certificate of Occupancy, please provide Engineer Certification per the DPM checklist for the Grading and Drainage construction for Hydrology approval.

If you have any questions, please call me at 924-3980.

Sincerely,


Loren D. Mainz, P.E.
Hydrology Division

c: Terri Martin
file

JC-Engineering

1924 Roanoke Drive NE, Rio Rancho, NM 87124-5532

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Fax (505) 867-9302

kelleycj@juno.com

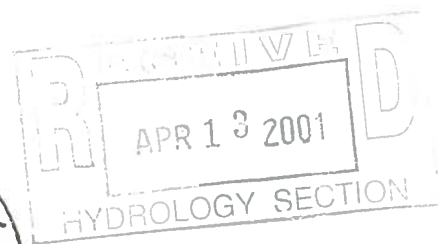
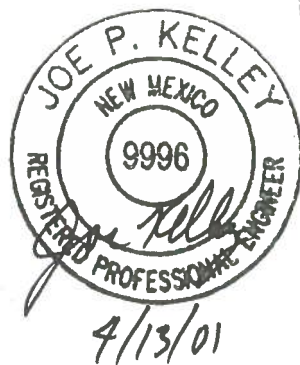
Drainage Report

For

Tract 4AA-5A-2A of the Journal Center

In

Albuquerque, New Mexico



April 13, 2001

Purpose

This drainage report provides the hydrologic rationale for the appropriate development of tract 4AA-5A-2A of the Journal Center. The purpose of this report is to obtain approval of the grading plan by the City of Albuquerque so a building permit can be issued.

Area Description

The project is located within the Journal Center, on the south side of Masthead Street between two existing developed sites. The Hewlett Packard site is on the east, and the ITT site is on the west. The site is located on the block that extends from the west I-25 frontage road to Jefferson. All the other lots on both sides of this street have been developed, and this lot will be the last. Behind this site on the south is the MCT Industries site, which is also fully developed. The entire area is a business/industrial area, and the surrounding sites have been developed with buildings and paved yards.

Area Masterplan

This site is located in an area that is governed hydrologically by the Drainage Management Plan for the Journal Center by Bohannon-Huston, last updated on December 17, 1992. This particular tract is located within Basin G of that plan, and is depicted within the plan as discharging freely to Masthead. The pertinent portion of the Masterplan has been copied and is included on page B-2 of this report.

Precipitation

There will be no on-site detention ponding, so the 100-year, 6-hour design storm was used in these calculations. See page A-2 for the AHYMO hydrologic calculations.

Existing Conditions

The existing site is in a natural state of sparse grass and native shrubs. Please refer to the grading plan and to the Drainage Basin Plan sheet B-1. There is also a portion of the Hewlett Packard parking lot that is located on this site. Apparently the 2.276 acres that comprise this site were originally part of the 3.7069 acre Hewlett Packard site that is depicted on the original Masterplan, and two rows of existing parking are located on what is now the subject property. The Hewlett Packard site is higher in elevation than this site, but the existing parking lot curbs and grading are such that none of the Hewlett-Packard runoff discharges onto the subject site. The portion of the parking lot that is located on the subject site discharges to Masthead via a 12" sidewalk culvert at its northwest corner.

The MCT Industries site located south of the subject site is developed industrially. A large asphalt area is located directly south of the subject site, and a row of parking is immediately adjacent to the fence line. The MCT Industries site is designed such that

the runoff of the south portion of the site discharges into a small retention pond located at the northwest corner. This pond overflows into an 11'-wide concrete rundown that discharges into the ITT site. The outline of the rundown can be seen on the grading plan, and also on the drainage basin plan page B-1.

The ITT site is located west of the subject tract, and is downstream of this tract. Under existing conditions, a small swale and berm have been cut into the west side of the subject tract to prevent any runoff from discharging onto the ITT parking lot, cutting off any site runoff from discharging onto the ITT site. But the natural lay of the land is such that the majority of the runoff would discharge to Masthead anyway. Very little would tend to encroach upon the ITT site.

Developed Conditions

As shown on the grading plan, the site will be developed with buildings and parking lots. The majority of the site will be developed in Phase 1 with a 13,896 s.f. single story building and a surrounding parking area. The western part of the site will eventually be developed with a Phase 2 building that consists of a parking area below, with the occupied building area on the second floor, at approximately the same elevation as the first building's finished floor.

The Phase 1 building roof will discharge into the parking lot via roof drains connected directly to the parking area through the curb on the east side of the building. The new curbs will be concrete curb and gutter. Runoff has been directed into the gutter flow lines so that the water will discharge from the site via a concrete gutter, and mitigate potential damage due to the freeze/thaw cycle.

As summarized on the table below, the runoff from Phase 1 will discharge safely into the street via the new driveways. The new driveways are steep enough so that no street flow on Masthead will not enter the site. On-site channels have been designed with sufficient capacity to accept runoff as computed by the weir equation on page A-2, and summarized below.

Runoff Summary

Basin	Q (cfs)	Outlet Description	Channel & Capacity (cfs)
Existing Site (All)	4.72	Over the curb	--
A	3.69	Driveway	3'-6" Channel / 4.08 cfs
B	1.11	2'-0" Channel	2'-0" Channel / 2.33 cfs
C	2.54	Driveway	--
D (Developed)	2.52	Future Roof Drains	--
Developed Site (All)	9.86	Varies	--

The Phase 2 building will be designed to discharge directly to the street via future roof drains.

Compliance with the Master Plan

This site has been developed to discharge in accordance with the Master Plan. In a predesign conference on March 26th with John Murray of City Hydrology, it was determined that free discharge would be acceptable, if it was in accordance with the original plan. As I reviewed the original plan and made a site visit, I concluded that free discharge would be appropriate because:

1. Free discharge was the intent of the original plan. As stated in the original plan, **“considerable expense has already been applied to the construction of drainage facilities in the area. The Pino Arroyo and Jefferson Street storm sewer represent an investment of approximately 2 million dollars. Design was guided and approved based upon criteria in effect at the time assuming free discharge from all parcels.”** The original plan also states, **“based on information presented in this plan it is proposed that a free discharge management approach be approved for all parcels within the park.”** The original plan showed the discharge from this site directly into Masthead with no intervening ponding.
2. AHYMO is the mathematical hydrologic tool used in Albuquerque to quantify runoff. The tool changed between 1990 and today (2001). Thus hydrologic computations of the same areas will yield higher results now. This parcel is in Basin G of the original plan, which was originally depicted in 1980 as discharging 84 cfs under old hydrology. In about 1990, this was revised to 83 cfs. Basin G was 22.5 acres in size, and thus was designed to discharge about 3.7 cfs/acre. Using new (current) hydrology, this ultimately-developed site will discharge 4.3 cfs/acre. For the entire 2.276 acres, that is 1.4 cfs more than the original plan. However, the methodology alone accounts for that difference. The key question is whether this site will discharge safely downstream, and the answer is “yes,” as discussed below.
3. The impact of the “increased runoff” may be slightly noticed in the street fronting the site, but will not be noticeable in the storm drains or concrete channels discharging into the rest of Albuquerque. The general scheme of the original Journal Center plan was to provide sufficient storm drainage infrastructure so that no on-site detention ponding would be necessary. This is evidenced by the design of storm drains and lined concrete channels that were part of the original plan, and that have all been constructed per plan. As shown on page B-2, a 60” storm drain has been extended to Masthead in order to capture the street runoff (which could be increased by as much as 1/84th, or 1.2%). This storm drain will readily accept the slight potential increase. After the runoff reaches the concrete-lined Pino arroyo, its affect will be unnoticeable.
4. This site (Tract 2A) is a subset of the original Hewlett Packard site (Tract 2) that was designed by the Mann Co. and approved by the City on June 28, 1990 without detention ponding.
5. All of the surrounding sites are developed, and none has detention ponding.

In conclusion, this site will discharge safely downstream, and is in compliance with the governing Master Plan.

Weir Rating Curve

The discharge into the on-site channels will be via weir flow.

Weir Calculation for Basin A ($Q_{100} = 3.69$ CFS)

$$Q = C * L * (H)^{3/2}$$

Where:

C = weir coefficient = 3.30

L = length of weir = 3.50 feet

Weir Bottom Elevation = 5168.09

H = water depth above weir bottom in feet (varies per table below).

Q = flow in cfs (varies per table below).

Elevation	Water Depth (ft)	Weir Flow (cfs)
5168.09	0.00	0.00
5168.19	0.10	0.37
5168.29	0.20	1.03
5168.39	0.30	1.90
5168.49	0.40	2.92
5168.59	0.50	4.08

Weir Calculation for Basin B ($Q_{100} = 1.11$ CFS)

$$Q = C * L * (H)^{3/2}$$

Where:

C = weir coefficient = 3.30

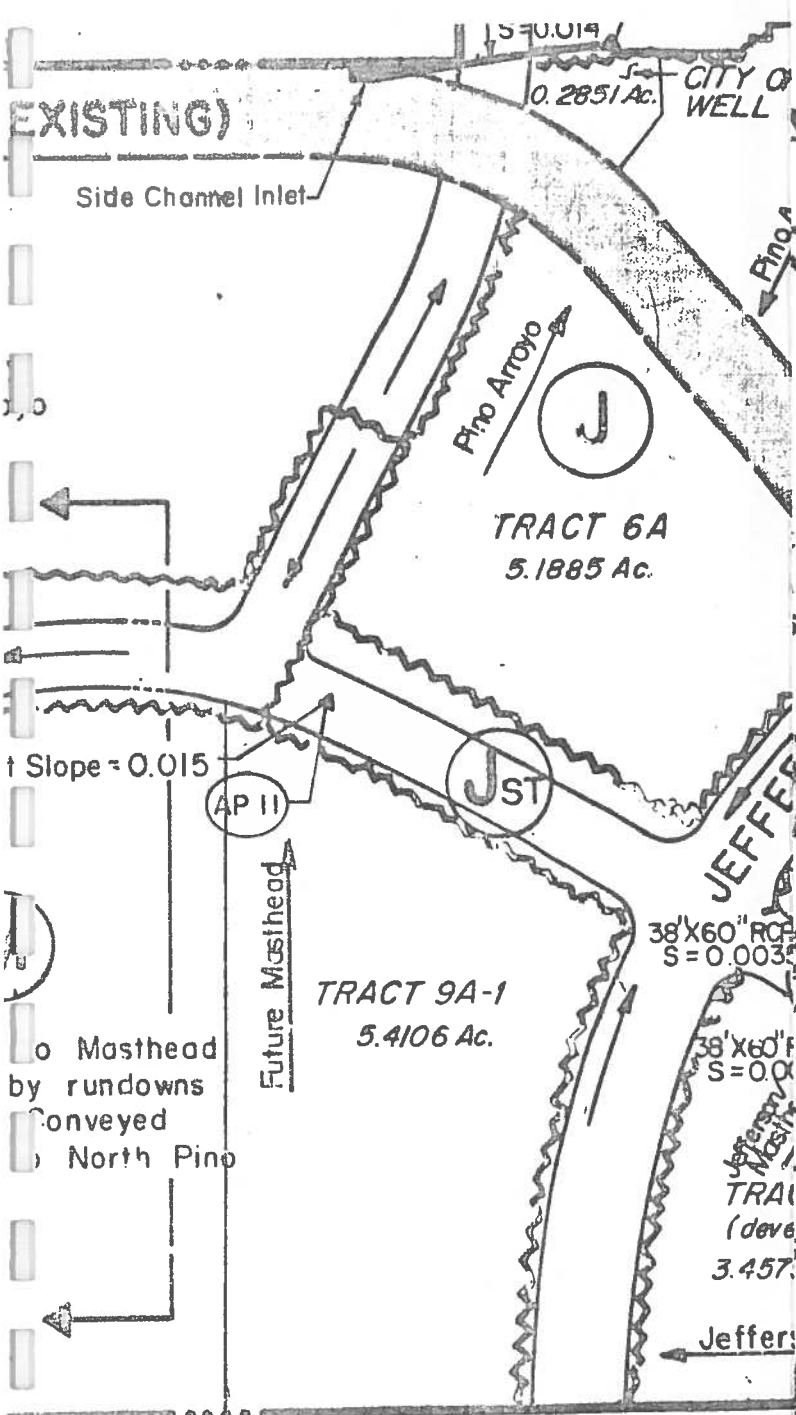
L = length of weir = 2.00 feet

Weir Bottom Elevation = 5166.30

H = water depth above weir bottom in feet (varies per table below).

Q = flow in cfs (varies per table below).

Elevation	Water Depth (ft)	Weir Flow (cfs)
5166.30	0.00	0.00
5166.40	0.10	0.21
5166.50	0.20	0.59
5166.60	0.30	1.08
5166.70	0.40	1.67
5166.80	0.50	2.33



EXERPT FROM REVISED DRAINAGE MANAGEMENT
 PLAN FOR THE JOURNAL CENTER BY BOHANNAN-
 STON DATED DECEMBER 17, 1992

REVISED
 DRAINAGE MANAGEMENT
 PLAN FOR:
JOURNAL CENTER
 DECEMBER 1992

SECTION

1984
 1990
 1992



Pond Outlet Rating Curve

The discharge into the sidewalk culverts of the ponds will be via weir flow.

Weir Calculation for Basin A ($Q_{100} = 3.44$ CFS)

$$Q = C * L * (H)^{3/2}$$

Where:

C = weir coefficient = 3.30
 L = length of weir = 3.00 feet
 Weir Bottom Elevation = 5166.28

H = water depth above weir bottom in feet (varies per table below).

Q = flow in cfs (varies per table below).

Elevation	Water Depth (ft)	Wier Flow (cfs)	Pond Vol. (ac-ft)
5166.28	0.00	0.00	0.00000
5166.38	0.10	0.31	0.00069
5166.48	0.20	0.89	0.00138
5166.58	0.30	1.63	0.00206
5166.68	0.40	2.50	0.00275
5166.78	0.50	3.50	0.00344

Weir Calculation for Basin B ($Q_{100} = 1.45$ CFS)

$$Q = C * L * (H)^{3/2}$$

Where:

C = weir coefficient = 3.30
 L = length of weir = 1.25 feet
 Weir Bottom Elevation = 5165.15

H = water depth above weir bottom in feet (varies per table below).

Q = flow in cfs (varies per table below).

Elevation	Water Depth (ft)	Wier Flow (cfs)	Pond Vol. (ac-ft)
5165.15	0.00	0.00	0.00000
5165.25	0.10	0.13	0.00034
5165.35	0.20	0.37	0.00069
5165.45	0.30	0.68	0.00103
5165.55	0.40	1.04	0.00138
5165.65	0.50	1.46	0.00172