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File 1980-0051
Date 8/2/01

Project Name: J & J Enterprises - Flood Plain Permit

P r e s e n t	S c a n n e d	<p>A few items are denoted with an asterisk (*), which means they are to be scanned for permanent record on the ISYS retrieval system. In some instances, not all entries designated to be scanned are present in the file. There are also documents specific to certain files, not found on the standard list. For this reason, a checklist has been included.</p> <p>Remaining items, (not selected for scanning), will be marked present on the checklist. This index can serve as a quick guide for the contents of each file.</p> <p>Files denoted with (**) are to be located using the ISYS Query System. Planning Clearance will need to be typed in full, as well as other entries such as Ordinances, Resolutions, Board of Appeals, and etc.</p>
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X	X	*Summary Sheet – Table of Contents
		Application form
		Receipts for fees paid for anything
		*Submittal checklist
		*General project report
		Reduced copy of final plans or drawings
		Reduction of assessor's map
		Evidence of title, deeds
		*Mailing list
		Public notice cards
		Record of certified mail
		Legal description
		Appraisal of raw land
		Reduction of any maps – final copy
		*Final reports for drainage and soils (geotechnical reports)
		Other bound or nonbound reports
		Traffic studies
		Individual review comments from agencies
		*Consolidated review comments list
		*Petitioner's response to comments
		*Staff Reports
		*Planning Commission staff report and exhibits
		*City Council staff report and exhibits
		*Summary sheet of final conditions
		*Letters and correspondence dated after the date of final approval (pertaining to change in conditions or expiration date)

DOCUMENTS SPECIFIC TO THIS DEVELOPMENT FILE:

X		Memo from Ron Rish to Charley Ray re: reviewed the hydraulics report, feels it should be the basis for any building permits – 8/1/80		
X	X	Letter from Charly Ray City of GJ – 7/22/80		
X		Flood Plain Permit Application		
X	X	Report "Effect of Proposed Building by J & J Enterprises on the 100-Year Floodplain of Hortizon Drive Channel"-6/18/80		
X	X	Grading Plan Topo & Utility Composite		



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EFFECT OF PROPOSED BUILDING BY J & J ENTERPRISES
ON THE 100-YEAR FLOODPLAIN OF
HORIZON DRIVE CHANNEL, GRAND JUNCTION, COLORADO

JOB NO. 1956.104

June 18, 1980

Prepared By
GINGERY ASSOCIATES, INC.
1310 Ute Avenue
Grand Junction, Colorado

FLOODPLAIN ANALYSIS

Horizon Drive Channel above G. Road Grand Junction, Colorado

I. Introduction

This study was prepared for J & J Enterprises of Grand Junction, Colorado to accompany the Floodplain Permit Application for Northside Park. The objective of this study is to determine what effect the proposed building will have on the Horizon Drive Channel 100-year floodplain and to establish the proper elevation for constructing the proposed building.

The proposed building site is 707 Horizon Drive, and more particularly, lots 2, 3 and 4, Northside Park, Mesa County, Colorado. The building is located approximately 130 feet northwest of Horizon Drive, 250 feet north of G Road, and adjacent to the Horizon Drive Drainage Channel. A location map is shown on Exhibit 1 of this report.

This lot is currently vacant and in recent years, approximately 6 feet of fill material has been placed on the property. Some fill is still needed to bring the ground level to that of the adjacent properties (as can be seen on the prepared grading plan).

II. Previous Floodplain Study

A Flood Hazard Report for the City of Grand Junction was prepared by the Department of the Army, Sacramento, District Corps of Engineers, Sacramento, California, November, 1976 (Reference 1). The proposed building site was not included in that report as the study limit for the Horizon Drive Channel was G Road.

This study, by Gingery Associates, Inc. was based upon the Army Corps of Engineers report and was compiled in such a way as to be an extension of that report.

III. Hydraulic Analysis

Water surface elevations of the 100-year flood were computed using the U. S. Army Corps of Engineers HEC II step-backwater computer program (Reference 2).

[The channel cross section data was obtained in the field by Gingery Associates, Inc., and the 100-year peak discharge of 500 cfs at G Road was determined in the USCE report dated November, 1976. This data was used in computing the 100-year floodplain as shown in Exhibit 2.]

The floodwaters are restricted at G Road by a 6 foot diameter corrugated metal culvert. The discharge capacity

through this culvert was computed at 440 cfs under a total head water depth of 14.5 feet, (elev. = 4702.5) thus causing backwater storage to flood onto the proposed building site.

The remaining 60 cfs will flow between the proposed building and the existing Pizza Hut to the south, then along Horizon Drive, over G Road and back into the channel as shown in Exhibit 2. This would create a weir flow situation under an estimated head of 0.5 feet with a velocity of about 1 foot per second.

The 100-year floodplain, as shown in Exhibit 2, is actually the limits of the backwater storage area. By placing the proposed building as shown, this area will be reduced only slightly and therefore not change the expected backwater surface elevation (4702.5) as shown in Table 1.

↓
IT'S GOT
TO GO
SOMEWHERE

IV. Conclusion

THIS STUDY DOESN'T
INDICATE WHERE.

The 100-year water surface elevation along the Horizon Drive Channel will not be increased due to the proposed building encroachment; therefore, the effect of the proposed building on the upstream and downstream properties is insignificant. The development on this site will conform to the surrounding topography as the adjacent property owners have already brought in fill and raised their property as shown on the proposed grading plan (Exhibit 1).

The 100-year floodplain and 100-year water surface profile for this section of the Horizon Drive Channel are shown in Exhibit 2 and 3 respectively. The 100-year water surface elevations are given in Table 1 for the area with and without the proposed building.

V. Recommendations

1. The elevation of the first floor should be at least 4703.5 to give a 1 foot freeboard during a 100-year flood event.
2. The parking lot should be graded so that an overflow can be provided for between the proposed building and the existing Pizza Hut.
3. No fill should be placed in the main course of the Horizon Drive Channel.
4. Place compacted fill in the low spot at the most northern corner of the property to reduce erosion of the bank.
5. Seed the Channel bank to help prevent erosion.

VI. References

1. City of Grand Junction and Mesa County, "Flood Hazard Information, Grand Junction, Colorado", November, 1976.
2. U. S. Army Corps of Engineers, Hydrologic Engineering Center, "HEC-II Water Surface Profiles, Computer Program 723-X6-L202 A", Davis, California, 1976.

TABLE 1.

		<u>100-YEAR FLOOD SURFACE ELEVATION</u>	
	<u>CROSS SECTION</u>	<u>WITHOUT BUILDING</u>	<u>WITH BUILDING</u>
	1	4702.50	4702.50
(proposed bldg.)	2	4702.50	4702.50
	3	4702.50	4702.50
	4	4702.50	4702.50
	5	4702.50	4702.50
	6	4702.53	4702.53
	7	4703.22	4703.22

EFFECT OF PROPOSED BUILDING BY J & J ENTERPRISES
ON THE 100-YEAR FLOODPLAIN OF
HORIZON DRIVE CHANNEL, GRAND JUNCTION, COLORADO

Prepared by

Reviewed by

Lowell D. Lester
Engineer

Ronald R. Fromknecht
Ronald R. Fromknecht, P. E.
Project Manager



Technical computations prepared by:

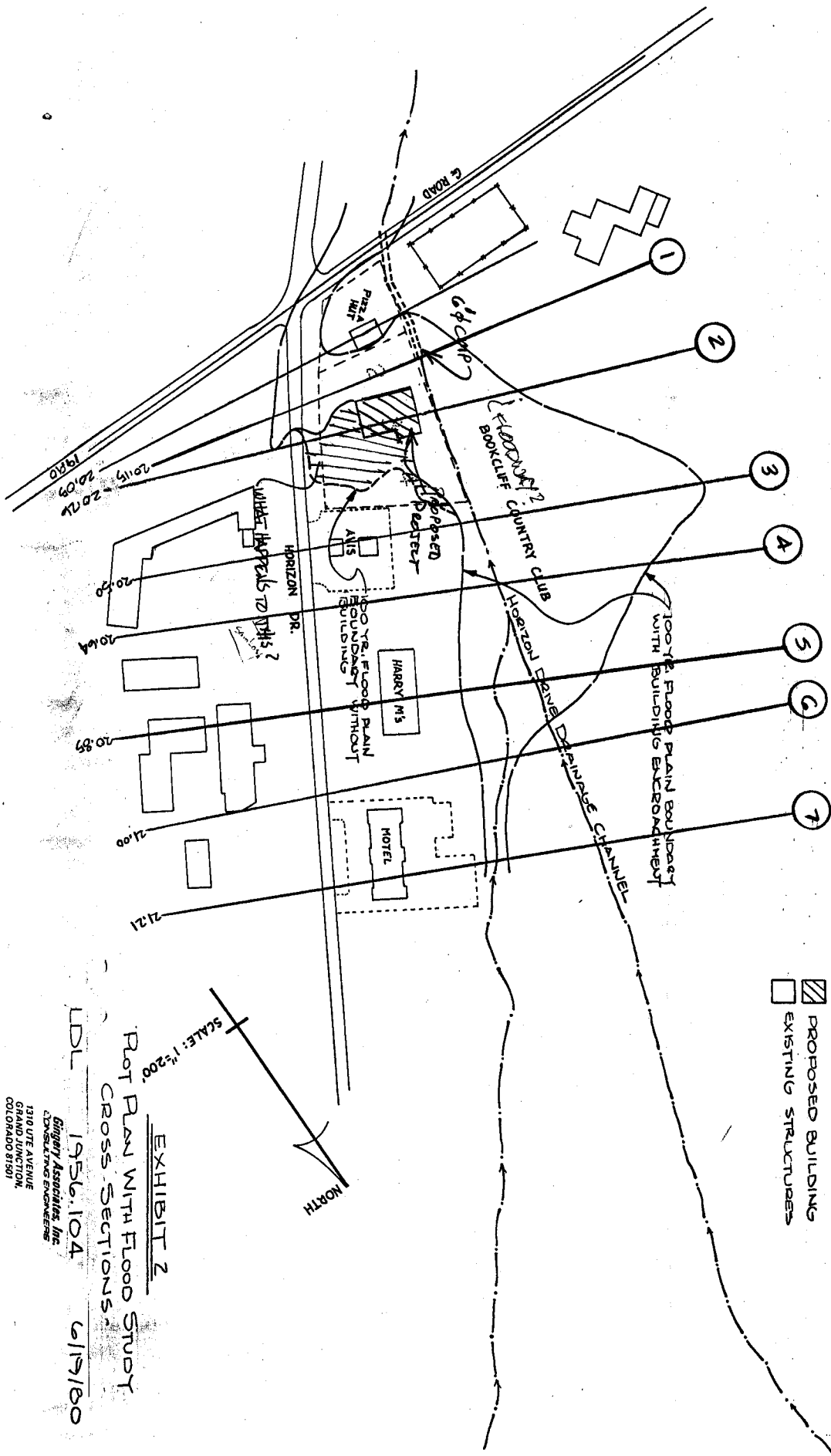
Jim Chang, Engineer and Purushottam Dass, Ph.D, P.E.

EXHIBIT 1

NORTHSIDE PARK

GRADING PLAN, TOPO & UTILITY COMPOSITE

(in pocket)



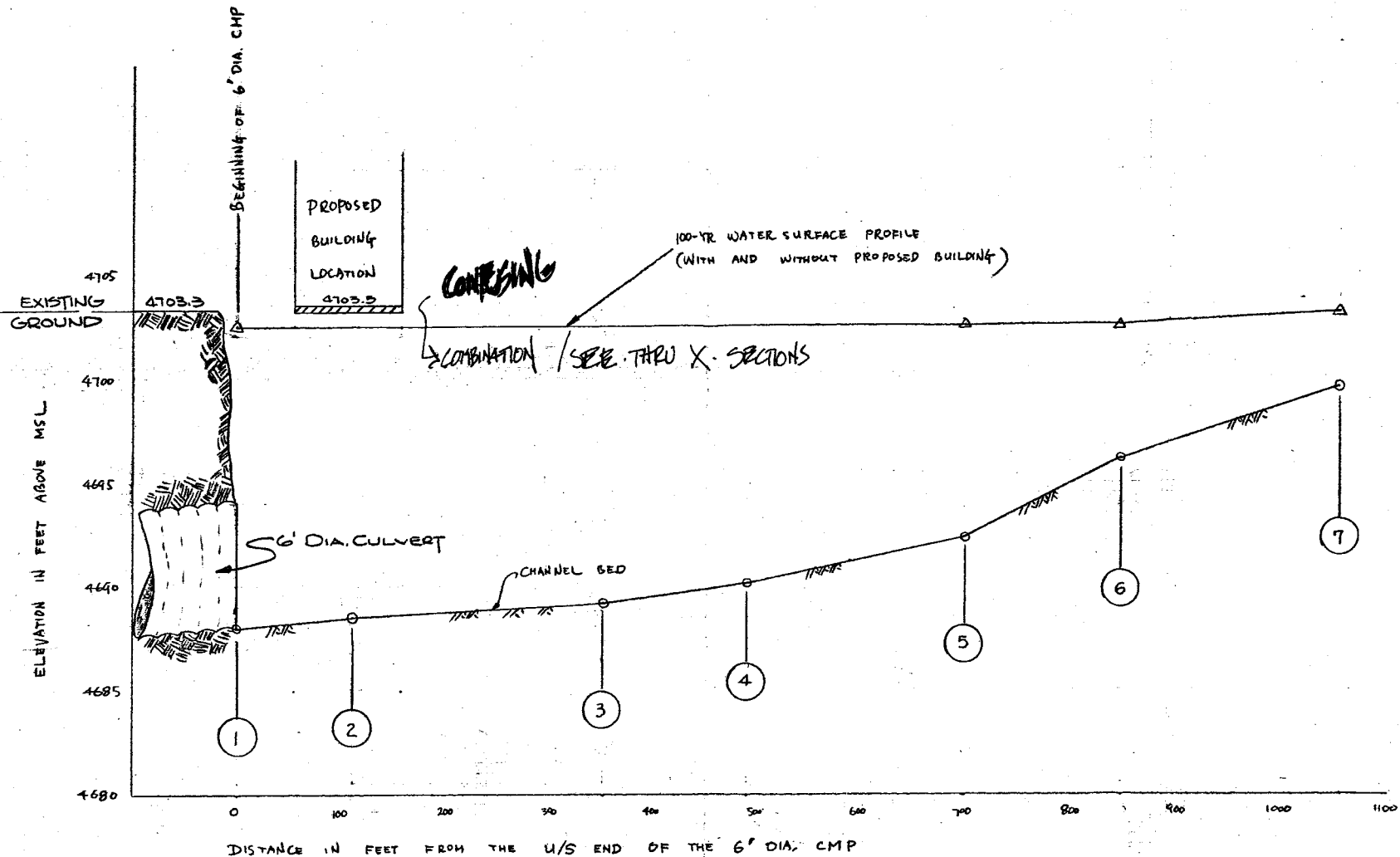
LEGEND

- ① CROSS SECTION STATIONS
- 2015 STREAM DIST. IN THOUSANDS OF FEET ABOVE 24 ROAD
- 100 YR. FLOOD PLAIN W/BUILDING ENCROACHMENT
- 100 YR. FLOOD PLAIN W/O BUILDING ENCROACHMENT
- PROPOSED BUILDING
- EXISTING STRUCTURES

EXHIBIT 2
 POT PLAIN WITH FLOOD STUDY
 CROSS SECTIONS

LDL 1956.104 6/19/80
 Ginter Associates, Inc.
 1310 UTE AVENUE
 GRAND JUNCTION
 COLORADO 81501





HORIZON DRIVE CHANNEL: 100-YR WATER SURFACE PROFILE
WITH AND WITHOUT PROPOSED BUILDING

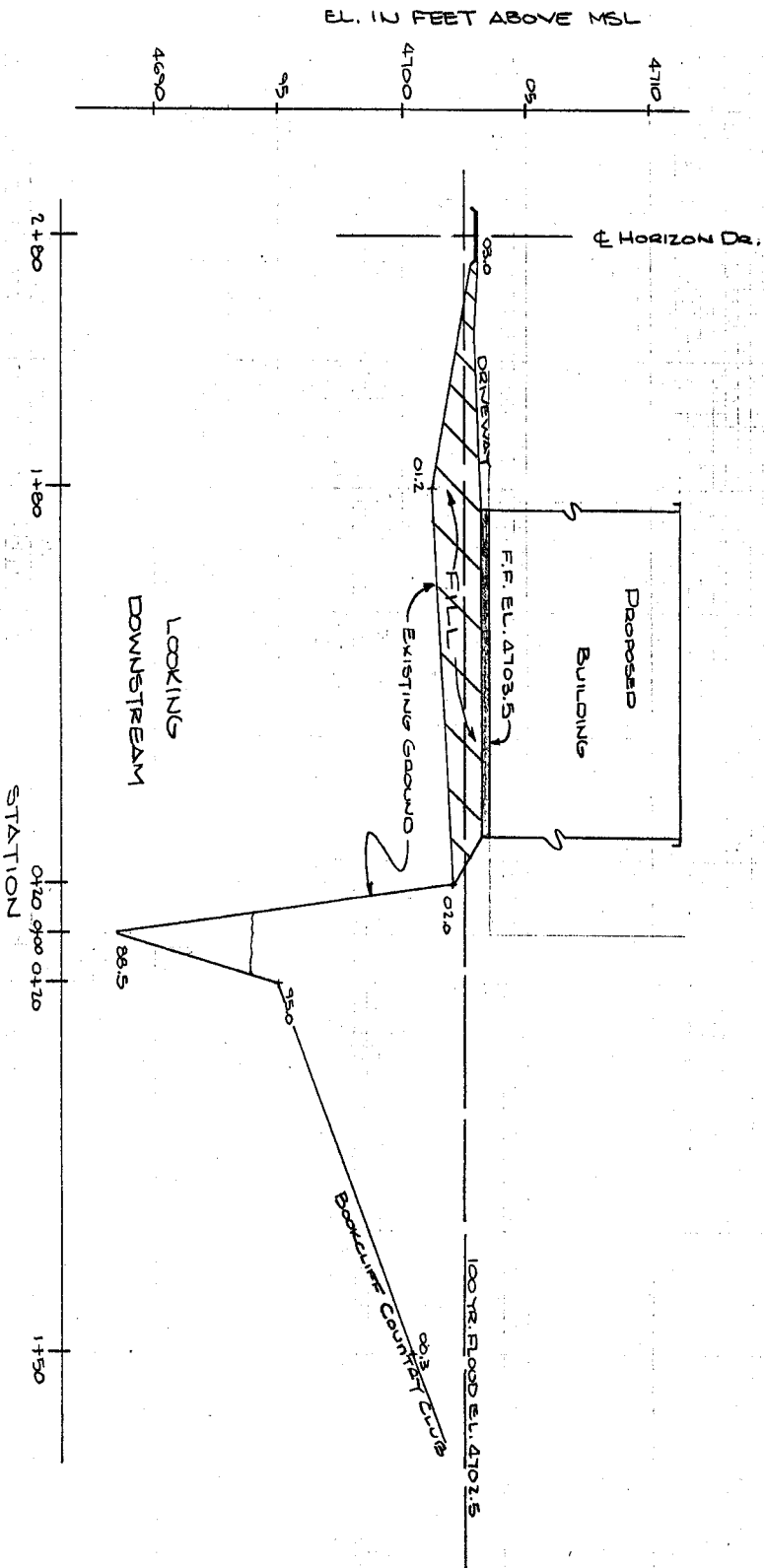
SCALE: HORIZ 1" = 100'
VERT 1" = 5'

G
Gingery Associates, Inc.
CONSULTING ENGINEERS
1310 UTE AVENUE
GRAND JUNCTION,
COLORADO 81501
TELEPHONE 303 245-0627

EXHIBIT 3

NOTE: ELEVATIONS BASED UPON USGS MONUMENT LOCATED 200' SOUTH OF 12TH ST. & HORIZON DR. INTER

1956,104



NOTE: ELEVATIONS BASED UPON USGS MONUMENT LOCATED 200' SOUTH OF 12TH ST. & HORIZON DRIVE INTERSECTION.
 ACCESS TO SITE DURING 100-YR. FLOOD EVENT WILL BE VIA HORIZON DRIVE.

CROSS SECTION AT PROPOSED BUILDING SITE

VERT. 1" = 5' HORIZ. 1" = 50'

EXHIBIT 4

Gingery Associates, Inc.
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 1310 UTE AVENUE
 GRAND JUNCTION
 COLORADO 81505
 TELEPHONE 303 246-0827

1956.104
 AEH 6/19/80

APPENDIX

 HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
 ERROR CORR - 01,02,03
 MODIFICATION - 50,51,52,53

w/
 1309

C
 T1 HORIZON DRIVE FLOOD PLAIN, JOB 1956.004
 T2 100-YEAR RUN WITH PROPOSED BUILDING
 T3 HORIZON DR. CHANNEL, GJ, CD

J1	ICHECK	ING	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FG
	0.	2.	0.	0.	0.0	0.0	0.0	0.	4702.500	0.0
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	-1.000	0.0	-1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J6	IHLQ	ICOPY								
	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.035	0.040	0.055	0.100	0.300	0.0	0.0	0.0	0.0	0.0
QT	2.000	500.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

BEGINNING OF 6-FT DIA. CMP

X1	1.000	10.000	227.000	276.000	0.0	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	180.000	0.0	0.0	0.0	0.0	0.0	0.0
GR	4702.000	0.0	4699.000	30.800	4699.000	53.500	4701.000	83.000	4702.000	227.000
GR	4688.000	250.000	4688.000	264.000	4694.000	276.000	4702.000	358.000	4710.000	430.000
X1	2.000	7.000	275.000	430.000	110.000	110.000	110.000	0.0	0.0	0.0
X3	100.000	0.0	0.0	258.000	0.0	0.0	0.0	0.0	0.0	0.0
GR	4703.000	0.0	4701.000	100.000	4702.000	260.000	4688.500	275.000	4695.000	300.000
GR	4700.300	430.000	4707.100	530.000	0.0	0.0	0.0	0.0	0.0	0.0
X1	3.000	9.000	160.000	295.000	240.000	240.000	240.000	0.0	0.0	0.0

HORIZON DR. CHANNEL, GJ,

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
1.000	500.00	<u>4702.50</u>	0.0	0.0	0.0	140.31	0.0
2.000	500.00	<u>4702.50</u>	0.0	0.00	0.0	204.40	110.00
3.000	500.00	<u>4702.50</u>	0.0	0.0	0.0	492.42	240.00
4.000	500.00	<u>4702.50</u>	0.0	0.0	0.0	376.72	140.00
5.000	500.00	<u>4702.50</u>	0.0	0.0	0.0	293.13	210.00
6.000	500.00	<u>4702.53</u>	0.0	0.02	0.0	66.63	150.00
7.000	500.00	<u>4703.22</u>	0.0	0.69	0.0	48.07	210.00

SUMMARY OF ERRORS

 HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
 ERROR CORR - 01,02,03
 MODIFICATION - 50,51,52,53

w/o BUDG

C
 T1 HORIZON DRIVE FLOOD PLAIN, JOB 1956,004
 T2 100-YEAR RUN WITHOUT PROPOSED BUILDING
 T3 HORIZON DR. CHANNEL, GJ, CO

J1	ICHECK	ING	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	2.	0.	0.	0.0	0.0	0.0	0.	4702.500	0.0
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	-1,000	0.0	-1,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J6	IHLEQ	ICOPY								
	1,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.035	0.040	0.055	0.100	0.300	0.0	0.0	0.0	0.0	0.0
QT	2,000	500,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

BEGINNING OF 6-FT DIA. CMP

X1	1,000	10,000	227,000	276,000	0.0	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	180,000	0.0	0.0	0.0	0.0	0.0	0.0
GR	4702,000	0.0	4699,000	30,800	4699,000	53,500	4701,000	83,000	4702,000	227,000
GR	4688,000	250,000	4688,000	264,000	4694,000	276,000	4702,000	358,000	4710,000	430,000
X1	2,000	7,000	275,000	430,000	110,000	110,000	110,000	0.0	0.0	0.0
X3	10,000	0.0	0.0	200,000	0.0	0.0	0.0	0.0	0.0	0.0
GR	4703,000	0.0	4701,000	100,000	4702,000	260,000	4688,500	275,000	4695,000	300,000
GR	4700,300	430,000	4707,100	550,000	0.0	0.0	0.0	0.0	0.0	0.0
X1	3,000	9,000	160,000	295,000	240,000	240,000	240,000	0.0	0.0	0.0
X3	10,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	4706,602	0.0	4706,398	160,000	4689,199	135,000	4700,102	275,000	4696,602	420,000
GR	4698,699	520,000	4704,699	750,000	4704,602	850,000	4705,000	955,000	0.0	0.0

X1	1.000	10.000	227.000	276.000	0.0	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	180.000	0.0	0.0	0.0	0.0	0.0	0.0
GR	4702.000	0.0	4699.000	30.800	4699.000	53.500	4701.000	83.000	4702.000	227.000
GR	4688.000	250.000	4688.000	264.000	4694.000	276.000	4702.000	358.000	4710.000	430.000

X1	2.000	7.000	275.000	430.000	110.000	110.000	110.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	200.000	0.0	0.0	0.0	0.0	0.0	0.0
GR	4703.000	0.0	4701.000	100.000	4702.000	260.000	4688.500	275.000	4695.000	300.000
GR	4700.300	430.000	4701.100	530.000	0.0	0.0	0.0	0.0	0.0	0.0

X1	3.000	9.000	160.000	295.000	240.000	240.000	240.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	4706.602	0.0	4706.398	160.000	4689.199	195.000	4700.102	295.000	4696.602	420.000
GR	4698.699	520.000	4704.699	750.000	4704.602	850.000	4705.000	955.000	0.0	0.0

X1	4.000	10.000	250.000	380.000	140.000	140.000	140.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	570.000	0.0	0.0	0.0	0.0
GR	4709.102	0.0	4707.898	95.000	4699.199	250.000	4690.199	270.000	4699.301	380.000
GR	4698.301	475.000	4702.602	570.000	4701.398	675.000	4704.301	775.000	4706.500	970.000

X1	5.000	13.000	130.000	170.000	210.000	210.000	210.000	0.0	0.0	0.0
GR	4703.898	0.0	4703.898	60.000	4697.102	130.000	4692.301	150.000	4697.602	170.000
GR	4701.301	275.000	4702.602	375.000	4703.398	480.000	4703.199	580.000	4705.398	675.000
GR	4706.398	800.000	4708.699	875.000	4713.102	975.000	0.0	0.0	0.0	0.0

X1	6.000	11.000	125.000	210.000	150.000	150.000	150.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	4711.398	0.0	4708.398	125.000	4699.199	150.000	4696.199	200.000	4704.500	210.000
GR	4701.000	300.000	4703.199	400.000	4703.500	525.000	4706.199	650.000	4707.398	720.000
GR	4711.000	1000.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	7.000	12.000	145.000	220.000	210.000	210.000	210.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	4714.602	0.0	4709.199	145.000	4700.898	170.000	4699.500	200.000	4706.199	220.000
GR	4707.199	320.000	4702.801	420.000	4706.000	535.000	4704.699	620.000	4708.398	720.000
GR	4708.199	870.000	4710.500	970.000	0.0	0.0	0.0	0.0	0.0	0.0

HORIZON DR. CHANNEL, GJ,

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH	
1.000	500.00	<u>4702.50</u>	0.0	0.0	0.0	140.31	0.0	0
2.000	500.00	<u>4702.50</u>	0.0	0.00	0.0	262.39	110.00	110
3.000	500.00	<u>4702.50</u>	0.0	0.0	0.0	492.42	240.00	350
4.000	500.00	<u>4702.50</u>	0.0	0.0	0.0	376.72	140.00	440
5.000	500.00	<u>4702.50</u>	0.0	0.0	0.0	293.13	210.00	700
6.000	500.00	<u>4702.53</u>	0.0	0.02	0.0	66.63	150.00	850
7.000	500.00	<u>4703.22</u>	0.0	0.69	0.0	48.07	210.00	1060

SUMMARY OF ERRORS

City
County
Development
Department

CITY OF GRAND JUNCTION—MESA COUNTY—COLORADO 81501
359 WHITE AVE.—ROOM 60—DIAL (303) 243-9200 EXT. 343

July 22, 1980

Application has been made for a City of Grand Junction Floodplain Permit for construction of a commercial building (offices and restaurant).

Common location of the site being:

701 Horizon Drive

Mesa County Assessors Tax Parcel Number(s):

2701-363-27-002/003/004

The subject property lies within the H-O (highway oriented) zoning district of the City of Grand Junction; the use described above is in conformance with uses listed as appropriate for this zone; such use is allowed in floodfringe areas, subject to successful application for a floodplain permit.

A summary of the permit application process follows.

Initial application was made for a floodplain development permit June 18, 1980. The body of the material submitted dealt with a site-specific flood hazard study for the project area. This study was necessitated due to lack of any documented flood hazard information at this point along the Horizon Drive channel. (A previous study performed by the Army Corps of Engineers terminated at "G" Road - just south of the project site).

The initial flood hazard study was sent out for review to the city engineer and was returned with comments summarized below.

- * The headwater calculation submitted by the applicant was found to be 2 feet lower than that determined by the city engineer.
- * The flood hazard study must delineate the channel floodway - city ordinances prohibit construction of a building in the floodway - therefore the relationship between building location and floodway must be shown.
- * Since floodwater elevations before and after site improvements were shown to be constant, there must be a change in flow velocity resulting from floodplain encroachment at the site - such velocities must be documented.

As a result of the above comments and subsequent discussions with the project engineer, a revised flood hazard study was submitted July 15, 1980. The revised flood hazard study:

- * Re-establishes a headwater consistent with the city engineer's calculations;
- * Adequately delineates the floodway - the structure does not encroach on the floodway;
- * Re-calculates floodwater elevations to show an increase of approximately 0.2 feet as a result of floodplain encroachment. (Velocities remain the same for both developed and undeveloped scenarios).

In addition, the project engineer has stated:

"The 100-year water surface elevation along the Horizon Drive channel will not be significantly increased due to the proposed building encroachment; therefore, the effect of the proposed building on the upstream and downstream properties is insignificant."

The applicant has thus shown the subject property to be adequately flood-proofed without significantly affecting either upstream or downstream properties.

Therefore this floodplain development permit is granted subject to the following conditions:

- * The applicant will proceed with development of the site in compliance with recommendations and specifications outlined in the revised flood hazard study as prepared by Gingery Associates Inc. (reference job no. 1956-104).
- * That any new construction be anchored to prevent flotation, collapse, or lateral movement; be constructed with materials and utility equipment resistant to flood damage and be constructed by methods and practices that minimize flood damage.
- * That all primary utility control points (water/electricity, etc.) be set an elevation at least equal to or above the minimum first-finished floor elevation of 4703.6 M-S-L.
- * The applicant will proceed in conformity with all applicable federal and state statutes as well as all applicable local regulations including but not limited to subdivision regulations, zoning regulations and building codes.


This permit applies only to the proposal as identified and may not be expanded or transferred.

This permit shall not be effective for thirty days from the date of issuance during which time the permit will be forwarded to the Grand Junction City Council for review and comment. If a hearing to review the proposal is not called for the permit will be con-

sidered in effect.

Before final approval of any permitted use (i.e. issuance of certificate of occupancy), the applicant shall submit a certificate by a registered professional engineer that the proposal has been completed in accordance with the approved plan and all conditions have been satisfied.

This permit shall be valid for one year from it's date of effect. (i.e. permit will be in effect 30 days from day of issuance if approved by City Council). If substantial commencement relative to the original purpose of this permit has not begun during that one year the permit shall become invalid at that time. Extension of a floodplain development permit shall be achieved only through the application, review and evaluation process as required for the original permit.



Charly Ray
Floodplain Administrator

JULY 22ND 1980
Date

CR/kms