DRAINAGE INFORMATION SHEET

PROJECT TITLE: MARKET CENTRE EAST ZONE ATLAS/DRNG. FILE #: K21 (D16)

LEGAL DESCRIPTION: TRACTS 2A2 THRU 2A5 HORNE DEV. ADD'N

CITY ADDRESS: 45 HOTEL CIRCLE NE

ENGINEERING FIRM: ESPEY HUSTON & ASSOC CONTACT: D. LORENZ

ADDRESS: 317 COMMERCIAL NE PHONE: 242 1909

OWNER: SES BECK & ASSOC CONTACT: R. JANSSEN

ADDRESS: 2029 CENTURY PARK EAST STE 890
LA, CALIF 90067 PHONE: 1-213-553-6899

ARCHITECT: DE LA TORRE RAINHART CONTACT: R. GREEN

ADDRESS: 700 LOMAS NE PHONE: 842 9500

SURVEYOR: ESPEY HUSTON & ASSOC CONTACT: T. ALDRICH

ADDRESS: 317 COMMERCIAL NE PHONE: 242 1909

CONTRACTOR: PAGE & WRTZ CONTACT: J. LOWE

ADDRESS: 5001 PASEO DEL NORTE PHONE: 823 2940

RECEIVED
AUG 24 1988
HYDROLOGY SECTION

PRE-DESIGN MEETING:

X YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. _____

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

X 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

X CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: AUG 23, 1988

BY: Dennis Lorenz

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

MAYOR
KEN SCHULTZ

CHIEF ADMINISTRATIVE OFFICER
GENE ROMO

DEPUTY CAO PUBLIC SERVICES
FRANK MARTINEZ

DEPUTY CAO PLANNING/DEVELOPMENT
BILL MUELLER

March 1, 1988

Dennis Lorenz, P.E.
Espey, Huston & Associates, Inc.
317 Commercial Street, NE
Albuquerque, New Mexico 87102

RE: REVISED GRADING & DRAINAGE PLAN OF MARKET CENTER EAST
RECEIVED FEBRUARY 11, 1988 FOR BUILDING PERMIT APPROVAL
(K-21/D16)

Dear Mr. Lorenz:

The above referenced submittal, revised February 2, 1988 is approved for building permit.

Include these approved plans with the construction sets routed for sign-off. If the building permit has already been issued, it is your responsibility to see that the contractor has this approved plan.

If you have any questions, please call me at 768-2650.

Cordially,

Roger A. Green PE

Roger A. Green, P.E.
C.E./Hydrology Section

xc: George Rainhart

RAG/bsj

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

August 7, 1986.

Dennis Lorenz, P.E.
Espey, Huston & Associates, Inc.
4801 Indian School Road, NE Suite 204
Albuquerque, New Mexico 87103

RE: DRAINAGE REPORT AND DOWNSTREAM ANALYSIS OF MARKET CENTER EAST, RECEIVED JULY 30, 1986 FOR SITE DEVELOPMENT AND PLATTING APPROVAL (K-21/D16)

Dear Dennis:

The above referenced submittal with Conceptual Grading and Drainage Plan drawings revised July 28, 1986, are approved for Site Development and Preliminary Plat approval. Site plan must show the proposed drainage easement required between Hotel Circle and Eubank. On Page 7 of the report text, and Sheet 12 of drawings, the volume calculation formula was not revised and is incorrect as shown.

At time of construction drawing preparation for DRC, the sediment pond at A.P. #1 can be redesigned using the revised volume quantities. Also, pond improvement details for the ponding area along Eubank at A.P. #3 will be required.

Prior to any Final Plat sign-off by City Engineer or Building Permit approvals, the drainage easement between Hotel Circle and Eubank must be secured. Easement width must follow DPM guidelines.

If you have any questions, call me at 766-7644.

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Hydrology Section

cc: Steve Johnson

RAG/bsj

ALBUQUERQUE
NEW MEXICO
1706

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

RECEIVED
JAN 05 1987

December 31, 1986

K-21/D16

Mr. Dennis Lorenz
Espey-Huston & Associates
317 Commercial, NE
Albuquerque, NM

RE: MARKET CENTER EAST

Dear Mr. Lorenz:

This is to confirm our meeting that was held on December 31, 1986 in Rodger Green's office, Hydrology Section, to discuss the storm drainage outfall across Eubank. It was decided that a 48" storm drain would tie into the 54" culvert with a transition structure. The structure would provide an inlet for the pond which will also function as an outfall for larger storms, if required. The transverse inlet on Hotel Circle will be modified to use Type 'A' and Type 'C' inlet configurations. Prior to plat approval, an easement must be analyzed for the AMDS system, which is a Priority A project which runs through this development.

Please contact me if this is not in accordance with our meeting and something is noted here in error.

Thank you,

Andre Houle, Senior Civil Engineer
Design Review Section
Public Works Dept./Engineering Group

AH/tar
(6810E)

cc: Jim Leymon, Espey-Huston & Associates
Roger Green, PWD/Engineering-Hydrology Section
Dan Hogan, Assistant Utilities Engineer/Design Hydrology

K21-D16

NEW MEXICO STATE HIGHWAY
AND TRANSPORTATION DEPARTMENT
AN EQUAL OPPORTUNITY EMPLOYER
DISTRICT III

GARREY CARRUTHERS
GOVERNOR

COMMISSION

Willie Ortiz
Chairman, Santa Fe

J. V. "Rip" Cortez
Vice-Chairman, Cuba

Emerlinda De Baca
Secretary, Socorro

Jack Westman
Member, Albuquerque

Dr. Donald Reid
Member, Clayton

Mary Jean Smith Christensen
Member, Gallup

DEPARTMENT

Secretary
Dewey Lansdell

General Office
PO Box 1149
Santa Fe NM
87504-1149
505-827-5130

District One Office
PO Box 1457
Deming NM
88031-1457
505-546-2231

District Two Office
PO Box 1457
Roswell NM
88202-1457
505-624-3600

District Three Office
PO Box 3780
Starke D
Albuquerque NM
87190-3780
505-841-2200

District Four Office
PO Box 361
Las Vegas NM
87701-0361
505-425-7561

District Five Office
PO Box 4127
Cerrillos Station
Santa Fe NM
87502-4127
505-827-5141

District Six Office
PO Box 6
Mora NM
87732
505-387-2234

July 28, 1987

Mr. Curt Smith, Superintendent
Jaynes Corporation General Contractors
2906 Broadway NE
P.O. Box 26841
Albuquerque NM 87125

SUBJECT: Utility Permit No. 311983
Grading and Rip-Rap on I-40 Right of Way

Gentlemen:

On July 27, 1987, Mr. Paul Myers and myself inspected drainage work involved with the construction of the parking lot of the Builders Square building.

The following work within I-40 was found to be in substantial compliance with the plans and specifications submitted with the permit application:

1 - Grading of the drainage area east of the 48-inch pipe

2 - Wire enclosed rip-rap at the inlet of the 48-inch pipe

3 - Dry rip-rap at two outlet locations along the fence line

Sincerely,

D. G. ARP
District Highway Engineer

By: Fred C. Torrez
Fred C. Torrez
District Traffic Engineer

FCT:cgf

xc: Paul Myers
Roger A. Green, City of Albuquerque

Duplicate Copy

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

MAYOR
KEN SCHULTZ

CHIEF ADMINISTRATIVE OFFICER
GENE ROMO

DEPUTY CAO DEVELOPMENT & ENTERPRISE SERVICES
LARRY LARRANAGA

DEPUTY CAO PUBLIC SERVICES
DAN WEAKS

August 1, 1988

Dennis Lorenz, P.E.
Espey, Huston & Associates, Inc.
317 Commercial Street, NE
Albuquerque, New Mexico 87102

RE: DRAINAGE COMPLAINT - MARKET CENTER EAST (K-21/D16)

Dear Mr. Lorenz:

The following complaint has been submitted by City inspectors. I have also verified the problem in the field. East of our public storm drain on Hotel Circle, there is a private 24 inch storm drain line. We entered the 48 inch public storm drain and traveled to the 24 inch private storm drain. We discovered that the pipe sections did not connect to each other. We found a seven inch (7") gap between pipe sections. According to Roger Greens' letter of December 3, 1987, Espey, Huston needs to certify the project prior to Certificate of Occupancy release. We cannot allow the Certificate of Occupancy to be issued until the above problem has been corrected.

Please contact this office prior to correction. I would suggest a more detailed review of the storm drains construction prior to Certification.

Should you have any questions, call me at 768-2650.

Cordially,

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

xc: Roger Green
Rick Duran
Steve Johnson

CAM/bsj

C I T Y O F A L B U Q U E R Q U E

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE REF. NO.: WPHYD288

November 16, 1989

TO: File K-21/D16, Market Center East

FROM: Stuart Reeder SR

SUBJECT: STATUS OF MARKET CENTER EAST

The site development plan for Tract 1-C1A, which amended the master site development plan by changing the footprint for this tract, was approved at DRB on August 8, 1989.

FILE COPY

KEN SCHULTZ
MAYOR

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 31, 1988

Dennis Lorenz, P.E.
Espey, Huston & Associates, Inc.
317 Commercial Street, NE
Albuquerque, New Mexico 87102

RE: ENGINEER'S CERTIFICATION OF MARKET CENTER EAST
RECEIVED AUGUST 24, 1988 FOR CERTIFICATE OF OCCUPANCY
(K-21/D16)

Dear Mr. Lorenz:

The above referenced submittal, Certification dated August 23, 1988, is acceptable for approval of the Certificate of Occupancy by Hydrology on the Target Store. The temporary sedimentation ponds and erosion control berms along the undeveloped tracts must be left in place until subsequent development takes place.

If you have any further questions, call me at 768-2650.

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Hydrology Section

xc: Rick Green, de la Torre/Rainhart

RAG/bsj
(WP+288)

2838
K21/D16 Central Cutoff

957

86 43951

GRANT OF EASEMENT

FOR

WATER LINE EASEMENT

RECEIVED
MAY 23 1986
HYDROLOGY SECTION

THIS INDENTURE made and executed this 8th day of April, 1986 by and between Centre East Joint Venture in the County of Bernalillo and State of New Mexico hereinafter called the Grantors and THE CITY OF ALBUQUERQUE, NEW MEXICO, a municipal corporation, hereinafter called the Grantee.

WITNESSETH, that for valuable considerations the receipt of which is hereby acknowledged the Grantors have this day bargained and sold and by these presents do sell, convey and deliver unto the City of Albuquerque a permanent easement as right-of-way including the permanent right to enter upon the real estate hereinafter described at any time that it may see fit and construct, maintain and repair water lines across, through, and under the lands hereinafter described and the further right to remove trees, bushes, undergrowth and obstructions interfering with the location, construction and maintenance of said utility.

The land affected by the grant of this easement and right-of-way is located in the County of Bernalillo and State of New Mexico and is more particularly described as follows:

SEE ATTACHED EXHIBIT "A"

TO HAVE AND TO HOLD the said right and easement for the uses and purposes aforesaid, unto Grantee its successors and assigns for so long as said easement shall not be abandoned for use as a right-of-way for aforesaid water lines.

The Grantors do hereby covenant with Grantee that they are lawfully seized and possessed of the real estate above described and that they have a good and lawful right to convey it or any part thereof, that it is free from all encumbrances except taxes due and owing the Treasurer of Bernalillo County and that they will forever warrant and defend the title thereto against the lawful claims of all persons whomsoever.

As a part of the consideration for this grant, the Grantors do hereby release any and all claims for damages for whatsoever cause incidental to the exercise of the rights herein granted provided, however, that the Grantee agrees to save Grantors harmless from any and all liability that may arise as a result of the construction and use of the easement for the purposes set forth.

IN WITNESS WHEREOF, the parties have set their hands and seals this 8 day of April, 1986.

CENTRE EAST JOINT VENTURE

By: Steve Johnson, Managing Venturer

By: Ted Garrett, Managing Venturer

STATE OF NEW MEXICO)
ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 8th day of April, 1986 by Steve Johnson, Managing Venturer, Centre East Joint Venture.

Jeanie Baxter

My commission expires:

8-30-88

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 8th day of April, 1986, by Ted E. Garrett, Jr., Vice President of AmeriWest Corporation on behalf of Centre East Joint Venture.

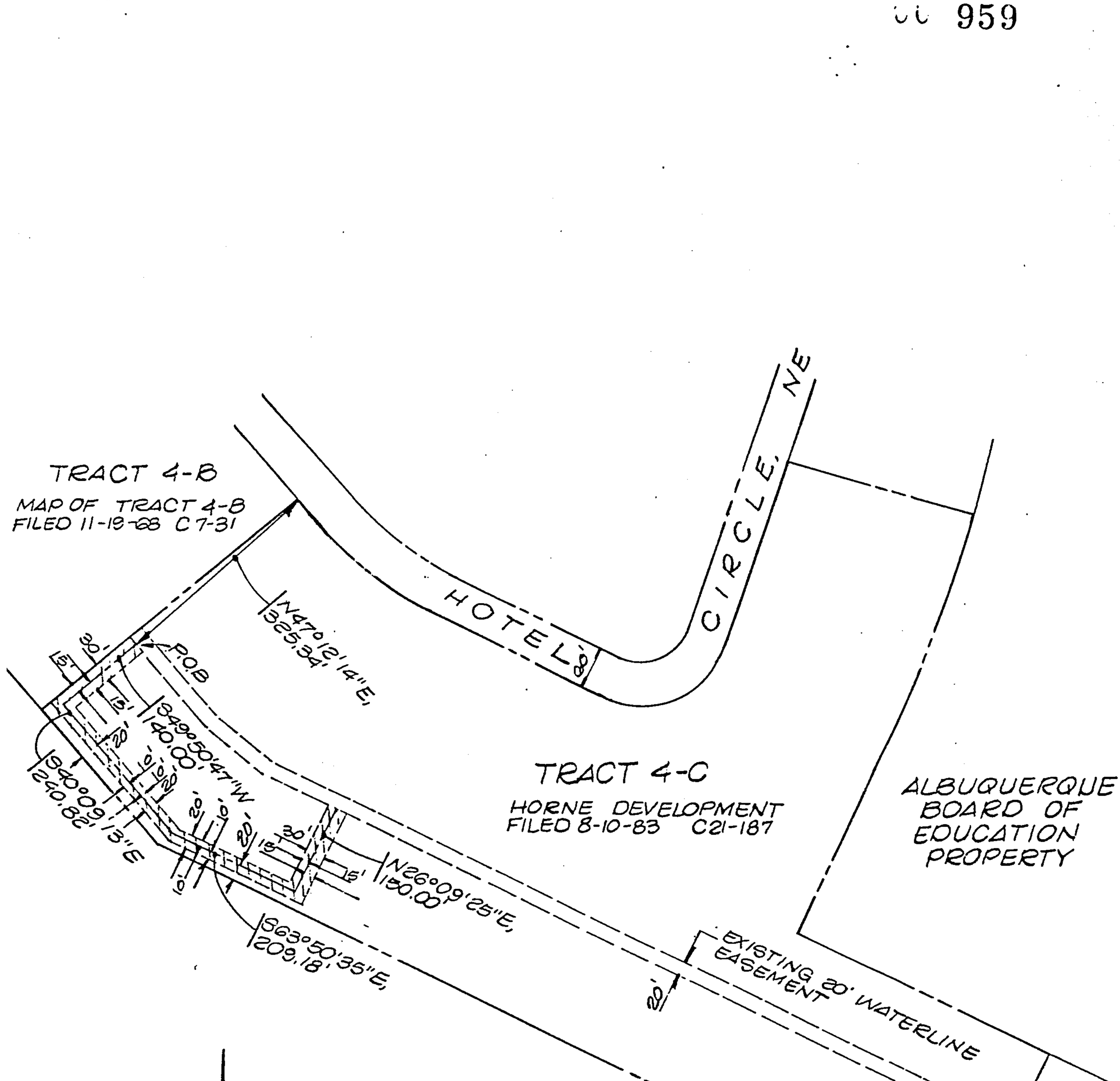
Panchita J. King

My commission expires:

November 16, 1986

OFFICIAL SEAL
PANCHITA J. KING
NOTARY PUBLIC - STATE OF NEW MEXICO
Notary Bond Filed with Secretary of State
My Commission Expires 11/16/86

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD
1986 MAY 19 AM 8:15
BOOK 338A PAGE 957
BERNALILLO COUNTY CLERK & RECORDER



Hatch-marked area indicates water line easement being granted.

EXHIBIT "A"

ESPEY,
HUSTON &
ASSOCIATES, INC.
Engineering & Environmental Consultants
4801 Indian School Rd., N.E., Suite 204 · Albuquerque, New Mexico 87110

DRAINAGE REPORT
AND
DOWNSTREAM ANALYSIS
FOR
MARKET CENTRE EAST
JULY 1986

MARKET CENTRE EAST
DOWNSTREAM ANALYSIS

The following analysis outlines the proposed drainage criteria for the Market Centre East development and contributing drainage areas. The attached calculations are presented in accordance with the Development Process Manual, Volume II, Chapter 22.

The following narrative outlines the condition at each analysis point and lists the required improvements:

1. Analysis Point #1

Analysis Point #1 is located near the southeast corner of the Market Centre East project, at the I-40 channel. At this point, the I-40 channel is located along the north right-of-way of the Interstate. In the existing state, Basin "A" drains into the I-40 right-of-way, then west to an existing 42" RCP which drains to the I-40 channel.

It is proposed to build a berm along the west property line of the APS property to prohibit any discharge from Basin "A" onto the project site. Also, a sedimentation pond shall be constructed to prevent the transport of sediment downstream. The sedimentation pond will drain by means of a 30-inch standpipe into an existing 83" x 53" eliptical storm drain which outfalls at the I-40 channel.

2. Analysis Point #2

Analysis Point #2 is located at an existing 42-inch culvert within the I-40 right-of-way near the westbound Eubank exit. The 42-inch culvert presently drains Basins "A", "B" and "I" to the I-40 channel. In the developed condition, the culvert will continue to drain Basins "B" and "I". A storm drain will be constructed to convey flows from Basin "B" to the existing culvert. Also, an area drain will be placed within the I-40 right-of-way to drain Basin "I".

3. Analysis Point #3

Analysis Point #3 is located at the existing 54-inch culvert which drains to Los Altos Park and eventually to the I-40 channel. The 54-inch culvert presently drains Basins "C", "D" and "F". In the developed condition, Basins "C", "D" and "F" will continue to drain to AP #3. Basin "D" will continue to contribute overland flow to an existing ponding site located within the east right-of-way of Eubank, at the inlet of the 54-inch pipe. Basins "C" and "F" will drain to a proposed 48" storm drain which will outfall at the pond site.

The existing pond site will require additional grading, fencing and erosion control.

4. Analysis Point #4

Analysis Point #4 is located at the low point of Hotel Circle Road. Presently, at AP #4, Basins "C" and "F" drain through a rundown to the above mentioned pond at AP #3. A 48-inch storm drain with a transverse inlet is proposed to be constructed to drain developed flows from Basins "C" and "F" to the pond site.

5. Analysis Point #5

Analysis Point #5 is located at the terminus of the existing swale (at Los Altos Park) at an existing 54-inch culvert which drains to the I-40 channel. The 54-inch culvert presently drains Basins "C", "D", "H", "F", and the NMSHD 24" storm drain at Eubank. As shown by the calculations, the 54-inch pipe and swale have capacity to drain the developed flows from these areas. Some additional erosion protection may be required at the 54-inch inlet.

6. Analysis Point #6

Analysis Point #6 is located on Eubank Boulevard just south of Hotel Circle Drive. This analysis point is impacted by Basin "E" and the excess overland flow from Basin "G". AMDS Hydrographs are included for Basin "G" and resultant excess street flow. Eubank Boulevard is presently located within a 100-year flood hazard zone. It is required that Basin "E" not further impact the FHZ. Hydrographs were plotted for Basin "E", excess street flow, and the NMSHD 24-inch storm drain (not included in AMDS Analysis). As shown by the hydrographs, approximately 60 percent of Basin "E" drains via the 24-inch storm drain prior to the occurrence of excess street flow. Free discharge of Basin "E" does increase the peak discharge at AP #6 by 7 cfs; however, it appears that free discharge is preferred over ponding due to the separation of peaks. The recent grading and drainage plan for the Owl Cafe utilized this criteria and free discharge was granted with approval of the plan.

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

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: K-21 DATE: 11/13/85 @ 9:00

PLANNING DIVISION NOS: EPC: * DRB: _____

SUBJECT: MARKET CENTRE EAST

STREET ADDRESS (IF KNOWN): _____

SUBDIVISION NAME: TRACTS 1-C, 2, 4-A4, 4-C, SLY ½ 3, HOPME DEV. ADD'N.

* Submitting for SDP approval.

APPROVAL REQUESTED:

____	PRELIMINARY PLAT	____	FINAL PLAT
*	SITE DEVELOPMENT PLAN	____	BUILDING PERMIT
____	OTHER	____	ROUGH GRADING

_____

	WHO	REPRESENTING
ATTENDANCE:	Dennis Lorenz	Espey, Huston & Assoc. Inc.
	Billy Goolsby	City / Design Hydrology

FINDINGS:

① Minimum requirement will be an approved Conceptual Plan that is of sufficient detail for design of the required infrastructures.

② A subdivision improvements agreement may be appropriate for final Site Development Plan sign-off.

③ Discharge to be determined by analysis of downstream capacity. On-site control may be required if discharge is direct to public street or surface discharge.

④ An erosion control plan for the period of construction will be required to ensure that sediments remain on-site.

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:	Billy G. Goolsby	SIGNED:	Dennis A. Lorenz
TITLE:	CE/Design Hydrology	TITLE:	STAFF ENGR
DATE:	11/13/85	DATE:	11-13-85

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

FIGURE-1

SITE
DEVELOPMENT

SU-1

C C & F PROPERTIES OF ALBUQ

CORONADO
SCHOOL BOARD
OF
VILLAGE
EDUCATION

CORONADO
HEIGHTS ADD'N

DALE
BELLAMAH
PARK

JEANNE
PARK
ADD'N

RHODES

LENKURT
SITE

SU-1 INDUSTRIAL PARK

LOMAS BLVD

CORONADO FREEWAY

DRAINAGE CHANNEL

ISR 40

CHICO ROAD

LOS ALTOS PARK

VENTURA

BUENA VISTA

TOMASITA

TABO

C-1 C-2 C-3 R-1 R-2

LEGAL DESCRIPTION
T 10 N
R 4 E
SEC 19

UNIFORM PROPERTY CODE
1 091 087

MAP AMENDED THROUGH
JUNE 1981

K-21-Z

8

(Joins sheet 22)
Eubank School
TgB
BKD
EMBS
Scale 1:24000
10000 Feet
5000
0
1000
2000
3000
4000
5000
T. 10 N.
(Joins sheet 31)
480 000 FEET
415 000 FEET
(Joins sheet 42)

FIGURE -2

ESPEY, HUSTON & ASSOCIATES, INC.

CALCULATIONS

I. DESIGN CRITERIA

A. Rainfall

P_{100} = 2.45 in. P_{10} = 1.61 in.

B. Soils

TgB - Tijeras - Soil Group "B"

C. Rational "C" Factor

Existing undeveloped soil C = 0.34

Developed areas @ 95% impervious C = 0.92

D. Time of Concentration

$tc = 0.0078\ (L)^{0.77}/(s)^{0.385}$

E. Rainfall Intensity

$i = P6.84\ tc^{-0.51}$

F. Runoff – Peak rate

Q = CIA

G. Volume

V = PCA

V = direct runoff x Area

TABLE - 1

HYDROLOGIC CALCULATIONS

— EXISTING —

AP#	BASIN	AREA	L	H	t_c	%Imp	C'	i_{100}	i_{10}	Q_{100}	Q_{10}	V_{100}	V_{10}	CN
1	A	22.1	1900	24	14	18	0.42	4.35	2.80	40.4	26.6	52,145	20,055	75
2	B	18.4	1700	40	13	0	0.34	5.14	3.38	32.2	21.1	30,055	10,020	70
4	C	37.0	2700	47	16	13	0.40	4.04	2.65	59.8	32.3	73,870	26,860	73
3	D	12.3	1250	25	10	95	0.92	5.18	3.40	59.6	38.5	84,835	49,115	95
6	E	9.5	1000	14	10	21	0.43	5.18	3.40	21.2	13.9	22,415	10,345	76
—	F	4.0	850	20	10	50	0.58	5.18	3.40	12.0	7.9	12,340	5,080	79
2102	*G	380±	—	—	24	—	—	—	—	323	—	—	—	—
5	H	10.0	1150	20	10	22	0.44	5.18	3.40	22.8	15.0	16,335	3,630	68
2	I	2.3	1400	34	10	40	0.52	5.18	3.40	6.2	4.1	7515	2920	81
2	A+B	40.5	2700	46	15	10	0.38	4.02	2.64	61.9	40.7	80,860	29,405	73
2	A+B+I	42.8	2700	46	15	11	0.39	4.02	2.64	67.1	44.1	85,450	31,075	73
3	C+D+F	53.3	2700	47	16	33	0.50	4.04	2.65	107.7	70.8	164,455	67,720	79
5	C,D,F&H	63.3	3950	84	20	32	0.48	3.62	2.38	110.0	72.3	183,825	80,425	77
6	*C+D+H +F+24"SD	—	—	—	20	—	—	—	—	131	—	—	—	—

* SEE ATTACHED HYDROGRAPHS FOR DETERMINATION OF Q_p.

ESPEY, HUSTON & ASSOCIATES INC.
Engineering & Environmental Consultants

SUBJECT MARKET CENTER EAST.

SHEET 1 OF 22
DATE 3-11-86 BY DL
CK BY

TABLE - 2

HYDROLOGIC CALCULATIONS

DEVELOPED

AP#	BASIN	AREA	L	H	tc	%IMP	'C'	Q_{100}	Q_{10}	Q_{100}	Q_{10}	V_{100}	V_{10}	CN
1	A	22.1	1700	24	14	18	0.42	4.35	2.86	40.4	26.6	52,145	20,055	75
2	B	18.4	1900	30	13	95	0.92	4.55	2.99	77.0	50.6	126,905	73,470	95
4	C	37.0	2700	47	16	95	0.92	4.03	2.65	137.5	90.3	255,190	147,740	95
3	D	12.3	1250	25	10	95	0.92	5.18	3.40	58.6	38.5	84,835	49,115	95
6	E	7.5	1000	14	10	95	0.92	5.18	3.40	45.3	29.7	65,520	37,934	95
—	F	6.5	850	20	10	95	0.92	5.18	3.40	30.7	20.3	12,340	5,080	79
2102	* G	380±	—	—	24	—	—	—	—	325	—	—	—	—
5	H	10.0	1150	20	10	22	0.44	5.18	3.40	22.8	15.0	16,335	3630	68
2	I	2.3	1400	34	10	40	0.52	5.18	3.40	6.2	4.1	7515	2920	81
2	B+I	20.7	1900	30	13	89	0.85	4.55	2.99	80.0	52.6	127,740	82,655	93
3	C+D+F	53.3	2700	47	16	95	0.89	4.04	2.65	191.6	125.9	348,260	212,825	94
5	C+D+H +F	63.3	3950	84	20	83	0.79	3.62	2.38	181.0	118.9	367,645	229,780	92
4	C+F	41.0	2700	47	16	91	0.89	4.03	2.65	147.0	96.6	267,895	163,715	94
6	* E+G	—	—	—	24	—	—	—	—	77.0	—	—	—	—
5	*C+D+H +F+24" SD	—	—	—	20	—	—	—	—	200	—	—	—	—

3.72 cfs/Ac

* SEE ATTACHED HYDROGRAPHS FOR DETERMINATION OF Q_p.

ESPEY, HUSTON & ASSOCIATES INC.
Engineering & Environmental Consultants

SUBJECT MARKET CENTRE EAST

SHEET 2 OF 22 BY DL
DATE 3-11-86 CK BY

OK

ESPEY, HUSTON & ASSOCIATES INC.
Engineering & Environmental Consultants

SUBJECT _____

MARKET CENTER EAST

SHEET 3 OF 22 BY DL
DATE 3-11-84 CK BY _____

CALCULATIONS

I. ANALYSIS POINT #1

CONTRIBUTING BASIN = BASIN "A"

Q_{100} = 40.4 CFS V_{100} = 82,550 CF 52,145

Q_{10} = 26.6 CFS V_{10} = 54,235 CF 20,055

- SIZE SEDIMENTATION POND - ALLOW Q_{10} TO PASS.

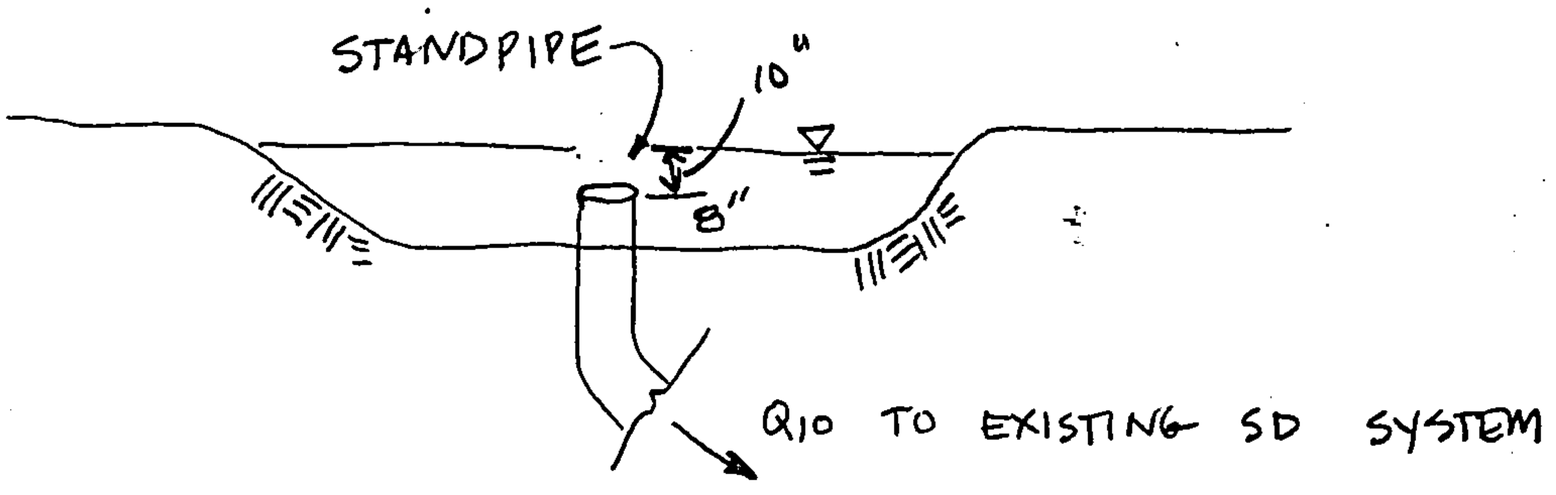
  BY SOLVING HYDROGRAPH POND VOL = 9650 CF

  LIMIT DEPTH TO 18" MAX resize w/ revised volumes.

  POND SIZE = 80' x 80' x 1.5' requires APS approval and Maintenance Covenant.

- SIZE OUTFALL STRUCTURE

  USE VERTICAL STANDPIPE 8" ± HIGHER THAN POND BOTTOM TO LIMIT SEDIMENT TRANSPORT.



BY ORIFACE:

$A = Q / c\sqrt{2gh}$

$A = 5.1$ SF (30" PIPE) ✓

h = 8" 10"
c = 0.8
Q = 26.6 CFS

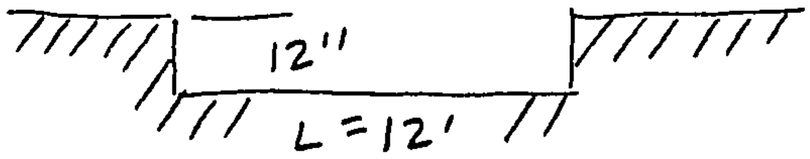
OK

- PROVIDE SPILLWAY FOR EMERGENCY CONDITION:

BY WEIR: $Q = 3.33 L H^{3/2}$

USE $H = 12''$

$L = 12'$ $Q = 40.4$ CFS



II ANALYSIS POINT # 2

CONTRIBUTING BASINS B + I

- SIZE SD SYSTEM FOR Q_{100}

BASIN B (ON-SITE SYSTEM)

$Q_{100} = 77.0$ CFS $V_{100} =$ 150,550 CF 126,905

1. INLETS - USE TYPE DBL 'D'

ALLOW D = 6" MAX $K = 0.75$ (CLOGG)

OPEN GRATE AREA = 5.59 SF $C = 0.8$

BY ORIFACE:

$Q/DBL = KC A (2)\sqrt{2gh}$

$Q = 38$ CFS

INLETS = $77.0/38 = 2$

OK

2. SIZE PIPES

- AFTER 1ST INLET Q = 38 CFS.
  USE 30" ✓ RCP @ 1% min.

- AFTER 2ND INLET Q = 77 CFS
  USE 42" ✓ RCP @ 1% min.

BASIN "I" (OFFSITE)

ADD BASIN "I" TO BASIN "B"

Q_{100} = 80.0 CFS ✓ V_{100} = 156,480 CF 127,740

1. PIPE SIZING

USE 42" RCP @ 1% $Q_{PIPE\ MAX}$ = 101 CFS > Q_{100} (80 CFS)

2. INLET

Q_{100} (BASIN 'I') = 6.2 CFS

ONE SINGLE 'D' INLET OR NMSHD AREA TYPE INLET WILL WORK WITH 24" CONN. PIPE.

- BUILD BERM OR DEPRESSION AT INLET TO CAPTURE ALL FLOW.

- CHECK EXISTING 42" RCP TO I-40 CHANNEL.
  BY INSPECTION THE PIPE HAS S > 1%,
  AS SHOWN ABOVE Q_{PIPE} = 101 CFS > Q_{100} (80 CFS)

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SUBJECT MARKET CENTRE EAST

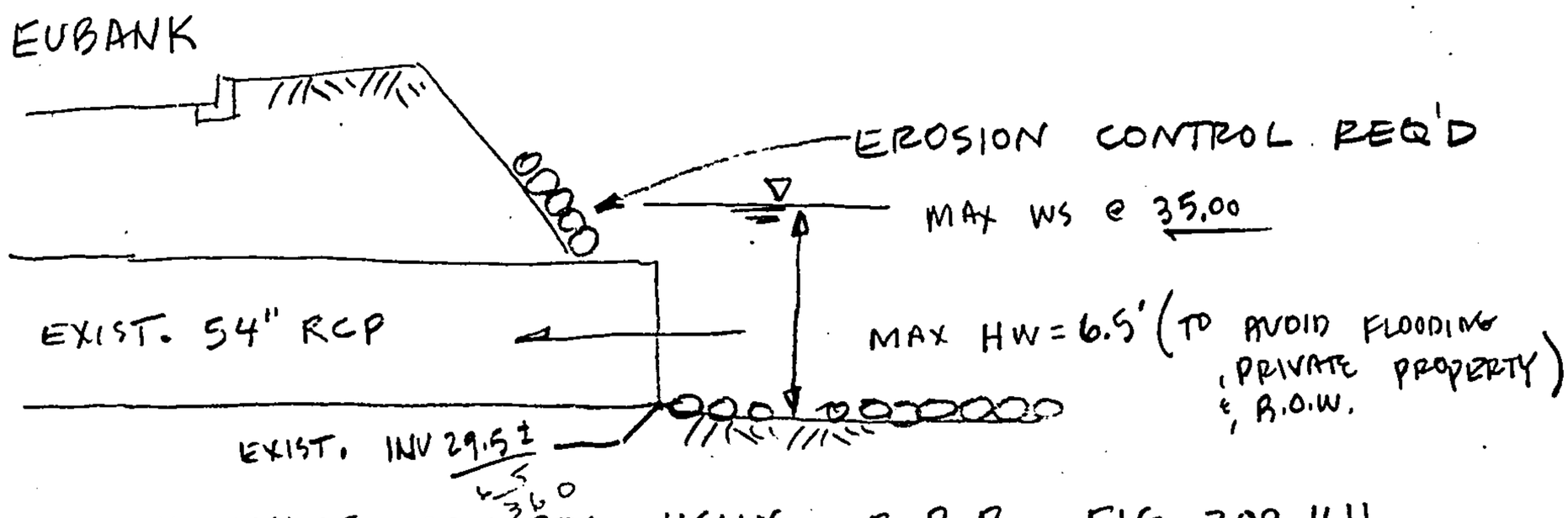
SHEET 6 OF 22 BY DL
DATE 3·11·86 CK BY

III ANALYSIS POINT # 3

CONTRIBUTING BASINS = BASINS "C+D+F"

Q_{100} = 191.6 CFS ✓ V_{100} = 348,260 CF ✓

- CHECK EXISTING 54" RCP @ EUBANK



CHECK INLET CONTROL USING B.P.R. FIG 309.4H

$\frac{HW}{D}$ = 1.44 ; ENTRANCE TYPE (3)

$Q_{54"}$ = 160 CFS < Q_{100} (191.6 CFS)

THIS LIMITS DISCHARGE FROM BASINS C, D & F TO 160 CFS. (OUTLET CONTROL OF 54" RCP IS NOT A FACTOR. THIS IS PROVEN LATER). BASIN 'D' IS FULLY DEVELOPED, SO, REQUIRE BASINS 'C' & 'F' TO POND EXCESS RUNOFF, OR INSPECT PONDING AREA ALONG EUBANK TO DETERMINE IF ADEQUATE PONDING VOLUME EXISTS.

AS SHOWN BY THE TRIANGULAR HYDROGRAPH (SEE SHEET 17) THE PONDING REQUIREMENT IS 9480 CF. INSPECTION OF THE EXISTING PONDING AREA ALONG EUBANK (AT ENTRANCE TO 54" RCP) INDICATES AN AVAILABLE PONDING VOLUME OF APPROXIMATELY 35,000 CF. ALSO, A PORTION OF BASIN 'F' (TRACT 2, BLK A, CC&F PROPERTIES) PRESENTLY PONDS 18,800 CF WITH A CONTROLLED DISCHARGE. THEREFORE, NO ONSITE PONDING IS REQUIRED FOR BASINS C, D OR F. HOWEVER, THE DEVELOPER SHOULD BE REQUIRED TO IMPROVE THE EXISTING POND SITE (I.E. EROSION CONTROL). — will need these pond details before DRC or Building Permits.

IV ANALYSIS POINT #4

CONTRIBUTING BASINS C&F

Q_{100} = 147 CFS ✓ V_{100} = 267,895 CF ✓

AS DEMONSTRATED IN SECTION III, BASINS C&F MAY FREE DISCHARGE TO AP #3. THE COLLECTION POINT IS AT THE EXISTING SAG POINT OF HOTEL CIRCLE.

- DESIGN INLET / PIPE NETWORK TO DRAIN AP #4 TO AP #3 (54" SD):

1. DETERMINE PIPE DIAMETER BY MANNINGS EQN:

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

DUE TO OBSTRUCTIONS (EXISTING UTILITIES) CRITICAL SLOPE MAY REACH 0.01

⇒ $Q_{36"} = 66.9$ CFS

$Q_{42"} = 100.9$ CFS

$Q_{48"} = 144.0$ CFS. ⇒ CLOSE USE 48" RCP MINOR SLOPE ADJUSTMENT WILL INCREASE CAPACITY

2. CHECK HEAD REQUIRED AT ENTRANCE USING B.P.R FIGURE 309.4H:

$Q = 147$ CFS $D = 48"$ TYPE (1)

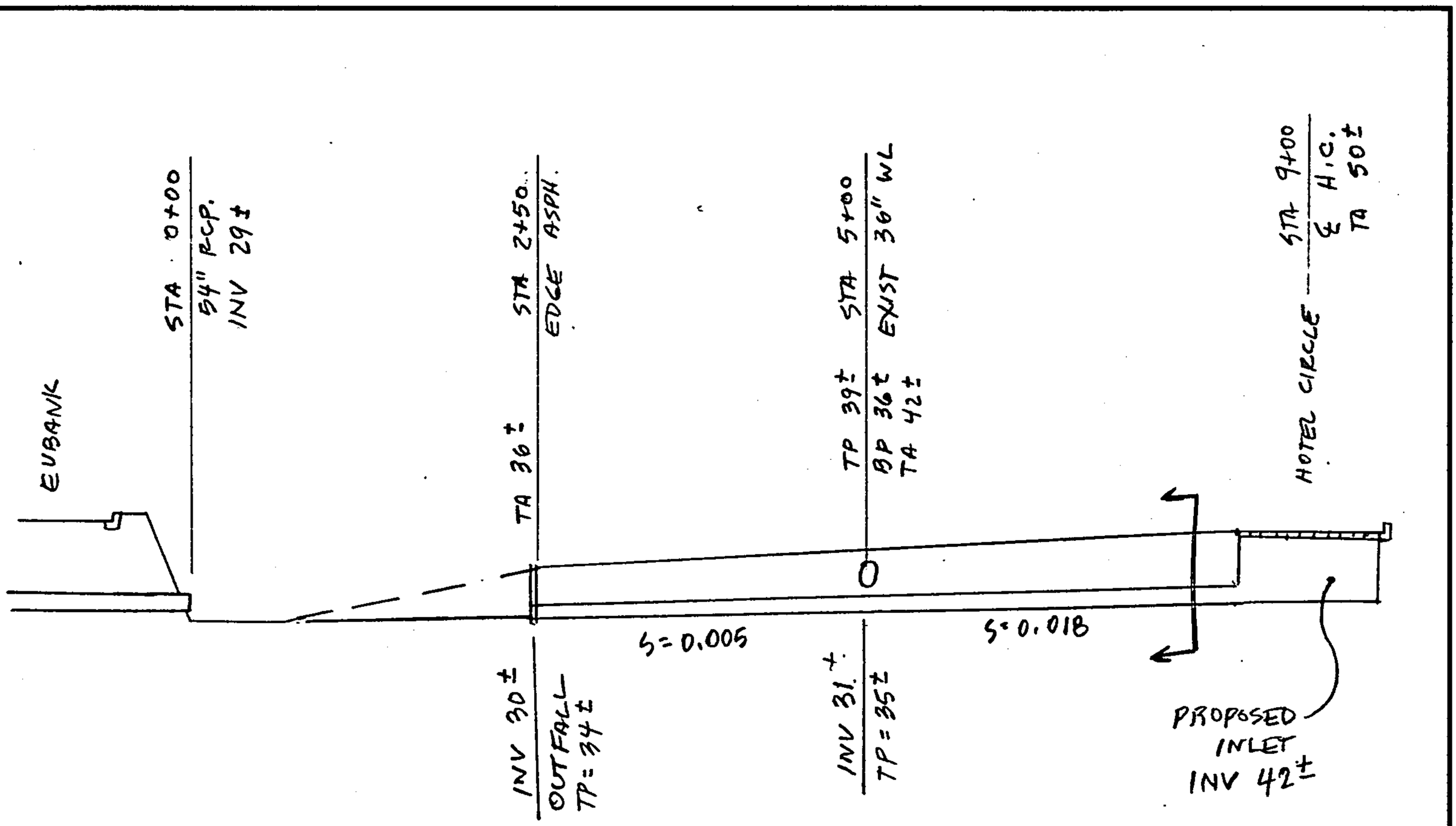
⇒ $\frac{HW}{D} = 2.15$ $H = 8.6$ FT

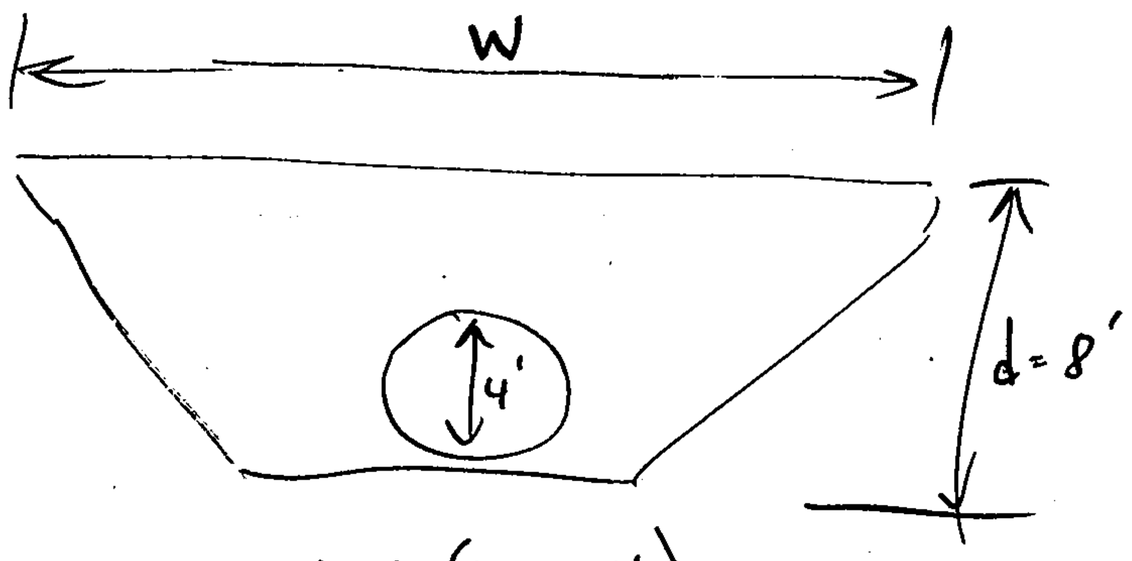
STREET GRADE @ 50.0± — THIS PLACES INVERT OF INLET @ 41.9± WITH RESULTANT PIPE SLOPE @ 0.018±

PROJECT NAME MARKET CENTRE EAST JOB NO.

SUBJECT

BY BV CK. BY APPROVED BY DATE 3-10-86 PAGE 9 OF 22





$W = 2 \times d + (\text{Dia} + 4)$

$= (2)(8) + (4+4)$

$= 16 + 8 = 24'$ min Easement Width

$17.2 \quad 25$

NOTES:

eh

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OK

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MARKET CENTRE EAST

SHEET 10 OF 22 BY DL
DATE 3-11-86 CK BY _____

1. SIZE INLETS

ALLOW STREET DEPTH TO REACH 0.50' MAXIMUM (6" CURB HEIGHT).

CHECK TYPICAL INLET CAPACITIES @ d=0.5' AND STREET SLOPE @ 2% (TYP).

Q = 147

INLET TYPE	Q MAX	
A	8	NOT ECONOMICAL.
B	13	
C	8	
DBL C	10	

ALSO DETERMINE CAPACITY OF TRANSVERSE INLET AT SAG POINT, $d_{MAX} = 0.5'$

INLET SIZE = 36' x (36") (40' FF)

NO — OPEN AREA = 72 SF (36x2)

BY ORIFACE

$Q = KCA\sqrt{2gh}$

$h = 0.5'$
$C = 0.8$
$K = 0.75$ (CLOG)
$A = 72SF$ 43.2

Needed 36' Q 33' x 36 has only 1.2 sqft/L.F. x 36 L.F = 43.2 SF

$Q_{INLET} = 245$ CFS > Q_{100} (147 CFS)

147 cfs = Q_{100} ∴ OK

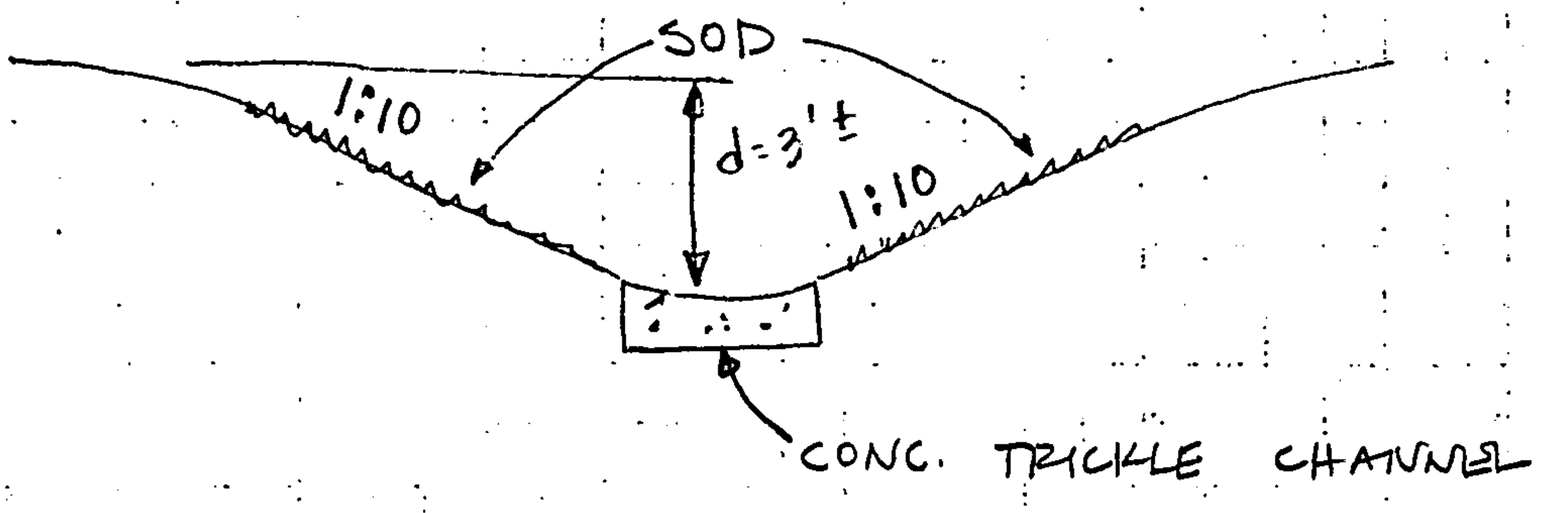
⇒ USE TRANSVERSE INLET @ SAG

V ANALYSIS POINT # 5

CONTRIBUTING BASINS = "C + D + F + H + NMSHD 24"

Q_{100} = 200 CFS { Q_{100} = 160 CFS (AP#3 LIMIT) + 40 CFS (24"SD) = 200 CFS }

- CHECK SWALE CAPACITY @ LOS ALTOS PARK



USE MANNINGS TO DETERMINE DEPTH

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

WHERE: n = 0.025
S = 0.04 ±
Q = 200 CFS

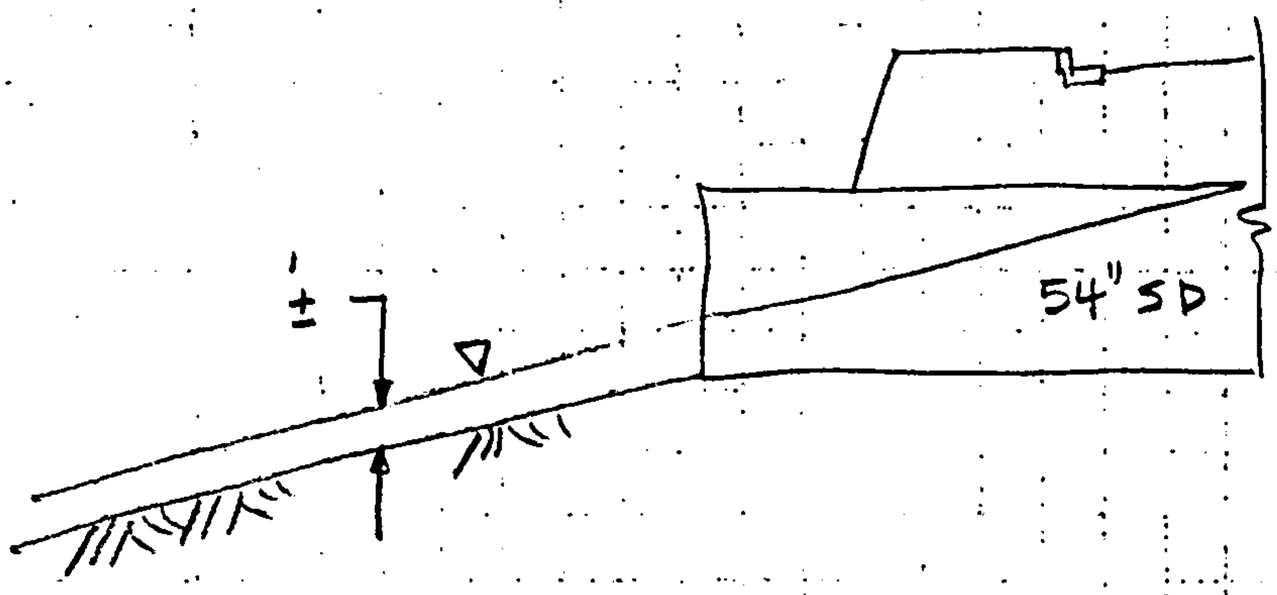
SOLVING FOR d:

d = 1.4' ± < 3' (AVAILABLE)

CHECK VELOCITY: $V = \frac{Q}{A} = \frac{200}{19.6} = 10.2$ FPS

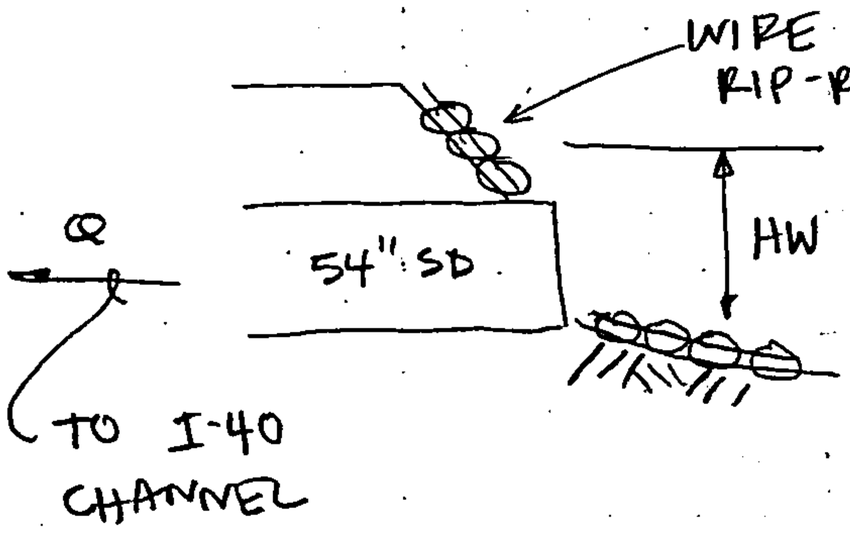
OK FOR SOD ✓
High Maintenance!

- CHECK FOR OUTLET CONTROL @ 54" RCP (EUBANK):



SINCE TW IS MUCH LESS THAN PIPE DIAMETER IT IS APPARENT THAT OUTLET CONTROL WILL NOT DICTATE CAPACITY.

- CHECK 54" RCP @ I-40 CHANNEL FOR CAPACITY:



$Q_{100} = 200$ CFS

USE B.P.R FIGURE 309.4H TO DETERMINE HEAD REQUIRED:

$\frac{HW}{D} = 1.8$; TYPE (3)

$\Rightarrow$ HW = 8.1'

BY VISUAL INSPECTION THE REQUIRED HW IS AVAILABLE.

OK

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SUBJECT MARKET CENTRE EAST

SHEET 13 OF 22 BY DV
DATE 3-11-86 CK BY

VI ANALYSIS POINT #6

CONTRIBUTING BASINS = BASIN "E" + EXCESS OVERLAND FLOW FROM BASIN "G"

Q_{100} = 77 CFS (SEE HYDROGRAPHS)

- 48" SD IN EUBANK AT CAPACITY (124 CFS) AND OF NO REAL HELP
- AMOS IS IN ERROR IN THAT NO MENTION IS MADE OF 24" NMSHD SD THAT DRAINS FROM SAG POINT IN EUBANK TO LOS ALTOS PARK AND EVENTUALLY AP #5.
- CHECK 24" SD CAPACITY

A. INLETS (GRATE CAPACITY)

USE ORIFICE EQN @ SAG WITH d_{MAX} = 12" WHICH FLOODS EUBANK TO PL.

$Q = KCA\sqrt{2gh}$ WHERE: C = 0.8
K = 0.75 (CLOG)
h = 1.0
A = 5.595 SF (OPEN AREA)

⇒ Q = 27 CFS / INLET

2 - INLETS - Q_{INLETS} = 54 CFS

B. PIPE CAPACITY

CHECK ENTRANCE BY ORIFACE:

WHERE: C = 0.8
A = 3.14
h = 4' ±

$Q_{24"}$ = 40 CFS

OK

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SUBJECT

MARKET CENTRE EAST

SHEET 14 OF 22 BY DL
DATE 3-11-86 CK BY

CHECK PIPE CAPACITY BY MANNINGS

WHERE: $h = 0.013$
$A = 3.14$
$S = 0.05 \pm$

$Q = 51$ CFS

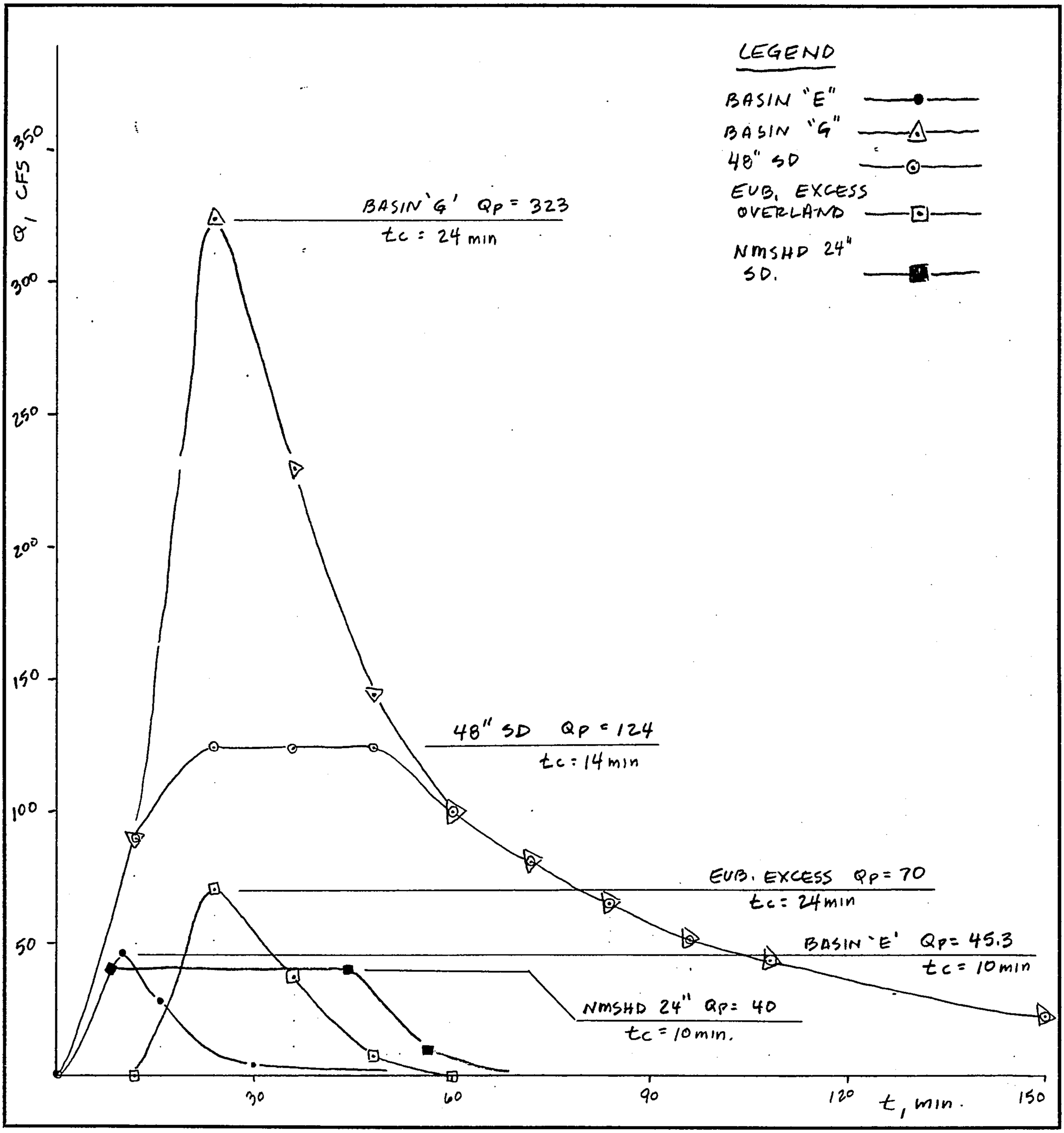
⇒ 24" ENTRANCE CONTROL LIMITS SYSTEM CAPACITY TO 40 CFS ±.

- AS SHOWN BY HYDROGRAPHS, THIS SYSTEM (24") WILL EVENTUALLY DRAIN EUBANK, ALTHOUGH THE FHZ STILL EXISTS.

PROJECT NAME MARKET CENTRE EAST JOB NO. 7352

SUBJECT HYDROGRAPHS AP # 6

BY DL CK. BY _____ APPROVED BY _____ DATE 3-10-86 PAGE 15 OF 22



NOTES:

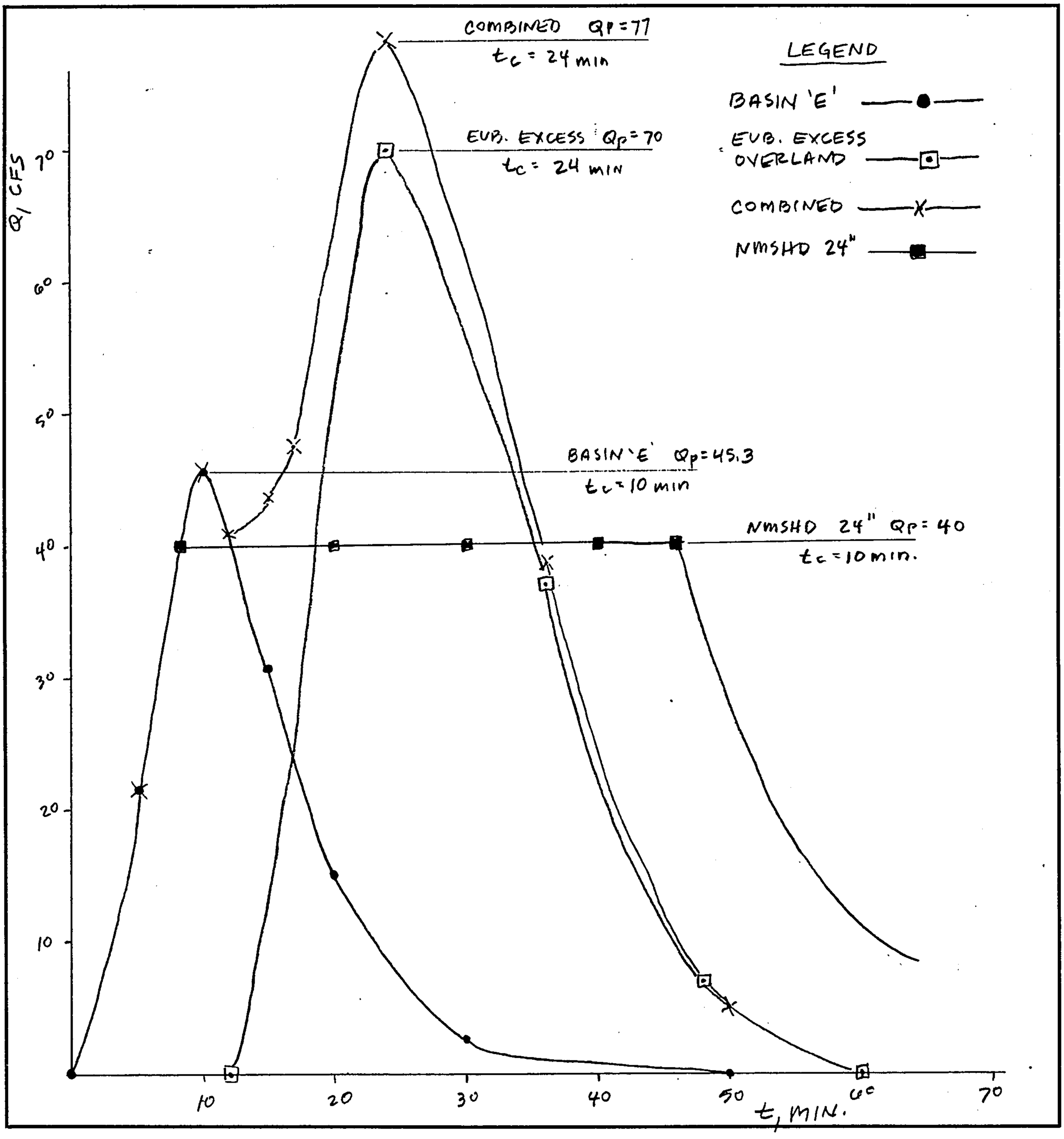
eh

ESPEY, HUSTON & ASSOCIATES, INC.

PROJECT NAME MARKET CENTRE EAST JOB NO. 7352

SUBJECT HYDROGRAPHS AP #6

BY DL CK. BY _____ APPROVED BY _____ DATE 3-10-86 PAGE 16 OF 22



NOTES:

eh

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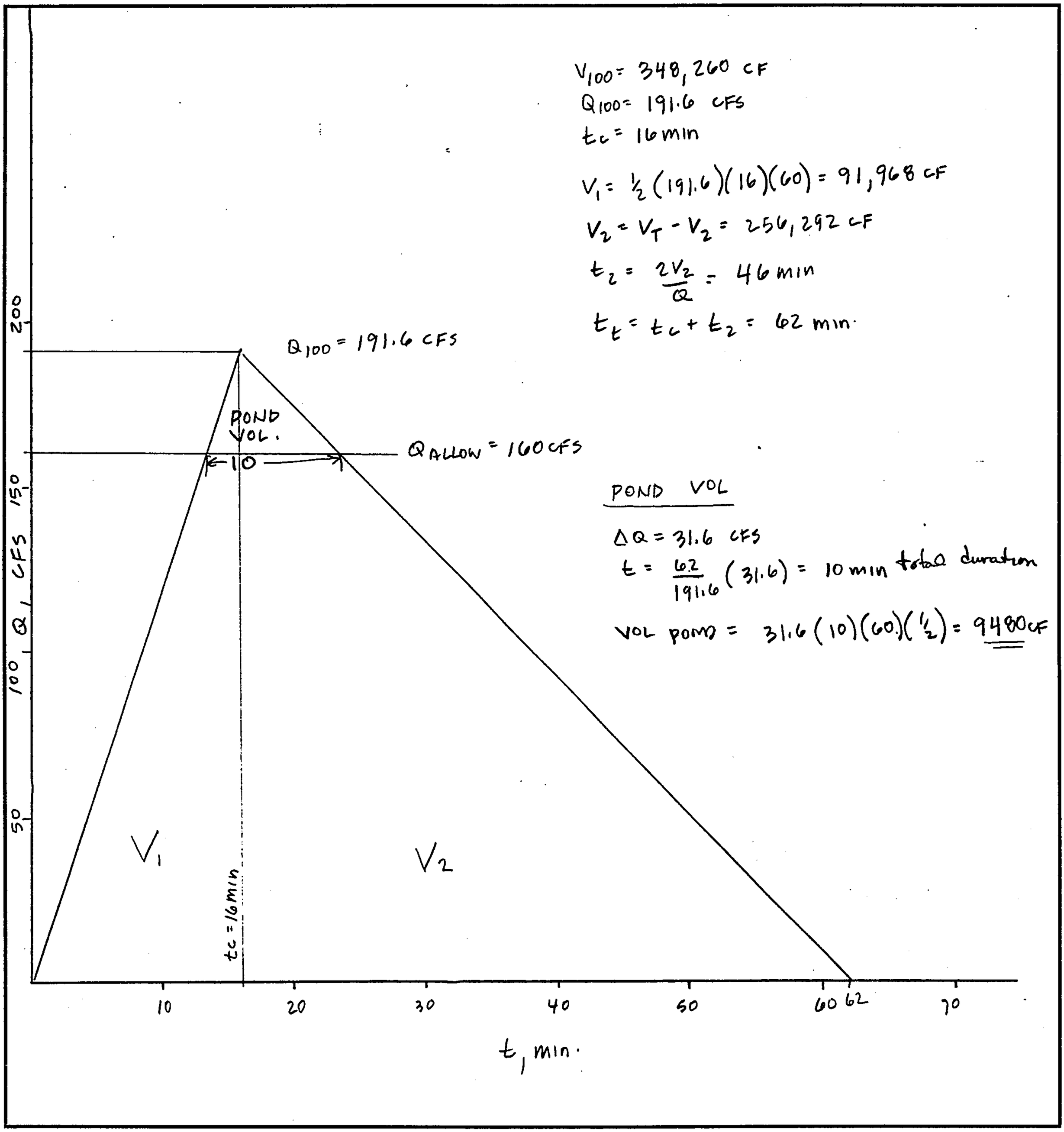
PROJECT NAME MARKET CENTRE EAST JOB NO. 7352

SUBJECT POND HYDROGRAPH

BY DL CK. BY _____ APPROVED BY _____ DATE 7-28-86 PAGE 17 OF 22



$V_{100} = 348,260$ CF

$Q_{100} = 191.6$ CFS

$t_c = 16$ min

$V_1 = \frac{1}{2}(191.6)(16)(60) = 91,968$ CF

$V_2 = V_T - V_2 = 256,292$ CF

$t_2 = \frac{2V_2}{Q} = 46$ min

$t_t = t_c + t_2 = 62$ min.

POND VOL

$\Delta Q = 31.6$ CFS

$t = \frac{62}{191.6}(31.6) = 10$ min total duration

VOL POND = $31.6(10)(60)(\frac{1}{2}) = 9480$ CF

NOTES:

HYDROGRAPH COMPUTATION WORKSHEET

DATE 3-10-86
COMPUTED BY DL
CHECK BY _____

PROJECT MARKET CENTRE EAST

LOCATION EUBANK So. OF LOMAS

ANALYSIS POINT # 6 BASIN "E"

(DR. AREA) A = 9.5 ACRES

T_c 10 MIN

POINT RAINFALL 2.45 IN. FROM PLATE 22.2 D-1

CN = — FROM PLATES 22.2 C-2, 22.2 C-3

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

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

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

$(R \times q_p) = Q_{peak}$ = 45.3 CFS

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

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

Q_p DETERMINED BY RATIONAL METHOD. SEE TABLE - 2

	(t/T_p)	t (min.)	y	Q (cfs)
1	0	0	0	0
2	.1	1	.03	1.4
3	.2	2	.10	4.5
4	.3	3	.190	8.6
5	.4	4	.310	14.0
6	.5	5	.470	21.3
7	.6	6	.660	29.9
8	.7	7	.820	37.1
9	.8	8	.930	42.1
10	.9	9	.990	44.8
11	1.0	10	1.00	45.3
12	1.1	11	.990	44.8
13	1.2	12	.930	42.1
14	1.3	13	.860	39.0
15	1.4	14	.780	35.3
16	1.5	15	.680	30.8
17	1.6	16	.560	25.4
18	1.7	17	.460	20.8
19	1.8	18	.390	17.7
20	1.9	19	.330	15.0
21	2.0	20	.280	12.7
22	2.2	22	.207	9.4
23	2.4	24	.147	6.7
24	2.6	26	.107	4.8
25	2.8	28	.077	3.6
26	3.0	30	.055	2.7
27	3.2	32	.040	1.8
28	3.4	34	.029	
29	3.6	36	.021	
30	3.8	38	.015	
31	4.0	40	.011	
32	4.5	45	.005	
33	5.0	50	.000	0

PLATE 22.2 F-1

```
* ADD PARTIAL OLF AT AP2102 TO ROUTED OLF FROM AP2101
ADD HYD                 ID=16     HYD=295
                        ID=16     ID=19
* PARTIAL OLF AT AP2102
PRINT HYD               ID=16     CODE=10
```

HYDROGRAPH NUMBER 295

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.	2.000	26.	4.000	10.
0.200	73.	2.200	22.	4.200	9.
0.400	299.	2.400	19.	4.400	9.
0.600	204.	2.600	17.	4.600	8.
0.800	119.	2.800	15.	4.800	8.
1.000	75.	3.000	14.	5.000	8.
1.200	57.	3.200	13.	5.200	7.
1.400	45.	3.400	11.	5.400	7.
1.600	37.	3.600	11.	5.600	7.
1.800	31.	3.800	10.	5.800	7.

```
RUNOFF VOLUME =      19.588 ACRE-FT
PEAK DISCHARGE RATE =      299.0 CFS
PEAK OCCURRED AT   0.40 HRS.

* ADD PARTIAL OLF AT AP2102 TO ROUTED SS FLOW FROM AP2101
ADD HYD                 ID=16     HYD=296
                        ID=16     ID=20
*** TOTAL FLOW AT AP2102
* 60 IN SS CONVEYS 130 CFS TO CHANNEL
PRINT HYD               ID=16     CODE=10
```

HYDROGRAPH NUMBER 296

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.	2.000	38.	4.000	15.
0.200	89.	2.200	32.	4.200	15.
0.400	323.	2.400	28.	4.400	14.
0.600	229.	2.600	26.	4.600	13.
0.800	144.	2.800	23.	4.800	13.
1.000	100.	3.000	22.	5.000	12.
1.200	80.	3.200	20.	5.200	12.
1.400	65.	3.400	18.	5.400	11.
1.600	52.	3.600	17.	5.600	11.
1.800	44.	3.800	16.	5.800	11.

```
RUNOFF VOLUME =      24.812 ACRE-FT
PEAK DISCHARGE RATE =      322.9 CFS
PEAK OCCURRED AT   0.40 HRS.
```

1.400	0.	3.400	0.	5.400	0.
1.600	0.	3.600	0.	5.600	0.
1.800	0.	3.800	0.	5.800	0.

RUNOFF VOLUME = 5.566 ACRE-FT
PEAK DISCHARGE RATE = 198.9 CFS
PEAK OCCURRED AT 0.40 HRS.

```
* DIVIDE OLF AT EUBANK AND LOMAS (35% AND 65% RESPECTIVELY)
DIVIDE HYD              ID=16  PERCENTAGE =-.65
                        ID=19  HYD NO=296.2
                        ID=16  HYD NO=296.3 REMAINING ON EUBANK
*OLF ON EUBANK
PRINT HYD               ID=16 CODE=10
```

OUTFLOW HYDROGRAPH RESERVOIR 0.0

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.	2.000	0.	4.000	0.
0.200	0.	2.200	0.	4.200	0.
0.400	70.	2.400	0.	4.400	0.
0.600	37.	2.600	0.	4.600	0.
0.800	7.	2.800	0.	4.800	0.
1.000	0.	3.000	0.	5.000	0.
1.200	0.	3.200	0.	5.200	0.
1.400	0.	3.400	0.	5.400	0.
1.600	0.	3.600	0.	5.600	0.
1.800	0.	3.800	0.	5.800	0.

RUNOFF VOLUME = 1.948 ACRE-FT
PEAK DISCHARGE RATE = 69.6 CFS
PEAK OCCURRED AT 0.40 HRS.

```
****** OLF ON LOMAS
PRINT HYD               ID=19  CODE=10
```

```
* DIVIDE OUT STORM SEWER ON EUBANK
DIVIDE HYD          ID=16 CAP=124
                    ID=20 HYD=296.1 SS ON EUBANK
                    ID=16 HYD=296.2 OLF REMAINING

* SS HYD IN EUBANK TO I-40 CHANNEL
PRINT HYD           ID=20  CODE=10
```

HYDROGRAPH NUMBER 296.1

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.	2.000	34.	4.000	15.
0.200	89.	2.200	32.	4.200	15.
0.400	124.	2.400	28.	4.400	14.
0.600	124.	2.600	26.	4.600	13.
0.800	124.	2.800	23.	4.800	13.
1.000	100.	3.000	22.	5.000	12.
1.200	80.	3.200	20.	5.200	12.
1.400	65.	3.400	18.	5.400	11.
1.600	52.	3.600	17.	5.600	11.
1.800	44.	3.800	16.	5.800	11.

RUNOFF VOLUME = 19.246 ACRE-FT
PEAK DISCHARGE RATE = 124.0 CFS
PEAK OCCURRED AT 0.24 HRS.

```
* OLF HYD AT EUBANK AND LOMAS
PRINT HYD           ID=16 CODE=10
```

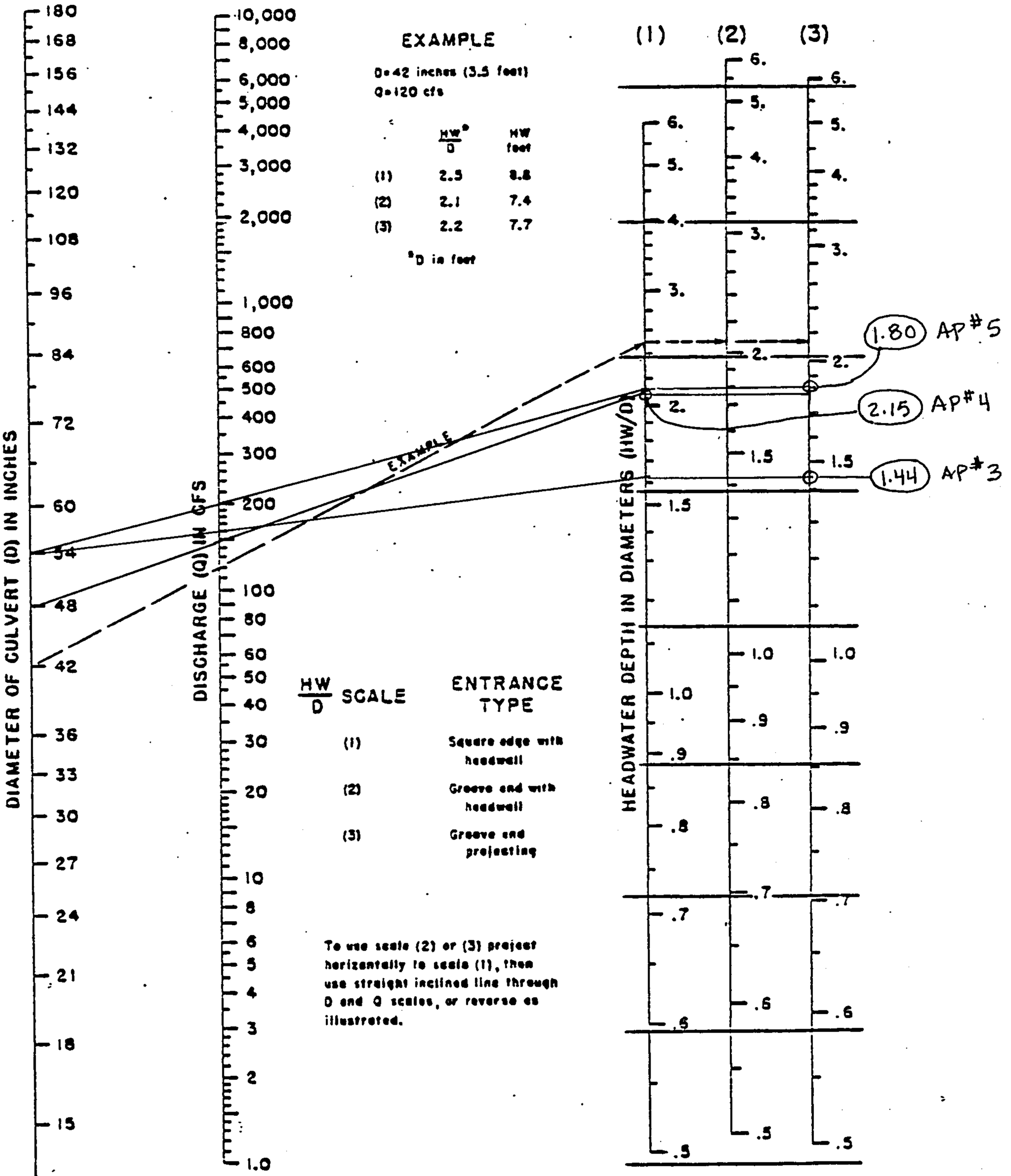
HYDROGRAPH NUMBER 296.2

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.	2.000	0.	4.000	0.
0.200	0.	2.200	0.	4.200	0.
0.400	199.	2.400	0.	4.400	0.
0.600	105.	2.600	0.	4.600	0.
0.800	20.	2.800	0.	4.800	0.
1.000	0.	3.000	0.	5.000	0.
1.200	0.	3.200	0.	5.200	0.
1.400	0.	3.400	0.	5.400	0.
1.600	0.	3.600	0.	5.600	0.
1.800	0.	3.800	0.	5.800	0.

RUNOFF VOLUME = 5.566 ACRE-FT
PEAK DISCHARGE RATE = 198.9 CFS
PEAK OCCURRED AT 0.40 HRS.

```
* DIVIDE OLF AT EUBANK AND LOMAS (35% AND 65% RESPECTIVELY)
```

FIGURE 309.4H



HEADWATER SCALES 2 & 3
REVISED MAY 1964

BUREAU OF PUBLIC ROADS JAN. 1963

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

NATURAL CHANNEL OUTPUT

WATER SURFACE ELEVATION		=	1.69
SLOPE	(ft/ft)	=	.01
ROUGHNESS COEFFICIENT		=	.017
DISCHARGE	(cfs)	=	281.1558
HYDRAULIC DEPTH	(ft)	=	.7022283
AREA	(sqft)	=	41.43498
VELOCITY	(ft/sec)	=	6.785469
WETTED PERIMETER	(ft)	=	60.82681
TOP WIDTH	(ft)	=	59.00501
HYDRAULIC RADIUS	(ft)	=	.6811961
VELOCITY HEAD	(ft)	=	.7149471
ENERGY HEAD	(ft)	=	2.404947

NATURAL CHANNEL OUTPUT

WATER SURFACE ELEVATION		=	1.19
SLOPE	(ft/ft)	=	.01
ROUGHNESS COEFFICIENT		=	.017
DISCHARGE	(cfs)	=	94.75808
HYDRAULIC DEPTH	(ft)	=	.363274
AREA	(sqft)	=	21.43498
VELOCITY	(ft/sec)	=	4.420721
WETTED PERIMETER	(ft)	=	59.83663
TOP WIDTH	(ft)	=	59.00501
HYDRAULIC RADIUS	(ft)	=	.3582251
VELOCITY HEAD	(ft)	=	.3034592
ENERGY HEAD	(ft)	=	1.493459

1.19
.50
.69' flow depth

*** DESIGN SUMMARY TABLE FOR INLET *** MARKET CENTER EAST
PLANE SECTION
COMBINATION, CONTINUOUS GRADE
P-1-7/8-4

Q = 94.8 if confined to 40' width

DEPTH OF FLOW (FT) = .81
WIDTH OF SPREAD = 40.65

LENGTH OF INLET = 3
GRATE WIDTH = 2
CURB OPENING LENGTH = 6.5
WIDTH OF SPECIAL SHAPING = .5
DEPRESSION OF INLET = 0
MANNINGS N = .017
STREET GRADE = .01
STREET WIDTH = 40
CROSS SLOPE = .02
TOTAL DISCHARGE = 94.8
INTERCEPTED FLOW = 23.79
BY-PASS FLOW = 71.01
INLET INTERCEPTION EFFICIENCY = .25

MARKET CENTER EAST
STORM DRAIN
HGL

W.O. # 3402

# CALC	STA. NODE 1	NODE 2	ELEV	D1	D2	Q	A	V1	V2	K	LENGTH	DELTA	HV	n
1.000	8.250	8.250	28.000	54.000	0.000	194.000	15.904	12.198	0.000	0.000	0.000	0.000	2.310	0.000
2.000	8.250	10.030	29.320	54.000	0.000	194.000	15.904	0.000	0.000	1966.488	128.000	0.000	2.310	0.013
3.000	10.030	10.030	29.330	54.000	0.000	194.000	15.904	12.198	0.000	0.000	0.000	0.000	2.310	0.013
4.000	10.030	10.100	29.360	54.000	0.000	194.000	15.904	0.000	0.000	1966.488	7.000	0.000	2.310	0.013
5.000	10.100	10.100	29.360	54.000	0.000	194.000	15.904	12.198	0.000	0.234	0.000	45.000	2.310	0.013
6.000	10.100	10.200	29.400	54.000	0.000	194.000	15.904	0.000	0.000	1966.488	10.000	0.000	2.310	0.013
7.000	10.200	10.250	29.400	54.000	54.000	194.000	15.904	9.620	12.198	0.000	5.000	0.000	1.437	0.013
8.000	10.250	11.630	29.970	54.000	0.000	153.000	15.904	0.000	0.000	1966.488	138.000	0.000	1.437	0.013

CODE	NODE	FS	FRIC L	MANH L	BEND L	EXP L	JUNC L	ANG L	CONT L	INLT L	TRANS L	TOT L	HGL	EGL
0.000	8.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	32.500	34.810
1.000	10.030	0.010	1.246	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.246	33.746	36.056
2.000	10.030	0.000	0.000	0.116	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.116	33.861	36.172
1.000	10.100	0.010	0.068	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.068	33.929	36.240
6.000	10.100	0.000	0.000	0.000	0.000	0.000	0.000	0.541	0.000	0.000	0.000	0.541	34.470	36.780
1.000	10.200	0.010	0.097	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.097	34.567	36.878
5.000	10.250	0.006	0.039	0.000	0.000	0.000	0.873	0.000	0.000	0.000	0.000	0.913	36.354	37.791
1.000	11.630	0.006	0.835	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.835	37.189	38.626

CODES

1 - PIPE SECTION 2 - MANHOLE 3 - PIPE-BEND 4 - EXPANSION 5 - JUNCTION
6 - ANGLE - POINT 7 - CONTRACTION 8 - INLETS 9 - TRANSITIONS

Downstream node 110 Upstream node 114

Calculated pressure flow Junction losses

No.	Discharge	Diameter	Area	Velocity	Delta	HV
1.000	192.000	4.000	12.566	15.279	0.000	3.625
2.000	147.000	4.000	12.566	11.698	45.000	2.125
3.000	59.000	2.500	4.909	12.019	0.000	0.000
4.000	0.000	0.000	0.000	0.000	0.000	0.000
5.000	0.000					

Mannings n : Upstream = .013 Downstream = .013
Friction slope : Upstream = 1.047286E-02 Downstream = 1.786624E-02
Averaged friction slope in junction assumed as = 1.416955E-02
Junction length (ft.) = 4
Friction loss = .0566782
Entrance loss = 0
Junction loss = 1.048901
Hydraulic grade line = 36.04895
Energy grade line = 38.17379
Flowline = 29.5

E - EXIT P - PRINT R - RETURN TO MENU

# CALC	NODE 1	NODE 2	ELEV	D1	D2	Q	A	V1	V2	K	LENGTH	DELTA	HV	n
1.000	110.000	110.000	29.500	48.000	0.000	192.000	12.566	15.279	0.000	0.000	0.000	0.000	3.625	0.000
2.000	110.000	114.000	29.500	48.000	48.000	192.000	12.566	11.698	15.279	0.000	4.000	45.000	2.125	0.013

CODE	NODE	FS	FRIC L	MANH L	BEND L	EXP L	JUNC L	ANG L	CONT L	INLT L	TRANS L	TOT L	HGL	EGL
0.000	110.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	33.500	37.125
5.000	114.000	0.010	0.057	0.000	0.000	0.000	0.992	0.000	0.000	0.000	0.000	1.049	36.049	38.174

CODES

1 - PIPE SECTION 2 - MANHOLE 3 - PIPE-BEND 4 - EXPANSION 5 - JUNCTION
6 - ANGLE - POINT 7 - CONTRACTION 8 - INLETS 9 - TRANSITIONS

1/19/87 AJ.

MARKET CENTER EAST

# CALC	NODE 1	NODE 2	ELEV	D1	D2	Q	A	V1	V2	K	LENGTH	DELTA	HV	n
1.000	0.000	0.000	29.000	54.000	0.000	192.000	15.904	12.072	0.000	0.000	0.000	0.000	2.263	0.000
2.000	0.000	100.000	29.500	54.000	0.000	192.000	15.904	0.000	0.000	1966.488	100.000	0.000	2.263	0.013
3.000	100.000	102.000	29.500	48.000	54.000	192.000	0.000	15.279	12.072	0.000	0.000	0.000	3.625	0.013
4.000	102.000	110.000	29.500	48.000	0.000	192.000	12.566	0.000	0.000	1436.431	8.000	0.000	3.625	0.013
5.000	110.000	114.000	29.500	30.000	48.000	192.000	12.566	12.019	15.279	0.000	4.000	0.000	2.243	0.013
6.000	114.000	310.000	30.000	48.000	0.000	147.000	12.566	0.000	0.000	1436.431	196.000	0.000	2.125	0.013
7.000	310.000	310.000	30.000	48.000	0.000	147.000	12.566	11.698	0.000	0.000	0.000	0.000	2.125	0.013
8.000	310.000	314.000	30.000	48.000	0.000	147.000	12.566	11.698	0.000	1436.431	4.000	45.000	2.125	0.013
9.000	314.000	630.000	31.600	48.000	0.000	147.000	12.566	0.000	0.000	1436.431	316.000	0.000	2.125	0.013
10.000	630.000	630.000	31.600	48.000	0.000	147.000	12.566	11.698	0.000	0.000	0.000	0.000	2.125	0.013
11.000	630.000	850.000	35.600	48.000	0.000	147.000	12.566	0.000	0.000	1436.431	220.000	0.000	2.125	0.013
12.000	850.000	854.000	35.600	48.000	0.000	147.000	12.566	11.698	0.000	1436.431	4.000	45.000	2.125	0.013
13.000	854.000	1030.000	38.800	48.000	0.000	147.000	12.566	0.000	0.000	1436.431	176.000	0.000	2.125	0.013
14.000	1030.000	1034.000	38.800	36.000	48.000	147.000	12.566	19.240	11.698	0.000	4.000	90.000	5.748	0.013

CODE	NODE	FS	FRIC L	MANH L	BEND L	EXP L	JUNC L	ANG L	CONT L	INLT L	TRANS L	TOT L	HGL	EGL
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	33.500	35.763
1.000	100.000	0.010	0.953	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.953	34.453	36.716
4.000	102.000	0.000	0.000	0.000	0.000	0.160	0.000	0.000	0.000	0.000	0.000	0.160	33.251	36.876
1.000	110.000	0.018	0.143	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.143	33.394	37.019
5.000	114.000	0.021	0.077	0.000	0.000	0.000	2.203	0.000	0.000	0.000	0.000	2.280	37.055	39.299
1.000	310.000	0.010	2.053	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.053	39.227	41.351
2.000	310.000	0.000	0.000	0.106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.106	39.333	41.458
3.000	314.000	0.010	0.042	0.000	0.376	0.000	0.000	0.000	0.000	0.000	0.000	0.418	39.750	41.875
1.000	630.000	0.010	3.309	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.309	43.060	45.185
2.000	630.000	0.000	0.000	0.106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.106	43.166	45.291
1.000	850.000	0.010	2.304	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.304	45.470	47.595
3.000	854.000	0.010	0.042	0.000	0.376	0.000	0.000	0.000	0.000	0.000	0.000	0.418	45.888	48.012
1.000	1030.000	0.010	1.843	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.843	47.731	49.856
5.000	1034.000	0.042	0.104	0.000	0.000	0.000	9.063	0.000	0.000	0.000	0.000	9.167	53.274	59.023

Forgot Manhole ∴ add .106'

ERROR

2.28
1.05
1.23 Error

.106
53.380
1.23
52.15
- 51.5
.65' Flow dpth ∴ OK

STREET F.L = 51.5

CODES

1 - PIPE SECTION 2 - MANHOLE 3 - PIPE-BEND 4 - EXPANSION 5 - JUNCTION
6 - ANGLE - POINT 7 - CONTRACTION 8 - INLETS 9 - TRANSITIONS

DRAINAGE INFORMATION SHEET

PROJECT TITLE: MARKET CENTRE EAST ZONE ATLAS/DRNG. FILE #: K21 / D16

LEGAL DESCRIPTION: HORNE DEVELOPMENT: ADDITION TRACT 1-C1A

CITY ADDRESS: LOMAS BLVD NE

ENGINEERING FIRM: ESPEY HUSTON CONTACT: D. LORENZ

ADDRESS: 317 COMMERCIAL NE PHONE: 242 1909

OWNER: MCE JOINT VENTURE CONTACT:

ADDRESS: 625 SILVER SW PHONE: 242 3330

ARCHITECT: DE LA TORRE RAINHART CONTACT: G. RAINHART

ADDRESS: 700 LOMAS NE PHONE: 842 9500

SURVEYOR: ESPEY HUSTON CONTACT: B. SEITZ

ADDRESS: PHONE:

CONTRACTOR: NONE CONTACT:

ADDRESS: PHONE:

RECEIVED
JUL 27 1989
HYDROLOGY SECTION

PRE-DESIGN MEETING:

___ YES
X NO
___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO.
EPC NO.
PROJ. NO.

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT
___ DRAINAGE PLAN
X CONCEPTUAL GRADING & DRAINAGE PLAN
___ GRADING PLAN
___ EROSION CONTROL PLAN
___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
X 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: 7-21-89

BY: DENNIS LORENZ

DRAINAGE INFORMATION SHEET

PROJECT TITLE: MARKET CENTRE EAST ZONE ATLAS/DRNG. FILE #: K21/D16

LEGAL DESCRIPTION: TRACT I-C1A HORNE DEVELOPMENT ADDN

CITY ADDRESS: LOMAS BLVD NE

ENGINEERING FIRM: ESPEY HUSTON. CONTACT: D. LORENZ

ADDRESS: 317 COMMERCIAL NE PHONE: 242 1909

OWNER: MARKET CENTRE EAST JV CONTACT: B. HOOTEN

ADDRESS: 2033 WYOMING BLVD NE PHONE: 292 8900

ARCHITECT: DE LA TORRE RAINHART CONTACT: G. RAINHART

ADDRESS: 2 WOODWARD CTR, 700 LOMAS PHONE: 842 9500

SURVEYOR: NA CONTACT:

ADDRESS: PHONE:

CONTRACTOR: NA CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

___ YES

X NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED
MAY 05 1989
HYDROLOGY SECTION

DRB NO. _____

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

X CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

X 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: 5-5-89

BY: D. LORENZ

* REVISED 11-19-87 DL

DRAINAGE CRITERIA

CRITERIA FOR HYDROLOGIC CALCULATIONS IS BASED ON THE SCS METHOD AND RATIONAL METHOD AS OUTLINED IN THE DPM, VOL II, CHAPTER 22:

A. RAINFALL $P_{100} = 2.45''$ $P_{10} = 1.61''$

B. TIME OF CONCENTRATION

$$T_c = 0.0078\ L^{.77} / S^{.385}$$

L = LENGTH
S = SLOPE

C. RAINFALL INTENSITY

$$i = P\ 6.84\ T_c^{(-0.51)}$$

D. SCS CURVE NUMBER (CN)
CN DETERMINED USING PLATES 22.2 C-2 & C-3

* E. RATIONAL 'C'
C DETERMINED USING PLATE ~~22.2 C-1~~ not recognized in DPM

F. SOILS
TIJERAS (TgB) HYDROLOGIC SOILS GROUP 'B'

F. RUNOFF

$$Q = CiA$$

RATIONAL METHOD USED TO BE CONSISTENT WITH APPROVED DOWNSTREAM ANALYSIS AND CONCEPTUAL DRAINAGE PLAN FOR MARKET CENTRE EAST.

G. RUNOFF VOLUME

$$V = 3630AR$$

R = DIRECT RUNOFF

DEVELOPED CONDITION

AP	BASIN	AREA	L	H	T_c	i_{100}	C	CN	R_{10}	R_{100}	Q_{10}	Q_{100}	V_{10}	V_{100}
10	I	7.08	720	12	10	5.18	0.89	94	1.0	1.8	21.4	32.6	25700	46260
12	IIa	0.26	190	2	"	"	"	"	"	"	0.8	1.2	945	1700
14	IIb	0.35	200	4	"	"	"	"	"	"	1.1	1.6	1270	2285
13	IIc	0.48	330	9	"	"	"	"	"	"	1.4	2.2	1740	3135
15	IId	2.67	665	16	"	"	"	"	"	"	8.1	12.3	9690	17445
15	II	3.69	665	16	"	"	"	"	"	"	11.2	17.0	13395	24110
4	III	1.20	150	1	"	"	0.90	95	1.1	1.9	3.7	5.6	4790	8275
17	IVa	0.74	350	10	"	"	0.89	94	1.0	1.8	2.2	3.4	2685	4835
17	IVb	1.34	230	5	"	"	"	"	"	"	4.1	6.2	4865	8755
17	IV	2.08	580	15	"	"	"	"	"	"	6.3	9.6	7550	13590
18	V	0.45	100	6	"	"	"	"	"	"	1.4	2.1	1635	2940
7	VIa	2.13	425	2	"	"	"	"	"	"	6.4	9.8	7730	13915
8	VIb	1.14	265	2	"	"	"	"	"	"	3.5	5.3	4140	7450
8	VI	3.27	690	4	"	"	"	"	"	"	9.9	15.1	11870	21365
9	VII	0.42	140	8	"	"	"	"	"	"	1.3	1.9	1525	2745
20	VIIIa	1.43	340	7	"	"	"	"	"	"	4.3	6.6	5190	9345
20	VIIIb	1.40	340	7	"	"	"	"	"	"	4.2	6.5	5080	9150

ESPEY, HUSTON & ASSOCIATES INC.
Engineering & Environmental Consultants

PROJECT HYDROLOGY
MARKET CENTRE EAST
SHEET 4 OF
DATE 10-26-87 BY DL
CK BY

DEVELOPED CONDITION

AP	BASIN	AREA	L	H	T_c	i_{100}	C	CN	R_{10}	R_{100}	Q_{10}	Q_{100}	V_{10}	V_{100}
20	VIII	2.83	340	7	10	5.18	0.89	94	1.0	1.8	8.5	13.1	10270	18495
19	IX	2.74	500	14	"	"	"	"	"	"	8.3	12.6	9945	17905
5	Xa	1.22	900	10	"	"	0.92	95	1.1	1.9	3.8	5.8	4870	8415
6	Xb	0.40	285	5	"	"	"	"	"	"	1.3	1.9	1595	2760
18	Xc	0.97	700	10	"	"	"	"	"	"	3.0	4.6	3875	6690
20	Xd	0.47	325	6	"	"	"	"	"	"	1.5	2.2	1875	3240
16	Xe	0.31	230	4	"	"	"	"	"	"	1.0	1.5	1235	2140
20	XF	1.80	760	7	"	"	"	"	"	"	5.6	8.6	7185	12415
20	X	5.18	2330	29	17	3.95	0.92	95	1.1	1.9	16.2	24.7	20685	39300
1	OS1	6.5	850	20	10	5.18	"	"	"	"	20.4	30.1	25955	44830
2	OS2	5.1	1050	22	"	"	"	"	"	"	16.0	24.3	20365	35175
3	OS3	2.25	800	10	"	"	"	"	"	"	7.0	10.7	8985	15520
11	IIe	0.13	70	1	"	5.18	0.90	95	1.1	1.9	0.4	0.6	520	895
5	OS+Xa+III	16.27	1400	26	"	"	0.89	94	1.0	1.8	49.3	75.0	59060	106310
6	AP5+X6+VI	19.94	1685	30	11	4.93	"	"	"	"	57.5	87.5	72380	130285
18	AP6+Xc+V+VI	23.44	2390	42	15	4.21	"	"	"	"	57.7	87.8	85085	153155
20 SO.	AP18+Xd+VIIIb	25.31	2730	46	17	3.95	"	"	"	"	58.4	89.0	91875	165375

DEVELOPED CONDITION

AP	BASIN	AREA	L	H	T_c	i_{100}	C	CN	R_{10}	R_{100}	Q_{10}	Q_{100}	V_{10}	V_{100}
16	II+Xe	4.0	665	16	10	5.18	.89	94	1.0	1.8	12.1	18.4	14520	26135
20 NO.	AP16+IX Xf+VIIIA	9.97	1480	29	"	"	"	"	"	"	30.2	46.0	36190	65145
10	I+VII	7.5	720	12	"	"	"	"	"	"	22.7	34.6	27225	49005
20	I+VII	7.5	970	25	"	"	"	"	"	"	22.7	34.6	27225	49005
20	E	42.83	2730	46	17	3.95	"	"	"	"	98.9	150.6	155475	279850

CALCULATIONS

I. SIDEWALK CULVERT SIZING (PRIVATE)

USE : $Q = 3.33LH^{3/2}$ $L = Q/H^{3/2}(3.33)$

AP	Q_{100}	H	L REQ'D	L PROVIDED
12	1.2	6"	1.02'	12"
13	2.2	6"	1.87'	24"
14	1.6	6"	1.36'	18"
17	3.4	6"	2.89'	36"

II PUBLIC SIDEWALK CULVERTS

A. AP # 4

CULVERTS RECEIVE RUNOFF FROM ROOF OF TARGET BUILDING

$Q_{100} = 5.6$ CFS / 3 $= 1.9$ CFS / ROOF DRAIN

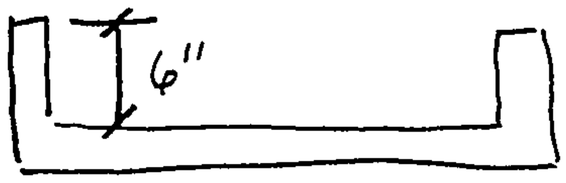
USE MANNING'S. TO SIZE CULVERTS:

$S = 0.02$

$n = 0.013$ TRY $W = 1'$ (MIN)

$A = 0.5$ $P = 2.0$

$R = 0.25$



$$Q = \frac{1.49}{.013}(0.5)(.25)^{2/3}(.02)^{1/2} = 3.2 \gg Q_{100}$$

* PROVIDE 12" CULVERT @ EACH ROOF DRAIN. PER COA DETAIL.

B. AP # 8

1. FIRST CHECK INTERIM SWALE CAPACITY

AT AP # 7 Q_{100} = 9.8 CFS

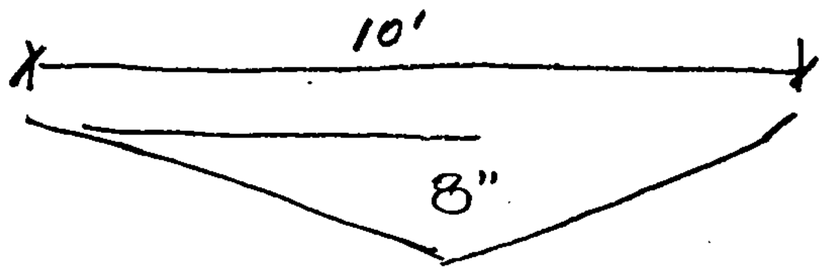
CHECK CURB OPENING REQ'D

$Q = 3.33 L H^{3/2}$ $H = 6''$

$L = Q/3.33H^{3/2} = 8.3'$ * 10' PROVIDED

CHECK SWALE CAPACITY:

USE Q_{100} @ AP # 8 = 15.1 CFS



n = 0.017
A = 6.7
P = 10
R = 0.34
S = 0.007

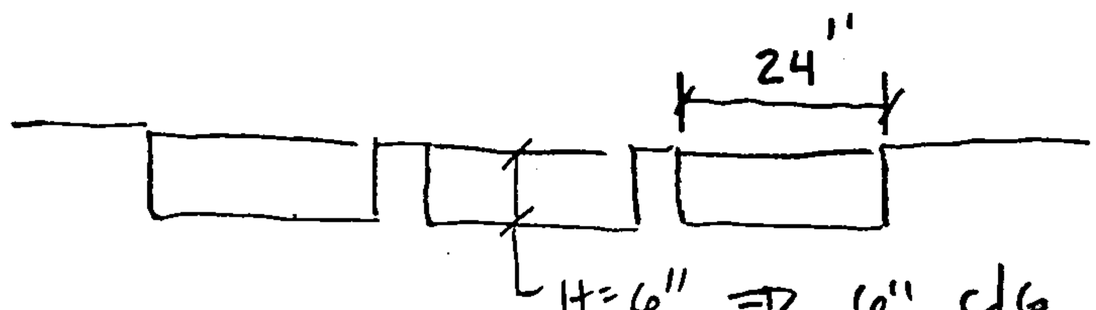
$Q = \frac{1.49}{.017}(6.7)(.34)^{2/3}(.007)^{1/2}$

Q = 23.7 CFS > Q_{100}

2. SIZE PUBLIC CULVERT

AP # 8 Q_{100} = 15.1 CFS

USE MANNING'S SINCE FLOW IS CHANNELIZED:



USE EFFECTIVE AREA = 3(.5)(2) = 3.0

$P = 7.0$

$R = 0.43$

$S = 0.007$

$n = 0.013$

$$Q = \frac{1.49}{.013}(3)(.43)^{3/2}(.007)^{1/2}$$

$Q = 16.4$ CFS $> Q_{100}$

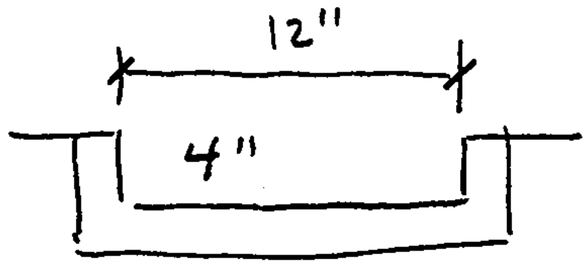
* USE 3 - 6" x 24" CULVERTS PER COA DETAIL

III. RUNDOWN AT AP # 11

RUNDOWN CONVEYS RUNOFF FROM ROOFDRAIN

$Q_{100} = 0.6$ CFS

USE MANNINGS SINCE FLOW IS CHANNELIZED:



$A = 0.33$ $P = 1.67$ $R = 0.20$

$n = 0.013$ $S = 0.01$

$$Q = \frac{1.49}{.013}(.33)(.20)^{2/3}(.01)^{1/2} = 1.3 \text{ CFS} > Q_{100}$$

IV PRIVATE ONSITE STORM DRAIN.

A. AP # 9 TO AP # 10

$Q_{100} = 1.9$ CFS FROM LOADING DOCK

$n = 0.015$ $S = 0.0165$

$$\text{PIPE DIA} = \left[\frac{1630\,Qn}{S^{1/2}}\right]^{.375} = \left[\frac{1630(1.9)(.015)}{(.0165)^{1/2}}\right]^{.375}$$

PIPE DIA = 9" min * 10" PROVIDED

CITECK 10" PIPE CAPACITY

$$Q = \frac{1.49}{.015}(0.55)(.21)^{2/3}(.0165)^{1/2}$$

A = 0.55

P = 0.21

Q = 2.5 CFS > Q_{100} FS = 1.3

B. SIZE DROP INLET AT AP # 10

Q_{100} = 32.6 CFS (SURFACE FLOW)

COA STD GRATE OPEN AREA = 6.19 SF

CITECK DBL 'D' INLET

LET H_{MAX} = 6"

USE ORIFACE EQN $Q = CA\sqrt{2gh}$

h = 0.5

A = 12.38

C = 0.8

$Q = 0.8(12.38)\sqrt{2g(.5)} = 56.2$ CFS > Q_{100}

FS = 56.2 / 32.6 = 1.7

C. SIZE RCP STORM DRAIN AP# 10 TO AP #20

$Q_{100} = 34.6$ CFS

$S = 0.04$ $n = 0.013$

$$\text{PIPE DIA} = \left[\frac{1630 Qn}{S^{1/2}}\right]^{.375} = 21.7''$$

* 24" PROVIDED

CHECK 24" PIPE CAPACITY:

$$Q = \frac{1.49}{.013}(3.14)(.5)^{2/3}(.04)^{1/2}$$

$A = 3.14$

$R = 0.5$

$Q = 45.3$ CFS $> Q_{100}$ FS = 1.3

CONNECT 24" RCP TO STUB PROVIDED BY PUBLIC WORKS PROJECT.

D. CHECK DROP INLET FOR INLET CONTROL

PIPE DIA = 24"

USE ORIFACE EQN $Q = CA\sqrt{2gh}$

h = UNKN.

$A = 3.14$

$C = 0.8$

$Q = 34.6$

$$h_{REQD} = Q^2/2gA^2C^2$$

$$h_{REQD} = \frac{(34.6)^2}{2g(3.14)^2(.8)^2} = 2.94'$$

* 3.5' PROVIDED FS = 1.2

V. STREET DEPTH CHECK

CHECK STREET DEPTH AROUND PERIMETER OF SITE IN ACCORDANCE WITH DRAINAGE ORDINANCE AND DPM PLATE 22.3 D-2.

STREET WIDTH = 40' FF
STD 2% CROWN
EXISTING 6" C/G

PER ORDINANCE, STREET DEPTH SHALL NOT EXCEED 0.2' ABOVE TOP OF CURB.
=> d_{100} MAX = 0.70'

AP	Q_{100}	SLOPE	d_{100}
5	75.0	0.017	0.62'
6	87.5	0.018	0.65'
18	87.8	0.018	0.65'
20 SO.	89.0	0.018	0.66'
16	18.4	0.025	0.38'
20 NO.	46.0	0.005	0.65'

STORM SEWER COLLECTION SYSTEM TO BE PLACED AT AP # 20 BY PUBLIC WORKS PROJECT . SEE SEPARATE SUBMITTAL FOR PUBLIC STORM SEWER DESIGN.

* REVISED 11-19-87 DL

VI TEMPORARY ONSITE SEDIMENTATION PONDING

SEDIMENTATION PONDING WILL BE MAINTAINED ON PHASES II & III. OVERFLOW SPILLWAYS TO BE PROVIDED INTO STORM DRAINAGE FACILITIES.

* POND SIZING: PONDS ARE SIZED TO HOLD 10 YEAR STORM.

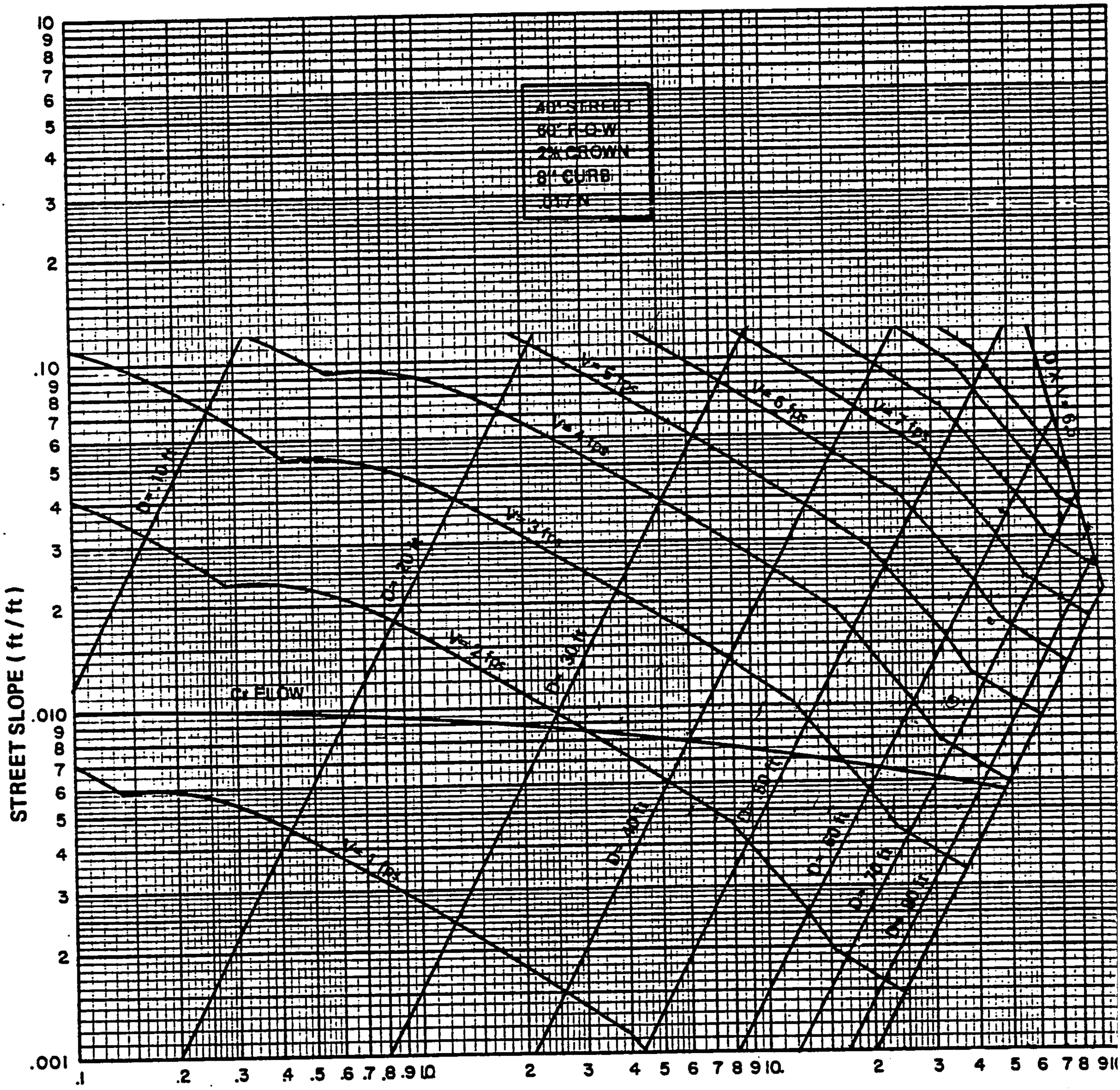
A. BASIN VIb

A = 1.14 AC R = 1.1
CN = 95 V = 3630 AR = 4552 CF
P = 1.61"
Tc = 10 min.

B. BASINS VIIIa & VIIIb

A = 1.4 AC R = 1.1
CN = 95 V = 3630 AR = 5590 CF EA.
P = 1.61"
Tc = 10 min.

STREET CAPACITY



REV. 3-83

PLATE 22.3 D-2

RECEIVED
JAN 07 1987
HYDROLOGY SECTION

ESPEY, HUSTON & ASSOCIATES INC.
Engineering & Environmental Consultants

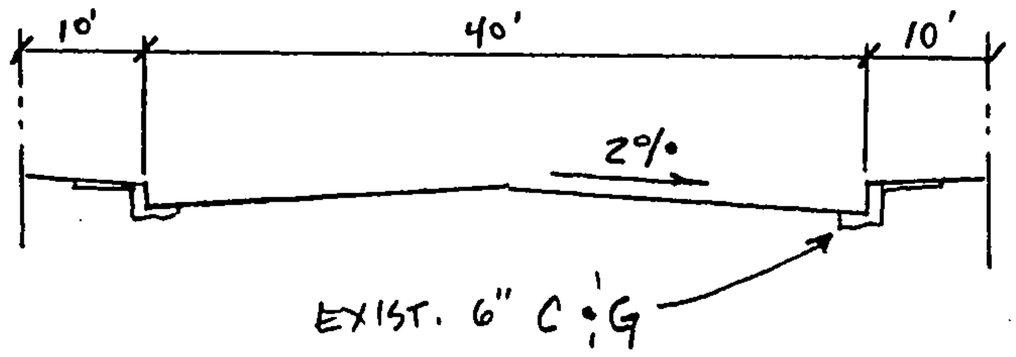
SUBJECT MARKET CENTRE EAST

SHEET 1 OF 4
DATE 1-2-87
BY
CK BY

PURPOSE

REDESIGN SD / POND SYSTEM BETWEEN ANALYSIS POINTS 3 + 4 TO ELIMINATE POND BY MAKING A CONTINUOUS CONNECTION TO THE EXISTING 54" RCP, AND REPLACE TRANSVERSE INLET WITH STANDARD APPLICATION OF A C INLETS.

I. INLET SIZING AND LOCATION



EXISTING STREET SECT.

USE DPM PLATES 22.3 D-2 FOR STREET DEPTH
22.3 D-5,6 FOR INLET CAPACITY
0.2 max by Ordinance

USE d_{100} MAX = 0.5'(CURB) + (0.33) = 0.83'

A. BEGIN AT CONFLUENCE OF BASIN C7 WITH UPSTREAM STREET FLOW: ? FROM WHERE?

F+C-1+C-2 = 66.1 + 20.5 = 86.6 cfs

Q_{100} = (71.4 CFS) d_{100} = 0.78' @ S = 0.01

USE 2 S 'A' Q_{CAP} = 30 CFS Q_{RES} = 41.4 CFS ; d = 0.56

2 D 'C' Q_{CAP} = 20 " Q_{RES} = 21.4 " ; d = 0.46'

2 D 'C' Q_{CAP} = 14" (64 cfs) Q_{RES} = 7.4 d = 0.33'

SIZE MAINLINE BY MANNINGS @ S=0.01

Q_{100} = (64 CFS) USE 36" RCP Q_{CAP} = 67 CFS

Capacity

B. ADD BASIN C5 ✓

Q_{100} = 49.1 CFS + 7.4 (Q_{RES}) = 56.5 CFS

d_{100} = 0.62' S = 0.01

USE 2 S 'A' Q_{CAP} = 20 CFS Q_{RES} = 36.5 d = 0.55'

2 D 'C' Q_{CAP} = 20 " Q_{RES} = 16.5 d = 0.43'

C. CHECK REQUIREMENT AT CONFLUENCE OF BASIN C6 WITH STREET FLOW:

C-3, 4, 6 ✓

Q_{100} = 47.1 CFS + 16.5 (Q_{RES}) = 63.6 CFS

d_{100} = 0.70' S = 0.007

USE 2 S 'A' Q_{CAP} = 20 CFS Q_{RES} = 43.6 CFS d = 0.64'

2 D 'C' Q_{CAP} = 20 " Q_{RES} = 23.6 " d = 0.50'

2 D 'C' Q_{CAP} = 14" Q_{RES} = 6.6" d = 0.32

ASSUMING THESE INLETS ARE LOCATED AT A SAG POINT IN THE EXISTING STREET, NO EXCESS STREET FLOW SHOULD EXIST.

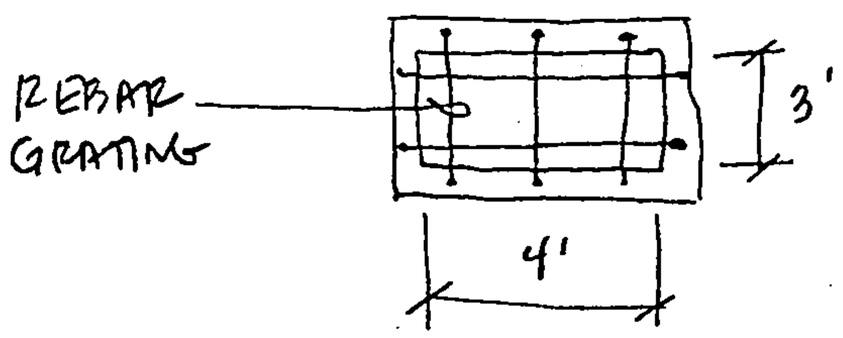
SIZE MAINLINE BY MANNINGS @ S=0.01

Q_{100} = 63.6 CFS USE 36" RCP Q_{CAP} = 67 CFS.

II. BY MAKING A CONNECTION TO THE EXISTING 54" RCP AT EUBANK, A DRAIN IS NEEDED TO COLLECT SURFACE FLOWS FROM EXISTING DEVELOPED AREAS (SEE PLAN)

A. SIZE INLET

USE NMSHD MEDIAN TYPE DRAIN SERIAL BDIE-001



USE ORIFACE TO DETERMINE DEPTH OF PONDED WATER REQUIRED TO DRAIN Q_{100}.

$Q_{100} = 58.6$ CFS (BASIN 'D') ✓

USE $Q = CA\sqrt{2gh}$ WHERE $C = 0.8$
$A = 12$ SF
$g = 32.2$ FT/S²

SOLVE FOR $H = 0.58'$

APPLY CLOGGING FACTOR OF .75

$\Rightarrow H_{MAX} = 0.78'$ (AVAILABLE)

B. SIZE CONNECTOR PIPE

BY MANNINGS @ $S = 0.025$

USE 30" RCP $Q_{CAP} = 65$ CFS

C. CHECK HEAD REQUIRED AT CONNECTOR PIPE INLET:

$Q_{100} = 58.6$

USE $Q = CA\sqrt{2gh}$ WHERE $C = 0.8$

$A = 4.95 F$

$g = 32.2 F/S^2$

SOLVE FOR $H = 3.5'$ (AVAILABLE).

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

RECEIVED
FEB 06 1990
HYDROLOGY SECTION

February 2, 1990

PARTIAL

CERTIFICATE OF COMPLETION AND ACCEPTANCE

Mr. Rick Davis, Cauwels & Davis
Centre East Joint Venture
1116 Pennsylvania N.E.
Albuquerque, NM 87110

RE: PROJECT NO. 3896, HORNE DEVELOPMENT ADDITION, HOTEL CIRCLE, (MAP NO. K-21)

Dear Mr. Davis:

This is to certify that the City of Albuquerque partially accepts Project No. 3896 as being partially completed according to approved plans and construction specifications. The City of Albuquerque will accept for continuous maintenance the sanitary sewer improvements constructed as part of Project No. 3896 excluding 4" PCC sidewalk, curb and gutter and residential pavement.

The project is described as follows:

- 8" sanitary sewer main and appurtenances in a 20' public sanitary sewer easement on Tract 1-CIA-6, Horne Development Addition.

- The contractor's correction period begins the date of this letter and will be effective for a period of one (1) year.

Sincerely,

Brian L. Speicher, P.E.
Chief Construction Engineer
Design/Construction Division
Engineering Group
Public Works Department

BLS:kt

xc: Espey-Huston & Associates
Sundance Mechanical & Utility Contractors
Fred Aguirre, Engineering Group, PWD
Andre Houle, Engineering Group, PWD
Ray Pang, Engineering Group, PWD
Terri Martin, Engineering Group, PWD
Jeanette Barrett, Special Assessments
Sam Hall, Operations Group, PWD
A. N. Gaume, Operations Group, PWD
Jim Fink, Operations Group, PWD
Ray Chavez, Engineering Group, PWD
Jon Ertsgaard, Water/Wastewater Group, PWD
Dave Parks, Engineering Group, PWD
Tom Kennerly, Engineering Group, PWD
Josie Gutierrez, New Meter Sales, Finance Group, PWD
Claudia Gallegos, Standby Clerk, Finance Group, PWD
Della Gallegos, Engineering Group, PWD
Richard Zamora, Engineering Group, PWD
Judy Aguilar, Engineering Group, PWD
f/Project 3896
f/Warranty
f/Readers

(INP 138429)

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

RECEIVED
SEP 13 1988
HYDROLOGY SECTION

MAYOR
KEN SCHULTZ

CHIEF ADMINISTRATIVE OFFICER
GENE ROMO

DEPUTY CAO DEVELOPMENT & ENTERPRISE SERVICES
LARRY LARRANAGA

DEPUTY CAO PUBLIC SERVICES
DAN WEAKS

September 12, 1988

CERTIFICATE OF COMPLETION AND ACCEPTANCE

Jay Chester
Centre East Joint Venture
P.O. Box 25625
Albuquerque, NM 87125

RE: PROJECT NO. 3402, MARKET CENTER EAST, (MAP NO. K-21) 4016

Dear Mr. Chester:

This is to certify that the City of Albuquerque accepts Project No. 3402 as being completed according to approved plans and construction specifications. If all required right-of-ways and/or easements have been dedicated, the City of Albuquerque will accept for continuous maintenance all public infrastructure improvements constructed as part of Project No. 3402. If the required right-of-ways and/or easements have not been dedicated, the City of Albuquerque cannot accept the project for continuous maintenance and said maintenance will be the responsibility of the developer. When a final plat has been filed it will be the developer's responsibility to provide the Construction Management Division with a copy, at which time the City will fully accept Project No. 3402.

The project is described as follows:

- Street rehabilitation, turnbays, diesel lanes, street paving, water and storm drainage improvements at Market Center East.

- The contractor's warranty begins the date of this letter and will be effective for a period of one (1) year.

Sincerely,

Russell B. Givler, P.E.
Chief Construction Engineer
Construction Mgmt. Division
Engineering Group
Public Works Department

RBG:tjp

xc: Espey-Huston & Associates, Inc.
J.R. Hale
Fred Aguirre, Engineering Group, PWD
Phil Fischer, Engineering Group, PWD
Ray Pang, Engineering Group, PWD
Terri Martin, Engineering Group, PWD
Jeanette Barrett, Special Assessments
Jim Olsen, Operations Group, PWD
Sam Cummins, Operations Group, PWD
Jim Fink, Operations Group, PWD
Anthony Lopez, Operations Group, PWD
Jon Ertsgaard, Engineering Group, PWD
Dave Parks, Engineering Group, PWD
Tom Kennerly, Operations Group, PWD
Josie Gutierrez, New Meter Sales, Finance Group, PWD
Claudia Gallegos, Standby Clerk, Finance Group, PWD
Della Gallegos, Engineering Group, PWD
Terry Schultz, Engineering Group, PWD
Fred Gomez, Engineering Group, PWD
Nadine Sedillo, Engineering Group, PWD
Judy Aguilar, Engineering Group, PWD
f/Project 3402
f/Readers
f/Warranty

PREPARED BY: RANDY L. TRAYNOR
EH&A

K21/D16

HORNE DEVELOPMENT ADDITION
PUBLIC INFRASTRUCTURE LISTING
~~February 3, 1987~~ 5/5/87
DRB - 86-637

ITEM	DESCRIPTION
Hotel Circle and Hotel	Roadway rehabilitation as detailed in attached letter from Russell B, Giveler, Chief Construction Engineer, Engineering Public Works Department dated November 20, 1986 to EH&A.
Storm Drainage	Approximately 205 LF - 24" RCP, 35 LF - 30" RCP, 250 LF - 36" RCP, 930 LF - 48" RCP, 6 - Type 'A' Catch Basins, 10 Double Type 'C' catch Basins, 1 - NMSHD Inlet, and Appurtenances, located within 25 foot wide Drainage Easement located from Hotel Circle to Eubank Blvd., as shown on Sheet 12 of the Approved Conceptual Grading and Drainage Plan for Market Centre East, dated January 5, 1987.

Approved on May 5, 198~~6~~7, by the Development Review Board.

Jack Cloud 5/5/87
Planning Department — Date

Jon E. Eutsgaard 5/5/87
Dept. of Public Works, Utility Development Division — Date

Robert A. Tanner 5-5-87
Traffic Engineer — Date

Jack Lasseter 5-5-87
Parks and Recreation Department — Date

Fred N. Cagwin 5/5/87
City Engineer/AMAFCA, Utility Development Division — Date

MARKET CENTRE EAST
PUBLIC INFRASTRUCTURE LISTING

June 23, 1987

Approved on June 23, 1987, by the Development Review Board.
DRB-85-785
Z-1661-3

Jack Claud — 6-23-87
Planning Department — Date

W H Weitmore — 6-23-87
Utility Development Division, City Engineer — Date

Robert A. Toenangl — 6-23-87
Transportation Development Division, Traffic Engineer — Date

Parks and Recreation Department — 6-23-87
Date

Fred D Clyne — 6-23-87
City Engineer/AMAFCA — Date

ITEM	FROM	TO	DESCRIPTION
II. WATER			
A. Waterline	West leg of Hotel Circle, throughout project site	Approx. the southernmost point of Hotel Circle	Approx. 1620 L.F. of 8" waterline including valves & services, & fire hydrants.
B. Waterline	Fireline connections to 8" waterline		Approx. 350 L.F. of 6" waterline, including valves & fire hydrants.

ITEM	FROM	TO	DESCRIPTION
I. PAVING Continued			
E. Hotel Avenue	Intersection of Hotel Avenue and Eubank		Hotel Avenue channelization at Eubank for right turn in/ right turn out.
F. Hotel Avenue	Extension from Hotel Circle to Lomas Boulevard		Approx. 660 L.F. of 40' wide pvm't. std. curb & gutter, attached sidewalk both sides, with flared intersection at Hotel Ave. and Lomas Blvd.. Including channelization and medians at Hotel Avenue and Hotel Circle. Also, to include median cut, approx. 170 L.F. of 12' wide left turn bay and signalization at Hotel Ave. and Lomas Blvd. To include street lighting on Hotel Ave. & Circle & Extension of Hotel Ave. Street lights do not have to be financially guaranteed.
*G. Intersection Improvements	Intersection of Eubank Boulevard and Lomas Boulevard		Intersection improvements at Eubank and Lomas Blvds., as identified by the Traffic Engineer in staff report Z-1661-3.

*Devloper responsible for 50% of intersection improvements.

Prepared by: Randy Traynor
Espey, Huston & Associates, Inc.

K21/D16

MARKET CENTRE EAST
PUBLIC INFRASTRUCTURE LISTING
June 23, 1987
DRB-85-785
Z-1661-3

FOR SITE DEVELOPMENT PLAN APPROVAL PHASES III & IV

ITEM		FROM	TO	DESCRIPTION
I.	PAVING			
A.	Lomas Boulevard	West leg of Hotel Circle	West approx. 200 ft.	Approx. 200 L.F. of 12' wide right turn bay, including std. curb & gutter, attached sidewalk one side only. To also include R/W dedication.
B.	Lomas Boulevard	Approx. 85 ft. east of the west leg of Hotel Circle	East approx. 130 ft.	Approx. 130 L.F. of 12' wide bus bay, including std. curb & gutter, attached sidewalk one side only.
C.	Lomas Boulevard	From mid-block exit onto Lomas Blvd.	West approx. 200 ft.	Approx. 200 L.F. of 12' wide right turn bay, including std. curb & gutter, attached sidewalk one side only.
D.	Lomas Boulevard	East leg of Hotel Circle	West approx. 150 ft.	Approx. 150 L.F. of 12' wide right turn bay, including std. curb & gutter, attached sidewalk one side only.

K21/D16

08762634

(Procedure "B")

AGREEMENT TO CONSTRUCT
SUBDIVISION IMPROVEMENTS
PUBLIC & PRIVATE

253

THIS AGREEMENT made this 11th day of June, 1987, by and between the City of Albuquerque, New Mexico (hereinafter referred to as "City") and CENTRE EAST JOINT VENTURE (hereinafter referred to as "Developer") pursuant to Section 6 of the City's Subdivision Ordinance (Enactment No. 56-1983, effective June 29, 1983).

WHEREAS, the Developer is developing certain lands within the City of Albuquerque, County of Bernalillo, State of New Mexico known as HORNE DEVELOPMENT ADDITION AND C.L. & F. PROPERTIES OF ALBUQUERQUE, INC. (hereinafter referred to as the "Subdivision"); and

WHEREAS, the Developer has submitted and the City has approved a preliminary plat identified as HORNE DEVELOPMENT ADDITION AND C.L. & F. PROPERTIES OF ALBUQUERQUE, INC. describing the Subdivision; and

WHEREAS, the preliminary plat submitted by the Developer proposes both private and public infrastructure improvements within the subdivision; and

WHEREAS, Section 6 of the City's Subdivision Ordinance requires the Developer to install and construct certain public improvements at no cost to the City; and

WHEREAS, the City requires the execution of an Agreement to construct said public improvements, together with actual satisfactory construction or acceptable guarantees of construction as specified below, as a prerequisite to approval of a Final Plat of the Subdivision; and

WHEREAS, the Developer must obtain City approval of construction plans, 200 specifications, and cost estimates for the improvements and upon City approval of such construction plans, specifications, and cost estimates the City is prepared to issue the Developer a Work Order permitting the commencement of construction activities upon execution of this Agreement and payment of allrequired fees, all as set forth and specified in Exhibit "A", which is attached hereto and incorporated herein as if fully set forth in this Agreement; and

WHEREAS, the City is willing to inspect or monitor the private inspection of the improvements during the course of their construction and accept said improvements upon their satisfactory completion, all as set forth and specified in Exhibit "B", which is attached hereto and incorporated herein as if fully set forth in this Agreement; and

WHEREAS, the Developer financially guarantees the satisfactory completion of the infrastructure construction required herein and the payment of all labor and material costs and charges, all as set forth and specified in Exhibit "C", which is attached hereto and incorporated herein as if fully set forth in this Agreement;

NOW, THEREFORE, in consideration of the above, the City and the Developer hereby agree as follows:

1. The Developer shall, on or before the 15 day of April, 1988, complete to the satisfaction of the City the improvements required for the Subdivision as set forth, specified and referenced in Exhibit "A" attached hereto. The improvements which the Developer shall satisfactorily complete within the time limitation stated above are described and identified in Exhibit "D", which is attached hereto and incorporated herein as fully set forth in this Agreement.

The time limitation stated above may be extended by the City Engineer for a period not to exceed twelve (12) months if the Developer shows adequate reasons for said extension. 261

2. After execution of this Agreement, payment of all fees as specified in Exhibit "A" attached hereto, and, if applicable, delivery of the financial guarantee specified in Exhibit "C" attached hereto, the Developer shall be issued a Work Order by the City. The Developer shall advise the City Engineer in advance of the actual start of construction and arrange for all inspections required and specified in Exhibit "B" attached hereto. The Developer shall permit the City or other participating agencies to make such tests and inspections during the construction of the improvements and upon completion of the improvements as are necessary or desirable.

3. a) Prior to final acceptance of the completed Public Improvements by the City, the Developer shall furnish to the City Engineer all documentation of the completion of construction as set forth and specified in Exhibit "A" attached hereto.

b) Prior to release of financial assurance, the Developer shall either provide Certification by a New Mexico registered Professional Engineer that the required Private Improvements have been constructed in compliance with approved plans and specifications or the Developer shall make necessary arrangements for Certification by the City Engineer that the required improvements are satisfactorily completed.

4. Until acceptance of the improvements by the City, the Developer shall be solely responsible for maintaining the premises being subdivided in a safe condition. The Developer agrees to defend, indemnify and hold harmless the City and its officers, agents and employees from and against all suits, actions or claims of any character brought because of any injury or damage arising out of the design or construction of the improvements or by reason of

any act or omission, or misconduct of the Developer, his agents, employees or the Engineer or Contractor or their agents or employees. The indemnity required hereunder shall not be limited by reason of the specifications of any particular insurance coverage in this Agreement. Nothing herein is intended to impair any right or indemnity under the laws of the State of New Mexico. 262

5. The Developer shall procure or cause to be procured and maintain public liability insurance in the amount of not less than One Million Dollars ($1,000,000) for accidents or occurrences which cause bodily injury, death or property damage to any member of the public resulting from any condition of the lands of the subdivision or improvements therein or the construction activities thereon. The insurance policy must name the City of Albuquerque, its employees, and elected officials, as their interest may appear, as additional insureds. The Developer shall maintain such insurance until acceptance of the improvements by the City. Any cancellation provision must provide that if the policy is cancelled prior to the expiration date hereof, materially changed, or not renewed, the issuing company will mail 30 days written notice to the City, attention City Engineer. The Developer shall furnish the Ctiy Engineer a certificate of said insurance prior to issuance of a Work Order for construction of the improvements.

6. If at the time that construction of the Project is completed the City does not own the real property on or in which the improvements are constructed, the Developer shall convey such real property and property rights as the City deems necessary, together with all improvements, to the City free and clear of all claims, encumbrances and liens prior to final acceptance of the improvements by the City. Conveyance may be appropriate dedication on the final plat of the subdivision.

7. At the time of acceptance of the completed improvements or any portion thereof by the City, the Developer shall furnish or cause to be furnished a bond or other suitable guarantee in a form and with a surety satisfactory to the City to guarantee the completed project against defective materials and workmanship for a period of three (3) years following the date of acceptance by the City.

8. The City shall either perform or monitor the performance of inspections during the course of construction of the improvements and inspect the improvements upon their completion in a timely manner, all as set forth and specified in Exhibit "B" attached hereto.

9. The City shall designate a Construction Engineer and/or Inspector for this project.

10. The City shall make available at established reproduction costs for the use of the Developer or its agents all of its maps, records, laboratory tests, or other data pertinent to the work to be performed by the Developer or its agents pursuant to this Agreement and also any other maps, records, or other materials available to the City upon the City's request to any other public agency or body.

11. a) The City shall issue a Certificate of Completion and Acceptance for the Public Improvements upon final completion to the City's satisfaction of the Improvements as described in the plans and specifications as set forth and specified in Exhibit "A" attached hereto.

b) The City shall issue a Certificate of Completion for the Private Improvements upon final completion to the City's satisfaction of the Private Improvements as described in the plans and specifications as set forth and specified in Exhibit "A" attached hereto.

12. If the Developer has requested Final Plat approval by the City prior to the actual construction of the improvements, the City will approve the Final Plat for recordation upon execution of this Agreement, payment of all fees specified in Exhibit "A" attached hereto, delivery of the financial guarantee specified in Exhibit "C" attached hereto and full compliance with the City's Subdivision Ordinance.

13. This Agreement shall not be assigned except with the written consent of the parties hereto and the express written concurrence of any surety who has undertaken to guarantee the completion of the Improvements. If so assigned, this Agreement shall extend to and be binding upon the successors and assigns of the parties hereto.

14. In the event of the sale, conveyance, or assignment of the Subdivision or any portion thereof, the City will not release the Developer from its obligations under this Agreement and will continue to hold the Developer responsible for all Improvements until a successor in interest to the Developer has posted a suitable guarantee and entered into a Subdivision Improvement Agreement with the City. At such time as acceptable security has been posted by the Developer's successor in interest and the Agreement executed, the City will release the guarantee.

15. Should there be a conflict between the terms and conditions of this Agreement (with Exhibits A, B, C, and D) and the terms and conditions of any other document referred to herein, the terms and conditions of this Agreement (with Exhibits A, B, C, and D) shall govern.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

DEVELOPER

Signed

Steve Johnson
Name

General Partner, Centre East
Title Joint Venture

ATTEST:

City Clerk

REVIEWED BY:

Assistant City Attorney

City Attorney

CITY OF ALBUQUERQUE, NEW MEXICO

Walter H. Nickerson, Jr., City Engineer,
Utility Dev. Div., Engineering Group/PWD

Gene Romo
Chief Administrative Officer

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 27th day of May, 19 87, by Steve Johnson of Centre East Joint Venture.

OFFICIAL SEAL
JEANIE BAXTER
NOTARY PUBLIC-STATE OF NEW MEXICO
Notary Bond Filed with Secretary of State

My Commission Expires: 8-30-88

Notary Public

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 11th day of June, 19 87, by Gene Romo, Chief Administrative Officer of the City of Albuquerque.

Notary Public

My Commission Expires:

3-17-90

Rev. 10/85

EXHIBIT "A"

TO SUBDIVISION IMPROVEMENT AGREEMENT
EXECUTED BY AND BETWEEN CENTRE EAST JOINT VENTURE (DEVELOPER)
AND CITY OF ALBUQUERQUE, NEW MEXICO (CITY) ON
THE 11th DAY OF June, 1987.

1. COMMITMENT TO CONSTRUCT IMPROVEMENTS.

The Developer shall construct in a manner satisfactory to the City the improvements listed in Paragraph 1 of the Subdivision Improvement Agreement and which are shown in greater detail on the Developer's proposed and approved Subdivision Improvements Plan, which was filed with the office of the City Engineer and identified as Project No. N/A.

2. DESIGN AND CONSTRUCTION METHODS.

As soon as reasonably practical after approval of the Developer's Preliminary Plat of the Subdivision, the Developer shall submit to the City Engineer final construction plans, specifications, and cost estimates for the proposed public improvements. At this time, the Developer shall pay all fees required under Section 12.D of the City's Subdivision Ordinance and Paragraph 4 of this Exhibit.

The Developer has engaged * ESPEY, HUSTON & ASSOC., INC. as Engineer(s) for the construction project, who are Registered Professional Engineers in the State of New Mexico. The Developer shall ensure that the Engineer(s), in such capacity, shall provide the following services prior to, during, and after construction of the improvements:

Preparation of Final Plat & Estimates

*DEVELOPER WILL NOTIFY THE CITY ENGINEER IN WRITING PRIOR TO ISSUANCE OF WORK ORDER.

The Developer shall ensure that the Engineer(s) perform all of the above services in a satisfactory manner and submit to the City Engineer any reports required by the City Engineer.

The Developer has engaged * _____ as Contractor(s), who is properly licensed in the State of New Mexico. The Developer shall ensure that the Contractor(s), in such capacity, shall in a manner satisfactory to the City construct the improvements as shown on Developer's proposed Subdivision Improvements Plan (Project No. N/A), incorporating any change orders approved by the City Engineer, City of Albuquerque Interim Standard Specifications for Public Works Construction, 1985, and all other applicable laws, regulations, and policies. Construction surveying and testing shall be performed as set forth in Exhibit "B" of the Subdivision Improvement Agreement between Developer and the City.

3. COMPLETION OF CONSTRUCTION.

The Developer shall report the completion of construction in writing to the City Engineer. Upon receipt of the report, the City Engineer or his representative shall visually inspect the public improvements to verify completion of construction according to plan. Subsequent to verification, the Developer shall submit to the City Engineer a "final acceptance package", which shall consist of the following documents:

a. "As-built" drawings of reproducible quality, depicting all construction of the public improvements as actually accomplished in the field and certified by a New Mexico Registered Professional Engineer or Land Surveyor, as appropriate,

b. A list of quantities of contract items in place, using the bid items in the City Engineer's Standard Estimated Unit Prices.

* DEVELOPER WILL NOTIFY THE CITY ENGINEER IN WRITING PRIOR TO ISSUANCE OF WORK ORDER.

This list shall be divided into the following categories as applicable:

(1) Sanitary sewer items and quantities;

(2) Water service items and quantities;

(3) Street paving quantities;

(4) Street curb and gutter quantities; and

(5) Storm drainage improvements and quantities.

The City shall concurrently provide a written certification from the City Engineer that the construction has been performed in substantial compliance with the City of Albuquerque Interim Standard Specifications for Public Works Construction, 1985, and with the approved final plans and specifications for public improvements. If the City is acting as the Contractor for all or a portion of the improvements constructed pursuant to this Agreement, the City shall prepare its own final acceptance package documents for those improvements actually constructed by the City.

Upon receipt of the Developer's "final acceptance package", the City Engineer shall review it for completeness and accuracy. If the documentation has been satisfactorily completed, the City Engineer shall approve the package and issue a Certificate of Completion and Acceptance. Any financial guarantee provided by the Developer in accordance with Section 6.D.2 of the City's Subdivision Ordinance and as described in Exhibit "C" to the Subdivision Improvement Agreement between the Developer and the City shall be released no later than sixty (60) days after approval of the final acceptance package by the City Engineer.

4. PAYMENT OF FEES.

Prior to issuance of a Work Order, the Developer shall pay to the City the following fees:

Type of Fee	Amount
Engineering Fee	*
Excavation Ordinance Fee	As required per City approved
	engineer's estimate
Sidewalk Ordinance Fee	As required per City approved
	engineer's estimate

Prior to final acceptance of the improvements by the City, the Developer shall pay any other City fees which may have been incurred during the course of construction.

*DEVELOPER WILL NOTIFY THE CITY ENGINEER IN WRITING PRIOR TO ISSUANCE OF WORK ORDER

270

EXHIBIT "B"
TO SUBDIVISION IMPROVEMENT AGREEMENT
EXECUTED BETWEEN CENTRE EAST JOINT VENTURE (DEVELOPER)
AND THE CITY OF ALBUQUERQUE (CITY)
ON THE 11th DAY OF June, 1987.

1. CONSTRUCTION INSPECTION METHODS.

Inspection of the subdivision improvement construction shall be performed by * on private facilities and by * on public facilities both being New Mexico Registered Professional Engineers, in accordance with all applicable laws, ordinances and regulations. If said inspection is performed by an entity other than the City, the City may monitor said inspection and the Developer shall ensure that the inspecting entity provides all inspection results, reports and related data to the City as required for review. The City retains the right to perform its own general overall inspection of the construction project at any time prior to final acceptance of the improvements if deemed necessary or advisable by the City Engineer. For any inspections performed by the City, the Developer shall pay to the City a reasonable fee therefor.

2. CONSTRUCTION SURVEYING.

Construction surveying for the subdivision improvement project shall be performed by * on private facilities and by * on public facilities in accordance with all applicable laws, ordinances and regulations. If said construction surveying is performed by an entity other than the City, the City may monitor said construction surveying and the Developer shall ensure that the construction surveying entity provides all construction surveying field notes, plats, reports and related data to the City as required for review. If any construction surveying is performed by the City, the Developer shall pay to the City a reasonable fee therefor.

* DEVELOPER WILL NOTIFY THE CITY ENGINEER IN WRITING PRIOR TO ISSUANCE OF WORK ORDER.

3. FIELD TESTING.

Field testing of the subdivision improvement construction shall be performed by * _____ on private facilities and by * _____ on public facilities, each being a certified testing laboratory under the supervision of a New Mexico Registered Professional Engineer, in accordance with the technical standards contained in the applicable contract documents and all applicable laws, ordinances and regulations. If any field testing is performed by an entity other than the City, the City may monitor said field testing and the Developer shall ensure that the field testing entity provides all field testing results, reports and related data to the City as required for review. If any field testing is performed by the City, the Developer shall pay to the City a reasonable fee therefor.

4. RECORD TESTING.

Notwithstanding the provisions of Paragraph 3 above, the City retains the right to perform any and all record testing which may be deemed necessary or advisable by the City Engineer at the expense of the Developer.

* DEVELOPER WILL NOTIFY THE CITY ENGINEER IN WRITING PRIOR TO ISSUANCE OF WORK ORDER.

272

EXHIBIT "C"
TO SUBDIVISION IMPROVEMENT AGREEMENT
EXECUTED BETWEEN LENTRE EAST JOINT VENTURE (DEVELOPER)
AND THE CITY OF ALBUQUERQUE (CITY) ON
THE 11th DAY OF June, 1987.

1. PLAT APPROVAL STATUS

The Developer has/has not (circle one) requested final plat approval by the City prior to construction of the Subdivision Improvements described in Paragraph 1 of the Subdivision Improvement Agreement. If the Developer has not requested final plat approval prior to construction of the improvements, no financial guarantee is required by the City. However, the Developer understands and agrees that the City will not approve the Developer's proposed plat until the improvements are completed in accordance with the Agreement to which this document is attached as an Exhibit.

If the Developer has requested final plat approval prior to the construction of the improvements, a financial guarantee in an amount of not less than 125 percent of the costs of completing the improvements (as estimated by the City Engineer) is required pursuant to the City's Subdivision Ordinance. Said financial guarantee must be irrevocable in form and may be effected by a bond, letter of credit, escrow deposit, or other acceptable pledge of liquid assets payable to the City in the event of Developer's default under the Subdivision Improvement Agreement.

2. FINANCIAL GUARANTEE.

With respect to the Subdivision Improvement Agreement to which this document is attached as an Exhibit, the Developer has acquired or is able to acquire the following described financial guarantee (describe fully, indicate amount, identification number, names of bank or bonding entity, inclusive dates of guarantee, and all other relevant information):

Letter of credit issued by Albuquerque Federal (No. 01167) dated June 1, 1987, in the amount of #386,895.35. Inclusive dates from June 1, 1987 thru June 15, 1988.

273

The Developer understands and agrees that the original executed financial guarantee described above must be delivered to the City simultaneously with the City's execution of the Subdivision Improvement Agreement between Developer and the City; and must be in an amount of not less than 125 percent of the cost of completing the improvements, as estimated by the City Engineer.

In the event the Developer shall fail or neglect to fulfill his obligations under this Agreement, the City shall have the right to construct or cause to be constructed the Improvements specified herein, as shown on the Final Plat and in the plans and specifications as approved, and the Developer as Principal and the surety or sureties shall be jointly and severally liable to pay to and indemnify the City, the total cost to the City thereof, including but not limited to, engineering, legal, and contingent costs together with any damages, either direct or consequential, which the City may sustain on account of the failure of the Developer to carry out and execute all of the provisions of the Agreement to which this document is attached as an Exhibit. The City shall have the unconditional right to call upon the financial guarantee provided by the Developer described in this paragraph for the purposes specified and in the amounts enumerated in such guarantee.

3. PROCEDURES FOR REDUCTION OF FINANCIAL GUARANTEE UPON PARTIAL COMPLETION OF IMPROVEMENTS.

The Developer may request a reduction in the amount of financial guarantee upon partial completion of the subdivision improvements. To qualify for a financial guarantee reduction, the completed improvements must be of a free-standing nature, functionally independent of any uncompleted

improvements, and completed in substantial compliance with the subdivision improvement construction plans as determined by an inspection conducted by the City.

If the completed improvements meet the above requirements, the City Engineer will then estimate the cost of completing the remaining improvements. The Developer may then submit the following documents to the City for review and approval:

a) A revised financial guarantee in an amount of not less than 125 percent of the City Engineer's estimated cost of completing the remaining improvements;

b) A release of the original financial guarantee for execution by the City;

c) Documentation that the completed improvements and the land in which the completed improvements are located are subject to no liens, claims or other encumbrances;

d) A bond or other suitable instrument guaranteeing the completed improvements against defective materials and workmanship for a period of three (3) years as set forth in Paragraph 7 of the Subdivision Improvement Agreement between the Developer and the City.

Upon receipt of the above-described documents in forms acceptable to the City, the City shall issue a Certificate of Completion and Acceptance for the completed improvements and accepts the revised financial guarantee tendered by the Developer.

RECEIVED BY: RANDY L. TRAYNOR
EH&A

Exhibit "D"

275

HORNE DEVELOPMENT ADDITION
PUBLIC INFRASTRUCTURE LISTING
~~February 3, 1987~~ 5/5/87
DRB - 86-637

ITEM	DESCRIPTION
Hotel Circle and Hotel	Roadway rehabilitation as detailed in attached letter from Russell B, Giveler, Chief Construction Engineer, Engineering Public Works Department dated November 20, 1986 to EH&A.
Storm Drainage	Approximately 205 LF - 24" RCP, 35 LF - 30" RCP, 250 LF - 36" RCP, 930 LF - 48" RCP, 6 - Type 'A' Catch Basins, 10 Double Type 'C' catch Basins, 1 - NMSHD Inlet, and Appurtenances, located within 25 foot wide Drainage Easement located from Hotel Circle to Eubank Blvd., as shown on Sheet 12 of the Approved Conceptual Grading and Drainage Plan for Market Centre East, dated January 5, 1987.

Approved on May 5, 198~~6~~7, by the Development Review Board.

Jack Cloud 5/5/87
Planning Department — Date

Jon E. Eutsgaard 5/5/87
Dept. of Public Works, Utility Development Division — Date

Robert A. Tannahill 5-5-87
Traffic Engineer — Date

Jack Lewis 5-5-87
Parks and Recreation Department — Date

[illegible] 5/5/87
City Engineer/AMAFCA, Utility Development Division — Date

CITY ESTIMATE SHEET

EH&A Job: MARKET CENTRE EAST

STORM DRAINAGE IMPROVEMENTS:

Bid Item	CP 31 Item No.	Short Description	City Eng's Unit Price	Estimated Quantity	Estimated Amount	As-Built Quantity	As-Built Amount
1.	K-5	24"RCP,Per L.F.	26.21	205	5,373.05		
2.	K-7	30"RCP,Per L.F.	37.00	35	1,295.00		
3.	K-9	36"RCP,Per L.F.	54.06	250	13,515.00		
4.	K-11	48"RCP,Per L.F.	73.50	930	68,355.00		
5.	K-29	CB-A-S,Per Each	2,075.00	6	12,450.00		
6.	K-34	CB-D-D,Per Each	2,760.00	10	27,600.00		
7.	K-81	Trching, (42" & over), Less than 8'Deep, Per L.F.	8.74	~~930~~ 1420	~~8,128.20~~	12,410 80	
8.		REM & REPL 2"AC PVMT, including S/G Prep, complete in place, Per, S.Y.	10.00	1,200	12,000.00		
9.	P-13	PCC C & G REM, Per L.F.	4.01	150	601.50		
10.	S-22	4'MH,6'-10'D, Per Each	977.61	7	6,843.27		
11.	S-26	6'MH, Add D Cst to 4'MH,Per V.F.	85.49	40	3,419.60		
12.	S-27	8'MH, Add D Cst to 4'MH,Per V.F.	180.00	8	1,440.00		
13.		MNSHD Inlet Structure,BDIE-001, complete in place, Per Each	2,000.00	1	2,000.00		
14.	K-47	Fill, Per C.Y.	5.00	1,135	5,675.00		

TOTAL ESTIMATED STORM DRAINAGE IMPROVEMENTS ~~$168,695.62~~ $172,978.23

CITY ESTIMATE SHEET

EH&A Job: MARKET CENTRE EAST

PAVING IMPROVEMENTS:

Bid Item	CP 31 Item No.	Short Description	City Eng's. Unit Price	Estimated Quantity	Estimated Amount	As-Built Quantity	As-Built Amount
1.	P-10	Cut & Rem AC PVMT per S.Y.	3.26	900	2,934.00		
2.	P-13	PCC C&G Rem, per L.F.	4.01	200	802.00		
3.	-	AC patch construction including 6"S/B @95% min.density, & 4" AC type B-1500 lb.Stab. @96% min.density, complete in space per S.Y.	14.50	900	13,050.00		
4.	P-14	(SDWK & DRVPD) Rem, per S.Y.	3.57	33	117.81		
5.	P-44	PCC VLY G, per S.F.	3.80	100	380.00		
6.		Modified PCC C&G, per L.F.	6.82	200	1,364.00		
7.	P-51	MH ADJ W/RGS, per Each	115.00	19	2,185.00		
8.	P-53	V-Box ADJ; per Each	100.00	4	400.00		
9.	-	AC Milling, 6'wide,per L.F.	0.55	9,000	4,950.00		
10.	-	Crack seal, including all cleaning & Routing, complete, per L.F.	0.85	10,525	8,946.25		
11.	P-31	1"AC,SF-1500-M, type 'B', per S.Y.	2.40	18,000	43,200.00		

Bid Item	CP 31 Item No.	Short Description	City Eng's. Unit Price	Estimated Quantity	Estimated Amount	As-Built Quantity	As-Built Amount
12.	P-30	Tack Coat, per S.Y.	0.26	18,000	4,680.00		
13.	P-37	PM Seal, per S.Y.	2.95	18,000	53,100.00		
14.	P-42	4"PCC SDWK, per S.F.	1.43	300	429.00		

TOTAL ESTIMATED PAVING IMPROVEMENTS 136,538.06

TOTAL ESTIMATED PAVING AND DRAINAGE IMPROVEMENTS 309,516.28
PLUS 25% ~~207,119.67~~ ~~51,779.92~~ 77,379.07

TOTAL FINANCIAL GUARANTEE AMOUNT ~~$258,899.59~~ $386,895.35

OK
RWH

OK. FOR FINANCIAL GUARANTEE PER DRB AGREEMENT DATED 12/2/86 BY DIMEEN ON DEC 12, 1986 EH&ASSOC LETTER.

1/12/87

Paul T. Brasher, N.M.P.E. No.7282 — 12.16.86 Date

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

87 JUN 15 PM 2:59

BK M5499A PG 259-278
GLADYS M. DAVIS
CO. CLERK & RECORDER

K21016

FILED WITH CITY CLERK'S OFFICE
6/18/87

Albuquerque Federal

June 1, 1987

IRREVOCABLE LETTER OF CREDIT AND AGREEMENT NO. 01167

Amount: $ 386,895.35

Mr. Gene Romo
Chief Administrative Officer
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Dear Mr. Romo:

At the request of Centre East Joint Venture, a New Mexico Joint Venture, we establish our Irrevocable Letter of Credit in your favor for the account of Centre East Joint Venture, to the extent of and not exceeding Three-hundred eight-six thousand eight hundred ninety-five dollars and thirty five cents. ($386,895.35).

This Letter of Credit has been established to insure the completion of Market Centre East Improvements, as provided by the Agreement between Centre East Joint Venture and the CITY OF ALBUQUERQUE which Agreement is recorded in book Misc. 499-A, at Pages 259 to 278, of the records of the County of Bernalillo, State of New Mexico (the "Agreement"). A Draft or Drafts for any amount up to, but not in excess of, Three-hundred eighty-six thousand eight hundred ninety-five dollars and thirty five cents. ($386,895.35) is/are available at sight at Albuquerque Federal Savings & Loan association, Albuquerque, New Mexico, between June 1, 1987 and June 15, 1988.

When presented for negotiation, the Draft(s) is/are to be accompanied by the following document:

The City's notarized certification stating that Centre East Joint venture has failed to comply with the terms of the Agreement; and also certifying that "the undersigned is Chief Administrative Officer of the City of Albuquerque and is authorized to sign this statement, "and also certifying that the amount of the Draft does not exceed 125% of the cost of completing the improvements specified in the Agreement.

We hereby agree with the drawer of Draft(s) drawn and under and in compliance with the terms of this credit that such Draft(s) will be duly honored on the presentation to the drawee if negotiated between June 1, 1987 and June 15, 1988.

The Draft(s) drawn under this credit must be endorsed and contain the clause: "Drawn under Letter of Credit and agreement No. 01167 of Albuquerque Federal Savings & Loan Association, dated June 1, 1987; the amount of such Draft(s) must be endorsed on the reverse side thereof, and this Letter of Credit must be attached to that Draft which exhausts this credit.

This credit terminates at 5:00 o'clock p.m., New Mexico time, June 15, 1988.

ALBUQUERQUE FEDERAL SAVINGS AND LOAN ASSOCIATION:

BY: Catherine M. Cronin
Catherine M. Cronin
ITS: Vice President

ATTEST:

BY: Paul Teske Jr
Paul Teske, Vice President

APPROVED AS TO FORM:

CITY OF ALBUQUERQUE

William D. Kearny
Assistant City Attorney

Approved As To Form
City Attorney
Date: 6/10/87

K21/D16

(Procedure "B")

87125089

AGREEMENT TO CONSTRUCT SUBDIVISION IMPROVEMENTS (PUBLIC & PRIVATE) FOR SITE DEVELOPMENT PLAN

001328

THIS AGREEMENT made this 10th day of November, 1987, by and between the City of Albuquerque, New Mexico (hereinafter referred to as "City") and CENTRE EAST JOINT VENTURE (hereinafter referred to as "Developer") pursuant to Section 6 of the City's Subdivision Ordinance (Enactment No. 56-1983, effective June 29, 1983) and Section 40.K. of the City's Zoning Code.

WHEREAS, the Developer is developing certain lands within the City of Albuquerque, County of Bernalillo, State of New Mexico known as HORNE DEVELOPMENT ADDITION AND C.L. & F. PROPERTIES OF ALBUQUERQUE INC. (hereinafter referred to as the "Subdivision"); and

WHEREAS, the Developer has submitted a Site Development Plan identified as MARKET CENTRE EAST describing the site development; and

WHEREAS, the Site Development Plan submitted by the Developer proposes both private and public infrastructure improvements within the subdivision; and

WHEREAS, Section 6 of the City's Subdivision Ordinance requires the Developer to install and construct certain public improvements at no cost to the City; and

WHEREAS, the City requires the execution of an Agreement to construct said public improvements, together with actual satisfactory construction or acceptable guarantees of construction as specified below, as a prerequisite to approval of a Site Development Plan; and

WHEREAS, the Developer must obtain City approval of construction plans, specifications, and cost estimates for the improvements and upon City approval

Rev. 12/85
(3784E)

COUNTY OF BERNALILLO
FILED FOR RECORD

87 DEC 11 AM 8:33

BK 567A PG 328-347
GLADYS M. DAVIS
CO. CLERK & RECORDER
DEPUTY

of such construction plans, specifications, and cost estimates the City is prepared to issue the Developer a Work Order permitting the commencement of construction activities upon execution of this Agreement and payment of allrequired fees, all as set forth and specified in Exhibit "A", which is attached hereto and incorporated herein as if fully set forth in this Agreement; and

WHEREAS, the City is willing to inspect or monitor the private inspection of the improvements during the course of their construction and accept said improvements upon their satisfactory completion, all as set forth and specified in Exhibit "B", which is attached hereto and incorporated herein as if fully set forth in this Agreement; and

WHEREAS, the Developer financially guarantees the satisfactory completion of the infrastructure construction required herein and the payment of all labor and material costs and charges, all as set forth and specified in Exhibit "C", which is attached hereto and incorporated herein as if fully set forth in this Agreement;

NOW, THEREFORE, in consideration of the above, the City and the Developer hereby agree as follows:

1. The Developer shall, on or before the 9th day of ~~September~~ JULY RT, 1986, complete to the satisfaction of the City the improvements required for the Subdivision as set forth, specified and referenced in Exhibit "A" attached hereto. The improvements which the Developer shall satisfactorily complete within the time limitation stated above are described and identified in Exhibit "D", which is attached hereto and incorporated herein as is fully set forth in this Agreement.

The time limitation stated above may be extended by the City Engineer for a period not to exceed twelve (12) months if the Developer shows adequate reasons for said extension.

2. After execution of this Agreement, payment of all fees as specified in Exhibit "A" attached hereto, and, if applicable, delivery of the financial guarantee specified in Exhibit "C" attached hereto, the Developer shall be issued a Work Order by the City. The Developer shall advise the City Engineer in advance of the actual start of construction and arrange for all inspections required and specified in Exhibit "B" attached hereto. The Developer shall permit the City or other participating agencies to make such tests and inspections during the construction of the improvements and upon completion of the improvements as are necessary or desirable.

3. a) Prior to final acceptance of the completed Public Improvements by the City, the Developer shall furnish to the City Engineer all documentation of the completion of construction as set forth and specified in Exhibit "A" attached hereto.

b) Prior to release of financial assurance, the Developer shall either provide Certification by a New Mexico registered Professional Engineer that the required Private Improvements have been constructed in compliance with approved plans and specifications or the Developer shall make necessasry arrangements for Certification by the City Engineer that the required improvements are satisfactorily completed.

4. Until acceptance of the improvements by the City, the Developer shall be solely responsible for maintaining the premises being subdivided in a safe condition. The Developer agrees to defend, indemnify and hold harmless the City and its officers, agents and employees from and against all suits, actions or claims of any character brought because of any injury or damage

arising out of the design or construction of the improvements or by reason of any act or omission, or misconduct of the Developer, his agents, employees or the Engineer or Contractor or their agents or employees. The indemnity required hereunder shall not be limited by reason of the specifications of any particular insurance coverage in this Agreement. Nothing herein is intended to impair any right or indemnity under the laws of the State of New Mexico.

5. The Developer shall procure or cause to be procured and maintain public liability insurance in the amount of not less than One Million Dollars ($1,000,000) combined single limit for accidents or occurrences which cause bodily injury, death or property damage to any member of the public resulting from any condition of the lands of the subdivision or improvements therein or the construction activities thereon. The insurance policy must name the City of Albuquerque, its employees, and elected officials, as their interest may appear, as additional insureds. The Developer shall maintain such insurance until acceptance of the improvements by the City. Any cancellation provision must provide that if the policy is cancelled prior to the expiration date hereof, materially changed, or not renewed, the issuing company will mail 30 days written notice to the City, attention City Engineer. The Developer shall furnish the City Engineer a certificate of said insurance prior to issuance of a Work Order for construction of the improvements.

6. If at the time that construction of the Project is completed the City does not own the real property on or in which the improvements are constructed, the Developer shall convey such real property and property rights as the City deems necessary, together with all improvements, to the City free and clear of all claims, encumbrances and liens prior to final acceptance of the improvements by the City. Conveyance may be appropriate dedication on the final plat of the subdivision.

7. At the time of acceptance of the completed improvements or any portion thereof by the City, the Developer shall furnish or cause to be furnished a bond or other suitable guarantee in a form and with a surety satisfactory to the City to guarantee the completed project against defective materials and workmanship for a period of three (3) years following the date of acceptance by the City.

8. The City shall either perform or monitor the performance of inspections during the course of construction of the improvements and inspect the improvements upon their completion in a timely manner, all as set forth and specified in Exhibit "B" attached hereto.

9. The City shall designate a Construction Engineer and/or Inspector for this project.

10. The City shall make available at established reproduction costs for the use of the Developer or its agents all of its maps, records, laboratory tests, or other data pertinent to the work to be performed by the Developer or its agents pursuant to this Agreement and also any other maps, records, or other materials available to the City upon the City's request to any other public agency or body.

11. a) The City shall issue a Certificate of Completion and Acceptance for the Public Improvements upon final completion to the City's satisfaction of the Improvements as described in the plans and specifications as set forth and specified in Exhibit "A" attached hereto.

b) The City shall issue a Certificate of Completion for the Private Improvements upon final completion to the City's satisfaction of the Private Improvements as described in the plans and specifications as set forth and specified in Exhibit "A" attached hereto.

12. If the Developer has requested Site Development Plan approval by the City prior to the actual construction of the improvements, the City will approve the Site Development Plan upon execution of this Agreement, payment of all fees specified in Exhibit "A" attached hereto, delivery of the financial guarantee specified in Exhibit "C" attached hereto and full compliance with the City's Subdivision Ordinance.

13. This Agreement shall not be assigned except with the written consent of the parties hereto and the express written concurrence of any surety who has undertaken to guarantee the completion of the Improvements. If so assigned, this Agreement shall extend to and be binding upon the successors and assigns of the parties hereto.

14. In the event of the sale, conveyance, or assignment of the Subdivision or any portion thereof, the City will not release the Developer from its obligations under this Agreement and will continue to hold the Developer responsible for all Improvements until a successor in interest to the Developer has posted a suitable guarantee and entered into a Subdivision Improvement Agreement with the City. At such time as acceptable security has been posted by the Developer's successor in interest and the Agreement executed, the City will release the guarantee.

15. Should there be a conflict between the terms and conditions of this Agreement (with Exhibits A, B, C, and D) and the terms and conditions of any other document referred to herein, the terms and conditions of this Agreement (with Exhibits A, B, C, and D) shall govern.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

DEVELOPER

Signed

STEVE JOHNSON
Name
GENERAL PARTNER, CENTRE EAST
Title JOINT VENTURE

ATTEST:

N/A
City Clerk

REVIEWED BY:

Assistant City Attorney

City Attorney

CITY OF ALBUQUERQUE, NEW MEXICO

Walter H. Nickerson, City Engineer
Development Div./Public Works-Engineering

Gene Romo
Chief Administrative Officer

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 31st day of August, 1987, by Steve Johnson of Centre East Joint Venture.

Panchita J. King
Notary Public

OFFICIAL SEAL
PANCHITA J. KING
NOTARY PUBLIC - STATE OF NEW MEXICO
Notary Bond Filed with Secretary of State
My Commission Expires 11/16/90

My Commission Expires:

November 16, 1990

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 10th day of November, 1987, by Gene Romo, Chief Administrative Officer of the City of Albuquerque.

Priscilla Phillips
Notary Public

My Commission Expires:

3-17-90

EXHIBIT "A"
TO SUBDIVISION IMPROVEMENT AGREEMENT
EXECUTED BY AND BETWEEN CENTRE EAST JOINT VENTURE (DEVELOPER)
AND CITY OF ALBUQUERQUE, NEW MEXICO (CITY) ON
THE 10th DAY OF November, 1987.

1. COMMITMENT TO CONSTRUCT IMPROVEMENTS.

The Developer shall construct in a manner satisfactory to the City the improvements listed in Paragraph 1 of the Subdivision Improvement Agreement and which are shown in greater detail on the Developer's proposed and approved Subdivision Improvements Plan, which was filed with the office of the City Engineer and identified as Project No. N/A.

2. DESIGN AND CONSTRUCTION METHODS.

As soon as reasonably practical after approval of the Developer's Preliminary Plat of the Subdivision, the Developer shall submit to the City Engineer final construction plans, specifications, and cost estimates for the proposed public improvements. At this time, the Developer shall pay all fees required under Section 12.D of the City's Subdivision Ordinance and Paragraph 4 of this Exhibit.

The Developer has engaged ESPEY, HUSTON AND ASSOCIATES, INC. as Engineer(s) for the construction project, who are Registered Professional Engineers in the State of New Mexico. The Developer shall ensure that the Engineer(s), in such capacity, shall provide the following services prior to, during, and after construction of the improvements:

COMPILE CONSTRUCTION PLANS

The Developer shall ensure that the Engineer(s) perform all of the above services in a satisfactory manner and submit to the City Engineer any reports required by the City Engineer.

The Developer has engaged * _____ as Contractor(s), who is properly licensed in the State of New Mexico. The Developer shall ensure that the Contractor(s), in such capacity, shall in a manner satisfactory to the City construct the improvements as shown on Developer's proposed Subdivision Improvements Plan (Project No. N/A), incorporating any change orders approved by the City Engineer, City of Albuquerque Interim Standard Specifications for Public Works Construction, 1985, and all other applicable laws, regulations, and policies. Construction surveying and testing shall be performed as set forth in Exhibit "B" of the Subdivision Improvement Agreement between Developer and the City.

3. COMPLETION OF CONSTRUCTION.

The Developer shall report the completion of construction in writing to the City Engineer. Upon receipt of the report, the City Engineer or his representative shall visually inspect the public improvements to verify completion of construction according to plan. Subsequent to verification, the Developer shall submit to the City Engineer a "final acceptance package", which shall consist of the following documents:

a. "As-built" drawings of reproducible quality, depicting all construction of the public improvements as actually accomplished in the field and certified by a New Mexico Registered Professional Engineer or Land Surveyor, as appropriate,

b. A list of quantities of contract items in place, using the bid items in the City Engineer's Standard Estimated Unit Prices.

*DEVELOPER WILL NOTIFY THE CITY ENGINEER IN WRITING PRIOR TO ISSUANCE OF WORK ORDER.

This list shall be divided into the following categories as applicable:

(1) Sanitary sewer items and quantities;

(2) Water service items and quantities;

(3) Street paving quantities;

(4) Street curb and gutter quantities; and

(5) Storm drainage improvements and quantities.

The City shall concurrently provide a written certification from the City Engineer that the construction has been performed in substantial compliance with the City of Albuquerque Interim Standard Specifications for Public Works Construction, 1985, and with the approved final plans and specifications for public improvements. If the City is acting as the Contractor for all or a portion of the improvements constructed pursuant to this Agreement, the City shall prepare its own final acceptance package documents for those improvements actually constructed by the City.

Upon receipt of the Developer's "final acceptance package", the City Engineer shall review it for completeness and accuracy. If the documentation has been satisfactorily completed, the City Engineer shall approve the package and issue a Certificate of Completion and Acceptance. Any financial guarantee provided by the Developer in accordance with Section 6.D.2 of the City's Subdivision Ordinance and as described in Exhibit "C" to the Subdivision Improvement Agreement between the Developer and the City shall be released no later than sixty (60) days after approval of the final acceptance package by the City Engineer.

4. PAYMENT OF FEES.

Prior to issuance of a Work Order, the Developer shall pay to the City the following fees:

Type of Fee	Amount
Engineering Fee	*
Excavation Ordinance Fee	As required per City approved
	engineer's estimate
Sidewalk Ordinance Fee	As required per City approved
	engineer's estimate

Prior to final acceptance of the improvements by the City, the Developer shall pay any other City fees which may have been incurred during the course of construction.

*DEVELOPER WILL NOTIFY THE CITY ENGINEER IN WRITING PRIOR TO ISSUANCE OF WORK ORDER.

EXHIBIT "B"
TO SUBDIVISION IMPROVEMENT AGREEMENT
EXECUTED BETWEEN CENTRE EAST JOINT VENTURE (DEVELOPER)
AND THE CITY OF ALBUQUERQUE (CITY)
ON THE 10th DAY OF November, 1987.

001339

1. CONSTRUCTION INSPECTION METHODS.

Inspection of the subdivision improvement construction shall be performed by * on private facilities and by * on public facilities both being New Mexico Registered Professional Engineers, in accordance with all applicable laws, ordinances and regulations. If said inspection is performed by an entity other than the City, the City may monitor said inspection and the Developer shall ensure that the inspecting entity provides all inspection results, reports and related data to the City as required for review. The City retains the right to perform its own general overall inspection of the construction project at any time prior to final acceptance of the improvements if deemed necessary or advisable by the City Engineer. For any inspections performed by the City, the Developer shall pay to the City a reasonable fee therefor.

2. CONSTRUCTION SURVEYING.

Construction surveying for the subdivision improvement project shall be performed by * on private facilities and by * on public facilities in accordance with all applicable laws, ordinances and regulations. If said construction surveying is performed by an entity other than the City, the City may monitor said construction surveying and the Developer shall ensure that the construction surveying entity provides all construction surveying field notes, plats, reports and related data to the City as required for review. If any construction surveying is performed by the City, the Developer shall pay to the City a reasonable fee therefor.

* DEVELOPER WILL NOTIFY THE CITY ENGINEER IN WRITING PRIOR TO ISSUANCE OF WORK ORDER.

3. FIELD TESTING.

Field testing of the subdivision improvement construction shall be performed by * _____ on private facilities and by * _____ on public facilities each being a certified testing laboratory under the supervision of a New Mexico Registered Professional Engineer, in accordance with the technical standards contained in the applicable contract documents and all applicable laws, ordinances and regulations. If any field testing is performed by an entity other than the City, the City may monitor said field testing and the Developer shall ensure that the field testing entity provides all field testing results, reports and related data to the City as required for review. If any field testing is performed by the City, the Developer shall pay to the City a reasonable fee therefor.

4. RECORD TESTING.

Notwithstanding the provisions of Paragraph 3 above, the City retains the right to perform any and all record testing which may be deemed necessary or advisable by the City Engineer at the expense of the Developer.

* DEVELOPER WILL NOTIFY THE CITY ENGINEER IN WRITING PRIOR TO ISSUANCE OF WORK ORDER

EXHIBIT "C"
TO SUBDIVISION IMPROVEMENT AGREEMENT
EXECUTED BETWEEN CENTRE EAST JOINT VENTURE (DEVELOPER)
AND THE CITY OF ALBUQUERQUE (CITY) ON
THE _____ DAY OF _____, 198__.

341

1. PLAT APPROVAL STATUS

The Developer (has) has not (circle one) requested Site Development Plan approval by the City prior to construction of the Subdivision Improvements described in Paragraph 1 of the Subdivision Improvement Agreement. If the Developer has not requested Site Development Plan approval prior to construction of the improvements, no financial guarantee is required by the City. However, the Developer understands and agrees that the City will not approve the Developer's proposed Site Development Plan until the improvements are completed in accordance with the Agreement to which this document is attached as an Exhibit.

If the Developer has requested Site Development Plan approval prior to the construction of the improvements, a financial guarantee in an amount of not less than 125 percent of the costs of completing the improvements (as estimated by the City Engineer) is required pursuant to the City's Subdivision Ordinance. Said financial guarantee must be irrevocable in form and may be effected by a bond, letter of credit, escrow deposit, or other acceptable pledge of liquid assets payable to the City in the event of Developer's default under the Subdivision Improvement Agreement.

2. FINANCIAL GUARANTEE

With respect to the Subdivision Improvement Agreement to which this document is attached as an Exhibit, the Developer has acquired or is able to acquire the following described financial guarantee (describe fully, indicate amount, identification number, names of bank or bonding entity, inclusive dates of guarantee, and all other relevant information):

IRREVOCABLE LOAN BY LETTER OF CREDIT NO. ANB1236, AMOUNT: $202,988.64, BANK: SUNWEST BANK OF ALBUQUERQUE, DATED FROM SEPT. 9, 1987 TO SEPT. 9, 1988

The Developer understands and agrees that the original executed financial guarantee described above must be delivered to the City simultaneously with the City's execution of the Subdivision Improvement Agreement between Developer and the City; and must be in an amount of not less than 125 percent of the cost of completing the improvements, as estimated by the City Engineer.

In the event the Developer shall fail or neglect to fulfill his obligations under this Agreement, the City shall have the right to construct or cause to be constructed the Improvements specified herein, as shown on the Site Development Plan and in the plans and specifications as approved, and the Developer as Principal and the surety or sureties shall be jointly and severally liable to pay to and indemnify the City, the total cost to the City thereof, including but not limited to, engineering, legal, and contingent costs together with any damages, either direct or consequential, which the City may sustain on account of the failure of the Developer to carry out and execute all of the provisions of the Agreement to which this document is attached as an Exhibit. The City shall have the unconditional right to call upon the financial guarantee provided by the Developer described in this paragraph for the purposes specified and in the amounts enumerated in such guarantee.

3. PROCEDURES FOR REDUCTION OF FINANCIAL GUARANTEE UPON PARTIAL COMPLETION OF IMPROVEMENTS.

The Developer may request a reduction in the amount of financial guarantee upon partial completion of the subdivision improvements. To qualify

for a financial guarantee reduction, the completed improvements must be of a free-standing nature, functionally independent of any uncompleted improvements, and completed in substantial compliance with the subdivision improvement construction plans as determined by an inspection conducted by the City.

If the completed improvements meet the above requirements, the City Engineer will then estimate the cost of completing the remaining improvements. The Developer may then submit the following documents to the City for review and approval:

a) A revised financial guarantee in an amount of not less than 125 percent of the City Engineer's estimated cost of completing the remaining improvements;

b) A release of the original financial guarantee for execution by the City;

c) Documentation that the completed improvements and the land in which the completed improvements are located are subject to no liens, claims or other encumbrances;

d) A bond or other suitable instrument guaranteeing the completed improvements against defective materials and workmanship for a period of three (3) years as set forth in Paragraph 7 of the Subdivision Improvement Agreement between the Developer and the City.

Upon receipt of the above-described documents in forms acceptable to the City, the City shall issue a Certificate of Completion and Acceptance for the completed improvements and accepts the revised financial guarantee tendered by the Developer.

Prepared by: Randy Traynor
Espey, Huston & Associates, Inc.

006344

MARKET CENTRE EAST
PUBLIC INFRASTRUCTURE LISTING
June 23, 1987
DRB-85-785
Z-1661-3

FOR SITE DEVELOPMENT PLAN APPROVAL PHASES III & V

ITEM		FROM	TO	DESCRIPTION
PAVING				
A.	Lomas Boulevard	West leg of Hotel Circle	West approx. 200 ft.	Approx. 200 L.F. of 12' wide right turn bay, including std. curb & gutter, attached sidewalk one side only. To also include R/W dedication.
B.	Lomas Boulevard	Approx. 85 ft. east of the west leg of Hotel Circle	East approx. 130 ft.	Approx. 130 L.F. of 12' wide bus bay, including std. curb & gutter, attached sidewalk one side only.
C.	Lomas Boulevard	From mid-block exit onto Lomas Blvd.	West approx. 200 ft.	Approx. 200 L.F. of 12' wide right turn bay, including std. curb & gutter, attached sidewalk one side only.
D.	Lomas Boulevard	East leg of Hotel Circle	West approx. 150 ft.	Approx. 150 L.F. of 12' wide right turn bay, including std. curb & gutter, attached sidewalk one side only.

005345

ITEM	FROM	TO	DESCRIPTION
I. PAVING Continued			
E. Hotel Avenue	Intersection of Hotel Avenue and Eubank		Hotel Avenue channelization at Eubank for right turn in/ right turn out.
F. Hotel Avenue	Extension from Hotel Circle to Lomas Boulevard		Approx. 660 L.F. of 40' wide pvm't. std. curb & gutter, attached sidewalk both sides, with flared intersection at Hotel Ave. and Lomas Blvd.. Including channelization and medians at Hotel Avenue and Hotel Circle. Also, to include median cut, approx. 170 L.F. of 12' wide left turn bay and signalization at Hotel Ave. and Lomas Blvd. To include street lighting on Hotel Ave. & Circle & Extension of Hotel Ave. Street lights do not have to be financially guaranteed.
*G. Intersection Improvements	Intersection of Eubank Boulevard and Lomas Boulevard		Intersection improvements at Eubank and Lomas Blvds., as identified by the Traffic Engineer in staff report Z-1661-3. To be guaranteed by separate agreement Jacobsen

*Devloper responsible for 50% of intersection improvements.

000346

ITEM		FROM	TO	DESCRIPTION
II.	WATER			
	A. Waterline	West leg of Hotel Circle, throughout project site	Approx. the southernmost point of Hotel Circle	Approx. 1620 L.F. of 8" waterline including valves & services, & fire hydrants.
	B. Waterline	Fireline connections to 8" waterline		Approx. 350 L.F. of 6" waterline, including valves & fire hydrants.

00[illegible]347

MARKET CENTRE EAST
PUBLIC INFRASTRUCTURE LISTING

June 23, 1987

Approved on June 23 **, 1987, by the Development Review Board.**
DRB-85-785
Z-1661-3

Jack Cloud / John C 12-8-87 — 6-23-87
Planning Department — **Date**

W H Watmore 12-8-87 — 6-23-87
Utility Development Division, City Engineer — **Date**

Robert A. Loemaugh DWH 12/8/87 — 6-23-87
Transportation Development Division, Traffic Engineer — **Date**

[illegible] — 6-23-87
Parks and Recreation Department — **Date**

Fred D Clyne DWH 12/8/87 — 6-23-87
City Engineer/AMAFCA — **Date**

FILED WITH CITY CLERK'S OFFICE

12/11/87

SUNWEST BANK of Albuquerque, N.A.

Telephone: 505-765-2205
Cable Address:
SUNWESTBK-ABQ
Telex Number:
660430

ADVISED DIRECTLY TO BENEFICIARY VIA HAND-DELIVERY
INTERNATIONAL DEPARTMENT
P. O. Box 25500 Albuquerque, New Mexico 87125-5500

IRREVOCABLE STANDBY LETTER OF CREDIT NO. ANB1236

City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103
Attn: Chief Administrative Officer

Date September 9, 1987

Amount $202,988.64

GENTLEMEN:

AT THE REQUEST OF AmeriWest Corporation, 625 Silver, S.W., Suite 200, Albuquerque, New Mexico 87125

AND FOR THE ACCOUNT OF same

WE HEREBY OPEN IN YOUR FAVOR OUR IRREVOCABLE LETTER OF CREDIT NOT EXCEEDING AN AGGREGATE AMOUNT OF TWO HUNDRED TWO THOUSAND NINE HUNDRED EIGHTY-EIGHT AND 64/100 U.S. DOLLARS

AVAILABLE BY YOUR DRAFT(S) AT *SIGHT* ON *US*
WHEN ACCOMPANIED BY THE DOCUMENTS LISTED BELOW:

1. The original of this letter of credit.

2. The City's notarized certification stating that "Centre East Joint Venture has failed to comply with the terms of the Agreement. The undersigned is Chief Administrative Officer of the City of Albuquerque and is authorized to sign this statement. The amount of the draft does not exceed 125% of the cost of completing the improvements specified in the Agreement."

Partial drawing(s) are allowed.
*

Approved As To Form
City Attorney
Date: 11-7-87

*

*

Approved as to Form
Asst. City Attorney
Date: 11/6/87

*

YOU THAT

WE HEREBY AGREE WITH ~~THE DRAWERS, ENDORSERS AND BONA FIDE HOLDERS OF~~ DRAFTS DRAWN UNDER AND IN COMPLIANCE WITH THE TERMS OF THIS CREDIT, THAT SUCH DRAFTS WILL BE DULY HONORED ON PRESENTATION TO THE DRAWEE IF NEGOTIATED ON OR BEFORE September 9, 1988 at counters, Sunwest Bank of Albuquerque, International Department.

DRAFTS DRAWN UNDER THIS CREDIT MUST BE ENDORSED AND CONTAIN THE CLAUSE: "DRAWN UNDER THE SUNWEST BANK OF ALBUQUERQUE, N.A. LETTER OF CREDIT NO. ANB1236 DATED September 9, 1987," AND THE AMOUNTS OF SUCH DRAFTS MUST BE ENDORSED ON THE REVERSE SIDE HEREOF, BY THE NEGOTIATING OR PAYING BANK.

THIS CREDIT IS SUBJECT TO UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1983 REVISION) INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 400.

SUNWEST BANK OF ALBUQUERQUE, N.A.

AUTHORIZED SIGNATURE

AUTHORIZED SIGNATURE

FILED WITH CITY CLERK'S OFFICE 12/14/87

SUNWEST BANK of Albuquerque, N.A.

ADVISED DIRECTLY TO BENEFICIARY VIA HAND-DELIVERY BY APPLICANT

INTERNATIONAL DEPARTMENT
P. O. Box 25500 Albuquerque, New Mexico 87125-5500

Telephone: 505-765-2205
Cable Address:
SUNWESTBK-ABQ
Telex Number:
660430

AMENDMENT NUMBER ONE
IRREVOCABLE LETTER OF CREDIT NO. ANB1236

City of Albuquerque
P.O.Box 1293
Albuquerque, New Mexico 87103, Attn: Chief Administrative Officer

Date September 23, 1987

GENTLEMEN:

AT THE REQUEST OF AmeriWest Corporation, 625 Silver, S.W., Suite 200, Albuquerque, New Mexico 87125
AND FOR THE ACCOUNT OF same

WE HAVE BEEN REQUESTED TO ADVISE YOU THAT CREDIT NO. ANB1236 OPENED IN YOUR FAVOR IS AMENDED AS FOLLOWS:

1. Amend name of applicant from "AmeriWest Corporation" to "Centre East Joint Venture c/o AmeriWest Corporation" (i.e. Letter of Credit will now read "At the request of Centre East Joint Venture c/o AmeriWest Corporation...").

2. ADD: This Letter of Credit has been established to insure the completion of Market Centre East, as provided by the Agreement between Centre East Joint Venture c/o AmeriWest Corporation and the City of Albuquerque which Agreement is recorded in Book Misc. _____, at pages _____ to _____, of the records of the County of Bernalillo, State of New Mexico (the "Agreement").

Approved As To Form

City Attorney

Date: 11/6/87

Approved As To Form:

Assistant City Attorney

Date: 11/4/87

ALL OTHER CONDITIONS REMAIN UNCHANGED.

THIS AMENDMENT CONSTITUTES AN INTEGRAL PART OF AND MUST BE ATTACHED TO THE ORIGINAL LETTER OF CREDIT.

THIS CREDIT IS SUBJECT TO UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1983 REVISION) INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 400.

SUNWEST BANK OF ALBUQUERQUE, N.A.

AUTHORIZED SIGNATURE