



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

December 12, 1985

Mr. Clinton Dodge
Leedshill-Herkenhoff, Inc.
500 Copper NW
Albuquerque, NM 87103

REF: ENGINEER'S CERTIFICATION FOR WATER WORKS SALES (J10-D11) ENGINEER'S
STAMP DATED 11/29/85

Dear Mr. Dodge:

Based on the information provided on your December 5, 1985 submittal,
certification for the above referenced drainage plan is acceptable.

If I can be of further assistance, please feel free to call me at
766-7644.

Sincerely,

Bernie J. Montoya
for Bernie J. Montoya, CE
Engineering Assistant/Hydrology

BJM:mrk

MUNICIPAL DEVELOPMENT DEPARTMENT

C. Dwayne Sheppard, P.E., City Engineer

ENGINEERING DIVISION

Telephone (505) 766-7467

AN EQUAL OPPORTUNITY EMPLOYER

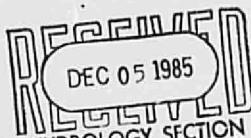
DRAINAGE INFORMATION SHEET

PROJECT TITLE: WATERWORKS SALES ZONE ATLAS/DRNG. FILE #: J-10/D11
 PL DESCRIPTION: LOT 216, AIRPORT UNIT, TOWN OF ATRISCO GRANT
 ADDRESS: 901 64th STREET NW 87120
 ENGINEERING FIRM: LEEDSHILL-HERKENHOFF CONTACT: JOANN ENGLISH
 ADDRESS: 500 COPPER NW PHONE: 247-0294
 OWNER: WATERWORKS SALES CONTACT: ROY SMITH
 ADDRESS: SAME AS ABOVE PHONE: _____
 ARCHITECT: N/A CONTACT: _____
 ADDRESS: _____ PHONE: _____
 CONVEYOR: LEEDSHILL-HERKENHOFF CONTACT: KIM STELZER
 ADDRESS: SAME AS ABOVE PHONE: _____
 FACTOR: N/A CONTACT: _____
 ADDRESS: _____ PHONE: _____

PRE-DESIGN MEETING:

☐ YES
☐ NO

☒ COPY OF CONFERENCE RECORD SHEET PROVIDED PREVIOUSLY



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: 4 DEC 85
 BY: JOANN ENGLISH



LEEDSHILL-HERKENHOFF, INC.
500 Copper Avenue N.W.
P. O. Box 1217
Albuquerque, New Mexico 87103
(505) 247-0294

1879-2023.12-85

November 29, 1985

Bernie Montoya
City/County Flood Plain Administration
Design Hydrology Section
123 Central N.W.
Albuquerque, New Mexico 87102

RE: ENGINEERING CERTIFICATION FOR DRAINAGE PLAN,
WATERWORKS SALES (J10-D11)

Transmitted herewith are two copies of the as constructed grading plan for the above referenced project. Shown on the drawings are existing conditions (prior to regarding), proposed contours and as-constructed contours. You will note that the as-constructed contours vary from the contours proposed. The as-constructed contours have been checked against the requirements of the proposed drainage plan and are in conformance with the intent of the drainage plan. The pond volumes in Area 2 meet or exceed the volumes required for retaining developed runoff flows. These are summarized on the plan itself.

I believe that this should meet the intent of the 1980 drainage plan and the enclosed plan is documentation of this. The grading has been verified by our surveyors and this will serve to certify that Waterworks Sales Company is in compliance with the drainage plan of 1980 and the revised plan of September of this year. Waterworks would like to resolve their outstanding certificate of occupancy as soon as possible.

This should include the information that you requested, but if there is anything else you need, please call.

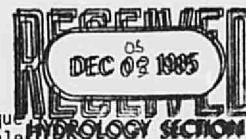
Joann English

JOANN ENGLISH

er

Encs.

cc: Roy Smith, Waterworks Sales, Albuquerque
James Warner, President, Waterworks Sales

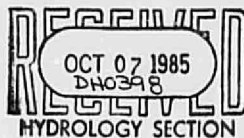




600 WEST 48TH AVENUE
DENVER, COLORADO 80216
(303) 292-6206

WATERWORKS SALES COMPANY

A Corporate Trade Name of J. M. Warner, Inc.



HYDROLOGY SECTION

October 2, 1985

*file with
J10-D11*

Mr. Bernie J. Montoya
Engineering Assistant
Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87102

Re: Revised Drainage Plan
J10-D11

Dear Mr. Montoya:

Thank you for your letter of September 26 with
copy of approval letter dated September 17.

Appreciate your prompt assistance and coopera-
tion with our problem.

Sincerely

WATERWORKS SALES COMPANY

Jim Warner
James B. Warner
President
J/j



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

September 26, 1985

James B. Warner
Waterworks Sales Company
600 West 48th Avenue
Denver Colorado 80216

REF: REVISED DRAINAGE PLAN FOR WATERWORKS SALES (J10-D11)

Dear Mr. Warner:

Attached you will find a copy of the approval letter dated September 17, 1985 which was mailed to your Engineer.

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

Sincerely,

Bernie J. Montoya

Bernie J. Montoya
Engineering Assistant
Hydrology

BJM/cl

MUNICIPAL DEVELOPMENT DEPARTMENT

C. Dwayne Sheppard, P.E., City Engineer

ENGINEERING DIVISION

Telephone (505) 766-7467

AN EQUAL OPPORTUNITY EMPLOYER



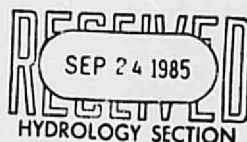
600 WEST 48TH AVENUE
DENVER, COLORADO 80216
(303) 292-6206

WATERWORKS SALES COMPANY

A Corporate Trade Name of J. M. Warner, Inc.

September 19, 1985

Mr. Carlos A. Montoya, P.E.
City/County Flood Plain Administrator
Design Hydrology Section
123 Central N.W.
Albuquerque, New Mexico 87102



RE: Revised Drainage and Grading Plan
For Waterworks Sales Company (J10-D11)

Dear Mr. Montoya:

On September 12, 1985, Leedshill-Herkenhoff, Inc., resubmitted information applicable to improvements needed for our Albuquerque facility to comply with your requirements.

We would respectfully request a reply at your very first convenience, in order that we might proceed with whatever construction is required for compliance.

If I might personally assist in the process, please do not hesitate to advise me accordingly.

Thank you for your consideration.

Sincerely,

WATERWORKS SALES COMPANY

James B. Warner
President

JBW:c

cc: Ms. Jo Ann English
Leedshill-Herkenhoff, Inc.
Mr. Roy Smith
Waterworks Sales Company
Albuquerque Office



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

September 17, 1985

Joann English
Leedshill-Herkenhoff, Inc.
500 Copper NW
Albuquerque, NM 87103

REF: REVISED DRAINAGE PLAN FOR WATER WORKS SALES (J10-D11) RECEIVED
SEPTEMBER 13, 1985

Dear Joann,

Based on the information provided on your September 13, 1985 resubmittal, revisions as indicated are acceptable.

Please advise your client that future drainage improvements on 64th St. and Glenrio are in the planning process. When the facilities become available they may want to do away with their ponding areas and obtain free discharge into the streets. A revised drainage plan will be required at that time if they elect to tie into the facility.

A certificate of occupancy will be issued after the certification is submitted and reviewed. If I can be of further assistance, please call me at 766-7644.

Sincerely,

Bernie J. Montoya CE
Engineering Assistant
Hydrology

BJM/cl

MUNICIPAL DEVELOPMENT DEPARTMENT

C. Wayne Sheppard, P.E., City Engineer

ENGINEERING DIVISION

Telephone (505) 766-7467

AN EQUAL OPPORTUNITY EMPLOYER



LEEDSHILL-HERKENHOFF, INC.
500 Copper Avenue N.W.
P. O. Box 1217
Albuquerque, New Mexico 87103
(505) 247-0294

1470-2023.12-85



September 12, 1985

Carlos A. Montoya, P.E.
City/County Flood Plain Administration
Design Hydrology Section
123 Central N.W.
Albuquerque, NM 87102

RE: REVISED DRAINAGE AND GRADING PLAN
FOR WATERWORKS SALES (J10-D11)

Dear Mr. Montoya:

Per your request of July 25, 1985, I am enclosing these items in this package. Enclosed you will find:

1. Information sheet designating resubmittal
2. Revised grading plan with engineer's stamp.
3. Calculations of developed flow rates and proposed ponding volume.

Briefly, the Waterworks Sales site was examined for historic versus developed flow rates to determine the retaining pond volume required. The calculations are enclosed. The historic runoff apparently drained from the site towards the southeast. There were no ponds evident from the original contours prepared by Enchantment Engineering in 1980. It was assumed therefore that the historic runoff volume would be allowed to exit from the site and that only the increased runoff volume due to development would be required to be retained on site.

Based upon this assumption, runoff was calculated per DPM standards. The result was that the developed peak runoff Q was increased from 6.4 to 9.16 cfs and that the volume was increased from 0.25 AF to 0.36 AF for the 100 year storm. Based upon these calculations, the existing ponding areas on the site were checked for capacity, and were found to be of insufficient volume to retain the 0.11 AF required.

It is proposed that one area of the site be regraded to provide the additional ponding volume (see drawing). The volume for the entire site per this grading plan is 0.19 AF. Ponds in drainage areas 1 and 2 have been reduced in volume by 30% to account for displacement by pipe storage in the



LEEDSHILL-HERKENHOFF, INC.

Carlos A. Montoya, P.E.
September 12, 1985
page 2

ponds. The net result is that the peak runoff Q is increased, but the actual runoff volume is decreased from the historic values. This is in compliance with the intent of the original grading and drainage plan prepared by Enchantment Engineering in January 1980.

Please review the enclosed submittal and advise us if this is acceptable and meets your requirements. If it is, we will recommend to Waterworks Sales that the construction be completed so that their outstanding certificate of occupancy may be resolved.

Thank you,


JOANN ENGLISH

bz

Enc.

cc: Roy Smith, Waterworks Sales, w/enc.

DRAINAGE INFORMATION SHEET

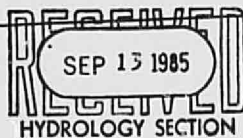
PROJECT TITLE: WATERWORKS SALES ZONE ATLAS/DRNG. FILE #: J-10
 LEGAL DESCRIPTION: LOT 216, AIRPORT UNIT TOWN OF ATRISCO GRANT
 ADDRESS: 901 164th STREET NW 87120
 ENGINEERING FIRM: LEEDSHILL-HERKENHOFF, INC. CONTACT: JOHN ENGLISH
 ADDRESS: 500 COPPER RD PHONE: 247-0894
 OWNER: WATERWORKS SALES CONTACT: BOB SMITH
 ADDRESS: SAME PHONE: _____
 ARCHITECT: LEEDSHILL-HERKENHOFF, INC. CONTACT: KEI GUTHRIE
 ADDRESS: SAME AS ABOVE PHONE: _____
 SURVEYOR: LEEDSHILL-HERKENHOFF, INC. CONTACT: KIM STELZER
 ADDRESS: SAME AS ABOVE PHONE: _____
 CONTRACTOR: UNKNOWN CONTACT: _____
 ADDRESS: _____ PHONE: _____

DESIGN MEETING:

☒ YES

☐ NO

☒ COPY OF CONFERENCE RECAP SHEET PROVIDED, LETTER DATED 10/1/85



DRB NO. _____

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☒ DRAINAGE PLAN *revised*
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION *no mm*

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 *no mm*
- ☐ ROUGH GRADING PERMIT APPROVAL
- ☐ GRADING/PAVING PERMIT APPROVAL
- ☐ OTHER Revision (SPECIFY)

DATE SUBMITTED: 10 SEPT 85

BY: JOHN ENGLISH



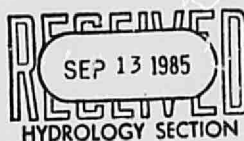
City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

July 25, 1985

Mr. Kenneth Guthrie
Leedshill-Herkenhoff, Inc.
500 Copper Ave. NW
P.O. Box 1217
Albuquerque, NM 87103



REF: REVISED DRAINAGE & GRADING PLAN FOR WATERWORKS SALES (J10-D11)
RECEIVED 7/22/85

Dear Mr. Guthrie:

Based on the information provided on your July 22, 1985 submittal, listed you will find certain concerns that will need to be addressed before final approval is granted:

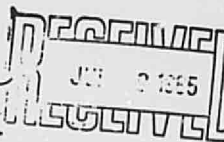
1. Information sheet designating resubmittal.
2. Engineer's stamp with signature and date.
3. Calculations showing developed flow rates along with the proposed ponding volume.
4. Detail showing the proposed ponding area along with the required elevations for construction purposes.
5. In placing the pipes back into the proposed ponding area, how much displacement of volume do you anticipate? Please address.

If you have any questions or comments, please feel free to contact us at 766-7644.

Sincerely,

Carlos A. Montoya

Carlos A. Montoya PE
City/County Flood Plain Admin.



CAM/BJM/cl

MUNICIPAL DEVELOPMENT DEPARTMENT

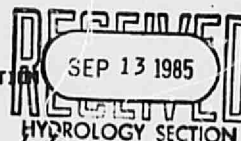
C. Dwayne Sheppard, P.E., City Engineer

ENGINEERING DIVISION

Telephone (505) 766-7467

AN EQUAL OPPORTUNITY EMPLOYER

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION



HYDROLOGY SECTION PROJECT NO.: J10 DATE: 2/8/85

PLANNING DIVISION NOS. EPC: _____ DRB: _____

CONFERENCE RECAP

SUBJECT: 901 64th ST NW (WATERWORKS Sales) (ORIGINAL PLAN APPROVED 12/1)

APPROVAL REQUESTED:

____ PRELIMINARY PLAT _____ FINAL PLAT
____ SITE DEVELOPMENT PLAN _____ ☒ BUILDING PERMIT
____ ROUGH GRADING

WHO

REPRESENTING

ATTENDANCE: Jo Ann English _____
Fred J. Aguilar _____

FINDINGS: 1. UPDATED DRAINAGE PLAN REQUIRED FOR BUILDING PERMIT
SIGN-OFF.

2. CONTROLLED DISCHARGE REQUIRED IN VIEW OF THE
EXISTING FLOODING PROBLEM DOWNSTREAM OF THIS SITE.

3. THE ALLOWABLE DISCHARGE IS DEPENDENT ON DOWNSTREAM
CAPACITY. SEE APPROVED DRAINAGE REPORT FILE NO H11-D22
FOR STORM DRAIN CAPACITY DOWNSTREAM

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Fred J. Aguilar SIGNED: Jo Ann English
TITLE: _____ TITLE: _____
DATE: 2/8/85 DATE: 2/8/85

LH LEEDSHILL - HERKENHOFF, INC. ALBUQUERQUE PHOENIX SANTA FE SAN DIEGO SAN FRANCISCO ENGINEERING COMPUTATIONS	NAME OF PROJECT WATERWORKS SALES		RECEIVED SEP 13 1985 SHEET NUMBER 15 DATE SEP 85 HYDROLOGY SECTION
	COMPUTED BY: JE	CHECKED BY: LC	

CALCULATIONS FOR DEVELOPED FLOW RATES

THIS ANALYSIS INCLUDES ONLY ON SITE FLOWS FOR THE EXISTING WATERWORKS SALES OFFICE ON 64th ST & GLENRIO
 CALCULATIONS PER DAM

SITE TOPOGRAPHY:


- SITE IS VERY FLAT AND IS GENERALLY HIGHER IN ELEVATION ON THE EAST AND WEST SIDES. PIPE STORAGE AREA IS SOMEWHAT BOWL SHAPED.
- MAJORITY OF WATER IS RETAINED ON SITE BECAUSE IT CAN'T GET OUT ONTO 64th & GLENRIO
- PRIOR TO DEVELOPMENT, SITE WAS FLAT WITH SLOPE NW TO SE. THERE WERE NO APPARENT PONDS, SO IT IS ASSUMED THAT ALL RUNOFF WAS ALLOWED TO EXIT THE SITE. (REF. ORIGINAL PLANS FOR SITE BY ENCHANTMENT ENGINEERING DATED JAN. 1980)
- FLOW IS KEPT ON SITE BY A BLOCK WALL ON THE WEST SIDE OF THE SITE.
- WATER WILL POND TO APPROX. EL. 5099.4 ON THE NORTHERN PORTION OF THE SITE BEFORE IT ENTERS ONTO 64th STREET
- WATER FROM THE SOUTHERN PORTION OF THE SITE WILL BEGIN TO ENTER ONTO GLENRIO WHEN THE WATER SURFACE ELEVATION EXCEEDS 5099.3
- TYPICAL SLOPES AND LENGTHS ACROSS THE SITE ARE:

APPROX. STA.	L.	ΔE	S	T _c *
5+00 (W)	130'	.0'	.0062	2.34
5+00 (E)	95'	1.1'	0.012	1.53
6+23 (E)	125'	1.5'	0.012	1.89
7+50 (E)	90'	.1'	0.0011	3.56
END BLDG (N)	150'	1.0'	0.007	2.46

$$T_c \text{ FROM BPM FORMULA} = 0.0078 \left(\frac{L^{.77}}{S^{.385}} \right)$$

BECAUSE T_c VALUES ARE SO LOW ACROSS ENTIRE SITE, USE T_c MIN. = 10 MINUTES.

- BECAUSE HISTORIC RUNOFF WAS ALLOWED TO EXIT FROM SITE, IT IS ASSUMED THAT DEVELOPED RUNOFF MUST BE RETAINED ON SITE. PONDING VOLUME MUST EQUAL DEVELOPED RUNOFF - HISTORIC RUNOFF. THIS IS IN ACCORDANCE WITH ORIGINAL DRAINAGE AND GRADING PLAN FOR SITE DATED JAN. 1980.

 LEEDSHILL - HERKENHOFF, INC. ALBUQUERQUE PHOENIX SAN FRANCISCO SAN DIEGO ENGINEERING COMPUTATIONS	NAME OF PROJECT WATERWORKS SALES		SHEET NUMBER 2 OF
	COMPUTED BY: JG	CHECKED BY: LC	JOB NUMBER 2023.12

FROM PLATE 22.2 D-1, 6 HR 100 YR RAINFALL IS 2.2"
 RAINFALL INTENSITY = ~~4.65~~ $2.2(2.114) = 4.65$ INCHES/HOUR
 AREA OF ENTIRE SITE = $210 \times 835 = 175350$ SF = 4.02 AC
 PAVED AREAS AND BUILDING = 45725 SF = 1.05 AC
 SOIL GROUP B - TYPE MWA MADUREZ WINK SERIES

C VALUES FROM PLATE 22.C-1
 0% IMPERVIOUS, C = 0.34
 25% IMPERVIOUS, C = 0.45

- CALCULATE UNDEVELOPED FLOW RATES

$$Q = CIA = 0.34(4.65)(4.02) = 6.4 \text{ cfs}$$

$$\psi = CRA = 0.34(2.2) \left(\frac{4.02}{12} \right) = .25 \text{ AF}$$

- EXISTING CONDITIONS INDICATE THREE DISTINCT DRAINAGE AREAS, LOOK AT EACH INDIVIDUALLY

DRAINAGE AREA #1

$$\text{AREA} = 220 \times 210 = 46200 \text{ SF} = 1.06 \text{ AC}$$

AREA IS IN CLOSE TO NATURAL CONDITIONS

$$Q = .34(1.06)(4.65) = 1.68 \text{ cfs}$$

$$\psi = .34(1.06) \left(\frac{2.2}{12} \right) = 0.07 \text{ AF}$$

BECAUSE AREA HAS NOT BEEN DEVELOPED, $Q_{DEV} = Q_{HIST}$
 AND NO PONDING IS REQUIRED.

DRAINAGE AREA #2

$$\text{AREA} = 470 \times 210 = 98700 \text{ SF} = 2.27 \text{ AC}$$

IMPERVIOUS AREA = 20250 SF (20% OF AREA)

C FACTOR FOR 20% IMPERVIOUS = 0.43

$$Q_{UNDEVELOPED} = .34(2.27)(4.65) = 3.59 \text{ cfs}$$

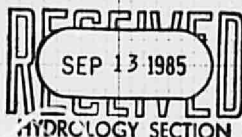
$$Q_{DEVELOPED} = .43(2.27)(4.65) = 4.54 \text{ cfs}$$

$$\Delta Q = 0.95 \text{ cfs}$$

$$\psi_{UNDEVELOPED} = .34(2.2) \left(\frac{2.27}{12} \right) = .14 \text{ AF}$$

$$\psi_{DEVELOPED} = .43(2.2) \left(\frac{2.27}{12} \right) = .18 \text{ AF}$$

$$\Delta \psi = 0.04 \text{ AF}$$



H LEEDSHILL - HERKENHOFF, INC. ALBUQUERQUE PHOENIX SANTA FE SAN DIEGO SAN FRANCISCO ENGINEERING COMPUTATIONS	NAME OF PROJECT WATERWORKS SALES		SHEET NUMBER 3 OF
	COMPUTED BY: JE	CHECKED BY: LC	JOB NUMBER 2023.12 DATE: SEPT. 85

DRAINAGE AREA #3

AREA = .69 AC

% IMPERVIOUS = 95

C FACTOR FOR 95% IMPERVIOUS = .92

$Q_{undeveloped} = 0.34 (4.65) (.69) = 1.09 \text{ cfs}$

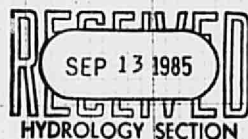
$Q_{developed} = 0.92 (4.65) (.69) = 2.95 \text{ cfs}$

$\Delta Q = 1.86 \text{ cfs}$

$\psi_{undeveloped} = .34 (2.2) (.69) = 0.04 \text{ AF}$

$\psi_{developed} = .92 (2.2) (.69) = .12 \text{ AF}$

$\Delta \psi = 0.08 \text{ AF}$



CALCULATE COMPOSITE C FACTOR FOR ENTIRE DEVELOPED SITE

$C_{comp} = .34 \left(\frac{1.06}{4.02} \right) + .43 \left(\frac{2.27}{4.02} \right) + .92 \left(\frac{.89}{4.02} \right)$

$= .089 + 0.24 + .16 = 0.49$

RECALCULATE RUNOFF FROM SITE USING C_{comp}

$Q = .49 (4.65) (4.02) = 9.25 \text{ cfs}$

$\Delta Q = 9.25 - 7.4 \text{ cfs} = 2.85 \text{ cfs}$

$\psi = .49 (2.2) (4.02) = .36 \text{ AF}$


$\Delta \psi = .36 \text{ AF} - .25 \text{ AF} = .11 \text{ AF}$

PROPOSE TO DO THE FOLLOWING:

1. AREA 3 HAS BEEN CONSTRUCTED, SO DO NOT WANT TO REVISE THIS AREA IF POSSIBLE

2. PROPOSE TO RETAIN SOME RUNOFF IN AREAS 1 AND 2 TO HOLD $\Delta \psi = \psi_{developed} - \psi_{historic}$

3. BY ACCOMPLISHING RETAINAGE OF RUNOFF VOLUME, WILL INCREASE ACTUAL PEAK RUNOFF Q BUT WILL EQUAL OR DECREASE VOLUME OF RUNOFF EXITING TO GLENRIO AND 64th STREET. THIS MEETS THE INTENT OF THE ORIGINAL GRADING/DRAINAGE PLAN.

 LEEDSHILL - HERKENHOFF, INC. ALBUQUERQUE PHOENIX SANTA FE SAN DIEGO SAN FRANCISCO ENGINEERING COMPUTATIONS	NAME OF PROJECT WATERWORKS SALES		SHEET NUMBER 4 OF
	COMPUTED BY: JE	CHECKED BY: LC	JOB NUMBER 2023.12 DATE: SEPT 85.

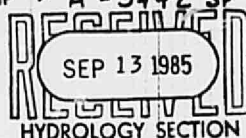
CALCULATIONS OF EXISTING PONDING AREAS

DRAINAGE AREA #1 - WATER CAN POND TO EL. 5099.6

BEFORE IT CROSSES A SLIGHT RIDGE AND CAN GET OUT ONTO 64th STREET.

EL. 99.2 AREA = 400 SF $\bar{A} = 1145$ SF
 EL. 99.4 AREA = 1886 SF $\bar{A} = 5772$ SF
 EL. 99.6 AREA = 9657 SF

\downarrow
 229 CF
 1154 CF
 $\Sigma \downarrow = 1383$ CF



DRAINAGE AREA #2 -

EL. 99.0 AREA = 371 SF $\bar{A} = 2614$ SF
 EL. 99.2 AREA = 4857 SF $\bar{A} = 7543$ SF
 EL. 99.4 AREA = 10219 SF

\downarrow
 523 CF
 1509 CF
 $\Sigma \downarrow = 2032$ CF

DRAINAGE AREA #3

EL. 98.8 AREA = 57 SF $\bar{A} = 243$ SF
 EL. 99.0 AREA = 429 SF $\bar{A} = 758$ SF
 EL. 99.2 AREA = 1086 SF $\bar{A} = 1558$ SF
 EL. 99.3 AREA = 2029 SF

\downarrow
 49 CF
 152 CF
 156 CF
 $\Sigma \downarrow = 357$ CF

EXISTING PONDING AREA VOLUMES = 3772 CF = 0.09 AF

MUST POND A MINIMUM OF .11 AF (SEE SHEET 3)
 IN ADDITION TO PONDING REQUIREMENTS, ASSUME THAT
 30% OF PONDING VOLUME IN AREAS 1 AND 2 WILL BE
 DISPLACED BY PIPE STORAGE. THEREFORE, INCREASE
 REQUIRED STORAGE BY THIS AMOUNT.

$\therefore \downarrow_{REQ'D} = (.13) .11 = .14 \text{ AF} = 6229 \text{ CF}$

LH LEEDSHILL - HERKENHOFF, INC. ALBUQUERQUE PHOENIX SANTA FE SAN DIEGO SAN FRANCISCO ENGINEERING COMPUTATIONS	NAME OF PROJECT WATERWORKS SALES		SHEET NUMBER 5 OF
	COMPUTED BY: JE	CHECKED BY: 11/	JOB NUMBER 2023.12 DATE: SEPT 85

DRAINAGE AREA #1 - REMAINS AS IS
PONDING VOLUME

SEP 13 1985

1383 CF

DRAINAGE AREA #3 - REMAINS AS IS
PONDING VOLUME

HYDROLOGY SECTION

357 CF

DRAINAGE AREA #2 - REGRADE PER DRAWING
NEW POND VOLUMES:

POND 2A

EL. 99.0 AREA = 4011
EL. 99.2 AREA = 7360
EL. 99.4 AREA = 18000

$\bar{A} = 5686$
 $\bar{A} = 12680$

+

1137

2536

$\Sigma A = 3673$

POND 2B

EL. 99.0 AREA = 3244
EL. 99.2 AREA = 6227
EL. 99.4 AREA = 8321
EL. 99.6 AREA = 11640

$\bar{A} = 4792$
 $\bar{A} = 7280$
 $\bar{A} = 9980$

+

958

1456

1996

$\Sigma A = 4410$

POND 2C

EL. 99.0 AREA = 1378
EL. 99.2 AREA = 4984
EL. 99.4 AREA = 9720

$\bar{A} = 3181$
 $\bar{A} = 7352$

+

636

1470

$\Sigma A = 2106$

TOTAL PONDING ON SITE = 1383 + 357 + 3673 + 4410 + 2106 = 11929 CF
= 0.27 AF

IN AREAS 1 AND 2, ASSUME THAT PIPE STORAGE DISPLACES 30%
OF POND VOLUME, THEREFORE POND VOLUME =

$357 + .70(1383 + 3673 + 4410 + 2106) = 357 + 8100 = 8457 CF$
= 0.19 AF

SUMMARY

Q UNDEVELOPED = 6.4 cfs

Q DEVELOPED = 9.16 cfs

\bar{A} UNDEVELOPED = 0.25 AF

\bar{A} DEVELOPED = 0.36 AF

PONDING REQ'D = 0.36 - 0.25 = 0.11 AF

PONDING PROVIDED = 0.19 AF (CORRECTED FOR PIPE
STORAGE DISPLACEMENT)



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

July 25, 1985

Mr, Kenneth Guthrie
Leedshill-Herkenhoff, Inc.
500 Copper Ave. NW
P.O. Box 1217
Albuquerque, NM 87103

REF: REVISED DRAINAGE & GRADING PLAN FOR WATERWORKS SALES (J10-D11)
RECEIVED 7/22/85

Dear Mr. Guthrie:

Based on the information provided on your July 22, 1985 submittal, listed you will find certain concerns that will need to be addressed before final approval is granted:

1. Information sheet designating resubmittal.
2. Engineer's stamp with signature and date.
3. Calculations showing developed flow rates along with the proposed ponding volume.
4. Detail showing the proposed ponding area along with the required elevations for construction purposes.
5. In placing the pipes back into the proposed ponding area, how much displacement of volume do you anticipate? Please address.

If you have any questions or comments, please feel free to contact us at 766-7644.

Sincerely,

Carlos A. Montoya

Carlos A. Montoya PE
City/County Flood Plain Admin.

CAM/BJM/cl

MUNICIPAL DEVELOPMENT DEPARTMENT

C. Dwayne Shappard, P.E., City Engineer

ENGINEERING DIVISION

Telephone (505) 766-7467

AN EQUAL OPPORTUNITY EMPLOYER



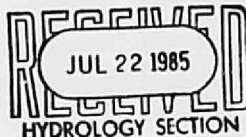
LEEDSHILL-HERKENHOFF, INC.

500 Copper Avenue N.W.
P. O. Box 1217
Albuquerque, New Mexico 87103
(505) 247-0294

1156-2023.12-85

July 15, 1985

Mr. Rick Duran
City Engineering - Design Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, N.M. 87103



RE: WATERWORKS SALES SITE DRAINAGE

Dear Rick:

Due to current business activity and a re-evaluation of future space requirements, the management of Waterworks Sales Company has decided not to expand their existing Albuquerque facility. Leedshill-Herkenhoff has been instructed to stop work on the design of the proposed building addition which was to have included a new drainage report. However, Waterworks Sales is aware that a final Certificate of Occupancy has not been issued for the existing building and that this situation needs to be addressed.

In our previous discussions with the Hydrology Department, it was agreed that the outstanding Certificate of Occupancy could be cleared if the existing pipe storage yard could be regraded to provide the necessary retention ponds. After a site visit and discussions with Roy Smith, you suggested that the aisles between the rows of pipe be regraded in order to accommodate a minimum of 75 percent of the storm water retention capacity as shown on the original drawings. After discussing this solution further, it was decided that the ponding area should be constructed under the stored pipe rather than in the access aisles. The stored pipe could be temporarily moved in order to grade for the new ponding and then the pipe restacked on the depressed area. This would avoid water standing in the access aisles. The enclosed sketch shows the approximate location of the proposed ponding.

We feel that this site modification will functionally provide the retention originally designed for the site although in a different configuration. When

Mr. Rick Duran
July 15, 1985
Page 2

the concrete block wall and the linear "French" drain, both of which have been constructed along the west side of the site are considered, it appears that the proposed site drainage will be within the intent of the original drawings. The drain consists of a trench filled with rock under the west row of pipe. Photographs of the drain, the wall and the pipe storage yard are enclosed.

The Waterworks Sales Company is prepared to immediately construct the additional ponding shown on the enclosed sketch in an effort to clear the outstanding Certificate of Occupancy. However, in order to avoid a future misunderstanding, they have requested a written acknowledgement of the proposed solution. A written reply or acknowledgement by signing a copy of this letter would be appreciated.

If you need additional information or have questions please contact me. Your past assistance and advice is appreciated and hopefully we are close to resolving this problem.

Sincerely,



KENNETH GUTHRIE
Vice President

jm

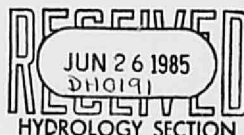
Enclosures



LEEDSHILL-HERKENHOFF, INC.
500 Copper Avenue N.W.
P. O. Box 1217
Albuquerque, New Mexico 87103
(505) 247-0294

1010-2023.12-85

June 24, 1985



Rick Duran
City Engineering - Design Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RE: Waterworks Sales Building Addition

Dear Rick:

To confirm our conversation of this morning:

1. Construction of the retention ponds as shown on the original plans is not required so as not to double up on site improvements.
2. A drainage report for the entire site will be required for the addition building permit. This report will incorporate Fred Aguirre's requirements of controlled discharge from a detention pond.
3. Outstanding certificate of occupancy can be taken care of with new drainage report if all requirements are met and report is approved.

Based on our conversation and upon receiving approval from Waterworks, we will proceed with the drainage report for the entire site.

If there is anything else required, or I have misinterpreted something, please let me know as soon as possible.

Thank you for your help.

JOANN ENGLISH

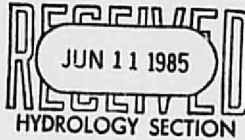
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LEEDSHILL-HERKENHOFF, INC.
500 Copper Avenue N.W.
P. O. Box 1217
Albuquerque, New Mexico 87103
(505) 247-0294

929-2023.12-85

June 11, 1985



Mr. Rick Duran
Engineering Design Hydrology
City of Albuquerque
123 Central N.W.
Albuquerque, New Mexico 87103

Mr. Duran:

As you requested in your meeting with Mr. Miguel Cheng-Guajardo of our office, we are resubmitting the verified site plan for Waterworks Sales site with a copy of a drawing showing spot elevations in the detention pond area. It appears that these detention ponds were not constructed as originally designed.

Sincerely,


KENNETH GUTHRIE

jm

Enclosure

cc: Roy Smith, Waterworks Sales

A subsidiary of Gordon Herkenhoff and Associates, Inc.



LEEDSHILL-HERKENHOFF, INC.
500 Copper Avenue N.W.
P. O. Box 1217
Albuquerque, New Mexico 87103
(505) 247-0294

914-2023.12-85

June 7, 1985



Mr. Rick Duran
Engineering Design Hydrology
City of Albuquerque
123 Central, Northwest
Albuquerque, New Mexico 87103

RE: WATERWORKS SALES SITE SURVEY

In response to your request, enclosed is a revised site plan for the Waterworks Sales Company office and warehouse on 64th Street and Glenrio Road. This site has been surveyed and this drawing prepared to show the as-constructed site improvements. A copy of the original site layout plan prepared by Enchantment Engineering in 1980 is also enclosed for reference.

Revisions to the site development include:

1. The building setback from the east property line is 40 feet, as compared to the original setback of 10 feet.
2. The concrete walk and header curb extending west from the building was not constructed, and the entire area was paved with asphalt.
3. The landscaping area was modified.
4. The concrete curb and gutter and sidewalk on the south and east sides was not constructed.
5. An additional parking area was constructed.
6. A concrete block wall was constructed in lieu of a chain-link fence.
7. A fuel pump was installed on the west side of the building.
8. The drive pad and pipe at the south end of the property was not constructed.

A subsidiary of Gordon Herkenhoff and Associates, Inc.

Mr. Rick Duran
June 7, 1985
Page Two

Although the site is relatively flat, the building and paved areas appear to drain to Glenrio and 64th Street as originally proposed.

I trust this information will be adequate for your review of this site. Please call if any questions or other information is required.


KENNETH GUTHRIE

sud

Enclosures

cc w/encl: Roy Smith
Waterworks Sales Company

LAW OFFICES

Spann, Latimer & Hollowwa

914 FIRST INTERSTATE BANK BUILDING
P.O. BOX 1031 AND P.O. BOX 1307
ALBUQUERQUE, NEW MEXICO 87103
(505) 243-3525

May 10, 1985

ANN WILCOX HOOD
OF COUNSEL

CHARLES C. ANN
E. DOUGLAS LATIMER
J. KERWIN HOLL WWA
JAMES A. ARTLEY

Cit. of Albuquerque
Engineering Division
P. O. Box 1293
Albuquerque, New Mexico

HAND-DELIVERED

Bernie J. Montoya
Hydrologic Engineering Technician

RE: Waterworks Sales Company
Location at 901 64th Street N.W.

Dear Bernie:

Rick, of your office, met with Robert Pinkard of Waterworks Sales on May 9, 1985, and reviewed the Waterworks site and the drainage plan. Rick was apparently satisfied that the ponding and water retention on the site was adequate, however, Rick indicated that it was necessary to have an updated drainage plan prepared and submitted to the City which accurately reflects the location of all improvements at the site as built, as well as the existing location of the ponds. Waterworks Sales has made immediate arrangements to have this plan prepared, which will then be submitted to you. It is my understanding that once you have reviewed that plan, you will be in a position to approve the Certificate of Occupancy.

Both my client and I appreciate your consideration and cooperation in this matter, as well as the assistance of Rick and Carlos Montoya. I hope to have an updated plan to you within the next couple of weeks for your review, approval, and ultimate sign off on the Certificate of Occupancy.

Again, thank you for your help.

VERY TRULY YOURS,

SPANN, LATIMER & HOLLOWWA

J. KERWIN HOLLOWWA

JKH:mo
cc: Waterworks Sales Company

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

HYDROLOGY SECTION PROJECT NO.: J10 DATE: 2/8/85
PLANNING DIVISION NOS. EPC: _____ DRB: _____

CONFERENCE RECAP

SUBJECT: 901 64th St NW (Waterworks Sales) (ORIGINAL PLAN APPROVED 19)

APPROVAL REQUESTED:

____ PRELIMINARY PLAT _____ FINAL PLAT
____ SITE DEVELOPMENT PLAN _____ ☒ BUILDING PERMIT
____ ROUGH GRADING

WHO

REPRESENTING

ATTENDANCE: Jo Ann English
Fred J. Aguilar

FINDINGS: 1. UPDATED DRAINAGE PLAN REQUIRED FOR BUILDING PERMIT
SIGN-OFF.
2. CONTROLLED DISCHARGE REQUIRED IN VIEW OF THE
EXISTING FLOODING PROBLEM DOWNSTREAM OF THIS SITE.
3. THE ALLOWABLE DISCHARGE IS DEPENDENT ON DOWNSTREAM
CAPACITY. SEE APPROVED DRAINAGE REPORT FILE NO H11-D22
FOR STORM DRAIN CAPACITY DOWNSTREAM

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Fred J. Aguilar SIGNED: Jo Ann English
TITLE: _____ TITLE: _____
DATE: 2/8/85 DATE: 2 Feb 85

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL