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

February 20, 1984

Mr. Jeffrey Mortensen
Tom Mann & Associates
811 Dallas NE
Albuquerque, NM 87110

REF: REVISED PLAN FOR DON BARKHURST WAREHOUSE FACILITIES (K21-D7)
RECEIVED JANUARY 27, 1984

Dear Mr. Mortensen:

The above referenced plan, dated January 25, 1984, is approved.

Please attach a copy of this plan along with the approved "Construction Within Public R/W" document to the construction set prior to issuance of the building permit.

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

Sincerely yours,

Billy J. Goolsby, PE.

Billy J. Goolsby
City/County Flood Plain Admin.

BJG:mrk

308 MORIEL - BASIN 1

20792
01/24/84
JGM

$Q_p = Q_{100} = 0.7$ cfs

$V_{100} = 1173$ cfs

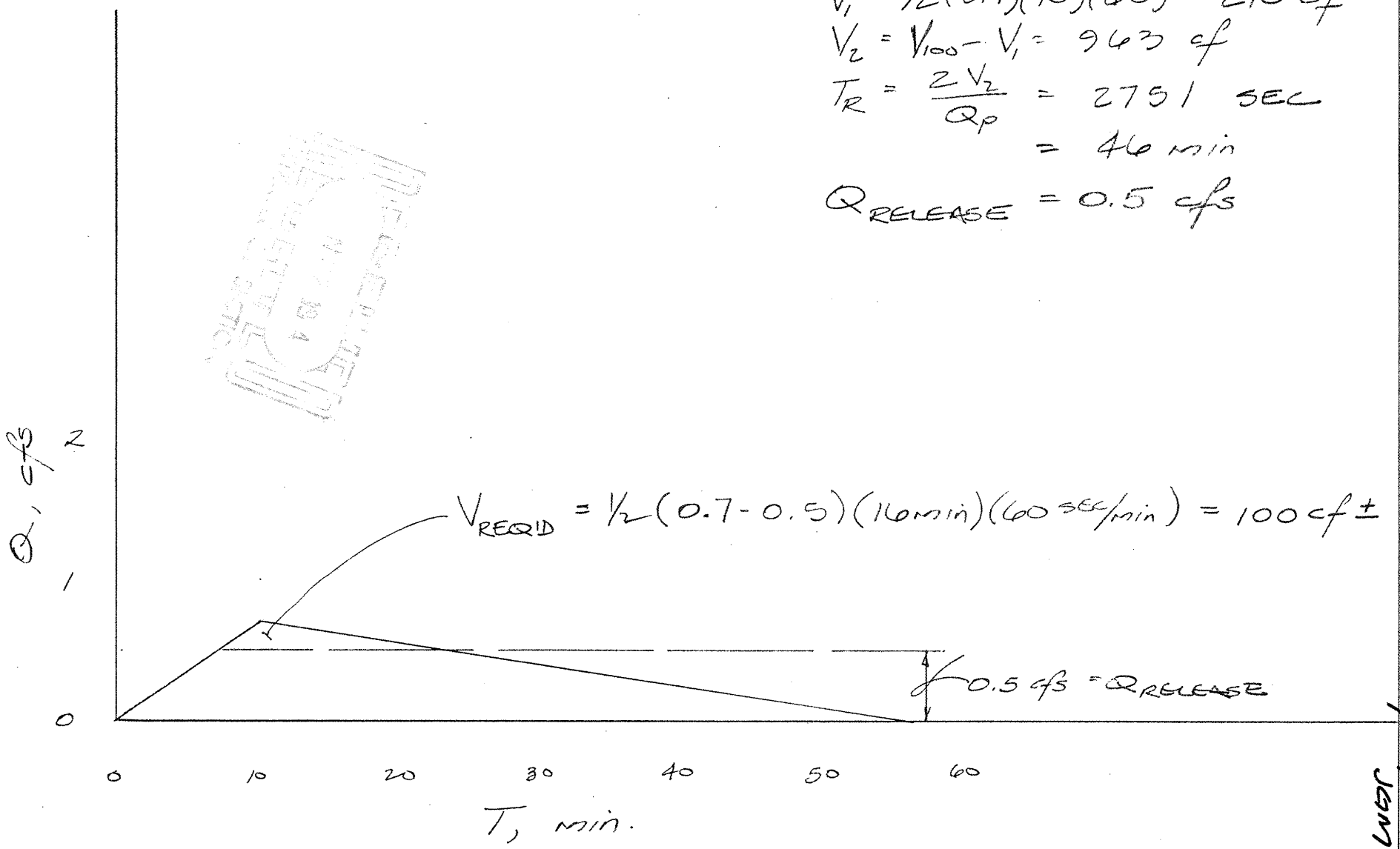
$V_1 = \frac{1}{2}(0.7)(10)(60) = 210$ cf

$V_2 = V_{100} - V_1 = 963$ cf

$T_R = \frac{2V_2}{Q_p} = 2751$ SEC

$= 46$ min

$Q_{RELEASE} = 0.5$ cfs



20792

INFORMATION SHEET

PROJECT TITLE BARKHURST WAREHOUSE TYPE OF SUBMITTAL REVISED PLAN

ZONE ATLAS PAGE NO. K-21 - D7 & D13 CITY ADDRESS 308 MURIEL NE

LEGAL DESCRIPTION LOTS 1 & 2, BLOCK 19, E. CENTRAL BUS. ADDN.

ENGINEERING FIRM TOM MANN & ASSOC. CONTACT JEFFREY G. MORTENSEN

ADDRESS 811 DALLAS NE PHONE 265-5611

OWNER DON BARKHURST CONTACT ARCHITECT

ADDRESS _____ PHONE _____

ARCHITECT MILLER & ASSOC CONTACT JIM MILLER

ADDRESS _____ PHONE 884-1255

SURVEYOR TOM MANN CONTACT J.G. MORTENSEN

ADDRESS _____ PHONE _____

CONTRACTOR BARKHURST CONTACT _____

ADDRESS _____ PHONE _____

PRE-DESIGN MEETING:

✓ YES
___ 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
___ OTHER _____ (SPECIFY)

ATTN: JOHN ARMSTRONG

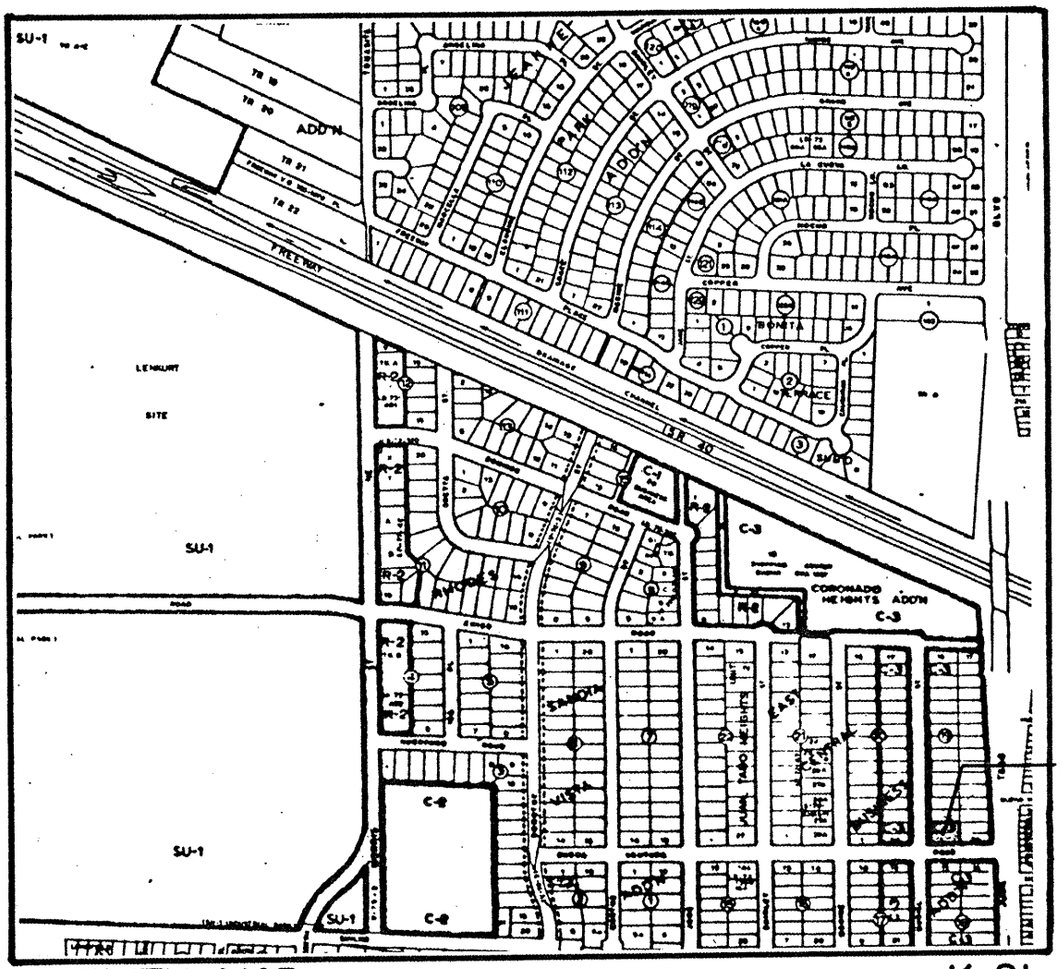
DATE SUBMITTED: 01/26/84

BY: J.G. MORTENSEN

NEW report

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



VICINITY MAP
SCALE: 1" = 800'

K-21

K21-07

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEW MEXICO
THOMAS T. HANBOR
3732
AND LAND SURVEYOR

NOTICE TO CONTRACTOR

1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.

2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with ~~"Contract Documents for City-Wide Utilities and Cash Paving No. 31"~~ Public Works Contract 84-1

3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.

4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.

5. Backfill compaction shall be according to RESIDENTIAL street use.

P-10277 Hopkins Thom B-52

APPROVALS	NAME	DATE
A.C.E./DESIGN	[illegible]	6 OCT 82
INSPECTOR	[illegible]	3-6-85 4-6-84

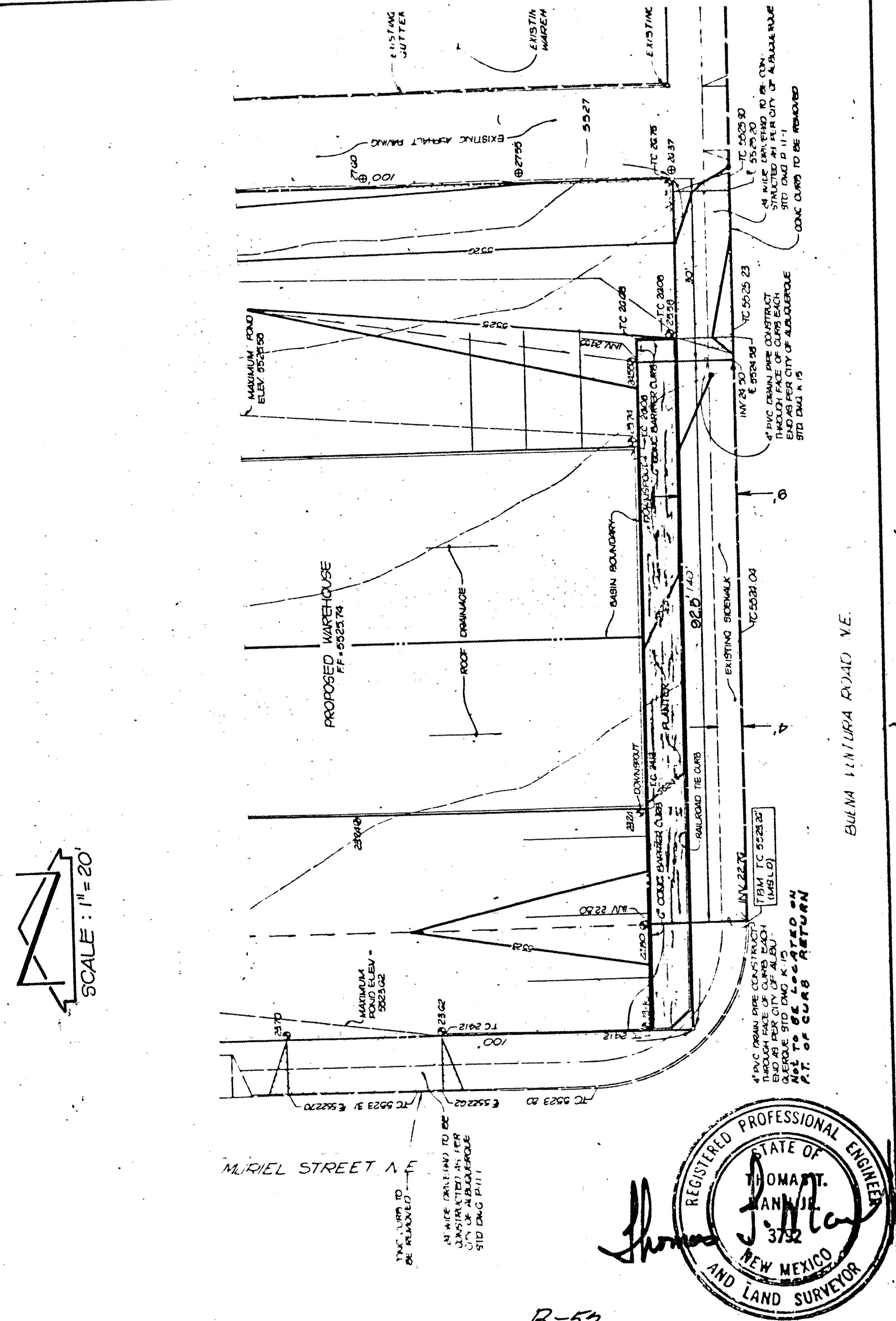
TITLE: DON BARKHURST WAREHOUSE
308 MURIEL ST. N.E.

PERMIT NO.

MAP K-21

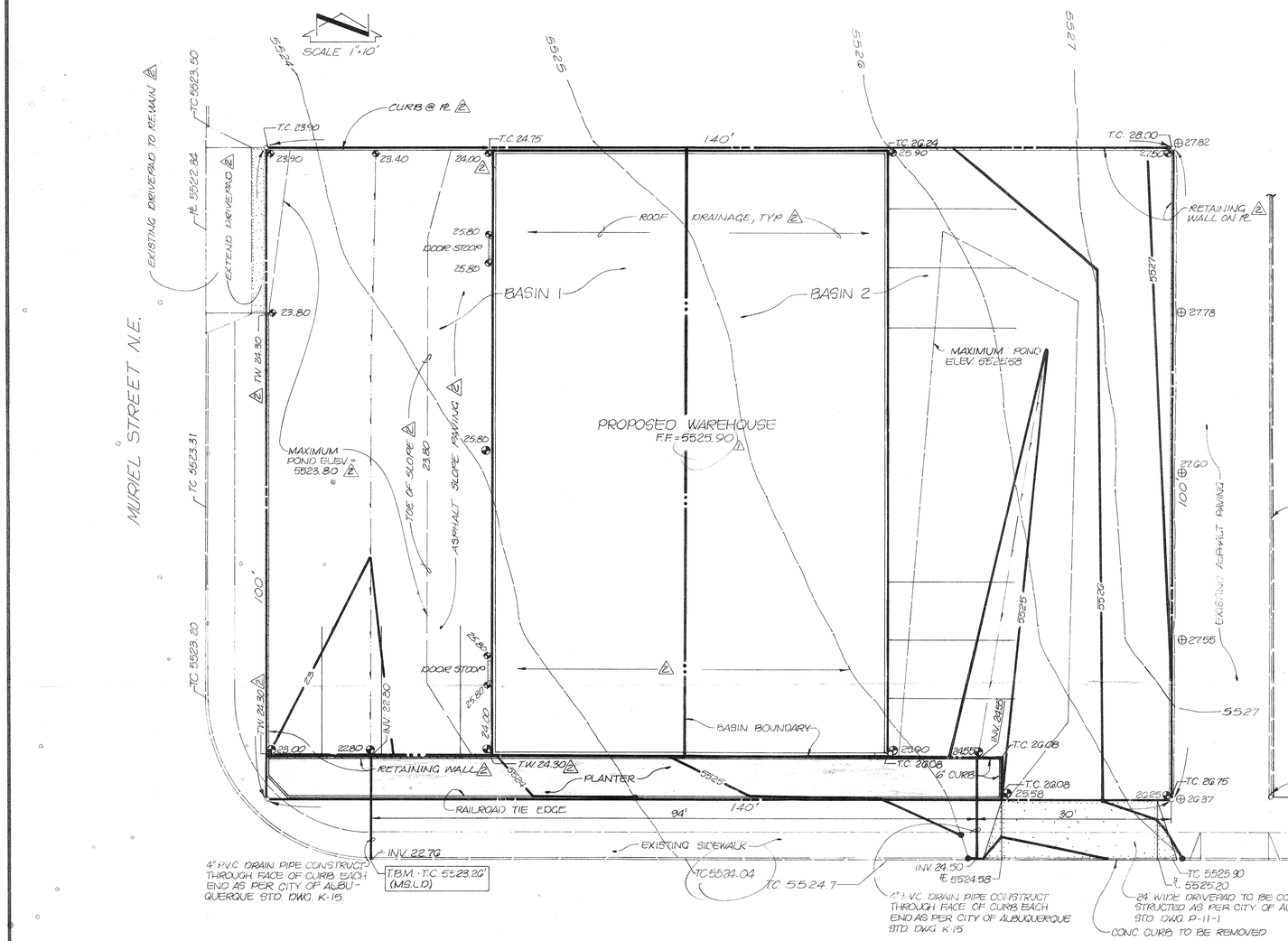
CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

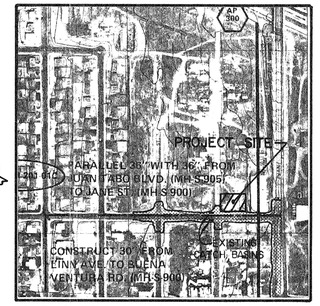


B-52

APPROVALS	NAME	DATE	TITLE: DON BARKHURST WAREHOUSE 308 MURIEL ST. N.E.	
A.C.E./DESIGN	[signature]	8 Oct 82		
INSPECTOR			PERMIT NO.	MAP NO. K-21
A.C.E./FIELD	[signature]	3/8/83	SHEET 2 OF 2	



VICINITY MAP K·21
SCALE: 1" = 800'



ALBUQUERQUE MASTER DRAINAGE
STUDY K·21 SCALE: 1"= 400'

DRAINAGE PLAN

The following items concerning the Don Barkhurst Warehouse Facilities Drainage Plan are contained hereon:

1. Vicinity Map
2. Flood Hazard Plate
3. Grading Plan
4. Calculations

The proposed improvements, as shown by the Vicinity Map, are located at the northeast corner of the intersection of Muriel Street N.E. and Buena Ventura Road N.E. The site is more particularly described as Lots 1 and 2, Block 19, East Central Business Addition. At present, the site is partially developed; a mobile home currently sits on the site. The land to the north of the site is undeveloped. The land to the east of the site is developed with an existing warehouse building.

The site lies adjacent to a designated flood hazard zone, as shown by Plate K-21 of the Albuquerque Master Drainage Study. Review of the Albuquerque Master Drainage Study shows that the 100-year flow depth in Buena Ventura Road reaches 0.83 feet. This depth just barely tops the existing curb in Buena Ventura Road. This flood water, however, does not enter private property. In addition, offsite flows do not enter this site. The existing warehouse to the east drains its roof water to a rain gutter which empties into two downspouts: one, adjacent to the southeast corner of the site and another approximately 100 feet north of the northeast corner of the site. Very little runoff is expected from the existing asphalt paving along the east property line. This paving is slightly inverted and drains to Buena Ventura Road.

The Grading Plan shows (1) existing and proposed grades indicated by spot elevations and contours at 1'-0" intervals, (2) continuity between existing and proposed elevations and (3) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements include the construction of a new warehouse building and the construction of adjacent asphalt parking and necessary landscaping. The grading required by these improvements will not alter the existing drainage pattern. Runoff will continue to flow to the intersection of Muriel Street and Buena Ventura Road. This runoff will, however, be temporarily ponded in Basins 1 and 2 and will ultimately be discharged to Buena Ventura Road N.E. The two ponds almost have sufficient capacity to contain the runoff volume anticipated for the 100-year, 6-hour storm in the fully developed state. The flooding of the warehouse will not be a concern, however, because the proposed drivepads will serve as spillways. Basin 1 will pond to elevation 5523.62 before it spills across the westerly drivepad. Basin 2 will pond to elevation 5525.58 before it spills across the drivepad at the southeast corner of the site. Both ponds will be paved with asphalt, therefore, ponding within 15 feet of the building foundation will not be a concern.

The calculations which appear below analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational method has been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume 2. As shown by these calculations, only a minor increase in runoff is anticipated. Neither of the planter areas are considered in the calculations because they will contain all runoff which falls within them. Lastly, as shown by the AMDS Plate K-21, that runoff which is discharged from the site will be intercepted by the existing catch basins at the downstream intersection. This, of course, assumes that the catch basins are functioning properly, are not clogged, and are not full. The 4-inch PVC drain pipes which drain Basins 1 and 2 will control the discharge of storm water onto Buena Ventura Road. This hopefully will alleviate a part of the current flooding problem along Buena Ventura Road until such time as the recommendations of the Albuquerque Master Drainage Study are implemented.

LEGEND

- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- 5524 EXISTING CONTOUR
- 5524 PROPOSED CONTOUR
- SWALE
- BASIN BOUNDARY

CALCULATIONS

SOIL INFORMATION

From SCS Bernalillo County Soil Survey, Plate 32:

TgB Tijeras gravelly fine sandy loam B Soil

RATIONAL METHOD

1. Discharge: $Q = CiA$

   C varies
   $i = P_6(6.84)T_c^{-0.51} = 5.18$ in/hr
   where $P_6 = 2.45$ in (DPM Plate 22.2D-1)
   $T_c = 10$ min (Minimum)

   A varies, Ac.

2. Volume: $V = CP_6A(\frac{1}{12})$

   C varies
   $P_6 = 2.45$ in (DPM Plate 22.2D-1)

   A varies, sf

EXISTING CONDITION

$A = 100' \times 140' = 14{,}000$ sf $= 0.32$ Ac

% impervious $= 0 \Rightarrow C = 0.34$ (DPM Plate 22.2C-1)

$Q_{100} = CiA = 0.34(5.18)(0.32) = 0.56$ cfs

$V_{100} = CP_6A(\frac{1}{12}) = 0.34(\frac{2.45}{12})(14{,}000) = 972$ cf

DEVELOPED CONDITION

1. BASIN 1:

   $A = 6{,}050$ sf $= 0.14$ Ac

   % impervious $= 100 \Rightarrow C = 0.95$

   $Q_{100} = CiA = 0.95\ (5.18)(0.14) = 0.7$ cfs

   $V_{100} = CP_6A(\frac{1}{12}) = 0.95\ (\frac{2.45}{12})(6{,}050) = 1{,}173$ cf

   $V_{pond} = 970$ cf

   By hydrograph analysis, $V_{required} = 100$ cf

Elev.	A, sf	Vol., cf	Σ Vol., cf
23.80	1970		
		936	936
23.0	370		
		37	970
22.8	-0-		

   $Q_{release} = CA\sqrt{2gh}$ (Orifice Equation)
   where $C = 0.8$
   $A = 0.0873$ sf (4" dia pipe)
   $g = 32.2$ ft/sec^2
   $h = 23.8 - 22.8 - 0.17 = 0.8'$
   $Q_{release} = 0.5$ cfs

2. BASIN 2

   $A = 7{,}140$ sf $= 0.16$ Ac

   % impervious $= 100 \Rightarrow C = 0.95$

   $V_{100} = 1{,}385$ cf
   $Q_{100} = 0.8$ cfs
   $V_{pond} = 814$ cf

Elev.	A, sf	Vol., cf	Σ Vol., cf
25.58	1,798		
		686	686
25.00	567		
		128	814
24.55	-0-		

   $V_{100} - V_{pond} = V_{direct} = 571$ cf

   $C_{corrected} = 0.39$

   $Q_{direct} = 0.32$ cfs

   $Q_{pipe} = 19.636Kd^2\sqrt{h} = 178$ gpm $= 0.40$ cfs
   where $K = 0.61$
   $d = 4"$
   $h = 25.58 - 24.55 - \frac{2}{12} = 0.86'$

   $Q_{100} = Q_{direct} + Q_{pipe} = 0.72$ cfs

3. ENTIRE SITE

   $Q_{100} = Q_{100,\,1} + Q_{100,\,2} = 0.34 + 0.72 = 1.07$ cfs

   $V_{100} = V_{100,\,1} + V_{100,\,2} = 2{,}558$ cf

COMPARISON

$\Delta Q_{100} = 1.07 - 0.56 = 0.51$ cfs

$\Delta V_{100} = 2{,}558 - 972 = 1{,}586$ cf

$V_{direct} = 2{,}558 - 1{,}173 - 814 = 571$ cf

$V_{direct} < V_{100}$, existing

OTHER INFORMATION

1. PROJECT BENCHMARK:

   ACS Station 8-K21. A square chiseled in top of concrete curb at the WSW curb return at the intersection of Chico Road N.E. and Jane Street N.E.

   Elevation: 5504.69 ft. (MSLD)

2. TEMPORARY BENCHMARK:

   Top-of-curb elevation at ENE curb return at intersection of Muriel Street N.E. and Buena Ventura Road N.E. (SEE GRADING PLAN).

   Elevation: 5523.26 ft. (MSLD)

3. LEGAL DESCRIPTION:

   Lots 1 & 2, Block 19, East Central Business Addition, filed July 15, 1946, Book D, Page 12.

4. ADDRESS:

   308 Muriel Street N.E.

APPROVED FOR DRAINAGE
2/20/83
DATE
Billy J. Hardesty
SIGNATURE
ADVISE DRAINAGE INSPECTION WHEN GRADING EXECUTED

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEW MEXICO
THOMAS T. MANN, JR.
3702
AND SURVEYOR
9/9/82

Tom Mann Associates, Inc.
811 DALLAS, N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

NO.	DATE	BY	REVISIONS
1	9/17/82	JGM	REVISE F.F.; ADD T/C ELEV.
2	1/24/83	JGM	REVISE BASIN 1 DURING CONSTRUCTION

DESIGNED BY: J.G.M.
DRAWN BY: JMT
APPROVED: T.T.M.

JOB NO. 2-0791
DATE 9-82

DRAINAGE AND GRADING PLAN
DON BARKHURST WAREHOUSE FACILITIES

FILE NO.

SHEET 1 OF 1

N08274