HYDROLOGY

F17/D35

McLEOD MINI
WAREHOUSES

F17-D35

1 PLAN

Isaacson & Arfman, P.A.

Consulting Engineering Associates

F17-D35

Letter of Transmittal

To CITY HYDROLOGY

Date 1-9-84

Job No.

Attn: FRED AGUIRRE

Reference McLEOD MINI WAREHOUSES

RECEIVED

Gentlemen:

JAN 10 1984

ENGINEERING

We transmit to you 2 copy(ies) of the following

- [ ] Plats
- [x] DRAINAGE Plans
- [ ] Specifications
- [ ] Report
- [ ] Shop Drawings
- [ ] Submittals
- [ ] Material Specifications
- [ ] Copy of Letter

This information is transmitted:

- [ ] As per your request
- [x] For your review & approval
- [ ] For your information
- [ ] For your attention
- [x] For your signature
- [x] For your files
- [x] For your use
- [ ] Please review & return
- [ ] For return to your files
- [ ] Please advise

Remarks: FRED — THIS IS THE PROJECT THAT WE DISCUSSED ON 11-23-83. THE CONTROLLED DISCHARGE IS MET UP TO POND OVERFLOW AND THE DPM REQUIREMENT ARE MET.

By: FRED ARFMAN

Copies To

128 Monroe, NE • Albuquerque, NM 87108 • (505) 268-8828

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO._____ DATE: 11-23-83

PLANNING DIVISION NO._____

CONFERENCE RECAP

SUBJECT: McLEOD MINI-WAREHOUSES (K17)
TRACT B-1, LANDS OF ROAD RUNNER of INVESTOR

	WHO	REPRESENTING
ATTENDANCE:	FRED ARFMAN	ISAACSON & ARFMAN, P.A.
	FRED AGUIRRE	CITY OF ALBUQUERQUE

FINDINGS:
1. CONTROLLED DISCHARGE REQUIRED (.5 cfs/ACRE) ~~FLOODING~~ EXISTS DOWNSTREAM
2. DRAINAGE PLAN REQUIRED PER the DPM

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JAN 27 1984
HYDROLOGY SECTION

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 Aguirre
TITLE: Design Hydrologist
DATE: 11/23/83

SIGNED: Fred C. Arfman
TITLE: V.P. w/ ISAACSON & ARFMAN
DATE: 11/23/83

Isaacson & Arfman, P.A.

Consulting Engineering Associates

RECEIVED JAN 23 1984 HYDROLOGY SECTION

Letter of Transmittal

To CITY HYDROLOGY

Date 1-23-84

Job No.

Attn:

Reference McLEOD MINI-WAREHOUSE

RECEIVED JAN 23 1984 HYDROLOGY SECTION

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- [ ] Plats
- [ ] Plans
- [ ] Specifications
- [ ] Report
- [ ] Shop Drawings
- [ ] Submittals
- [ ] Material Specifications
- [ ] Copy of Letter
- [x] GRADING / DRAINAGE PLAN
- [ ]

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- [x] For your use
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- [ ] Please advise
- [ ]
- [ ]

Remarks: THIS PLAN IS ONLY A SUPPLEMENT TO THE PREVIOUSLY SUBMITTED DRAINAGE PLAN. SHOWS REVISED FINISH FLOOR ELEVATIONS AND CONTOURS.

By: FRED C ARFMAN

Copies To J.B. FILE

128 Monroe, NE • Albuquerque, NM 87108 • (505) 268-8828

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

January 24, 1984

Mr. Fred C. Arfman, PE
Isaacson & Arfman, P.A.
128 Monroe NE
Albuquerque, NM 87108

REF: McLEOD MINI WAREHOUSES (F17-D35)

Dear Mr. Arfman:

These are my comments on the above mentioned drainage plan as dated 1/9/84 and received 1/10/84 and the drainage and grading plan dated 1/9/84 and received 1/23/84:

1. The statement that says you do not intend to accept off-site flows is unacceptable. Offsite flows cannot be blocked.

2. The plans need a legend.

3. What is existing and what is proposed? This is not clear from the plan.

4. Does this plan propose to cut or fill on adjacent property? This can only be permitted if the other property owner concurs. Show existing and proposed grades at property line. Include sections through property line to provide clarity.

5. Call out the limits of this property.

6. Show limits of curb and paving.

7. It appears that there is a proposed pond at the northwest corner of this site. How does this drain? How much water enters this pond? Is it okay to pond next to the building foundation?

8. Will both submitted plans be in the permit sets? If not, all information pertinent to construction will need to be included on one plan. If so, both plans need to agree with one another.

9. Section A-A on the drainage plan needs dimensions and if this is a typical section, the contours need to agree with that section.

10. Show calculations for pond volume and pipe discharge rate (according to my calculations the pipes as shown will discharge only about 1.1 cfs not 1.75 cfs as indicated).

11. Please indicate how you arrived at the required pond volume. If this was part of the pre-design, please indicate and include a copy of the conference re-cap with future submittals.

12. In future submittals, please include a completed information sheet.

If you have any further questions or comments, please feel free to call me at 766-7644.

Thank you,

John Armstrong
Civil Engineer/Hydrology

JA:mrk

Isaacson & Arfman, P.A.

Consulting Engineering Associates

RECEIVED JAN 27 1984 HYDROLOGY SECTION

Letter of Transmittal

To CITY HYDROLOGY

Date 1-26-84

Job No.

Attn: JOHN ARMSTRONG

Reference McLEOD MINI-WAREHOUSES

Gentlemen:

We transmit to you 2 copy(ies) of the following

- [ ] Plats
- [ ] Plans
- [ ] Specifications
- [ ] Report
- [ ] Shop Drawings
- [ ] Submittals
- [ ] Material Specifications
- [ ] Copy of Letter
- [x] SUPPLEMENTAL DRAINAGE INFORMATION
- [ ]

This information is transmitted:

- [x] As per your request
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- [ ] For your information
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- [ ] For your signature
- [x] For your files
- [x] For your use
- [ ] Please review & return
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- [x] Please advise
- [ ]
- [ ]

Remarks: THE OWNER TO THE EAST HAS BEEN CONTACTED ABOUT THE NEED FOR OUR PROJECT TO PREFORM SOME GRADING ON HIS PROPERTY — LETTER FORTHCOMING.

By: FRED C. ARFMAN

Copies To

128 Monroe, NE • Albuquerque, NM 87108 • (505) 268-8828

INFORMATION SHEET

PROJECT TITLE McLEOD MINI-WAREHOUSES TYPE OF SUBMITTAL DRAINAGE PLAN

ZONE ATLAS PAGE NO. F-17 CITY ADDRESS 4715 McLEOD RD. N.E.

LEGAL DESCRIPTION LOT B-1 OF LANDS OF ROADRUNNERS INVESTORS

ENGINEERING FIRM ISAACSON & ARFMAN, P.A. CONTACT FRED C. ARFMAN

ADDRESS 128 MONROE ST. N.E. PHONE 268-8828

OWNER KEN WATKINS CONTACT — SAME

ADDRESS 505 MARQUETTE PHONE 243-1031

ARCHITECT BILL BUCKLEY CONTACT BILL B.

ADDRESS 740 SAN MATEO PHONE 255-9196

SURVEYOR SURVEYING SERVICES CONTACT JIM GUTIERREZ

ADDRESS 2004 DEL RIO S.W. PHONE 877-2127

CONTRACTOR ALL ~~STATE~~-STEEL STRS. CONTACT WAYNE GRIBBLE

ADDRESS 176 VINEYARD, N.W. PHONE 345-8216

DATE SUBMITTED JANUARY 26, 1984

BY FRED C. ARFMAN, P.E.

Use this Information Sheet when submitting the following:

Drainage report or plan, conceptual grading and drainage plan, engineer's certification plan, erosion plan and grading plan. Provide the information applicable to your submittal.

RECEIVED
JAN 27 1984
HYDROLOGY SECTION

LETTER OF AGREEMENT

This agreement is entered into this 30 day of January, 1984, and is by and between EL JEFE, a New Mexico General Partnership ("El Jefe") and Don Dean ("Dean").

WHEREAS, El Jefe is the owner of Tract B-1 and Dean is the owner of Tract B-2, both tracts being portions of the lands of Roadrunner Investors; and

WHEREAS, El Jefe desires to construct buildings on Tract B-1; and

WHEREAS, El Jefe needs Dean's permission to enter onto his land and do some minor grading in order to re-direct storm waters to drain off Dean's land onto McLeod Road N.E.; and

WHEREAS, Dean desires to have El Jefe provide him with a retaining wall up against his lot line; therefore it is

AGREED as follows:

1. Dean will allow El Jefe, its agents, and employees to enter onto his land to construct a temporary "swale" consistent with drainage requirements which will provide for the drainage of waters from Dean's land onto McLeod Road N.E., until such time as Dean shall develop his property.

2. El Jefe will construct a "retaining wall" along the lot line which divides the two tracts of land as follows:

A. The "retaining wall" shall be the rear wall of the building which backs up to the lot line and shall not be a structure separate or apart from the building itself.

B. The "retaining wall" shall be the lowest four feet of the building wall and shall be measured from a point which is the lowest part of that wall's footing and thereafter for a distance of four feet up. SEE ADDENDA 'A'

3. At such time as Dean shall desire to commence construction upon his property (Tract B-2), El Jefe shall allow Dean to compact dirt up against the "retaining wall" and to pour asphalt or build a structure up to the "retaining wall"; PROVIDED

A. That such compaction of dirt shall be no more than is reasonable and ordinary for use in construction of a paved area or structure of Dean's choice.

B. That any laying of asphalt or compaction of dirt must also include such curbing as shall be necessary to prevent run-off water from reaching the building wall on El Jefe's property.

C. That such compaction and laying of asphalt shall not cause any structural or cosmetic damage to the wall on El Jefe's property.

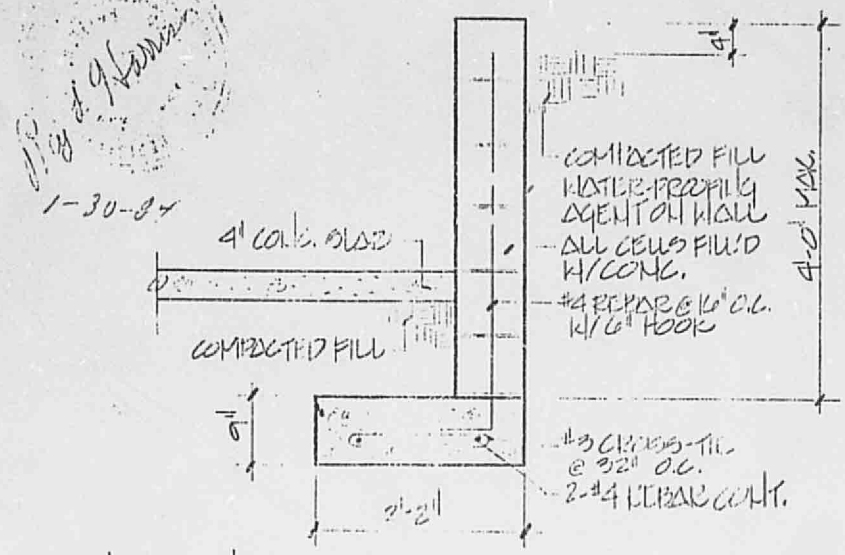
IN WITNESS WHEREOF, the undersigned parties have agreed and hereto affix their signatures on the date first noted above.

EL JEFE
A New Mexico General Partnership

_____

By: _____

ADDENDA 'A'



CMU RETAINER WALL DETAIL

SCALE: 3/4" = 1'-0"

1-30-84

January 30, 1984

John Armstrong
Hydrologist
City of Albuquerque
New Mexico

Re: Construction of Mini-Warehouses on Tract B-1

Dear Mr. Armstrong:

Pursuant to discussions with the El Jefe Partnership and agreements by and between myself and them, I am officially notifying the Municipal Authorities that I am allowing El Jefe's agents and employees to come onto my land (Tract B-2) for the purpose of constructing such "swale" as is necessary to accomplish the redirecting of the run-off waters from my property onto McLeod Road N.E., until such time as Dean shall develop said property.

Please be aware that I am giving my permission for such entry for the specific purpose of assisting El Jefe in obtaining the necessary foundation permits.

Thank you very much.

Don Dean

Isaacson & Arfman, P.A.

Consulting Engineering Associates

F17-D35

RECEIVED FEB 03 1984 HYDROLOGY SECTION

Letter of Transmittal

To CITY ENGINEERING — HYDROLOGY

Date 2-2-84

Job No.

Attn: JOHN ARMSTRONG

Reference 4715 McLEOD — MINIWAREHOUSES

Gentlemen:

We transmit to you 1 copy(ies) of the following

- [ ] Plats
- [ ] Plans
- [ ] Specifications
- [ ] Report
- [x] DRAINAGE ADDENDUM
- [ ]
- [ ] Shop Drawings
- [ ] Submittals
- [ ] Material Specifications
- [ ] Copy of Letter

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Remarks: PLEASE INCORPORATE THE FOLLOWING INTO YOUR RESPECTIVE FILE. THANK YOU —

By: FRED C. ARFMAN

Copies To

128 Monroe, NE • Albuquerque, NM 87108 • (505) 268-8828

Allsteel Structures
3201 Fourth, NW
Albuquerque, New Mexico 87107
(505) 345-8216

2-2-84

Mr. Fred Aguirre
Hydrology Dept.
City of Albuquerque

RE: 4715 McLeod NE--McLeod Mini Warehouse.

Sir,

Pursuant to your discussion this date with Mr. Fred Arfman, drainage engineer for this project, we, as contractors and 'El Jefe' Partners, the owners of this project have agreed to modify the scope of the project as follows;

1. Delete 10' from the south end of buildings 'B', 'G' and 'H'.

2. Extend the pond width to the north approximatly 10' to accomodate the retention capacity you require.

3. Conditional release of the foundation permit will be granted on this basis with your final review and approval required on the revised drainage plan now being prepared by Mr. Arfman before final permit is issued on this project.

Regards,

Wayne H. Gribble
ALLSTEEL STRUCTURES
a division of New Ventures Ltd.

ACCEPTED:

City of Albuquerque
Hydrology Dept.

DRAINAGE
APPROVED FOR FOUNDATION ONLY
2/2/84
DATE

SIGNATURE

TITLE

A&S Building Systems, Inc.

REVISED POND GEOMETRY & CAPACITY

BACKGROUND: A DETENTION POND MUST BE SIZED TO ACCOMMODATE THE DEVELOPED FLOWS FROM THE 100 YR. EVENT MINUS THE UNDEVELOPED 5 YR STORM.

UNDEVELOPED: SOIL TYPE EtC, EMBUDO, SOIL GROUP B
FROM PLATE 22.2 C-1, 'C' = 0.37
T_c = 10 MIN.
I = 4.73
D = 2.2" = 0.183'

RECEIVED FEB 03 1984 HYDROLOGY SECTION

$Q_{100} = (0.37)(4.73)(3.5) = 6.13$ CFS

$Q_5 = (0.37)(4.73)(3.5)(0.541) = 3.31$ CFS

DEVELOPED : COMPOSITE 'C'

$\frac{0.24}{3.5}(0.35) = 0.02$

$\frac{3.26}{3.5}(1.0) = 0.93$

0.95

$Q_{100} = (0.95)(4.73)(3.5) = 15.7$ CFS

BY PLATE 22.2F-1 (ATTACHED) = 15.89 CFS

REVISED POND VOLUME :

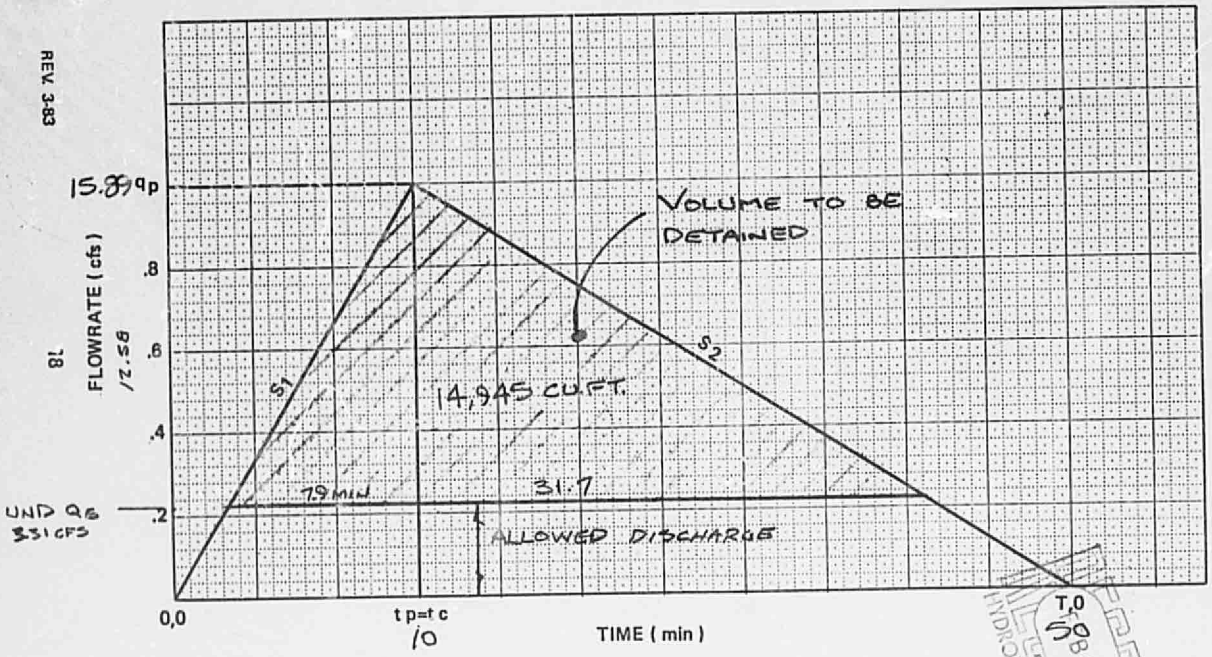
CONTOUR	S.F.	VOLUME
75.33	8,000	
		1,320
75.0	6,264	
		5,522
74.0	4,780	
		4,450
73.0	4,120	
		3,830
72.0	3,830	
		15,122 C.F.

REQUIRED POND VOLUME : BY PLATE 22.2 E-1, VOL = 14,945 C.F.

∴ PLANNED POND SATISFIES (15,122 > 14,945) — O.K.

McLEOD MINIWAREHOUSES

RUNOFF HYDROGRAPH (for on-site routing purposes)



q_p = maximum runoff rate (in cfs)

t_p = time to peak

t_c = time of concentration

$\forall$ = volume of runoff

T = total duration of runoff $= 2\forall / q_p$

S_1 = slope of rising side $= q_p / t_p$

S_2 = slope of recession side $= q_p / t_p - T$

HYDROLOGY SECTION
OCT 03 1984

HYDROGRAPH COMPUTATION WORKSHEET

DATE 2-2-84
COMPUTED BY FCA
CHECK BY

PROJECT McLEOD MINIWAREHOUSES

LOCATION 4715 McLEOD

ANALYSIS POINT # 1

(DR. AREA) A = 3.5 ACRES

T_c 10 MIN

POINT RAINFALL 2.2 IN. FROM PLATE 22.2 D-1

CN = 93 FROM PLATES 22.2 C-2, 22.2 C-3

RUNOFF VOLUME R = 1.7 IN. FROM PLATE 22.2 C-4

COMPUTED T_p = 10 MIN. $T_p = T_c$
(Rounded to even minute)

$q_p = \frac{45.4A}{T_p}$ = 15.89 CFS./INCH OF RUNOFF

$(R \times q_p) = Q_{peak}$ = 27.0 CFS

t(COLUMN)=(t/T_p) $t=T_p(t/T_p)$

$y = \frac{Q}{Q_{peak}}$ $Q = y(Q_{peak})$

	(t/T_p)	t (min.)	y	Q (cfs)
1	0	0	0	0
2	.1	1	.03	0.81
3	.2	2	.10	2.7
4	.3	3	.190	5.13
5	.4	4	.310	8.37
6	.5	5	.470	12.69
7	.6	6	.660	17.82
8	.7	7	.820	22.14
9	.8	8	.930	25.11
10	.9	9	.990	26.73
11	1.0	10	1.00	27.0
12	1.1	11	.990	26.73
13	1.2	12	.930	25.11
14	1.3	13	.860	23.22
15	1.4	14	.780	21.06
16	1.5	15	.680	18.36
17	.6	16	.560	15.12
18	.7	17	.460	12.42
19	1.8	18	.390	10.53
20	1.9	19	.330	8.91
21	2.0	20	.280	7.56
22	2.2	22	.207	5.59
23	2.4	24	.147	3.97
24	2.6	26	.107	2.89
25	2.8	28	.077	2.08
26	3.0	30	.055	1.49
27	3.2	32	.040	1.08
28	3.4	34	.029	0.78
29	3.6	36	.021	0.57
30	3.8	38	.015	0.41
31	4.0	40	.011	0.3
32	4.5	45	.005	0.14
33	5.0	50	.000	0

RECEIVED
FEB 03 1984
HYDROLOGY SECTION

PLATE 22.2 F-1

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

FILE COPY

February 14, 1984

Mr. Fred C. Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe NE
Albuquerque, New Mexico 87108

RE: MCLEOD MINI WAREHOUSES (F17-D35)

Dear Fred:

These are my comments on the plan as revised February 2, 1984.

1. The overflow spillway needs to be wider. It must be capable of conveying the 100 year Q, with freeboard, in the event the 4" pipes are clogged.

2. The berm around the pond needs more detail:
   a. Show a section through berm, with freeboard. The calculations submitted to date show the high water level to be 76.00 and a top of berm elevation of 75.80. Also, the Q used in that weir calculation was smaller than the actual Q 100 developed.

   b. Show that the inlet openings in the curb can handle the flow and show top of curb elevations on all curbs.

3. Show high water line for the pond.

4. Show a section through walls where grade outside is above finished floor.

If you should have any questions regarding these comments, please feel free to contact me at 766-7644.

Thank you,

John Armstrong
Civil Engineer/Hydrology

JA/ca

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

March 1, 1984

Mr. Fred C. Arfman
Isaacson & Arfman, P.A.
128 Monroe NE
Albuquerque, NM 87108

REF: McLEOD MINI WAREHOUSE (F17-D35)

Dear Fred:

The above mentioned plan, as submitted 2/27/84, is hereby approved. Please be sure that copies of the latest plan, along with approved copies of "Drainage Facilities Within City Right-of-Way" documents are attached to the permit sets prior to submittal to Hydrology for sign-off.

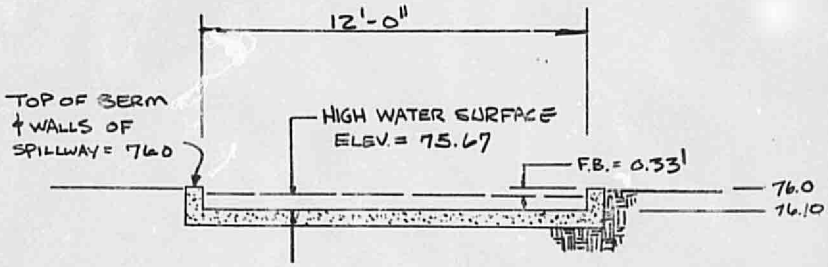
In all future submittals, please always include an information sheet and a revision date on the drawing if it has been changed.

Thank you,

John Armstrong
Civil Engineer/Hydrology

JA:mrk

EMERGENCY OVERFLOW SPILLWAY



- ASSUME CONTROL DISCHARGE (3 - 4" PIPES) IS BLOCKED
- SIZE SPILLWAY TO HANDLE Q_{100} = 15.7 CFS
  F.B = 0.33' (4")

FOR A 12' WIDE (INSIDE DIMENSION) SPILLWAY

$Q = 3.087 L H^{3/2}$

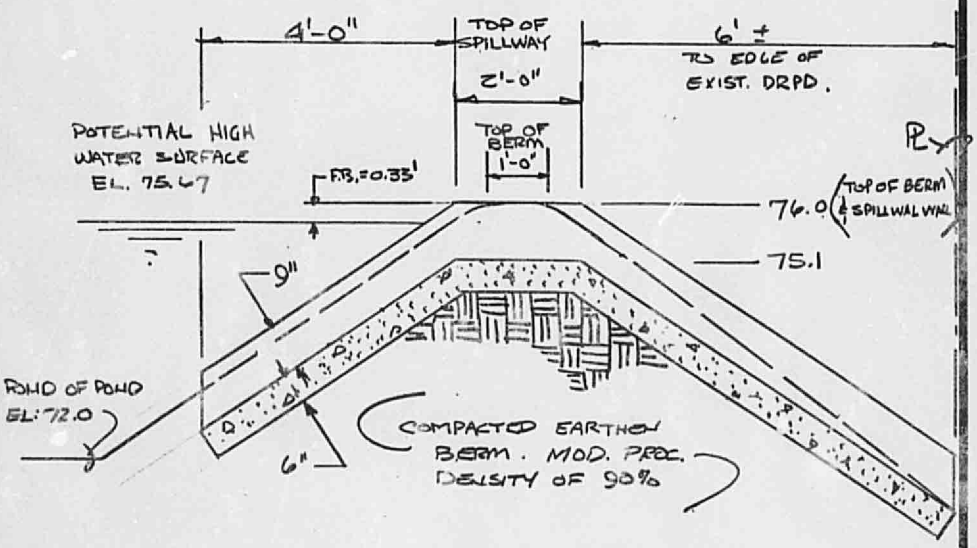
$= 3.087(12)(0.57)^{3/2}$; WHERE 0.55 IS THE DEPTH OF FLOW

$= 15.9$ CFS

15.9 > 15.7 ——————— O.K.

TOP OF SIDE WALLS OF SPILLWAY	=	76.0
FREEBOARD (4")		− 0.33
MAX. WATER SURF. ELEV.	=	75.67
MAX. DEPTH OF FLOW.		− 0.57
SPILLWAY ELEVATION	=	75.10

FEB 27 1984
HYDROLOGY SECTION



SECTION A-A (REVISED)

1" = 2'-0"

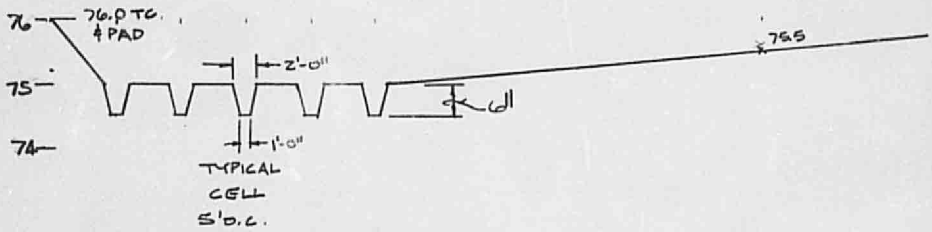
1. MAXIMUM SIDE SLOPES OF DETENTION POND BERM SHALL NOT EXCEED 1.5 TO 1
2. TO OF BERM A ELEV. 5176.0
3. SPILLWAY SHALL BE OF P.C.C. (30 DAY TEST OF 3000 PSI)
4. 6x6 . 10 ga. WIRE MESH SHALL BE PLACED HORIZONALLY W/ 3" OF CONCRETE COVER.

Isaacson & Arfman, P.A.

SUBJECT MCLEOD MINIWAREHOUSES JOB NO.
BY FCA DATE 2/84 SHEET NO. OF

POND ENTRANCE WEIRS

- ANALYZE WEIR SECTIONS AND OVERFLOW POTENTIAL.
- MAXIMUM HIGH WATER = 75.67
- HIGH WATER FOR DETENTION ONLY = 75.1



INDIVIDUAL WEIR CELL ANALYSIS

$Q = 3.0 L H^{3/2}$ WHERE $L = 1.5'$ (AVERAGE WIDTH)
$H = 0.5'$

$Q = 1.6$ CFS

TOTAL FLOW THRU THE FIVE WEIRS

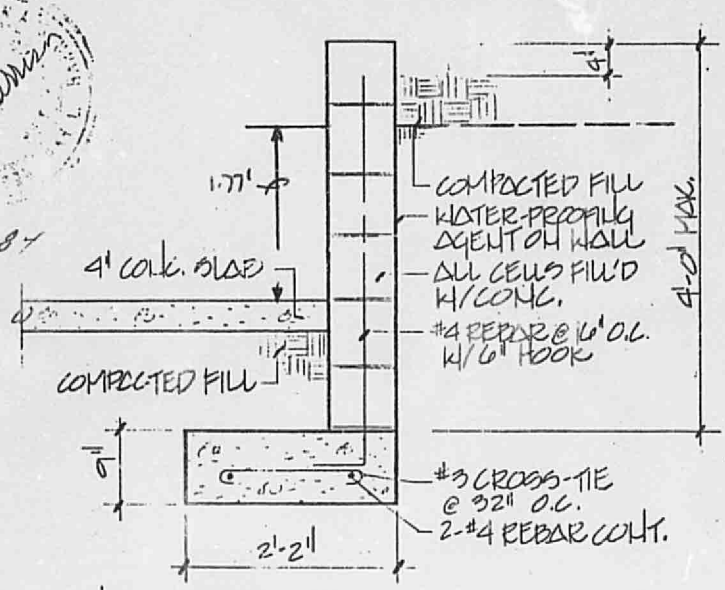
$5 \times 1.6 = 8$ CFS

NOW, ASSUME A 0.2' OVERFLOW OVER THE TOP OF CURB ALONG A 30 FOOT STREACH.
USE A 'C' OF 2.5

$Q = (2.5)(30)(0.2)^{3/2} = \underline{8 \text{ CFS}}$

TOTAL Q PASS THRU THE WEIRS AND OVER THEM IS 16 CFS, THEREFORE ALL FLOW CONDITIONS ARE SATISFIED FOR ALLOWING STORM WATERS TO ENTER INTO THE POND AREA.

WORST CONDITION
GND. TO EAST = 81.1
FF = 79.33
MAX. VERT. SEPARATION = 1.77 FT



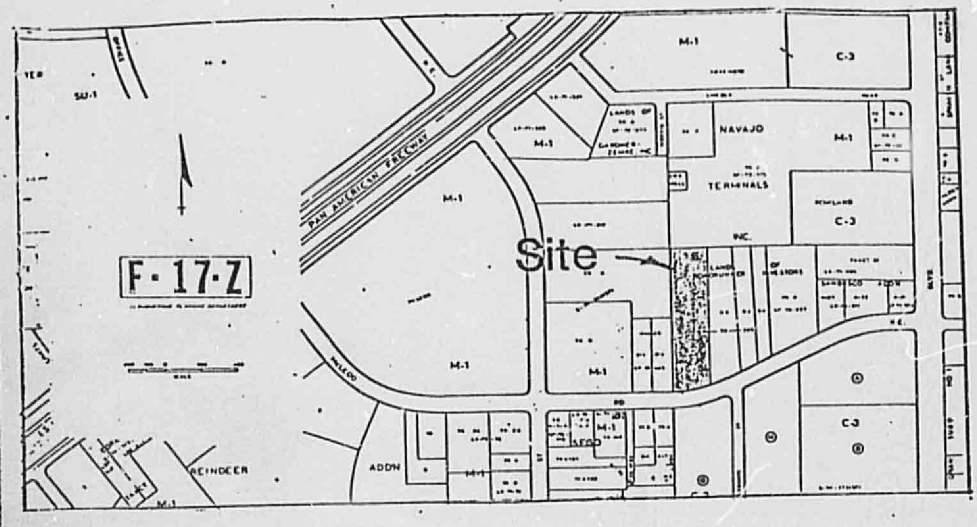
CMU RETAINER WALL DETAIL

SCALE: 3/4" = 1'-0"

1-30-87

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



VICINITY MAP
scale: 1"=750'

Legal: Lot B-1 of the Lands of Roadrunner Investors, SP-78-365

FRED C. ARFMAN NEW MEXICO 7322 REGISTERED PROFESSIONAL ENGINEER 1-13-84

7-17-D-35 Permit # 11889

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 "

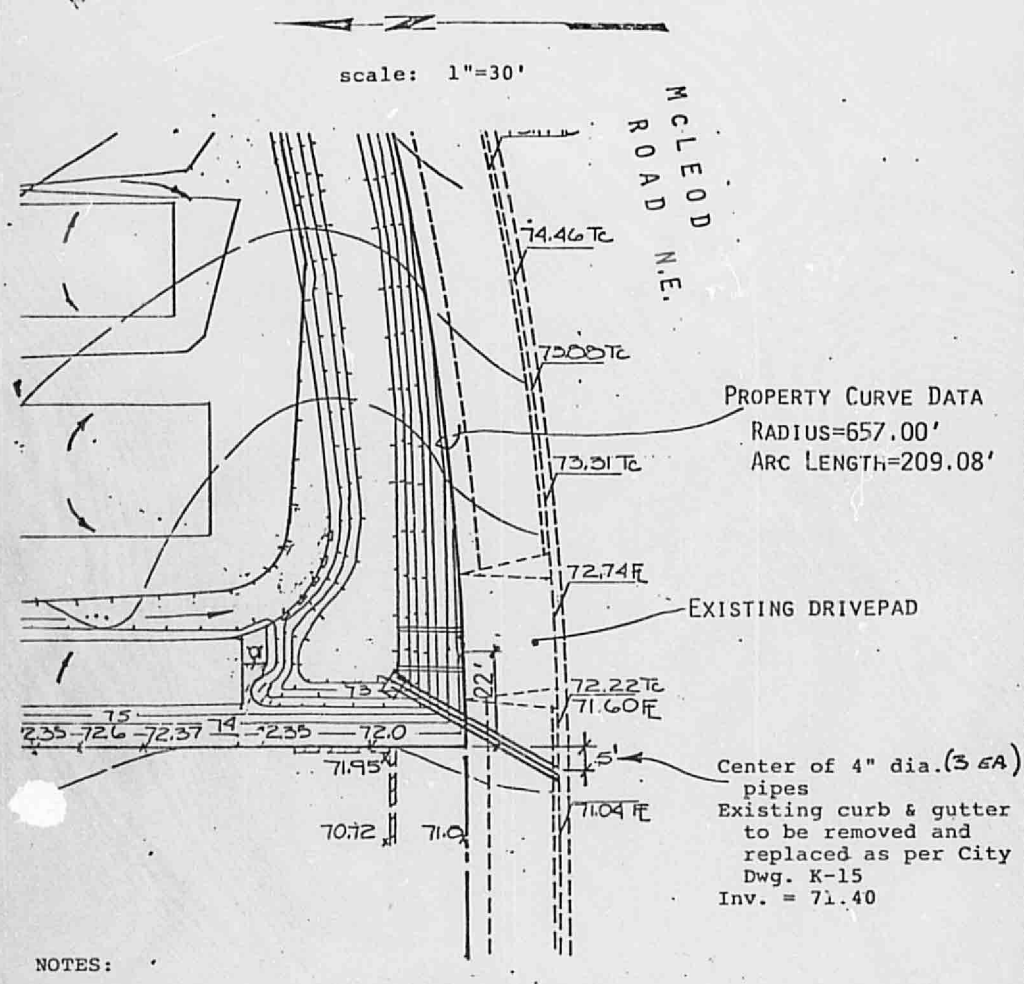
3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.

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 collector street use.

D-35

APPROVALS	NAME	DATE	TITLE: McLeod Mini-Warehouses 4715 McLeod Rd.	
A.C.E./DESIGN	[illegible]	13 Jan 84		
INSPECTOR	R. Salas	5-25-84	PERMIT NO.	MAP
A.C.E./FIELD	W. F. McNamara	5-25-84	SHEET 1 OF 2	NO. F 17



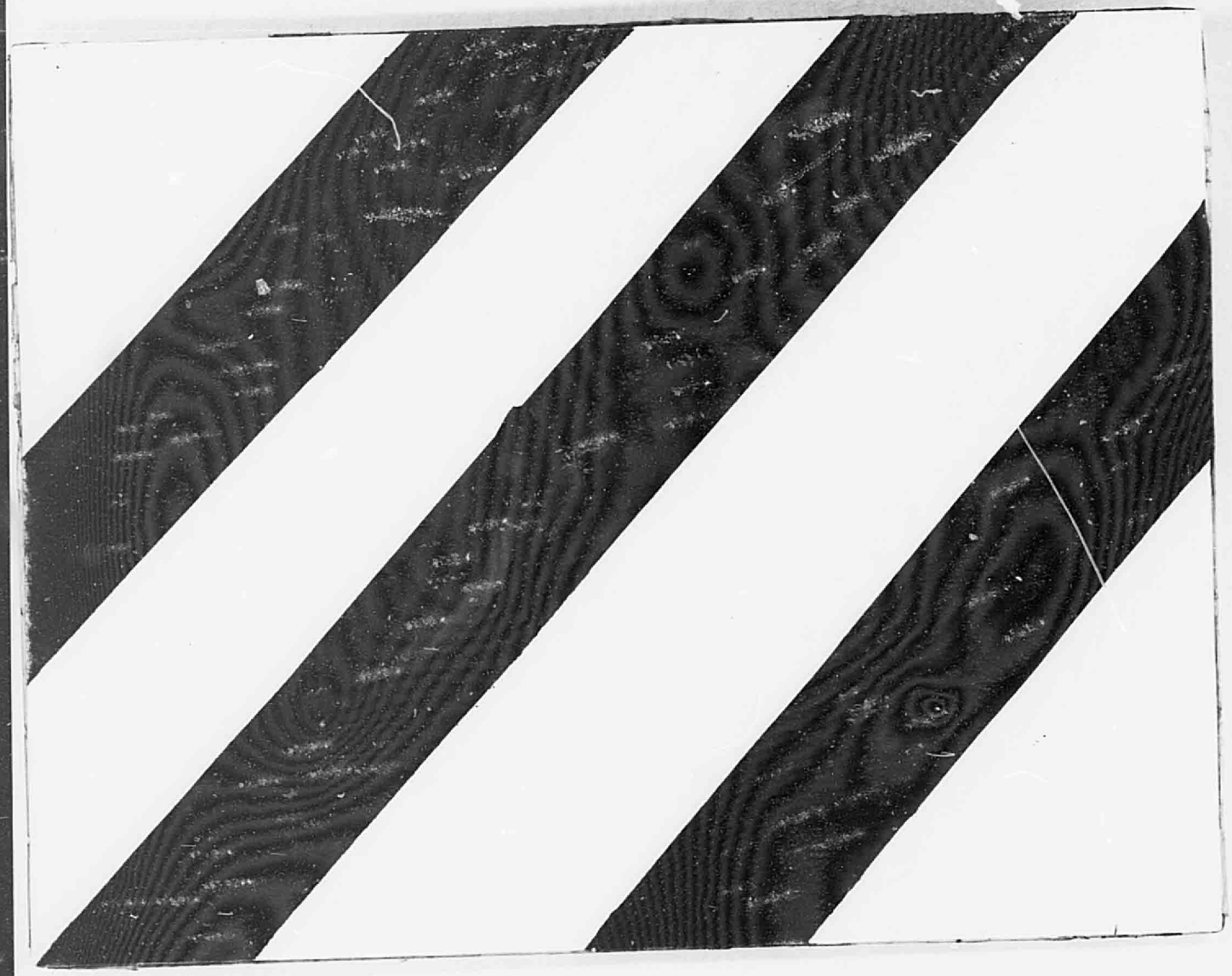
NOTES:

1. BM-City BM 5-F17 on the north side of Montgomery Blvd., opposite the junction with Monroe St. A square, ∅, chiseled on top of concrete curb.
   ELEVATION = 5173.556

2. TBM-A slash on the top of curb along the projection of the east property line into the right-of-way of McLeod Rd.
   ELEVATION = 5177.647

FRED C. ARFMAN
NEW MEXICO
7322
REGISTERED PROFESSIONAL ENGINEER
1-13-84

CITY OF ALBUQUERQUE

APPROVALS	ENGINEER	DATE	TITLE: McLeod Mini-Warehouses 4715 McLeod Rd.
C.E. DESIGN		13 Jan 84	
WATER RESOURCES	5-25-84	5-25-84	PROJECT NO.
CITY ENGINEER	W. F. McNamara	5-25-84	MAP NO.

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