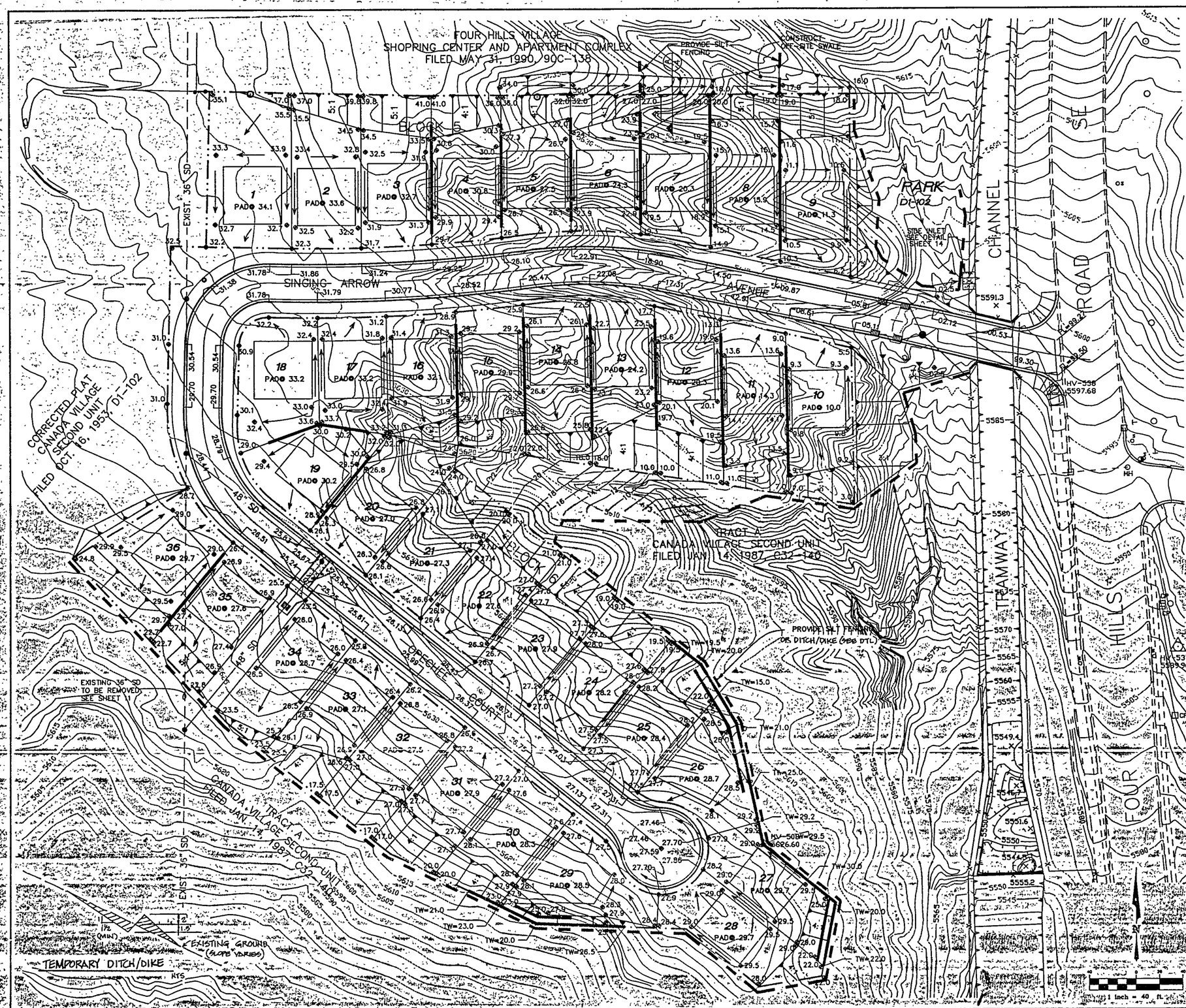


LEGEND

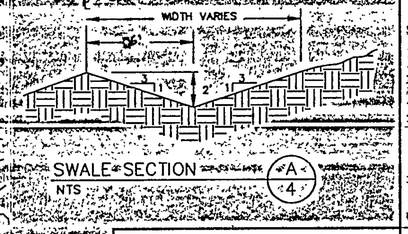
- 5615 — EXISTING CONTOUR ELEVATION
- 30.5 × EXISTING SPOT ELEVATION
- 25 — PROPOSED CONTOUR ELEVATION
- PROPERTY LINE
- ◆ 32.5 PROPOSED SPOT ELEVATION
- DIRECTION OF FLOW
- DRAINAGE SWALE
- DRAINAGE BASIN DIVIDE
- RETAINING WALL
- 50' CROWN TRANSITION
- SILT FENCING

TEMPORARY EROSION CONTROL PLAN

1. Contractor shall limit his activities to the limits shown on the plan.
2. Silt fencing shall be installed at the location indicated by the plan. All fencing shall be maintained until slope stabilization is accepted by the City of Albuquerque.
3. All side slopes and distrubed off-site areas shall be re-vegetated per City of Albuquerque Parks and General Services specifications.
4. All front yard areas shall be graded per Detail "F" on sheet 13 as a part of the temporary erosion control plan.
5. The Contractor shall maintain all temporary erosion control facilities throughout the construction phase of the project. The Owner shall maintain after acceptance of contractor work.
6. Temporary erosion control measures constructed on individual lots shall remain in place until the development of each respective lot is complete.

GENERAL NOTES FOR EARTHWORK

1. All earthwork operations shall be performed in accordance with the project Geotechnical report, which is available upon request.
2. The Contractor shall obtain a topsoil Disturbance Permit from Environmental Health prior to performing any earthwork operations.
3. The Owner shall provide to the City of Albuquerque a Certification by a Registered Professional Engineer that the site has been graded in substantial compliance with the approved Grading Plan.
4. This plan recommends positive drainage away from all structures to prohibit ponding of runoff which may cause structure settlement. Future alteration of lot grading is not recommended.
5. Irrigation within 10 feet of any proposed structure is not recommended. Introduction of irrigation water into subsurface soils adjacent to structures could result in foundation settlement.
6. BLI recommends that the Owner obtain the services of a qualified Geotechnical Engineer to test and monitor the earthwork aspects of the project.
7. Topographic and improvement survey by SURV-TEK, INC., 1995.



SWALE SECTION (A/4)
NTS

AS BUILT INFORMATION		
CONTRACTOR COMPANY NAME STAMPED BY		DATE
INSPECTOR'S INITIALS/SIGNATURE BY	INTERSECTION OF SINGING ARROW AND FOUR HILLS ROAD.	DATE
FIELD VERIFICATION BY	THE BENCHMARK IS MARKED "HV-538" ON THE CONCRETE	DATE
CORRECTED BY	SIDEWALK. ELEVATION IS 5597.68.	DATE
RECORDED BY	MICRO-FILM INFORMATION	DATE
NO.		

BENCH MARKS

SURVEY INFORMATION

NO.	FIELD NOTES BY	DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY

REVISIONS

DESIGNED BY D.L./P.B. DATE 6/95
DRAWN BY STAFF DATE 6/95
CHECKED BY D.L./P.B. DATE 6/95

BRASHER & LORENZ, INC.
4425 JUAN TABO BLVD. NE., SUITE 202
ALBUQUERQUE, NM 87111
PH (505)296-0422 FAX (505)296-0466

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

CAÑADA VILLAGE
GRADING PLAN

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
PRO. OWNR			WATER		
TRANS. DEV.			SEWER		
HYDROLOGY					

5007G-D 1=40 7/5/95

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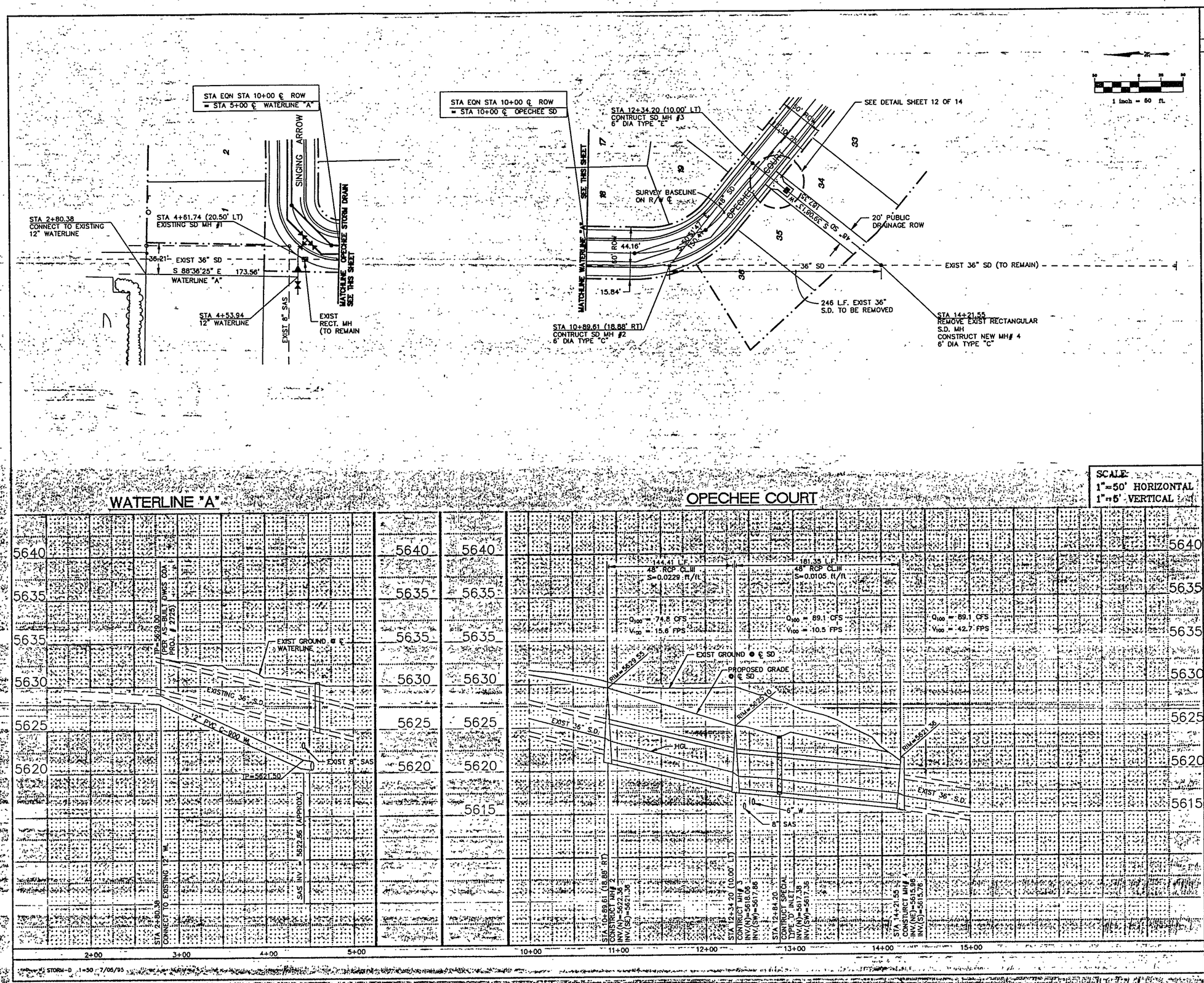
DRAWING NO. 5225.90 | MAP NO. L-22,23 | SHEET 4 OF 14

FOR INFORMATION ONLY



LEGEND

ITEM	EXISTING	PROPOSED
WATERLINE	6" W	6" W
SANITARY SEWER	8" SAS	8" SAS
STORM SEWER	36" SD	24" SD
FIRE HYDRANT		
VALVE		
WATER SERVICE (SINGLE)		
WATER SERVICE (DOUBLE)		
MANHOLE		
CURB		
DROP INLET		
OVERHEAD ELEC	OHE	
UNDERGROUND ELEC, GAS,TEL,TV	UGT	
FLOWLINE ELEV.	FL 0.14	FL 0.14
TOP OF CURB ELEV.	99.3	99.31
SPOT ELEV.	x16.7	16.7
SEWER SERVICE		
RIGHT OF WAY		
POWER POLE (GUYED)	PP	
CHAIN LINK FENCE		
CENTERLINE		
RETAINING WALL		
TOP OF ASPHALT ELEV.	TA 16.2	TA 16.2

NOTE:

1. ALL STATIONING IS BASED ON CENTERLINE OF RIGHT-OF-WAY UNLESS OTHERWISE NOTED.
2. METERS AND HYDRANTS ARE TO BE CONTAINED WITHIN ROAD R/W.
3. SANITARY SEWER SERVICES ARE STUBBED TO THE R/W LINE W/ ELECTRONIC MARKER DISCS (E.M.D.), NOT TO P.U.E.

AS BUILT INFORMATION

CONTRACTOR | DATE
NOTE: STAMED BY ENGINEER AS ACCEPTANCE BY | DATE
VERIFICATION BY | DATE
DRAWINGS CORRECTED BY | DATE
MICRO-FILM INFORMATION
RECORDED BY | DATE
NO.

BENCH MARKS

LOCATED AT THE SOUTHWEST CORNER OF THE INTERSECTION OF SINGING ARROW AND FOUR HILLS ROAD. THE BENCHMARK IS MARKED "HV-5.38" ON THE CONCRETE SIDEWALK. ELEVATION IS 5597.68.

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

PAUL D. BRASHER NEW MEXICO 7282 REGISTERED PROFESSIONAL ENGINEER 11-2-95

REVISIONS

NO.	DATE	REMARKS	BY

DESIGN

DESIGNED BY DL/PB DATE 6/95
DRAWN BY STAFF DATE 6/95
CHECKED BY DL/PB DATE 6/95

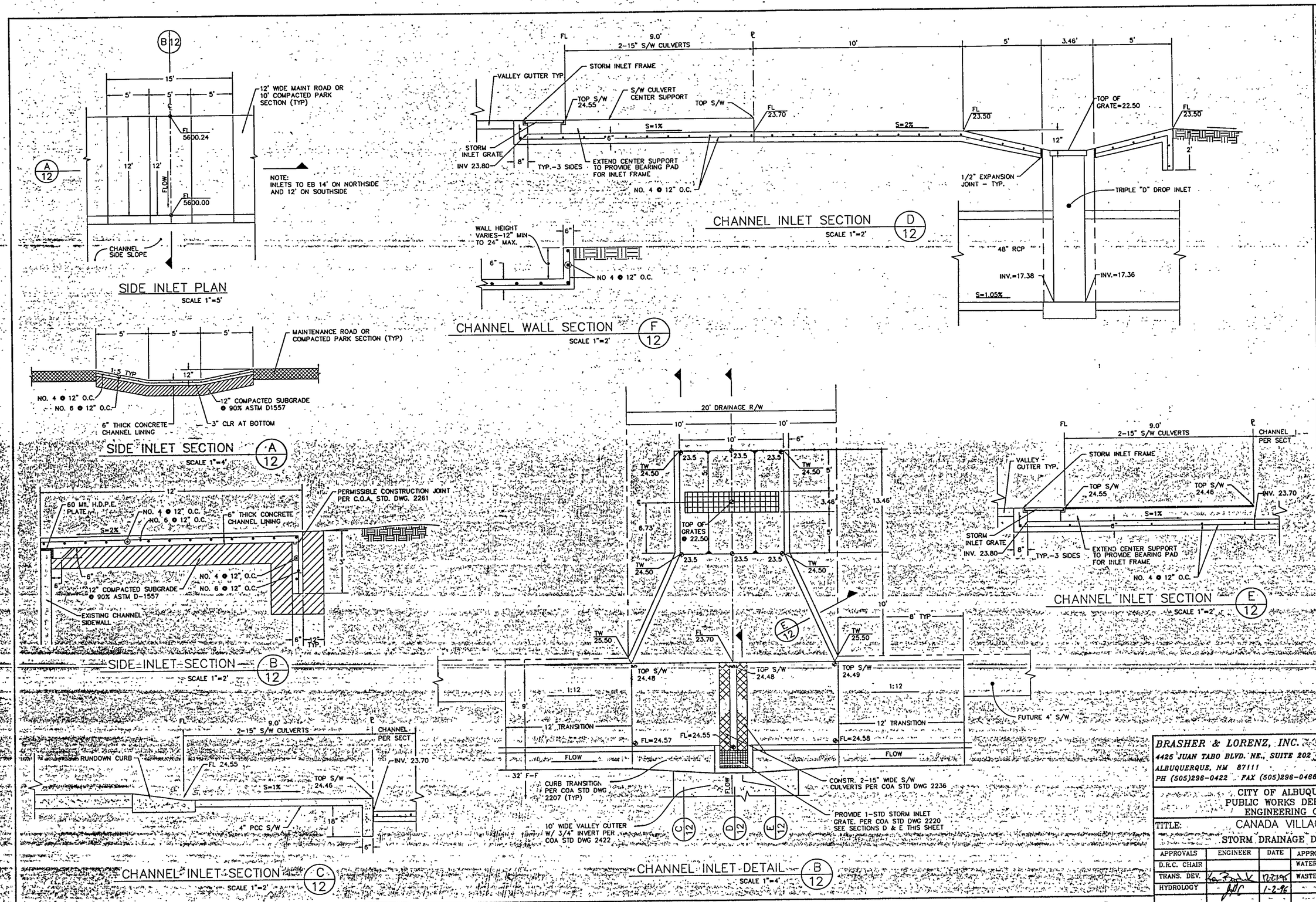
BRASHER & LORENZ, INC.
4425 JUAN TABO BLVD. NE., SUITE 202
ALBUQUERQUE, NM 87111
PH (505)296-0422 FAX (505)296-0466

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

TITLE: CANADA VILLAGE
OPECHEE COURT
STORM DRAIN AND WATERLINE "A" PLAN & PROFILE

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
D.R.C. CHAIR			WATER		
TRANS. DEV.		12-27-95	WASTEWATER		12/27/95
HYDROLOGY		1-2-96			

PROJECT NO. 5225.90 | MAP NO. L-22,23 | SHEET 11 OF 14



AS BUILT INFORMATION

CONTRACTOR | DATE
WORK STAKED BY | DATE
ACCEPTANCE BY | DATE
VERIFICATION BY | DATE
DRAWINGS CORRECTED BY | DATE

MICRO-FILM INFORMATION

RECORDED BY | DATE
MO.

BENCH MARKS

LOCATED AT THE SOUTHWEST CORNER OF THE INTERSECTION OF SINGING ARROW AND FOUR HILLS ROAD. THE BENCHMARK IS MARKED "HV-538" ON THE CONCRETE SIDEWALK. ELEVATION IS 5597.68.

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

NO	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY D.L./P.B. DATE 6/95
DRAWN BY STAFF DATE 6/95
CHECKED BY D.L./P.B. DATE 6/95

BRASHER & LORENZ, INC.
4425 JUAN TABO BLVD. NE., SUITE 202
ALBUQUERQUE, NM 87111
PH (505)296-0422 FAX (505)296-0466

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: CANADA VILLAGE
STORM DRAINAGE DETAILS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
D.R.C. CHAIR			WATER		
TRANS. DEV.		12-21-95	WASTEWATER		
HYDROLOGY		1-2-96			

PROJECT NO. 5225.90 | MAP NO. L-22,23 | SHEET 12 OF 14

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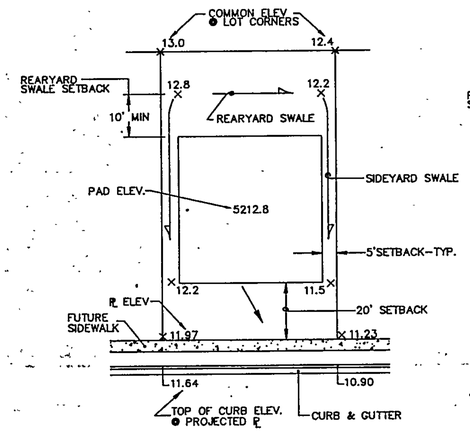
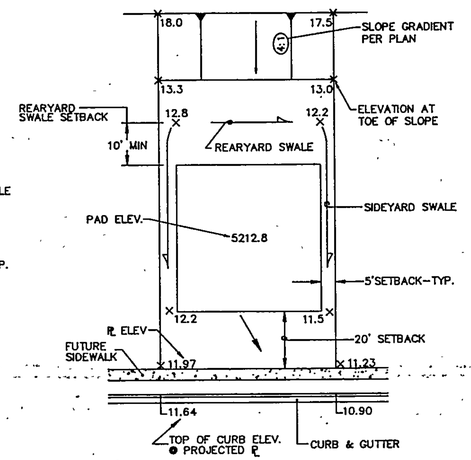
PROJECT 5007-02 1"=50' 7/05/95



TYPICAL LOT GRADING DETAIL (A)
NTS



TYPICAL LOT GRADING DETAIL (B)
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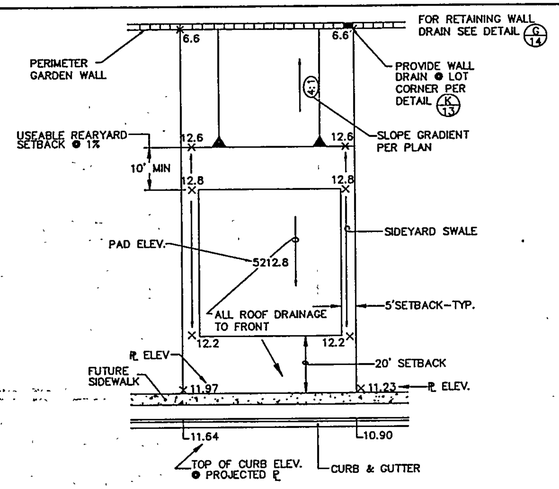

TYPICAL LOT GRADING DETAIL (C)
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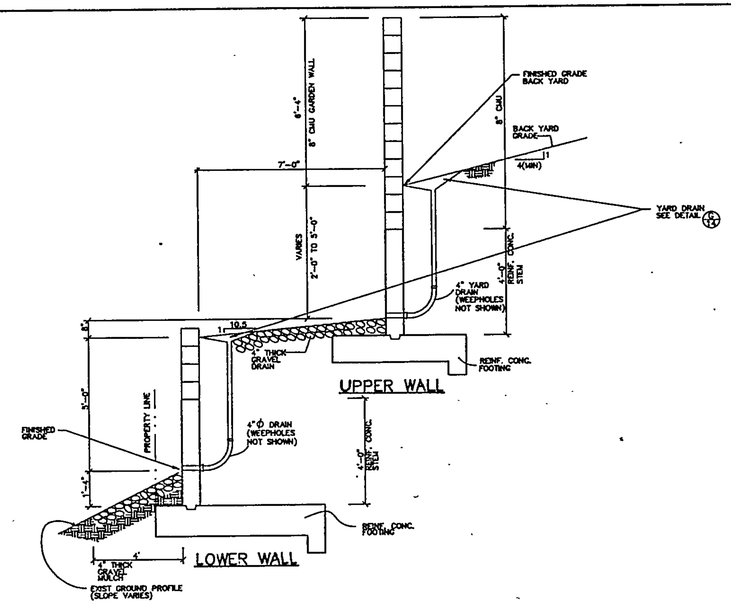

RETAINING WALL LAYOUT
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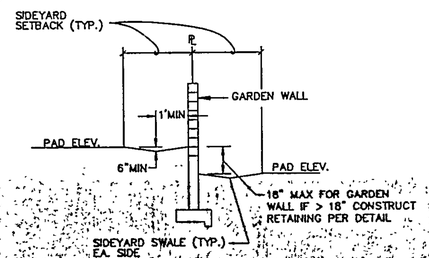

SIDEYARD GRADING DETAIL (D)
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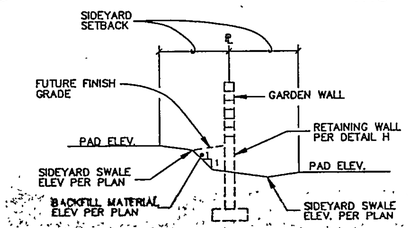
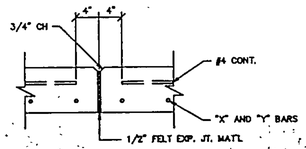
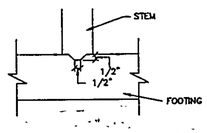


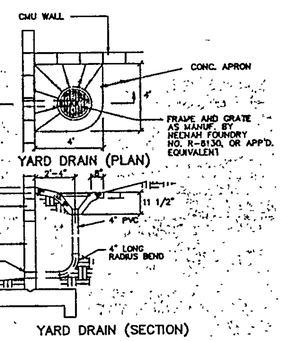
SIDEYARD GRADING AT RETAINING WALLS DETAIL (E)
NTS



STEM KEY DTL



EXPANSION JOINT DETAIL

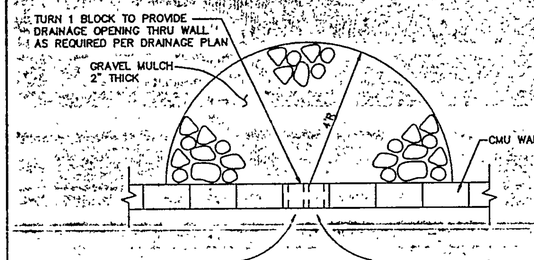


YARD DRAIN (PLAN)

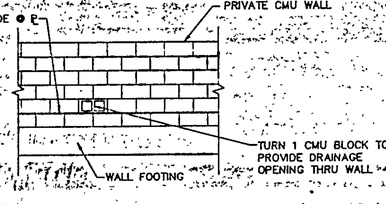
YARD DRAIN (SECTION)

NOTES:

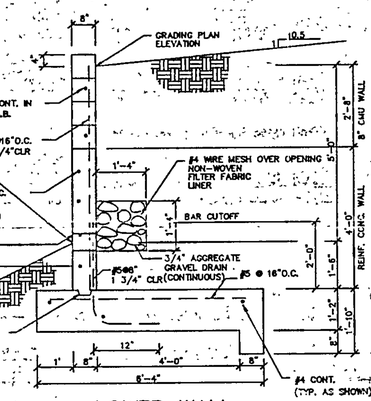
- ALL CMU CELLS SHALL BE COMPLETELY FILLED W/CONCRETE
- f'_c = 4000 psi MAX. AGGREGATE SIZE=3/4"
- f_y = 60,000 psi ASTM A-615 GR.60)
- f_m = 1500 psi
- CONTRACTOR SHALL SUBMIT TO OWNER RESULTS OF MASONRY TEST PRISMS BUILT AND TESTED PER U.B.C. STD. 24-26, U.B.C. SEC. 2405.
- FOOTING SUBGRADE AND BASE SHALL BE COMPACTED TO 95% MOD. PROCTOR PER ASTM D-1557
- 1/2" FELT EXPANSION JOINTS SHALL BE INSTALLED IN ALL CONCRETE AND MASONRY AT 30' ON CENTER AND AT SECTION CHANGES
- ALL MASONRY SHALL BE LAID IN RUNNING BOND ONLY
- ALL CONCRETE AND MASONRY VERTICAL SURFACES TO BE BACKFILLED SHALL BE COATED W/EMULSIFIED ASPHALT
- ALL WALLS ARE DESIGNED BASED ON SPECIAL INSPECTION PER U.B.C. AND ASSUMES GARDEN WALLS ON UPPER WALLS AND PROPERTY LINE WALLS ONLY, TO A HEIGHT NOT TO EXCEED 6'-4"
- PROPERTY LINE WALLS ARE DESIGNED ASSUMING ADJACENT HOUSE FOUNDATION, LOADED FACE OF WALL SYTEM, ON A FOUNDATION 1'-8" WIDE, 1'-0" DEEP, AT 1500 LBS/LF.
- WALLS ARE DESIGNED ASSUMING:
  WIND LOADING ON GARDEN WALL = 35 PSF
  UNIT WEIGHT OF BACKFILL = 120 PCF
  CONCRETE/SOIL COEFF. OF FRICTION = 0.35
  ALLOWABLE SOIL BEARING PRESSURE = 1500 PSF
  ACTIVE PRESSURE = 44 PSF/FT
  SLOPE ACTIVE PRESSURE = 44 PSF/FT
  PASSIVE PRESSURE = 400 PSF/FT
- STEM KEY IS REQUIRED IF STEM IS NOT POURED MONOLITHIC W/FOOTING.
- REINF. CLEARENCE-ALL WALL SECTIONS: 3" HEEL (BOTTOM) 2 1/2" TOE(TOP),ENDS



CMU DRAINAGE OUTLET AT CUT-OFF WALL (L/13)
SCALE: 1"=2'



TYPICAL DRAINAGE OPENING THRU CMU WALL (K/13)
PRIVATE CONTRACT - NIC



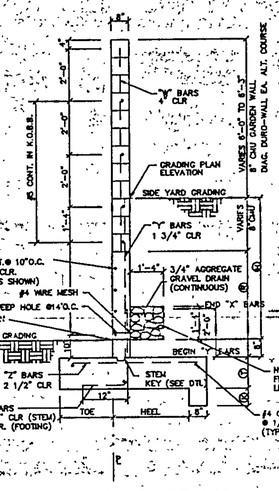
LOWER WALL
NTS

UPPER WALL

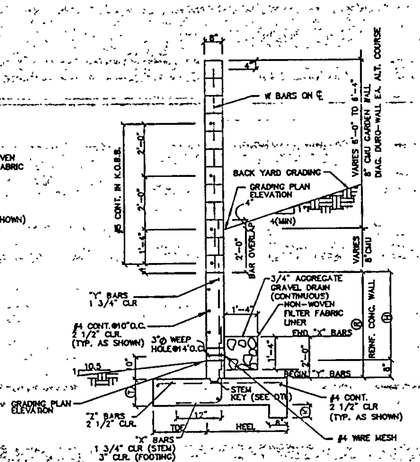
HEIGHT H	TOE	HEEL	R	W	X	Y	Z	K	T
2'-0" TO 3'-4"	1'-4"	3'-0"	2'-8"TO4'-0"	#4@32"	#4@16"	#4@16"	#4@16"	-0-	12"
3'-5" TO 5'-0"	2'-0"	3'-0"	4'-0"	#4@32"	#5@16"	#5@16"	#5@16"	6"	12"

PROPERTY LINE WALL

2'-0" TO 3'-4"	1'-4"	3'-0"	2'-8"TO4'-0"	#4@24"	#4@16"	#4@16"	#4@16"	-0-	12"
3'-5" TO 4'-8"	2'-0"	3'-0"	4'-0"	#4@16"	#5@16"	#4@16"	#5@16"	6"	12"
4'-9" TO 6'-0"	2'-0"	3'-6"	4'-0"	#4@16"	#5@14"	#5@16"	#5@16"	8"	1'-2"



PROPERTY LINE WALL
NTS



UPPER WALL
NTS

AS BUILT INFORMATION
CONTRACTOR'S WORK STAKED BY ____ DATE ____
INSPECTOR'S CONFORMANCE BY FIELD ____ DATE ____
TRANSITION BY ____ DATE ____
AS BUILTS CORRECTED BY ____ DATE ____

MICRO-FILM INFORMATION
RECORDED BY ____ DATE ____
NO. ____

BENCH MARKS
LOCATED AT THE SOUTHWEST CORNER OF THE INTERSECTION OF SINGING ARROW AND FOUR HILLS ROAD.
THE BENCHMARK IS MARKED "HV-538" ON THE CONCRETE SIDEWALK. ELEVATION IS 5597.68.

SURVEY INFORMATION
FIELD NOTES

NO.	DATE	BY

ENGINEER'S SEAL
PAUL T. BRASHER
NEW MEXICO
7423
12-29-95

NO.	DATE	REMARKS	BY
		REVISIONS	

DESIGNED BY DL/PB DATE 12/95
DRAWN BY STAFF DATE 12/95
CHECKED BY DL/PB DATE 12/95

BRASHER & LORENZ, INC.
4425 JUAN TABO BLVD. NE., SUITE 202
ALBUQUERQUE, NM 87111
PH (505)296-0422 FAX (505)296-0466

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: CANADA VILLAGE
GRADING DETAILS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
D.R.C. CHAIR			WATER		
TRANS. DEV.		12-27-95	WASTEWATER		10/31/95
HYDROLOGY		1-2-96			

PROJECT NO. 5225.90 | MAP NO. L-22,23 | SHEET 13 OF 14

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5007-01 1=50 12/12/95

DRAINAGE REPORT

FOR

CANADA VILLAGE

L22/D52

Prepared for:

MICHAEL KNIGHT, ISH, INC.
11930 Menaul Boulevard NE
Albuquerque, New Mexico 87112

Prepared By:

BRASHER & LORENZ, INC.
4425 Juan Tabo Blvd. NE Suite 202
Albuquerque, New Mexico 87111

RECEIVED
JUL 11 1995
HYDROLOGY DIVISION

May 1995

DENNIS A. LORENZ
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER

5-9-95
7-5-95

TABLE OF CONTENTS

TITLE	PAGE NO.
PURPOSE AND SCOPE	1
SITE LOCATION AND DESCRIPTION	1
EXISTING CONDITIONS	1
PROPOSED CONDITIONS	4
EROSION CONTROL	8

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SOILS MAP - FIGURE 2	3
FLOOD INSURANCE RATE MAP - FIGURE 3	5
OFF-SITE DRAINAGE CONDITIONS - FIGURE 4	6
CALCULATIONS	APPENDIX
AHYMO INPUT/OUTPUT FILES	APPENDIX
EXISTING ON-SITE DRAINAGE CONDITIONS - EXHIBIT 1	POCKET
GRADING AND DRAINAGE PLAN - EXHIBIT 2	POCKET
DRAINAGE DETAILS - EXHIBITS 3 & 4	POCKET

PURPOSE AND SCOPE

The purpose of this Drainage Report is to establish the criteria for controlling surface runoff from CANADA VILLAGE and contributing upstream areas in a manner which is acceptable to the City of Albuquerque and the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA). The plan studies the effects of existing and developed 100-year and 10-year/6-hour duration storm events on the project site. The plan outlines drainage management criteria for the development of CANADA VILLAGE.

The scope of this plan is to ensure that the project will be protected from storm runoff and that the development of this project will not increase the flooding potential of adjacent and downstream properties.

Approval of this Drainage Report shall facilitate preliminary plat and work order approval for CANADA VILLAGE.

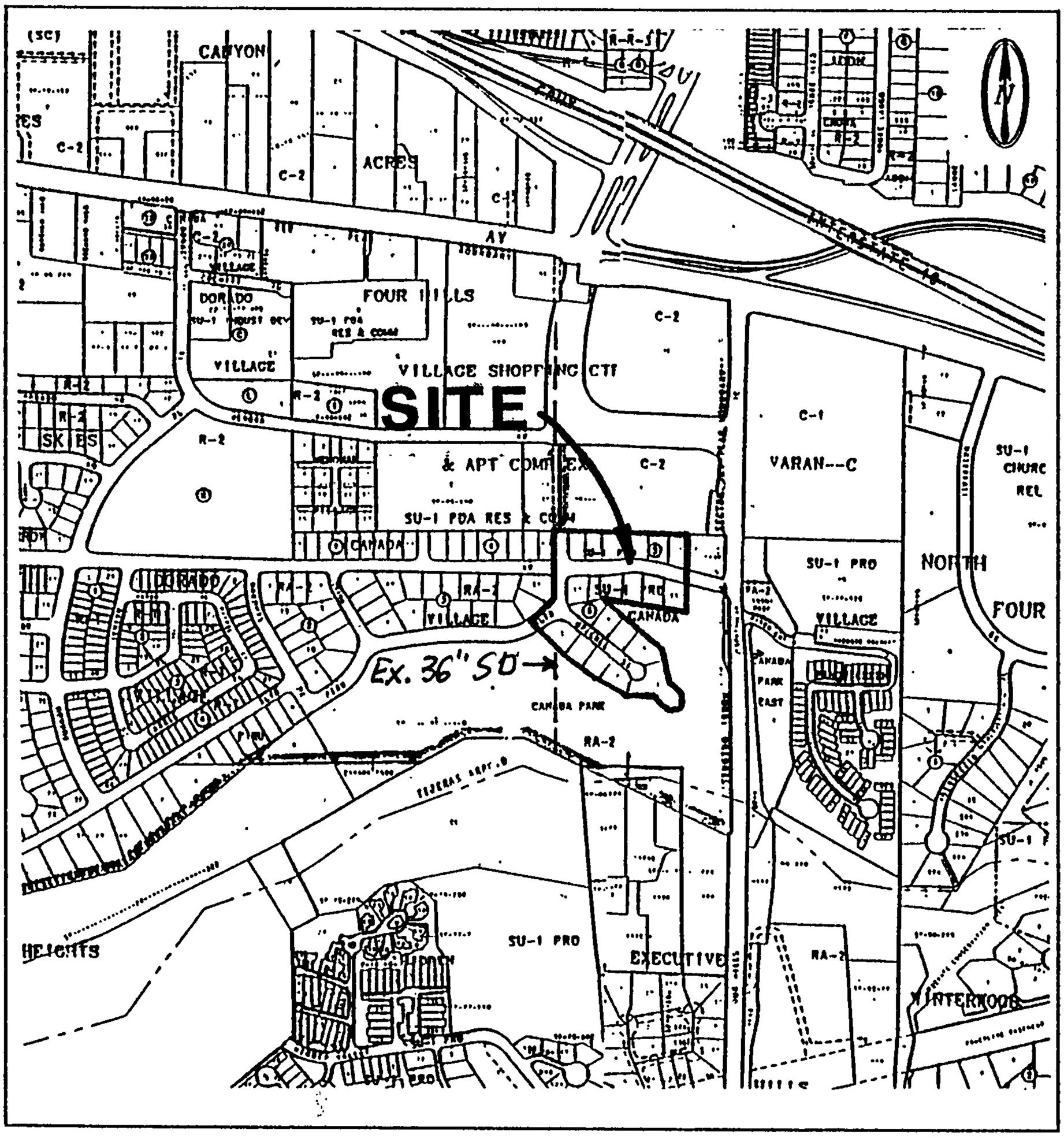
SITE LOCATION AND DESCRIPTION

CANADA VILLAGE is located in southeast Albuquerque, New Mexico, just west of Four Hills Road SE and south of Central Avenue SE (see Figure 1). The site contains approximately 7.9 acres and is described as Canada Village, Second Unit, Blocks 5 & 6. The site is presently undeveloped and covered with native vegetation. The property is located on the north escarpment of the Tijeras Arroyo. As a result, site topography is rugged, falling from uniform gradients north of the escarpment, south to the arroyo floor. The site is bounded by unimproved City park property on the east, south and west. Undeveloped commercial property is located to the north. The site gains access from Four Hills Road, an improved urban thoroughfare.

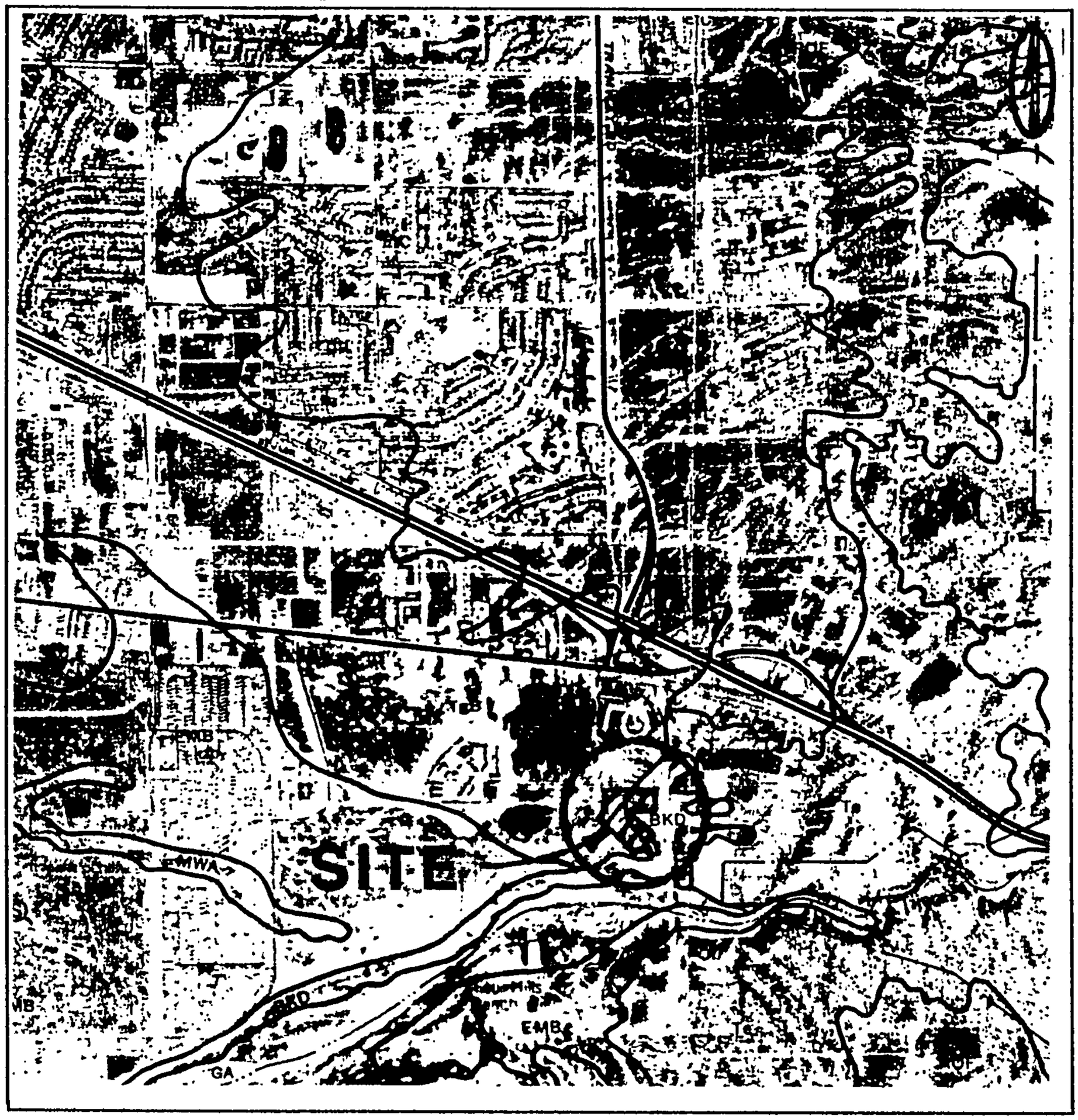
The site soils are generally composed of Bluepoint Kokan and Tijeras soils which are classified in hydrologic soil groups "A" & "B" respectively (see Figure 2). Bluepoint Kokan soils are loamy fine sands. The soil group consists of 50% Bluepoint loamy fine sand and 40% Kokan gravelly sand. On about 10% of the acreage, a high lime layer is located in stratum. Runoff is slow and erosion is moderate to severe. Tijeras soils are gravelly fine sandy loams located on gently sloping old alluvial fans. Runoff and erosion are moderate.

EXISTING DRAINAGE CONDITIONS

As mentioned above, the project site is presently undeveloped. Existing onsite topography slopes south and east to the Tramway Channel and Tijeras Arroyo. The Tramway Channel is a concrete lined channel which drains runoff from Central Avenue and other contributing basins along the Four Hills Road corridor. The subdivision is located on the north edge of the Tijeras arroyo escarpment. As shown



LOCATION MAP
Figure 1



SOILS MAP
Figure 2

by FIRM Panel 350002-0037 C (Figure 4), this site does not lie within a flood hazard zone.

The existing on-site and off-site drainage basins that effect the site and the adjcaent park property are illustrated on Figure 4 and Exhibit 1. As shown by the mapping, three off-site basins effect the site:

1. Basin "102" drains through the northwest corner of the site as sheet flow.

2. Basin "101" drains through the northeast corner within a natural swale and drains southeasterly to the Tramway Channel.

3. Basin "103" represents a portion of the commercial site located north of the project site. This basin flows around the northeast property corner and outfalls at the Tramway Channel.

CPN 3340

An existing 36-inch storm drain is located along the west subdivision boundary. This storm drain conveys flow originating from the intersection of Tramway and Central as well as Tramway and Wenonah Avenue. The existing alignment passes through lots 35 and 36. As a result, a portion of the storm drain will be relocated to allow development of lots 35 and 36. The storm drain continues south from the site to a headwall located at the north side of the Tijeras Arroyo.

All on-site basins drain directly to the Tramway Channel or Tijeras Arroyo.

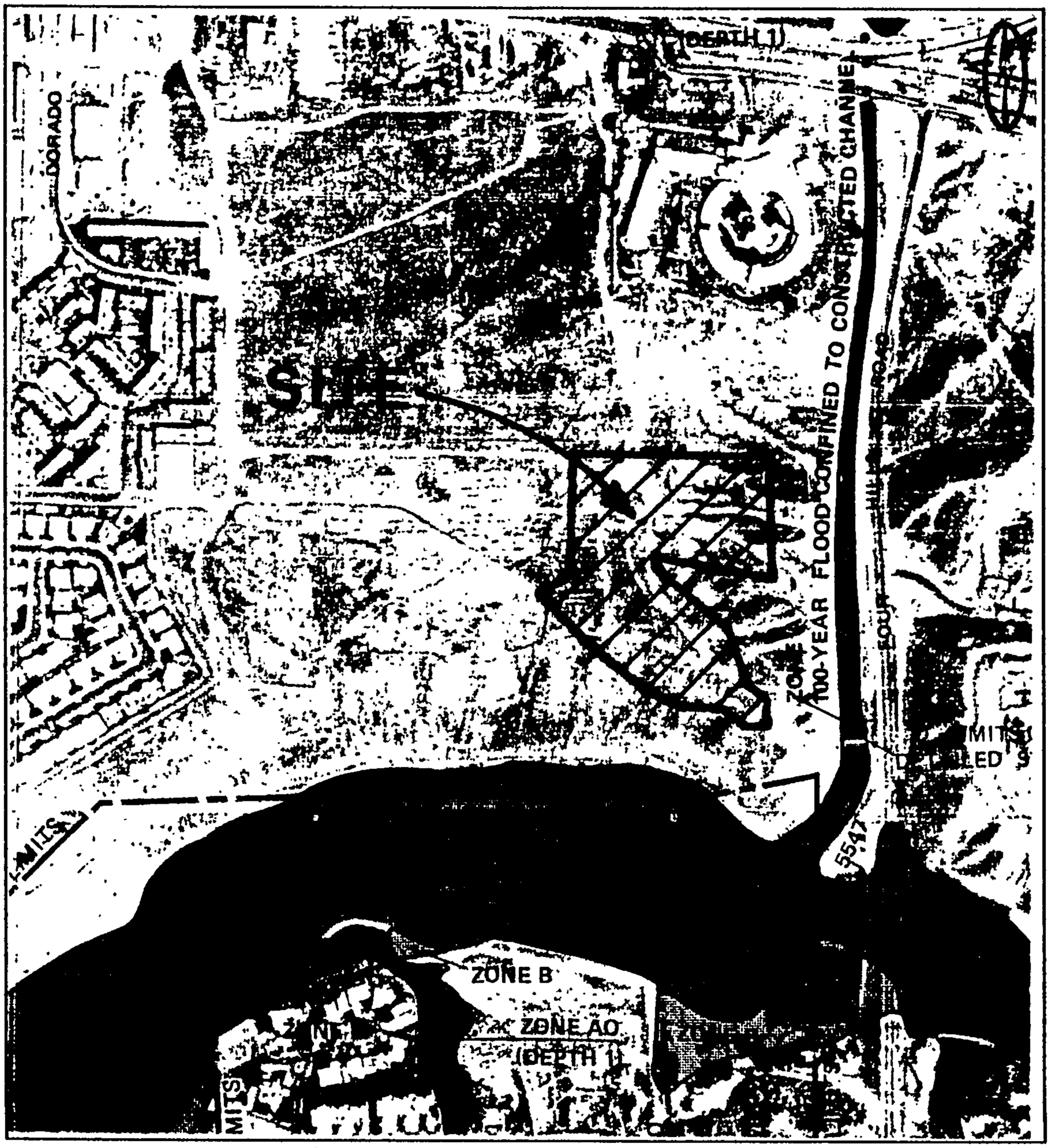
PROPOSED DRAINAGE CONDITIONS

The proposed drainage conditions for the project site are illustrated on Exhibit ~~1~~ 2. As shown by the Plan, the site is divided into 5 drainage basins described as follows:

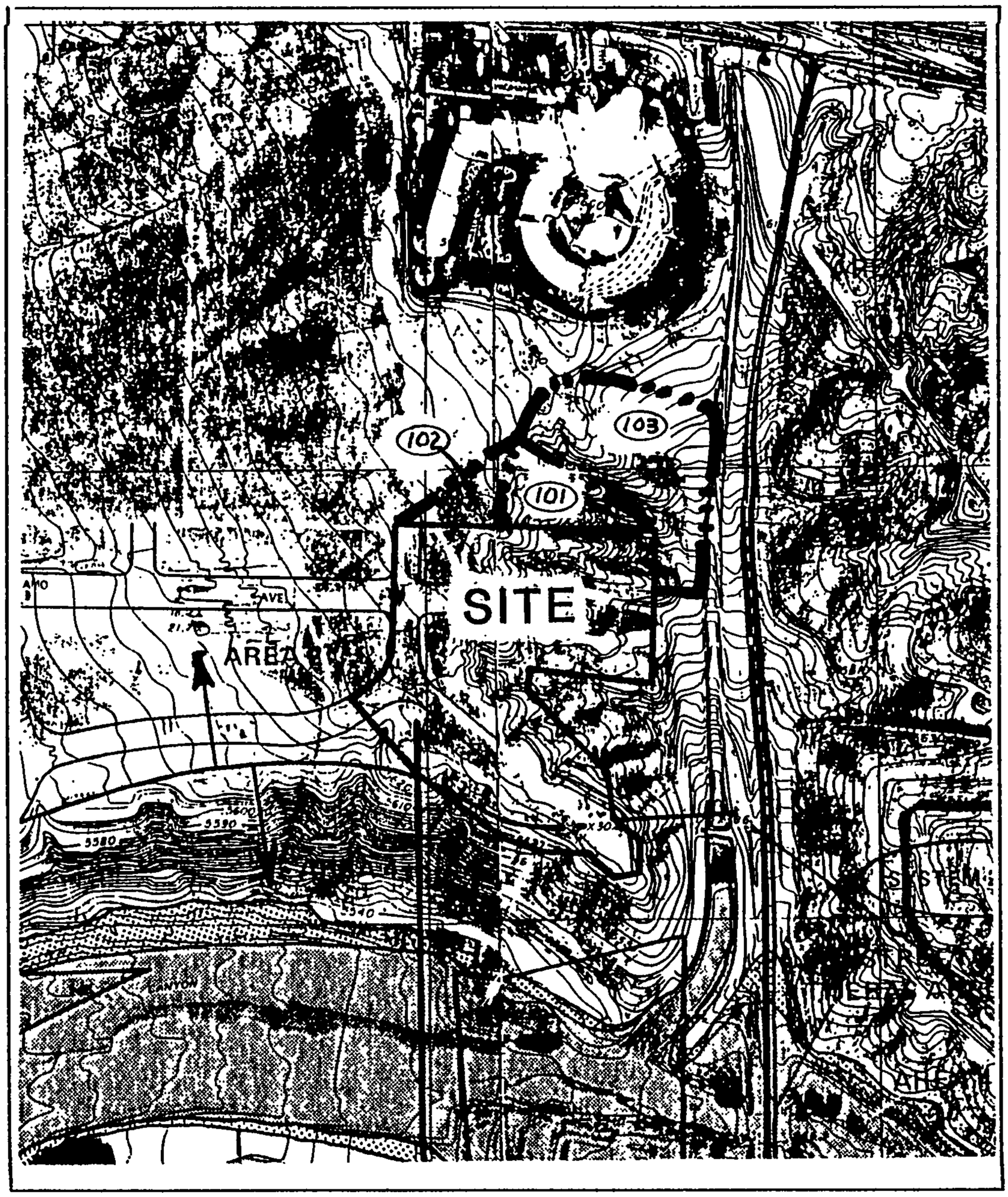
1. Basin "104" drains into Singing Arrow Avenue, which conveys runoff east to a series of inlets which outfall to the Tramway Channel.

2. Basin "105" drains into Opechee Court, which conveys runoff to a special inlet structure. The inlet structure drains to a 48-inch storm drain which drains to the Tijreas Arroyo via an existing 36-inch storm drain.

3. Basins "106 through 129" represent the rear yard areas which are positioned too low to drain to the interior public streets. These basins will drain through the perimeter walls to the park property per details provided on the Plan.



FLOOD INSURANCE RATE MAP
Figure 3



OFF-SITE DRAINAGE CONDITIONS
Figure 4

Permission has been granted by City Parks & General Services to dischage developed runoff into the park land under the following conditions:

1. That only the rear yard areas drain to the park. All roof drainage must drain to the interior streets.

2. That the discharge points be kept to a minimum.

3. That flow velocities at the discharge points be reduced to non-erosive levels to mitigate erosion.

Presently the entire project site drains into the park lands. The undeveloped flowrate and volume are as follows:

Site area = 7.9 acres

Contributing drainage basins are: 104 thru 108 (see Exhibit 1)

Undeveloped Q_{100} = 25.2 cfs Volume = 0.75 af = 32,670 cf

Under developed conditions only the rear yards of Lots 10-16 and 20-36 will discharge to the park. The developed flowrate and volume are as follows:

Basin area = 1.62 acres

Contributing drainage basins are: 106 thru 129 (see Exhibit 2)

Developed Q_{100} = 6.2 cfs Volume = 0.18 af = 7,840 cf

As shown by the Plan and calculations, the development of this property will not increase the flooding potential of the adjacent park property. Since a majority of the site wil drain internally to the public street network and existing public storm drainage facilities, the surface area draining to the park property will be greatly reduced, and hence, developed peak flow rates have been reduced to roughly 25% of the undeveloped flow rates. The details and calculations demonstrate that developed runoff will not present an erosion problem at the project interface with the park.

As shown by the Plan, the site will be effected by three off-site drainage basins as follows:

1. Basin "102" will drain around the northwest corner of the site as sheet flow.

2. Basin "101" will drain around the northeast corner within a construced

swale, and merge with Basin "C". The construced swale is necesary to drain a low point which results along the north property line. Permission has been obtained from the adjoining property owner to perform this work.

3. Basin "103" combines with Basin "B" and flows around the northeast property corner and outfalls at the Tramway Channel.

EROSION CONTROL

Temporary erosion control measures are recommended during the construction phase of the project to limit the discharge of sediment into adjoining public streets and park property. Temporary erosion control facilities will be required along the project boundaries. Complete details and exact location of the erosion control facilities are specified on the Grading and Drainage Plan for CANADA VILLAGE (Exhibit 2), which will be provided with the work order planset. All temporary erosion control facilities shall be maintained by the contractor throughout the construction phase.

APPENDIX

AHYMO

INPUT FILES

```
*S            HYDROLOGY FOR UNDEVELOPED BASINS IN CANADA VILLAGE (PRECAN.DAT)
*S            100-YEAR RAINFALL
START               TIME=0.0 PUNCH CODE=0  PRINT LINE=0
*S COMPUTE BASINS
RAINFALL            TYPE=1  RAIN QUARTER=0   RAIN ONE=2.07
                    RAIN SIX=2.65  RAIN DAY=3.30  DT=0.033333
COMPUTE NM HYD      ID=1   HYD NO= 101.0   DA=0.00103 SQ MI
                    PER A=0.0  PER B=0.0  PER C=100.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=1 CODE=1
COMPUTE NM HYD      ID=2   HYD NO=102.0    DA=0.000545 SQ MI
                    PER A=100.0  PER B=0.0  PER C=0.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=2 CODE=1
COMPUTE NM HYD      ID=3   HYD NO=103.0    DA=0.003766 SQ MI
                    PER A=0.0  PER B=0.0  PER C=100.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=3 CODE=1
COMPUTE NM HYD      ID=4   HYD NO=104.0    DA=0.001976 SQ MI
                    PER A=0.0  PER B=0.0  PER C=100.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=4 CODE=1
COMPUTE NM HYD      ID=5   HYD NO=105.0    DA=0.0022795 SQ MI
                    PER A=0.0  PER B=0.0  PER C=100.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=5 CODE=1
COMPUTE NM HYD      ID=6   HYD NO=106.0    DA=0.001628 SQ MI
                    PER A=0.0  PER B=0.0   PER C=100.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=6 CODE=1
COMPUTE NM HYD      ID=7   HYD NO=107.0    DA=0.0021396 SQ MI
                    PER A=0.0  PER B=0.0   PER C=100.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=7 CODE=1
COMPUTE NM HYD      ID=8   HYD NO=108.0    DA=0.0045626 SQ MI
                    PER A=50.0 PER B=0.0   PER C=50.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=8 CODE=1
*
FINISH
```

```
*S            HYDROLOGY FOR CANADA VILLAGE (CANADA.DAT)
*S            100-YEAR RAINFALL
START               TIME=0.0 PUNCH CODE=0  PRINT LINE=0
*S COMPUTE BASINS
RAINFALL            TYPE=1  RAIN QUARTER=0   RAIN ONE=2.07
                    RAIN SIX=2.65  RAIN DAY=3.30  DT=0.033333
COMPUTE NM HYD      ID=1   HYD NO= 101.0   DA=0.00103 SQ MI
                    PER A=0.0  PER B=0.0  PER C=10.0
                    PER D=90.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=1 CODE=1
COMPUTE NM HYD      ID=2   HYD NO=102.0    DA=0.000545 SQ MI
                    PER A=0.0  PER B=0.0  PER C=10.0
                    PER D=90.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=2 CODE=1
COMPUTE NM HYD      ID=3   HYD NO=103.0    DA=0.003766 SQ MI
                    PER A=0.0  PER B=0.0  PER C=10.0
                    PER D=90.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=3 CODE=1
COMPUTE NM HYD      ID=4   HYD NO=104.0    DA=0.00479 SQ MI
                    PER A=0.0  PER B=21.5  PER C=21.5
                    PER D=57.0 TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=4 CODE=1
COMPUTE NM HYD      ID=5   HYD NO=105.0    DA=0.00523 SQ MI
                    PER A=0.0  PER B=15.76 PER C=15.76
                    PER D=68.45 TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=5 CODE=1
COMPUTE NM HYD      ID=6   HYD NO=106.0    DA=0.000123 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=6 CODE=1
COMPUTE NM HYD      ID=7   HYD NO=107.0    DA=0.000128 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=7 CODE=1
COMPUTE NM HYD      ID=8   HYD NO=108.0    DA=0.000138 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=8 CODE=1
COMPUTE NM HYD      ID=9   HYD NO=109.0    DA=0.000143 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=9 CODE=1
COMPUTE NM HYD      ID=10  HYD NO=110.0    DA=0.000128 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=10 CODE=1
COMPUTE NM HYD      ID=11  HYD NO=111.0    DA=0.000108 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=11 CODE=1
COMPUTE NM HYD      ID=12  HYD NO=112.0    DA=0.0000968 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=12 CODE=1
COMPUTE NM HYD      ID=13  HYD NO=113.0    DA=0.0000968 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=13 CODE=1
COMPUTE NM HYD      ID=14  HYD NO=114.0    DA=0.000108 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
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                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=14 CODE=1
COMPUTE NM HYD      ID=15  HYD NO=115.0    DA=0.000108 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=15 CODE=1
COMPUTE NM HYD      ID=16  HYD NO=116.0    DA=0.000108 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=16 CODE=1
COMPUTE NM HYD      ID=17  HYD NO=117.0    DA=0.000108 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=17 CODE=1
COMPUTE NM HYD      ID=18  HYD NO=118.0    DA=0.000101 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=18 CODE=1
COMPUTE NM HYD      ID=19  HYD NO=119.0    DA=0.0000448 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=19 CODE=1
COMPUTE NM HYD      ID=20  HYD NO=120.0    DA=0.0000807 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=20 CODE=1
COMPUTE NM HYD      ID=21  HYD NO=121.0    DA=0.0000807 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=21 CODE=1
COMPUTE NM HYD      ID=22  HYD NO=122.0    DA=0.0000628 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=22 CODE=1
COMPUTE NM HYD      ID=23  HYD NO=123.0    DA=0.0000861 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=23 CODE=1
COMPUTE NM HYD      ID=24  HYD NO=124.0    DA=0.000108 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=24 CODE=1
COMPUTE NM HYD      ID=25  HYD NO=107.0    DA=0.000118 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=25 CODE=1
COMPUTE NM HYD      ID=26  HYD NO=126.0    DA=0.000118 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=26 CODE=1
COMPUTE NM HYD      ID=27  HYD NO=127.0    DA=0.000104 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=27 CODE=1
COMPUTE NM HYD      ID=28  HYD NO=128.0    DA=0.0000968 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=28 CODE=1
COMPUTE NM HYD      ID=29  HYD NO=129.0    DA=0.000113 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
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                    PER D=33.0  TP=0.133333HR MASSRAIN=-1
PRINT HYD           ID=29 CODE=1
ADD HYD             ID=6 HYD NO=106.01 ID I=6 ID II=7
PRINT HYD           ID=6 CODE=1
ADD HYD             ID=6 HYD NO=106.02 ID I=6 ID II=8
PRINT HYD           ID=6 CODE=1
ADD HYD             ID=6 HYD NO=106.03 ID I=6 ID II=9
PRINT HYD           ID=6 CODE=1
ADD HYD             ID=6 HYD NO=106.04 ID I=6 ID II=10
PRINT HYD           ID=6 CODE=1
ADD HYD             ID=6 HYD NO=106.05 ID I=6 ID II=11
PRINT HYD           ID=6 CODE=1
ADD HYD             ID=6 HYD NO=106.06 ID I=6 ID II=12
PRINT HYD           ID=6 CODE=1
ADD HYD             ID=13 HYD NO=113.01 ID I=13 ID II=14
PRINT HYD           ID=13 CODE=1
ADD HYD             ID=13 HYD NO=113.02 ID I=13 ID II=15
PRINT HYD           ID=13 CODE=1
ADD HYD             ID=13 HYD NO=113.03 ID I=13 ID II=16
PRINT HYD           ID=13 CODE=1
ADD HYD             ID=13 HYD NO=113.04 ID I=13 ID II=17
PRINT HYD           ID=13 CODE=1
ADD HYD             ID=13 HYD NO=113.05 ID I=13 ID II=18
PRINT HYD           ID=13 CODE=1
ADD HYD             ID=13 HYD NO=113.06 ID I=13 ID II=19
PRINT HYD           ID=13 CODE=1
ADD HYD             ID=20 HYD NO=120.01 ID I=20 ID II=21
PRINT HYD           ID=20 CODE=1
ADD HYD             ID=22 HYD NO=122.01 ID I=22 ID II=23
PRINT HYD           ID=22 CODE=1
ADD HYD             ID=22 HYD NO=122.02 ID I=22 ID II=24
PRINT HYD           ID=22 CODE=1
ADD HYD             ID=22 HYD NO=122.03 ID I=22 ID II=25
PRINT HYD           ID=22 CODE=1
ADD HYD             ID=22 HYD NO=122.04 ID I=22 ID II=26
PRINT HYD           ID=22 CODE=1
ADD HYD             ID=22 HYD NO=122.05 ID I=22 ID II=27
PRINT HYD           ID=22 CODE=1
ADD HYD             ID=22 HYD NO=122.06 ID I=22 ID II=28
PRINT HYD           ID=22 CODE=1
ADD HYD             ID=22 HYD NO=122.07 ID I=22 ID II=29
PRINT HYD           ID=22 CODE=1
*
FINISH
```

AHYMO

SUMMARY OUTPUT FILES

			AHYMO SUMMARY				
Precipitation Zone 4					P360 = 2.90 in		
BASIN	AREA	Aa	Ab	Ac	Ad	Q100	VOL100
	acres	%A	%A	%A	%A	cfs	af
EXISTING CONDITION:							
101	0.66	0	0	100	0	2.3	0.07
102	0.04	100	0	0	0	0.7	0.01
103	2.41	0	0	100	0	8.2	0.25
104	1.27	0	0	100	0	4.3	0.13
105	1.46	0	0	100	0	5.0	0.15
106	1.04	0	0	100	0	3.6	0.11
107	1.37	0	0	100	0	4.7	0.14
108	2.91	50	0	50	0	7.6	0.22
DEVELOPED CONDITION:							
101	0.66	0	0	10	90	3.1	0.12
102	0.04	0	0	10	90	1.7	0.06
103	2.41	0	0	10	90	11.4	0.45
104	3.07	0	21.50	21.50	57.00	12.4	0.46
105	3.35	0	15.76	15.76	68.45	14.3	0.55
106	0.08	1	33	33	33	0.3	0.01
107	0.08	1	33	33	33	0.3	0.01
108	0.09	1	33	33	33	0.3	0.01
109	0.09	1	33	33	33	0.4	0.01
110	0.08	1	33	33	33	0.3	0.01
111	0.07	1	33	33	33	0.3	0.01
112	0.06	1	33	33	33	0.2	0.01
113	0.06	1	33	33	33	0.2	0.01
114	0.07	1	33	33	33	0.3	0.01
115	0.07	1	33	33	33	0.3	0.01
116	0.07	1	33	33	33	0.3	0.01
117	0.07	1	33	33	33	0.3	0.01
118	0.06	1	33	33	33	0.3	0.01
119	0.03	1	33	33	33	0.1	0.01
120	0.05	1	33	33	33	0.2	0.01
121	0.05	1	33	33	33	0.2	0.01
122	0.04	1	33	33	33	0.2	0.01
123	0.06	1	33	33	33	0.2	0.01
124	0.07	1	33	33	33	0.3	0.01
125	0.08	1	33	33	33	0.3	0.01
126	0.08	1	33	33	33	0.3	0.01
127	0.06	1	33	33	33	0.3	0.01
128	0.06	1	33	33	33	0.2	0.01
129	0.07	1	33	33	33	0.3	0.01
106-112	0.56	1	33	33	33	2.1	0.06
113-119	0.44	1	33	33	33	1.7	0.05
120-121	0.10	1	33	33	33	0.4	0.01
122-129	0.52	1	33	33	33	2.0	0.06

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =05/09/1995
INPUT FILE = PRECAN.DAT USER NO.= BRASHERE.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
*S	HYDROLOGY FOR UNDEVELOPED BASINS IN CANADA VILLAGE (PRECAN.DAT)									
*S	100-YEAR RAINFALL									
START										TIME= .00
*S COMPUTE BASINS										
RAINFALL TYPE= 1										RAIN6= 2.650
COMPUTE NM HYD	101.00	-	1	.00103	2.25	.070	1.27174	1.500	3.414	PER IMP= .00
COMPUTE NM HYD	102.00	-	2	.00055	.66	.019	.65533	1.500	1.894	PER IMP= .00
COMPUTE NM HYD	103.00	-	3	.00377	8.20	.255	1.27174	1.500	3.403	PER IMP= .00
COMPUTE NM HYD	104.00	-	4	.00198	4.31	.134	1.27174	1.500	3.406	PER IMP= .00
COMPUTE NM HYD	105.00	-	5	.00228	4.97	.155	1.27174	1.500	3.405	PER IMP= .00
COMPUTE NM HYD	106.00	-	6	.00163	3.55	.110	1.27174	1.500	3.408	PER IMP= .00
COMPUTE NM HYD	107.00	-	7	.00214	4.66	.145	1.27174	1.500	3.405	PER IMP= .00
COMPUTE NM HYD	108.00	-	8	.00456	7.56	.222	.91310	1.500	2.590	PER IMP= .00
FINISH										

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =05/08/1995
INPUT FILE = canada.dat USER NO.= BRASHERE.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
*S	HYDROLOGY FOR CANADA VILLAGE (CANADA.DAT)									
*S	100-YEAR RAINFALL									
START										TIME= .00
*S COMPUTE BASINS										
RAINFALL TYPE= 1										RAIN6= 2.650
COMPUTE NM HYD	101.00	-	1	.00103	3.13	.125	2.28284	1.500	4.742	PER IMP= 90.00
COMPUTE NM HYD	102.00	-	2	.00055	1.66	.066	2.28284	1.500	4.769	PER IMP= 90.00
COMPUTE NM HYD	103.00	-	3	.00377	11.38	.459	2.28284	1.500	4.720	PER IMP= 90.00
COMPUTE NM HYD	104.00	-	4	.00479	12.44	.467	1.82814	1.500	4.059	PER IMP= 57.00
COMPUTE NM HYD	105.00	-	5	.00523	14.30	.552	1.97940	1.500	4.273	PER IMP= 68.47
COMPUTE NM HYD	106.00	-	6	.00012	.30	.010	1.50634	1.500	3.838	PER IMP= 33.00
COMPUTE NM HYD	107.00	-	7	.00013	.31	.010	1.50634	1.500	3.838	PER IMP= 33.00
COMPUTE NM HYD	108.00	-	8	.00014	.34	.011	1.50634	1.500	3.808	PER IMP= 33.00
COMPUTE NM HYD	109.00	-	9	.00014	.35	.011	1.50633	1.500	3.808	PER IMP= 33.00
COMPUTE NM HYD	110.00	-	10	.00013	.31	.010	1.50634	1.500	3.838	PER IMP= 33.00
COMPUTE NM HYD	111.00	-	11	.00011	.27	.009	1.50634	1.500	3.888	PER IMP= 33.00
COMPUTE NM HYD	112.00	-	12	.00010	.24	.008	1.50634	1.500	3.928	PER IMP= 33.00
COMPUTE NM HYD	113.00	-	13	.00010	.24	.008	1.50634	1.500	3.928	PER IMP= 33.00
COMPUTE NM HYD	114.00	-	14	.00011	.27	.009	1.50634	1.500	3.888	PER IMP= 33.00
COMPUTE NM HYD	115.00	-	15	.00011	.27	.009	1.50634	1.500	3.888	PER IMP= 33.00
COMPUTE NM HYD	116.00	-	16	.00011	.27	.009	1.50634	1.500	3.888	PER IMP= 33.00
COMPUTE NM HYD	117.00	-	17	.00011	.27	.009	1.50634	1.500	3.888	PER IMP= 33.00
COMPUTE NM HYD	118.00	-	18	.00010	.25	.008	1.50634	1.500	3.888	PER IMP= 33.00
COMPUTE NM HYD	119.00	-	19	.00004	.12	.004	1.50634	1.500	4.071	PER IMP= 33.00
COMPUTE NM HYD	120.00	-	20	.00008	.21	.006	1.50634	1.500	3.994	PER IMP= 33.00
COMPUTE NM HYD	121.00	-	21	.00008	.21	.006	1.50634	1.500	3.994	PER IMP= 33.00
COMPUTE NM HYD	122.00	-	22	.00006	.16	.005	1.50634	1.500	4.071	PER IMP= 33.00
COMPUTE NM HYD	123.00	-	23	.00009	.22	.007	1.50633	1.500	3.947	PER IMP= 33.00
COMPUTE NM HYD	124.00	-	24	.00011	.27	.009	1.50634	1.500	3.888	PER IMP= 33.00
COMPUTE NM HYD	107.00	-	25	.00012	.29	.009	1.50633	1.500	3.851	PER IMP= 33.00
COMPUTE NM HYD	126.00	-	26	.00012	.29	.009	1.50633	1.500	3.851	PER IMP= 33.00
COMPUTE NM HYD	127.00	-	27	.00010	.26	.008	1.50634	1.500	3.888	PER IMP= 33.00
COMPUTE NM HYD	128.00	-	28	.00010	.24	.008	1.50634	1.500	3.928	PER IMP= 33.00
COMPUTE NM HYD	129.00	-	29	.00011	.28	.009	1.50634	1.500	3.873	PER IMP= 33.00
ADD HYD	106.01	6& 7	6	.00025	.62	.020	1.50541	1.500	3.838	
ADD HYD	106.02	6& 8	6	.00039	.95	.031	1.50539	1.500	3.827	
ADD HYD	106.03	6& 9	6	.00053	1.30	.043	1.50538	1.500	3.822	
ADD HYD	106.04	6&10	6	.00066	1.62	.053	1.50538	1.500	3.825	
ADD HYD	106.05	6&11	6	.00077	1.88	.062	1.50533	1.500	3.834	
ADD HYD	106.06	6&12	6	.00086	2.13	.069	1.50530	1.500	3.845	
ADD HYD	113.01	13&14	13	.00020	.51	.016	1.50503	1.500	3.907	
ADD HYD	113.02	13&15	13	.00031	.78	.025	1.50502	1.500	3.900	
ADD HYD	113.03	13&16	13	.00042	1.05	.034	1.50502	1.500	3.897	
ADD HYD	113.04	13&17	13	.00053	1.32	.042	1.50501	1.500	3.895	
ADD HYD	113.05	13&18	13	.00063	1.57	.051	1.50501	1.500	3.894	
ADD HYD	113.06	13&19	13	.00067	1.69	.054	1.50049	1.500	3.906	
ADD HYD	120.01	20&21	20	.00016	.41	.013	1.46361	1.500	3.994	
ADD HYD	122.01	22&23	22	.00015	.38	.012	1.48092	1.500	3.999	
ADD HYD	122.02	22&24	22	.00026	.65	.020	1.49104	1.500	3.952	

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	122.03	22&25	22	.00037	.94	.030	1.49557	1.500	3.920	
ADD HYD	122.04	22&26	22	.00049	1.23	.039	1.49792	1.500	3.904	
ADD HYD	122.05	22&27	22	.00060	1.49	.048	1.49915	1.500	3.901	
ADD HYD	122.06	22&28	22	.00069	1.73	.055	1.49998	1.500	3.905	
ADD HYD	122.07	22&29	22	.00081	2.01	.065	1.50075	1.500	3.900	
FINISH										

AHYMO

OUTPUT FILES

```
    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
         RUN DATE (MON/DAY/YR) = 05/08/1995
         START TIME (HR:MIN:SEC) = 10:37:36     USER NO.= BRASHERE.I01
         INPUT FILE = canada.dat

*S            HYDROLOGY FOR CANADA VILLAGE (CANADA.DAT)
*S            100-YEAR RAINFALL
START              TIME=0.0 PUNCH CODE=0  PRINT LINE=0
*S COMPUTE BASINS
RAINFALL           TYPE=1  RAIN QUARTER=0   RAIN ONE=2.07
                   RAIN SIX=2.65  RAIN DAY=3.30  DT=0.033333

               COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
               DT =    .033333 HOURS       END TIME =     5.999940 HOURS
                  .0000   .0044   .0089   .0136   .0183   .0231   .0280
                  .0330   .0381   .0434   .0487   .0543   .0599   .0657
                  .0717   .0778   .0841   .0906   .0973   .1043   .1114
                  .1188   .1265   .1345   .1428   .1514   .1604   .1699
                  .1798   .1902   .2012   .2069   .2130   .2196   .2337
                  .2651   .3135   .3830   .4779   .6025   .7615   .9594
                 1.2009  1.4244  1.5178  1.5968  1.6670  1.7309  1.7897
                 1.8443  1.8954  1.9432  1.9882  2.0307  2.0708  2.1088
                 2.1448  2.1789  2.2113  2.2420  2.2712  2.2787  2.2859
                 2.2928  2.2994  2.3058  2.3120  2.3179  2.3237  2.3294
                 2.3348  2.3402  2.3453  2.3504  2.3554  2.3602  2.3649
                 2.3696  2.3741  2.3786  2.3829  2.3872  2.3914  2.3956
                 2.3997  2.4037  2.4076  2.4115  2.4153  2.4191  2.4228
                 2.4265  2.4301  2.4337  2.4372  2.4407  2.4441  2.4475
                 2.4509  2.4542  2.4575  2.4607  2.4639  2.4671  2.4702
                 2.4733  2.4764  2.4794  2.4824  2.4854  2.4884  2.4913
                 2.4942  2.4971  2.4999  2.5027  2.5055  2.5083  2.5110
                 2.5138  2.5165  2.5192  2.5218  2.5245  2.5271  2.5297
                 2.5322  2.5348  2.5373  2.5399  2.5424  2.5449  2.5473
                 2.5498  2.5522  2.5546  2.5570  2.5594  2.5618  2.5641
                 2.5665  2.5688  2.5711  2.5734  2.5757  2.5780  2.5802
                 2.5824  2.5847  2.5869  2.5891  2.5913  2.5935  2.5956
                 2.5978  2.5999  2.6020  2.6042  2.6063  2.6084  2.6104
                 2.6125  2.6146  2.6166  2.6187  2.6207  2.6227  2.6247
                 2.6267  2.6287  2.6307  2.6327  2.6346  2.6366  2.6385
                 2.6405  2.6424  2.6443  2.6462  2.6481  2.6500

COMPUTE NM HYD     ID=1   HYD NO= 101.0   DA=0.00103 SQ MI
                   PER A=0.0  PER B=0.0  PER C=10.0
                   PER D=90.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.6589    CFS   UNIT VOLUME =    .9960       B =   526.28      P60 = 2.0700
    AREA =      .000927 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .108150HR    TP =   .133333HR    K/TP RATIO =   .811123     SHAPE CONSTANT, N =  4.409458
    UNIT PEAK =   .29479    CFS   UNIT VOLUME =    .9563       B =   381.61      P60 = 2.0700
    AREA =      .000103 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD          ID=1 CODE=1

                                PARTIAL HYDROGRAPH   101.00
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```
    RUNOFF VOLUME =     2.28284 INCHES     =        .1254 ACRE-FEET
    PEAK DISCHARGE RATE =       3.13 CFS  AT   1.500 HOURS   BASIN AREA =   .0010 SQ. MI.


COMPUTE NM HYD      ID=2   HYD NO=102.0    DA=0.000545 SQ MI
                    PER A=0.0  PER B=0.0  PER C=10.0
                    PER D=90.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   1.9360    CFS   UNIT VOLUME =    .9932       B =   526.28      P60 = 2.0700
    AREA =      .000491 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .108150HR    TP =   .133333HR    K/TP RATIO =   .811123     SHAPE CONSTANT, N =  4.409458
    UNIT PEAK =   .15598    CFS   UNIT VOLUME =    .9188       B =   381.61      P60 = 2.0700
    AREA =      .000055 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=2 CODE=1

                                PARTIAL HYDROGRAPH   102.00


    RUNOFF VOLUME =     2.28284 INCHES     =        .0664 ACRE-FEET
    PEAK DISCHARGE RATE =       1.66 CFS  AT   1.500 HOURS   BASIN AREA =   .0005 SQ. MI.


COMPUTE NM HYD      ID=3   HYD NO=103.0    DA=0.003766 SQ MI
                    PER A=0.0  PER B=0.0  PER C=10.0
                    PER D=90.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   13.378    CFS   UNIT VOLUME =    .9985       B =   526.28      P60 = 2.0700
    AREA =      .003389 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .108150HR    TP =   .133333HR    K/TP RATIO =   .811123     SHAPE CONSTANT, N =  4.409458
    UNIT PEAK =   1.0778    CFS   UNIT VOLUME =    .9888       B =   381.61      P60 = 2.0700
    AREA =      .000377 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD .         ID=3 CODE=1

                                PARTIAL HYDROGRAPH   103.00


    RUNOFF VOLUME =     2.28284 INCHES     =        .4585 ACRE-FEET
    PEAK DISCHARGE RATE =      11.38 CFS  AT   1.500 HOURS   BASIN AREA =   .0038 SQ. MI.


COMPUTE NM HYD      ID=4   HYD NO=104.0    DA=0.00479 SQ MI
                    PER A=0.0  PER B=21.5  PER C=21.5
                    PER D=57.0 TP=0.133333HR MASSRAIN=-1
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```
    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   10.777    CFS   UNIT VOLUME =    .9982       B =   526.28      P60 = 2.0700
    AREA =      .002730 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .120497HR    TP =   .133333HR    K/TP RATIO =   .903729     SHAPE CONSTANT, N =  3.920589
    UNIT PEAK =   5.4043    CFS   UNIT VOLUME =    .9980       B =   349.84      P60 = 2.0700
    AREA =      .002060 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=4 CODE=1

                                PARTIAL HYDROGRAPH   104.00


    RUNOFF VOLUME =     1.82814 INCHES     =        .4670 ACRE-FEET
    PEAK DISCHARGE RATE =      12.44 CFS  AT   1.500 HOURS   BASIN AREA =   .0048 SQ. MI.


COMPUTE NM HYD      ID=5   HYD NO=105.0    DA=0.00523 SQ MI
                    PER A=0.0  PER B=15.76 PER C=15.76
                    PER D=68.45 TP=0.133333HR MASSRAIN=-1
    *****WARNING*****  SUM OF TREATMENT TYPES DOES NOT EQUAL 100 PERCENT OR TOTAL AREA


    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   14.135    CFS   UNIT VOLUME =    .9985       B =   526.28      P60 = 2.0700
    AREA =      .003581 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .120497HR    TP =   .133333HR    K/TP RATIO =   .903729     SHAPE CONSTANT, N =  3.920589
    UNIT PEAK =   4.3266    CFS   UNIT VOLUME =    .9973       B =   349.84      P60 = 2.0700
    AREA =      .001649 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=5 CODE=1

                                PARTIAL HYDROGRAPH   105.00


    RUNOFF VOLUME =     1.97940 INCHES     =        .5521 ACRE-FEET
    PEAK DISCHARGE RATE =      14.30 CFS  AT   1.500 HOURS   BASIN AREA =   .0052 SQ. MI.


COMPUTE NM HYD      ID=6   HYD NO=106.0    DA=0.000123 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .16021    CFS   UNIT VOLUME =    .9286       B =   526.28      P60 = 2.0700
    AREA =      .000041 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
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```
    UNIT PEAK =   .21541    CFS   UNIT VOLUME =    .9392       B =   348.52      P60 = 2.0700
    AREA =      .000082 SQ MI    IA =   .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=6 CODE=1

                                PARTIAL HYDROGRAPH   106.00


    RUNOFF VOLUME =     1.50634 INCHES     =        .0099 ACRE-FEET
    PEAK DISCHARGE RATE =        .30 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=7   HYD NO=107.0    DA=0.000128 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .16672    CFS   UNIT VOLUME =    .9286       B =   526.28      P60 = 2.0700
    AREA =      .000042 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .22417    CFS   UNIT VOLUME =    .9392       B =   348.52      P60 = 2.0700
    AREA =      .000086 SQ MI    IA =   .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=7 CODE=1

                                PARTIAL HYDROGRAPH   107.00


    RUNOFF VOLUME =     1.50634 INCHES     =        .0103 ACRE-FEET
    PEAK DISCHARGE RATE =        .31 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=8   HYD NO=108.0    DA=0.000138 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .17975    CFS   UNIT VOLUME =    .9386       B =   526.28      P60 = 2.0700
    AREA =      .000046 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .24168    CFS   UNIT VOLUME =    .9446       B =   348.52      P60 = 2.0700
    AREA =      .000092 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=8 CODE=1

                                PARTIAL HYDROGRAPH   108.00


    RUNOFF VOLUME =     1.50634 INCHES     =        .0111 ACRE-FEET
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```
PEAK DISCHARGE RATE =        .34 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=9   HYD NO=109.0    DA=0.000143 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   .18626    CFS   UNIT VOLUME =    .9386       B =   526.28      P60 = 2.0700
AREA =      .000047 SQ MI    IA =   .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
UNIT PEAK =   .25044    CFS   UNIT VOLUME =    .9446       B =   348.52      P60 = 2.0700
AREA =      .000096 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=9 CODE=1

                                PARTIAL HYDROGRAPH   109.00


RUNOFF VOLUME =     1.50633 INCHES     =        .0115 ACRE-FEET
PEAK DISCHARGE RATE =        .35 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=10  HYD NO=110.0    DA=0.000128 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   .16672    CFS   UNIT VOLUME =    .9286       B =   526.28      P60 = 2.0700
AREA =      .000042 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
UNIT PEAK =   .22417    CFS   UNIT VOLUME =    .9392       B =   348.52      P60 = 2.0700
AREA =      .000086 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=10 CODE=1

                                PARTIAL HYDROGRAPH   110.00


RUNOFF VOLUME =     1.50634 INCHES     =        .0103 ACRE-FEET
PEAK DISCHARGE RATE =        .31 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=11  HYD NO=111.0    DA=0.000108 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   .14067    CFS   UNIT VOLUME =    .9169       B =   526.28      P60 = 2.0700
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    AREA =      .000036 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .18914    CFS   UNIT VOLUME =    .9269       B =   348.52      P60 = 2.0700
    AREA =      .000072 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=11 CODE=1

                                PARTIAL HYDROGRAPH   111.00

    RUNOFF VOLUME =     1.50634 INCHES     =        .0087 ACRE-FEET
    PEAK DISCHARGE RATE =        .27 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.

COMPUTE NM HYD      ID=12  HYD NO=112.0    DA=0.0000968 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .12609    CFS   UNIT VOLUME =    .9032       B =   526.28      P60 = 2.0700
    AREA =      .000032 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .16953    CFS   UNIT VOLUME =    .9198       B =   348.52      P60 = 2.0700
    AREA =      .000065 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=12 CODE=1

                                PARTIAL HYDROGRAPH   112.00

    RUNOFF VOLUME =     1.50634 INCHES     =        .0078 ACRE-FEET
    PEAK DISCHARGE RATE =        .24 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.

COMPUTE NM HYD      ID=13  HYD NO=113.0    DA=0.0000968 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .12609    CFS   UNIT VOLUME =    .9032       B =   526.28      P60 = 2.0700
    AREA =      .000032 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .16953    CFS   UNIT VOLUME =    .9198       B =   348.52      P60 = 2.0700
    AREA =      .000065 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=13 CODE=1
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                              PARTIAL HYDROGRAPH   113.00

    RUNOFF VOLUME =     1.50634 INCHES     =        .0078 ACRE-FEET
    PEAK DISCHARGE RATE =        .24 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=14  HYD NO=114.0    DA=0.000108 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .14067    CFS   UNIT VOLUME =    .9169       B =   526.28      P60 = 2.0700
    AREA =      .000036 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .18914    CFS   UNIT VOLUME =    .9269       B =   348.52      P60 = 2.0700
    AREA =      .000072 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=14 CODE=1

                              PARTIAL HYDROGRAPH   114.00

    RUNOFF VOLUME =     1.50634 INCHES     =        .0087 ACRE-FEET
    PEAK DISCHARGE RATE =        .27 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=15  HYD NO=115.0    DA=0.000108 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .14067    CFS   UNIT VOLUME =    .9169       B =   526.28      P60 = 2.0700
    AREA =      .000036 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .18914    CFS   UNIT VOLUME =    .9269       B =   348.52      P60 = 2.0700
    AREA =      .000072 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=15 CODE=1

                              PARTIAL HYDROGRAPH   115.00

    RUNOFF VOLUME =     1.50634 INCHES     =        .0087 ACRE-FEET
    PEAK DISCHARGE RATE =        .27 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=16  HYD NO=116.0    DA=0.000108 SQ MI
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```
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .14067    CFS   UNIT VOLUME =    .9169       B =   526.28      P60 = 2.0700
    AREA =      .000036 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .18914    CFS   UNIT VOLUME =    .9269       B =   348.52      P60 = 2.0700
    AREA =      .000072 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=16 CODE=1

                                PARTIAL HYDROGRAPH   116.00


    RUNOFF VOLUME =     1.50634 INCHES     =        .0087 ACRE-FEET
    PEAK DISCHARGE RATE =        .27 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=17  HYD NO=117.0    DA=0.000108 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .14067    CFS   UNIT VOLUME =    .9169       B =   526.28      P60 = 2.0700
    AREA =      .000036 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .18914    CFS   UNIT VOLUME =    .9269       B =   348.52      P60 = 2.0700
    AREA =      .000072 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=17 CODE=1

                                PARTIAL HYDROGRAPH   117.00


    RUNOFF VOLUME =     1.50634 INCHES     =        .0087 ACRE-FEET
    PEAK DISCHARGE RATE =        .27 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=18  HYD NO=118.0    DA=0.000101 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .13156    CFS   UNIT VOLUME =    .9169       B =   526.28      P60 = 2.0700
    AREA =      .000033 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
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    UNIT PEAK =   .17688    CFS   UNIT VOLUME =    .9269       B =   348.52      P60 = 2.0700
    AREA =      .000068 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=18 CODE=1

                                PARTIAL HYDROGRAPH   118.00

    RUNOFF VOLUME =     1.50634 INCHES     =        .0081 ACRE-FEET
    PEAK DISCHARGE RATE =        .25 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=19  HYD NO=119.0    DA=0.0000448 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .58354E-01CFS   UNIT VOLUME =    .8874       B =   526.28      P60 = 2.0700
    AREA =      .000015 SQ MI    IA =   .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .78458E-01CFS   UNIT VOLUME =    .8729       B =   348.52      P60 = 2.0700
    AREA =      .000030 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=19 CODE=1

                                PARTIAL HYDROGRAPH   119.00

    RUNOFF VOLUME =     1.50634 INCHES     =        .0036 ACRE-FEET
    PEAK DISCHARGE RATE =        .12 CFS  AT   1.500 HOURS   BASIN AREA =   .0000 SQ. MI.


COMPUTE NM HYD      ID=20  HYD NO=120.0    DA=0.0000807 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .10511    CFS   UNIT VOLUME =    .8874       B =   526.28      P60 = 2.0700
    AREA =      .000027 SQ MI    IA =   .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .14133    CFS   UNIT VOLUME =    .9036       B =   348.52      P60 = 2.0700
    AREA =      .000054 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=20 CODE=1

                                PARTIAL HYDROGRAPH   120.00

    RUNOFF VOLUME =     1.50634 INCHES     =        .0065 ACRE-FEET
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```
PEAK DISCHARGE RATE =        .21 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=21  HYD NO=121.0    DA=0.0000807 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   .10511    CFS   UNIT VOLUME =    .8874       B =   526.28      P60 = 2.0700
AREA =      .000027 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
UNIT PEAK =   .14133    CFS   UNIT VOLUME =    .9036       B =   348.52      P60 = 2.0700
AREA =      .000054 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=21 CODE=1

                                PARTIAL HYDROGRAPH   121.00


RUNOFF VOLUME =     1.50634 INCHES     =        .0065 ACRE-FEET
PEAK DISCHARGE RATE =        .21 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=22  HYD NO=122.0    DA=0.0000628 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   .81799E-01CFS   UNIT VOLUME =    .8874       B =   526.28      P60 = 2.0700
AREA =      .000021 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
UNIT PEAK =   .10998    CFS   UNIT VOLUME =    .8729       B =   348.52      P60 = 2.0700
AREA =      .000042 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=22 CODE=1

                                PARTIAL HYDROGRAPH   122.00


RUNOFF VOLUME =     1.50634 INCHES     =        .0050 ACRE-FEET
PEAK DISCHARGE RATE =        .16 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=23  HYD NO=123.0    DA=0.0000861 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
UNIT PEAK =   .11215    CFS   UNIT VOLUME =    .9032       B =   526.28      P60 = 2.0700
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```
    AREA =      .000028 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .15079    CFS   UNIT VOLUME =    .9121       B =   348.52      P60 = 2.0700
    AREA =      .000058 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=23 CODE=1

                                PARTIAL HYDROGRAPH   123.00


    RUNOFF VOLUME =     1.50633 INCHES     =        .0069 ACRE-FEET
    PEAK DISCHARGE RATE =        .22 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=24  HYD NO=124.0    DA=0.000108 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .14067    CFS   UNIT VOLUME =    .9169       B =   526.28      P60 = 2.0700
    AREA =      .000036 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .18914    CFS   UNIT VOLUME =    .9269       B =   348.52      P60 = 2.0700
    AREA =      .000072 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=24 CODE=1

                                PARTIAL HYDROGRAPH   124.00


    RUNOFF VOLUME =     1.50634 INCHES     =        .0087 ACRE-FEET
    PEAK DISCHARGE RATE =        .27 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=25  HYD NO=107.0    DA=0.000118 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .15370    CFS   UNIT VOLUME =    .9286       B =   526.28      P60 = 2.0700
    AREA =      .000039 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .20665    CFS   UNIT VOLUME =    .9333       B =   348.52      P60 = 2.0700
    AREA =      .000079 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=25 CODE=1
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                              PARTIAL HYDROGRAPH   107.00

    RUNOFF VOLUME =     1.50633 INCHES     =        .0095 ACRE-FEET
    PEAK DISCHARGE RATE =        .29 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=26  HYD NO=126.0    DA=0.000118 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .15370    CFS   UNIT VOLUME =    .9286       B =   526.28      P60 = 2.0700
    AREA =      .000039 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .20665    CFS   UNIT VOLUME =    .9333       B =   348.52      P60 = 2.0700
    AREA =      .000079 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=26 CODE=1

                              PARTIAL HYDROGRAPH   126.00


    RUNOFF VOLUME =     1.50633 INCHES     =        .0095 ACRE-FEET
    PEAK DISCHARGE RATE =        .29 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=27  HYD NO=127.0    DA=0.000104 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .13546    CFS   UNIT VOLUME =    .9169       B =   526.28      P60 = 2.0700
    AREA =      .000034 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .18214    CFS   UNIT VOLUME =    .9269       B =   348.52      P60 = 2.0700
    AREA =      .000070 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=27 CODE=1

                              PARTIAL HYDROGRAPH   127.00


    RUNOFF VOLUME =     1.50634 INCHES     =        .0084 ACRE-FEET
    PEAK DISCHARGE RATE =        .26 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=28  HYD NO=128.0    DA=0.0000968 SQ MI
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```
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .12609    CFS   UNIT VOLUME =    .9032       B =   526.28      P60 = 2.0700
    AREA =      .000032 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .16953    CFS   UNIT VOLUME =    .9198       B =   348.52      P60 = 2.0700
    AREA =      .000065 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=28 CODE=1

                                PARTIAL HYDROGRAPH   128.00


    RUNOFF VOLUME =     1.50634 INCHES     =        .0078 ACRE-FEET
    PEAK DISCHARGE RATE =        .24 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


COMPUTE NM HYD      ID=29  HYD NO=129.0    DA=0.000113 SQ MI
                    PER A=1  PER B=33.0  PER C=33.0
                    PER D=33.0  TP=0.133333HR MASSRAIN=-1

    K =   .072666HR    TP =   .133333HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .14719    CFS   UNIT VOLUME =    .9169       B =   526.28      P60 = 2.0700
    AREA =      .000037 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


    K =   .121067HR    TP =   .133333HR    K/TP RATIO =   .908004     SHAPE CONSTANT, N =  3.901036
    UNIT PEAK =   .19790    CFS   UNIT VOLUME =    .9333       B =   348.52      P60 = 2.0700
    AREA =      .000076 SQ MI    IA =    .42836 INCHES    INF =   1.04940 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=29 CODE=1

                                PARTIAL HYDROGRAPH   129.00


    RUNOFF VOLUME =     1.50634 INCHES     =        .0091 ACRE-FEET
    PEAK DISCHARGE RATE =        .28 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


ADD HYD             ID=6 HYD NO=106.01 ID I=6 ID II=7
PRINT HYD           ID=6 CODE=1

                                PARTIAL HYDROGRAPH   106.01


    RUNOFF VOLUME =     1.50541 INCHES     =        .0202 ACRE-FEET
    PEAK DISCHARGE RATE =        .62 CFS  AT   1.500 HOURS   BASIN AREA =   .0003 SQ. MI.
```

```
ADD HYD            ID=6 HYD NO=106.02 ID I=6 ID II=8
PRINT HYD          ID=6 CODE=1

                              PARTIAL HYDROGRAPH  106.02

   RUNOFF VOLUME =     1.50539 INCHES     =        .0312 ACRE-FEET
   PEAK DISCHARGE RATE =        .95 CFS  AT   1.500 HOURS   BASIN AREA =   .0004 SQ. MI.


ADD HYD            ID=6 HYD NO=106.03 ID I=6 ID II=9
PRINT HYD          ID=6 CODE=1

                              PARTIAL HYDROGRAPH   106.03

   RUNOFF VOLUME =     1.50538 INCHES     =        .0427 ACRE-FEET
   PEAK DISCHARGE RATE =       1.30 CFS  AT   1.500 HOURS   BASIN AREA =   .0005 SQ. MI.


ADD HYD            ID=6 HYD NO=106.04 ID I=6 ID II=10
PRINT HYD          ID=6 CODE=1

                              PARTIAL HYDROGRAPH   106.04

   RUNOFF VOLUME =     1.50538 INCHES     =        .0530 ACRE-FEET
   PEAK DISCHARGE RATE =       1.62 CFS  AT   1.500 HOURS   BASIN AREA =   .0007 SQ. MI.


ADD HYD            ID=6 HYD NO=106.05 ID I=6 ID II=11
PRINT HYD          ID=6 CODE=1

                              PARTIAL HYDROGRAPH   106.05

   RUNOFF VOLUME =     1.50533 INCHES     =        .0617 ACRE-FEET
   PEAK DISCHARGE RATE =       1.88 CFS  AT   1.500 HOURS   BASIN AREA =   .0008 SQ. MI.


ADD HYD            ID=6 HYD NO=106.06 ID I=6 ID II=12
PRINT HYD          ID=6 CODE=1

                              PARTIAL HYDROGRAPH   106.06

   RUNOFF VOLUME =     1.50530 INCHES     =        .0694 ACRE-FEET
   PEAK DISCHARGE RATE =       2.13 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


ADD HYD            ID=13 HYD NO=113.01 ID I=13 ID II=14
PRINT HYD          ID=13 CODE=1

                              PARTIAL HYDROGRAPH   113.01
```

```
    RUNOFF VOLUME =     1.50503 INCHES     =        .0164 ACRE-FEET
    PEAK DISCHARGE RATE =        .51 CFS  AT   1.500 HOURS   BASIN AREA =   .0002 SQ. MI.


ADD HYD             ID=13 HYD NO=113.02 ID I=13 ID II=15
PRINT HYD           ID=13 CODE=1

                                PARTIAL HYDROGRAPH   113.02


    RUNOFF VOLUME =     1.50502 INCHES     =        .0251 ACRE-FEET
    PEAK DISCHARGE RATE =        .78 CFS  AT   1.500 HOURS   BASIN AREA =   .0003 SQ. MI.


ADD HYD             ID=13 HYD NO=113.03 ID I=13 ID II=16
PRINT HYD           ID=13 CODE=1

                                PARTIAL HYDROGRAPH   113.03


    RUNOFF VOLUME =     1.50502 INCHES     =        .0338 ACRE-FEET
    PEAK DISCHARGE RATE =       1.05 CFS  AT   1.500 HOURS   BASIN AREA =   .0004 SQ. MI.


ADD HYD             ID=13 HYD NO=113.04 ID I=13 ID II=17
PRINT HYD           ID=13 CODE=1

                                PARTIAL HYDROGRAPH   113.04


    RUNOFF VOLUME =     1.50501 INCHES     =        .0424 ACRE-FEET
    PEAK DISCHARGE RATE =       1.32 CFS  AT   1.500 HOURS   BASIN AREA =   .0005 SQ. MI.


ADD HYD             ID=13 HYD NO=113.05 ID I=13 ID II=18
PRINT HYD           ID=13 CODE=1

                                PARTIAL HYDROGRAPH   113.05


    RUNOFF VOLUME =     1.50501 INCHES     =        .0506 ACRE-FEET
    PEAK DISCHARGE RATE =       1.57 CFS  AT   1.500 HOURS   BASIN AREA =   .0006 SQ. MI.


ADD HYD             ID=13 HYD NO=113.06 ID I=13 ID II=19
PRINT HYD           ID=13 CODE=1

                                PARTIAL HYDROGRAPH   113.06


    RUNOFF VOLUME =     1.50049 INCHES     =        .0540 ACRE-FEET
    PEAK DISCHARGE RATE =       1.69 CFS  AT   1.500 HOURS   BASIN AREA =   .0007 SQ. MI.
```

```
ADD HYD            ID=20 HYD NO=120.01 ID I=20 ID II=21
PRINT HYD          ID=20 CODE=1

                              PARTIAL HYDROGRAPH   120.01


   RUNOFF VOLUME =     1.46361 INCHES     =        .0126 ACRE-FEET
   PEAK DISCHARGE RATE =        .41 CFS  AT   1.500 HOURS   BASIN AREA =   .0002 SQ. MI.


ADD HYD            ID=22 HYD NO=122.01 ID I=22 ID II=23
PRINT HYD          ID=22 CODE=1

                              PARTIAL HYDROGRAPH   122.01


   RUNOFF VOLUME =     1.48092 INCHES     =        .0118 ACRE-FEET
   PEAK DISCHARGE RATE =        .38 CFS  AT   1.500 HOURS   BASIN AREA =   .0001 SQ. MI.


ADD HYD            ID=22 HYD NO=122.02 ID I=22 ID II=24
PRINT HYD          ID=22 CODE=1

                              PARTIAL HYDROGRAPH   122.02


   RUNOFF VOLUME =     1.49104 INCHES     =        .0204 ACRE-FEET
   PEAK DISCHARGE RATE =        .65 CFS  AT   1.500 HOURS   BASIN AREA =   .0003 SQ. MI.


ADD HYD            ID=22 HYD NO=122.03 ID I=22 ID II=25
PRINT HYD          ID=22 CODE=1

                              PARTIAL HYDROGRAPH   122.03


   RUNOFF VOLUME =     1.49557 INCHES     =        .0299 ACRE-FEET
   PEAK DISCHARGE RATE =        .94 CFS  AT   1.500 HOURS   BASIN AREA =   .0004 SQ. MI.


ADD HYD            ID=22 HYD NO=122.04 ID I=22 ID II=26
PRINT HYD          ID=22 CODE=1

                              PARTIAL HYDROGRAPH   122.04


   RUNOFF VOLUME =     1.49792 INCHES     =        .0394 ACRE-FEET
   PEAK DISCHARGE RATE =       1.23 CFS  AT   1.500 HOURS   BASIN AREA =   .0005 SQ. MI.


ADD HYD            ID=22 HYD NO=122.05 ID I=22 ID II=27
PRINT HYD          ID=22 CODE=1

                              PARTIAL HYDROGRAPH   122.05
```

```
    RUNOFF VOLUME =     1.49915 INCHES     =        .0477 ACRE-FEET
    PEAK DISCHARGE RATE =       1.49 CFS  AT   1.500 HOURS   BASIN AREA =   .0006 SQ. MI.


ADD HYD             ID=22 HYD NO=122.06 ID I=22 ID II=28
PRINT HYD           ID=22 CODE=1

                                PARTIAL HYDROGRAPH   122.06


    RUNOFF VOLUME =     1.49998 INCHES     =        .0555 ACRE-FEET
    PEAK DISCHARGE RATE =       1.73 CFS  AT   1.500 HOURS   BASIN AREA =   .0007 SQ. MI.


ADD HYD             ID=22 HYD NO=122.07 ID I=22 ID II=29
PRINT HYD           ID=22 CODE=1

                                PARTIAL HYDROGRAPH   122.07


    RUNOFF VOLUME =     1.50075 INCHES     =        .0646 ACRE-FEET
    PEAK DISCHARGE RATE =       2.01 CFS  AT   1.500 HOURS   BASIN AREA =   .0008 SQ. MI.


*
FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 10:37:40
```

```
    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
         RUN DATE (MON/DAY/YR) = 05/09/1995
         START TIME (HR:MIN:SEC) = 14:45:11     USER NO.= BRASHERE.I01
         INPUT FILE = PRECAN.DAT

*S            HYDROLOGY FOR UNDEVELOPED BASINS IN CANADA VILLAGE (PRECAN.DAT)
*S            100-YEAR RAINFALL
START                TIME=0.0 PUNCH CODE=0  PRINT LINE=0
*S COMPUTE BASINS
RAINFALL             TYPE=1  RAIN QUARTER=0   RAIN ONE=2.07
                     RAIN SIX=2.65  RAIN DAY=3.30  DT=0.033333

                COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                DT =    .033333 HOURS       END TIME =     5.999940 HOURS
                   .0000   .0044   .0089   .0136   .0183   .0231   .0280
                   .0330   .0381   .0434   .0487   .0543   .0599   .0657
                   .0717   .0778   .0841   .0906   .0973   .1043   .1114
                   .1188   .1265   .1345   .1428   .1514   .1604   .1699
                   .1798   .1902   .2012   .2069   .2130   .2196   .2337
                   .2651   .3135   .3830   .4779   .6025   .7615   .9594
                  1.2009  1.4244  1.5178  1.5968  1.6670  1.7309  1.7897
                  1.8443  1.8954  1.9432  1.9882  2.0307  2.0708  2.1088
                  2.1448  2.1789  2.2113  2.2420  2.2712  2.2787  2.2859
                  2.2928  2.2994  2.3058  2.3120  2.3179  2.3237  2.3294
                  2.3348  2.3402  2.3453  2.3504  2.3554  2.3602  2.3649
                  2.3696  2.3741  2.3786  2.3829  2.3872  2.3914  2.3956
                  2.3997  2.4037  2.4076  2.4115  2.4153  2.4191  2.4228
                  2.4265  2.4301  2.4337  2.4372  2.4407  2.4441  2.4475
                  2.4509  2.4542  2.4575  2.4607  2.4639  2.4671  2.4702
                  2.4733  2.4764  2.4794  2.4824  2.4854  2.4884  2.4913
                  2.4942  2.4971  2.4999  2.5027  2.5055  2.5083  2.5110
                  2.5138  2.5165  2.5192  2.5218  2.5245  2.5271  2.5297
                  2.5322  2.5348  2.5373  2.5399  2.5424  2.5449  2.5473
                  2.5498  2.5522  2.5546  2.5570  2.5594  2.5618  2.5641
                  2.5665  2.5688  2.5711  2.5734  2.5757  2.5780  2.5802
                  2.5824  2.5847  2.5869  2.5891  2.5913  2.5935  2.5956
                  2.5978  2.5999  2.6020  2.6042  2.6063  2.6084  2.6104
                  2.6125  2.6146  2.6166  2.6187  2.6207  2.6227  2.6247
                  2.6267  2.6287  2.6307  2.6327  2.6346  2.6366  2.6385
                  2.6405  2.6424  2.6443  2.6462  2.6481  2.6500

COMPUTE NM HYD       ID=1   HYD NO= 101.0   DA=0.00103 SQ MI
                     PER A=0.0  PER B=0.0  PER C=100.0
                     PER D=0.0  TP=0.133333HR MASSRAIN=-1

    K =   .108150HR    TP =   .133333HR    K/TP RATIO =   .811123     SHAPE CONSTANT, N =  4.409458
    UNIT PEAK =   2.9479    CFS   UNIT VOLUME =    .9958       B =   381.61      P60 = 2.0700
    AREA =      .001030 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD            ID=1 CODE=1

                                PARTIAL HYDROGRAPH   101.00


    RUNOFF VOLUME =     1.27174 INCHES     =        .0699 ACRE-FEET
    PEAK DISCHARGE RATE =       2.25 CFS  AT   1.500 HOURS   BASIN AREA =   .0010 SQ. MI.
```

```
COMPUTE NM HYD      ID=2   HYD NO=102.0    DA=0.000545 SQ MI
                    PER A=100.0  PER B=0.0  PER C=0.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1

   K =   .158681HR    TP =   .133333HR    K/TP RATIO =  1.190112     SHAPE CONSTANT, N =  2.983819
   UNIT PEAK =   1.1465    CFS   UNIT VOLUME =    .9871       B =   280.50      P60 = 2.0700
   AREA =      .000545 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=2 CODE=1

                                PARTIAL HYDROGRAPH   102.00


   RUNOFF VOLUME =      .65533 INCHES     =        .0190 ACRE-FEET
   PEAK DISCHARGE RATE =        .66 CFS  AT   1.500 HOURS   BASIN AREA =   .0005 SQ. MI.


COMPUTE NM HYD      ID=3   HYD NO=103.0    DA=0.003766 SQ MI
                    PER A=0.0  PER B=0.0  PER C=100.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1

   K =   .108150HR    TP =   .133333HR    K/TP RATIO =   .811123     SHAPE CONSTANT, N =  4.409458
   UNIT PEAK =   10.778    CFS   UNIT VOLUME =    .9992       B =   381.61      P60 = 2.0700
   AREA =      .003766 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=3 CODE=1

                                PARTIAL HYDROGRAPH   103.00


   RUNOFF VOLUME =     1.27174 INCHES     =        .2554 ACRE-FEET
   PEAK DISCHARGE RATE =       8.20 CFS  AT   1.500 HOURS   BASIN AREA =   .0038 SQ. MI.


COMPUTE NM HYD      ID=4   HYD NO=104.0    DA=0.001976 SQ MI
                    PER A=0.0  PER B=0.0  PER C=100.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1

   K =   .108150HR    TP =   .133333HR    K/TP RATIO =   .811123     SHAPE CONSTANT, N =  4.409458
   UNIT PEAK =   5.6554    CFS   UNIT VOLUME =    .9982       B =   381.61      P60 = 2.0700
   AREA =      .001976 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
   RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=4 CODE=1

                                PARTIAL HYDROGRAPH   104.00


   RUNOFF VOLUME =     1.27174 INCHES     =        .1340 ACRE-FEET
   PEAK DISCHARGE RATE =       4.31 CFS  AT   1.500 HOURS   BASIN AREA =   .0020 SQ. MI.


COMPUTE NM HYD      ID=5   HYD NO=105.0    DA=0.0022795 SQ MI
                    PER A=0.0  PER B=0.0  PER C=100.0
```

```
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1

    K =   .108150HR    TP =   .133333HR    K/TP RATIO =   .811123     SHAPE CONSTANT, N =  4.409458
    UNIT PEAK =   6.5240    CFS   UNIT VOLUME =    .9984       B =   381.61      P60 = 2.0700
    AREA =      .002280 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=5 CODE=1

                                PARTIAL HYDROGRAPH   105.00


    RUNOFF VOLUME =     1.27174 INCHES     =        .1546 ACRE-FEET
    PEAK DISCHARGE RATE =       4.97 CFS  AT   1.500 HOURS   BASIN AREA =   .0023 SQ. MI.


COMPUTE NM HYD      ID=6   HYD NO=106.0    DA=0.001628 SQ MI
                    PER A=0.0  PER B=0.0   PER C=100.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1

    K =   .108150HR    TP =   .133333HR    K/TP RATIO =   .811123     SHAPE CONSTANT, N =  4.409458
    UNIT PEAK =   4.6594    CFS   UNIT VOLUME =    .9977       B =   381.61      P60 = 2.0700
    AREA =      .001628 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=6 CODE=1

                                PARTIAL HYDROGRAPH   106.00


    RUNOFF VOLUME =     1.27174 INCHES     =        .1104 ACRE-FEET
    PEAK DISCHARGE RATE =       3.55 CFS  AT   1.500 HOURS   BASIN AREA =   .0016 SQ. MI.


COMPUTE NM HYD      ID=7   HYD NO=107.0    DA=0.0021396 SQ MI
                    PER A=0.0  PER B=0.0   PER C=100.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1

    K =   .108150HR    TP =   .133333HR    K/TP RATIO =   .811123     SHAPE CONSTANT, N =  4.409458
    UNIT PEAK =   6.1236    CFS   UNIT VOLUME =    .9984       B =   381.61      P60 = 2.0700
    AREA =      .002140 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=7 CODE=1

                                PARTIAL HYDROGRAPH   107.00


    RUNOFF VOLUME =     1.27174 INCHES     =        .1451 ACRE-FEET
    PEAK DISCHARGE RATE =       4.66 CFS  AT   1.500 HOURS   BASIN AREA =   .0021 SQ. MI.


COMPUTE NM HYD      ID=8   HYD NO=108.0    DA=0.0045626 SQ MI
                    PER A=50.0 PER B=0.0   PER C=50.0
                    PER D=0.0  TP=0.133333HR MASSRAIN=-1

    K =   .133415HR    TP =   .133333HR    K/TP RATIO =  1.000618     SHAPE CONSTANT, N =  3.528101
```

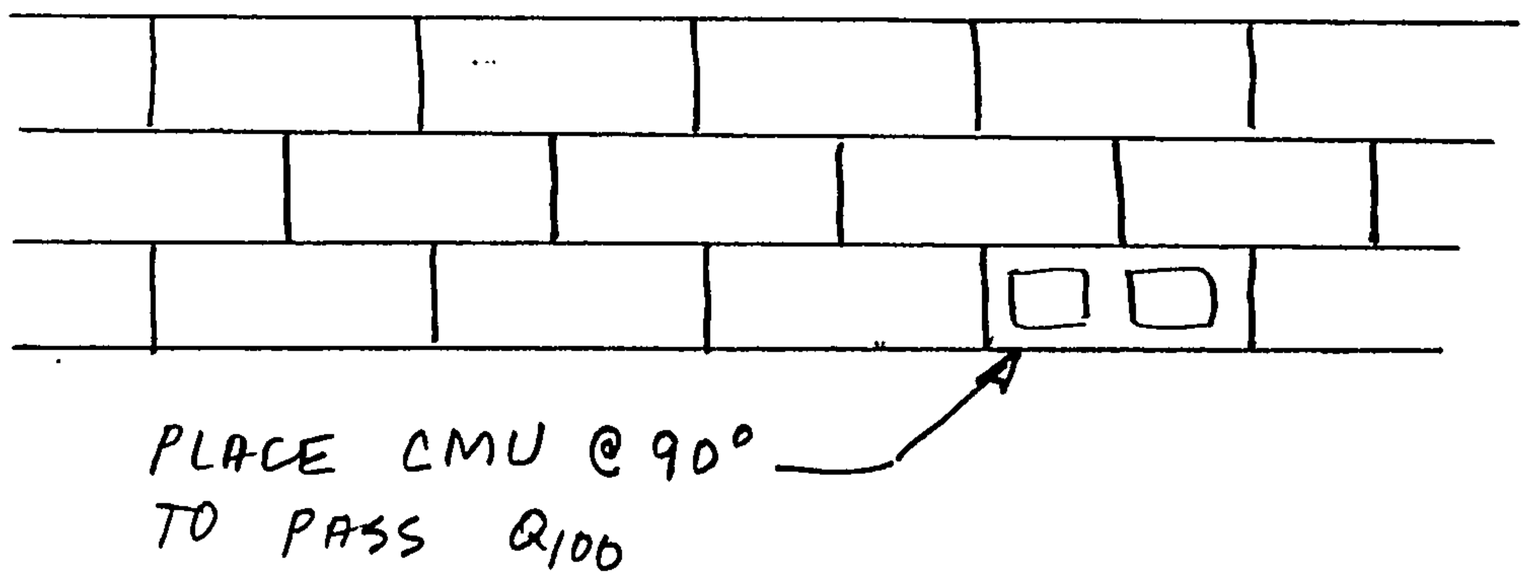
```
    UNIT PEAK =   11.032    CFS   UNIT VOLUME =    .9991       B =   322.37      P60 = 2.0700
    AREA =      .004563 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

PRINT HYD           ID=8 CODE=1

                                PARTIAL HYDROGRAPH   108.00


    RUNOFF VOLUME =      .91310 INCHES     =        .2222 ACRE-FEET
    PEAK DISCHARGE RATE =       7.56 CFS  AT   1.500 HOURS   BASIN AREA =   .0046 SQ. MI.



*
FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 14:45:12
```

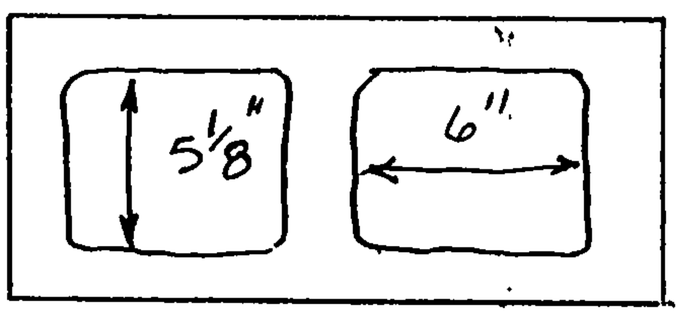
CALCULATIONS

PROJECT NAME CANADA VILLAGE JOB NO. 5007

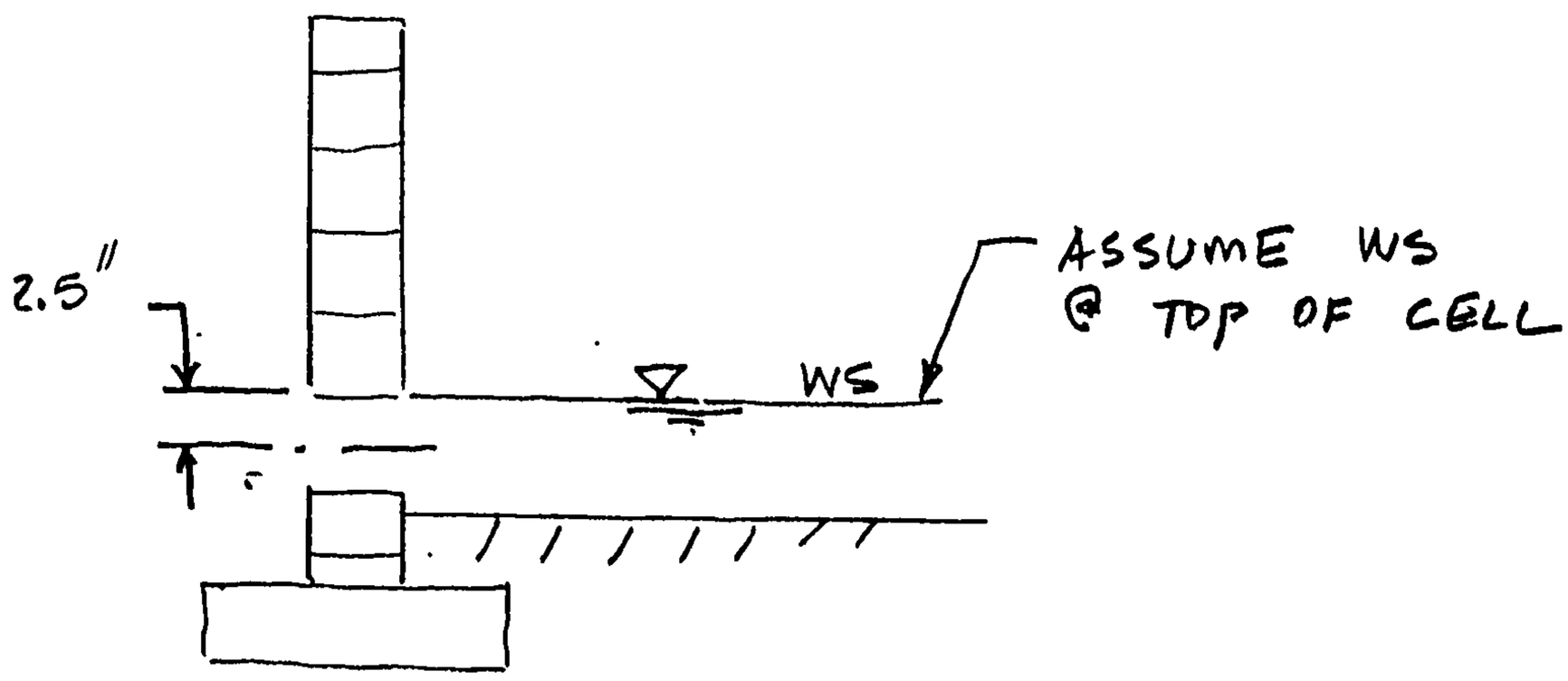
SUBJECT REAR YARD DRAINAGE TO PARK

BY _____ CHECKED BY _____ DATE 5-9-95 PAGE 1 OF _____





AREA / CELL = 0.214 SF



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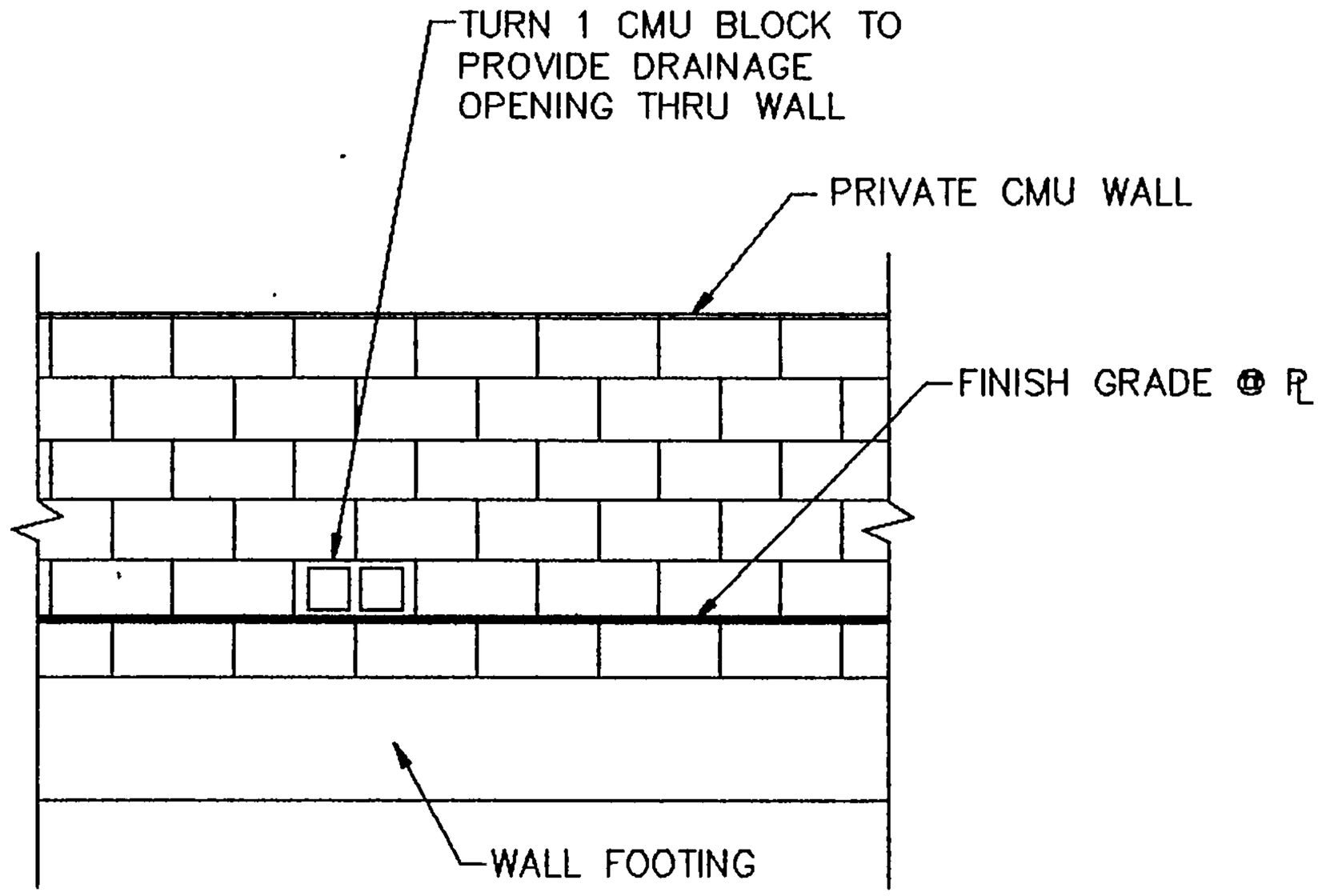
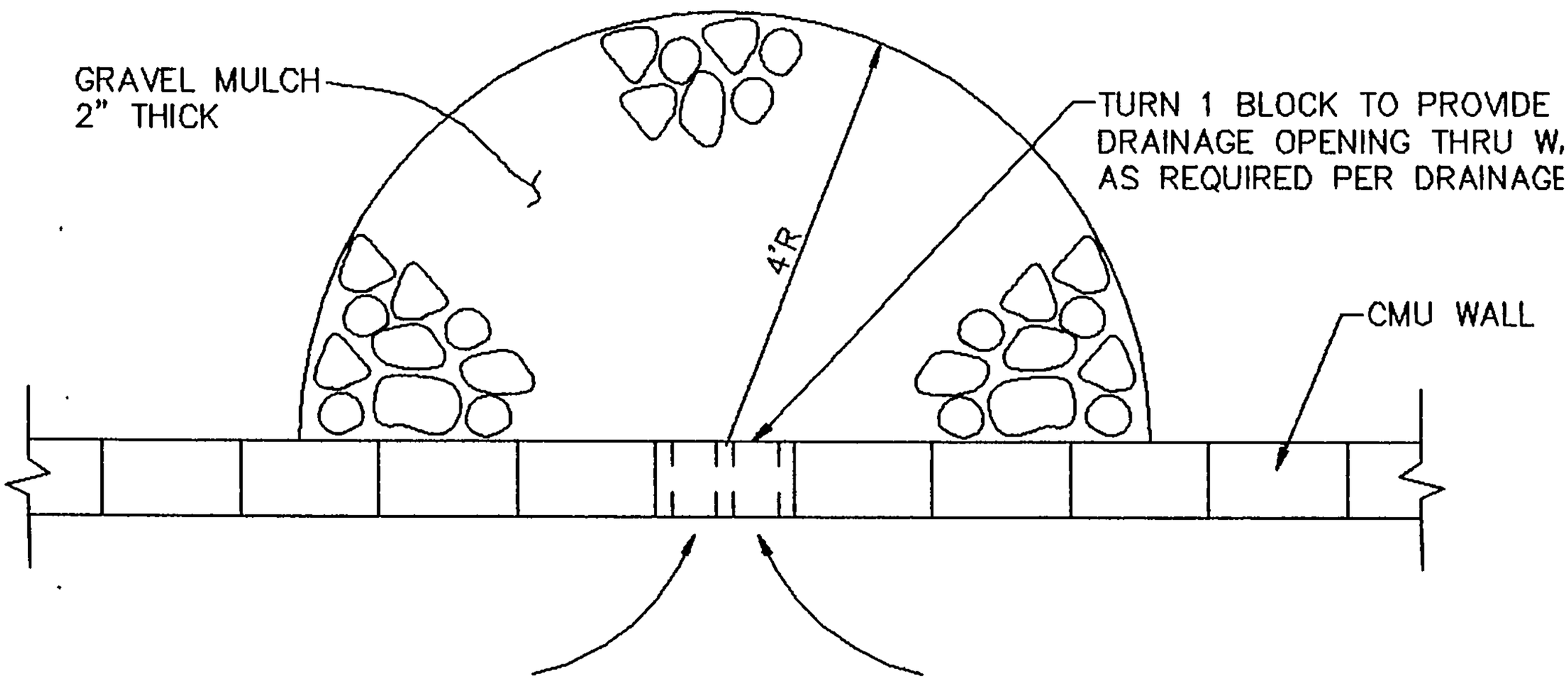


TYPICAL DRAINAGE OPENING THRU CMU WALL (A/5)

PRIVATE CONTRACT – NIC



CMU DRAINAGE OUTLET AT CUT–OFF WALL (B/5)

SCALE: 1"=2'

PROJECT NAME CANADA VILLAGE JOB NO. 5007

SUBJECT REAR YARD DRAINAGE TO PARK

BY _____ CHECKED BY _____ DATE 5-9-95 PAGE 3. OF _____

USE ORIFICE EQN TO FIND Q/CELL:

$Q = CA\sqrt{2gh}$

$h = 0.21'$ $g = 32.2\ f/s^2$ $A = 0.214$ SF/CELL

C = COEF OF DISCHG "BRATER - KING"
TABLE 4-4 (ATTACHED)

$C = 0.6$

$Q/CELL = 0.6(0.214)\sqrt{2g(0.21)} = 0.47$ CFS

Q_{100} @ LARGEST LOT = 0.35 CFS

⇒ ONE CELL REQ'D ⟨ 2 CELLS / BLK ⟩

⇒ DET EXIT VELOCITY :

$V = \frac{Q}{A}$ Q/CELL = 0.35 CFS/2 = 0.175 CFS

$V = 0.175/0.214 = 0.82$ fps ⟨ NON EROSIVE ⟩

CHECK BY WEIR

$Q = CLH^{3/2}$ USE $C = 2.92$ BRATER KING TABLE 5-3

$L = 0.5'$ $H = 0.43'$ $H = (Q/C)^{2/3}$ $H = .24'$ $A = .24$ sf
$L = 1.0$

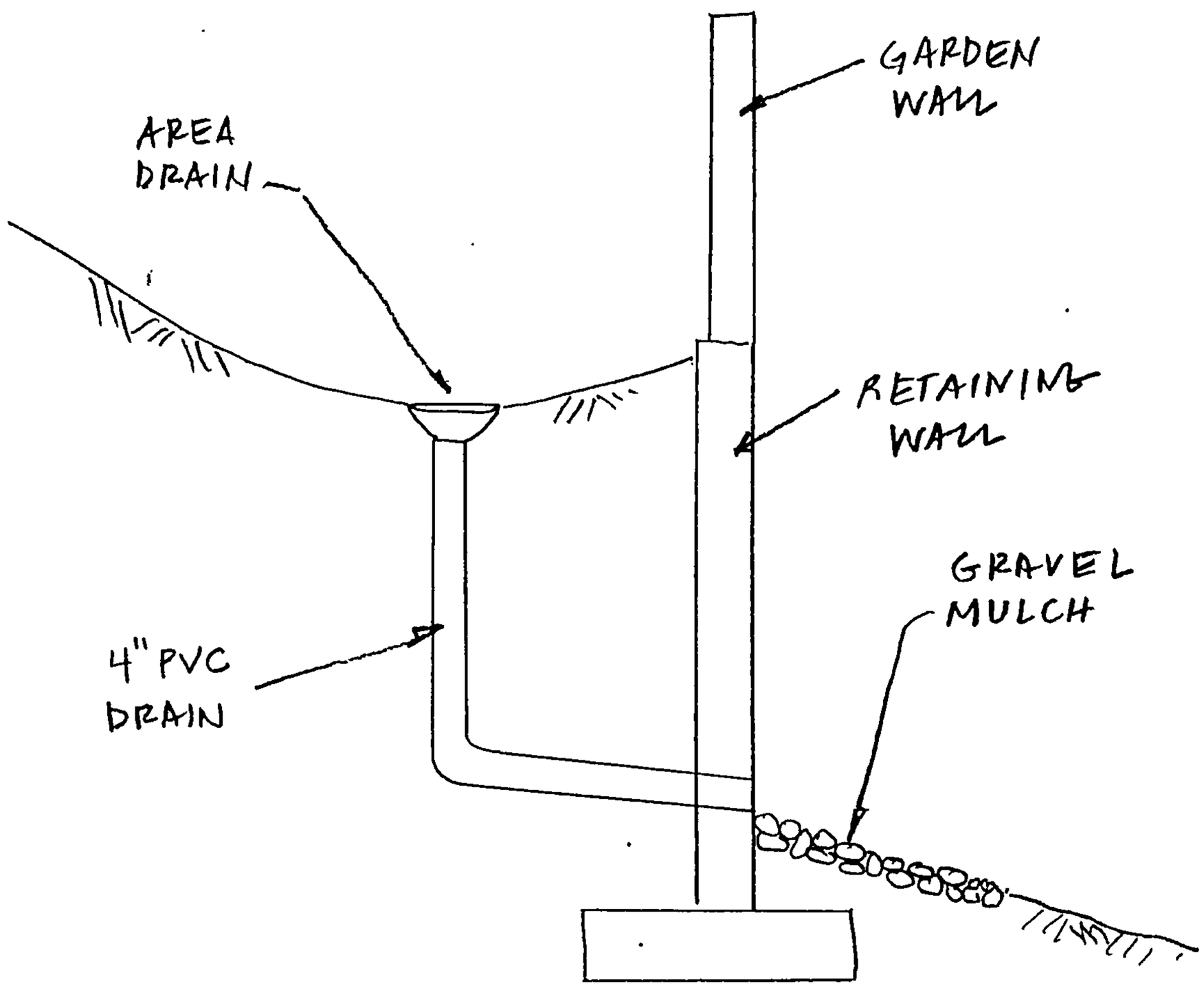
$Q_{CELL} = 0.41$ CFS Q_{100} @ LARGEST LOT = 0.35 CFS

$\boxed{Q_{BLOCK} = 0.82 \text{ CFS} > Q_{100}}$ $V = .35/.24 = 1.44$ fps

PROJECT NAME CANYON VILLAGE JOB NO. 5001

SUBJECT REAR YARD DRAINAGE TO PARK

BY _____ CHECKED BY _____ DATE 6-29-95 PAGE 4 OF _____



TYPICAL REAR YARD DRAIN THRU RETAINING WALL

BRASHER & LORENZ, INC.
Consulting Engineers

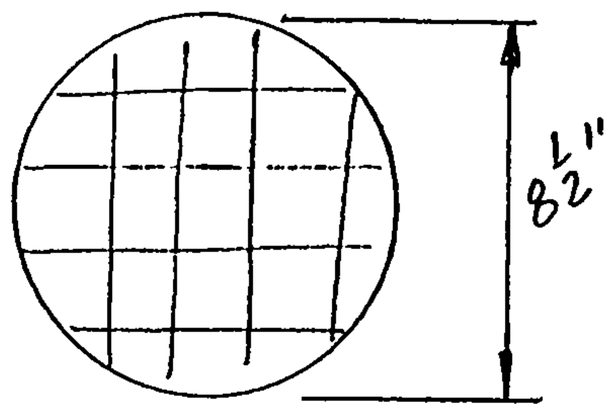
PROJECT NAME CANADA VILLAGE JOB NO. 5007

SUBJECT REAR YARD DRAINAGE TO PARK

BY _____ CHECKED BY _____ DATE 6-29-95 PAGE 5 OF _____

ANALYZE AREA DRAIN CAPACITY:

USE WEIR EQN:



$Q = CLH^{3/2}$

$P = 2\pi\left(\frac{4.25''}{12}\right) = 2.23$ FT

$P = L$

$H = 6''$ MAX

$C = 2.50$ (BRATER-KING)

$Q = 2.0$ CFS

APPLY CLOG FACTOR (0.5)

$Q = 1.0$ CFS

REDUCE FOR GRATING (ASSUME OPEN AREA = 0.5 TOTAL AREA)

$\boxed{Q_{MAX} = 0.5 \text{ CFS}} > Q_{100}$

CHECK 6" PVC FOR CAPACITY:

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

$n = 0.013$

$S = 1\%$ min

$R = 0.13$

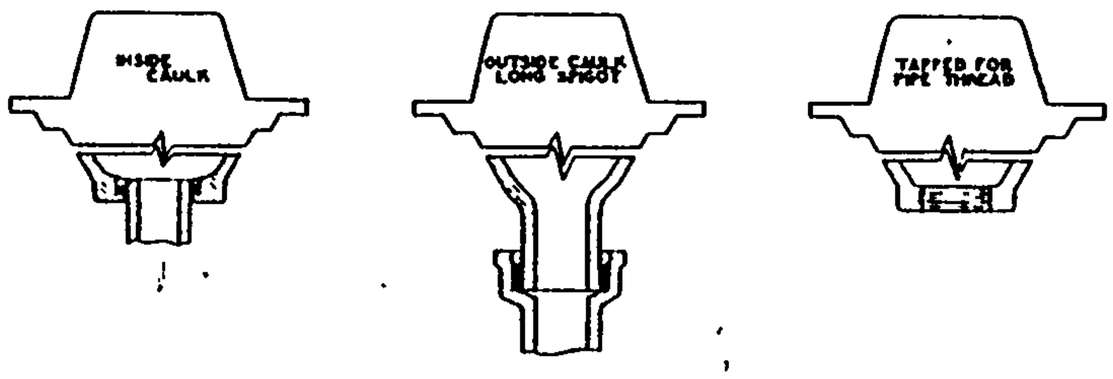
$A = 0.20$ SF

$\boxed{Q = 0.6 \text{ CFS} > Q_{100}}$

POSSIBLE AREA DRAINS

CAST IRON ROOF DRAINS

Three Types of Discharge Construction



Roof drain designs shown on this page are available in three types of outlet, as illustrated above. Details and catalog number descriptions shown below.

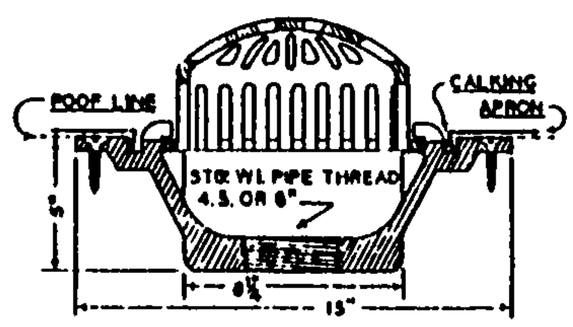
Cast iron drains are suitable for use on flat roofs to provide adequate storm drainage at all times. Ideal for industrial, residential or institutional buildings with pliable roofing or built-up roof construction. Especially constructed roof drains, with and without flashing, may be installed securely watertight.

All roof drains asphalt coated.

R-4920 Series

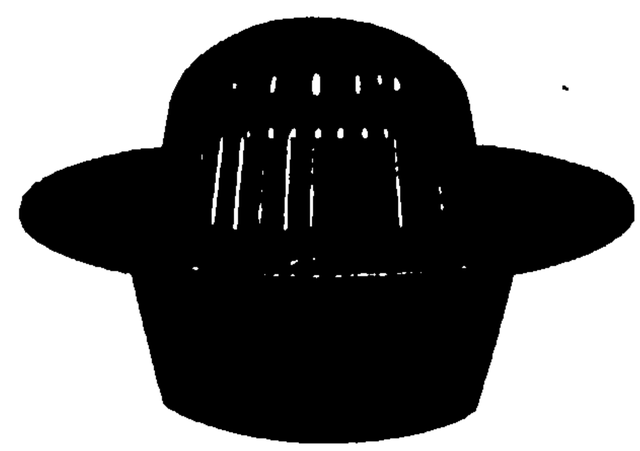
Specify: 1. Catalog number.

Catalog No.	Notes and Description	Pipe Size
R-4920-A1	For Inside Caulk	4
R-4920-A2	For Inside Caulk	5
R-4920-A3	For Inside Caulk	6
R-4920-B1	Long Spigot	4
R-4920-B2	Long Spigot	5
R-4920-B3	Long Spigot	6
R-4920-C1	Tapped for Pipe Thread	4
R-4920-C2	Tapped for Pipe Thread	5
R-4920-C3	Tapped for Pipe Thread	6



Removable grated top that locks in place. Large drainage capacity.

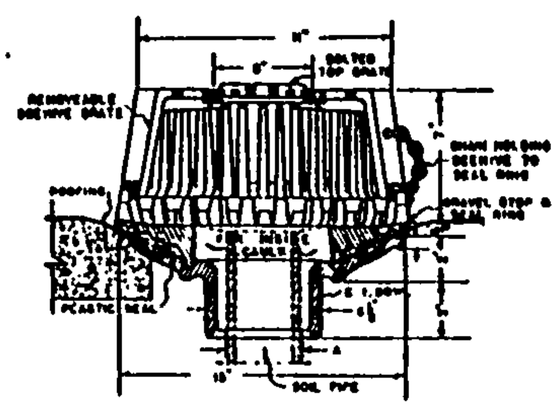
Used with sheet metal apron caulked into sump base.



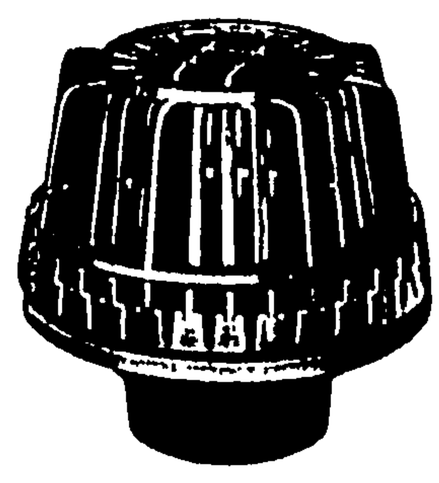
R-4921 Series

Specify: 1. Catalog number.

Catalog No.	Notes and Description	Pipe Size
R-4921-A1	For Inside Caulk	4
R-4921-A2	For Inside Caulk	5
R-4921-A3	For Inside Caulk	6
R-4921-B1	Long Spigot	4
R-4921-B2	Long Spigot	5
R-4921-B3	Long Spigot	6
R-4921-C1	Tapped for Pipe Thread	4
R-4921-C2	Tapped for Pipe Thread	5
R-4921-C3	Tapped for Pipe Thread	6



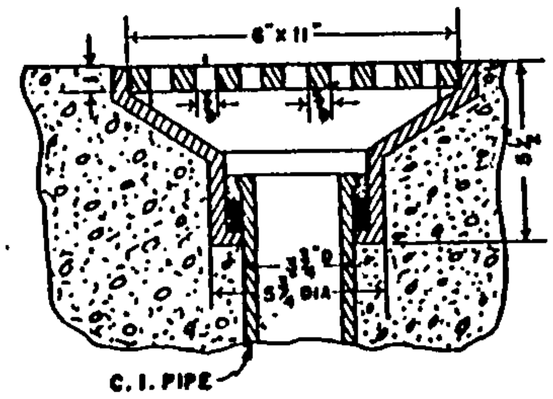
Weight of dome, and flashing ring on plastic cement secures roofing material. Beehive chained to seal ring prevents loss.

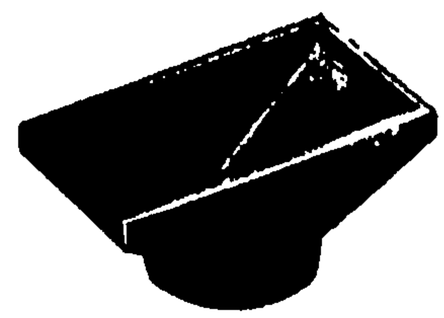


R-4953-A Cast Iron Floor Drain with Grate

Light Duty

Outlet for 3-inch inside pipe caulk.



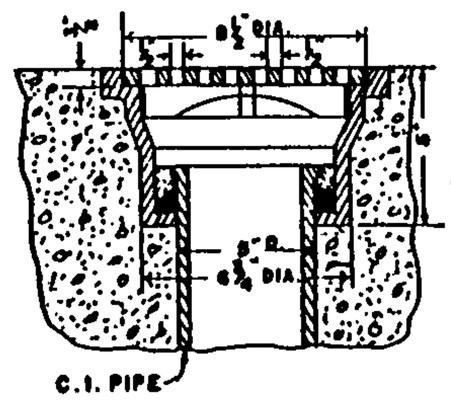


Shown with grate removed.

R-4953-B Cast Iron Floor Drain with Grate

Light Duty

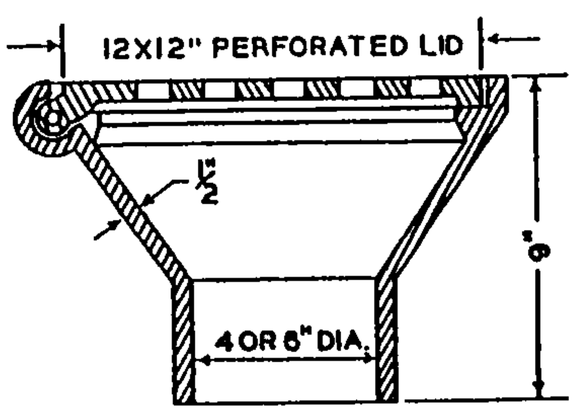
Outlet for 4-inch inside pipe caulk.

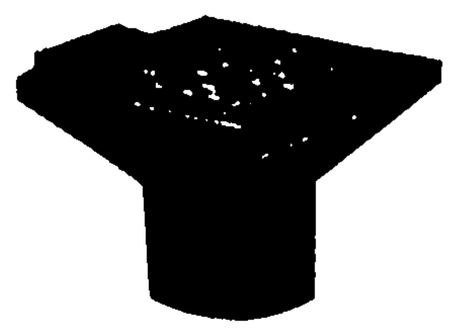


R-4954 Series Floor Drain Frame with Hinged Strainer

Light Duty Specify: 1. Catalog number.

Catalog No.	Size — Dimensions in Inches
R-4954-A	to fit 4" soil pipe.
R-4954-B	to fit 5" soil pipe.
R-4954-C	to fit 6" soil pipe.





R-4968 Series Cast Iron Spiral Stairs, Treads, Platforms Only

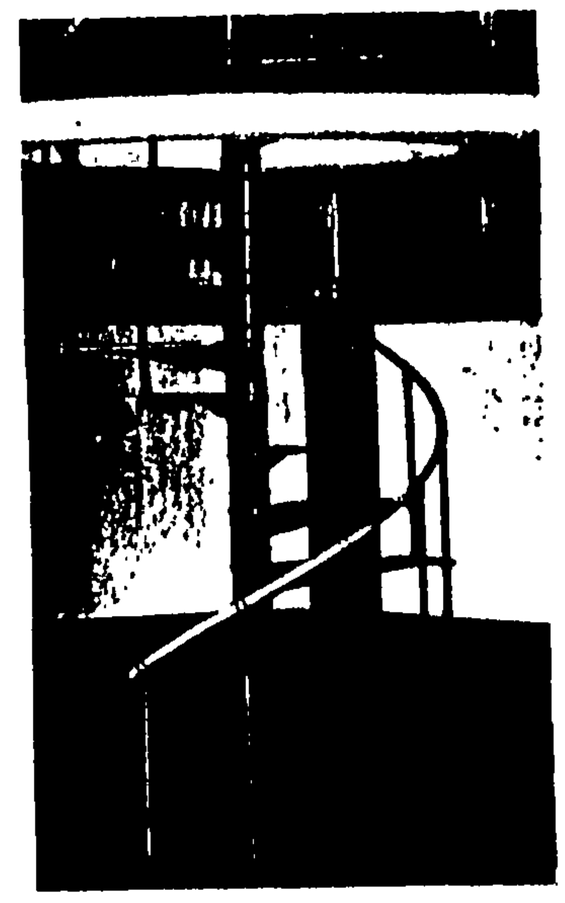
A great space saver for industrial plants, public and commercial buildings, swimming pools, sun decks, recreational facilities, and residences.

New cantilever center supported treads convertible to right or left hand turn Vari-sleeve spacers allow complete versatility in floor to ceiling height adjustment.

NOTE: Cast iron treads and platforms only. Assembly and assembly components by others.

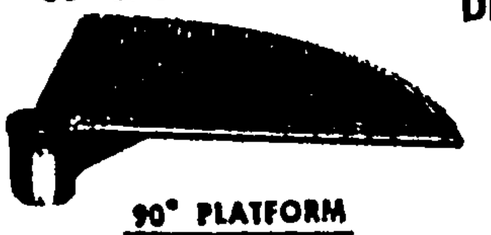
Specify:

1. Catalog number.
2. Tread size in degrees:
   22½°—16 treads per circle.
   30°—12 treads per circle.
3. Radius of tread and platform:
   30" or 36".
4. Platform if required.
5. Elevation between floors or height of stair.

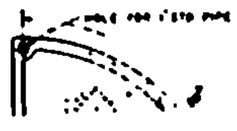


ILLUSTRATING R-4968 RIGHT HAND STAIR ASSEMBLY

DETAILS



90° PLATFORM



TREAD

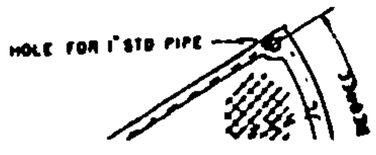


Table of Sizes

Catalog No.	Description	Radius
R-4968-A	90° Platform	30"
R-4968-B	90° Platform	36"

PROJECT NAME CANADA VILLAGE JOB NO. 5007

SUBJECT REAR YARD DRAINAGE TO PARK

BY _____ CHECKED BY _____ DATE 5-9-95 PAGE 8 OF _____

FROM BRATER + KING, "HANDBOOK OF HYDRAULICS"

Table 4-4. Coefficients of Discharge for Rectangular Orifices 0.656 Ft Wide with Partially Suppressed Contraction

Description of contraction	Height, feet	Head, feet			Description of contraction	Height, feet	Head, feet		
		1	3	5			1	3	5
Complete contraction...	0.656	0.598	0.604	0.603	Suppressed at bottom and partly on one side..	0.656	0.633	0.636	0.637
	0.328	0.616	0.615	0.611		0.328	0.658	0.656	0.654
	0.164	0.631	0.627	0.620		0.164	0.676	0.673	0.672
	0.098	0.632	0.628	0.623		0.098	0.682	0.683	0.681
	0.033	0.652	0.634	0.620		0.033	0.708	0.705	0.695
Suppressed at bottom only	0.656	0.620	0.624	0.625	Suppressed at bottom and partly on two sides.	0.656	0.678	0.664	0.663
	0.328	0.649	0.647	0.634		0.328	0.680	0.675	0.672
	0.164	0.671	0.668	0.666		0.164	0.687	0.680	0.673
	0.098	0.680	0.677	0.677		0.098	0.693	0.688	0.683
	0.033	0.710	0.705	0.696		0.033	0.708	0.705	0.698
Suppressed on both sides only.....	0.656	0.632	0.628	0.628	Suppressed at bottom and two sides.....	0.656	0.690	0.677	0.672
	0.328	0.637	0.630	0.630					
	0.164	0.641	0.634	0.635					
	0.098	0.653	0.643	0.639					
	0.033	0.682	0.667	0.655	Complete suppression.....	0.656	.....	0.950	

4-30

HANDBOOK OF HYDRAULICS

BRASHER & LORENZ, INC.
Consulting Engineers

PROJECT NAME CANADA VILLAGE JOB NO. 5007

SUBJECT REAR YARD DRAINAGE TO PARK

BY _____ CHECKED BY _____ DATE 6-29-95 PAGE 9 OF _____

Table 5-3. Values of C in the Formula $Q = CLH^{3/2}$ for Broad-crested Weirs

Measured head in feet, H	Breadth of crest of weir in feet										
	0.50	0.75	1.00	1.50	2.00	2.50	3.00	4.00	5.00	10.00	15.00
0.2	2.80	2.75	2.69	2.62	2.54	2.48	2.44	2.38	2.34	2.49	2.68
0.4	2.92	2.80	2.72	2.64	2.61	2.60	2.58	2.54	2.50	2.56	2.70
0.6	3.08	2.89	2.75	2.64	2.61	2.60	2.68	2.69	2.70	2.70	2.70
0.8	3.30	3.04	2.85	2.68	2.60	2.60	2.67	2.68	2.68	2.69	2.64
1.0	3.32	3.14	2.98	2.75	2.66	2.64	2.65	2.67	2.68	2.68	2.63
1.2	3.32	3.20	3.08	2.86	2.70	2.65	2.64	2.67	2.66	2.69	2.64
1.4	3.32	3.26	3.20	2.92	2.77	2.68	2.64	2.65	2.65	2.67	2.64
1.6	3.32	3.29	3.28	3.07	2.89	2.75	2.68	2.66	2.65	2.64	2.63
1.8	3.32	3.32	3.31	3.07	2.88	2.74	2.68	2.66	2.65	2.64	2.63
2.0	3.32	3.31	3.30	3.03	2.85	2.76	2.72	2.68	2.65	2.64	2.63
2.5	3.32	3.32	3.31	3.28	3.07	2.89	2.81	2.72	2.67	2.64	2.63
3.0	3.32	3.32	3.32	3.32	3.20	3.05	2.92	2.73	2.66	2.64	2.63
3.5	3.32	3.32	3.32	3.32	3.32	3.19	2.97	2.76	2.68	2.64	2.63
4.0	3.32	3.32	3.32	3.32	3.32	3.32	3.07	2.79	2.70	2.64	2.63
4.5	3.32	3.32	3.32	3.32	3.32	3.32	3.32	2.88	2.74	2.64	2.63
5.0	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.07	2.79	2.64	2.63
5.5	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	2.88	2.64	2.63

PROJECT NAME Canada Village Subdivision JOB NO. 5007

SUBJECT Outlet Structure in OPECHEE COURT

BY SRL CHECKED BY DATE 5/5/95 PAGE 10 OF

Basin 105

$Q = 14.3$ cfs

$D = 0.4'$

Assume: Weir Condition on Grates in Sump

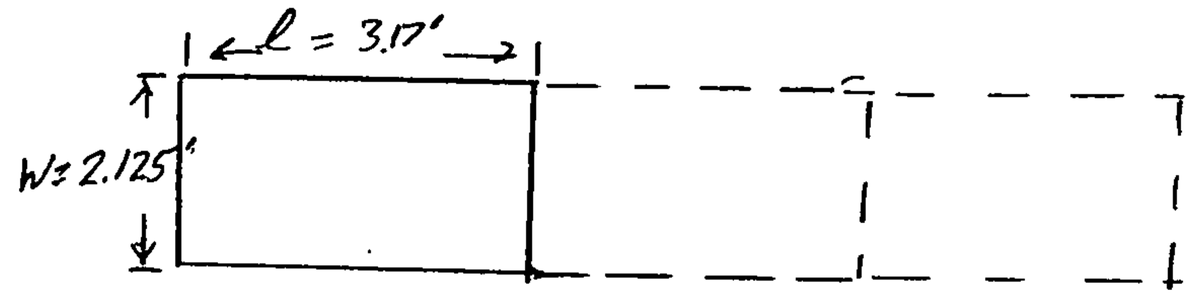
Find: The Required # of Type "D" Grates too convey discharge

Soln: Referencing Figure 309.4F of New Mexico Design Manual of NMSHTD.

From the Nomagraph, @ $D = 0.4'$ the Discharge per foot of effective Perimeter $(Q/P) = 0.7$ cfs/ft

$$P_{min} = Q/(Q/P) = \frac{14.3}{0.7} = 20.4 \text{ ft}$$

One Type "D" Grate has dimensions as shown



$P = 2l_t + 2w$

$20.4 = 2l_t + 2(2.125')$

$2l_t = 16.15$

$l_t = 8.075$

$$\# \text{ of Grates} = \frac{l_t}{l} = \frac{8.075'}{3.17'} = 2.54 \approx \underline{\underline{3 \text{ Grates}}}$$

$Q_{orifice} = 0.6\,(3 \times 4.1 \times 50\%)\sqrt{64.4\,(1.0)} = 29.6$ cfs

$Q_{weir} = 2.9\,(\overset{9.51}{23.27})\,(1.0)^{1.5} = \overset{27.6 \text{ cfs}}{67.5 \text{ cfs}}$

BRASHER & LORENZ, INC.
Consulting Engineers

$$H = \left(\frac{14.3}{2.9 \times 9.5}\right)^{2/3} = .65'$$

PROJECT NAME Canada Village Subdivision JOB NO. 5007

SUBJECT Storm Drain Inlets in Singing Arrow Ave.

BY SRL CHECKED BY DATE 5/5/95 PAGE 11 OF

Basin 104

$S = 0.027 \approx 3\%$

$Q = 12.4$ cfs $= 6.2$ cfs on each side of street

Check: to see if One type "A" inlet + one type "C" inlet on each side of street is sufficient to take total Q.

Soln:

From Plate 22.3 D-1 C.O.A. DPM

Flow Depth = 0.34'

From Plate 22.3 D-5 C.O.A DPM

@ $D = 0.34'$, $S = 0.03$ → Capacity of type "A" inlet = 4.0 cfs

$Q_{RESIDUAL} = 2.2$ CFS $d = 0.25'$ ⇒ CAPACITY "C" = 2.4 CFS

Thus: - 1 type "A" + 1 type "C" inlet in series have a capacity of 6.4 cfs > 6.2 cfs

- therefore 1 type "A" + 1 type "C" is sufficient ON EACH SIDE OF STREET.

24" RCP to Tramway Channel

$S_{min} = 0.33\%$ ~~0.5%~~

PROJECT NAME Canada Village Subdivision JOB NO. 5007

SUBJECT Channel Inlet For Drainage basin 103

BY SRL CHECKED BY DATE 5/5/95 PAGE 12 OF

$Q = 11.4$ cfs

Assume: Allowable Head $(h) \leq 1'$

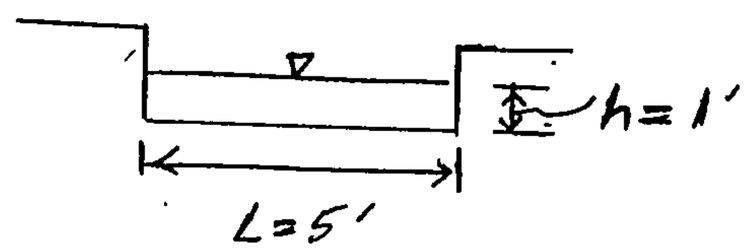
Find: size of weir that can pass Q with $h \leq 1'$

Soln:

Since the channel wall is a sharp drop-off the weir formula is:

$$Q = CLH^{\frac{3}{2}} \rightarrow \text{use } C = 2.7$$

1st attempt $\rightarrow L = 5'$

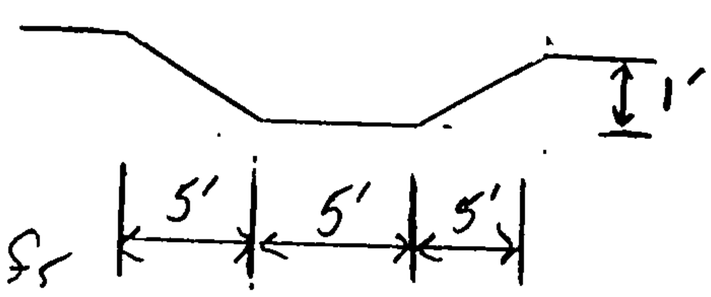


$$Q = (2.7)(5)1^{\frac{3}{2}}$$

$$Q = 13.5 \text{ cfs} > 11.4 \text{ cfs} \quad \text{OK!}$$

To allow for drivability modify section to

effective $L = 10$



- solve for new H @ $Q = 11.4$ cfs

$$H = \sqrt[\frac{3}{2}]{\left(\frac{Q}{CL}\right)} = \sqrt[\frac{3}{2}]{\frac{11.4}{2.7(10)}} = 0.56' \neq 1'$$

$$\therefore 0.56' < H < 1' \rightarrow \text{OK!}$$

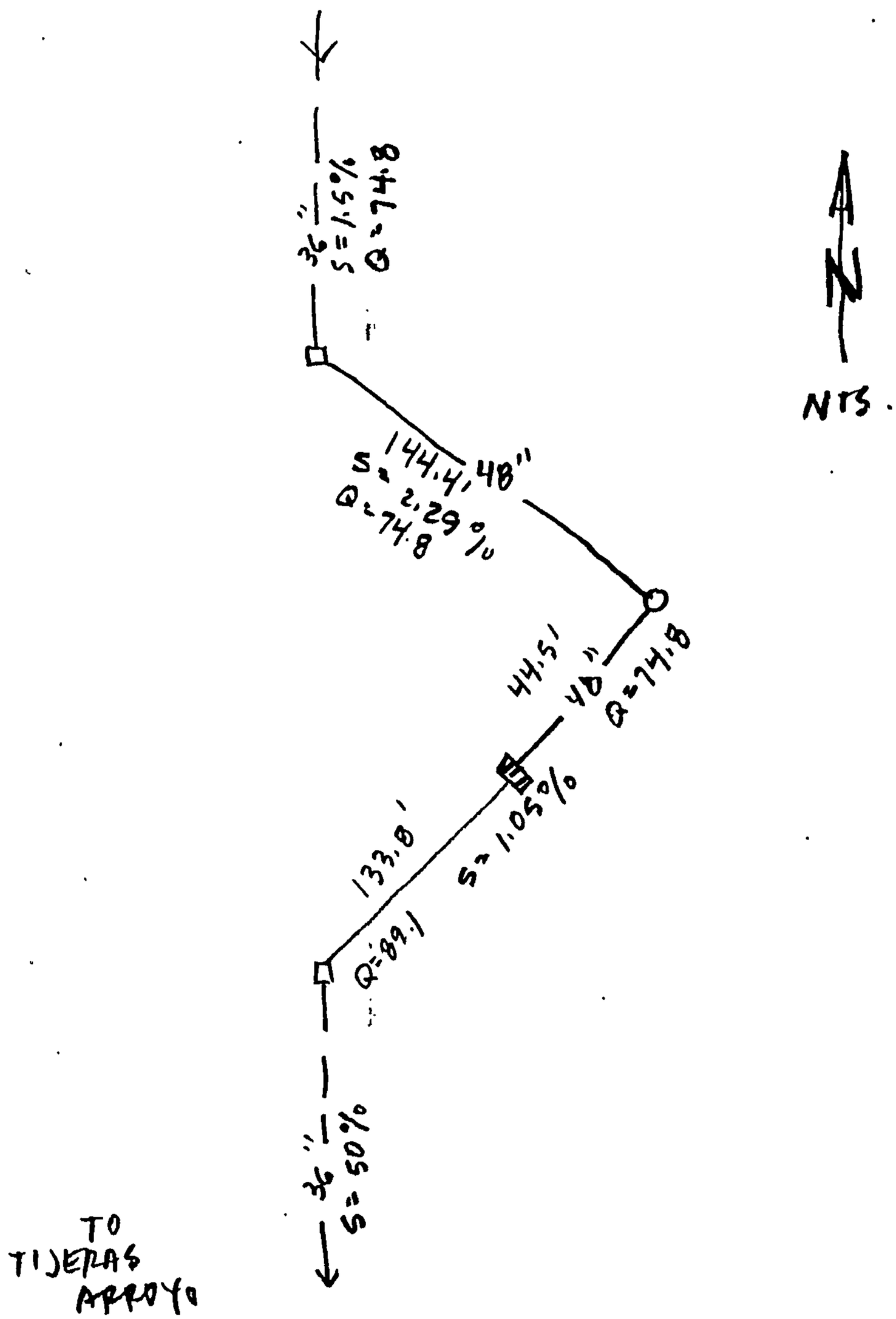
HYDRAULIC GRADE LINE CALCULATIONS

PROJECT NAME CANADA VILLAGE JOB NO. 5007

SUBJECT HGL CALCS

BY _____ CHECKED BY _____ DATE 6-30-95 PAGE 1 OF _____

SD SCHEMATIC



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Consulting Engineers

SUMMARY OF HYDRAULIC CALCULATIONS

PROJECT: CANADA VILLAGE

CLOSED CONDUIT

LINE: 36/48/36

BY: DL

DATE: 6-30-95

SHEET: 1 OF:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
										JUNCTION		LOSSES									
STATION	STRUCT	D	Q	A	V	K	S_f	L	Δ	D	θ	h_f	h_p	h_j	h_{mh}	h_f	h_{misc}	Σ	E.G.	h_v	H.G.
14+22	36"SD	0.96	89.1	1.77	42.7	—	—	—	—	—	—										
14+22	MH	2.44	89.1	7.3	10.5		1.02		45°				0.24		0.08			0.32		1.71	16.92
12+84	D1	2.44	89.1	7.3	10.5		1.02	133.8	0											1.71	17.24
12+84	D1	2.44	89.1	7.3	10.5		1.02		0						0.08			0.08		1.71	18.60
12+34	MH	2.44	74.8	6.4	11.7		1.04	44.5	0											1.71	18.68
12+34	MH	1.60	74.8	4.6	15.6		2.45		90				0.42		0.11			0.53		2.12	19.14
10+90	MH	1.60	74.8	4.6	15.6		2.45	144.4	0											2.12	19.67
10+90	MH	1.60	74.8	4.6	15.6		2.45		45				0.53		0.19			0.72		3.78	23.20
																				3.78	23.92

REMARKS:

MANNING'S n: 0.013

CONTROL = INV @ STA 14+22 (15.96) + d (0.96) = 16.92

REV. 3-83

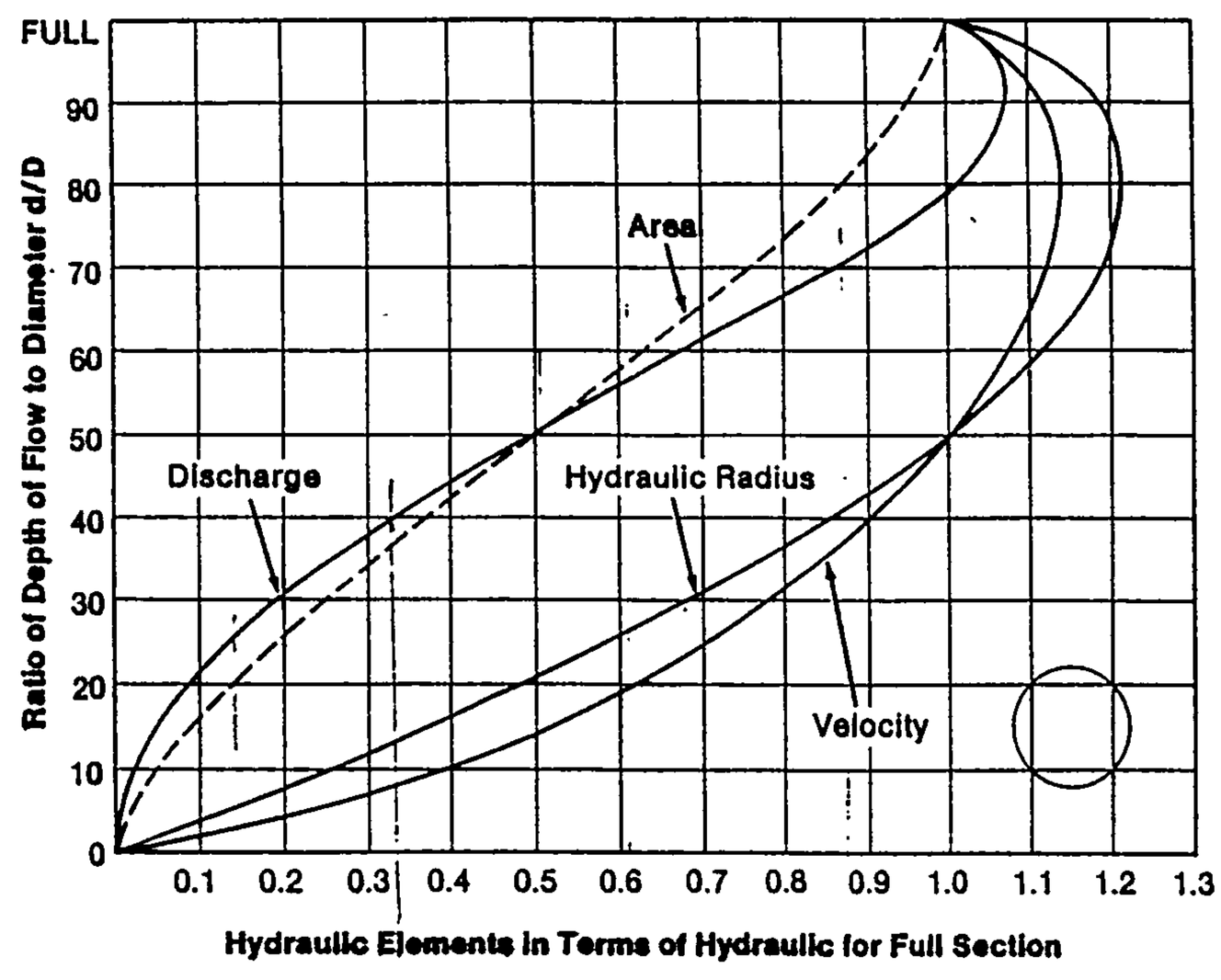
160

PLATE 22.8 B-5

22.8

HYDRAULIC VALUES

D	S	Q	Q_F	A_F	R_F	V_F	Q/Q_F	A/A_F	R/R_F	V/V_F	d/d_F	A	R	V	d
36"	0.50	89.1	471.6	7.07	0.75	66.7	0.19	0.25	0.68	0.64	0.32	1.77	0.51	42.7	0.96
48"	0.0105	89.1	147.2	12.57	1.00	11.7	0.61	0.58	1.08	0.90	0.61	7.3	1.08	10.5	2.44
48"	0.0229	74.8	217.4	12.57	1.00	17.3	0.34	0.37	0.85	0.90	0.40	4.65	0.85	15.6	1.60
48"	0.0105	74.8	147.2	12.57	1.00	11.7	0.51	0.51	1.00	1.00	0.50	6.4	1.00	11.7	2.00



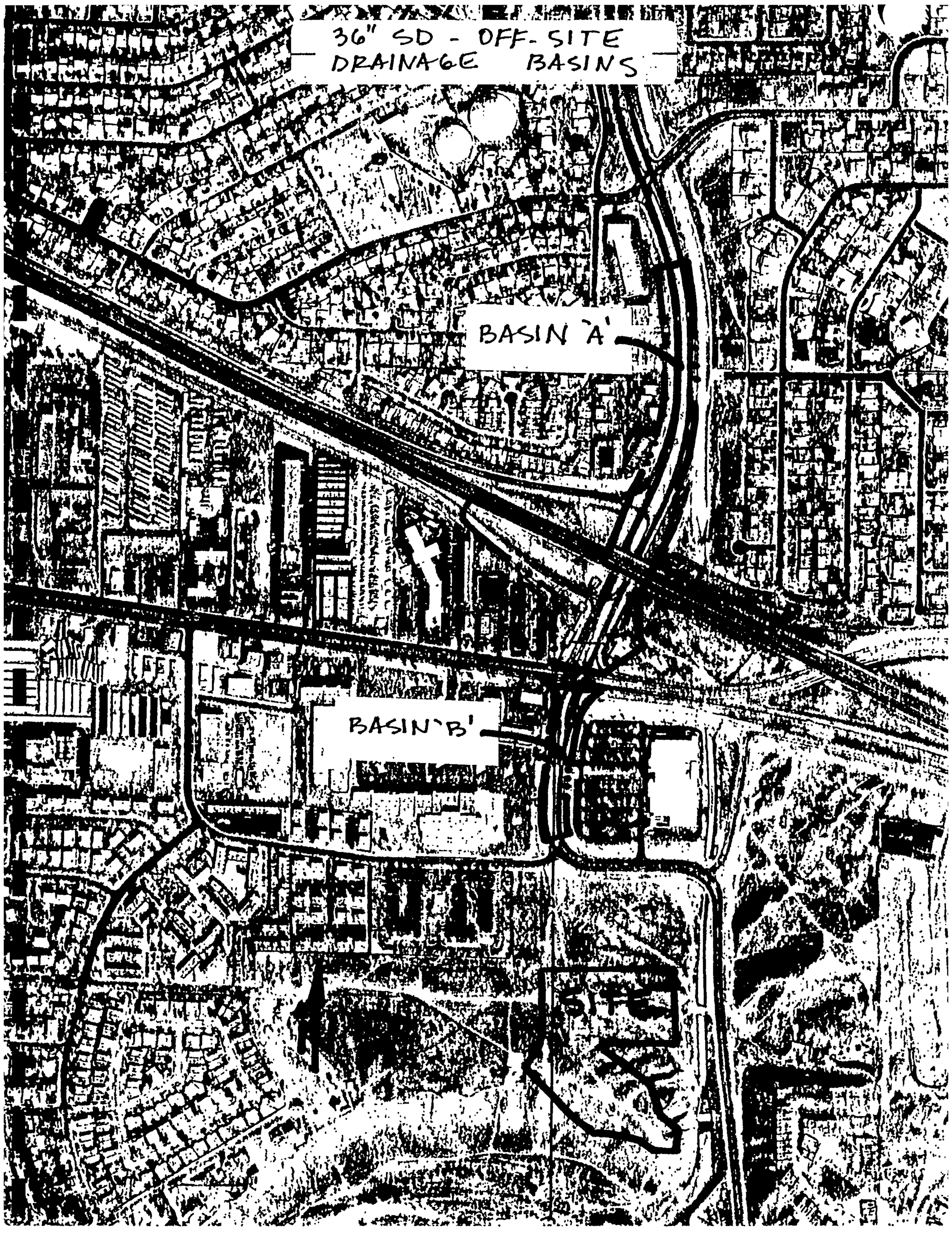
PROJECT NAME CANADA VILLAGE JOB NO. 5007

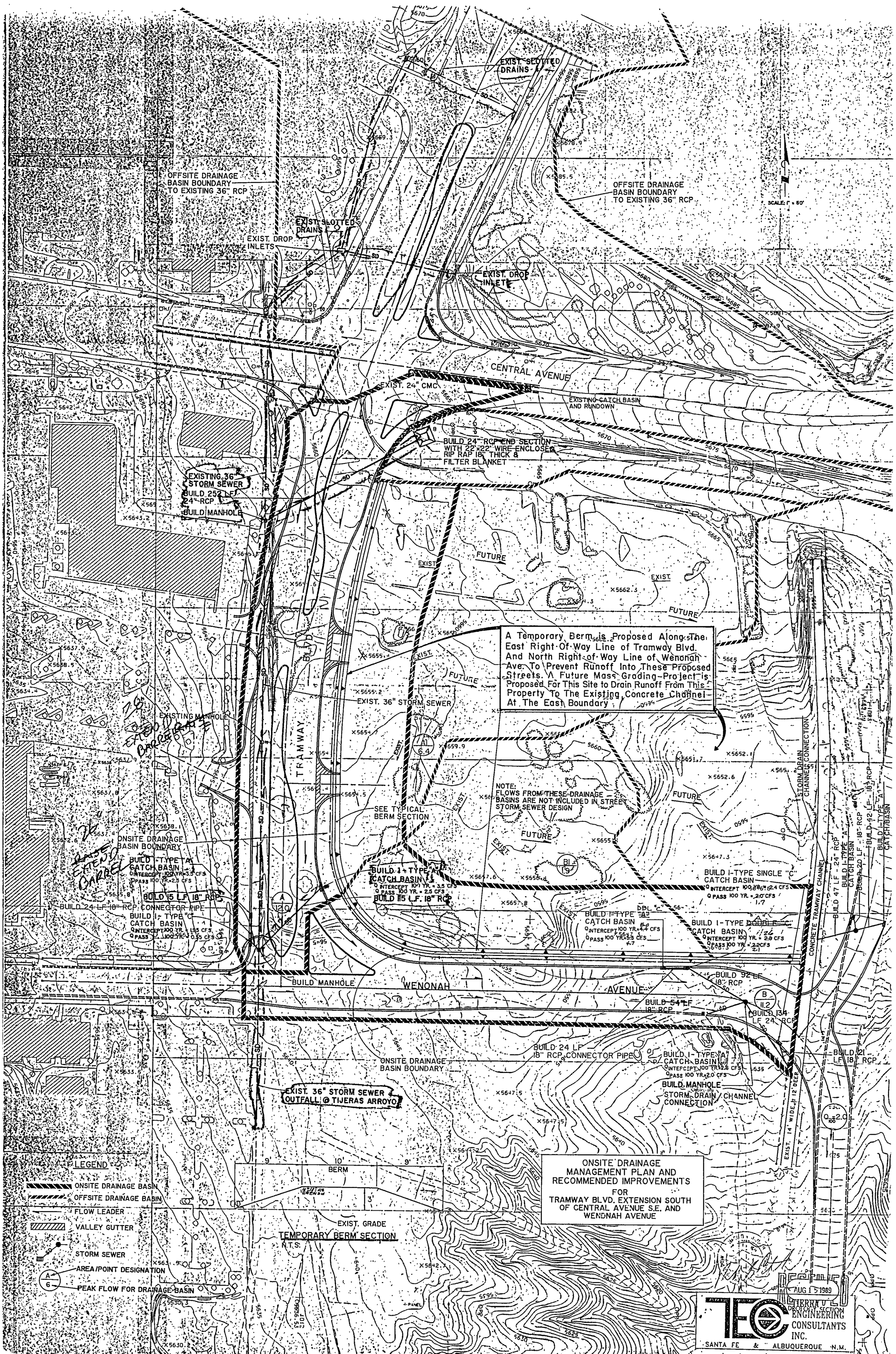
SUBJECT 36" SD HYDROLOGY

BY _____ CHECKED BY _____ DATE 6-30-95 PAGE 4 OF _____

36 inch SD Hydrology

			HYDROLOGY - HYMO					
Precipitation Zone 4						P360 = 2.90 inches		
BASIN	AREA	Aa	Ab	Ac	Ad	E	Q100	VOL100
	acres	acres	acres	acres	acres	inches	cfs	af
DEVELOPED CONDITION:								
105	3.35	0.00	0.53	0.53	2.29	1.97	14.3	0.55
A	12.00	0.00	0.00	0.60	11.40	2.58	62.1	2.58
B	2.50	0.00	0.20	0.00	2.30	2.52	12.7	0.53


36" SD - OFF-SITE
DRAINAGE BASINS
BASIN 'A'
BASIN 'B'


OFFSITE DRAINAGE BASIN BOUNDARY TO EXISTING 36" RCP
EXIST. SLOTTED DRAINS
EXIST. DROP INLETS
EXIST. DROP INLETS
OFFSITE DRAINAGE BASIN BOUNDARY TO EXISTING 36" RCP
SCALE: 1" = 50'
CENTRAL AVENUE
EXIST. 24" CMC
EXISTING CATCH BASIN AND RUNDOWN
BUILD 24" RCP END SECTION WITH 22'x22' WIRE ENCLOSED RIP RAP 18" THICK & FILTER BLANKET
EXISTING 36" STORM SEWER
BUILD 252 LF 24" RCP
BUILD MANHOLE
FUTURE
EXIST.
A Temporary Berm is Proposed Along The East Right-Of-Way Line of Tramway Blvd. And North Right-of-Way Line of Wenonah Ave. To Prevent Runoff Into These Proposed Streets. A Future Mass Grading Project is Proposed For This Site to Drain Runoff From This Property To The Existing Concrete Channel At The East Boundary
EXIST. 36" STORM SEWER
EXISTING MANHOLE
TRAMWAY
SEE TYPICAL BERM SECTION
NOTE: FLOWS FROM THESE DRAINAGE BASINS ARE NOT INCLUDED IN STREET STORM SEWER DESIGN
STORM DRAIN CHANNEL CONNECTION
CONCRETE TRAMWAY CHANNEL
ONSITE DRAINAGE BASIN BOUNDARY
BUILD 1-TYPE "A" CATCH BASIN
BUILD 15 LF 18" RCP
BUILD 24 LF 18" RCP CONNECTOR PIPE
BUILD 1-TYPE "C" CATCH BASIN
BUILD 1-TYPE SINGLE "C" CATCH BASIN
BUILD 47 LF - 24" RCP
BUILD 1-TYPE "A" CATCH BASIN
BUILD 42 LF - 18" RCP
BUILD 1-TYPE "A" CATCH BASIN
BUILD MANHOLE
WENONAH AVENUE
BUILD 92 LF 18" RCP
BUILD 54 LF 18" RCP
BUILD 134 LF 24" RCP
BUILD 24 LF 18" RCP CONNECTOR PIPE
BUILD 1-TYPE "A" CATCH BASIN
BUILD MANHOLE
STORM DRAIN CHANNEL CONNECTION
BUILD 21 LF 18" RCP
EXIST. 36" STORM SEWER OUTFALL @ TIJERAS ARROYO
EXIST. 14' WIDE x 12' DEEP
LEGEND
ONSITE DRAINAGE BASIN
OFFSITE DRAINAGE BASIN
FLOW LEADER
VALLEY GUTTER
STORM SEWER
AREA/POINT DESIGNATION
PEAK FLOW FOR DRAINAGE BASIN
TEMPORARY BERM SECTION
N.T.S.
EXIST. GRADE
ONSITE DRAINAGE MANAGEMENT PLAN AND RECOMMENDED IMPROVEMENTS FOR TRAMWAY BLVD. EXTENSION SOUTH OF CENTRAL AVENUE S.E. AND WENONAH AVENUE
AUG 15 1989
TERRA CONSULTANTS INC.
SANTA FE & ALBUQUERQUE N.M.

LEGEND

—6001—	EXISTING CONTOUR ELEVATION
02.5 ×	EXISTING SPOT ELEVATION
—01—	PROPOSED CONTOUR ELEVATION
—· · · · —	PROPERTY LINE
⊕ 01.5	PROPOSED SPOT ELEVATION
←	DIRECTION OF FLOW
	DRAINAGE SWALE
▬ ▬ ▬	DRAINAGE BASIN DIVIDE
▬▬▬	RETAINING WALL
(112)	DRAINAGE BASIN ID.

RECEIVED JUL 14 1995 HYDROLOGY DIVISION

GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.

AS BUILT INFORMATION

CONTRACTOR / COMPANY — DATE
STAKED BY — DATE
INSPECTOR'S ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS

LOCATED AT THE SOUTHWEST CORNER OF THE INTERSECTION OF SINGING ARROW AND FOUR HILLS ROAD. THE BENCHMARK IS MARKED "HV-538" ON THE CONCRETE SIDEWALK. ELEVATION IS 5597.68.

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

5-9-95
7-5-95

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY — DATE 5/95
DRAWN BY — DATE 5/95
CHECKED BY — DATE 5/95

BRASHER & LORENZ, INC.
4425 JUAN TABO BLVD. NE., SUITE 202
ALBUQUERQUE, NM 87111
PH (505)296-0422 FAX (505)296-0466

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

CAÑADA VILLAGE
EXISTING ON-SITE DRAINAGE CONDITIONS

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
D.R.C. CHAIR			WATER		
TRANS. DEV.			WASTEWATER		
HYDROLOGY					

5007EX1 1=40 5/9/95

© COPYRIGHT

DRAWING NO. — MAP NO. L-22,23 — SHEET EXHIBIT 1

CITY OF
Albuquerque
Public Works Department

January 31, 1997

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

Paul Brasher
Brasher & Lorenz, Inc.
2201 San Pedro NE
Building #1 - Suite 210
Albuquerque, NM 87110

L22-D52

RE: CANADA VILLAGE ~~(L22-D52)~~. ENGINEER'S CERTIFICATION FOR RELEASE OF FINANCIAL GUARANTEE. ENGINEER'S CERTIFICATION DATED JANUARY 15, 1997.

Dear Mr. Brasher:

Based on the information provided on your January 21, 1997 submittal, City Hydrology has the following comment:

1. Provide as-built invert and rim elevations for the new storm drain.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Andrew Garcia
File

DRAINAGE INFORMATION SHEET

L22/D52

PROJECT TITLE: CANADA VILLAGE ZONE ATLAS/DRNG. FILE #: [redacted]

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: LOTS 1-36 CANADA VILLAGE (LOS CABALLEROS SUBDIVISION)

CITY ADDRESS: SINGING ARROW AT FOUR HILLS RD

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz

ADDRESS: 2201 San Pedro NE Bldg.1 Suite 210 Albuquerque, New Mexico 87110 PHONE: 888-6088

OWNER: MIKE KNIGHT, ISH LEE MICHAEL HOMES CONTACT: _____

ADDRESS: 1500 JUAN TABO BLVD NE PHONE: 299-1500

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
____ DRAINAGE PLAN
____ CONCEPTUAL GRADING & DRAINAGE PLAN
____ GRADING PLAN
____ EROSION CONTROL PLAN
X ENGINEER'S CERTIFICATION
____ OTHER _____

PRE-DESIGN MEETING:

X YES
____ NO
____ COPY PROVIDED

RECEIVED
FEB 07 1997
HYDROLOGY SECTION

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D. APPROVAL
____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ FOUNDATION PERMIT APPROVAL
____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY APPROVAL
____ GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ S.A.D. DRAINAGE REPORT
____ DRAINAGE REQUIREMENTS
X OTHER RELEASE OF FINANCIAL GUARANTY (SPECIFY)

DATE SUBMITTED: 2-6-97

BY: Dennis A. Lorenz PAUL BRASHER

DRAINAGE INFORMATION SHEET

L22/D52

PROJECT TITLE: CANADA VILLAGE ZONE ATLAS/DRNG. FILE #: ~~L22/D52~~

DRB #: 94-538 EPC #: _____ WORK ORDER #: 5225

LEGAL DESCRIPTION: LOTS 1-36 LOS CABALLEROS SUBDIV.

CITY ADDRESS: SINGING ARROW AT FOUR HILLS RD.

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Paul Brasher

ADDRESS: 2201 San Pedro NE Bldg.1 Suite 210 Albuquerque, New Mexico 87110 PHONE: 888-6088

OWNER: ISH LEE MICHAEL HOMES CONTACT: MIKE KNIGHT

ADDRESS: P.O. BOX 21849, ALBUQ NM 87154 PHONE: 299-1500

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
____ DRAINAGE PLAN
____ CONCEPTUAL GRADING & DRAINAGE PLAN
____ GRADING PLAN
____ EROSION CONTROL PLAN
X ENGINEER'S CERTIFICATION
____ OTHER _____

PRE-DESIGN MEETING:

____ YES
____ NO
____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D. APPROVAL
____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ FOUNDATION PERMIT APPROVAL
____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY APPROVAL
____ GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ S.A.D. DRAINAGE REPORT
____ DRAINAGE REQUIREMENTS
X OTHER FIN. GUAR. RELEASE (SPECIFY)

Rec'd 1/21/97

DATE SUBMITTED: 1/16/97

BY: Paul Brasher

Find out old original drainage file #

Paul Brasher told me that the 36" S.D. was built in 1959. He has inspected it and it is in good shape. John Justin
9-14-95

V-95-86
DRB-94-538
S-95-32

Surv-Tek, Inc., agents for Lee Michael Homes, Inc., request Vacation (closing) of Public Right-of-Way for portions of the cul-de-sac for Opechee Court NE and segments of Piru Boulevard NE, plus Preliminary and Final Plat approval (includes grading approval) for approximately 36 lots on Lots 1 thru 6, Block 5 and Lots 1 thru 15, Block 6 of Canada Village, Second Unit, zoned R-1 (City) and located on Singing Arrow Ave SE between Piru Blvd SE and Four Hills Dr SE, containing approximately 6.2 acres. (L-22)

COG — "No adverse comment."

Zoning Enforcement — "No adverse comment."

Real Estate — "If approved, final disposition shall be through the City Real Property Division. Contact the Real Property Division as soon as possible concerning estimated compensation due the City for the vacation".

APS — The 36 homes in Unit II of La Canada Village will affect Wherry and Eubank Elementary Schools, Van Buren Middle School, and Highland High School. The schools in the area should be able to accommodate students potentially generated by the development.

U.S. West Communications — This vacation can be granted. Okay to sign Preliminary and Final plats.

PNM — PNM has no adverse comments on vacation of Public Right-of-Way for portions of the cul-de-sac for Opechee Ct NE, and a segment of Piru Blvd NE. However, PNM does hereby reserve an easement ten (10) feet wide along the northerly vacated Right-of-Way of Piru Blvd NE which is the northerly boundary line of Lot 36, Block A, Canada Village Second Unit.

PNM Gas — Approves.

Office of Econ. Develop. — "No adverse comment."

Neighborhood Coordin. — Letter sent to Singing Arrow Neighborhood Association.

AMAFCA — Refer to City of Albuquerque/Hydrology comments.

Environmental Health

Prior to any earthmoving activities involving a parcel of 3/4 of an acre or more, a Topsoil Disturbance Permit must be obtained from the City's Environmental Health Department pursuant to Albuquerque/Bernalillo County Air Quality Control Board Regulation No. 8. Revegetation or stabilization of disturbed areas can be coordinated as part of the permitting process. Contact Larry Caudill (768-2600).

As the proposal proceeds toward the implementation of residential units, EHD encourages the applicant to consider alternatives to the use of woodburning fireplaces. Possibilities include gas logs and Environmental Protection Agency approved woodburning devices. Operating a fireplace for 4 hours can produce as much carbon monoxide as 2 days worth of driving to and from work. In contrast, gas logs produce about 35 times less carbon monoxide than a woodburning fireplace.

Parks and General Services

The Developer under Ordinance 7-1976, as amended, is required to dedicate land which is suitable for development. The City may in lieu of dedication of land accept a cash payment of an amount equal to the value of the land required. Parks and General Services will require a cash-in-lieu payment for 15 newly created lots. Parks and General Services will require a cash-in-lieu payment for 15 newly created lots. At the time of issuance of building permits, the developer shall be required to pay a development fee.

There is an existing trail along Four Hills Road. This is supposed to connect to a 6 foot bike lane along Singing Arrow Avenue. The plat does not show the 6 foot bike lane. Also, the application does not include an infrastructure list which should show the bike lane striping.

The grading and drainage plan should include a "limits to grading" line. The grading and drainage plan should include temporary fencing so as not to disturb the remaining parkland. Revegetation will be required of the graded parkland per standard specification for public work construction.

Is there an easement for the storm/sewer line that you are proposing to tie into within the park?

Utilities Development

No adverse comment on the vacation requests provided that adequate public water and sanitary sewer easements are retained. In regard to the plat, a water and sanitary sewer availability statement was issued on June 15, 1995 for the proposed development. An infrastructure list, based on the availability statement, is required for preliminary plat approval. Discussion is necessary concerning the method of obtaining sanitary sewer service for the proposed development.

City Engineer

In addition to the approved drainage report on file with this office, the following items will need to be addressed for preliminary plat approval:

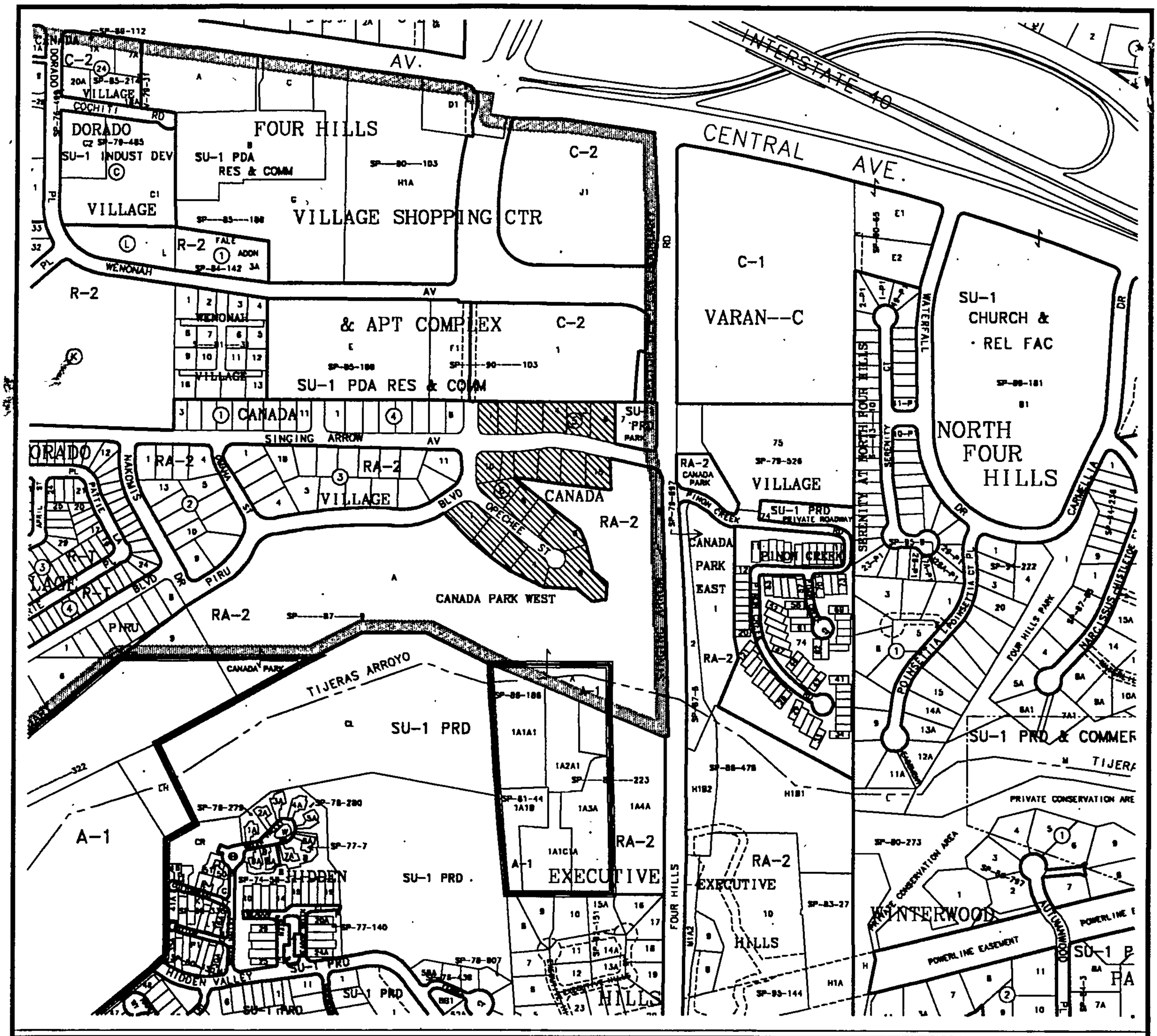
Does an easement exist for the 36" storm drain? Who owns and/or maintains the storm drain? What is the capacity of the storm drain and can it handle this development's flows? Are there any improvements needed on the storm drain system?

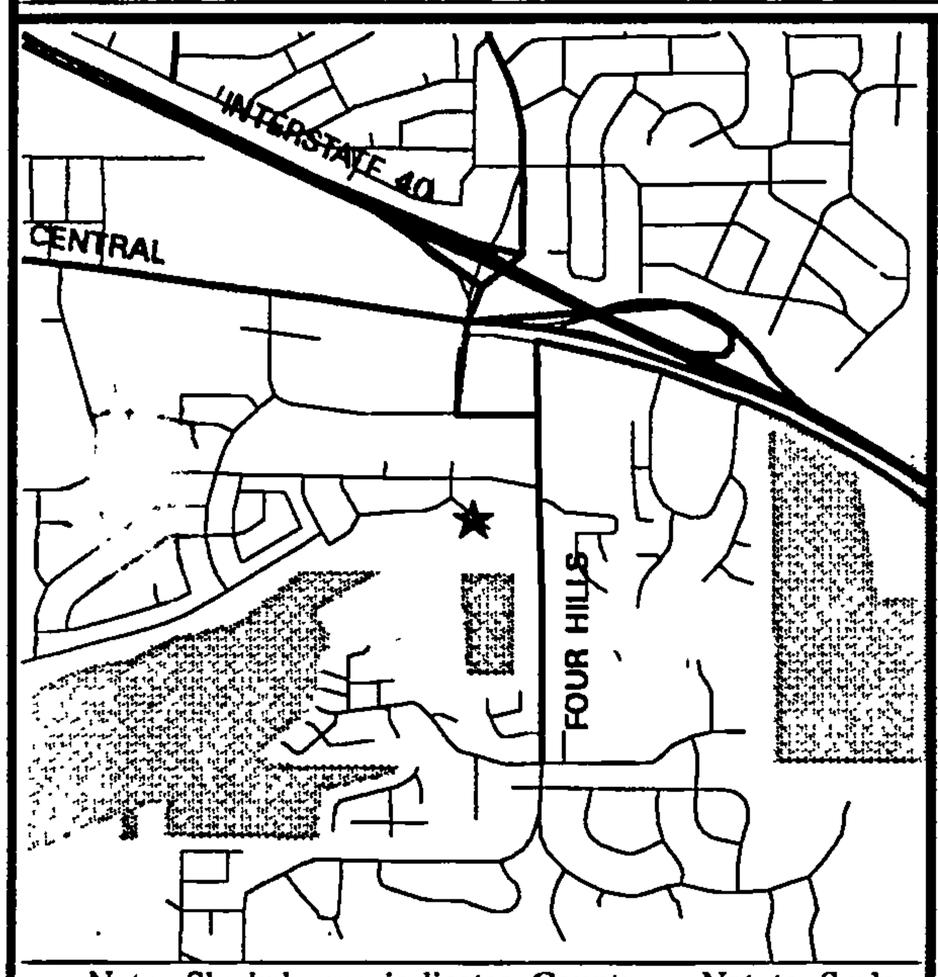
Transportation Develop.	1. Piru Street north of Singing Arrow should not be vacated until the location for the second access point for the subdivision is determined. 2. An Infrastructure List is required. 3. If Singing Arrow should be vacated then the street needs to have a 75 foot radii as a minimum radius.
Planning Department	Refer to public hearing comments regarding proposed vacation(s) of Piru Blvd; it appears that off-site alternative easements or concurrent vacation(s) are needed.

A Grading Plan and Infrastructure List are needed for Preliminary Plat approval.

<u>IT IS REQUESTED THAT THE APPLICANT AND/OR AGENT BE PRESENT AT THE HEARING</u>

cc:Lee Michael Homes Inc., 11930 Menaul Blvd NE, 87112
Surv-Tek Inc., 5643 Paradise Blvd NW, 87114





Note: Shaded area indicates County Not to Scale

ZONING MAP

AGIS

Scale 1"= 547 '

DRB-94-538/S-95-32

HEARING DATE
9-19-95

MAP NO.
L-22

FILE NO.
V-95-86

DRAINAGE INFORMATION SHEET

L22/D52

PROJECT TITLE: CANADA VILLAGE ZONE ATLAS/DRNG. FILE #: ~~[illegible]~~

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: CANADA VILLAGE, SECOND UNIT, BLOCKS 5 + 6

CITY ADDRESS: SINGING ARROW AVE SE

ENGINEERING FIRM: BRASHER & LORENZ, INC. CONTACT: Dennis A. Lorenz, PE

ADDRESS: 4425 Juan Tabo Blvd. NE Suite 202 PHONE: 296-0422

OWNER: ISH, INC CONTACT: MIKE KNIGHT

ADDRESS: 11930 MENAUL NE PHONE: _____

ARCHITECT: NA CONTACT: _____

ADDRESS: SURVTEK, INC PHONE: G. HUGG

SURVEYOR: SURV-TEK, INC CONTACT: G. HUGG

ADDRESS: 5643 PARADISE BLVD PHONE: 897-3366

CONTRACTOR: NA CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

X DRAINAGE REPORT
____ DRAINAGE PLAN
____ CONCEPTUAL GRADING & DRAINAGE PLAN
____ GRADING PLAN
____ EROSION CONTROL PLAN
____ ENGINEER'S CERTIFICATION
____ OTHER _____

PRE-DESIGN MEETING:

X YES
____ NO
____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL
X PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D. APPROVAL
____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
X FINAL PLAT APPROVAL
____ FOUNDATION PERMIT APPROVAL
____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY APPROVAL
____ GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ S.A.D. DRAINAGE REPORT
____ DRAINAGE REQUIREMENTS
____ OTHER _____ (SPECIFY)

DATE SUBMITTED: 5-10-95

BY: D. LORENZ

RECEIVED
JUL 11 1995
HYDROLOGY DIVISION

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

August 1, 1995

Dennis A Lorenz, PE
Brasher & Lorenz, Inc
4425 Juan Tabo NE Suite 202
Albuquerque, NM 87111

L22/D52

RE: DRAINAGE REPORT FOR CANADA VILLAGE [redacted]
RECEIVED JULY 11, 1995 FOR PRELIMINARY & FINAL PLAT
ENGINEER'S STAMP DATED 7-5-95

Dear Mr. Lorenz:

Based on the information included in the submittal referenced above, City Hydrology accepts the Drainage Report for Preliminary & Final Plat. Submit the Grading Plan, dated 7-5-95, to DRB for their approval.

Do not grade any adjacent property without written permission from the property owner.

Engineer's Certification of grading & drainage per DPM checklist must be accepted by City Hydrology before the Financial Guaranty will be released.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Andrew Garcia
Fred Aguirre, DRB 94-538
Mike Knight, ISH Inc, 11930 Menaul NE 87112

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

CITY OF
Albuquerque
Public Works Department

February 11, 1997

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

Paul Brasher
Brasher & Lorenz, Inc.
2201 San Pedro NE
Building #1 - Suite 210
Albuquerque, NM 87110

L22/D52

RE: CANADA VILLAGE ~~[illegible]~~. ENGINEER'S CERTIFICATION FOR RELEASE OF FINANCIAL GUARANTEE. ENGINEER'S CERTIFICATION DATED FEBRUARY 6, 1997.

Dear Mr. Brasher:

Based on the information provided on your February 7, 1997 submittal, City Hydrology accepts the Engineer's Certification of grading and drainage for release of financial guarantee.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Terri Martin
Andrew Garcia
File

BRASHER & LORENZ, INC.
CONSULTING ENGINEERS

4425 JUAN TABO BLVD NE SUITE 202 ALBUQUERQUE, NM 87111 PHONE (505) 296-0422 FAX (505) 296-0466

July 10, 1995

John Curtin
Hydrology
City of Albuquerque
PO Box 1293
Albuquerque, New Mexico 87103

RECEIVED
JUL 11 1995
HYDROLOGY DIVISION

SUBJECT: CANADA VILLAGE ~~[illegible]~~
L22/D52

Dear John:

Submitted herewith for review and approval is 1 copy of the revised Drainage Report for the subject project. The Plan has been revised to address the issues raised in your June 14, 1995 letter. Specifically, your comments are addressed as follows:

1. We had a Pre-Design meeting with Fred Aguirre. He felt the drainage criteria was straight forward and did not write a formal conference recap.

2. A copy of the proposed Infrastructure List is provided as requested.

3. Temporary construction easements are being prepared for the land located north of the site as well as the City Park land. These documents will be forwarded to you as soon as possible.

4. The Erosion Control Plan is provided as a part of the Drainage Plan as requested.

5. The AHYMO files have been printed in condensed format and should be easier to review. A comparision of undeveloped and developed flow rates is also provided.

6. The perimeter wall drainage details have been included on the plans. The capacity calculations have been revised per your comments.

7. The channel inlet details have been revised to include more spot elevations and detail, as requested.

8. The HGL information for the on-site storm drain is provded on the DRC planset.

9. The drop inlet capacity calculations have been revised per your comments.

10. All street flows have been checked to verify that runoff will remain within the curbs.

If you have any questions regarding this submittal, or if I can be of any assistance, please call.

Sincerely,

BRASHER & LORENZ, INC.

Dennis A. Lorenz, PE

/dl
encl

JUL 1 1 1995
HYD

Author: John P. Curtin at CABQ-PUBWORKS
Date: 8/1/95 4:24 PM
Priority: Normal
TO: COLLEEN FRENZ at SOFTSWITCH
BCC: John P. Curtin
Subject: Park grading @ Canada Village

---------- Message Contents ----------

Colleen:

Dennis Lorenz has submitted a Drainage Report that claims that Parks & General Services has granted permission for Canada Village to discharge rear yard runoff onto Park property and to grade adjacent Park property. Is this correct? If you are not the proper person to ask, let me know who I should contact.

John Curtin
PWD/Hydrology
768-2727

JUL 1 1 1995
HYDROLOGY DIVISION

D.R.B. Case No. _____
D.R.C. Project No. _____
Date Submitted _____
Prelim. Plat Approved _____
Prelim. Plat Expires _____

Figure 12

EXHIBIT "A"
To Subdivision Improvements Agreement
DEVELOPMENT REVIEW BOARD (DRB) REQUIRED INFRASTRUCTURE LISTING
for **CANADA VILLAGE, SECOND UNIT, BLOCKS 5 & 6**

Following is a summary of Public/Private Infrastructure required to be constructed or financially guaranteed to be constructed for the above development. This summary is not necessarily a complete listing. During the design process, if the City determines that appurtenant items have not been included in the summary, those items will be included in the listing and related financial guarantee, if the items normally are the Subdivider responsibility. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility are the responsibility of the Subdivider and will be included in the financial guarantee provided to the City.

SIZE	IMPROVEMENT	LOCATION	FROM	TO
6"	Waterline	Singing Arrow	Opechee Ct	Four Hills Road
6"	Waterline	Opechee Ct	Singing Arrow	End of cul de sac
12"	Waterline	Easement	Singing Arrow	NorthSub'n bdry
8"	Sanitary Sewer	Singing Arrow	Opechee Ct	Four Hills Road
8"	Sanitary Sewer	Opechee Ct	Singing Arrow	End of cul de sac
8"	Sanitary Sewer	Four Hills Road	Singing Arrow	160 feet south
32'FF	Street*	Singing Arrow	Opechee Ct	Four Hills Road
32'FF	Street*	Opechee Ct	Singing Arrow	End of cul de sac
24"	Storm Drain#	Singing Arrow	Singing Arrow	Tramway Channel
48"	Storm Drain#	Opechee Ct	Existing 36" SD	150' east
48"	Storm Drain#	Drainage R/W	Opechee Ct	Existing 36"SD

* All streets to include curb & gutter and 4' sidewalk both sides and residential street pavement

\# Includes drop inlets, connector pipe and manholes, as required to intercept street flow, per DPM

Certification of Grading to include private retaining walls (required for release of financial guarantee). Certified items do not require financial guarantee.

Residential street lighting per DPM

Prepared By: _____

Print Name: Dennis A. Lorenz, PE

Firm: Brasher & Lorenz, Inc.

****

Development Review Board Member Approval

_____	_____
Planning Director	Utility Development
_____	_____
Parks & Recreation	City Engineer/AMAFCA
_____	
Transportation Development	

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 14, 1995

Dennis A Lorenz, PE
Brasher & Lorenz, Inc
4425 Juan Tabo NE Suite 202
Albuquerque, NM 87111

C22/D52

RE: DRAINAGE REPORT FOR CANADA VILLAGE
RECEIVED MAY 10, 1995 FOR PRELIMINARY & FINAL PLAT
ENGINEER'S STAMP DATED 5-9-95

Dear Mr. Lorenz:

Based on the information included in the submittal referenced above, City Hydrology has the following comments:

Who did you have the Pre-Design Meeting with? No record of the meeting was found. Provide a copy of the proposed Infrastructure List. DRB file 94-538 only contains the Sketch Plat. Permission to grade or discharge on adjacent property must be in writing. Submit a copy of the written permission from the Owner of Four Hills Village and from the City Parks & General Services. The Erosion Control Plan must be on the Grading & Drainage Plan.

The AHYMO summary printouts are confusing and jumbled up. Perhaps if they were printed on 11x17 paper they would be decipherable. A table comparing the undeveloped and the proposed flows would expedite the review.

Due to the small flows discharging from the turned blocks, they will act as weirs instead of orifices. The wall drain detail is not shown with the Grading Details. The channel inlet details are confusing and appears to need more spot elevations. Provide design calculations (Q100,V100 & HGL) for the storm drains in Opechee & Singing Arrow. The capacity of the Type C inlets in Singing Arrow must be based on the reduced depth after the Type A inlets have intercepted 4 cfs. Check that the potential hydraulic jump or energy grade line in Opechee & Singing Arrow is confined within the right of way.

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

L22/D52

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Andrew Garcia
Fred Aguirre, DRB 94-538
Mike Knight, ISH Inc, 11930 Menaul NE 87112

FIGURE 6

CITY OF ALBUQUERQUE
NOTICE OF D.R.C. MEETING

L-22/D52

5-22-95
(DATE)

PROJECT NO: 5225.90
ZONE ATLAS: ~~L-22~~

PROJECT NAME: CANADA VILLAGE
LOCATION: (OPECHEE CT. + SINGING ARROW SE.)

* Not yet assigned

TYPE OF PROJECT: AHBA ✓ CIP ___ PWC ___ SAD ___ ALL PRIVATE ___

Contact Person: PAUL BRASHER Phone: 296-0422
Firm: BRASHER-LORENZ-ENOX.

✓ Scheduled with the D.R.C. on 5-24-95 at 2:00 in Conf. Room 302
___ No DRC Meeting Scheduled. Please return any comments by ___

The Project Is Scheduled For:
/ / Design Report Review / / Final Plan Review (Approved Infra. List)
/ / Pre-Design Meeting / / Signoff of Plans (Mylars Required)
/X/ Preliminary Plan Review / / ___

The Project Relates To:
/✓/ Water /✓/ San. Sewer /✓/ Paving /✓/ Storm Drainage / / ___

The Attached Package Includes:
/D/ Drawings /S/ Spec's /E/ Estimate /R/ Report /M/ Memo Only

Indicated below are the Departments/Divisions that have received project documents and/or are invited to attend. It will be the Project Managers responsiblity to notify consulting engineering firms of date and time of scheduled meetings.

/D/ DRC Chairman	Project Review Section	All
/D/ Traffic Repres	Transportation Development	All
/D/ Water Repres.	Utility Design	All
/D/ Hydro Repres.	Hydrology	All
/D/ Const. Repres.	Construction	All
/D/ Bill Coleman	Traffic Operations	
/ / Dick Salas	Street Maintenance	
/D/ Sergio Miranda	Water (Shutoff Plan)	ALL WATER SHUTOFF
/D/ Diane Scena	Parks & Recreation	ALL LANDSCAPING
/ / Joe Luehring	Utility Coordinator	ALL PWC & CIP
/ / Sheryl Germack	Transit Department	CIP/Memo
/ / Rick Roybal	Construction Coordinator	CIP/Memo
/ / Jim Fink	Line Maintenance	CIP-SAS/Memo
/ / Joe Dellalonga	City Architect	ARCHITECTURAL
/ / Lee Lunsford	SAD Engineer	SAD/Memo
/ / Brett Locke	Transportation Develop.	CIP/Memo
/ / Roger Green	Utility Design	CIP/WATER & SAS
/ / Mike Minturn	General Services Dept.	BUILDINGS
/ / Greg Smith	PWD/Legal	DWGS & SPECS
/ / Richard Sertich	Planning Department	CIP/Memos
/ / CIP Manager	CIP	CIP/Memos
/ / ___	___	___
/ / ___	___	___

RG/tm (WP+123400) Rev. 11/05/91

DRAINAGE INFORMATION SHEET

L22/D52

PROJECT TITLE: CANADA VILLAGE ZONE ATLAS/DRNG. FILE #: ~~[illegible]~~

DRB #: 94-538 EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: CANADA VILLAGE, SECOND UNIT, BLOCKS 5 + 6

CITY ADDRESS: SINGING ARROW AVE SE

ENGINEERING FIRM: BRASHER & LORENZ, INC. CONTACT: Dennis A. Lorenz, PE

ADDRESS: 4425 Juan Tabo Blvd. NE Suite 202 PHONE: 296-0422

OWNER: ISH, INC CONTACT: MIKE KNIGHT

ADDRESS: 11930 MENAUL NE PHONE: _____

ARCHITECT: NA CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: SURV-TEK, INC CONTACT: G. HUGG

ADDRESS: 5643 PARADISE BLVD PHONE: 897-3366

CONTRACTOR: NA CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

X YES
___ NO
___ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL
X PRELIMINARY PLAT APPROVAL
___ S. DEV. PLAN FOR SUB'D. APPROVAL
___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
___ SECTOR PLAN APPROVAL
X FINAL PLAT APPROVAL
___ FOUNDATION PERMIT APPROVAL
___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ GRADING PERMIT APPROVAL
___ PAVING PERMIT APPROVAL
___ S.A.D. DRAINAGE REPORT
___ DRAINAGE REQUIREMENTS
___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 5-10-95

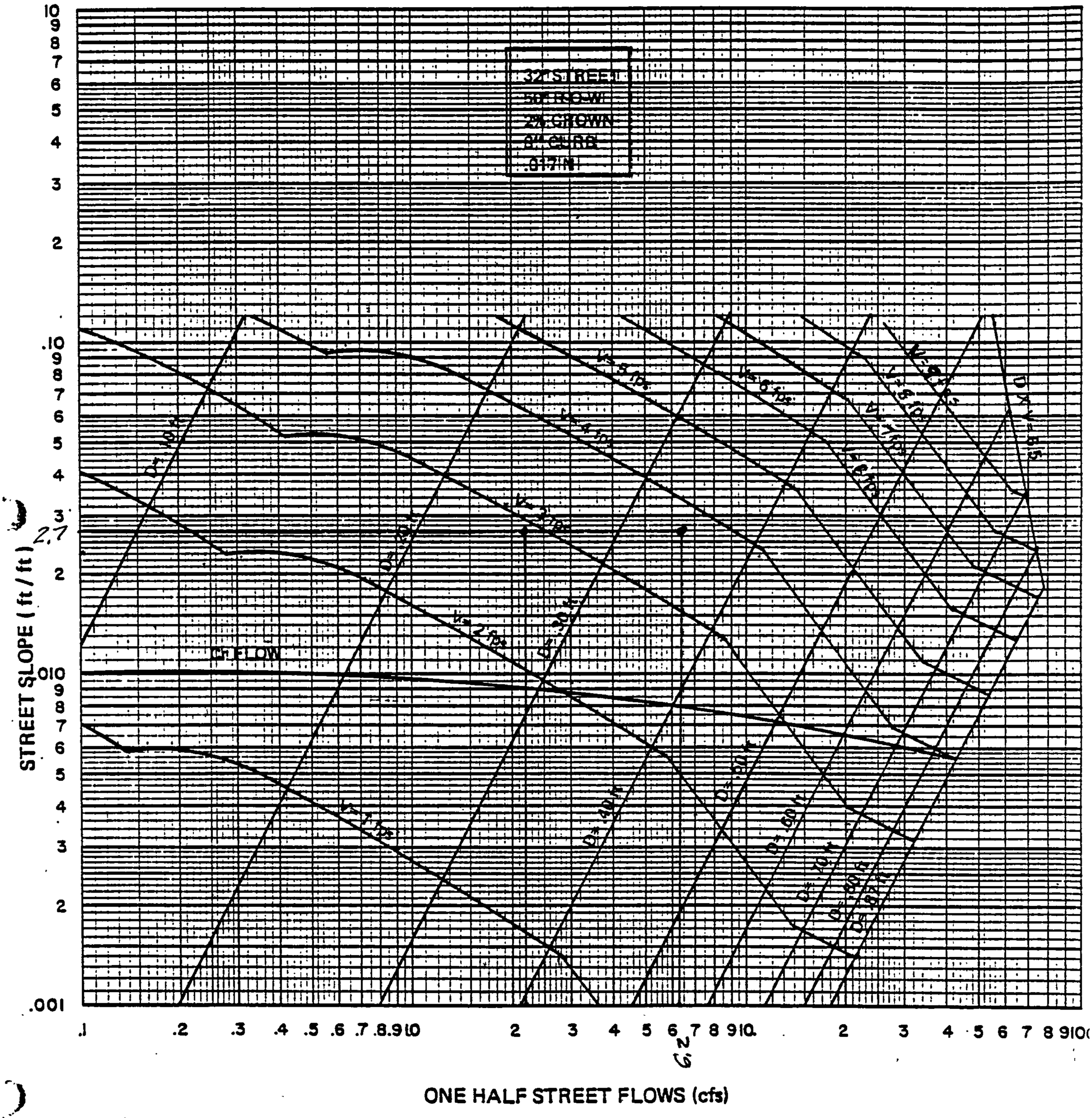
BY: D. LORENZ

RECEIVED
MAY 10 1995
HYDROLOGY D...

Velocities > 6 fps were labeled wrong JPC 4/21/9

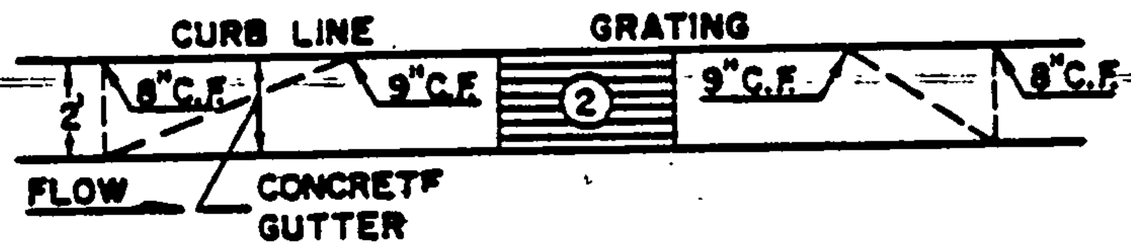
22.3

STREET CAPACITY

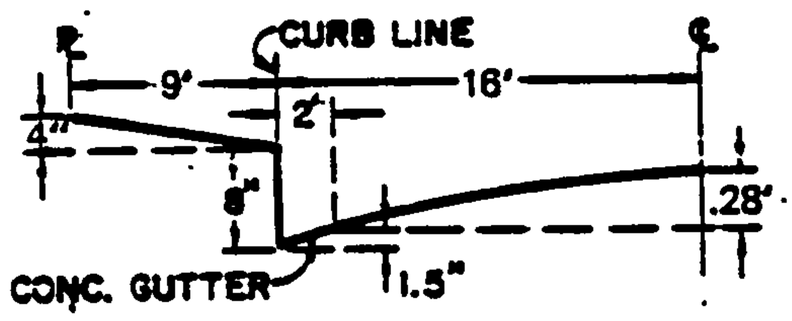


2.7

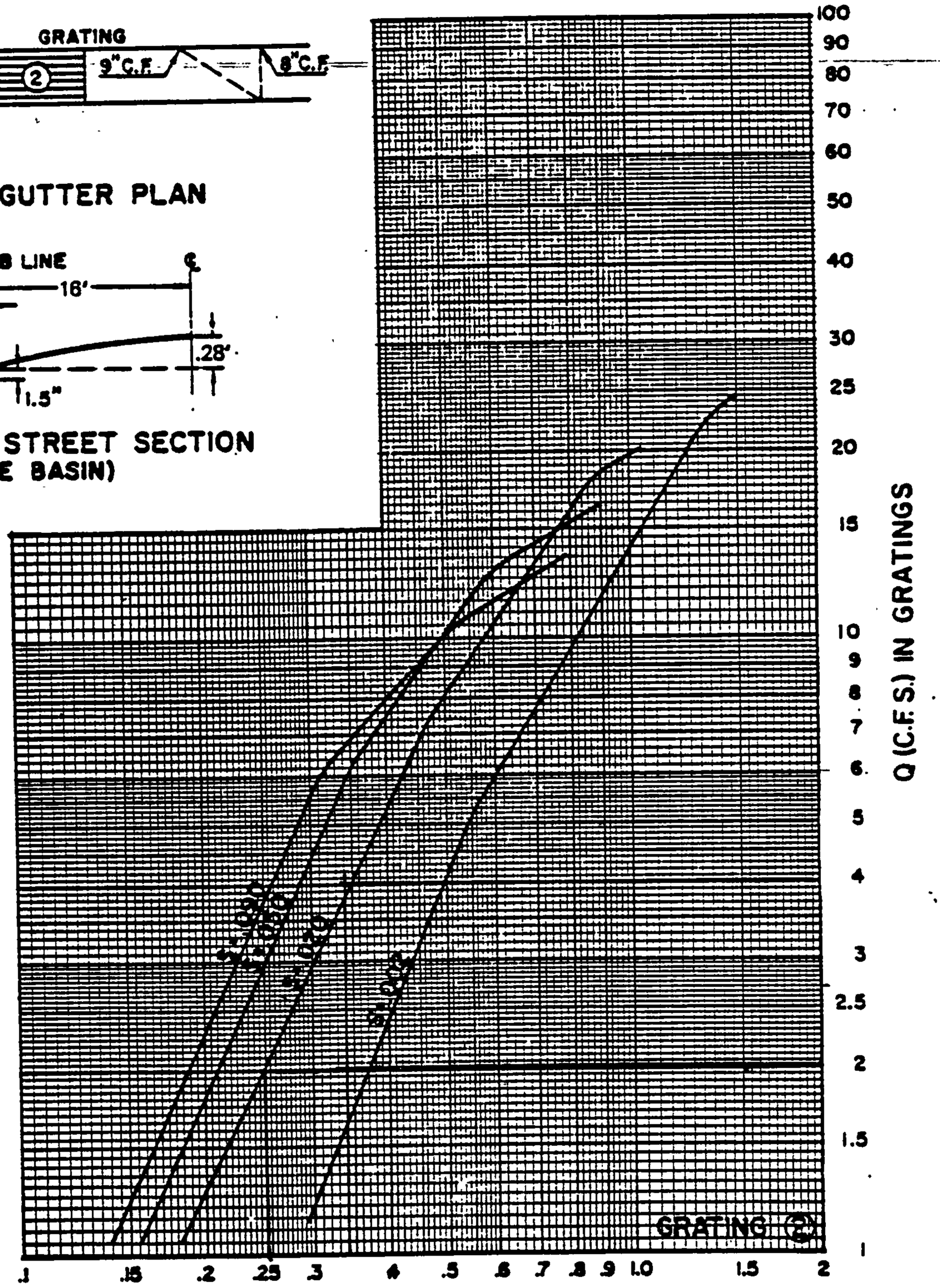
GRATING CAPACITIES FOR TYPE "A", "C" and "D"



GRATING & GUTTER PLAN



TYPICAL HALF STREET SECTION
(ABOVE BASIN)



D=DEPTH OF FLOW (FT.) ABOVE NORMAL GUTTER GRADE

DEVELOPMENT & BUILDING SERVICE CENTER

ONE STOP
600 SECOND ST. N.W./2ND FLOOR
ATTENTION: Arlene
505-924-3900

Records Withdrawal Form

Project No. / L22/D52 Date: 1-4-00

Project Title: ~~[illegible]~~ Cañada Village

(a.) File b. Mylars c. Redlines/Comments
d. Other _____

Requested By: Isaacson & Arfman **Phone No.:** 268-8828
Company

Comments: _____

Anticipated Return Date: _____

Receipt Acknowledged

I here by accept full responsibility for the security of the above noted records/plans until return receipt acknowledgement is completed. Records/plans will be returned to the Development & Building Services Center on or before the indicated anticipated return date.

Delivery Picked Up By:

Name: Ray Valdez **Organization:** Reliable Reproductions
Print

Signed: Ray Valdez Date: 1-4-2000
Phone No. _____

Office Use Only

Return Acknowledged

Received by: ~~Ray Valdez~~ Arlene U. Portillo **Date:** 01/05/00
Print

DELIVERY MEMO

TERMS: NET 30 DAYS

RELIABLE
Reproductions & products for design imaging.
1100 Second Street NW
Albuquerque, New Mexico • 87102
505-247-1578 • 800-537-1196
Fax 505-764-9138

• BLUEPRINTS
• PHOTOCOPIES
• ENLARGEMENTS

DATE JAN 5 2000 19

CUSTOMERS ORDER NO.

SOLD TO: ISAACSON & ARDMAN

SHIP TO: C.O.A. Design & Review

ORDERED	SHIPPED	BACK ORD.	UNIT	CATALOG NO.	DESCRIPTION	SQ. FT.
					RETURN ORIGINALS	
					Arlene G. Portillo 01/05/00	

DELIVERY MEMO NO. 4209

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

RECEIVED
FEB 12 1991
HYDROLOGY DIVISION

February 7, 1991

PROJECT ACCEPTANCE LETTER

L22/D52

Gilbert Luna
Universal Construction Company
Station B, Box 6008
Albuquerque, NM 87197-6008

RE: TRAMWAY BLVD. EXTENSION SOUTH OF CENTRAL AND WENONAH, PROJECT NO. 3340

Dear Mr. Luna:

The above referenced project has been completed according to the plans and specifications. The project consisted of the extension of Tramway south of Central Ave., S.E. and Wenonah Ave. to include earthwork, base course, asphalt paving, concrete curb and gutter, a concrete bridge crossing, trench and waterline, and storm drainage infrastructure.

The City of Albuquerque accepts the referenced project as a whole and the contractual correction period began July 3, 1990. The correction period on this project is for one (1) year.

Sincerely,

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

BLS:tp

Loren Meinz
for Tramway
Drainage file

Form No. A-110
Rev. 9-87

New Mexico
State Highway and Transportation Department

INTRA-DEPARTMENTAL CORRESPONDENCE

SUBJECT Drainage Report Review, Tramway Blvd. Ext., south of Central Ave. to Wenonah Ave.

DATE 8/31/89

FILE REFERENCE:

RECEIVED
SEP 13 1989
PMD/TRANS DES

TO Wayne Preskar
Project Development Engineer

ATTENTION OF

FROM Ronald E. Gaines
Drainage Engineer

I have reviewed the subject project drainage report for the City of Albuquerque, submitted by Tierra Engineering.

The consultant proposed to build three curb inlets at Tramway Blvd. and Wenonah Ave. intersection and to drain into the existing 1-36" storm sewer line along the proposed Tramway Blvd. extension. The expected additional 100 year flow into the existing storm sewer system is 7 cfs. There are no as-builts available on the existing storm drain system, however, our evaluation showed that there is enough capacity to handle the additional flows.

I found that the recommendations contained therein are reasonable and therefore, it is hereby approved.

If I can be of futher assistance, please advise.

Sincerely,

Ronald E. Gaines

Ronald E. Gaines

cc: L. D. Duffy
Gilbert Aldez, Tierra Engineering
Suzanne Dougharty, City of Albuquerque