HYDROLOGY D17/D48 6 PLANS

D17/D48

6 Plans

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

July 20, 1984

Mr. Brian Burnett
Bohannan-Huston, Inc.
4125 Carlisle Boulevard NE
Albuquerque, NM 87107

REF: GRADING AND DRAINAGE PLAN FOR "THE COMMONS" AT JOURNAL CENTER (D17-D48)
RECEIVED JULY 16, 1984

Dear Brian:

The above referenced plan, dated June 15, 1984, is approved.

Please attach a copy of this approved plan along with the appropriately approved "Drainage Facilities Within City Right-of-Way" document to the construction set prior to release of the building permit.

If I can be of further assistance, please contact me at 766-7644.

Sincerely yours,

Not required - Incorporated in City Project 2217.

Billy J. Goolsby

Billy J. Goolsby, PE
City/County Flood Plain Admin.

BJG:mrk

cc: Greg Olson

BOHANNAN-HUSTON INC.
4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000
6773 VISCOUNT BLVD., EL PASO, TEXAS 79925 915 778-4491
330 GARFIELD, SANTA FE, NEW MEXICO 87501 505 988-7671

July 16, 1984

RECEIVED
JUL 16 1984
HYDROLOGY SECTION

Mr. Billy Goolsby
City/County Flood Plain Administrator
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: The Commons Drainage Report (D17-D48)

Dear Billy,

This letter is in response to your correspondence dated June 19, 1984. It is intended to provide sufficient information for your final drainage and grading approval. The items will be addressed in the same order as your comments.

1. The 1984 report updates the 1980 submittal utilizing current criteria and policy. Since the Commons was the first project to develop within the site draining to Masthead, it was necessary to analyze the entire basin using this current thinking. As the report indicates, a free discharge approach is acceptable. With this established, a grading plan incorporating this principal was prepared.

2. Enclosed with the letter you will find a tabulation of the computations to establish the flow rates shown on the revised drainage plate. The time of concentration was taken conservatively to be 10 minutes. The actual peak runoff from the site will be less than this amount. Analysis of the final grading plan has shown the impervious area on the site to be 80.5% which corresponds to a C value of 0.77.

3. The report shows the basin peak discharge to 153.6 cfs and the basin area to be 44.8 acres. The site's peak discharge is 33.84 cfs and its area is 9.47 acres. This translates to an area ratio of 21.1% and a flowrate ratio of 22.0%. Considering the conservative nature of the time of concentration, the site discharge is well within allowable limits.

PRINCIPALS
JERRY R. BOHANNAN, P.E. & L.S.
LARRY W. HUSTON
MICHIAL M. EMERY, P.E.

4. The final grading plan for the Commons does not discharge runoff to the west. The runoff from Phase 2 of the project is directed to the rundown at Masthead Street. The slopes in this area are sufficiently flat (0.005) that no significant erosion should occur. There is only one place on the site that a pipe is required under the sidewalk for drainage purposes and the 4" PVC is adequate as shown.

If you have any questions, please call Dave Woods or me.

Sincerely,

Brian G. Burnett

Brian G. Burnett
Project Manager

Enclosure

cc: Mr. Lowell Hare
Mr. Mark Powell

DWW/bl
Job No. 41211

COMMONS ON SITE RUNOFF RATES

BASIN	ARGA(AC)	Q100
A	1.37	4.90
B	.95	3.40
C	.40	1.42
D1	.35	1.25
D2	.43	1.52
D3	.12	.44
D4	.31	1.10
E	1.80	6.42
F	.94	3.37
G	1.61	5.77
H	1.19	4.25
Total	9.47	33.84

Q=CIA
=.77 (2.2X2.11)A

C=.77 Based on Type B Soil
80.5% IMPERVIOUS

RECEIVED
JUL 16 1984
HYDROLOGY SECTION

INFORMATION SHEET

PROJECT TITLE THE COMMONS TYPE OF SUBMITTAL FINAL GRADING PLAN

ZONE ATLAS PAGE NO. D-17 D48 CITY ADDRESS JEFFERSON ST. AT MATHEAD

LEGAL DESCRIPTION TRACT 7A JOURNAL CENTER

ENGINEERING FIRM BOHANNAN HUSTON INC CONTACT DAVE WOODS

ADDRESS 4125 CARLISLE NE PHONE 881-2000

OWNER LOVEL HARE CONTACT LOVEL HARE

ADDRESS 5300 DTC PARKWAY SUITE 270 ENGLEWOOD CO 80111 PHONE (303) 773-9600

ARCHITECT COMMERCIAL DESIGN ASSOC CONTACT

ADDRESS 8200 E. PACIFIC PL NO. 204 DENVER CO 80231 PHONE (303) 751-7701

SURVEYOR CONTACT

ADDRESS PHONE

CONTRACTOR CONTACT

ADDRESS PHONE

PRE-DESIGN MEETING: D-17 - D48

___ YES
X NO
___ COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ SITE DEVELOPMENT PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ ROUGH GRADING PERMIT APPROVAL
___ GRADING/PAVING PERMIT APPROVAL
X OTHER REVIEW (SPECIFY)
APPROVAL WILL BE SOUGHT THROUGH THE BUILDING PERMIT PROCESS

DATE SUBMITTED: 6/19/84

BY: [signature]

RECEIVED
JUN 20 1984
HYDROLOGY SECTION

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

June 19, 1984

Mr. Brian Burnett
Bohannan-Huston, Inc.
4125 Carlisle Boulevard NE
Albuquerque, NM 87107

REF: REVISED GRADING AND DRAINAGE PLAN FOR "THE COMMONS" AT JOURNAL CENTER (D17-D48) RECEIVED JUNE 13, 1984

Dear Brian:

I have reviewed the above referenced submittal and forward the following comments:

1. On the first page of your report, fourth paragraph, you reference the October 1980 report. In this paragraph, it is quoted that the "purpose of this report (October 1980) was to provide quidelines for the preparation of detailed drainage analysis for individual sites as they develop". The current report is just a repeat of the 1980 report.

2. On the submitted plan you have provided some discharge values for each individual basin in the development. There was nothing submitted to revise the report or show how these values were determined.

3. "The Commons" development is a portion of a larger basin. The relationship of this portions runoff and that of the total basin has not been addressed.

4. With regard to the final grading plan submittal of June 20, 1984, I have two (2) comments:

   a. With the phased development as shown, where will the runoff from the lower portion of the development adjacent to the south property line go? If it goes to the west as shown by final development, what temporary provisions are proposed for erosion protection?

b. There is only one 4" PVC pipe under a sidewalk shown. Is this a typical application or is this the only critical location?

Should you have any questions, please feel free to call me at 766-7644.

Sincerely yours,

Billy J. Goolsby

Billy J. Goolsby, PE
City/County Flood Plain Admin.

BJG:mrk

INFORMATION SHEET

PROJECT TITLE THE COMMONS TYPE OF SUBMITTAL REVISED DRAINAGE PLATE

ZONE ATLAS PAGE NO. D 17-D48 CITY ADDRESS

LEGAL DESCRIPTION

ENGINEERING FIRM BOHANNAN HUSTON INC CONTACT DAVE WOODS

ADDRESS 4125 CARLISLE PHONE 881-2000

OWNER LOWEL HARE CONTACT LOWEL HARE

ADDRESS DENVER CO. PHONE

ARCHITECT COMMERCIAL DESIGN ASSOC. CONTACT MARK POWEL

ADDRESS DENVER CO. PHONE

SURVEYOR CONTACT

ADDRESS PHONE

CONTRACTOR CONTACT

ADDRESS PHONE

PRE-DESIGN MEETING:

___ YES
X NO
___ COPY OF CONFERENCE RECAP SHEET PROVIDED

D-17-D48.
UPDATED DEVELOPED DRAINAGE PLATE

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ SITE DEVELOPMENT PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ ROUGH GRADING PERMIT APPROVAL
___ GRADING/PAVING PERMIT APPROVAL
___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 6/13/84

BY:

RECEIVED
JUN 13 1984
HYDROLOGY SECTION

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

May 11, 1984

Mr. Brian Burnett
Bohannan-Huston, Inc.
4125 Carlisle Blvd., N.E.
Albuquerque, NM 87107

RE: DRAINAGE REPORT FOR "THE COMMONS" AT JOURNEL CENTER (D17-D48)
RECEIVED APRIL 19, 1984

Dear Brian,

I have reviewed the above referenced submittal and am confused as to what is intended by the submittal. You have gone through the whole report addressing the proposed runoff from the entire Journel Center Development but, nowhere can I find any reference or calculation, tabulation, etc. for the on-site development for which this report was submitted.

I may be just overlooking the information and if so, please contact me and point it out.

Should you have any questions or comments, please contact me.

Sincerely yours,

Billy J. Goolsby

Billy J. Goolsby, P.E.
City/County Flood Plain Admin.

BJG/dlw

BOHANNAN–HUSTON INC.

4125 Carlisle Blvd. NE Albuquerque, New Mexico 87107
(505) 881-2000

Transmittal

To: City Hydrology
2nd & Central

☐ Parcel Post ☐ Messenger
☐ First Class ☐ UPS
☐ Express Mail ☐ Air Freight
☐ Bus ☐

Attention: Fred Aguirre

Date: 4-19-84 Our job number: 41211

Your job number:

Job: "The Commons" @ Journal Center

We are enclosing:	For:

Comments: 1 - Drainage Report for review

Thanks

RECEIVED
APR 19 1984
HYDROLOGY SECTION

By: Brian G. Burnett thank you

Rec'd by: Cynthia Alderete Date: 4/19/84

☐ Please Return Signed Yellow Copy

2/1/84

DRAINAGE REPORT FOR "THE COMMONS" AT JOURNAL CENTER

April, 1984

BOHANNAN-HUSTON INC.

D17-D48

RECEIVED
APR 19 1984
HYDROLOGY SECTION

BOHANNAN-HUSTON INC.

4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000
6713 VISCOUNT BLVD., EL PASO, TEXAS 79925 915 778-4449
330 GARFIELD, SANTA FE, NEW MEXICO 87501 505 988-7671

April 17, 1984

Mr. Fred Aguirre
Civil Engineer/Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Drainage Report for "The Commons" at Journal Center

Dear Fred:

Enclosed for your review is a copy of the referenced drainage report. Please contact me if you have any questions.

Sincerely yours,

Brian G. Burnett, P.E.
Project Manager

Enclosure

cc: Mr. Mike Callahan
Mr. Lowell Hare
Mr. Mark Powell

BGB/mw
Job No. 4 121 1

RECEIVED
APR 19 1984
HYDROLOGY SECTION

PRINCIPALS
JERRY R. BOHANNAN, P.E. & L.S.
LARRY W. HUSTON
MICHIAL M. EMERY, P.E.

INFORMATION SHEET

PROJECT TITLE "The Commons" at Journal Center TYPE OF SUBMITTAL Drainage Report

ZONE ATLAS PAGE NO. D-17 CITY ADDRESS

LEGAL DESCRIPTION Plat to follow

ENGINEERING FIRM Bohannan–Huston, Inc. CONTACT Brian G. Burnett

ADDRESS 4125 Carlisle Blvd. NE Albuquerque, NM 87107 PHONE 881-2000

OWNER Lowell A. Hare CONTACT

ADDRESS 5300 DTC Parkway, Suite 270 Englewood, CO 80111 PHONE (303) 773-9600

ARCHITECT Commercial Design Associates CONTACT Mark Powell

ADDRESS 8200 E. Pacific Place, No. 204 Denver, CO 80231 PHONE (303) 751-7701

SURVEYOR CONTACT

ADDRESS PHONE

CONTRACTOR CONTACT

ADDRESS PHONE

PRE-DESIGN MEETING:

___ YES
XX NO
___ COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ SITE DEVELOPMENT PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
XX ROUGH GRADING PERMIT APPROVAL
___ GRADING/PAVING PERMIT APPROVAL
___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 4/18/84

BY: Brian G Burnett

RECEIVED
APR 19 1984
HYDROLOGY SECTION

DRAINAGE REPORT
FOR
"THE COMMONS"
AT
JOURNAL CENTER

April, 1984

PREPARED FOR:

LOWELL A. HARE
5300 DTC PARKWAY, SUITE 270
ENGLEWOOD, CO 80111

PREPARED BY:

BOHANNAN–HUSTON, INC.
4125 CARLISLE BLVD., NE
ALBUQUERQUE, NM 87107

Brian G. Burnett, P.E.
N.M.P.E. No. 8541

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1 – Site Location

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2 – Street Capacities

APPENDIX

1 – Drainage Summary Sheet – 1980 Report

PLATES
(in rear pocket)

Plate 4A (from 1980 report)
Sheets 12, 13, 14 – Construction Plans for Masthead
Plate 1 – Grading Plan for "The Commons"

PURPOSE

The purpose of this report is to outline the drainage management scheme for a 9.4 acre parcel located in the Journal Center Complex. The Development Process Manual (DPM) and City Drainage Ordinance will be utilized to establish the plan.

SITE LOCATION AND DESCRIPTION

The property is located directly west of Jefferson Street and south of Masthead Drive. The intersection of Masthead Drive and Tiberon Street is located at the northwest corner of the parcel. Figure 1 identifies the site's location. For design purposes, a 'B' type soil will be utilized.

PREVIOUS REPORTS

Several documents have been prepared which outline the drainage master plan for the 310 acre parcel, known as the Journal Center. The first report, entitled ***Journal Center Drainage Report*** (September, 1979), outlined broad drainage measures for the site. Of special interest in this document were recommendations for the treatment of flows in the Pino Arroyo.

As design work progressed on the Pino Arroyo Channel and on-site infrastructure, a second report was prepared. The ***Journal Center Interim Drainage Report*** (October, 1980) defined how each individual tract would treat strom runoff. The primary purpose of the report was to provide "guidelines for the preparation of detailed drainage analysis for individual sites as they develop".

The runoff analysis was prepared utilizing the Rational Formula. Rainfall intensities were obtained by the ***Master Plan of Drainage*** prepared by Leedshill–Herkenhoff, Inc. Runoff coefficients were assumed to be 0.40 for undeveloped conditions and 0.77 for developed conditions.

Basically, the Journal Center tract can be divided into two areas: the northern half which drains toward Los Angeles Boulevard and the southern half which drains towards the Pino Arroyo and its outfall at the North Diversion Channel. Included in the rear pocket is Plate 4A which was prepared for the second report. This plate identifies major drainage divides and basins based on current platting and existing facilities. Included as Appendix 1 is the drainage summary sheet for the individual tracts.

RUNOFF ANALYSIS UTILIZING EXISTING CRITERIA

Since the preparation of the two reports, several significant changes have taken place regarding drainage management in Albuquerque. The first was the adoption of the Drainage Ordinance which outlined the broad guidelines for analyzing runoff and its impact on adjacent property and infrastructure. The second was the preparation of the DPM which formalized criteria and methods for such analysis. The previous work will be compared to values obtained using this current thinking.

Of specific interest to this project is the drainage basins which discharge to Masthead Drive. Areas Gst, Jst, Kst, Lst, M and N contribute runoff to this system. Detailed construction plans have been prepared for Masthead Drive and are included in the rear pocket. As the plans indicate, flows within Masthead Drive will be removed prior to reaching the Public Service Company Easement. They will be then carried in an earth channel to the Pino Arroyo desilting basin.

The concept oulined in the October, 1980 report called for the areas listed above to discharge to Masthead Drive in a free flow manner (i.e., no ponding). Based on current criteria and ordinance guidelines, the validity of this free flow assumption was checked. Contained in Table 1 is a comparison of flow rates for Areas Gst, Jst, Kst, Lst, M and N. As the figures indicate, the earlier rates appear reasonable when compared to current criteria.

Table 2 lists useful data relating to street capacity. The most critical reach from a capacity standpoint is where the slope equals 0.0101. Charts from the DPM, however, indicate that the street has sufficient capacity to convey the flows reaching this section.

ON-SITE MANAGEMENT

The analysis outlined above indicates that runoff from Areas Gst, Jst, Kst, Lst, M and N should be allowed free discharge to Masthead Drive. The grading plan identified on Plate 1 follows this concept. No ponding areas have been provided on-site.

It is proposed that runoff be directed to Masthead Drive. This street will be constructed to the property's west boundary. Since no permanent improvements exist to the west, runoff will proceed overland before reaching the Pino Arroyo Desilting Basin. To avoid undercutting of the pavement surface, pit-run gravel will be placed at the edge of the pavement and immediately downstream.

FIGURES

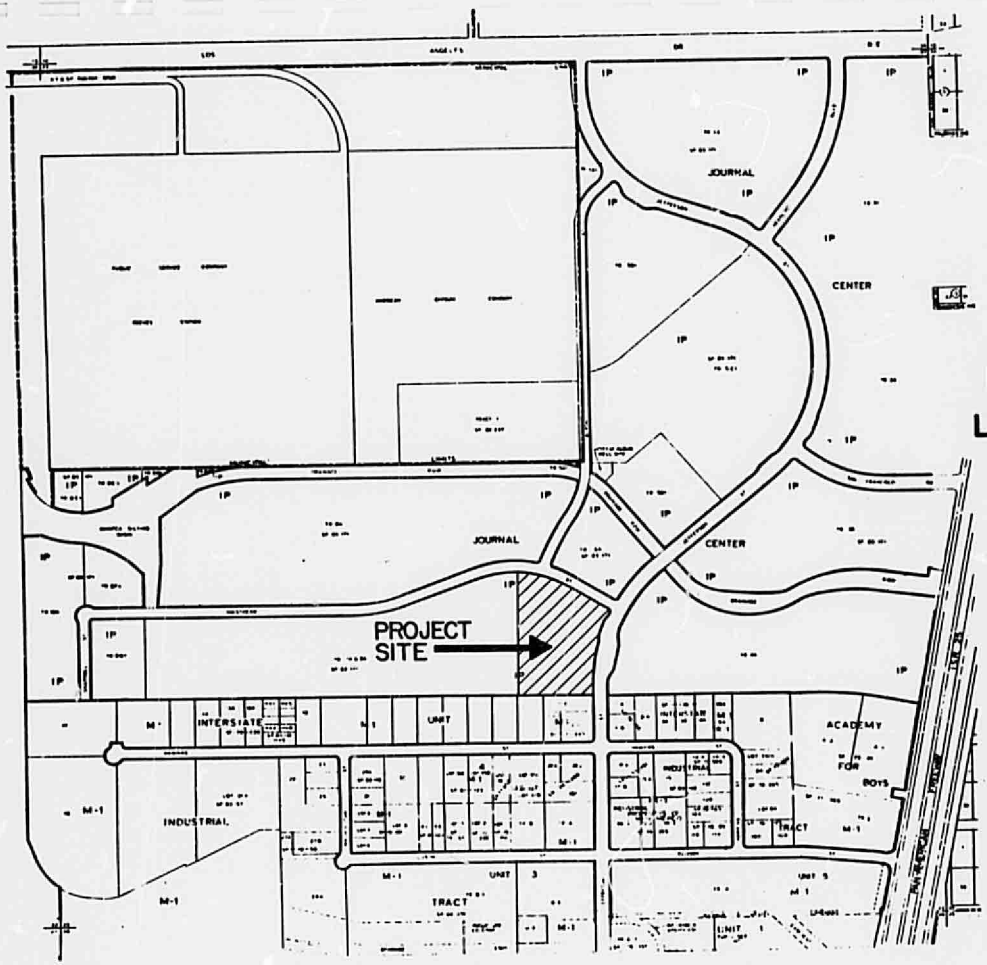

FIGURE 1
LOCATION MAP

D-17-Z

TABLES

TABLE 1

			CURRENT CRITERIA - 100 YEAR STORM						
BASIN	AREA (acres)	1980 REPORT DEVELOPED Q(cfs)	ESTIMATED LONGEST REACH (ft.)	RAINFALL[1] (in.)	% IMPERVIOUS	'C' FACTOR[2]	t_c[3] (min.)	INTENSITY[4] (in./hr.)	Q[5] (cfs)
Gst	3.0	12.5	5000	2.2	90	0.86	10	4.7	12.1
Jst	0.6	2.4	1000	↑	100	1.0	10	4.7	2.8
Kst	1.3	5.4	1100	↕	90	0.86	10	4.7	5.3
Lst	1.4	5.8	1300	↕	90	0.86	11.4	4.4	5.3
M	25.5	86.5	1800	↓	90	0.86	15.8	3.7	81.1
N	13.0	50.9	1400	2.2	90	0.86	12.3	4.2	47.0

1. PLATE 22.2 D-1
2. PLATE 22.2 C-1
3. PLATE 22.2 B-1 (Based on average slope of 2% and velocity of 1.9 ft/sec)
4. PLATE 22.2 D-2
5. Q=CIA

BGB 3.84
"THE COMMONS"

TABLE 2

BASINS CONTRIBUTING TO STREET SEGMENT	COMBINED FLOWRATE (FROM TABLE 1)	STREET SEGMENT SLOPE[1]	CAPACITY OF STREET SEGMENT[2] (cfs)
Gst, Jst	14.9	0.0206	180
Gst, Jst, Kst	20.2	0.0150	160
Gst, Jst, Kst, M	101.3	0.0101	130
Gst, Jst, Kst, M, Lst	106.6	0.0214	184
Gst, Jst, Kst, M, Lst, N	153.6	0.0148	160

1. Obtained from Construction Drawings (See Rear Pocket)
2. Plate 22.2 D-2 100 YEAR flow at two-tenths above top of curb

PROJECT NAME The Commons
PROJECT NO. Street Analysis
SUBJECT
SHEET OF
BY BGB DATE 3-84
CH'D DATE

APPENDICES

BASIN	AREA	C	FLOW LENGTH	ELEV. DIFF.	t_c	Developed Q
A	24.1	.77	1760	30	11.8	95.3
B	17.6	.77	1650	34	10.4	72.3
C	27.9	.77	1450	32	9.2	116.0
D	20.0	.77	1400	32	9.6	83.0
E	29.5	.77	3400	43	22.0	91.4
F	19.6	.77	2200	39	13.8	73.5
G	22.5	.77	2200	39	13.8	84.4
G_{ST}	3.0	.77	750	9	7.0	12.5
H	24.0	.77	1500	29	9.9	99.8
I	5.2	.77	450	8	4.1	21.5
J	4.6	.77	900	6	10.1	19.2
J_{ST}	0.6	.77	550	8	5.1	2.4
K	15.6	.77	1500	22	11.1	63.0
K_{ST}	1.3	.77	1150	20	8.4	5.4
L	15.4	.77	950	20	6.8	64.0
L_{ST}	1.4	.77	1300	25	8.9	5.8
M	25.5	.77	2550	31	17.9	86.5
N	13.0	.77	1700	25	12.2	50.9
N_{CH}	3.4	.77	800	6	8.8	14.2
O	5.3	.77	800	6	8.8	22.0
AP9	30.4	.77	2900	37	19.4	99.7
AP10	44.8	.77	3800	58	22.26	137.9

PROJECT NAME Journal Center SHEET 2 OF 2
PROJECT NO. BY Dmyn DATE
SUBJECT Basin Runoff Calculations CH'D DATE