Jason's Copy

M12-D1

County of Bernalillo

State of New Mexico

2400 BROADWAY, S.E.
ALBUQUERQUE, NEW MEXICO 87102
PUBLIC WORKS (505) 848-1500

Date: 14-NOV-96

Subject: Resubmittal

Case No.: PWD-96-56

Zone Map No.: M-12

Street Address: 1221 ARENAL RD SE

Legal Description: WESTSIDE COMMUNITY CENTER TR 1 LANDS OF ORLANDO & LIBBY S ANCHEZ

Name of Applicant: Bernalillo County Parks

Dear Applicant:

Bernalillo County Public Works Department will require **TWO WEEKS for review and comment of submittal and resubmittals, and ONE WEEK for final review and plat sign-off.** Major submittals may require more than two weeks for review and comment.
The issuance of a permit or a review or approval of plan specifications, computations, and shop drawings shall not be interpreted to be a permit for or an approval of any variance or violation of any of the provisions of any County or State codes, ordinances, standards, or policies. Nor shall such issuance of a permit or approval of plans, specifications, computations, and shop drawings prevent any authorized County representative or County inspector form thereafter requiring the correction of errors in said plans, specifications, computations, or shop drawings or from stopping construction operations which are being carried on thereunder when in violation of any County or State codes, ordinances, standards, or policies.
Review of construction plans, specifications, computations, and shop drawings is only for general conformance with the design concept of the project and general compliance with the plans and specifications and shall not be construed as relieving the Contractor, Land Divider, Subdivider, Engineer/Surveyor, or applicant of the full responsibility for: providing materials, equipment, and work required by the contract; the proper fitting and construction for the work; the accuracy and completeness of the submittal; selecting fabrication processes and techniques of construction; and performing the work in a safe manner.

REV 4-22-91 BR

COUNTY OF BERNALILLO

APPLICATION FOR CASE REVIEW

Please complete pages one and two of this application for review of your case. **Submit THREE bluelines of plat, drawings, or information with case submittals and THREE bluelines of plat, drawings, or information along with the original mylar for final sign-off applications. Submit a County Zone Atlas Map with subject property marked on the map.** If a Grading and Drainage plan is not included with a land division, replat, or conceptual plan, please submit one 8.5"x11" photcopy of a USGS quad map with the subject property superimposed.

NOTE: INCOMPLETE APPLICATIONS WILL BE RETURNED WITHOUT REVIEW.

1. APPLICANT INFORMATION:

a. Applicant is(check one):
__X_OWNER ____SURVEYOR ____AGENT
____ENGINEER ____DRAINAGE ENGINEER

b. Date of this application: 12-NOV-96

c. Signature of applicant:
(print)_____ (sign)_____

d. OWNER: Bernalillo County Parks & Rec PHONE: 764-6856
620 Lomas NW
Albuquerque, NM 87102

e. AGENT: Chavez-Grieves Engineering PHONE: 505-882-7376
5639 Jefferson NE
Albuquerque, NM 87109

f. OTHER(specify): Chavez-Grieves Engineeri PHONE: 505-882-7376
ng

5639 Jefferson NE
Albuquerque, NM 87109

2. TYPE OF SUBMITTAL (check one):

_____REPLAT
_____LAND DIVISION (MINOR SUBDIVISION)
_____MAJOR SUBDIVISION
_____CONSTRUCTION DRAWINGS
__X__GRADING/DRAINAGE PLAN
_____AS-CONSTRUCTED GRADING/DRAINAGE PLAN
_____VARIANCE REQUEST
_____TRAFFIC IMPACT ANALYSIS/TRAFFIC STUDY
_____INFRASTRUCTURE LIST/DESIGN REVIEW FEE
_____OTHER (specify):_____

County of Bernalillo

Your: ___ submittal of drainage information
X resubmittal of drainage information

is: ___ approved.
X approved with comments/conditions.
___ disapproved.
___ deferred to County Floodplain Administrator

TO BE FILLED OUT BY COUNTY PUBLIC WORKS DIVISION ONLY

Case review comments are:

X attached.
___ not attached.
___ not attached. See remarks below.

Resubmittal is:

X not required.
___ required. When resubmitting, please use Resubmittal Form.

Please submit:

___ grading/drainage plan with revisions.
X as-constructed grading/drainage plan.
___ other: _____

It is required that:

___ Bernalillo County Public Works Division inspect improvements prior to final sign-off of plat.
___ Bernalillo County Public Works Division signature line be placed on plat.

Remarks: _____

_____

_____

_____

T G Mancuso, PE 11/12/96

Molzen-Corbin & Assoc., for
County Surface Water Hydrologist
Bernalillo County Public Works Division

cc: ___ Sandia Heights Homeowners Association
X Owner: Bernalillo County Parks & Rec.
X Agent: Chavez - Grieves
X Case File: PWD 96-56
X Susan Calongne, County Floodplain Administrator, COA
X Molzen-Corbin & Associates
___ Other: _____

pb-wrks.4

BERNALILLO COUNTY PUBLIC WORKS DEPARTMENT
CASE FILE COMMENTS

CASE NO: PWD-96-56

ZONE MAP NO.: M-12

REFERENCE CASES:

STREET ADDRESS: 1221 ARENAL RD SE

LEGAL DESCRIPTION: WESTSIDE COMMUNITY CENTER TR 1 LANDS OF ORLANDO & LIBBY SANCHEZ

COMMENTS OF:

11-APR-96 DRAN: A portion of this property appears to be within a designated 100 year flood plain as shown on the National Flood Insurance Program's Flood Insurance Rate Map. Defer approval to the County Floodplain Administrator.

22-AUG-96 DRAN: A portion of this property appears to be within a designated 100 year flood plain as shown on the National Flood Insurance Program's Flood Insurance Rate Map. Defer approval to the County Floodplain Administrator.

12-NOV-96 DRAN: The Floodplain Administrator has completed review of this case and comments are as follows:

1. Based on the information provided on the grading and drainage plan, with engineer's seal dated 08-28-96, this plan appears to meet the requirements established for this area and is therefore acceptable.
2. Development of this property must conform to this plan. Any proposed changes will require a revision to the plan prior to initiating the proposed change.
3. An "As-Constructed" grading and drainage plan, with engineer's certification that the constructed improvements are in substantial compliance with this plan, will be required prior to County Building and Zoning issuing an occupancy permit.

*** Inspection required, applicant required to obtain permits from G.J. Foster at Bernalillo County Public Works Department. Phone (505) 848 - 1523

County of Bernalillo

State of New Mexico

2400 BROADWAY, S.E.
ALBUQUERQUE, NEW MEXICO 87102
PUBLIC WORKS (505) 848-1500

November 4, 1996

Joe Kelly, P.E.
Chavez-Grieves
5639 Jefferson NE
Albuquerque, New Mexico

RE: DRAINAGE REPORT AND GRADING AND DRAINAGE PLAN FOR WESTSIDE COMMUNITY CENTER (M12/D1) (PWD 96-56) SUBMITTED FOR BUILDING PERMIT, GRADING PERMIT AND PAVING PERMIT APPROVAL, ENGINEER'S STAMP DATED 8/28/96.

Dear Mr. Kelly:

Based on the information provided in the submittal of October 30, 1996, the above referenced plan is approved for Grading Permit, Paving Permit and Building Permit release.

Please be advised that prior to the issuance of the Certificate of Occupancy, the Engineer's Certification must be submitted to and approved by the review agencies.

If you should have any questions, or if I may be of further assistance to you, please call.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Roger Paul, Bernalillo County Public Works Division
File

DRAINAGE INFORMATION

PROJECT TITLE: West Side Community Center ZONE ATLAS/DRNG. FILE #: ~~M-13~~ M12/D1

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

LEGAL DESCRIPTION: Tract 1 of Lands of Orlando and Libby Sanchez

CITY ADDRESS: 1221 Arenal Rd SW

ENGINEERING FIRM: Chavez-Grieves CONTACT: Joe Kelley, P.E.

ADDRESS: 5639 Jefferson NE PHONE: 344-4080

OWNER: Bernalillo County CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: Gamelsky-Benton CONTACT: Lee Gamelsky

ADDRESS: _____ PHONE: 842-8865

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

_X_ DRAINAGE REPORT

_X_ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

_X_ GRADING PLAN

_X_ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

____ OTHER

PRE-DESIGN MEETING:

____ YES

_X_ 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. PRMT. APPROVAL

____ SECTOR PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ FOUNDATION PERMIT APPROVAL

_X_ BUILDING PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

_X_ GRADING PERMIT APPROVAL

_X_ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

____ OTHER _____ (SPECIFY)

DATE SUBMITTED: Aug. 28, 1996

BY: Joe P. Kelley, P.E.

Printed October 9, 1996 (7:05am)

CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc.

5639 Jefferson Street NE, Albuquerque, New Mexico 87109 *Phone (505) 344-4080 - Fax (505) 343-8759*

FACSIMILE TRANSMITTAL LETTER

TO: Susan Calongne, P.E., City Hydrology
FAX NO.: 768-3629

TO: Dan Flack, Molzen-Corbin (for Bernalillo County Hydrology)
FAX NO.: 242-0673

TO: Ike Benton, Gamelsky-Benton Architects
FAX NO.: 842-1693

FROM: Joe Kelley

DATE: October 9, 1996

PROJECT NAME: West Side Community Center (M12/D1, PWD 96-56)
PROJECT NO.: G21-103-5195

NUMBER OF PAGES TRANSMITTED: 2
(INCLUDING THIS COVER PAGE)

Susan, in your comment letter dated September 18, 1996 you asked for a copy of the agreement between Parks & Rec and PWD. Art de la Cruz, the Parks & Rec Director, sent me this and said that this is all the information that have at this time.

Feel free to call if you have any questions.

SENT [ ]

PMM 6.D.

MEMORANDUM

ENGINEERING SECTION

DATE: March 5, 1996

TO: Art De La Cruz, Parks & Recreation Director

FROM: David Stoliker, Engineering Manager

Re: Isleta Boulevard Road and Drainage Improvements

As per our conversation, the Public Works Division needs to construct drainage improvements along Isleta Boulevard (reference attached map). Parks and Recreation property can be utilized for retaining the necessary flood quantities in exchange for the land costs.

The estimated land necessary is 2 acres at an estimated cost of $134,000. If this arrangement is acceptable, Sandi Bluehouse will be working up a draft agreement in the near future. Please contact us at your convenience.

DS/RF/sb

Attachment:
Two Project Reference Maps

cc: Henry Rosoff, Technical Services Director
Sandi Bluehouse, Program Manager
ES File: Isleta Boulevard Phase I
Uniplex: SANDI/ISLETABLVDI/delacruz.0305956

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344-4080 · FAX (505) 343-8759

GRADING AND DRAINAGE PLAN

FOR

WESTSIDE COMMUNITY CENTER

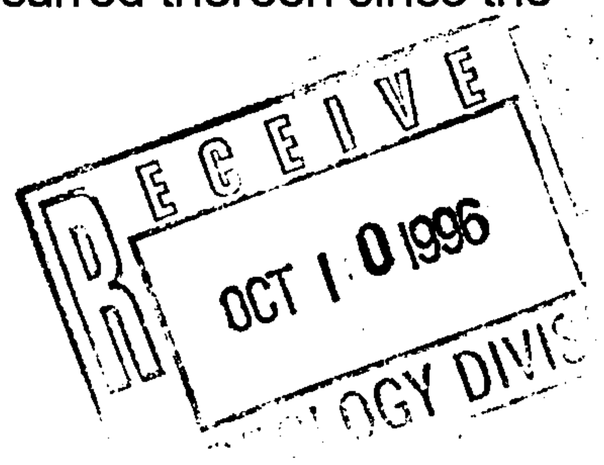
ALBUQUERQUE, NEW MEXICO

APRIL, 1996

ENGINEER'S STATEMENT

I certify that I am a Registered Professional Engineer in the State of New Mexico and that this report was prepared by me or under my supervision. I have personally inspected this land, and it appears that no grading, filling, or excavation has occurred thereon since the existing contour map was prepared.

Joe P. Kelley 8/28/96 9/9/96



LOCATION

Westside Community Center is located at 1221 Arenal Road SW in Albuquerque, New Mexico.

LEGAL DESCRIPTION

The parcels are blocks 16, 17, 18 &19 of Lower Broadway Addition, Bernalillo County.

FLOOD HAZARD ZONES

As shown by Panel 3500020034 of the National Flood Insurance Rate Maps for the City of Albuquerque, dated October 14, 1983, the a portion of the site is in a designated flood hazard zone AH. Zone AH designates "areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined."

Off-site to the north is also an AH flood hazard zone. The remaining surrounding areas are designate as flood zone hazard B. Zone B designates "areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than 1 foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood."

EXISTING SITE CONDITIONS AND DRAINAGE PATTERN

The site is in a low-lying area that has no storm drainage systems. It is old farmland that used to be flood-irrigated, and all the runoff collects in the old field.

RELATED REPORTS

A storm drain is being designed for Bernalillo County by Andrews, Asbury & Robert Inc. that will serve the site. As part of that design, it has been determined to discharge off-site runoff from the north side of Isleta Blvd. through this site via a new underground storm drain. The plan is to attenuate the peak runoff by running it though a detention pond constructed on this site. As shown on page B-2, the pond will require an additional 1.03 acre-ft capacity to serve the interim off-site runoff.

PROPOSED SITE CONDITIONS AND DRAINAGE PATTERN: INTERIM CONDITION

The proposed drainage pattern for the interim condition is similar to the existing pattern: total site retention. This is the most appropriate drainage pattern because: 1) This site is in a low-lying area that has historically been served by ponding; 2) This site is not currently served by any storm drainage systems; and 3) This site is in a designated flood plain. In a pre-design conference with Roger Paul (Molzen-Corbin and Associates), hydrology consultant for the County, it was agreed that the County also views total site retention as a viable option for the interim condition. Therefore, the site was designed to retain all storm runoff on-site, and to pond the water in five separate ponds on the site. The adjacent abandoned MRGCD ditch and street improvements on Isleta Blvd create a finite drainage basin that discharges to this site. All offsite runoff and developed runoff from this area will be retained on site during the interim condition.

The off-site flows that historically discharged onto this site will continue to be accepted at their historical discharge points. The sheet flow from the basin that is across Islet Blvd will be accepted and ponded on site. The off-site flow from across Isleta Blvd will impact the Westside Community Center property during the interim condition. During storm events the ponded water will encroach on the soccer field. During the majority of storm events it will be enclosed in the small ponds at 1.5' deep, and in the 5' deep fenced pond.

PROPOSED SITE CONDITIONS AND DRAINAGE PATTERN: FINAL CONDITION

The proposed drainage pattern for the final condition is similar to the interim pattern except for these changes:

1. That an outfall to a storm water drainage system located in Arenal Rd. will be in place. The main pond in Basin A will be connected to this system. The ponding will change from the interim retention system to a final detention condition.

2. A storm drain pipe discharging the runoff from the north side of Isleta Blvd will be connected to the large detention pond, and will join the on-site runoff being discharged into the storm drain system in Arenal Rd. The 100 year event for this basin will produce a Q_{360} = 6.52 cfs and a total volume of V_{360} = 1.03 ac-ft.

The Off-site flows that historically discharged onto this site will continue to be accepted at their historical discharge points, except for the sheet flow from the basin that is across Islet Blvd. In the final condition the 100 year event for the developed site will produce a Q_{360} = 7.37 cfs and a total volume of V_{360} = 1.90 ac-ft into the proposed storm drain in Arenal Rd. When the flow from north of Isleta Blvd. is added, the flow into the proposed storm drain in Arenal Rd. will be Q_{360} = 13.89 cfs and V_{360} = 1.90 ac-ft . This additional off-site runoff is in accordance with the storm drain design by Andrews, Asbury & Robert Inc.

HYDROLOGY/HYDRAULICS

The runoff calculations and design have been done in accordance with Section 22.2 of the Development Process Manual of the City of Albuquerque, January 1993. In addition, the site complies with the requirements of Bernalillo County Ordinance No. 90-6, the Storm Drainage Ordinance.

The computerized hydrologic model, AHYMO, was used to calculate storm volumes in accordance with Section 22.2. The 1-hour, 6-hour, and 24-hour precipitation depths were derived from figures C-1, C-2, and C-3 of Section 22.2. The 100-year, 10-day storm was used to determine the required ponding volume. This volume was computed from the output data provided by the AHYMO run, coupled with equations A-9 and C-9 of Section 22.2.

EXISTING BASIN PEAK FLOW RUNOFF SUMMARY

BASIN	Q_{360} (CFS)	V_{360} (AC-FT)	A_D (AC)	$V_{10\text{-DAY}}$ (AC-FT)	$V_{10\text{-DAY}}$ (CU-FT)
ON-SITE	9.41	0.2648	4.29	0.30	13,000.00
Off-site 11	4.08	0.1220	1.66	0.15	6,500.00
Off-Site 12	7.06	0.2119	2.50	0.25	11,000.00
Off-site Isleta	6.52	1.03	20.3	N\A	N\A
TOTALS	20.55	1.629	28.75	0.7	30,500.00

PROPOSED FINAL CONDITION

BASIN PEAK FLOW RUNOFF SUMMARY

BASIN	Q_{360} (CFS)	V_{360} (AC-FT)	A_D (AC)	$V_{10\text{-DAY}}$ (AC-FT)	$V_{10\text{-DAY}}$ REQUIRED (CU-FT)	PONDING AREA (S.F.)	POND DEPTH (FEET)	PONDING VOLUME PROVIDED (CU-FT)
A *	8.830	1.095	21.23	1.11	48,000.00	10580	5.50	58,190.00
B	2.660	0.0781	1.087	0.09	3,920.00	2790	1.50	4,185.00
C	2.490	0.0736	1.020	0.09	3,920.00	3663	1.50	5,494.50
D	7.180	0.2800	3.200	0.30	13,000.00	6952	1.50	10,428.00
E	11.20	0.3766	2.623	0.40	17,000.00	6300	1.50	9,450.00
TOTALS	32.36	1.9033		1.99	85,840.00			87,747.50

* Basin A has the off-site flows from Isleta Blvd. Included

APPENDIX A

AHYMO HYDROLOGIC OUTPUT SUMMARY

EXISTING AND PROPOSED CONDITIONS

AHYMO Hydrologic Output 6 hr - Existing & Proposed Conditions

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    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
         RUN DATE (MON/DAY/YR) = 04/08/1996
         START TIME (HR:MIN:SEC) = 13:32:30     USER NO.= CHVZ_GNM.I01
         INPUT FILE = AHYMO.IN

*S**************************************************************************
*S*************    CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.   **************
*S*************           WESTSIDE COMMUNITY CENTER            **************
*S**************************************************************************
*S*  FILENAME:  G:\G21\103\DOCUMENT\AHYMO.IN/OUT
*S**************************************************************************
*S******* 100 YEAR, 6 HOUR STORM
START                 0.00
RAINFALL              TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.98
                      RAIN SIX=2.30 RAIN DAY=2.66  DT=0.03333

                  COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                  DT =    .033330 HOURS       END TIME =     5.999400 HOURS
                     .0000   .0015   .0029   .0044   .0060   .0076   .0092
                     .0108   .0125   .0143   .0161   .0179   .0198   .0217
                     .0237   .0258   .0279   .0300   .0323   .0346   .0370
                     .0396   .0422   .0449   .0477   .0506   .0537   .0570
                     .0604   .0640   .0678   .0733   .0791   .0854   .0988
                     .1288   .1751   .2415   .3321   .4512   .6032   .7923
                    1.0231  1.2374  1.3269  1.4024  1.4696  1.5308  1.5870
                    1.6393  1.6881  1.7339  1.7770  1.8176  1.8560  1.8923
                    1.9267  1.9594  1.9903  2.0197  2.0476  2.0540  2.0598
                    2.0654  2.0707  2.0757  2.0805  2.0851  2.0896  2.0939
                    2.0980  2.1020  2.1058  2.1096  2.1132  2.1168  2.1202
                    2.1235  2.1268  2.1300  2.1331  2.1361  2.1391  2.1420
                    2.1448  2.1476  2.1503  2.1530  2.1556  2.1582  2.1607
                    2.1632  2.1656  2.1680  2.1703  2.1727  2.1749  2.1772
                    2.1794  2.1816  2.1837  2.1858  2.1879  2.1900  2.1920
                    2.1940  2.1960  2.1979  2.1999  2.2018  2.2036  2.2055
                    2.2073  2.2091  2.2109  2.2127  2.2145  2.2162  2.2179
                    2.2196  2.2213  2.2229  2.2246  2.2262  2.2278  2.2294
                    2.2310  2.2326  2.2341  2.2357  2.2372  2.2387  2.2402
                    2.2417  2.2431  2.2446  2.2460  2.2475  2.2489  2.2503
                    2.2517  2.2531  2.2544  2.2558  2.2571  2.2585  2.2598
                    2.2611  2.2624  2.2637  2.2650  2.2663  2.2676  2.2689
                    2.2701  2.2714  2.2726  2.2738  2.2750  2.2763  2.2775
                    2.2786  2.2798  2.2810  2.2822  2.2834  2.2845  2.2857
                    2.2868  2.2879  2.2891  2.2902  2.2913  2.2924  2.2935
                    2.2946  2.2957  2.2968  2.2978  2.2989  2.3000

*S***************  COMPUTE THE RUNOFF FROM THE EXISTING BASINS  **************
*S  OFF-SITE BASIN O-11.5 (THIS HYD IS 1/2 OF THE TOTAL OFFSITE BASIN O-11)
COMPUTE NM HYD       ID=11  HYD=O-11.5  DA=.0013085 SQ MI
                                                        %A=0  %B=88  %C=5  %D=7
                                                        TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .36162    CFS   UNIT VOLUME =    .9664       B =   526.28      P60 = 1.9800
    AREA =      .000092 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .130402HR    TP =   .133300HR    K/TP RATIO =   .978261     SHAPE CONSTANT, N =  3.610034
    UNIT PEAK =   2.9968    CFS   UNIT VOLUME =    .9957       B =   328.27      P60 = 1.9800
    AREA =      .001217 SQ MI    IA =    .49194 INCHES    INF =   1.22742 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD             ID=11  CODE=1

                                        HYDROGRAPH FROM AREA O-11.5


    RUNOFF VOLUME =      .85533 INCHES     =        .0597 ACRE-FEET
    PEAK DISCHARGE RATE =       2.04 CFS  AT   1.500 HOURS   BASIN AREA =   .0013 SQ. MI.
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*S  ADD FOR THE TOTAL OFFSITE RUNOFF -O11- TO SITE.(11.5+11.5)
ADD HYD             ID=12  HYD=TOTAL_O11  ID I=11  ID II=11
PRINT HYD           ID=12  CODE=1

                                        HYDROGRAPH FROM AREA TOTAL_O11


    RUNOFF VOLUME =      .85523 INCHES     =        .1194 ACRE-FEET
    PEAK DISCHARGE RATE =      4.08 CFS  AT   1.500 HOURS   BASIN AREA =   .0026 SQ. MI.



*S  OFF-SITE BASIN O-12
COMPUTE NM HYD      ID=13  HYD=O-12  DA=.0019163 SQ MI
                                                          %A=0  %B=88  %C=5  %D=7

                                                          TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .52960    CFS   UNIT VOLUME =    .9786       B =   526.28      P60 = 1.9800
    AREA =      .000134 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

    K =   .130402HR    TP =   .133300HR    K/TP RATIO =   .978261     SHAPE CONSTANT, N =  3.610034
    UNIT PEAK =   4.3889    CFS   UNIT VOLUME =    .9973       B =   328.27      P60 = 1.9800
    AREA =      .001782 SQ MI    IA =    .49194 INCHES    INF =   1.22742 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=13  CODE=1

                                        HYDROGRAPH FROM AREA O-12


    RUNOFF VOLUME =      .85533 INCHES     =        .0874 ACRE-FEET
    PEAK DISCHARGE RATE =      2.98 CFS  AT   1.500 HOURS   BASIN AREA =   .0019 SQ. MI.



*S  ADD FOR THE TOTAL OFFSITE RUNOFF TO SITE.(11+12)
ADD HYD             ID=13  HYD=TOTAL_OFF  ID I=13  ID II=12
PRINT HYD           ID=13  CODE=1

                                        HYDROGRAPH FROM AREA TOTAL_OFF


    RUNOFF VOLUME =      .85524 INCHES     =        .2068 ACRE-FEET
    PEAK DISCHARGE RATE =      7.06 CFS  AT   1.500 HOURS   BASIN AREA =   .0045 SQ. MI.



*S  ON-SITE BASIN (WEST SIDE COMMUNITY CENTER PROPERTY)
COMPUTE NM HYD      ID=1  HYD=ONSITE  DA=.00664 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   16.220    CFS   UNIT VOLUME =    .9995       B =   325.62      P60 = 1.9800
    AREA =      .006640 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE


    RUNOFF VOLUME =      .74876 INCHES     =        .2652 ACRE-FEET
    PEAK DISCHARGE RATE =      9.41 CFS  AT   1.533 HOURS   BASIN AREA =   .0066 SQ. MI.
```

```
*S  ADD FOR THE TOTAL EXISTING RUNOFF.(11+12+ONSITE)
ADD HYD             ID=1  HYD=TOTAL_EXIST  ID I=13  ID II=1
PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA TOTAL_EXIST


    RUNOFF VOLUME =      .79195 INCHES     =        .4719 ACRE-FEET
    PEAK DISCHARGE RATE =     16.44 CFS  AT   1.500 HOURS   BASIN AREA =   .0112 SQ. MI.



*S*************  COMPUTE THE RUNOFF FROM THE DEVELOPED BASINS  *************
*S
*S  ON-SITE BASIN D2(DIRECT RUNOFF FROM BUILDINS)
COMPUTE NM HYD      ID=1  HYD=ONSITED2  DA=.0009256 SQ MI
                                                        %A=0  %B=0  %C=0  %D=100

                                                        TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.6543    CFS   UNIT VOLUME =    .9961       B =   526.28      P60 = 1.9800
    AREA =      .000926 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA ONSITED2


    RUNOFF VOLUME =     2.06607 INCHES     =        .1020 ACRE-FEET
    PEAK DISCHARGE RATE =      2.75 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.



*S  ON-SITE BASIN D1 (SOUTH 1/2 OF PARKING LOT)
COMPUTE NM HYD      ID=2  HYD=ONSITE-D1  DA=.0008967 SQ MI
                                                        %A=0  %B=0  %C=0  %D=100

                                                        TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.5402    CFS   UNIT VOLUME =    .9961       B =   526.28      P60 = 1.9800
    AREA =      .000897 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=2  CODE=1

                                    HYDROGRAPH FROM AREA ONSITE-D1


    RUNOFF VOLUME =     2.06607 INCHES     =        .0988 ACRE-FEET
    PEAK DISCHARGE RATE =      2.66 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.



*S  ADD ON-SITE BASINS D1 & D2
ADD HYD             ID=2  HYD=D1-D2  ID I=1  ID II=2
PRINT HYD           ID=2  CODE=1

                                    HYDROGRAPH FROM AREA D1-D2


    RUNOFF VOLUME =     2.06577 INCHES     =        .2008 ACRE-FEET
    PEAK DISCHARGE RATE =      5.41 CFS  AT   1.500 HOURS   BASIN AREA =   .0018 SQ. MI.



*S  ROUTE THE OFF-SITE RUNOFF TO BASIN D THROUGH A CHANNEL
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
                                                        MIN ELEV=0  MAX ELEV=0.5
```

CH SLP=.04 FP SLP=.04 N=.013 DIST=2

DIST	ELEV
0	0.5
0	0
2	0
2	0.5

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	.00
.03	.05	.11	2.00
.05	.11	.33	2.00
.08	.16	.65	2.00
.11	.21	1.04	2.00
.13	.26	1.49	2.00
.16	.32	2.00	2.00
.18	.37	2.57	2.00
.21	.42	3.19	2.00
.24	.47	3.85	2.00
.26	.53	4.55	2.00
.29	.58	5.29	2.00
.32	.63	6.07	2.00
.34	.68	6.89	2.00
.37	.74	7.73	2.00
.39	.79	8.61	2.00
.42	.84	9.52	2.00
.45	.89	10.46	2.00
.47	.95	11.42	2.00
.50	1.00	12.41	2.00

COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=30 SLP=.04

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.026	.053	.11	.0042
.053	.105	.33	.0026
.079	.158	.65	.0020
.105	.211	1.04	.0017
.132	.263	1.49	.0015
.158	.316	2.00	.0013
.184	.368	2.57	.0012
.211	.421	3.19	.0011
.237	.474	3.85	.0010
.263	.526	4.55	.0010
.289	.579	5.29	.0009
.316	.632	6.07	.0009
.342	.684	6.89	.0008
.368	.737	7.73	.0008
.395	.789	8.61	.0008
.421	.842	9.52	.0007
.447	.895	10.46	.0007
.474	.947	11.42	.0007
.500	1.000	12.41	.0007

ROUTE ID=3 HYD=TO_D_INFLOW ID=2 DT=0.0333
PRINT HYD ID=3 CODE=1

HYDROGRAPH FROM AREA TO_D_INFLOW

RUNOFF VOLUME = 2.06630 INCHES = .2008 ACRE-FEET
PEAK DISCHARGE RATE = 5.40 CFS AT 1.499 HOURS BASIN AREA = .0018 SQ. MI.

```
*S  ON-SITE BASIN D (PLAY GROUND AREA)
COMPUTE NM HYD       ID=1  HYD=ONSITE-D  DA=.0012554 SQ MI
                                                        %A=0  %B=100  %C=0  %D=0

                                                        TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   3.0667    CFS   UNIT VOLUME =    .9959       B =   325.62      P60 = 1.9800
    AREA =      .001255 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-D


    RUNOFF VOLUME =      .74876 INCHES     =        .0501 ACRE-FEET
    PEAK DISCHARGE RATE =       1.79 CFS  AT   1.533 HOURS   BASIN AREA =   .0013 SQ. MI.

    *S  ADD RUNOFF ROUTED FROM D1-D2  TO BASIN D (TOTAL TO POND IN BASIN D)
    ADD HYD              ID=1  HYD=D1-D2-D  ID I=1  ID II=3
    PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA D1-D2-D


        RUNOFF VOLUME =     1.52978 INCHES     =        .2511 ACRE-FEET
        PEAK DISCHARGE RATE =       7.18 CFS  AT   1.500 HOURS   BASIN AREA =   .0031 SQ. MI.


    *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN D.
    ROUTE RESERVOIR      ID=2  HYD=BASIN_D_ROUTE  INFLOW ID=1  CODE=10
                                                          OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                          0               0
4936.50
                                                          0.5             .01
4936.70
                                                          2.4             .24
4938.00

      * * * * * * * * * * * * * * * * * *

        TIME      INFLOW    ELEV      VOLUME    OUTFLOW
        (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

          .00        .00   4936.50       .000       .00
          .33        .00   4936.50       .000       .00
          .67        .00   4936.50       .000       .00
         1.00        .00   4936.50       .000       .00
         1.33       1.66   4936.63       .006       .32
         1.67       3.78   4937.32       .120      1.41
         2.00       1.52   4937.45       .142      1.59
         2.33        .35   4937.34       .123      1.43
         2.67        .13   4937.17       .093      1.18
         3.00        .07   4937.02       .066       .96
         3.33        .04   4936.89       .043       .78
         3.67        .03   4936.79       .025       .63
         4.00        .03   4936.70       .011       .50
         4.33        .03   4936.56       .003       .15
         4.67        .03   4936.52       .001       .06
         5.00        .03   4936.51       .001       .04
         5.33        .03   4936.51       .001       .03
         5.67        .03   4936.51       .001       .03
         6.00        .04   4936.51       .001       .03
         6.33        .00   4936.51       .000       .02
         6.67        .00   4936.50       .000       .01
         7.00        .00   4936.50       .000       .00
PEAK DISCHARGE =        1.591 CFS - PEAK OCCURS AT HOUR    1.97
MAXIMUM WATER SURFACE ELEVATION =     4937.446
```

```
 MAXIMUM STORAGE =          .1420 AC-FT      INCREMENTAL TIME=     .033330HRS

PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_D_ROUTE


    RUNOFF VOLUME =     1.52978 INCHES     =        .2511 ACRE-FEET
    PEAK DISCHARGE RATE =       1.59 CFS  AT   1.966 HOURS   BASIN AREA =   .0031 SQ. MI.


*S  ROUTE THIS RUNOFF(POND D) VIA A PIPE TO POND IN BASIN A.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05
                                                          DIA=0.6666 FT N=.013

                                  RATING CURVE PIPE SECTION  1.0
                                     WATER       FLOW        FLOW        MAX
                                   SURFACE       AREA        RATE       WIDTH
                                     ELEV       SQ FT         CFS         FT
                                      .00         .00         .00         .00
                                      .03         .01         .01         .30
                                      .07         .02         .06         .41
                                      .10         .03         .14         .48
                                      .14         .05         .26         .54
                                      .17         .07         .40         .59
                                      .21         .09         .57         .62
                                      .24         .12         .77         .64
                                      .28         .14         .98         .66
                                      .31         .16        1.21         .67
                                      .35         .18        1.45         .67
                                      .38         .21        1.69         .67
                                      .42         .23        1.93         .67
                                      .45         .25        2.16         .67
                                      .49         .27        2.38         .67
                                      .52         .29        2.58         .67
                                      .56         .31        2.74         .67
                                      .59         .33        2.86         .67
                                      .63         .34        2.91         .67
                                      .67         .35        2.91         .67
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=190 SLP=.0063

                                  TRAVEL TIME TABLE
                                                REACH=  1.0

                                  WATER       AVERAGE     FLOW        TRAVEL
                                  DEPTH       AREA        RATE        TIME
                                  FEET        SQ.FT.      CFS         HRS
                                     .035        .007         .01        .0258
                                     .069        .019         .06        .0166
                                     .104        .035         .14        .0129
                                     .139        .053         .26        .0108
                                     .174        .072         .40        .0095
                                     .208        .093         .57        .0086
                                     .243        .115         .77        .0079
                                     .278        .138         .98        .0074
                                     .313        .161        1.21        .0070
                                     .347        .184        1.45        .0067
                                     .382        .207        1.69        .0065
                                     .417        .230        1.93        .0063
                                     .452        .252        2.16        .0061
                                     .486        .273        2.38        .0060
                                     .521        .293        2.58        .0060
                                     .556        .311        2.74        .0060
                                     .591        .327        2.86        .0060
                                     .625        .340        2.91        .0062
                                     .667        .349        2.91        .0063
ROUTE               ID=3 HYD=TO_A_INFLOW ID=2 DT=0.0333
PRINT HYD           ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW
```

```
    RUNOFF VOLUME =      1.52982 INCHES      =         .2511 ACRE-FEET
    PEAK DISCHARGE RATE =       1.59 CFS  AT    1.998 HOURS   BASIN AREA =    .0031 SQ. MI.


*S  ON-SITE BASIN A (TEMPORARY PONDING AREA)
COMPUTE NM HYD       ID=1  HYD=ONSITE-A  DA=.0016249 SQ MI
                                                        %A=0  %B=100  %C=0  %D=0

                                                        TP=0.1333  RAINFALL=-1


    K =    .131726HR     TP =    .133300HR     K/TP RATIO =    .988190      SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =    3.9693     CFS   UNIT VOLUME =     .9969        B =   325.62       P60 = 1.9800
    AREA =       .001625 SQ MI     IA =     .50000 INCHES     INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=1  CODE=1

                                    HYDROGRAPH FROM AREA ONSITE-A

    RUNOFF VOLUME =       .74876 INCHES      =         .0649 ACRE-FEET
    PEAK DISCHARGE RATE =       2.31 CFS  AT    1.533 HOURS   BASIN AREA =    .0016 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN D TO BASIN A
ADD HYD              ID=15  HYD=D1-D2-012-D-A  ID I=1  ID II=3
PRINT HYD            ID=15  CODE=1

                                    HYDROGRAPH FROM AREA D1-D2-012-D-A

    RUNOFF VOLUME =      1.26071 INCHES      =         .3162 ACRE-FEET
    PEAK DISCHARGE RATE =       3.32 CFS  AT    1.533 HOURS   BASIN AREA =    .0047 SQ. MI.


*S  ON-SITE BASIN E-1 (NORTH 1/2 OF PARKING LOT)
COMPUTE NM HYD       ID=1  HYD=ONSITE-E1  DA=.0008967 SQ MI
                                                        %A=0  %B=0  %C=0  %D=100

                                                        TP=0.1333  RAINFALL=-1


    K =    .072649HR     TP =    .133300HR     K/TP RATIO =    .545000      SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =    3.5402     CFS   UNIT VOLUME =     .9961        B =   526.28       P60 = 1.9800
    AREA =       .000897 SQ MI     IA =     .10000 INCHES     INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=1  CODE=1

                                    HYDROGRAPH FROM AREA ONSITE-E1

    RUNOFF VOLUME =      2.06607 INCHES      =         .0988 ACRE-FEET
    PEAK DISCHARGE RATE =       2.66 CFS  AT    1.500 HOURS   BASIN AREA =    .0009 SQ. MI.


*S  ROUTE THE ON-SITE RUNOFF TO BASIN E THROUGH A CHANNEL
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
                                                        MIN ELEV=0  MAX ELEV=0.5

                                                        CH SLP=.04  FP SLP=.04   N=.013  DIST=2

                                                        DIST    ELEV

                                                        0       0.5

                                                        0       0

                                                        2       0
```

2 0.5

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	.00
.03	.05	.11	2.00
.05	.11	.33	2.00
.08	.16	.65	2.00
.11	.21	1.04	2.00
.13	.26	1.49	2.00
.16	.32	2.00	2.00
.18	.37	2.57	2.00
.21	.42	3.19	2.00
.24	.47	3.85	2.00
.26	.53	4.55	2.00
.29	.58	5.29	2.00
.32	.63	6.07	2.00
.34	.68	6.89	2.00
.37	.74	7.73	2.00
.39	.79	8.61	2.00
.42	.84	9.52	2.00
.45	.89	10.46	2.00
.47	.95	11.42	2.00
.50	1.00	12.41	2.00

COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=30 SLP=.04

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.026	.053	.11	.0042
.053	.105	.33	.0026
.079	.158	.65	.0020
.105	.211	1.04	.0017
.132	.263	1.49	.0015
.158	.316	2.00	.0013
.184	.368	2.57	.0012
.211	.421	3.19	.0011
.237	.474	3.85	.0010
.263	.526	4.55	.0010
.289	.579	5.29	.0009
.316	.632	6.07	.0009
.342	.684	6.89	.0008
.368	.737	7.73	.0008
.395	.789	8.61	.0008
.421	.842	9.52	.0007
.447	.895	10.46	.0007
.474	.947	11.42	.0007
.500	1.000	12.41	.0007

ROUTE ID=3 HYD=TO_E_INFLOW ID=1 DT=0.03333
PRINT HYD ID=3 CODE=1

HYDROGRAPH FROM AREA TO_E_INFLOW

RUNOFF VOLUME = 2.06630 INCHES = .0988 ACRE-FEET
PEAK DISCHARGE RATE = 2.67 CFS AT 1.500 HOURS BASIN AREA = .0009 SQ. MI.

*S ON-SITE BASIN E (NORTH PLAY GROUND)
COMPUTE NM HYD ID=1 HYD=ONSITE-E DA=.0012196 SQ MI
%A=0 %B=100 %C=0 %D=0

TP=0.1333 RAINFALL=-1

K = .131726HR TP = .133300HR K/TP RATIO = .988190 SHAPE CONSTANT, N = 3.573071

```
    UNIT PEAK =   2.9792    CFS   UNIT VOLUME =    .9955       B =   325.62      P60 = 1.9800
    AREA =      .001220 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-E


    RUNOFF VOLUME =      .74876 INCHES     =        .0487 ACRE-FEET
    PEAK DISCHARGE RATE =       1.74 CFS  AT   1.533 HOURS   BASIN AREA =   .0012 SQ. MI.


*S  ADD RUNOFF ROUTED FROM E1-TO BASIN E (TOTAL TO POND IN BASIN E)
ADD HYD             ID=1  HYD=EI  ID I=1  ID II=3
PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA EI


    RUNOFF VOLUME =     1.30673 INCHES     =        .1475 ACRE-FEET
    PEAK DISCHARGE RATE =       4.40 CFS  AT   1.500 HOURS   BASIN AREA =   .0021 SQ. MI.


*S  ROUTE THE RUNOFF FROM OFFSITE BASIN 20 VIA A PIPE TO BASIN E.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.0056
                                                          DIA=1.0 FT N=.013

                RATING CURVE PIPE SECTION  1.0
    WATER       FLOW        FLOW        MAX
    SURFACE     AREA        RATE        WIDTH
    ELEV        SQ FT       CFS         FT
      .00         .00         .00         .00
      .05         .02         .01         .44
      .10         .04         .06         .61
      .16         .08         .14         .73
      .21         .12         .25         .81
      .26         .16         .40         .88
      .31         .21         .57         .93
      .36         .26         .76         .96
      .42         .31         .97         .99
      .47         .36        1.19        1.00
      .52         .41        1.43        1.00
      .57         .47        1.67        1.00
      .63         .52        1.91        1.00
      .68         .57        2.14        1.00
      .73         .61        2.35        1.00
      .78         .66        2.55        1.00
      .83         .70        2.71        1.00
      .89         .74        2.82        1.00
      .94         .77        2.87        1.00
     1.00         .79        2.87        1.00
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=300 SLP=.0056

                TRAVEL TIME TABLE
                          REACH=  1.0

    WATER       AVERAGE     FLOW        TRAVEL
    DEPTH       AREA        RATE        TIME
    FEET        SQ.FT.      CFS         HRS
       .052        .016         .01       .0930
       .104        .043         .06       .0596
       .156        .078         .14       .0463
       .208        .119         .25       .0389
       .261        .163         .40       .0342
       .313        .210         .57       .0309
       .365        .259         .76       .0285
       .417        .310         .97       .0267
       .469        .362        1.19       .0252
       .521        .414        1.43       .0241
       .573        .466        1.67       .0233
```

.625	.517	1.91	.0226
.677	.566	2.14	.0221
.730	.614	2.35	.0217
.782	.659	2.55	.0216
.834	.700	2.71	.0215
.886	.736	2.82	.0217
.938	.765	2.87	.0222
1.000	.785	2.87	.0228

```
    ROUTE               ID=3 HYD=OFFSITE20 INFLOW ID=13 DT=0.03333
TRAVEL TIME TABLE EXCEEDED
    PRINT HYD           ID=3 CODE=1

                                        HYDROGRAPH FROM AREA OFFSITE20


        RUNOFF VOLUME =      .85535 INCHES     =        .2068 ACRE-FEET
        PEAK DISCHARGE RATE =      6.92 CFS  AT   1.533 HOURS   BASIN AREA =   .0045 SQ. MI.



    *S  ADD RUNOFF ROUTED FROM OFFSITE BASIN 20 TO BASIN E(020+E1=E)
    ADD HYD             ID=17  HYD=020-E1-E  ID I=3  ID II=1
    PRINT HYD           ID=17  CODE=1

                                        HYDROGRAPH FROM AREA 020-E1-E


        RUNOFF VOLUME =      .99894 INCHES     =        .3543 ACRE-FEET
        PEAK DISCHARGE RATE =     11.20 CFS  AT   1.533 HOURS   BASIN AREA =   .0066 SQ. MI.



    *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN E.
    ROUTE RESERVOIR     ID=2  HYD=BASIN_E_ROUTE  INFLOW ID=17  CODE=10
                                                          OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                          0               0
4936.50
                                                          0.1             .01
4936.70
                                                          2.4             .23             4938.00


        * * * * * * * * * * * * * * * * * *

          TIME      INFLOW    ELEV      VOLUME    OUTFLOW
          (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

            .00       .00   4936.50       .000       .00
            .33       .00   4936.50       .000       .00
            .67       .00   4936.50       .000       .00
           1.00       .00   4936.50       .000       .00
           1.33      1.10   4936.59       .004       .04
           1.67      6.86   4937.75       .188      1.96
           2.00      1.69   4937.95       .221      2.31
           2.33       .50   4937.76       .189      1.97
           2.67       .20   4937.52       .149      1.56
           3.00       .10   4937.32       .115      1.20
           3.33       .04   4937.16       .088       .92
           3.67       .02   4937.04       .067       .69
           4.00       .02   4936.94       .051       .53
           4.33       .02   4936.87       .039       .40
           4.67       .02   4936.82       .029       .30
           5.00       .02   4936.77       .023       .23
           5.33       .02   4936.75       .018       .18
           5.67       .02   4936.72       .014       .14
           6.00       .02   4936.71       .011       .11
           6.33       .00   4936.67       .009       .09
           6.67       .00   4936.63       .007       .07
           7.00       .00   4936.60       .005       .05
           7.33       .00   4936.58       .004       .04
           7.67       .00   4936.56       .003       .03
           8.00       .00   4936.54       .002       .02
           8.33       .00   4936.53       .002       .02
```

8.67	.00	4936.53	.001	.01
9.00	.00	4936.52	.001	.01
9.33	.00	4936.51	.001	.01
9.67	.00	4936.51	.001	.01
10.00	.00	4936.51	.000	.00

PEAK DISCHARGE = 2.339 CFS - PEAK OCCURS AT HOUR 1.90
MAXIMUM WATER SURFACE ELEVATION = 4937.966
MAXIMUM STORAGE = .2242 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA BASIN_E_ROUTE

RUNOFF VOLUME = .99894 INCHES = .3543 ACRE-FEET
PEAK DISCHARGE RATE = 2.34 CFS AT 1.900 HOURS BASIN AREA = .0066 SQ. MI.

*S ROUTE THIS RUNOFF TO BASIN A VIA A PIPE FROM POND IN BASIN E.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05
DIA=0.666 FT N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.03	.01	.01	.30
.07	.02	.06	.41
.10	.03	.14	.48
.14	.05	.26	.54
.17	.07	.40	.58
.21	.09	.57	.62
.24	.11	.77	.64
.28	.14	.98	.66
.31	.16	1.21	.66
.35	.18	1.44	.67
.38	.21	1.69	.67
.42	.23	1.93	.67
.45	.25	2.16	.67
.49	.27	2.38	.67
.52	.29	2.57	.67
.56	.31	2.74	.67
.59	.33	2.85	.67
.62	.34	2.90	.67
.67	.35	2.90	.67

COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=190 SLP=.005

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.035	.007	.01	.0259
.069	.019	.06	.0166
.104	.035	.14	.0129
.139	.053	.26	.0108
.174	.072	.40	.0095
.208	.093	.57	.0086
.243	.115	.77	.0079
.278	.137	.98	.0074
.312	.160	1.21	.0070
.347	.184	1.44	.0067
.382	.207	1.69	.0065
.416	.229	1.93	.0063
.451	.251	2.16	.0061
.486	.272	2.38	.0060
.521	.292	2.57	.0060
.555	.310	2.74	.0060
.590	.326	2.85	.0060
.625	.339	2.90	.0062

```
                                .666        .348        2.90        .0063
ROUTE                ID=3 HYD=TO_A_INFLOW ID=2 DT=0.03333
PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =       .99873 INCHES     =         .3542 ACRE-FEET
    PEAK DISCHARGE RATE =       2.34 CFS  AT    1.900 HOURS   BASIN AREA =    .0066 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN E TO BASIN A(D+O12+A)
ADD HYD              ID=16  HYD=D1-D2-O1-D-A-E  ID I=3  ID II=15
PRINT HYD            ID=16  CODE=1

                                        HYDROGRAPH FROM AREA D1-D2-O1-D-A-E


    RUNOFF VOLUME =     1.10721 INCHES     =         .6704 ACRE-FEET
    PEAK DISCHARGE RATE =       4.68 CFS  AT    1.633 HOURS   BASIN AREA =    .0114 SQ. MI.


*S  ON-SITE BASIN B (SOUTH END OF SOCCER FIELD)
COMPUTE NM HYD       ID=1  HYD=ONSITE-B  DA=.00043044 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   1.0515    CFS   UNIT VOLUME =    .9871       B =   325.62      P60 = 1.9800
    AREA =      .000430 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-B


    RUNOFF VOLUME =       .74876 INCHES     =         .0172 ACRE-FEET
    PEAK DISCHARGE RATE =        .62 CFS  AT    1.533 HOURS   BASIN AREA =    .0004 SQ. MI.


*S  ADD RUNOFF ROUTED FROM OFFSITE BASIN O-11.5 TO BASIN B
ADD HYD              ID=19  HYD=11.5-B   ID I=11  ID II=1
PRINT HYD            ID=19  CODE=1

                                        HYDROGRAPH FROM AREA 11.5-B


    RUNOFF VOLUME =       .82880 INCHES     =         .0769 ACRE-FEET
    PEAK DISCHARGE RATE =       2.66 CFS  AT    1.500 HOURS   BASIN AREA =    .0017 SQ. MI.


    *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN B.
    ROUTE RESERVOIR     ID=2  HYD=BASIN_B_ROUTE  INFLOW ID=19  CODE=10
                                                          OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                          0               0
4936.50
                                                          0.2             .001
4936.70
                                                          1.5             .052
4938.00

      * * * * * * * * * * * * * * * * * *

        TIME      INFLOW    ELEV      VOLUME    OUTFLOW
        (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)
```

.00	.00	4936.50	.000	.00
.33	.00	4936.50	.000	.00
.67	.00	4936.50	.000	.00
1.00	.00	4936.50	.000	.00
1.33	.15	4936.56	.000	.06
1.67	1.50	4937.54	.034	1.04
2.00	.29	4937.33	.026	.83
2.33	.10	4937.00	.013	.50
2.67	.04	4936.78	.004	.28
3.00	.01	4936.53	.000	.03
3.33	.00	4936.50	.000	.00

PEAK DISCHARGE = 1.067 CFS - PEAK OCCURS AT HOUR 1.73
MAXIMUM WATER SURFACE ELEVATION = 4937.567
MAXIMUM STORAGE = .0350 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA BASIN_B_ROUTE

RUNOFF VOLUME = .82880 INCHES = .0769 ACRE-FEET
PEAK DISCHARGE RATE = 1.07 CFS AT 1.733 HOURS BASIN AREA = .0017 SQ. MI.

*S ROUTE THIS RUNOFF TO BASIN A VIA A PIPE FROM POND IN BASIN B.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05
DIA=0.666 FT N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.03	.01	.01	.30
.07	.02	.06	.41
.10	.03	.14	.48
.14	.05	.26	.54
.17	.07	.40	.58
.21	.09	.57	.62
.24	.11	.77	.64
.28	.14	.98	.66
.31	.16	1.21	.66
.35	.18	1.44	.67
.38	.21	1.69	.67
.42	.23	1.93	.67
.45	.25	2.16	.67
.49	.27	2.38	.67
.52	.29	2.57	.67
.56	.31	2.74	.67
.59	.33	2.85	.67
.62	.34	2.90	.67
.67	.35	2.90	.67

COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=190 SLP=.005

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.035	.007	.01	.0259
.069	.019	.06	.0166
.104	.035	.14	.0129
.139	.053	.26	.0108
.174	.072	.40	.0095
.208	.093	.57	.0086
.243	.115	.77	.0079
.278	.137	.98	.0074
.312	.160	1.21	.0070
.347	.184	1.44	.0067
.382	.207	1.69	.0065
.416	.229	1.93	.0063

```
                                .451        .251        2.16        .0061
                                .486        .272        2.38        .0060
                                .521        .292        2.57        .0060
                                .555        .310        2.74        .0060
                                .590        .326        2.85        .0060
                                .625        .339        2.90        .0062
                                .666        .348        2.90        .0063
ROUTE               ID=3 HYD=TO_A_INFLOW ID=2 DT=0.03333
PRINT HYD           ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =      .82905 INCHES     =        .0769 ACRE-FEET
    PEAK DISCHARGE RATE =      1.07 CFS  AT   1.733 HOURS   BASIN AREA =   .0017 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN B TO BASIN A(012+E+D)
ADD HYD             ID=17  HYD=A-B-D-E-012  ID I=3  ID II=16
PRINT HYD           ID=17  CODE=1

                                        HYDROGRAPH FROM AREA A-B-D-E-012


    RUNOFF VOLUME =     1.07022 INCHES     =        .7472 ACRE-FEET
    PEAK DISCHARGE RATE =      5.69 CFS  AT   1.667 HOURS   BASIN AREA =   .0131 SQ. MI.


*S RUNOFF FROM BASIN C (NORTH END OF SOCCER FIELD)
COMPUTE NM HYD      ID=2  HYD=ONSITE-C  DA=.00031566 SQ MI
                                                        %A=0  %B=100  %C=0  %D=0

                                                        TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   .77109    CFS   UNIT VOLUME =    .9818       B =   325.62      P60 = 1.9800
    AREA =      .000316 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-C


    RUNOFF VOLUME =      .74876 INCHES     =        .0126 ACRE-FEET
    PEAK DISCHARGE RATE =       .46 CFS  AT   1.533 HOURS   BASIN AREA =   .0003 SQ. MI.


    *S  ADD RUNOFF ROUTED FROM OFFSITE BASIN O-11.5 TO BASIN C
    ADD HYD             ID=19  HYD=O11.5-C   ID I=2  ID II=11
    PRINT HYD           ID=19  CODE=1

                                        HYDROGRAPH FROM AREA O11.5-C


        RUNOFF VOLUME =      .83446 INCHES     =        .0723 ACRE-FEET
        PEAK DISCHARGE RATE =      2.49 CFS  AT   1.500 HOURS   BASIN AREA =   .0016 SQ. MI.


    *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN C.
    ROUTE RESERVOIR     ID=2  HYD=BASIN_C_ROUTE  INFLOW ID=19  CODE=10
                                                        OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                        0               0
4936.500
                                                        1.0             0.01
4936.70
                                                        10.0            0.13
4938.00
```

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 * * * * * * * * * * * * * * * * * *

   TIME      INFLOW     ELEV      VOLUME    OUTFLOW
   (HRS)     (CFS)      (FEET)    (AC-FT)   (CFS)

    .00         .00   4936.50       .000       .00
    .33         .00   4936.50       .000       .00
    .67         .00   4936.50       .000       .00
   1.00         .00   4936.50       .000       .00
   1.33         .14   4936.51       .000       .04
   1.67        1.41   4936.80       .019      1.68
   2.00         .27   4936.61       .006       .57
   2.33         .10   4936.53       .002       .16
   2.67         .04   4936.51       .001       .06
   3.00         .01   4936.50       .000       .02
   3.33         .00   4936.50       .000       .01
   3.67         .00   4936.50       .000       .00
 PEAK DISCHARGE =        1.709 CFS - PEAK OCCURS AT HOUR    1.63
 MAXIMUM WATER SURFACE ELEVATION =     4936.803
 MAXIMUM STORAGE =          .0195 AC-FT      INCREMENTAL TIME=     .033330HRS

PRINT HYD           ID=2  CODE=1

                                          HYDROGRAPH FROM AREA BASIN C ROUTE

    RUNOFF VOLUME =      .83446 INCHES     =        .0723 ACRE-FEET
    PEAK DISCHARGE RATE =       1.71 CFS  AT   1.633 HOURS   BASIN AREA =    .0016 SQ. MI.


*S  ROUTE THIS RUNOFF TO BASIN A VIA A PIPE FROM POND IN BASIN C.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05
                                                        DIA=1.00 IN N=.013

                                RATING CURVE PIPE SECTION  1.0
                                   WATER       FLOW        FLOW        MAX
                                 SURFACE       AREA        RATE       WIDTH
                                   ELEV       SQ FT        CFS         FT
                                    .00         .00         .00         .00
                                    .05         .02         .04         .44
                                    .10         .04         .18         .61
                                    .16         .08         .42         .73
                                    .21         .12         .76         .81
                                    .26         .16        1.18         .88
                                    .31         .21        1.69         .93
                                    .36         .26        2.26         .96
                                    .42         .31        2.89         .99
                                    .47         .36        3.57        1.00
                                    .52         .41        4.27        1.00
                                    .57         .47        4.99        1.00
                                    .63         .52        5.70        1.00
                                    .68         .57        6.38        1.00
                                    .73         .61        7.03        1.00
                                    .78         .66        7.61        1.00
                                    .83         .70        8.09        1.00
                                    .89         .74        8.43        1.00
                                    .94         .77        8.57        1.00
                                   1.00         .79        8.57        1.00
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=160 SLP=.005

                                TRAVEL TIME TABLE
                                              REACH=  1.0

                                WATER       AVERAGE     FLOW        TRAVEL
                                DEPTH       AREA        RATE        TIME
                                FEET        SQ.FT.      CFS         HRS
                                   .052        .016         .04        .0166
                                   .104        .043         .18        .0106
                                   .156        .078         .42        .0083
                                   .208        .119         .76        .0070
                                   .261        .163        1.18        .0061
                                   .313        .210        1.69        .0055
```

```
                              .365        .259        2.26        .0051
                              .417        .310        2.89        .0048
                              .469        .362        3.57        .0045
                              .521        .414        4.27        .0043
                              .573        .466        4.99        .0042
                              .625        .517        5.70        .0040
                              .677        .566        6.38        .0039
                              .730        .614        7.03        .0039
                              .782        .659        7.61        .0038
                              .834        .700        8.09        .0038
                              .886        .736        8.43        .0039
                              .938        .765        8.57        .0040
                             1.000        .785        8.57        .0041
ROUTE                ID=3 HYD=TO_A_INFLOW ID=2 DT=0.03333
PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =      .83465 INCHES     =        .0723 ACRE-FEET
    PEAK DISCHARGE RATE =       1.71 CFS  AT   1.633 HOURS   BASIN AREA =    .0016 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN C TO BASIN A(A+B+D+E+011+012)
ADD HYD              ID=18  HYD=A-B-C-D-E-011-012  ID I=3  ID II=17
PRINT HYD            ID=18  CODE=1

                                        HYDROGRAPH FROM AREA A-B-C-D-E-011-012


    RUNOFF VOLUME =     1.04419 INCHES     =        .8195 ACRE-FEET
    PEAK DISCHARGE RATE =       7.37 CFS  AT   1.633 HOURS   BASIN AREA =    .0147 SQ. MI.


FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 13:32:33
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    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
         RUN DATE (MON/DAY/YR) = 04/08/1996
         START TIME (HR:MIN:SEC) = 13:37:09     USER NO.= CHVZ_GNM.I01
         INPUT FILE = AHYMO.IN

*S*************************************************************************
*S**************    CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.   **************
*S**************           WESTSIDE COMMUNITY CENTER            **************
*S*************************************************************************
*S*  FILENAME:  G:\G21\103\DOCUMENT\AHYMO.IN/OUT
*S*************************************************************************
*S******* 100 YEAR, 24 HOUR STORM
START                 0.00
RAINFALL              TYPE=2 RAIN QUARTER=0.0 RAIN ONE=1.98
                                  RAIN SIX=2.30 RAIN DAY=2.66  DT=0.05

                 COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                 DT =    .050000 HOURS       END TIME =    24.000000 HOURS
                    .0000   .0022   .0044   .0068   .0092   .0117   .0143
                    .0170   .0198   .0227   .0258   .0290   .0323   .0358
                    .0396   .0435   .0477   .0522   .0570   .0622   .0678
                    .0762   .0854   .1121   .1753   .2838   .4518   .6936
                   1.0242  1.2850  1.4028  1.5011  1.5873  1.6643  1.7341
                   1.7978  1.8562  1.9099  1.9595  2.0054  2.0478  2.0570
                   2.0654  2.0732  2.0805  2.0874  2.0939  2.1000  2.1059
                   2.1114  2.1168  2.1219  2.1268  2.1316  2.1361  2.1405
                   2.1448  2.1490  2.1530  2.1569  2.1607  2.1644  2.1680
                   2.1715  2.1750  2.1783  2.1816  2.1848  2.1879  2.1910
                   2.1940  2.1970  2.1999  2.2027  2.2055  2.2083  2.2110
                   2.2136  2.2162  2.2188  2.2213  2.2238  2.2262  2.2286
                   2.2310  2.2334  2.2357  2.2380  2.2402  2.2424  2.2446
                   2.2468  2.2489  2.2510  2.2531  2.2551  2.2572  2.2592
                   2.2612  2.2631  2.2651  2.2670  2.2689  2.2708  2.2726
                   2.2744  2.2763  2.2781  2.2799  2.2816  2.2834  2.2851
                   2.2868  2.2885  2.2902  2.2919  2.2935  2.2952  2.2968
                   2.2984  2.3000  2.3016  2.3031  2.3047  2.3062  2.3077
                   2.3093  2.3108  2.3123  2.3138  2.3153  2.3168  2.3183
                   2.3198  2.3213  2.3228  2.3242  2.3257  2.3272  2.3286
                   2.3301  2.3315  2.3330  2.3344  2.3359  2.3373  2.3387
                   2.3401  2.3415  2.3430  2.3444  2.3458  2.3472  2.3486
                   2.3499  2.3513  2.3527  2.3541  2.3554  2.3568  2.3582
                   2.3595  2.3609  2.3622  2.3636  2.3649  2.3662  2.3676
                   2.3689  2.3702  2.3715  2.3729  2.3742  2.3755  2.3768
                   2.3781  2.3794  2.3807  2.3819  2.3832  2.3845  2.3858
                   2.3871  2.3883  2.3896  2.3908  2.3921  2.3934  2.3946
                   2.3959  2.3971  2.3983  2.3996  2.4008  2.4020  2.4033
                   2.4045  2.4057  2.4069  2.4081  2.4093  2.4105  2.4117
                   2.4129  2.4141  2.4153  2.4165  2.4177  2.4189  2.4200
                   2.4212  2.4224  2.4236  2.4247  2.4259  2.4270  2.4282
                   2.4293  2.4305  2.4316  2.4328  2.4339  2.4351  2.4362
                   2.4373  2.4385  2.4396  2.4407  2.4418  2.4429  2.4441
                   2.4452  2.4463  2.4474  2.4485  2.4496  2.4507  2.4518
                   2.4529  2.4540  2.4550  2.4561  2.4572  2.4583  2.4594
                   2.4604  2.4615  2.4626  2.4636  2.4647  2.4658  2.4668
                   2.4679  2.4689  2.4700  2.4710  2.4721  2.4731  2.4741
                   2.4752  2.4762  2.4773  2.4783  2.4793  2.4803  2.4814
                   2.4824  2.4834  2.4844  2.4854  2.4864  2.4874  2.4885
                   2.4895  2.4905  2.4915  2.4925  2.4935  2.4944  2.4954
                   2.4964  2.4974  2.4984  2.4994  2.5004  2.5013  2.5023
                   2.5033  2.5043  2.5052  2.5062  2.5072  2.5081  2.5091
                   2.5100  2.5110  2.5119  2.5129  2.5138  2.5148  2.5157
                   2.5167  2.5176  2.5186  2.5195  2.5204  2.5214  2.5223
                   2.5232  2.5242  2.5251  2.5260  2.5269  2.5279  2.5288
                   2.5297  2.5306  2.5315  2.5324  2.5333  2.5343  2.5352
                   2.5361  2.5370  2.5379  2.5388  2.5397  2.5406  2.5414
                   2.5423  2.5432  2.5441  2.5450  2.5459  2.5468  2.5476
                   2.5485  2.5494  2.5503  2.5512  2.5520  2.5529  2.5538
                   2.5546  2.5555  2.5564  2.5572  2.5581  2.5589  2.5598
                   2.5607  2.5615  2.5624  2.5632  2.5641  2.5649  2.5657
                   2.5666  2.5674  2.5683  2.5691  2.5700  2.5708  2.5716
                   2.5725  2.5733  2.5741  2.5749  2.5758  2.5766  2.5774
                   2.5782  2.5791  2.5799  2.5807  2.5815  2.5823  2.5832
                   2.5840  2.5848  2.5856  2.5864  2.5872  2.5880  2.5888
                   2.5896  2.5904  2.5912  2.5920  2.5928  2.5936  2.5944
                   2.5952  2.5960  2.5968  2.5976  2.5983  2.5991  2.5999
                   2.6007  2.6015  2.6023  2.6030  2.6038  2.6046  2.6054
                   2.6061  2.6069  2.6077  2.6084  2.6092  2.6100  2.6107
                   2.6115  2.6123  2.6130  2.6138  2.6146  2.6153  2.6161
                   2.6168  2.6176  2.6183  2.6191  2.6198  2.6206  2.6213
                   2.6221  2.6228  2.6236  2.6243  2.6251  2.6258  2.6265
                   2.6273  2.6280  2.6287  2.6295  2.6302  2.6309  2.6317
```

```
 2.6324  2.6331  2.6339  2.6346  2.6353  2.6360  2.6368
 2.6375  2.6382  2.6389  2.6396  2.6404  2.6411  2.6418
 2.6425  2.6432  2.6439  2.6446  2.6453  2.6461  2.6468
 2.6475  2.6482  2.6489  2.6496  2.6503  2.6510  2.6517
 2.6524  2.6531  2.6538  2.6545  2.6552  2.6559  2.6566
 2.6572  2.6579  2.6586  2.6593  2.6600

*S**************  COMPUTE THE RUNOFF FROM THE EXISTING BASINS  **************
*S  OFF-SITE BASIN O-11.5 (THIS HYD IS 1/2 OF THE TOTAL OFFSITE BASIN O-11)
COMPUTE NM HYD      ID=11  HYD=O-11.5  DA=.0013085 SQ MI
                                                    %A=0  %B=88  %C=5  %D=7

                                                    TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .36162    CFS   UNIT VOLUME =    .9674       B =   526.28      P60 = 1.9800
    AREA =      .000092 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .130402HR    TP =   .133300HR    K/TP RATIO =   .978261     SHAPE CONSTANT, N =  3.610034
    UNIT PEAK =   2.9968    CFS   UNIT VOLUME =    .9967       B =   328.27      P60 = 1.9800
    AREA =      .001217 SQ MI    IA =    .49194 INCHES    INF =   1.22742 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=11  CODE=1

                                    HYDROGRAPH FROM AREA O-11.5


    RUNOFF VOLUME =      .88019 INCHES     =        .0614 ACRE-FEET
    PEAK DISCHARGE RATE =       2.03 CFS  AT   1.500 HOURS   BASIN AREA =   .0013 SQ. MI.


*S  ADD FOR THE TOTAL OFFSITE RUNOFF -O11- TO SITE.(11.5+11.5)
ADD HYD             ID=12  HYD=TOTAL_O11  ID I=11  ID II=11
PRINT HYD           ID=12  CODE=1

                                    HYDROGRAPH FROM AREA TOTAL_O11


    RUNOFF VOLUME =      .87380 INCHES     =        .1220 ACRE-FEET
    PEAK DISCHARGE RATE =       4.07 CFS  AT   1.500 HOURS   BASIN AREA =   .0026 SQ. MI.


*S  OFF-SITE BASIN O-12
COMPUTE NM HYD      ID=13  HYD=O-12  DA=.0019163 SQ MI
                                                    %A=0  %B=88  %C=5  %D=7

                                                    TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .52960    CFS   UNIT VOLUME =    .9791       B =   526.28      P60 = 1.9800
    AREA =      .000134 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .130402HR    TP =   .133300HR    K/TP RATIO =   .978261     SHAPE CONSTANT, N =  3.610034
    UNIT PEAK =   4.3889    CFS   UNIT VOLUME =    .9981       B =   328.27      P60 = 1.9800
    AREA =      .001782 SQ MI    IA =    .49194 INCHES    INF =   1.22742 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=13  CODE=1

                                    HYDROGRAPH FROM AREA O-12


    RUNOFF VOLUME =      .88019 INCHES     =        .0900 ACRE-FEET
    PEAK DISCHARGE RATE =       2.97 CFS  AT   1.500 HOURS   BASIN AREA =   .0019 SQ. MI.


*S  ADD FOR THE TOTAL OFFSITE RUNOFF TO SITE.(11+12)
ADD HYD             ID=13  HYD=TOTAL_OFF  ID I=13  ID II=12
PRINT HYD           ID=13  CODE=1

                                    HYDROGRAPH FROM AREA TOTAL_OFF
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```
    RUNOFF VOLUME =      .87646 INCHES     =        .2119 ACRE-FEET
    PEAK DISCHARGE RATE =      7.04 CFS  AT   1.500 HOURS   BASIN AREA =   .0045 SQ. MI.


*S  ON-SITE BASIN (WEST SIDE COMMUNITY CENTER PROPERTY)
COMPUTE NM HYD      ID=1  HYD=ONSITE  DA=.00664 SQ MI
                                                        %A=0  %B=100  %C=0  %D=0

                                                        TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   16.220    CFS   UNIT VOLUME =    1.000       B =   325.62      P60 = 1.9800
    AREA =      .006640 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE


    RUNOFF VOLUME =      .74776 INCHES     =        .2648 ACRE-FEET
    PEAK DISCHARGE RATE =      9.37 CFS  AT   1.500 HOURS   BASIN AREA =   .0066 SQ. MI.


*S  ADD FOR THE TOTAL EXISTING RUNOFF.(11+12+ONSITE)
ADD HYD             ID=1  HYD=TOTAL_EXIST  ID I=13  ID II=1
PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA TOTAL_EXIST


    RUNOFF VOLUME =      .79997 INCHES     =        .4767 ACRE-FEET
    PEAK DISCHARGE RATE =     16.41 CFS  AT   1.500 HOURS   BASIN AREA =   .0112 SQ. MI.


*S**************  COMPUTE THE RUNOFF FROM THE DEVELOPED BASINS  *************
*S
*S  ON-SITE BASIN D2(DIRECT RUNOFF FROM BUILDINS)
COMPUTE NM HYD      ID=1  HYD=ONSITED2  DA=.0009256 SQ MI
                                                        %A=0  %B=0  %C=0  %D=100

                                                        TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.6543    CFS   UNIT VOLUME =    .9959       B =   526.28      P60 = 1.9800
    AREA =      .000926 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITED2


    RUNOFF VOLUME =     2.42773 INCHES     =        .1198 ACRE-FEET
    PEAK DISCHARGE RATE =      2.70 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*S  ON-SITE BASIN D1 (SOUTH 1/2 OF PARKING LOT)
COMPUTE NM HYD      ID=2  HYD=ONSITE-D1  DA=.0008967 SQ MI
                                                        %A=0  %B=0  %C=0  %D=100

                                                        TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.5402    CFS   UNIT VOLUME =    .9959       B =   526.28      P60 = 1.9800
    AREA =      .000897 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-D1


    RUNOFF VOLUME =     2.42773 INCHES     =        .1161 ACRE-FEET
    PEAK DISCHARGE RATE =      2.62 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.
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*S  ADD ON-SITE BASINS D1 & D2
ADD HYD              ID=2  HYD=D1-D2  ID I=1  ID II=2
PRINT HYD            ID=2  CODE=1

                                   HYDROGRAPH FROM AREA D1-D2


    RUNOFF VOLUME =     2.42740 INCHES     =        .2359 ACRE-FEET
    PEAK DISCHARGE RATE =       5.32 CFS  AT   1.500 HOURS   BASIN AREA =    .0018 SQ. MI.


*S  ROUTE THE OFF-SITE RUNOFF TO BASIN D THROUGH A CHANNEL
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
                                                          MIN ELEV=0  MAX ELEV=0.5

                                                          CH SLP=.04  FP SLP=.04   N=.013  DIST=2

                                                          DIST    ELEV

                                                          0       0.5

                                                          0       0

                                                          2       0

                                                          2       0.5

                                  RATING CURVE VALLEY SECTION  1.0
                                     WATER        FLOW         FLOW         TOP
                                   SURFACE        AREA         RATE        WIDTH
                                    ELEV         SQ FT         CFS          FT
                                      .00           .00          .00          .00
                                      .03           .05          .11         2.00
                                      .05           .11          .33         2.00
                                      .08           .16          .65         2.00
                                      .11           .21         1.04         2.00
                                      .13           .26         1.49         2.00
                                      .16           .32         2.00         2.00
                                      .18           .37         2.57         2.00
                                      .21           .42         3.19         2.00
                                      .24           .47         3.85         2.00
                                      .26           .53         4.55         2.00
                                      .29           .58         5.29         2.00
                                      .32           .63         6.07         2.00
                                      .34           .68         6.89         2.00
                                      .37           .74         7.73         2.00
                                      .39           .79         8.61         2.00
                                      .42           .84         9.52         2.00
                                      .45           .89        10.46         2.00
                                      .47           .95        11.42         2.00
                                      .50          1.00        12.41         2.00
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=30 SLP=.04
                                  TRAVEL TIME TABLE
                                                REACH=  1.0

                                  WATER        AVERAGE      FLOW         TRAVEL
                                  DEPTH        AREA         RATE         TIME
                                  FEET         SQ.FT.       CFS          HRS
                                     .026          .053          .11         .0042
                                     .053          .105          .33         .0026
                                     .079          .158          .65         .0020
                                     .105          .211         1.04         .0017
                                     .132          .263         1.49         .0015
                                     .158          .316         2.00         .0013
                                     .184          .368         2.57         .0012
                                     .211          .421         3.19         .0011
                                     .237          .474         3.85         .0010
                                     .263          .526         4.55         .0010
                                     .289          .579         5.29         .0009
                                     .316          .632         6.07         .0009
                                     .342          .684         6.89         .0008
                                     .368          .737         7.73         .0008
                                     .395          .789         8.61         .0008
                                     .421          .842         9.52         .0007
                                     .447          .895        10.46         .0007
                                     .474          .947        11.42         .0007
                                     .500         1.000        12.41         .0007
```

```
ROUTE                ID=3 HYD=TO_D_INFLOW ID=2 DT=0.0333
PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_D_INFLOW


    RUNOFF VOLUME =     2.36577 INCHES     =        .2299 ACRE-FEET
    PEAK DISCHARGE RATE =       5.30 CFS  AT   1.499 HOURS   BASIN AREA =    .0018 SQ. MI.



*S  ON-SITE BASIN D (PLAY GROUND AREA)
COMPUTE NM HYD       ID=1  HYD=ONSITE-D  DA=.0012554 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   3.0667    CFS   UNIT VOLUME =    .9970       B =   325.62      P60 = 1.9800
    AREA =      .001255 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-D


        RUNOFF VOLUME =      .74776 INCHES     =        .0501 ACRE-FEET
        PEAK DISCHARGE RATE =       1.78 CFS  AT   1.500 HOURS   BASIN AREA =    .0013 SQ. MI.



      *S  ADD RUNOFF ROUTED FROM D1-D2  TO BASIN D (TOTAL TO POND IN BASIN D)
      ADD HYD              ID=1  HYD=D1-D2-D  ID I=1  ID II=3
      PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA D1-D2-D


        RUNOFF VOLUME =     1.70572 INCHES     =        .2800 ACRE-FEET
        PEAK DISCHARGE RATE =       7.06 CFS  AT   1.499 HOURS   BASIN AREA =    .0031 SQ. MI.



      *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN D.
      ROUTE RESERVOIR      ID=2  HYD=BASIN_D_ROUTE  INFLOW ID=1  CODE=10
                                                          OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                          0               0                 4936.50

                                                          0.5             .01               4936.70

                                                          2.4             .24               4938.00


        * * * * * * * * * * * * * * * * * *
```

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	4936.50	.000	.00
.33	.00	4936.50	.000	.00
.67	.00	4936.50	.000	.00
1.00	.00	4936.50	.000	.00
1.33	1.92	4936.65	.008	.38
1.67	3.73	4937.33	.121	1.42
2.00	1.50	4937.44	.142	1.59
2.33	.34	4937.33	.122	1.42
2.66	.13	4937.16	.092	1.18
3.00	.07	4937.01	.065	.96
3.33	.04	4936.89	.043	.77
3.66	.03	4936.78	.025	.62
4.00	.03	4936.70	.010	.50
4.33	.03	4936.56	.003	.15
4.66	.03	4936.52	.001	.06
5.00	.03	4936.51	.001	.04
5.33	.03	4936.51	.001	.03
5.66	.03	4936.51	.001	.03
5.99	.04	4936.51	.001	.04
6.33	.04	4936.51	.001	.04
6.66	.04	4936.51	.001	.04

6.99	.03	4936.51	.001	.04
7.33	.03	4936.51	.001	.03
7.66	.03	4936.51	.001	.03
7.99	.03	4936.51	.001	.03
8.33	.03	4936.51	.001	.03
8.66	.03	4936.51	.001	.03
8.99	.03	4936.51	.001	.03
9.32	.03	4936.51	.001	.03
9.66	.03	4936.51	.001	.03
9.99	.03	4936.51	.001	.03
10.32	.03	4936.51	.001	.03
10.66	.03	4936.51	.001	.03
10.99	.03	4936.51	.001	.03
11.32	.03	4936.51	.001	.03
11.66	.03	4936.51	.001	.03
11.99	.03	4936.51	.001	.03
12.32	.03	4936.51	.001	.03
12.65	.02	4936.51	.001	.03
12.99	.02	4936.51	.000	.02
13.32	.02	4936.51	.000	.02
13.65	.02	4936.51	.000	.02
13.99	.02	4936.51	.000	.02
14.32	.02	4936.51	.000	.02
14.65	.02	4936.51	.000	.02
14.99	.02	4936.51	.000	.02
15.32	.02	4936.51	.000	.02
15.65	.02	4936.51	.000	.02
15.98	.02	4936.51	.000	.02
16.32	.02	4936.51	.000	.02
16.65	.02	4936.51	.000	.02
16.98	.02	4936.51	.000	.02
17.32	.02	4936.51	.000	.02
17.65	.02	4936.51	.000	.02
17.98	.02	4936.51	.000	.02
18.32	.02	4936.51	.000	.02

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
18.65	.02	4936.51	.000	.02
18.98	.02	4936.51	.000	.02
19.31	.02	4936.51	.000	.02
19.65	.02	4936.51	.000	.02

PEAK DISCHARGE = 1.589 CFS - PEAK OCCURS AT HOUR 1.96
MAXIMUM WATER SURFACE ELEVATION = 4937.445
MAXIMUM STORAGE = .1418 AC-FT INCREMENTAL TIME= .033300HRS

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA BASIN_D_ROUTE

RUNOFF VOLUME = 1.70346 INCHES = .2796 ACRE-FEET
PEAK DISCHARGE RATE = 1.59 CFS AT 1.965 HOURS BASIN AREA = .0031 SQ. MI.

*S ROUTE THIS RUNOFF(POND D) VIA A PIPE TO POND IN BASIN A.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05

DIA=0.6666 FT N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.03	.01	.01	.30
.07	.02	.06	.41
.10	.03	.14	.48
.14	.05	.26	.54
.17	.07	.40	.59
.21	.09	.57	.62
.24	.12	.77	.64
.28	.14	.98	.66
.31	.16	1.21	.67
.35	.18	1.45	.67
.38	.21	1.69	.67
.42	.23	1.93	.67
.45	.25	2.16	.67
.49	.27	2.38	.67
.52	.29	2.58	.67

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                                    .56          .31          2.74          .67
                                    .59          .33          2.86          .67
                                    .63          .34          2.91          .67
                                    .67          .35          2.91          .67
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=190 SLP=.0063

                              TRAVEL TIME TABLE
                                          REACH=  1.0

                              WATER        AVERAGE      FLOW         TRAVEL
                              DEPTH        AREA         RATE         TIME
                              FEET         SQ.FT.       CFS          HRS
                                 .035          .007          .01          .0258
                                 .069          .019          .06          .0166
                                 .104          .035          .14          .0129
                                 .139          .053          .26          .0108
                                 .174          .072          .40          .0095
                                 .208          .093          .57          .0086
                                 .243          .115          .77          .0079
                                 .278          .138          .98          .0074
                                 .313          .161         1.21          .0070
                                 .347          .184         1.45          .0067
                                 .382          .207         1.69          .0065
                                 .417          .230         1.93          .0063
                                 .452          .252         2.16          .0061
                                 .486          .273         2.38          .0060
                                 .521          .293         2.58          .0060
                                 .556          .311         2.74          .0060
                                 .591          .327         2.86          .0060
                                 .625          .340         2.91          .0062
                                 .667          .349         2.91          .0063
ROUTE                ID=3 HYD=TO_A_INFLOW ID=2 DT=0.0333
PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =      1.70323 INCHES     =         .2796 ACRE-FEET
    PEAK DISCHARGE RATE =       1.59 CFS  AT    1.965 HOURS   BASIN AREA =    .0031 SQ. MI.


*S  ON-SITE BASIN A (TEMPORARY PONDING AREA)
COMPUTE NM HYD       ID=1  HYD=ONSITE-A  DA=.0016249 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =   .131726HR     TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   3.9693    CFS   UNIT VOLUME =    .9979       B =   325.62      P60 = 1.9800
    AREA =       .001625 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-A


    RUNOFF VOLUME =       .74776 INCHES     =         .0648 ACRE-FEET
    PEAK DISCHARGE RATE =       2.30 CFS  AT    1.500 HOURS   BASIN AREA =    .0016 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN D TO BASIN A
ADD HYD              ID=15  HYD=D1-D2-O12-D-A  ID I=1  ID II=3
PRINT HYD            ID=15  CODE=1

                                        HYDROGRAPH FROM AREA D1-D2-O12-D-A


    RUNOFF VOLUME =      1.37305 INCHES     =         .3444 ACRE-FEET
    PEAK DISCHARGE RATE =       3.27 CFS  AT    1.532 HOURS   BASIN AREA =    .0047 SQ. MI.


*S  ON-SITE BASIN E-1 (NORTH 1/2 OF PARKING LOT)
COMPUTE NM HYD       ID=1  HYD=ONSITE-E1  DA=.0008967 SQ MI
                                                          %A=0  %B=0  %C=0  %D=100

                                                          TP=0.1333  RAINFALL=-1
```

```
    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.5402    CFS   UNIT VOLUME =    .9959       B =   526.28      P60 = 1.9800
    AREA =      .000897 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-E1


    RUNOFF VOLUME =     2.42773 INCHES     =        .1161 ACRE-FEET
    PEAK DISCHARGE RATE =       2.62 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*S  ROUTE THE ON-SITE RUNOFF TO BASIN E THROUGH A CHANNEL
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
                                                    MIN ELEV=0  MAX ELEV=0.5
                                                    CH SLP=.04  FP SLP=.04   N=.013  DIST=2
                                                    DIST    ELEV
                                                    0       0.5
                                                    0       0
                                                    2       0
                                                    2       0.5

                                    RATING CURVE VALLEY SECTION  1.0
                                       WATER        FLOW         FLOW         TOP
                                     SURFACE        AREA         RATE        WIDTH
                                       ELEV       SQ FT          CFS         FT
                                         .00         .00          .00          .00
                                         .03         .05          .11         2.00
                                         .05         .11          .33         2.00
                                         .08         .16          .65         2.00
                                         .11         .21         1.04         2.00
                                         .13         .26         1.49         2.00
                                         .16         .32         2.00         2.00
                                         .18         .37         2.57         2.00
                                         .21         .42         3.19         2.00
                                         .24         .47         3.85         2.00
                                         .26         .53         4.55         2.00
                                         .29         .58         5.29         2.00
                                         .32         .63         6.07         2.00
                                         .34         .68         6.89         2.00
                                         .37         .74         7.73         2.00
                                         .39         .79         8.61         2.00
                                         .42         .84         9.52         2.00
                                         .45         .89        10.46         2.00
                                         .47         .95        11.42         2.00
                                         .50        1.00        12.41         2.00
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=30 SLP=.04

                                    TRAVEL TIME TABLE
                                                  REACH=  1.0

                                    WATER        AVERAGE      FLOW         TRAVEL
                                    DEPTH        AREA         RATE         TIME
                                    FEET         SQ.FT.       CFS          HRS
                                       .026         .053          .11         .0042
                                       .053         .105          .33         .0026
                                       .079         .158          .65         .0020
                                       .105         .211         1.04         .0017
                                       .132         .263         1.49         .0015
                                       .158         .316         2.00         .0013
                                       .184         .368         2.57         .0012
                                       .211         .421         3.19         .0011
                                       .237         .474         3.85         .0010
                                       .263         .526         4.55         .0010
                                       .289         .579         5.29         .0009
                                       .316         .632         6.07         .0009
                                       .342         .684         6.89         .0008
                                       .368         .737         7.73         .0008
                                       .395         .789         8.61         .0008
                                       .421         .842         9.52         .0007
                                       .447         .895        10.46         .0007
                                       .474         .947        11.42         .0007
```

```
                                .500       1.000       12.41       .0007
ROUTE                ID=3 HYD=TO_E_INFLOW ID=1 DT=0.05
PRINT HYD            ID=3 CODE=1

                                    HYDROGRAPH FROM AREA TO_E_INFLOW


    RUNOFF VOLUME =     2.42839 INCHES     =        .1161 ACRE-FEET
    PEAK DISCHARGE RATE =       2.62 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*S  ON-SITE BASIN E (NORTH PLAY GROUND)
COMPUTE NM HYD       ID=1  HYD=ONSITE-E  DA=.0012196 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   2.9792    CFS   UNIT VOLUME =    .9964       B =   325.62      P60 = 1.9800
    AREA =      .001220 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000
PRINT HYD            ID=1  CODE=1

                                    HYDROGRAPH FROM AREA ONSITE-E


    RUNOFF VOLUME =      .74776 INCHES     =        .0486 ACRE-FEET
    PEAK DISCHARGE RATE =       1.73 CFS  AT   1.500 HOURS   BASIN AREA =   .0012 SQ. MI.


*S  ADD RUNOFF ROUTED FROM E1-TO BASIN E (TOTAL TO POND IN BASIN E)
ADD HYD              ID=1  HYD=EI  ID I=1  ID II=3
PRINT HYD            ID=1  CODE=1

                                    HYDROGRAPH FROM AREA EI


    RUNOFF VOLUME =     1.45944 INCHES     =        .1647 ACRE-FEET
    PEAK DISCHARGE RATE =       4.35 CFS  AT   1.500 HOURS   BASIN AREA =   .0021 SQ. MI.


*S  ROUTE THE RUNOFF FROM OFFSITE BASIN 20 VIA A PIPE TO BASIN E.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.0056
                                                          DIA=1.0 FT N=.013

                                RATING CURVE PIPE SECTION  1.0
                                   WATER       FLOW        FLOW        MAX
                                  SURFACE      AREA        RATE        WIDTH
                                   ELEV        SQ FT       CFS         FT
                                     .00         .00         .00         .00
                                     .05         .02         .01         .44
                                     .10         .04         .06         .61
                                     .16         .08         .14         .73
                                     .21         .12         .25         .81
                                     .26         .16         .40         .88
                                     .31         .21         .57         .93
                                     .36         .26         .76         .96
                                     .42         .31         .97         .99
                                     .47         .36        1.19        1.00
                                     .52         .41        1.43        1.00
                                     .57         .47        1.67        1.00
                                     .63         .52        1.91        1.00
                                     .68         .57        2.14        1.00
                                     .73         .61        2.35        1.00
                                     .78         .66        2.55        1.00
                                     .83         .70        2.71        1.00
                                     .89         .74        2.82        1.00
                                     .94         .77        2.87        1.00
                                    1.00         .79        2.87        1.00
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=300 SLP=.0056

                                TRAVEL TIME TABLE
                                                REACH=  1.0

                                WATER       AVERAGE     FLOW        TRAVEL
                                DEPTH       AREA        RATE        TIME
```

FEET	SQ.FT.	CFS	HRS
.052	.016	.01	.0930
.104	.043	.06	.0596
.156	.078	.14	.0463
.208	.119	.25	.0389
.261	.163	.40	.0342
.313	.210	.57	.0309
.365	.259	.76	.0285
.417	.310	.97	.0267
.469	.362	1.19	.0252
.521	.414	1.43	.0241
.573	.466	1.67	.0233
.625	.517	1.91	.0226
.677	.566	2.14	.0221
.730	.614	2.35	.0217
.782	.659	2.55	.0216
.834	.700	2.71	.0215
.886	.736	2.82	.0217
.938	.765	2.87	.0222
1.000	.785	2.87	.0228

```
    ROUTE                ID=3 HYD=OFFSITE20 INFLOW ID=13 DT=0.05
TRAVEL TIME TABLE EXCEEDED
    PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA OFFSITE20

        RUNOFF VOLUME =      .87664 INCHES     =        .2119 ACRE-FEET
        PEAK DISCHARGE RATE =       6.64 CFS  AT    1.550 HOURS   BASIN AREA =    .0045 SQ. MI.


     *S  ADD RUNOFF ROUTED FROM OFFSITE BASIN 20 TO BASIN E(020+E1=E)
     ADD HYD              ID=17  HYD=020-E1-E  ID I=3  ID II=1
     PRINT HYD            ID=17  CODE=1

                                        HYDROGRAPH FROM AREA 020-E1-E


        RUNOFF VOLUME =     1.06201 INCHES     =        .3766 ACRE-FEET
        PEAK DISCHARGE RATE =      10.57 CFS  AT    1.550 HOURS   BASIN AREA =    .0066 SQ. MI.


     *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN E.
     ROUTE RESERVOIR      ID=2  HYD=BASIN_E_ROUTE  INFLOW ID=17  CODE=10
                                                          OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                          0               0                  4936.50
                                                          0.1             .01                4936.70
                                                          2.4             .23                4938.00

       * * * * * * * * * * * * * * * * * *
```

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	4936.50	.000	.00
.50	.00	4936.50	.000	.00
1.00	.00	4936.50	.000	.00
1.50	10.28	4937.09	.077	.80
2.00	1.66	4937.95	.222	2.31
2.50	.30	4937.64	.168	1.75
3.00	.09	4937.32	.115	1.20
3.50	.03	4937.09	.077	.80
4.00	.02	4936.94	.051	.52
4.50	.02	4936.84	.034	.35
5.00	.02	4936.77	.023	.23
5.50	.02	4936.73	.016	.16
6.00	.02	4936.71	.011	.11
6.50	.02	4936.66	.008	.08
7.00	.02	4936.62	.006	.06
7.50	.02	4936.60	.005	.05
8.00	.02	4936.58	.004	.04
8.50	.02	4936.57	.003	.03
9.00	.02	4936.56	.003	.03
9.50	.02	4936.55	.003	.03
10.00	.02	4936.55	.002	.02
10.50	.02	4936.54	.002	.02

11.00	.02	4936.54	.002	.02
11.50	.02	4936.54	.002	.02
12.00	.02	4936.54	.002	.02
12.50	.02	4936.54	.002	.02
13.00	.02	4936.54	.002	.02
13.50	.02	4936.53	.002	.02
14.00	.02	4936.53	.002	.02
14.50	.02	4936.53	.002	.02
15.00	.01	4936.53	.002	.02
15.50	.01	4936.53	.002	.02
16.00	.01	4936.53	.002	.02
16.50	.01	4936.53	.001	.01
17.00	.01	4936.53	.001	.01
17.50	.01	4936.53	.001	.01
18.00	.01	4936.53	.001	.01
18.50	.01	4936.53	.001	.01
19.00	.01	4936.52	.001	.01
19.50	.01	4936.52	.001	.01
20.00	.01	4936.52	.001	.01
20.50	.01	4936.52	.001	.01
21.00	.01	4936.52	.001	.01
21.50	.01	4936.52	.001	.01
22.00	.01	4936.52	.001	.01
22.50	.01	4936.52	.001	.01
23.00	.01	4936.52	.001	.01
23.50	.01	4936.52	.001	.01
24.00	.01	4936.52	.001	.01
24.50	.00	4936.51	.001	.01
25.00	.00	4936.51	.000	.00

PEAK DISCHARGE = 2.350 CFS - PEAK OCCURS AT HOUR 1.90
MAXIMUM WATER SURFACE ELEVATION = 4937.972
MAXIMUM STORAGE = .2252 AC-FT INCREMENTAL TIME= .050000HRS

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA BASIN_E_ROUTE

RUNOFF VOLUME = 1.06199 INCHES = .3766 ACRE-FEET
PEAK DISCHARGE RATE = 2.35 CFS AT 1.900 HOURS BASIN AREA = .0066 SQ. MI.

*S ROUTE THIS RUNOFF TO BASIN A VIA A PIPE FROM POND IN BASIN E.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05
DIA=0.666 FT N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.03	.01	.01	.30
.07	.02	.06	.41
.10	.03	.14	.48
.14	.05	.26	.54
.17	.07	.40	.58
.21	.09	.57	.62
.24	.11	.77	.64
.28	.14	.98	.66
.31	.16	1.21	.66
.35	.18	1.44	.67
.38	.21	1.69	.67
.42	.23	1.93	.67
.45	.25	2.16	.67
.49	.27	2.38	.67
.52	.29	2.57	.67
.56	.31	2.74	.67
.59	.33	2.85	.67
.62	.34	2.90	.67
.67	.35	2.90	.67

COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=190 SLP=.005

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.035	.007	.01	.0259
.069	.019	.06	.0166

.104	.035	.14	.0129
.139	.053	.26	.0108
.174	.072	.40	.0095
.208	.093	.57	.0086
.243	.115	.77	.0079
.278	.137	.98	.0074
.312	.160	1.21	.0070
.347	.184	1.44	.0067
.382	.207	1.69	.0065
.416	.229	1.93	.0063
.451	.251	2.16	.0061
.486	.272	2.38	.0060
.521	.292	2.57	.0060
.555	.310	2.74	.0060
.590	.326	2.85	.0060
.625	.339	2.90	.0062
.666	.348	2.90	.0063

```
ROUTE              ID=3 HYD=TO_A_INFLOW ID=2 DT=0.05
PRINT HYD          ID=3 CODE=1

                                HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =     1.06184 INCHES     =        .3766 ACRE-FEET
    PEAK DISCHARGE RATE =       2.35 CFS  AT   1.900 HOURS   BASIN AREA =    .0066 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN E TO BASIN A(D+O12+A)
ADD HYD            ID=16  HYD=D1-D2-O1-D-A-E  ID I=3  ID II=15
PRINT HYD          ID=16  CODE=1

                                HYDROGRAPH FROM AREA D1-D2-O1-D-A-E


    RUNOFF VOLUME =     1.18332 INCHES     =        .7164 ACRE-FEET
    PEAK DISCHARGE RATE =       4.61 CFS  AT   1.632 HOURS   BASIN AREA =    .0114 SQ. MI.


*S  ON-SITE BASIN B (SOUTH END OF SOCCER FIELD)
COMPUTE NM HYD     ID=1  HYD=ONSITE-B  DA=.00043044 SQ MI
                                                    %A=0  %B=100  %C=0  %D=0

                                                    TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   1.0515    CFS   UNIT VOLUME =    .9882       B =   325.62      P60 = 1.9800
    AREA =      .000430 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD          ID=1  CODE=1

                                HYDROGRAPH FROM AREA ONSITE-B


    RUNOFF VOLUME =      .74776 INCHES     =        .0172 ACRE-FEET
    PEAK DISCHARGE RATE =       .61 CFS  AT   1.500 HOURS   BASIN AREA =    .0004 SQ. MI.


    *S  ADD RUNOFF ROUTED FROM OFFSITE BASIN O-11.5 TO BASIN B
    ADD HYD            ID=19  HYD=11.5-B   ID I=11  ID II=1
    PRINT HYD          ID=19  CODE=1

                                HYDROGRAPH FROM AREA 11.5-B


    RUNOFF VOLUME =      .84252 INCHES     =        .0781 ACRE-FEET
    PEAK DISCHARGE RATE =       2.65 CFS  AT   1.500 HOURS   BASIN AREA =    .0017 SQ. MI.


    *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN B.
    ROUTE RESERVOIR    ID=2  HYD=BASIN_B_ROUTE  INFLOW ID=19  CODE=10
                                                    OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                    0               0                   4936.50

                                                    0.2             .001                4936.70
```

```
                                .555        .310        2.74        .0060
                                .590        .326        2.85        .0060
                                .625        .339        2.90        .0062
                                .666        .348        2.90        .0063
ROUTE                ID=3 HYD=TO_A_INFLOW ID=2 DT=0.05
PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =      .84287 INCHES     =        .0782 ACRE-FEET
    PEAK DISCHARGE RATE =       1.06 CFS  AT   1.750 HOURS   BASIN AREA =    .0017 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN B TO BASIN A(012+E+D)
ADD HYD              ID=17  HYD=A-B-D-E-012  ID I=3  ID II=16
PRINT HYD            ID=17  CODE=1

                                        HYDROGRAPH FROM AREA A-B-D-E-012


    RUNOFF VOLUME =     1.13804 INCHES     =        .7946 ACRE-FEET
    PEAK DISCHARGE RATE =       5.62 CFS  AT   1.665 HOURS   BASIN AREA =    .0131 SQ. MI.


*S RUNOFF FROM BASIN C (NORTH END OF SOCCER FIELD)
COMPUTE NM HYD       ID=2  HYD=ONSITE-C  DA=.00031566 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =    .131726HR     TP =    .133300HR     K/TP RATIO =    .988190      SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =    .77109     CFS   UNIT VOLUME =     .9844        B =   325.62       P60 = 1.9800
    AREA =       .000316 SQ MI     IA =     .50000 INCHES     INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000

PRINT HYD            ID=2  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-C


    RUNOFF VOLUME =       .74776 INCHES     =        .0126 ACRE-FEET
    PEAK DISCHARGE RATE =        .45 CFS  AT   1.500 HOURS   BASIN AREA =    .0003 SQ. MI.


*S  ADD RUNOFF ROUTED FROM OFFSITE BASIN O-11.5 TO BASIN C
ADD HYD              ID=19  HYD=O11.5-C   ID I=2  ID II=11
PRINT HYD            ID=19  CODE=1

                                        HYDROGRAPH FROM AREA O11.5-C


    RUNOFF VOLUME =       .84922 INCHES     =        .0736 ACRE-FEET
    PEAK DISCHARGE RATE =       2.49 CFS  AT   1.500 HOURS   BASIN AREA =    .0016 SQ. MI.


    *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN C.
    ROUTE RESERVOIR      ID=2  HYD=BASIN_C_ROUTE  INFLOW ID=19  CODE=10
                                                          OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                          0               0                4936.500
                                                          1.0             0.01             4936.70
                                                          10.0            0.13             4938.00

  * * * * * * * * * * * * * * * * * *

    TIME        INFLOW      ELEV        VOLUME      OUTFLOW
    (HRS)       (CFS)       (FEET)      (AC-FT)     (CFS)

     .00          .00     4936.50         .000         .00
     .50          .00     4936.50         .000         .00
    1.00          .00     4936.50         .000         .00
    1.50         2.49     4936.73         .013        1.20
    2.00          .27     4936.61         .006         .55
```

1.5 .052 4938.00

* * * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	4936.50	.000	.00
.50	.00	4936.50	.000	.00
1.00	.00	4936.50	.000	.00
1.50	2.65	4937.09	.016	.59
2.00	.28	4937.32	.025	.82
2.50	.06	4936.87	.008	.37
3.00	.01	4936.53	.000	.03
3.50	.00	4936.50	.000	.00

PEAK DISCHARGE = 1.060 CFS - PEAK OCCURS AT HOUR 1.70
MAXIMUM WATER SURFACE ELEVATION = 4937.561
MAXIMUM STORAGE = .0348 AC-FT INCREMENTAL TIME= .050000HRS

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA BASIN_B_ROUTE

RUNOFF VOLUME = .84252 INCHES = .0781 ACRE-FEET
PEAK DISCHARGE RATE = 1.06 CFS AT 1.700 HOURS BASIN AREA = .0017 SQ. MI.

*S ROUTE THIS RUNOFF TO BASIN A VIA A PIPE FROM POND IN BASIN B.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05

DIA=0.666 FT N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.03	.01	.01	.30
.07	.02	.06	.41
.10	.03	.14	.48
.14	.05	.26	.54
.17	.07	.40	.58
.21	.09	.57	.62
.24	.11	.77	.64
.28	.14	.98	.66
.31	.16	1.21	.66
.35	.18	1.44	.67
.38	.21	1.69	.67
.42	.23	1.93	.67
.45	.25	2.16	.67
.49	.27	2.38	.67
.52	.29	2.57	.67
.56	.31	2.74	.67
.59	.33	2.85	.67
.62	.34	2.90	.67
.67	.35	2.90	.67

COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=190 SLP=.005

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.035	.007	.01	.0259
.069	.019	.06	.0166
.104	.035	.14	.0129
.139	.053	.26	.0108
.174	.072	.40	.0095
.208	.093	.57	.0086
.243	.115	.77	.0079
.278	.137	.98	.0074
.312	.160	1.21	.0070
.347	.184	1.44	.0067
.382	.207	1.69	.0065
.416	.229	1.93	.0063
.451	.251	2.16	.0061
.486	.272	2.38	.0060
.521	.292	2.57	.0060

```
    2.50        .06   4936.52       .001       .09
    3.00        .01   4936.50       .000       .02
    3.50        .00   4936.50       .000       .00
 PEAK DISCHARGE =         1.684 CFS - PEAK OCCURS AT HOUR    1.65
 MAXIMUM WATER SURFACE ELEVATION =     4936.799
 MAXIMUM STORAGE =          .0191 AC-FT      INCREMENTAL TIME=     .050000HRS

PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_C_ROUTE


    RUNOFF VOLUME =      .84922 INCHES     =        .0736 ACRE-FEET
    PEAK DISCHARGE RATE =       1.68 CFS  AT   1.650 HOURS   BASIN AREA =   .0016 SQ. MI.


*S  ROUTE THIS RUNOFF TO BASIN A VIA A PIPE FROM POND IN BASIN C.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05
                                                          DIA=1.00 IN N=.013

                                    RATING CURVE PIPE SECTION  1.0
                                       WATER        FLOW         FLOW         MAX
                                     SURFACE        AREA         RATE        WIDTH
                                      ELEV          SQ FT        CFS         FT
                                        .00           .00          .00          .00
                                        .05           .02          .04          .44
                                        .10           .04          .18          .61
                                        .16           .08          .42          .73
                                        .21           .12          .76          .81
                                        .26           .16         1.18          .88
                                        .31           .21         1.69          .93
                                        .36           .26         2.26          .96
                                        .42           .31         2.89          .99
                                        .47           .36         3.57         1.00
                                        .52           .41         4.27         1.00
                                        .57           .47         4.99         1.00
                                        .63           .52         5.70         1.00
                                        .68           .57         6.38         1.00
                                        .73           .61         7.03         1.00
                                        .78           .66         7.61         1.00
                                        .83           .70         8.09         1.00
                                        .89           .74         8.43         1.00
                                        .94           .77         8.57         1.00
                                       1.00           .79         8.57         1.00
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=160 SLP=.005

                                    TRAVEL TIME TABLE
                                                REACH=  1.0

                                    WATER       AVERAGE      FLOW         TRAVEL
                                    DEPTH       AREA         RATE         TIME
                                    FEET        SQ.FT.       CFS          HRS
                                       .052         .016          .04          .0166
                                       .104         .043          .18          .0106
                                       .156         .078          .42          .0083
                                       .208         .119          .76          .0070
                                       .261         .163         1.18          .0061
                                       .313         .210         1.69          .0055
                                       .365         .259         2.26          .0051
                                       .417         .310         2.89          .0048
                                       .469         .362         3.57          .0045
                                       .521         .414         4.27          .0043
                                       .573         .466         4.99          .0042
                                       .625         .517         5.70          .0040
                                       .677         .566         6.38          .0039
                                       .730         .614         7.03          .0039
                                       .782         .659         7.61          .0038
                                       .834         .700         8.09          .0038
                                       .886         .736         8.43          .0039
                                       .938         .765         8.57          .0040
                                      1.000         .785         8.57          .0041
ROUTE               ID=3 HYD=TO_A_INFLOW ID=2 DT=0.05
PRINT HYD           ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =      .84930 INCHES     =        .0736 ACRE-FEET
    PEAK DISCHARGE RATE =       1.69 CFS  AT   1.650 HOURS   BASIN AREA =   .0016 SQ. MI.
```

```
*S  ADD RUNOFF ROUTED FROM POND IN BASIN C TO BASIN A(A+B+D+E+011+012)
ADD HYD             ID=18  HYD=A-B-C-D-E-011-012  ID I=3  ID II=17
PRINT HYD           ID=18  CODE=1

                                        HYDROGRAPH FROM AREA A-B-C-D-E-011-012


    RUNOFF VOLUME =     1.10611 INCHES     =        .8681 ACRE-FEET
    PEAK DISCHARGE RATE =       7.29 CFS  AT   1.665 HOURS   BASIN AREA =   .0147 SQ. MI.


FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 13:37:13
```

APPENDIX B

ADDITIONAL REPORTS

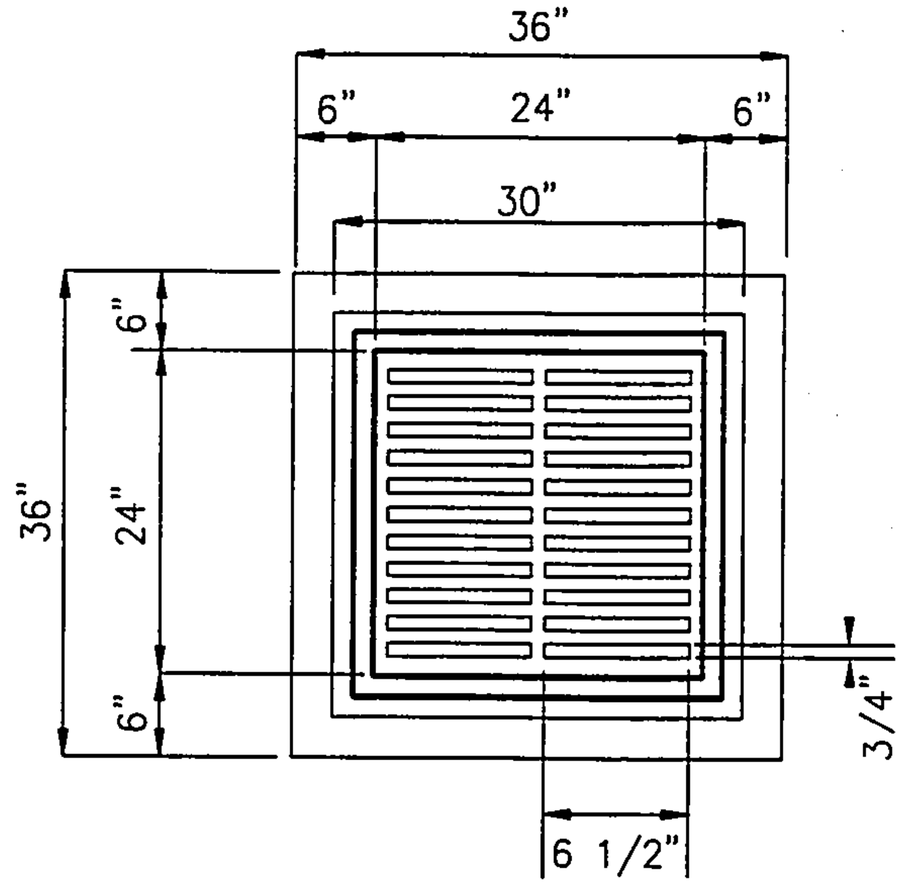
&

HYDRAULIC COMPUTATIONS

PIPE AND INLET GRATE INFORMATION

GRATE CAPACITY

NEENAH FOUNDRY COMPANY
CAT NO. R-1979-A66



GRATE AREA
ANET = 28 SLOTS AT 3/4" X 6 1/2" = 0.9479 ft2
ANET =0.9479 ft2

ORIFICE EQUATION $Q = 0.6\ A\ (2GH)^{1/2}$

$Q = 0.6\ (0.9479)\ (2*32.2*1.5)^{1/2}$

$Q = 5.59$ cfs

USE A 30% CLOGGING FACTOR
GRATE CAPACITY = 3.91 cfs

ALL DROP INLETS HAVE ADEQUATE CAPACITY FOR THE PROPOSED PONDS INTAKE FLOWS

PIPE DISCHARGE AND CAPACITIES

ANTICIPATED FLOW TO POND LOCATED IN BASIN A FROM:

BASIN B	8" PVC	$Q_{capacity}$ =2.90 cfs Qactual =1.07 cfs	yd = 0.312' PIPE = 47% FULL
BASIN C	8" PVC	$Q_{capacity}$ = 2.90 cfs Qactual = 0.86 cfs	yd = 0.278' PIPE = 42% FULL
BASIN D	8" PVC	$Q_{capacity}$ = 2.90 cfs Qactual = 2.10 cfs	yd = 0.452' PIPE = 67% FULL
	SIDEWALK 0.5' X 2' CULVERT	$Q_{capacity}$ = 12.41 cfs Qactual = 8.43 cfs	yd = 0.421' Channel = 84% FULL
BASIN E	8" PVC	$Q_{capacity}$ = 2.90 cfs Qactual = 2.57 cfs	yd = 0.521' PIPE = 78% FULL
	SIDEWALK 0.5' X 2' CULVERT	$Q_{capacity}$ = 12.41 cfs Qactual = 8.46 cfs	yd = 0.395' Channel = 79% FULL

March 12, 1996

MEMORANDUM FOR RECORD

TO: Craig Hagelgantz

FROM: Paul J. Gonzales PG

RE: Westside Community Center Detention Basin

Westside Community Center

I have revised the runoff model so that basin P17.1 includes only the area immediately surrounding Isleta Blvd. The ***24 hour, 100 year return event*** develops approximately ***1.03 acre-feet*** of runoff in basins P17.1 and P17.2. The ***24 hour, 5 year return event*** results in approximately ***0.37 acre-feet*** of runoff. The ***24 hour, 2 year return event*** results in approximately ***0.22 acre-feet*** of runoff. This runoff is to be detained in a pond south of Isleta Blvd., near the Westside Community Center. These amounts are significantly less than previoulsy modeled due to a reduction in the contributing surface area. After much considerartion, it was determined that it would be unrealistic to assume that the runoff from the Garden View area, north of Isleta Blvd, would reach the storm drain system. The area is geographically depressed. Therefore, the area was re-assessed and runoff re-calculated. Outflow from this pond can be transported via 18" and 24" diameter RCP directly to the main trunk line at the intersection of Arenal and Lopez.

It should be noted that the flows out of the Westside Community Center Detention Pond are only estimated values at this time. The outflow rating curve for the pond is the same as previoisly modeled under the NEWXXXXX.IN AHYMO models. The hydraulic calculations need to be performed and the outlet structure re-assessed to accomodate incoming flows and required detention times.

Table 1

ISLETA BOULEVARD IMPROVEMENTS

AHYMO BASIN PARAMETER WORKSHEET
BASIN PEAK FLOWS AND VOLUMES

BASIN	AREA (ACRE)	AREA (SQ. MI)	LENGT (FT)	ELEV. DIFF. (FT)	SLOPE (%)	K	VEL (FPS)	T(c) (HR)	T(p) (HR)	LAND TREATMENT (%) A	B	C	D	100 YR EVENT PEAK FLOW (24 HR) (CFS)	100 YR EVENT RUNOFF VOLUME (AC-FT)	5 YR EVENT PEAK FLOW (24 HR) (CFS)	5 YR EVENT RUNOFF VOLUME (AC-FT)	2 YR EVENT PEAK FLOW (24 HR) (CFS)	2 YR EVENT RUNOFF VOLUME (AC-FT)
P18.1	38.191	0.059673	400 920	3.25 2.75	0.81 0.30	0.7 2	0.63 1.09	0.18 0.23 0.41	0.12 0.16 0.27	0	52	5	43	79.97	4.622	33.07	1.965	20.69	1.282
Brother Detention Pond														19.19		6.9		3.79	
P18.2	8.577	0.013402	400 970	0.5 1.5	0.13 0.15	0.7 2	0.25 0.79	0.45 0.34 0.79	0.30 0.23 0.53	0	52	5	43	11.23	1.038	4.73	0.441	3.04	0.288
P18.3	6.988	0.010919	400 520	1.5 2	0.38 0.38	0.7 2	0.43 1.24	0.26 0.12 0.38	0.17 0.08 0.25	0	52	5	43	15.24	0.846	6.31	0.359	3.94	0.235
Waldo Detention Pond														4.75		2.21		1.19	
P18.4	15.096	0.023588	400 550	1.5 1.5	0.38 0.27	0.7 2	0.43 1.04	0.26 0.15 0.41	0.17 0.10 0.27	0	52	5	43	31.63	1.827	13.08	0.777	8.18	0.507
Bletcher Detention Pond														5.75		2.51		1.74	
P18.5	16.308	0.025481	400 1270	1 1.9	0.25 0.15	0.7 2	0.35 0.77	0.32 0.46 0.77	0.21 0.30 0.52	0	61	5	34	19.47	1.767	7.57	0.699	4.67	0.438
P18.6	42.130	0.065828	400 1150	2 4	0.50 0.35	0.7 2	0.49 1.18	0.22 0.27 0.50	0.15 0.18 0.33	0	69	5	26	64.16	4.092	22.34	1.486	12.62	0.88
Deaaman's Detention Pond														7.36		2.77		1.86	
P18.7	16.253	0.025395	400 1530	2 2	0.50 0.13	0.7 2	0.49 0.72	0.22 0.59 0.81	0.15 0.39 0.54	0	59	5	38	30.19	1.807	11.78	0.728	7.14	0.461
P18.8	49.095	0.076711	400 1600 220	1.8 2.7 0.5	0.45 0.17 0.23	0.7 2 3	0.47 0.82 1.43	0.24 0.54 0.04 0.82	0.16 0.36 0.03 0.55	0	69	5	26	50.72	4.769	17.88	1.732	10.39	1.026
P17.1	20.546	0.032103	400 525	2 1	0.50 0.19	0.7 2	0.49 0.87	0.22 0.17 0.39	0.15 0.11 0.26	0	52	5	43	43.92	2.487	18.13	1.057	11.3	0.69
P17.2	8.437	0.013183	400 250	1 2	0.25 0.80	0.7 2	0.35 1.79	0.32 0.04 0.36	0.21 0.03 0.24	0	68	5	7	12.73	0.594	3.01	0.145	1.04	0.057
Westside Community Center Detention Pond														5.63		2.41		1.71	
P17.3	4.046	0.006322	400 200	1.4 0.4	0.35 0.20	0.7 2	0.41 0.89	0.27 0.06 0.33	0.18 0.04 0.22	0	54	5	41	9.49	0.478	3.84	0.2	2.35	0.13
P16.1	23.62	0.036906	400 625	2.8 1	0.70 0.16	0.7 2	0.59 0.80	0.19 0.22 0.41	0.13 0.14 0.27	0	60	5	35	45.76	2.593	17.62	1.035	10.55	0.652
P16.2	17.309	0.027045	400 1200	2.5 1.2	0.63 0.10	0.7 2	0.55 0.63	0.20 0.53 0.73	0.13 0.35 0.49	0	68	5	7	32.39	1.878	12.37	0.742	7.39	0.465
P16.3	36.52	0.057063	400 1200	2.1 7.9	0.53 0.66	0.7 2	0.51 1.62	0.22 0.21 0.42	0.15 0.14 0.28	0	61	5	34	30.78	2.572	7.19	0.628	2.74	0.245
Arenal/Lopez Detention Pond														7.21		7.1		4.58	
Total	303.12	0.473619												Total =	31.368	Total =	11.994	Total =	7.356

NOTE: 1. Time of concentration, T(c), for each subarea must be greater than or equal to 0.2 hour as per DPM Section 22.2, page B-2

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
149 Jackson, NE., Albuquerque, N.M. 87108
Telephone (505) 265-6631 • FAX (505) 266-8112

Project ISLETA BLVD. IMPROVEMENTS Sheet 1 of 2
HYDRAULIC CALCULATIONS Job No. 567
By PG Chk'd Date 9/14/95

LOPEZ / ARENAL CONFLUENCE TO MANHOLE A1

375' @ S = 0.0012 → ΔE = 0.45 FT

INVERT ELEVATION OF 30" DIA. RCP @ L/A = 4930.05

MANHOLE A1 : INVERT ELEVATION (OUT) = 4930.50
INVERT ELEVATION (IN) = 4930.55

MANHOLE A1 TO MANHOLE A2 (AP-110)

375' @ S = 0.0012 ⇒ ΔE = 0.45 FT

MANHOLE A2 : INVERT ELEVATION (OUT) = 4931.00
INVERT ELEVATION (IN) = 4931.10
24" DIA RCP FROM MH. A3
INVERT ELEVATION 24" DIA RCP (IN) = 4931.05
FROM PT.3

MANHOLE A2 TO MANHOLE A3

225' @ S = 0.002 ⇒ ΔE = 0.45 FT

MANHOLE A3 : INVERT ELEVATION (OUT) = 4931.55
INVERT ELEVATION (IN) = 4931.60

24" DIA RCP

MANHOLE A3 TO MANHOLE A4

225' @ S = 0.002 ⇒ ΔE = 0.45 FT

MANHOLE A4 : INVERT ELEVATION (OUT) = 4932.05
INVERT ELEVATION (IN) = 4932.10

MANHOLE A4 TO WESTSIDE COMM CTR DETENTION POND RISER PIPE

≈ 150' @ S = 0.0012 ⇒ ΔE = 0.18 FT

≈ INVERT ELEVATION (DP. RISER) = 4932.28 (APPROXIMATE)
≈ SOFFIT ELEVATION 24" DIA RCP = 4933.78. (APPROXIMATE)
18" DIA. RCP

APPROXIMATE ELEVATION OF SOCCER FIELD = 4935

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
149 Jackson, NE., Albuquerque, N.M. 87108
Telephone (505) 265-6631 • FAX (505) 266-8112

Project ISLETA BLVD IMPROVEMENTS Sheet 1 of 2
WCC - DETENTION POND INVERT ELEVATIONS Job No. 567
By _____ Chk'd _____ Date 9/18/95

WESTSIDE COMMUNITY CTR. DETENTION POND

INVERT ELEV @ OUTFALL = 32.28

CHANNEL LENGTH, L = 460 FT

CHANNEL SLOPE, S = 0.001

$\Delta E_{INLET-OUTLET}$ = 0.46 FT

INVERT ELEVATION @ INLET = 32.74

DETENTION POND INLET OPTIONS: $Q_{REQ'D} \approx 44$ CFS

OPTION #1: (FLOW CAPACITIES DETERMINED BY MANNING EQN)

ONE 36" DIA RCP @ S = 0.0044

LENGTH, L = 90 FT, Q = 44.24 CFS

ΔE = 0.40 FT

INVERT ELEVATION	=	33.24
SOFFIT ELEVATION	=	36.24
TOP OF PIPE	=	36.64
LT. FLOWLINE - ISLETA BLVD	=	37.96
AVAILABLE COVER	=	1.32 FT

OPTION #2:

TWO 30" DIA. RCP @ S = 0.003

LENGTH, L = 90 FT, Q = 45 CFS

ΔE = 0.27 FT

INVERT ELEVATION	=	33.01
SOFFIT ELEVATION	=	35.51
TOP OF PIPE	=	35.87
AVAILABLE COVER	=	2.09 FT

DRAFT

SCALE: 1"=500'

NOTE: DRAINAGE DIVIDES NOT TO SCALE.

ISLETA BLVD.

GOFF RD.

ARENAL RD.

GATEWOOD RD.

ATRISCO DITCH

NASHVILLE AVE.

LA FONT RD.

BLETCHER RD.

WALDIE RD.

SUNBEAM RD.

LOVATO RD.

BRIDGE BLVD.

LOPEZ RD.

ISLETA BLVD.

ARMIJO DR.

ATRISCO LATERAL

HARDY AVE.

LA VEGA DR.

RIVERSIDE DR.

RIVERSIDE DRAIN

RIO GRANDE

P16.1 P16.2 P16.3 P17.1 P17.2 P17.3 P18.1 P18.2 P18.3 P18.4 P18.5 P18.6 P18.7 P18.8

I2 I3.1 I4.1 I5.1 I6.1 I7 I8 I9 I10 I12 I13 I14

3.1 Ac.Ft. 3 Ac.Ft. 1 Ac.Ft. 1 Ac.Ft. 3 Ac.Ft.

42" 24" 54" 48" 36" 30" 4'X7.25'CBC

LEGEND

- DRAINAGE BASIN BOUNDARY
- 36" PIPE SIZE & DIRECTION OF FLOW
- I9 ANALYSIS POINT
- P17.1 DRAINAGE BASIN DESIGNATION
- DETENTION POND

COUNTY OF BERNALILLO, NEW MEXICO

ISLETA BOULEVARD IMPROVEMENT PROJECT (NORTH)

FIGURE 1–DRAINAGE REPORT
REVISED ALTERNATE "C"

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
ALBUQUERQUE NEW MEXICO

THE ENGINEERING FIRM OF CHOICE

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344·4080 · FAX (505) 343·8759

October 4, 1996

Ms. Susan Calongne, P.E.
City/County Floodplain Administrator
City/County Building, Room 301
P.O. Box 1293
Albuquerque, NM 87103

RE: WESTSIDE COMMUNITY CENTER DRAINAGE PLAN (M12/D1, PWD96-56)
C-G PROJECT NUMBER: G21-103-5195

Dear Ms. Calongne:

Transmitted herewith for Grading and Paving Permit approval is the referenced grading plan, revised per your comments dated September 18, 1996. Your comments have been addressed as follows:

1. The Engineer's stamp date on the report and exhibits were all revised to be the same date.

2. Fencing has been indicated.

3. It is my understanding that County Public Works and Parks have not finalized their agreement, and I was not able to obtain a copy. We can provide you a copy once it becomes available. Until that time, I believe that it is appropriate to approve the plan as submitted due to the detention pond behaving as designed in the interim (i.e., as a retention pond).

Feel free to call me or Bill Towers if you have any questions prior to final approval.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Joe P. Kelley, P.E.
Senior Engineer

JPK/lr

CY: Ike Benton, Gamelsky Benton Architects, Fax: 842-1693

RECEIVED
OCT - 4 1996
HYDROLOGY DIVISION

G:\G21\103\DOCUMENT\WESTCOMM.WPD

14606

BERNALILLO COUNTY

$20

PWD SUBMITTAL

Use for all PWD applications EXCEPT Street Excavation

☒ NEW SUBMITTAL

☐ RESUBMITTAL

☐ FINAL SIGNOFF

TODAY'S DATE:

CASE NO: PWD-96-[redacted]182

OWNER

OWNER: BERNALILLO COUNTY PARKS & REC PHONE: 764-6856

MAILING ADDRESS: 620 LOMAS NW CITY: ALBUQ ZIP: 87102

AGENT

AGENT / CONTRACTOR: CHAVEZ-GRIEVES ENGINEERS PHONE: 344-4080

MAILING ADDRESS: 5639 JEFFERSON ST NE CITY: ALBUQ. ZIP: 87109

STATE LICENSE NO. EXP DATE VOLUME CLASS

ARCHITECT/ENGINEER: CHAVEZ-GRIEVES LICENSE NO. PHONE

SITE INFORMATION

SITE ADDRESS / DIRECTIONS: 1221 ARENAL RD. SW ALBUQUERQUE N.M ZONE ATLAS NO.: M-13

LEGAL DESCRIPTION: TRACT 1 OF LANDS OF ORLANDO & LIBBY SANCHEZ

LOT SIZE: 4.25 AC

EXISTING BUILDING(S) AND USE: WESTSIDE COMMUNITY CENTER PROPOSED BUILDING(S): ADDITIONS TO EXISTING

UPC # ___-___-___-___-___-___

TYPE OF SUBMITTAL

- ☐ REPLAT
- ☐ MINOR SUBDIVISION
- ☐ MAJOR SUBDIVISION
- ☐ CONSTRUCTION DRAWINGS
- ☒ GRADING & DRAINAGE PLAN
- ☐ AS-CONSTRUCTED GRADING & DRAINAGE PLAN
- ☐ VARIANCE REQUEST
- ☐ LAND DIVISION
- ☐ TRAFFIC IMPACT ANALYSIS / TRAFFIC STUDY
- ☐ INFRASTRUCTURE LIST / DESIGN REVIEW
- ☐ SPECIAL USE PERMIT
- ☐ BARRICADING PERMIT
- ☐ BUILDING PERMIT
- ☐ INSPECTION
- ☐ OTHER (Specify):

The issuance of a permit or a review or approval of plan specifications, computations, and shop drawings, shall not be interpreted to be a permit for, or an approval of any variance or violation of any of the provisions of any COUNTY or STATE codes, ordinances, standards, or policies. Nor shall such issuance of a permit or approval of plans, specifications, computations, and shop drawings prevent any authorized COUNTY representative or COUNTY inspector form thereafter requiring the correction of errors in said plans, specifications, computations, or shop drawings or from stopping construction operations which are being carried on thereunder when in violation of any COUNTY or STATE codes, ordinances, standards, or policies.

RECEIVED ... HYDROLOGY DIVISION

☐ Owner ☒ Agent ☐ Contractor Signature: Bill Towers BILL TOWERS Date: 10/3/96

COUNTY

BERNALILLO COUNTY USE ONLY

C/R's:		TOTAL FEE:	
		Receipt No.:	
		Received By:	

County of Bernalillo

State of New Mexico

2400 BROADWAY, S.E.
ALBUQUERQUE, NEW MEXICO 87102
PUBLIC WORKS (505) 848-1500

September 18, 1996

Joe Kelly, P.E.
Chavez-Grieves
5639 Jefferson NE
Albuquerque, New Mexico

RE: DRAINAGE REPORT AND GRADING AND DRAINAGE PLAN FOR WESTSIDE COMMUNITY CENTER (M12/D1) (PWD 96-56) SUBMITTED FOR BUILDING PERMIT, GRADING PERMIT AND PAVING PERMIT APPROVAL, ENGINEER'S STAMP DATED 8/28/96.

Dear Mr. Kelly:

Prior to approval of the above referenced plan for Building Permit, Grading Permit and Paving Permit release the following comments must be addressed:

1. The submittal received on September 5, 1996 was not a complete submittal. The County and I require complete submittals with revised Engineer's Stamp dates with each resubmittal.

2. Fencing was not shown around the pond as indicated in the original report. Do you propose to install the fence with this project, or will it go in with the Isleta project?

3. It is my understanding that there is an agreement between County Public Works and Parks with respect to the use of the pond. Please provide a copy of this agreement to me for my files.

If you should have any questions, or if I may be of further assistance to you, please call me at 768-2666.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

RECEIVED
SEP 19 1996
HYDROLOGY DIVIS.

c: Roger Paul, Bernalillo County Public Works Division
File

REC'D SEP 19 1996

THE ENGINEERING FIRM OF CHOICE

CHAVEZ · GRIEVES CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344·4080 · FAX (505) 343·8759

October 4, 1996

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City/County Floodplain Administrator
City/County Building, Room 301
P.O. Box 1293
Albuquerque, NM 87103

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C-G PROJECT NUMBER: G21-103-5195

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Feel free to call me or Bill Towers if you have any questions prior to final approval.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Joe Kelley

Joe P. Kelley, P.E.
Senior Engineer

JPK/lr

CY: Ike Benton, Gamelsky Benton Architects, Fax: 842-1693

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Susan's Copy

County of Bernalillo

State of New Mexico

2400 BROADWAY, S.E.
ALBUQUERQUE, NEW MEXICO 87102
PUBLIC WORKS (505) 848-1500

Date: 02-OCT-96

Subject: Submittal

Case No.: PWD-96-56

Zone Map No.: M-12

Street Address: 1221 ARENAL RD SE

Legal Description: WESTSIDE COMMUNITY CENTER TR 1 LANDS OF ORLANDO & LIBBY S ANCHEZ

Name of Applicant: Bernalillo County Parks

Dear Applicant:

Bernalillo County Public Works Department will require **TWO WEEKS for review and comment of submittal and resubmittals, and ONE WEEK for final review and plat sign-off.** Major submittals may require more than two weeks for review and comment.
The issuance of a permit or a review or approval of plan specifications, computations, and shop drawings shall not be interpreted to be a permit for or an approval of any variance or violation of any of the provisions of any County or State codes, ordinances, standards, or policies. Nor shall such issuance of a permit or approval of plans, specifications, computations, and shop drawings prevent any authorized County representative or County inspector form thereafter requiring the correction of errors in said plans, specifications, computations, or shop drawings or from stopping construction operations which are being carried on thereunder when in violation of any County or State codes, ordinances, standards, or policies.
Review of construction plans, specifications, computations, and shop drawings is only for general conformance with the design concept of the project and general compliance with the plans and specifications and shall not be construed as relieving the Contractor, Land Divider, Subdivider, Engineer/Surveyor, or applicant of the full responsibility for: providing materials, equipment, and work required by the contract; the proper fitting and construction for the work; the accuracy and completeness of the submittal; selecting fabrication processes and techniques of construction; and performing the work in a safe manner.

REV 4-22-91 BR

COUNTY OF BERNALILLO

APPLICATION FOR CASE REVIEW

Please complete pages one and two of this application for review of your case. **Submit THREE bluelines of plat, drawings, or information with case submittals and THREE bluelines of plat, drawings, or information along with the original mylar for final sign-off applications. Submit a County Zone Atlas Map with subject property marked on the map.** If a Grading and Drainage plan is not included with a land division, replat, or conceptual plan, please submit one 8.5"x11" photcopy of a USGS quad map with the subject property superimposed.

NOTE: INCOMPLETE APPLICATIONS WILL BE RETURNED WITHOUT REVIEW.

1. APPLICANT INFORMATION:

a. Applicant is(check one):

__X_OWNER ____SURVEYOR ____AGENT

____ENGINEER ____DRAINAGE ENGINEER

b. Date of this application: 22-AUG-96

c. Signature of applicant:
(print)_____ (sign)_____

d. OWNER: Bernalillo County Parks & Rec PHONE: 764-6856
620 Lomas NW
Albuquerque, NM 87102

e. AGENT: Chavez-Grieves Engineering PHONE: 505-882-7376
5639 Jefferson NE
Albuquerque, NM 87109

f. OTHER(specify): Chavez-Grieves Engineeri PHONE: 505-882-7376
ng

5639 Jefferson NE
Albuquerque, NM 87109

2. TYPE OF SUBMITTAL (check one):

_____REPLAT
_____LAND DIVISION (MINOR SUBDIVISION)
_____MAJOR SUBDIVISION
_____CONSTRUCTION DRAWINGS
__X__GRADING/DRAINAGE PLAN
_____AS-CONSTRUCTED GRADING/DRAINAGE PLAN
_____VARIANCE REQUEST
_____TRAFFIC IMPACT ANALYSIS/TRAFFIC STUDY
_____INFRASTRUCTURE LIST/DESIGN REVIEW FEE
_____OTHER (specify):_____

County of Bernalillo

Floodplain

Your: ___ submittal of drainage information
X resubmittal of drainage information

is: ___ approved.
___ approved with comments/conditions.
___ disapproved.
V deferred to County Floodplain Administrator

TO BE FILLED OUT BY COUNTY PUBLIC WORKS DEPARTMENT ONLY

Case review comments are:

X attached.
___ not attached.
___ not attached. See remarks below.

Resubmittal is:

___ not required.
X required. When resubmitting, please use Resubmittal Form.

Please submit:

X grading/drainage plan with revisions.
___ as-constructed grading/drainage plan.
___ other: _____

It is required that:

___ Bernalillo County Public Works Department inspect improvements prior to final sign-off of plat.
___ Bernalillo County Public Works Department signature line be placed on plat.

Remarks: _____

_____

_____

tz (Saw), PE 10/1/96

* See attached memo for AMAFCA Concurrence

Molzen-Corbin & Assoc., for
County Surface Water Hydrologist
Bernalillo County Public Works Department

cc: ___ Sandia Heights Homeowners Association
X Owner: Bernalillo County Parks & Rec.
X Agent: Chavez-Grieves Engineering
X Case File: PWD-96-56
___ AMAFCA
X Susan Calongne, County Floodplain Administrator, COA
X Molzen-Corbin & Associates
___ Other: _____

pb-wrks.1

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2600 PROSPECT N.E. - ALBUQUERQUE, N.M. 87107
TELEPHONE (505) 884-2215

July 30, 1996

TO: Roger Paul, P.E.
Bernalillo County Public Works Department

FR: Kurt Browning, P.E.
AMAFCA

For grading and drainage submittals that are located in the floodplain, it is not necessary for AMAFCA to sign the County approval/disapproval form. AMAFCA's comments are coordinated with the City/County Floodplain Administrator and are included in the written response.

You may include this memo with the signature sheet as needed, for the closing of floodplain cases.

End

BERNALILLO COUNTY PUBLIC WORKS DEPARTMENT
CASE FILE COMMENTS

CASE NO: PWD-96-56

ZONE MAP NO.: M-12

REFERENCE CASES:

STREET ADDRESS: 1221 ARENAL RD SE

LEGAL DESCRIPTION: WESTSIDE COMMUNITY CENTER TR 1 LANDS OF ORLANDO & LIBBY SANCHEZ

COMMENTS OF:

11-APR-96 DRAN: A portion of this property appears to be within a designated 100 year flood plain as shown on the National Flood Insurance Program's Flood Insurance Rate Map. Defer approval to the County Floodplain Administrator.

22-AUG-96 DRAN: A portion of this property appears to be within a designated 100 year flood plain as shown on the National Flood Insurance Program's Flood Insurance Rate Map. Defer approval to the County Floodplain Administrator.

Susan's Copy

County of Bernalillo

State of New Mexico

2400 BROADWAY, S.E.
ALBUQUERQUE, NEW MEXICO 87102
PUBLIC WORKS (505) 848-1500

Date: 12-JUN-96

Subject: Submittal

Case No.: PWD-96-56

Zone Map No.: M-12

Street Address:

Legal Description: WESTSIDE COMMUNITY CENTER

Name of Applicant: Bernalillo County Parks

Dear Applicant:

Bernalillo County Public Works Department will require **TWO WEEKS for review and comment of submittal and resubmittals, and ONE WEEK for final review and plat sign-off.** Major submittals may require more than two weeks for review and comment.
The issuance of a permit or a review or approval of plan specifications, computations, and shop drawings shall not be interpreted to be a permit for or an approval of any variance or violation of any of the provisions of any County or State codes, ordinances, standards, or policies. Nor shall such issuance of a permit or approval of plans, specifications, computations, and shop drawings prevent any authorized County representative or County inspector form thereafter requiring the correction of errors in said plans, specifications, computations, or shop drawings or from stopping construction operations which are being carried on thereunder when in violation of any County or State codes, ordinances, standards, or policies.
Review of construction plans, specifications, computations, and shop drawings is only for general conformance with the design concept of the project and general compliance with the plans and specifications and shall not be construed as relieving the Contractor, Land Divider, Subdivider, Engineer/Surveyor, or applicant of the full responsibility for: providing materials, equipment, and work required by the contract; the proper fitting and construction for the work; the accuracy and completeness of the submittal; selecting fabrication processes and techniques of construction; and performing the work in a safe manner.

REV 4-22-91 BR

COUNTY OF BERNALILLO

APPLICATION FOR CASE REVIEW

Please complete pages one and two of this application for review of your case. **Submit THREE bluelines of plat, drawings, or information with case submittals and THREE bluelines of plat, drawings, or information along with the original mylar for final sign-off applications. Submit a County Zone Atlas Map with subject property marked on the map.** If a Grading and Drainage plan is not included with a land division, replat, or conceptual plan, please submit one 8.5"x11" photcopy of a USGS quad map with the subject property superimposed.

NOTE: INCOMPLETE APPLICATIONS WILL BE RETURNED WITHOUT REVIEW.

1. APPLICANT INFORMATION:

a. Applicant is(check one):

X OWNER ____SURVEYOR ____AGENT
____ENGINEER ____DRAINAGE ENGINEER

b. Date of this application: 11-APR-96

c. Signature of applicant:
(print)_____ (sign)_____

d. OWNER: Bernalillo County Parks & Rec PHONE: 764-6856
620 Lomas NW
Albuquerque, NM 87102

e. AGENT: Chavez-Grieves Engineering PHONE: 505-882-7376
5639 Jefferson NE
Albuquerque, NM 87109

f. OTHER(specify): Chavez-Grieves Engineeri PHONE: 505-882-7376
ng

5639 Jefferson NE
Albuquerque, NM 87109

2. TYPE OF SUBMITTAL (check one):

____REPLAT
____LAND DIVISION (MINOR SUBDIVISION)
____MAJOR SUBDIVISION
____CONSTRUCTION DRAWINGS
__X__GRADING/DRAINAGE PLAN
____AS-CONSTRUCTED GRADING/DRAINAGE PLAN
____VARIANCE REQUEST
____TRAFFIC IMPACT ANALYSIS/TRAFFIC STUDY
____INFRASTRUCTURE LIST/DESIGN REVIEW FEE
____OTHER (specify):_____

County of Bernalillo

Your: ✓ submittal of drainage information
___ resubmittal of drainage information

is: ___ approved.
___ approved with comments/conditions.
✓ disapproved.
✓ deferred to County Floodplain Administrator

TO BE FILLED OUT BY COUNTY PUBLIC WORKS DEPARTMENT ONLY

Case review comments are:

✓ attached.
___ not attached.
___ not attached. See remarks below.

Resubmittal is:

✓ not required.
___ required. When resubmitting, please use Resubmittal Form.

Please submit:

✓ grading/drainage plan with revisions.
___ as-constructed grading/drainage plan.
___ other: _____

It is required that:

___ Bernalillo County Public Works Department inspect improvements prior to final sign-off of plat.
___ Bernalillo County Public Works Department signature line be placed on plat.

Remarks: _____

T. J. Lowe, PE 6/11/96

Molzen-Corbin & Assoc., for
County Surface Water Hydrologist
Bernalillo County Public Works Department

cc: ___ Sandia Heights Homeowners Association
✓ Owner: Bernalillo Co. Parks & Rec.
✓ Agent: Chavez - Grieves
✓ Case File: PWD - 96-56.
✓ Susan Calongne, County Floodplain Administrator, COA
✓ Molzen-Corbin & Associates
___ Other: _____

pb-wrks.4

BERNALILLO COUNTY PUBLIC WORKS DEPARTMENT
CASE FILE COMMENTS

CASE NO: PWD-96-56

ZONE MAP NO.: M-12

REFERENCE CASES:

STREET ADDRESS:

LEGAL DESCRIPTION: WESTSIDE COMMUNITY CENTER

COMMENTS OF:

11-APR-96 DRAN: A portion of this property appears to be within a designated 100 year flood plain as shown on the National Flood Insurance Program's Flood Insurance Rate Map. Defer approval to the County Floodplain Administrator.

Ral
6/11/96

File

County of Bernalillo

State of New Mexico

2400 BROADWAY, S.E.
ALBUQUERQUE, NEW MEXICO 87102
PUBLIC WORKS (505) 848-1500

May 8, 1996

Joe Kelly, P.E.
Chavez-Grieves
5639 Jefferson NE
Albuquerque, New Mexico

RE: DRAINAGE REPORT AND GRADING AND DRAINAGE PLAN FOR WESTSIDE COMMUNITY CENTER (M12/D1) (PWD 96-56) SUBMITTED FOR BUILDING PERMIT, GRADING PERMIT AND PAVING PERMIT APPROVAL, ENGINEER'S STAMP DATED 4/10/96.

Dear Mr. Kelly:

This letter is a compilation of comments from myself and the Bernalillo County Public Works Division. Prior to approval of the above referenced plan for building permit, grading permit or paving permit release, the following comments must be addressed:

1. Please show the limits of the existing FEMA floodplain on the plan. The plan must also include the delineation of the site on a portion of the FEMA Flood Insurance Rate Map. The plan and report must reference the AH flood zone elevation identified on the FIRM panel.

2. Please indicate all existing and proposed finish floor elevations.

3. Will the Bernalillo County drainage project modify the existing FEMA floodplain?

4. Is a permanent easement proposed for the pond since this is a part of the Bernalillo County drainage project?

If you should have any questions, please call me at 768-2666.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Roger Paul, Bernalillo County Public Works Division
File

County of Bernalillo

State of New Mexico

2400 BROADWAY, S.E.
ALBUQUERQUE, NEW MEXICO 87102
PUBLIC WORKS (505) 848-1500

September 18, 1996

Joe Kelly, P.E.
Chavez-Grieves
5639 Jefferson NE
Albuquerque, New Mexico

RE: DRAINAGE REPORT AND GRADING AND DRAINAGE PLAN FOR WESTSIDE COMMUNITY CENTER (M12/D1) (PWD 96-56) SUBMITTED FOR BUILDING PERMIT, GRADING PERMIT AND PAVING PERMIT APPROVAL, ENGINEER'S STAMP DATED 8/28/96.

Dear Mr. Kelly:

Prior to approval of the above referenced plan for Building Permit, Grading Permit and Paving Permit release the following comments must be addressed:

1. The submittal received on September 5, 1996 was not a complete submittal. The County and I require complete submittals with revised Engineer's Stamp dates with each resubmittal.

2. Fencing was not shown around the pond as indicated in the original report. Do you propose to install the fence with this project, or will it go in with the Isleta project?

3. It is my understanding that there is an agreement between County Public Works and Parks with respect to the use of the pond. Please provide a copy of this agreement to me for my files.

If you should have any questions, or if I may be of further assistance to you, please call me at 768-2666.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Roger Paul, Bernalillo County Public Works Division
File

Printed September 4, 1996 (9:11am)

CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc.

5639 Jefferson Street NE, Albuquerque, New Mexico 87109 *Phone (505) 344-4080 - Fax (505) 343-8759*

FACSIMILE TRANSMITTAL LETTER

TO: Ms. Susan Calognge, P.E., City Hydrology
FAX NO.: 768-3629

FROM: Joe Kelley

DATE: September 4, 1996

PROJECT NAME: West Side Community Center
PROJECT NO.: G21-103-5195

NUMBER OF PAGES TRANSMITTED: 2
(INCLUDING THIS COVER PAGE)

Reina of Molzen-Corbin called and asked that I send you this drainage information sheet.

Feel free to call if you have any questions.

SEP - 5 1996

SENT [ ]

PMM 6.D.

DRAINAGE INFORMATION

M12/01A

PROJECT TITLE: West Side Community Center ZONE ATLAS/DRNG. FILE #: ~~M-13~~ 144

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

LEGAL DESCRIPTION: Tract 1 of Lands of Orlando and Libby Sanchez

CITY ADDRESS: 1221 Arenal Rd SW

ENGINEERING FIRM: Chavez-Grieves CONTACT: Joe Kelley, P.E.

ADDRESS: 5639 Jefferson NE PHONE: 344-4080

OWNER: Bernalillo County CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: Gamelsky-Benton CONTACT: Lee Gamelsky

ADDRESS: _____ PHONE: 842-8865

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

_X_ DRAINAGE REPORT

_X_ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

_X_ GRADING PLAN

_X_ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

____ OTHER

PRE-DESIGN MEETING:

____ YES

_X_ 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. PRMT. APPROVAL

____ SECTOR PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ FOUNDATION PERMIT APPROVAL

_X_ BUILDING PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

_X_ GRADING PERMIT APPROVAL

_X_ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

____ OTHER _____ (SPECIFY)

approval for what?

DATE SUBMITTED: Aug. 28, 1996

BY: Joe P. Kelley, P.E.

SEP - 5 1996

MOLZEN-CORBIN & Associates
ENGINEERS/PLANNERS/CONSULTANTS

X 2701 Miles Road Southeast, Albuquerque, NM 87106
505-242-5700

☐ 205 West Boutz Number 4, Suite Number 5, P.O. Box 1360, Las Cruces, NM 88004
505-525-2397

LETTER OF TRANSMITTAL

TO City/County Building
5th and Marquette, Room 301
(505) 768-2650

DATE Aug. 29, 1996	JOB NO.
ATTENTION Floodplain Administration	
RE: Drainage Reviews	

GENTLEMEN:
WE ARE SENDING YOU X Attached ☐ Under separate cover via _____ the following items:

COPIES	DATE	NO.	DESCRIPTION
1			PWD - 96-56 (FP) Attn: Kurt

THESE ARE TRANSMITTED as checked below:

☐ For approval X For your use ☐ As requested ☐ For review and comment
☐ Other _____

REMARKS _____

COPY TO _____

SIGNED: Lena Flores

If enclosures are not as noted, kindly notify us at once.

SEP - 5 1996

CASE

PWD - 96 - 56

FP

M-12. B. 16, 17, 18 & 19, LOWER BROADWAY ADDN.

DRAN- _____

DRE - X

INSP - X

PLAN - X

	C.T.A	F.P.A
	8-28-96	8-28-96

DUE DATE

12 - SEP - 96

SEP - 5 1996

14322

BERNALILLO COUNTY

PWD SUBMITTAL

Use for all PWD applications EXCEPT Street Excavation

☐ NEW SUBMITTAL

☒ RESUBMITTAL

☐ FINAL SIGNOFF

TODAY'S DATE: 8/22/96

CASE NO: PWD - 96-56

OWNER

OWNER BERNALILLO COUNTY PARKS & REC. PHONE 764-6856

MAILING ADDRESS 620 LOMAS NW CITY ALBUQ. ZIP 87102

AGENT

AGENT / CONTRACTOR CHAVEZ- GRIEVES ENGINEERS PHONE 344-4080

MAILING ADDRESS 5639 JEFFERSON ST NE CITY ALBUQ. ZIP 87109

STATE LICENSE NO. EXP DATE VOLUME CLASS

ARCHITECT/ENGINEER CHAVEZ- GRIEVES LICENSE NO. PHONE

SITE INFORMATION

SITE ADDRESS / DIRECTIONS 1221 ARENAL RD. SW ALBUQUERQUE NM ZONE ATLAS NO.: M-13

LEGAL DESCRIPTION TRACT 1 OF LANDS OF ORLANDO & LIBBY SANCHEZ

LOT SIZE: 4.25 AC.

EXISTING BUILDING(S) AND USE: WEST SIDE COMMUNITY CENTER PROPOSED BUILDING(S): ADDITIONS TO EXISTING

UPC # ___-___-___-___-___-___-___

TYPE OF SUBMITTAL

- ☐ REPLAT
- ☐ MINOR SUBDIVISION
- ☐ MAJOR SUBDIVISION
- ☐ CONSTRUCTION DRAWINGS
- ☒ GRADING & DRAINAGE PLAN
- ☐ AS-CONSTRUCTED GRADING & DRAINAGE PLAN
- ☐ VARIANCE REQUEST
- ☐ LAND DIVISION
- ☐ TRAFFIC IMPACT ANALYSIS / TRAFFIC STUDY
- ☐ INFRASTRUCTURE LIST / DESIGN REVIEW
- ☐ SPECIAL USE PERMIT
- ☐ BARRICADING PERMIT
- ☒ BUILDING PERMIT
- ☐ INSPECTION
- ☐ OTHER (Specify):

The issuance of a permit or a review or approval of plan specifications, computations, and shop drawings, shall not be interpreted to be a permit for, or an approval of any variance or violation of any of the provisions of any COUNTY or STATE codes, ordinances, standards, or policies. Nor shall such issuance of a permit or approval of plans, specifications, computations, and shop drawings prevent any authorized COUNTY representative or COUNTY inspector form thereafter requiring the correction of errors in said plans, specifications, computations, or shop drawings or from stopping construction operations which are being carried on thereunder when in violation of any COUNTY or STATE codes, ordinances, standards, or policies.

☐ Owner ☒ Agent ☐ Contractor Signature Bill Towers BILL TOWERS Date 8/22/96

COUNTY

BERNALILLO COUNTY USE ONLY

C/R's:

TOTAL FEE:

Receipt No.: 5 [illegible]96

Received By:

c:\...PWD App-Rev: November 29, 1995

THE ENGINEERING FIRM OF CHOICE

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344·4080 · FAX (505) 343·8759

May 29, 1996

Ms. Susan M. Calongne, P.E.
City/County Floodplain Administrator
City Hydrology
2400 Broadway S.E.
Albuquerque, NM 87102

RE: DRAINAGE REPORT AND GRADING AND DRAINAGE PLAN FOR WESTSIDE COMMUNITY CENTER (M12/D1) (PWD -95-56)
SUBMITTED FOR BUILDING PERMIT, GRADING PERMIT AND PAVING PERMIT APPROVAL
C&G PROJECT NUMBER: G20-103-5195

Dear Ms. Calongne:

Transmitted herewith for review and approval is a Grading and Drainage Plan revised per your comments dated 5/8/96. Your comments are addressed as follows::

1. The plan was revised to show the limits of the floodplain, and the elevation identified on the FIRM panel.

2. The proposed and existing finished floor elevations are now shown on the plan.

3. The Bernalillo County drainage project will modify the existing FEMA floodplain. Andrew Asbury and Roberts is the firm currently performing the drainage study involving the floodplain, and any questions concerning the floodplain should be directed to them.

4. A permanent easement is planned for the proposed main pond since it is part of the Bernalillo County drainage project.

If you have any questions or wish to discuss this in more detail, please call me.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Craig Hagelgantz, E.I.

CH/cjr

Attachment

RECEIVED
MAY 30 1996

G:\G20\103\DOCUMENT\FLOOD1.FNL

DRAINAGE INFORMATION

PROJECT TITLE: Westside Community Center ZONE ATLAS/DRNG. FILE #: M-12-Z/101

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

LEGAL DESCRIPTION: The parcels are blocks 16, 17, 18 &19 of Lower Broadway Addition.

CITY ADDRESS: 1221 Arenal Rd. S W

ENGINEERING FIRM: Chavez-Grieves CONTACT: Joe Kelley, P.E.

ADDRESS: 5639 Jefferson NE PHONE: 344-4080

OWNER: Bernalillo County CONTACT: Parks & Recreation

ADDRESS: _____ PHONE: 764-6860

ARCHITECT: N/A CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: Forstbauer Surveying CONTACT: Ron Forstbauer, L.S.

ADDRESS: _____ PHONE: 268-2112

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

- ___ YES
- X 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. PRMT. APPROVAL
- ___ SECTOR PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY APPROVAL
- X GRADING PERMIT APPROVAL
- X PAVING PERMIT APPROVAL
- ___ S.A.D. DRAINAGE REPORT
- ___ DRAINAGE REQUIREMENTS
- ___ OTHER _____ (SPECIFY)

DATE SUBMITTED: April 10, 1996

BY: Joe P. Kelley, P.E.

RECEIVED
APR 19 1996

Printed April 17, 1996 (9:31am)

CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc.

5639 Jefferson Street NE, Albuquerque, New Mexico 87109 *Phone (505) 344-4080 - Fax (505) 343-8759*

FACSIMILE TRANSMITTAL LETTER

TO: Susan Calongne

FAX NO.: 768 3629

FROM: Craig Hagelgantz

DATE: April 17, 1996

PROJECT NAME: Westside Community Center

PROJECT NO.: G20-130-5195

RE: Drainage Information

COMMENTS:
Include are the drainage information sheets for Westside Community Center, as you asked for
Any questions call Joe or Craig

NUMBER OF PAGES TRANSMITTED: 3
(INCLUDING THIS COVER PAGE)

SENT [ ]

PMM 6.D.

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344-4080 · FAX (505) 343-8759

August 21, 1996

Ms. Susan Calongne, P.E.
City/County Floodplain Administrator
City of Albuquerque Public Works Dept., Hydrology Division
P.O. Box 1293, City/County Building Rm. 301
Albuquerque, NM 87103

RE: WESTSIDE COMMUNITY CENTER - GRADING AND DRAINAGE PLAN
C-G PROJECT NUMBER: G21-103-5195

Dear Ms. Calongne:

Transmitted herewith is the grading plan which has been revised per your comments. Your comments have been addressed as follows:

1. The existing floodplain limits had been shown on the grading plan.

2. I spoke with Mr. Roger Paul of Bernalillo County regarding the possible need for a drainage covenant with Bernalillo County. In discussion with Roger I pointed out that the site will be owned by the County and I could not see why the County would want to have a drainage covanent with itself to maintain the proposed drainage facilities. He called me back to let me know he was in agreement and the drainage covanent would not be necessary.

Should there be any further comments or questions prior to your approval, feel free to give me a call.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Joe Kelley

Joe P. Kelley, P.E.
Senior Engineer

JPK/lr

SEP – 5

County of Bernalillo

State of New Mexico

2400 BROADWAY, S.E.
ALBUQUERQUE, NEW MEXICO 87102
PUBLIC WORKS (505) 848-1500

May 8, 1996

Joe Kelly, P.E.
Chavez-Grieves
5639 Jefferson NE
Albuquerque, New Mexico

RE: DRAINAGE REPORT AND GRADING AND DRAINAGE PLAN FOR WESTSIDE COMMUNITY CENTER (M12/D1) (PWD 96-56) SUBMITTED FOR BUILDING PERMIT, GRADING PERMIT AND PAVING PERMIT APPROVAL, ENGINEER'S STAMP DATED 4/10/96.

Dear Mr. Kelly:

This letter is a compilation of comments from myself and the Bernalillo County Public Works Division. Prior to approval of the above referenced plan for building permit, grading permit or paving permit release, the following comments must be addressed:

1. Please show the limits of the existing FEMA floodplain on the plan. The plan must also include the delineation of the site on a portion of the FEMA Flood Insurance Rate Map. The plan and report must reference the AH flood zone elevation identified on the FIRM panel.

2. Please indicate all existing and proposed finish floor elevations.

3. Will the Bernalillo County drainage project modify the existing FEMA floodplain?

4. Is a permanent easement proposed for the pond since this is a part of the Bernalillo County drainage project?

If you should have any questions, please call me at 768-2666.

Sincerely,

Susan Calongne

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Roger Paul, Bernalillo County Public Works Division
File

DRAINAGE INFORMATION

PROJECT TITLE: Westside Community Center ZONE ATLAS/DRNG. FILE #: M-12-Z/101

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

LEGAL DESCRIPTION: The parcels are blocks 16, 17, 18 &19 of Lower Broadway Addition.

CITY ADDRESS: 1221 Arenal Rd. S W

ENGINEERING FIRM: Chavez-Grieves CONTACT: Joe Kelley, P.E.

ADDRESS: 5639 Jefferson NE PHONE: 344-4080

OWNER: Bernalillo County CONTACT: Parks & Recreation

ADDRESS: _____ PHONE: 764-6860

ARCHITECT: N/A CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: Forstbauer Surveying CONTACT: Ron Forstbauer, L.S.

ADDRESS: _____ PHONE: 268-2112

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

- ___ YES
- X 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. PRMT. APPROVAL
- ___ SECTOR PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY APPROVAL
- X GRADING PERMIT APPROVAL
- X PAVING PERMIT APPROVAL
- ___ S.A.D. DRAINAGE REPORT
- ___ DRAINAGE REQUIREMENTS
- ___ OTHER _____ (SPECIFY)

7-22-96
County did not receive copy of submittal - reject until Co. receives & approves

DATE SUBMITTED: April 10, 1996

BY: Joe P. Kelley, P.E.

APR 19 1996

MAY 30 1996

Called 6-26-96

County didn't get copied - was sent revised? or plan

County of Bernalillo

State of New Mexico

2400 BROADWAY, S.E.
ALBUQUERQUE, NEW MEXICO 87102
PUBLIC WORKS (505) 848-1500

May 8, 1996

Joe Kelly, P.E.
Chavez-Grieves
5639 Jefferson NE
Albuquerque, New Mexico

RE: DRAINAGE REPORT AND GRADING AND DRAINAGE PLAN FOR WESTSIDE COMMUNITY CENTER (M12/D1) (PWD 96-56) SUBMITTED FOR BUILDING PERMIT, GRADING PERMIT AND PAVING PERMIT APPROVAL, ENGINEER'S STAMP DATED 4/10/96.

Dear Mr. Kelly:

This letter is a compilation of comments from myself and the Bernalillo County Public Works Division. Prior to approval of the above referenced plan for building permit, grading permit or paving permit release, the following comments must be addressed:

1. Please show the limits of the existing FEMA floodplain on the plan. The plan must also include the delineation of the site on a portion of the FEMA Flood Insurance Rate Map. The plan and report must reference the AH flood zone elevation identified on the FIRM panel.

2. Please indicate all existing and proposed finish floor elevations.

3. Will the Bernalillo County drainage project modify the existing FEMA floodplain?

4. Is a permanent easement proposed for the pond since this is a part of the Bernalillo County drainage project?

If you should have any questions, please call me at 768-2666.

Sincerely,

Susan Calongne

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Roger Paul, Bernalillo County Public Works Division
File

LOCATION

Westside Community Center is located at 1221 Arenal Road SW in Albuquerque, New Mexico.

LEGAL DESCRIPTION

The parcels are blocks 16, 17, 18 &19 of Lower Broadway Addition, Bernalillo County.

FLOOD HAZARD ZONES

flood map w/ site

As shown by Panel 3500020034 of the National Flood Insurance Rate Maps for the City of Albuquerque, dated October 14, 1983, the a portion of the site is in a designated flood hazard zone AH. Zone AH designates "areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined."

elev. 4939

Off-site to the north is also an AH flood hazard zone. The remaining surrounding areas are designate as flood zone hazard B. Zone B designates "areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than 1 foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood."

EXISTING SITE CONDITIONS AND DRAINAGE PATTERN

The site is in a low-lying area that has no storm drainage systems. It is old farmland that used to be flood-irrigated, and all the runoff collects in the old field.

RELATED REPORTS

A storm drain is being designed for Bernalillo County by Andrews, Asbury & Robert Inc. that will serve the site. As part of that design, it has been determined to discharge off-site runoff from the north side of Isleta Blvd. through this site via a new underground storm drain. The plan is to attenuate the peak runoff by running it though a detention pond constructed on this site. As shown on page B-2, the pond will require an additional 1.03 acre-ft capacity to serve the interim off-site runoff.

PROPOSED SITE CONDITIONS AND DRAINAGE PATTERN: INTERIM CONDITION

The proposed drainage pattern for the interim condition is similar to the existing pattern: total site retention. This is the most appropriate drainage pattern because: 1) This site is in a low-lying area that has historically been served by ponding; 2) This site is not currently served by any storm drainage systems; and 3) This site is in a designated flood plain. In a pre-design conference with Roger Paul (Molzen-Corbin and Associates), hydrology consultant for the County, it was agreed that the County also views total site retention as a viable option for the interim condition. Therefore, the site was designed to retain all storm runoff on-site, and to pond the water in five separate ponds on the site. The adjacent abandoned MRGCD ditch and street improvements on Isleta Blvd create a finite drainage basin that discharges to this site. All offsite runoff and developed runoff from this area will be retained on site during the interim condition.

The off-site flows that historically discharged onto this site will continue to be accepted at their historical discharge points. The sheet flow from the basin that is across Islet Blvd will be accepted and ponded on site. The off-site flow from across Isleta Blvd will impact the Westside Community Center property during the interim condition. During storm events the ponded water will encroach on the soccer field. During the majority of storm events it will be enclosed in the small ponds at 1.5' deep, and in the 5' deep fenced pond.

PROPOSED SITE CONDITIONS AND DRAINAGE PATTERN: FINAL CONDITION

The proposed drainage pattern for the final condition is similar to the interim pattern except for these changes:

1. That an outfall to a storm water drainage system located in Arenal Rd. will be in place. The main pond in Basin A will be connected to this system. The ponding will change from the interim retention system to a final detention condition.

2. A storm drain pipe discharging the runoff from the north side of Isleta Blvd will be connected to the large detention pond, and will join the on-site runoff being discharged into the storm drain system in Arenal Rd. The 100 year event for this basin will produce a Q_{360} = 6.52 cfs and a total volume of V_{360} = 1.03 ac-ft.

The Off-site flows that historically discharged onto this site will continue to be accepted at their historical discharge points, except for the sheet flow from the basin that is across Islet Blvd. In the final condition the 100 year event for the developed site will produce a Q_{360} = 7.37 cfs and a total volume of V_{360} = 1.90 ac-ft into the proposed storm drain in Arenal Rd. When the flow from north of Isleta Blvd. is added, the flow into the proposed storm drain in Arenal Rd. will be Q_{360} = 13.89 cfs and V_{360} = 1.90 ac-ft . This additional off-site runoff is in accordance with the storm drain design by Andrews, Asbury & Robert Inc.

HYDROLOGY/HYDRAULICS

The runoff calculations and design have been done in accordance with Section 22.2 of the Development Process Manual of the City of Albuquerque, January 1993. In addition, the site complies with the requirements of Bernalillo County Ordinance No. 90-6, the Storm Drainage Ordinance.

The computerized hydrologic model, AHYMO, was used to calculate storm volumes in accordance with Section 22.2. The 1-hour, 6-hour, and 24-hour precipitation depths were derived from figures C-1, C-2, and C-3 of Section 22.2. The 100-year, 10-day storm was used to determine the required ponding volume. This volume was computed from the output data provided by the AHYMO run, coupled with equations A-9 and C-9 of Section 22.2.

EXISTING BASIN PEAK FLOW RUNOFF SUMMARY

BASIN	Q_{360} (CFS)	V_{360} (AC-FT)	A_D (AC)	$V_{10\text{-DAY}}$ (AC-FT)	$V_{10\text{-DAY}}$ (CU-FT)
ON-SITE	9.41	0.2648	4.29	0.30	13,000.00
Off-site 11	4.08	0.1220	1.66	0.15	6,500.00
Off-Site 12	7.06	0.2119	2.50	0.25	11,000.00
Off-site Isleta	6.52	1.03	20.3	N\A	N\A
TOTALS	20.55	1.629	28.75	0.7	30,500.00

PROPOSED FINAL CONDITION
BASIN PEAK FLOW RUNOFF SUMMARY

BASIN	Q_{360} (CFS)	V_{360} (AC-FT)	A_D (AC)	$V_{10\text{-DAY}}$ (AC-FT)	$V_{10\text{-DAY}}$ REQUIRED (CU-FT)	PONDING AREA (S.F.)	POND DEPTH (FEET)	PONDING VOLUME PROVIDED (CU-FT)
A *	8.830	1.095	21.23	1.11	48,000.00	10580	5.50	58,190.00
B	2.660	0.0781	1.087	0.09	3,920.00	2790	1.50	4,185.00
C	2.490	0.0736	1.020	0.09	3,920.00	3663	1.50	5,494.50
D	7.180	0.2800	3.200	0.30	13,000.00	6952	1.50	10,428.00
E	11.20	0.3766	2.623	0.40	17,000.00	6300	1.50	9,450.00
TOTALS	32.36	1.9033		1.99	85,840.00			87,747.50

* Basin A has the off-site flows from Isleta Blvd. Included

APPENDIX A

AHYMO HYDROLOGIC OUTPUT SUMMARY

EXISTING AND PROPOSED CONDITIONS

AHYMO Hydrologic Output 6 hr - Existing & Proposed Conditions

```
    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
         RUN DATE (MON/DAY/YR) = 04/08/1996
         START TIME (HR:MIN:SEC) = 13:32:30     USER NO.= CHVZ_GNM.I01
         INPUT FILE = AHYMO.IN

*S*************************************************************************
*S**************    CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.   **************
*S**************           WESTSIDE COMMUNITY CENTER            **************
*S*************************************************************************
*S*  FILENAME:  G:\G21\103\DOCUMENT\AHYMO.IN/OUT
*S*************************************************************************
*S******* 100 YEAR, 6 HOUR STORM
START                 0.00
RAINFALL              TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.98
                      RAIN SIX=2.30 RAIN DAY=2.66  DT=0.03333

                  COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                  DT =     .033330 HOURS       END TIME =     5.999400 HOURS
                     .0000   .0015   .0029   .0044   .0060   .0076   .0092
                     .0108   .0125   .0143   .0161   .0179   .0198   .0217
                     .0237   .0258   .0279   .0300   .0323   .0346   .0370
                     .0396   .0422   .0449   .0477   .0506   .0537   .0570
                     .0604   .0640   .0678   .0733   .0791   .0854   .0988
                     .1288   .1751   .2415   .3321   .4512   .6032   .7923
                    1.0231  1.2374  1.3269  1.4024  1.4696  1.5308  1.5870
                    1.6393  1.6881  1.7339  1.7770  1.8176  1.8560  1.8923
                    1.9267  1.9594  1.9903  2.0197  2.0476  2.0540  2.0598
                    2.0654  2.0707  2.0757  2.0805  2.0851  2.0896  2.0939
                    2.0980  2.1020  2.1058  2.1096  2.1132  2.1168  2.1202
                    2.1235  2.1268  2.1300  2.1331  2.1361  2.1391  2.1420
                    2.1448  2.1476  2.1503  2.1530  2.1556  2.1582  2.1607
                    2.1632  2.1656  2.1680  2.1703  2.1727  2.1749  2.1772
                    2.1794  2.1816  2.1837  2.1858  2.1879  2.1900  2.1920
                    2.1940  2.1960  2.1979  2.1999  2.2018  2.2036  2.2055
                    2.2073  2.2091  2.2109  2.2127  2.2145  2.2162  2.2179
                    2.2196  2.2213  2.2229  2.2246  2.2262  2.2278  2.2294
                    2.2310  2.2326  2.2341  2.2357  2.2372  2.2387  2.2402
                    2.2417  2.2431  2.2446  2.2460  2.2475  2.2489  2.2503
                    2.2517  2.2531  2.2544  2.2558  2.2571  2.2585  2.2598
                    2.2611  2.2624  2.2637  2.2650  2.2663  2.2676  2.2689
                    2.2701  2.2714  2.2726  2.2738  2.2750  2.2763  2.2775
                    2.2786  2.2798  2.2810  2.2822  2.2834  2.2845  2.2857
                    2.2868  2.2879  2.2891  2.2902  2.2913  2.2924  2.2935
                    2.2946  2.2957  2.2968  2.2978  2.2989  2.3000

*S***************  COMPUTE THE RUNOFF FROM THE EXISTING BASINS  **************
*S  OFF-SITE BASIN O-11.5 (THIS HYD IS 1/2 OF THE TOTAL OFFSITE BASIN O-11)
COMPUTE NM HYD        ID=11  HYD=O-11.5  DA=.0013085 SQ MI
                                                        %A=0  %B=88  %C=5  %D=7

                                                      TP=0.1333  RAINFALL=-1

     K =   .072649HR     TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   .36162    CFS   UNIT VOLUME =    .9664       B =   526.28      P60 = 1.9800
     AREA =       .000092 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


     K =   .130402HR     TP =   .133300HR    K/TP RATIO =   .978261     SHAPE CONSTANT, N =  3.610034
     UNIT PEAK =   2.9968    CFS   UNIT VOLUME =    .9957       B =   328.27      P60 = 1.9800
     AREA =       .001217 SQ MI    IA =    .49194 INCHES    INF =   1.22742 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD             ID=11  CODE=1

                                        HYDROGRAPH FROM AREA O-11.5


     RUNOFF VOLUME =       .85533 INCHES     =        .0597 ACRE-FEET
     PEAK DISCHARGE RATE =       2.04 CFS  AT   1.500 HOURS   BASIN AREA =   .0013 SQ. MI.
```

```
*S  ADD FOR THE TOTAL OFFSITE RUNOFF -O11- TO SITE.(11.5+11.5)
ADD HYD             ID=12  HYD=TOTAL_O11  ID I=11  ID II=11
PRINT HYD           ID=12  CODE=1

                                        HYDROGRAPH FROM AREA TOTAL_O11


    RUNOFF VOLUME =      .85523 INCHES     =        .1194 ACRE-FEET
    PEAK DISCHARGE RATE =      4.08 CFS  AT   1.500 HOURS   BASIN AREA =   .0026 SQ. MI.



*S  OFF-SITE BASIN O-12
COMPUTE NM HYD      ID=13  HYD=O-12  DA=.0019163 SQ MI
                                                          %A=0  %B=88  %C=5  %D=7

                                                          TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .52960    CFS   UNIT VOLUME =    .9786       B =   526.28      P60 = 1.9800
    AREA =      .000134 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


    K =   .130402HR    TP =   .133300HR    K/TP RATIO =   .978261     SHAPE CONSTANT, N =  3.610034
    UNIT PEAK =   4.3889    CFS   UNIT VOLUME =    .9973       B =   328.27      P60 = 1.9800
    AREA =      .001782 SQ MI    IA =    .49194 INCHES    INF =   1.22742 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=13  CODE=1

                                        HYDROGRAPH FROM AREA O-12


    RUNOFF VOLUME =      .85533 INCHES     =        .0874 ACRE-FEET
    PEAK DISCHARGE RATE =      2.98 CFS  AT   1.500 HOURS   BASIN AREA =   .0019 SQ. MI.



*S  ADD FOR THE TOTAL OFFSITE RUNOFF TO SITE.(11+12)
ADD HYD             ID=13  HYD=TOTAL_OFF  ID I=13  ID II=12
PRINT HYD           ID=13  CODE=1

                                        HYDROGRAPH FROM AREA TOTAL_OFF


    RUNOFF VOLUME =      .85524 INCHES     =        .2068 ACRE-FEET
    PEAK DISCHARGE RATE =      7.06 CFS  AT   1.500 HOURS   BASIN AREA =   .0045 SQ. MI.



*S  ON-SITE BASIN (WEST SIDE COMMUNITY CENTER PROPERTY)
COMPUTE NM HYD      ID=1  HYD=ONSITE  DA=.00664 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   16.220    CFS   UNIT VOLUME =    .9995       B =   325.62      P60 = 1.9800
    AREA =      .006640 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE


    RUNOFF VOLUME =      .74876 INCHES     =        .2652 ACRE-FEET
    PEAK DISCHARGE RATE =      9.41 CFS  AT   1.533 HOURS   BASIN AREA =   .0066 SQ. MI.
```

```
*S  ADD FOR THE TOTAL EXISTING RUNOFF.(11+12+ONSITE)
ADD HYD             ID=1  HYD=TOTAL_EXIST  ID I=13  ID II=1
PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA TOTAL_EXIST


    RUNOFF VOLUME =      .79195 INCHES     =        .4719 ACRE-FEET
    PEAK DISCHARGE RATE =      16.44 CFS  AT   1.500 HOURS   BASIN AREA =   .0112 SQ. MI.


*S*************  COMPUTE THE RUNOFF FROM THE DEVELOPED BASINS  *************
*S
*S  ON-SITE BASIN D2(DIRECT RUNOFF FROM BUILDINS)
COMPUTE NM HYD      ID=1  HYD=ONSITED2  DA=.0009256 SQ MI
                                                          %A=0  %B=0  %C=0  %D=100

                                                          TP=0.1333  RAINFALL=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.6543    CFS   UNIT VOLUME =    .9961       B =   526.28      P60 = 1.9800
    AREA =      .000926 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITED2


    RUNOFF VOLUME =     2.06607 INCHES     =        .1020 ACRE-FEET
    PEAK DISCHARGE RATE =       2.75 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*S  ON-SITE BASIN D1 (SOUTH 1/2 OF PARKING LOT)
COMPUTE NM HYD      ID=2  HYD=ONSITE-D1  DA=.0008967 SQ MI
                                                          %A=0  %B=0  %C=0  %D=100

                                                          TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.5402    CFS   UNIT VOLUME =    .9961       B =   526.28      P60 = 1.9800
    AREA =      .000897 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-D1


    RUNOFF VOLUME =     2.06607 INCHES     =        .0988 ACRE-FEET
    PEAK DISCHARGE RATE =       2.66 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*S  ADD ON-SITE BASINS D1 & D2
ADD HYD             ID=2  HYD=D1-D2  ID I=1  ID II=2
PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA D1-D2


    RUNOFF VOLUME =     2.06577 INCHES     =        .2008 ACRE-FEET
    PEAK DISCHARGE RATE =       5.41 CFS  AT   1.500 HOURS   BASIN AREA =   .0018 SQ. MI.


*S  ROUTE THE OFF-SITE RUNOFF TO BASIN D THROUGH A CHANNEL
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
                                                          MIN ELEV=0  MAX ELEV=0.5
```

CH SLP=.04 FP SLP=.04 N=.013 DIST=2

DIST	ELEV
0	0.5
0	0
2	0
2	0.5

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
.00	.00	.00	.00
.03	.05	.11	2.00
.05	.11	.33	2.00
.08	.16	.65	2.00
.11	.21	1.04	2.00
.13	.26	1.49	2.00
.16	.32	2.00	2.00
.18	.37	2.57	2.00
.21	.42	3.19	2.00
.24	.47	3.85	2.00
.26	.53	4.55	2.00
.29	.58	5.29	2.00
.32	.63	6.07	2.00
.34	.68	6.89	2.00
.37	.74	7.73	2.00
.39	.79	8.61	2.00
.42	.84	9.52	2.00
.45	.89	10.46	2.00
.47	.95	11.42	2.00
.50	1.00	12.41	2.00

COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=30 SLP=.04

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.026	.053	.11	.0042
.053	.105	.33	.0026
.079	.158	.65	.0020
.105	.211	1.04	.0017
.132	.263	1.49	.0015
.158	.316	2.00	.0013
.184	.368	2.57	.0012
.211	.421	3.19	.0011
.237	.474	3.85	.0010
.263	.526	4.55	.0010
.289	.579	5.29	.0009
.316	.632	6.07	.0009
.342	.684	6.89	.0008
.368	.737	7.73	.0008
.395	.789	8.61	.0008
.421	.842	9.52	.0007
.447	.895	10.46	.0007
.474	.947	11.42	.0007
.500	1.000	12.41	.0007

ROUTE ID=3 HYD=TO_D_INFLOW ID=2 DT=0.0333
PRINT HYD ID=3 CODE=1

HYDROGRAPH FROM AREA TO_D_INFLOW

RUNOFF VOLUME = 2.06630 INCHES = .2008 ACRE-FEET
PEAK DISCHARGE RATE = 5.40 CFS AT 1.499 HOURS BASIN AREA = .0018 SQ. MI.

AHYMO Hydrologic Output 6 hr - Existing & Proposed Conditions

```
*S  ON-SITE BASIN D (PLAY GROUND AREA)
COMPUTE NM HYD       ID=1  HYD=ONSITE-D  DA=.0012554 SQ MI
                                                    %A=0  %B=100  %C=0  %D=0

                                                    TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   3.0667    CFS   UNIT VOLUME =    .9959       B =   325.62      P60 = 1.9800
    AREA =      .001255 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=1  CODE=1

                                    HYDROGRAPH FROM AREA ONSITE-D


    RUNOFF VOLUME =      .74876 INCHES     =        .0501 ACRE-FEET
    PEAK DISCHARGE RATE =       1.79 CFS  AT   1.533 HOURS   BASIN AREA =   .0013 SQ. MI.
```

```
    *S  ADD RUNOFF ROUTED FROM D1-D2  TO BASIN D (TOTAL TO POND IN BASIN D)
    ADD HYD              ID=1  HYD=D1-D2-D  ID I=1  ID II=3
    PRINT HYD            ID=1  CODE=1

                                    HYDROGRAPH FROM AREA D1-D2-D


        RUNOFF VOLUME =     1.52978 INCHES     =        .2511 ACRE-FEET
        PEAK DISCHARGE RATE =       7.18 CFS  AT   1.500 HOURS   BASIN AREA =   .0031 SQ. MI.


    *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN D.
    ROUTE RESERVOIR      ID=2  HYD=BASIN_D_ROUTE  INFLOW ID=1  CODE=10
                                                          OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                          0               0
4936.50
                                                          0.5             .01
4936.70
                                                          2.4             .24
4938.00

      * * * * * * * * * * * * * * * * * *

        TIME      INFLOW    ELEV      VOLUME    OUTFLOW
        (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)

          .00        .00   4936.50       .000       .00
          .33        .00   4936.50       .000       .00
          .67        .00   4936.50       .000       .00
         1.00        .00   4936.50       .000       .00
         1.33       1.66   4936.63       .006       .32
         1.67       3.78   4937.32       .120      1.41
         2.00       1.52   4937.45       .142      1.59
         2.33        .35   4937.34       .123      1.43
         2.67        .13   4937.17       .093      1.18
         3.00        .07   4937.02       .066       .96
         3.33        .04   4936.89       .043       .78
         3.67        .03   4936.79       .025       .63
         4.00        .03   4936.70       .011       .50
         4.33        .03   4936.56       .003       .15
         4.67        .03   4936.52       .001       .06
         5.00        .03   4936.51       .001       .04
         5.33        .03   4936.51       .001       .03
         5.67        .03   4936.51       .001       .03
         6.00        .04   4936.51       .001       .03
         6.33        .00   4936.51       .000       .02
         6.67        .00   4936.50       .000       .01
         7.00        .00   4936.50       .000       .00
    PEAK DISCHARGE =       1.591 CFS - PEAK OCCURS AT HOUR    1.97
    MAXIMUM WATER SURFACE ELEVATION =     4937.446
```

```
 MAXIMUM STORAGE =          .1420 AC-FT     INCREMENTAL TIME=      .033330HRS

PRINT HYD            ID=2  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_D_ROUTE


    RUNOFF VOLUME =      1.52978 INCHES      =         .2511 ACRE-FEET
    PEAK DISCHARGE RATE =        1.59 CFS  AT    1.966 HOURS   BASIN AREA =    .0031 SQ. MI.


*S  ROUTE THIS RUNOFF(POND D) VIA A PIPE TO POND IN BASIN A.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05
                                                              DIA=0.6666 FT N=.013

                                    RATING CURVE PIPE SECTION  1.0
                                       WATER        FLOW         FLOW         MAX
                                     SURFACE        AREA         RATE        WIDTH
                                      ELEV          SQ FT        CFS         FT
                                       .00           .00          .00         .00
                                       .03           .01          .01         .30
                                       .07           .02          .06         .41
                                       .10           .03          .14         .48
                                       .14           .05          .26         .54
                                       .17           .07          .40         .59
                                       .21           .09          .57         .62
                                       .24           .12          .77         .64
                                       .28           .14          .98         .66
                                       .31           .16         1.21         .67
                                       .35           .18         1.45         .67
                                       .38           .21         1.69         .67
                                       .42           .23         1.93         .67
                                       .45           .25         2.16         .67
                                       .49           .27         2.38         .67
                                       .52           .29         2.58         .67
                                       .56           .31         2.74         .67
                                       .59           .33         2.86         .67
                                       .63           .34         2.91         .67
                                       .67           .35         2.91         .67
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=190 SLP=.0063

                                    TRAVEL TIME TABLE
                                                REACH=  1.0

                                    WATER        AVERAGE      FLOW         TRAVEL
                                    DEPTH        AREA         RATE         TIME
                                    FEET         SQ.FT.       CFS          HRS
                                       .035          .007          .01         .0258
                                       .069          .019          .06         .0166
                                       .104          .035          .14         .0129
                                       .139          .053          .26         .0108
                                       .174          .072          .40         .0095
                                       .208          .093          .57         .0086
                                       .243          .115          .77         .0079
                                       .278          .138          .98         .0074
                                       .313          .161         1.21         .0070
                                       .347          .184         1.45         .0067
                                       .382          .207         1.69         .0065
                                       .417          .230         1.93         .0063
                                       .452          .252         2.16         .0061
                                       .486          .273         2.38         .0060
                                       .521          .293         2.58         .0060
                                       .556          .311         2.74         .0060
                                       .591          .327         2.86         .0060
                                       .625          .340         2.91         .0062
                                       .667          .349         2.91         .0063
ROUTE                ID=3 HYD=TO_A_INFLOW ID=2 DT=0.0333
PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW
```

```
    RUNOFF VOLUME =     1.52982 INCHES     =        .2511 ACRE-FEET
    PEAK DISCHARGE RATE =       1.59 CFS  AT   1.998 HOURS   BASIN AREA =   .0031 SQ. MI.


*S  ON-SITE BASIN A (TEMPORARY PONDING AREA)
COMPUTE NM HYD      ID=1  HYD=ONSITE-A  DA=.0016249 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   3.9693    CFS   UNIT VOLUME =    .9969       B =   325.62      P60 = 1.9800
    AREA =      .001625 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA ONSITE-A

    RUNOFF VOLUME =      .74876 INCHES     =        .0649 ACRE-FEET
    PEAK DISCHARGE RATE =       2.31 CFS  AT   1.533 HOURS   BASIN AREA =   .0016 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN D TO BASIN A
ADD HYD             ID=15  HYD=D1-D2-012-D-A  ID I=1  ID II=3
PRINT HYD           ID=15  CODE=1

                                    HYDROGRAPH FROM AREA D1-D2-012-D-A


    RUNOFF VOLUME =     1.26071 INCHES     =        .3162 ACRE-FEET
    PEAK DISCHARGE RATE =       3.32 CFS  AT   1.533 HOURS   BASIN AREA =   .0047 SQ. MI.


*S  ON-SITE BASIN E-1 (NORTH 1/2 OF PARKING LOT)
COMPUTE NM HYD      ID=1  HYD=ONSITE-E1  DA=.0008967 SQ MI
                                                          %A=0  %B=0  %C=0  %D=100

                                                          TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.5402    CFS   UNIT VOLUME =    .9961       B =   526.28      P60 = 1.9800
    AREA =      .000897 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=1

                                    HYDROGRAPH FROM AREA ONSITE-E1

    RUNOFF VOLUME =     2.06607 INCHES     =        .0988 ACRE-FEET
    PEAK DISCHARGE RATE =       2.66 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*S  ROUTE THE ON-SITE RUNOFF TO BASIN E THROUGH A CHANNEL
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
                                                          MIN ELEV=0  MAX ELEV=0.5

                                                          CH SLP=.04  FP SLP=.04   N=.013  DIST=2

                                                          DIST    ELEV

                                                          0       0.5

                                                          0       0

                                                          2       0
```

```
                                                    2       0.5

RATING CURVE VALLEY SECTION  1.0
    WATER          FLOW          FLOW          TOP
   SURFACE         AREA          RATE         WIDTH
    ELEV          SQ FT          CFS           FT
     .00            .00           .00          .00
     .03            .05           .11         2.00
     .05            .11           .33         2.00
     .08            .16           .65         2.00
     .11            .21          1.04         2.00
     .13            .26          1.49         2.00
     .16            .32          2.00         2.00
     .18            .37          2.57         2.00
     .21            .42          3.19         2.00
     .24            .47          3.85         2.00
     .26            .53          4.55         2.00
     .29            .58          5.29         2.00
     .32            .63          6.07         2.00
     .34            .68          6.89         2.00
     .37            .74          7.73         2.00
     .39            .79          8.61         2.00
     .42            .84          9.52         2.00
     .45            .89         10.46         2.00
     .47            .95         11.42         2.00
     .50           1.00         12.41         2.00
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=30 SLP=.04

                    TRAVEL TIME TABLE
                                 REACH=  1.0

                    WATER        AVERAGE      FLOW         TRAVEL
                    DEPTH        AREA         RATE         TIME
                    FEET         SQ.FT.       CFS          HRS
                       .026         .053          .11        .0042
                       .053         .105          .33        .0026
                       .079         .158          .65        .0020
                       .105         .211         1.04        .0017
                       .132         .263         1.49        .0015
                       .158         .316         2.00        .0013
                       .184         .368         2.57        .0012
                       .211         .421         3.19        .0011
                       .237         .474         3.85        .0010
                       .263         .526         4.55        .0010
                       .289         .579         5.29        .0009
                       .316         .632         6.07        .0009
                       .342         .684         6.89        .0008
                       .368         .737         7.73        .0008
                       .395         .789         8.61        .0008
                       .421         .842         9.52        .0007
                       .447         .895        10.46        .0007
                       .474         .947        11.42        .0007
                       .500        1.000        12.41        .0007
ROUTE                ID=3 HYD=TO_E_INFLOW ID=1 DT=0.03333
PRINT HYD            ID=3 CODE=1

                                    HYDROGRAPH FROM AREA TO_E_INFLOW


    RUNOFF VOLUME =     2.06630 INCHES     =        .0988 ACRE-FEET
    PEAK DISCHARGE RATE =       2.67 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*S  ON-SITE BASIN E (NORTH PLAY GROUND)
COMPUTE NM HYD       ID=1  HYD=ONSITE-E  DA=.0012196 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =    .131726HR     TP =    .133300HR     K/TP RATIO =    .988190      SHAPE CONSTANT, N =  3.573071
```

```
    UNIT PEAK =   2.9792    CFS   UNIT VOLUME =    .9955       B =   325.62      P60 = 1.9800
    AREA =      .001220 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-E


    RUNOFF VOLUME =      .74876 INCHES     =        .0487 ACRE-FEET
    PEAK DISCHARGE RATE =       1.74 CFS  AT   1.533 HOURS   BASIN AREA =   .0012 SQ. MI.


*S  ADD RUNOFF ROUTED FROM E1-TO BASIN E (TOTAL TO POND IN BASIN E)
ADD HYD             ID=1  HYD=EI  ID I=1  ID II=3
PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA EI


    RUNOFF VOLUME =     1.30673 INCHES     =        .1475 ACRE-FEET
    PEAK DISCHARGE RATE =       4.40 CFS  AT   1.500 HOURS   BASIN AREA =   .0021 SQ. MI.


*S  ROUTE THE RUNOFF FROM OFFSITE BASIN 20 VIA A PIPE TO BASIN E.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.0056
                                                          DIA=1.0 FT N=.013

                RATING CURVE PIPE SECTION  1.0
```

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.05	.02	.01	.44
.10	.04	.06	.61
.16	.08	.14	.73
.21	.12	.25	.81
.26	.16	.40	.88
.31	.21	.57	.93
.36	.26	.76	.96
.42	.31	.97	.99
.47	.36	1.19	1.00
.52	.41	1.43	1.00
.57	.47	1.67	1.00
.63	.52	1.91	1.00
.68	.57	2.14	1.00
.73	.61	2.35	1.00
.78	.66	2.55	1.00
.83	.70	2.71	1.00
.89	.74	2.82	1.00
.94	.77	2.87	1.00
1.00	.79	2.87	1.00

```
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=300 SLP=.0056

                TRAVEL TIME TABLE
                                REACH=  1.0
```

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.052	.016	.01	.0930
.104	.043	.06	.0596
.156	.078	.14	.0463
.208	.119	.25	.0389
.261	.163	.40	.0342
.313	.210	.57	.0309
.365	.259	.76	.0285
.417	.310	.97	.0267
.469	.362	1.19	.0252
.521	.414	1.43	.0241
.573	.466	1.67	.0233

.625	.517	1.91	.0226
.677	.566	2.14	.0221
.730	.614	2.35	.0217
.782	.659	2.55	.0216
.834	.700	2.71	.0215
.886	.736	2.82	.0217
.938	.765	2.87	.0222
1.000	.785	2.87	.0228

```
    ROUTE                ID=3 HYD=OFFSITE20 INFLOW ID=13 DT=0.03333
TRAVEL TIME TABLE EXCEEDED
    PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA OFFSITE20


        RUNOFF VOLUME =      .85535 INCHES     =        .2068 ACRE-FEET
        PEAK DISCHARGE RATE =       6.92 CFS  AT    1.533 HOURS   BASIN AREA =    .0045 SQ. MI.



    *S  ADD RUNOFF ROUTED FROM OFFSITE BASIN 20 TO BASIN E(020+E1=E)
    ADD HYD              ID=17  HYD=020-E1-E  ID I=3  ID II=1
    PRINT HYD            ID=17  CODE=1

                                        HYDROGRAPH FROM AREA 020-E1-E


        RUNOFF VOLUME =      .99894 INCHES     =        .3543 ACRE-FEET
        PEAK DISCHARGE RATE =      11.20 CFS  AT    1.533 HOURS   BASIN AREA =    .0066 SQ. MI.



    *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN E.
    ROUTE RESERVOIR      ID=2  HYD=BASIN_E_ROUTE  INFLOW ID=17  CODE=10
                                                              OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION

                                                              0               0
4936.50

                                                              0.1             .01
4936.70

                                                              2.4             .23             4938.00


      * * * * * * * * * * * * * * * * * *

        TIME      INFLOW     ELEV       VOLUME     OUTFLOW
        (HRS)     (CFS)      (FEET)     (AC-FT)    (CFS)

         .00        .00    4936.50        .000        .00
         .33        .00    4936.50        .000        .00
         .67        .00    4936.50        .000        .00
        1.00        .00    4936.50        .000        .00
        1.33       1.10    4936.59        .004        .04
        1.67       6.86    4937.75        .188       1.96
        2.00       1.69    4937.95        .221       2.31
        2.33        .50    4937.76        .189       1.97
        2.67        .20    4937.52        .149       1.56
        3.00        .10    4937.32        .115       1.20
        3.33        .04    4937.16        .088        .92
        3.67        .02    4937.04        .067        .69
        4.00        .02    4936.94        .051        .53
        4.33        .02    4936.87        .039        .40
        4.67        .02    4936.82        .029        .30
        5.00        .02    4936.77        .023        .23
        5.33        .02    4936.75        .018        .18
        5.67        .02    4936.72        .014        .14
        6.00        .02    4936.71        .011        .11
        6.33        .00    4936.67        .009        .09
        6.67        .00    4936.63        .007        .07
        7.00        .00    4936.60        .005        .05
        7.33        .00    4936.58        .004        .04
        7.67        .00    4936.56        .003        .03
        8.00        .00    4936.54        .002        .02
        8.33        .00    4936.53        .002        .02
```

8.67	.00	4936.53	.001	.01
9.00	.00	4936.52	.001	.01
9.33	.00	4936.51	.001	.01
9.67	.00	4936.51	.001	.01
10.00	.00	4936.51	.000	.00

PEAK DISCHARGE = 2.339 CFS - PEAK OCCURS AT HOUR 1.90
MAXIMUM WATER SURFACE ELEVATION = 4937.966
MAXIMUM STORAGE = .2242 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA BASIN_E_ROUTE

RUNOFF VOLUME = .99894 INCHES = .3543 ACRE-FEET
PEAK DISCHARGE RATE = 2.34 CFS AT 1.900 HOURS BASIN AREA = .0066 SQ. MI.

*S ROUTE THIS RUNOFF TO BASIN A VIA A PIPE FROM POND IN BASIN E.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05

DIA=0.666 FT N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.03	.01	.01	.30
.07	.02	.06	.41
.10	.03	.14	.48
.14	.05	.26	.54
.17	.07	.40	.58
.21	.09	.57	.62
.24	.11	.77	.64
.28	.14	.98	.66
.31	.16	1.21	.66
.35	.18	1.44	.67
.38	.21	1.69	.67
.42	.23	1.93	.67
.45	.25	2.16	.67
.49	.27	2.38	.67
.52	.29	2.57	.67
.56	.31	2.74	.67
.59	.33	2.85	.67
.62	.34	2.90	.67
.67	.35	2.90	.67

COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=190 SLP=.005

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.035	.007	.01	.0259
.069	.019	.06	.0166
.104	.035	.14	.0129
.139	.053	.26	.0108
.174	.072	.40	.0095
.208	.093	.57	.0086
.243	.115	.77	.0079
.278	.137	.98	.0074
.312	.160	1.21	.0070
.347	.184	1.44	.0067
.382	.207	1.69	.0065
.416	.229	1.93	.0063
.451	.251	2.16	.0061
.486	.272	2.38	.0060
.521	.292	2.57	.0060
.555	.310	2.74	.0060
.590	.326	2.85	.0060
.625	.339	2.90	.0062

```
                                .666        .348        2.90        .0063
ROUTE                ID=3 HYD=TO_A_INFLOW ID=2 DT=0.03333
PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =       .99873 INCHES     =         .3542 ACRE-FEET
    PEAK DISCHARGE RATE =       2.34 CFS  AT    1.900 HOURS   BASIN AREA =    .0066 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN E TO BASIN A(D+O12+A)
ADD HYD              ID=16  HYD=D1-D2-O1-D-A-E  ID I=3  ID II=15
PRINT HYD            ID=16  CODE=1

                                        HYDROGRAPH FROM AREA D1-D2-O1-D-A-E


    RUNOFF VOLUME =     1.10721 INCHES     =         .6704 ACRE-FEET
    PEAK DISCHARGE RATE =       4.68 CFS  AT    1.633 HOURS   BASIN AREA =    .0114 SQ. MI.


*S  ON-SITE BASIN B (SOUTH END OF SOCCER FIELD)
COMPUTE NM HYD       ID=1  HYD=ONSITE-B  DA=.00043044 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =    .131726HR     TP =    .133300HR     K/TP RATIO =    .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   1.0515     CFS   UNIT VOLUME =     .9871       B =   325.62      P60 = 1.9800
    AREA =       .000430 SQ MI     IA =     .50000 INCHES     INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033330

PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-B


    RUNOFF VOLUME =       .74876 INCHES     =         .0172 ACRE-FEET
    PEAK DISCHARGE RATE =        .62 CFS  AT    1.533 HOURS   BASIN AREA =    .0004 SQ. MI.


*S  ADD RUNOFF ROUTED FROM OFFSITE BASIN O-11.5 TO BASIN B
ADD HYD              ID=19  HYD=11.5-B   ID I=11  ID II=1
PRINT HYD            ID=19  CODE=1

                                        HYDROGRAPH FROM AREA 11.5-B


    RUNOFF VOLUME =       .82880 INCHES     =         .0769 ACRE-FEET
    PEAK DISCHARGE RATE =       2.66 CFS  AT    1.500 HOURS   BASIN AREA =    .0017 SQ. MI.


    *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN B.
    ROUTE RESERVOIR      ID=2  HYD=BASIN_B_ROUTE  INFLOW ID=19  CODE=10
                                                          OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                          0               0
4936.50
                                                          0.2             .001
4936.70
                                                          1.5             .052
4938.00

      * * * * * * * * * * * * * * * * * *

        TIME      INFLOW    ELEV      VOLUME    OUTFLOW
        (HRS)     (CFS)     (FEET)    (AC-FT)   (CFS)
```

.00	.00	4936.50	.000	.00
.33	.00	4936.50	.000	.00
.67	.00	4936.50	.000	.00
1.00	.00	4936.50	.000	.00
1.33	.15	4936.56	.000	.06
1.67	1.50	4937.54	.034	1.04
2.00	.29	4937.33	.026	.83
2.33	.10	4937.00	.013	.50
2.67	.04	4936.78	.004	.28
3.00	.01	4936.53	.000	.03
3.33	.00	4936.50	.000	.00

PEAK DISCHARGE = 1.067 CFS - PEAK OCCURS AT HOUR 1.73
MAXIMUM WATER SURFACE ELEVATION = 4937.567
MAXIMUM STORAGE = .0350 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA BASIN_B_ROUTE

RUNOFF VOLUME = .82880 INCHES = .0769 ACRE-FEET
PEAK DISCHARGE RATE = 1.07 CFS AT 1.733 HOURS BASIN AREA = .0017 SQ. MI.

*S ROUTE THIS RUNOFF TO BASIN A VIA A PIPE FROM POND IN BASIN B.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05
DIA=0.666 FT N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.03	.01	.01	.30
.07	.02	.06	.41
.10	.03	.14	.48
.14	.05	.26	.54
.17	.07	.40	.58
.21	.09	.57	.62
.24	.11	.77	.64
.28	.14	.98	.66
.31	.16	1.21	.66
.35	.18	1.44	.67
.38	.21	1.69	.67
.42	.23	1.93	.67
.45	.25	2.16	.67
.49	.27	2.38	.67
.52	.29	2.57	.67
.56	.31	2.74	.67
.59	.33	2.85	.67
.62	.34	2.90	.67
.67	.35	2.90	.67

COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=190 SLP=.005

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.035	.007	.01	.0259
.069	.019	.06	.0166
.104	.035	.14	.0129
.139	.053	.26	.0108
.174	.072	.40	.0095
.208	.093	.57	.0086
.243	.115	.77	.0079
.278	.137	.98	.0074
.312	.160	1.21	.0070
.347	.184	1.44	.0067
.382	.207	1.69	.0065
.416	.229	1.93	.0063

```
                                .451        .251        2.16        .0061
                                .486        .272        2.38        .0060
                                .521        .292        2.57        .0060
                                .555        .310        2.74        .0060
                                .590        .326        2.85        .0060
                                .625        .339        2.90        .0062
                                .666        .348        2.90        .0063
ROUTE               ID=3 HYD=TO_A_INFLOW ID=2 DT=0.03333
PRINT HYD           ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =      .82905 INCHES     =        .0769 ACRE-FEET
    PEAK DISCHARGE RATE =       1.07 CFS  AT   1.733 HOURS   BASIN AREA =   .0017 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN B TO BASIN A(012+E+D)
ADD HYD             ID=17  HYD=A-B-D-E-012  ID I=3  ID II=16
PRINT HYD           ID=17  CODE=1

                                        HYDROGRAPH FROM AREA A-B-D-E-012


    RUNOFF VOLUME =     1.07022 INCHES     =         .7472 ACRE-FEET
    PEAK DISCHARGE RATE =       5.69 CFS  AT   1.667 HOURS   BASIN AREA =   .0131 SQ. MI.


*S RUNOFF FROM BASIN C (NORTH END OF SOCCER FIELD)
COMPUTE NM HYD      ID=2  HYD=ONSITE-C  DA=.00031566 SQ MI
                                                    %A=0  %B=100  %C=0  %D=0

                                                    TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   .77109    CFS   UNIT VOLUME =    .9818       B =   325.62      P60 = 1.9800
    AREA =      .000316 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-C


    RUNOFF VOLUME =      .74876 INCHES     =        .0126 ACRE-FEET
    PEAK DISCHARGE RATE =       .46 CFS  AT   1.533 HOURS   BASIN AREA =   .0003 SQ. MI.


    *S  ADD RUNOFF ROUTED FROM OFFSITE BASIN O-11.5 TO BASIN C
    ADD HYD             ID=19  HYD=O11.5-C   ID I=2  ID II=11
    PRINT HYD           ID=19  CODE=1

                                        HYDROGRAPH FROM AREA O11.5-C


        RUNOFF VOLUME =      .83446 INCHES     =        .0723 ACRE-FEET
        PEAK DISCHARGE RATE =       2.49 CFS  AT   1.500 HOURS   BASIN AREA =   .0016 SQ. MI.


    *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN C.
    ROUTE RESERVOIR     ID=2  HYD=BASIN_C_ROUTE  INFLOW ID=19  CODE=10
                                                        OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                        0               0
4936.500
                                                        1.0             0.01
4936.70
                                                        10.0            0.13
4938.00
```

* * * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	4936.50	.000	.00
.33	.00	4936.50	.000	.00
.67	.00	4936.50	.000	.00
1.00	.00	4936.50	.000	.00
1.33	.14	4936.51	.000	.04
1.67	1.41	4936.80	.019	1.68
2.00	.27	4936.61	.006	.57
2.33	.10	4936.53	.002	.16
2.67	.04	4936.51	.001	.06
3.00	.01	4936.50	.000	.02
3.33	.00	4936.50	.000	.01
3.67	.00	4936.50	.000	.00

PEAK DISCHARGE = 1.709 CFS - PEAK OCCURS AT HOUR 1.63
MAXIMUM WATER SURFACE ELEVATION = 4936.803
MAXIMUM STORAGE = .0195 AC-FT INCREMENTAL TIME= .033330HRS

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA BASIN_C_ROUTE

RUNOFF VOLUME = .83446 INCHES = .0723 ACRE-FEET
PEAK DISCHARGE RATE = 1.71 CFS AT 1.633 HOURS BASIN AREA = .0016 SQ. MI.

*S ROUTE THIS RUNOFF TO BASIN A VIA A PIPE FROM POND IN BASIN C.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05
DIA=1.00 IN N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.05	.02	.04	.44
.10	.04	.18	.61
.16	.08	.42	.73
.21	.12	.76	.81
.26	.16	1.18	.88
.31	.21	1.69	.93
.36	.26	2.26	.96
.42	.31	2.89	.99
.47	.36	3.57	1.00
.52	.41	4.27	1.00
.57	.47	4.99	1.00
.63	.52	5.70	1.00
.68	.57	6.38	1.00
.73	.61	7.03	1.00
.78	.66	7.61	1.00
.83	.70	8.09	1.00
.89	.74	8.43	1.00
.94	.77	8.57	1.00
1.00	.79	8.57	1.00

COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=160 SLP=.005

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.052	.016	.04	.0166
.104	.043	.18	.0106
.156	.078	.42	.0083
.208	.119	.76	.0070
.261	.163	1.18	.0061
.313	.210	1.69	.0055

```
                                .365        .259        2.26        .0051
                                .417        .310        2.89        .0048
                                .469        .362        3.57        .0045
                                .521        .414        4.27        .0043
                                .573        .466        4.99        .0042
                                .625        .517        5.70        .0040
                                .677        .566        6.38        .0039
                                .730        .614        7.03        .0039
                                .782        .659        7.61        .0038
                                .834        .700        8.09        .0038
                                .886        .736        8.43        .0039
                                .938        .765        8.57        .0040
                               1.000        .785        8.57        .0041
ROUTE                ID=3 HYD=TO_A_INFLOW ID=2 DT=0.03333
PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =       .83465 INCHES     =        .0723 ACRE-FEET
    PEAK DISCHARGE RATE =       1.71 CFS  AT    1.633 HOURS   BASIN AREA =    .0016 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN C TO BASIN A(A+B+D+E+011+012)
ADD HYD              ID=18  HYD=A-B-C-D-E-011-012  ID I=3  ID II=17
PRINT HYD            ID=18  CODE=1

                                        HYDROGRAPH FROM AREA A-B-C-D-E-011-012


    RUNOFF VOLUME =     1.04419 INCHES     =         .8195 ACRE-FEET
    PEAK DISCHARGE RATE =       7.37 CFS  AT    1.633 HOURS   BASIN AREA =    .0147 SQ. MI.


FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 13:32:33
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    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
         RUN DATE (MON/DAY/YR) = 04/08/1996
         START TIME (HR:MIN:SEC) = 13:37:09     USER NO.= CHVZ_GNM.I01
         INPUT FILE = AHYMO.IN

*S*************************************************************************
*S**************    CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.    **************
*S**************           WESTSIDE COMMUNITY CENTER             **************
*S*************************************************************************
*S*  FILENAME:  G:\G21\103\DOCUMENT\AHYMO.IN/OUT
*S*************************************************************************
*S******* 100 YEAR, 24 HOUR STORM
START                 0.00
RAINFALL              TYPE=2 RAIN QUARTER=0.0 RAIN ONE=1.98
                             RAIN SIX=2.30 RAIN DAY=2.66  DT=0.05

                COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                DT =    .050000 HOURS       END TIME =    24.000000 HOURS
                   .0000   .0022   .0044   .0068   .0092   .0117   .0143
                   .0170   .0198   .0227   .0258   .0290   .0323   .0358
                   .0396   .0435   .0477   .0522   .0570   .0622   .0678
                   .0762   .0854   .1121   .1753   .2838   .4518   .6936
                  1.0242  1.2850  1.4028  1.5011  1.5873  1.6643  1.7341
                  1.7978  1.8562  1.9099  1.9595  2.0054  2.0478  2.0570
                  2.0654  2.0732  2.0805  2.0874  2.0939  2.1000  2.1059
                  2.1114  2.1168  2.1219  2.1268  2.1316  2.1361  2.1405
                  2.1448  2.1490  2.1530  2.1569  2.1607  2.1644  2.1680
                  2.1715  2.1750  2.1783  2.1816  2.1848  2.1879  2.1910
                  2.1940  2.1970  2.1999  2.2027  2.2055  2.2083  2.2110
                  2.2136  2.2162  2.2188  2.2213  2.2238  2.2262  2.2286
                  2.2310  2.2334  2.2357  2.2380  2.2402  2.2424  2.2446
                  2.2468  2.2489  2.2510  2.2531  2.2551  2.2572  2.2592
                  2.2612  2.2631  2.2651  2.2670  2.2689  2.2708  2.2726
                  2.2744  2.2763  2.2781  2.2799  2.2816  2.2834  2.2851
                  2.2868  2.2885  2.2902  2.2919  2.2935  2.2952  2.2968
                  2.2984  2.3000  2.3016  2.3031  2.3047  2.3062  2.3077
                  2.3093  2.3108  2.3123  2.3138  2.3153  2.3168  2.3183
                  2.3198  2.3213  2.3228  2.3242  2.3257  2.3272  2.3286
                  2.3301  2.3315  2.3330  2.3344  2.3359  2.3373  2.3387
                  2.3401  2.3415  2.3430  2.3444  2.3458  2.3472  2.3486
                  2.3499  2.3513  2.3527  2.3541  2.3554  2.3568  2.3582
                  2.3595  2.3609  2.3622  2.3636  2.3649  2.3662  2.3676
                  2.3689  2.3702  2.3715  2.3729  2.3742  2.3755  2.3768
                  2.3781  2.3794  2.3807  2.3819  2.3832  2.3845  2.3858
                  2.3871  2.3883  2.3896  2.3908  2.3921  2.3934  2.3946
                  2.3959  2.3971  2.3983  2.3996  2.4008  2.4020  2.4033
                  2.4045  2.4057  2.4069  2.4081  2.4093  2.4105  2.4117
                  2.4129  2.4141  2.4153  2.4165  2.4177  2.4189  2.4200
                  2.4212  2.4224  2.4236  2.4247  2.4259  2.4270  2.4282
                  2.4293  2.4305  2.4316  2.4328  2.4339  2.4351  2.4362
                  2.4373  2.4385  2.4396  2.4407  2.4418  2.4429  2.4441
                  2.4452  2.4463  2.4474  2.4485  2.4496  2.4507  2.4518
                  2.4529  2.4540  2.4550  2.4561  2.4572  2.4583  2.4594
                  2.4604  2.4615  2.4626  2.4636  2.4647  2.4658  2.4668
                  2.4679  2.4689  2.4700  2.4710  2.4721  2.4731  2.4741
                  2.4752  2.4762  2.4773  2.4783  2.4793  2.4803  2.4814
                  2.4824  2.4834  2.4844  2.4854  2.4864  2.4874  2.4885
                  2.4895  2.4905  2.4915  2.4925  2.4935  2.4944  2.4954
                  2.4964  2.4974  2.4984  2.4994  2.5004  2.5013  2.5023
                  2.5033  2.5043  2.5052  2.5062  2.5072  2.5081  2.5091
                  2.5100  2.5110  2.5119  2.5129  2.5138  2.5148  2.5157
                  2.5167  2.5176  2.5186  2.5195  2.5204  2.5214  2.5223
                  2.5232  2.5242  2.5251  2.5260  2.5269  2.5279  2.5288
                  2.5297  2.5306  2.5315  2.5324  2.5333  2.5343  2.5352
                  2.5361  2.5370  2.5379  2.5388  2.5397  2.5406  2.5414
                  2.5423  2.5432  2.5441  2.5450  2.5459  2.5468  2.5476
                  2.5485  2.5494  2.5503  2.5512  2.5520  2.5529  2.5538
                  2.5546  2.5555  2.5564  2.5572  2.5581  2.5589  2.5598
                  2.5607  2.5615  2.5624  2.5632  2.5641  2.5649  2.5657
                  2.5666  2.5674  2.5683  2.5691  2.5700  2.5708  2.5716
                  2.5725  2.5733  2.5741  2.5749  2.5758  2.5766  2.5774
                  2.5782  2.5791  2.5799  2.5807  2.5815  2.5823  2.5832
                  2.5840  2.5848  2.5856  2.5864  2.5872  2.5880  2.5888
                  2.5896  2.5904  2.5912  2.5920  2.5928  2.5936  2.5944
                  2.5952  2.5960  2.5968  2.5976  2.5983  2.5991  2.5999
                  2.6007  2.6015  2.6023  2.6030  2.6038  2.6046  2.6054
                  2.6061  2.6069  2.6077  2.6084  2.6092  2.6100  2.6107
                  2.6115  2.6123  2.6130  2.6138  2.6146  2.6153  2.6161
                  2.6168  2.6176  2.6183  2.6191  2.6198  2.6206  2.6213
                  2.6221  2.6228  2.6236  2.6243  2.6251  2.6258  2.6265
                  2.6273  2.6280  2.6287  2.6295  2.6302  2.6309  2.6317
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 2.6324  2.6331  2.6339  2.6346  2.6353  2.6360  2.6368
 2.6375  2.6382  2.6389  2.6396  2.6404  2.6411  2.6418
 2.6425  2.6432  2.6439  2.6446  2.6453  2.6461  2.6468
 2.6475  2.6482  2.6489  2.6496  2.6503  2.6510  2.6517
 2.6524  2.6531  2.6538  2.6545  2.6552  2.6559  2.6566
 2.6572  2.6579  2.6586  2.6593  2.6600

*S**************  COMPUTE THE RUNOFF FROM THE EXISTING BASINS  **************
*S  OFF-SITE BASIN O-11.5 (THIS HYD IS 1/2 OF THE TOTAL OFFSITE BASIN O-11)
COMPUTE NM HYD       ID=11  HYD=O-11.5  DA=.0013085 SQ MI
                                                    %A=0  %B=88  %C=5  %D=7

                                                    TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .36162    CFS   UNIT VOLUME =    .9674       B =   526.28      P60 = 1.9800
    AREA =      .000092 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .130402HR    TP =   .133300HR    K/TP RATIO =   .978261     SHAPE CONSTANT, N =  3.610034
    UNIT PEAK =   2.9968    CFS   UNIT VOLUME =    .9967       B =   328.27      P60 = 1.9800
    AREA =      .001217 SQ MI    IA =    .49194 INCHES    INF =   1.22742 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=11  CODE=1

                                        HYDROGRAPH FROM AREA O-11.5


    RUNOFF VOLUME =      .88019 INCHES     =        .0614 ACRE-FEET
    PEAK DISCHARGE RATE =       2.03 CFS  AT   1.500 HOURS   BASIN AREA =   .0013 SQ. MI.


*S  ADD FOR THE TOTAL OFFSITE RUNOFF -O11- TO SITE.(11.5+11.5)
ADD HYD              ID=12  HYD=TOTAL_O11  ID I=11  ID II=11
PRINT HYD            ID=12  CODE=1

                                        HYDROGRAPH FROM AREA TOTAL_O11


    RUNOFF VOLUME =      .87380 INCHES     =        .1220 ACRE-FEET
    PEAK DISCHARGE RATE =       4.07 CFS  AT   1.500 HOURS   BASIN AREA =   .0026 SQ. MI.


*S  OFF-SITE BASIN O-12
COMPUTE NM HYD       ID=13  HYD=O-12  DA=.0019163 SQ MI
                                                    %A=0  %B=88  %C=5  %D=7

                                                    TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   .52960    CFS   UNIT VOLUME =    .9791       B =   526.28      P60 = 1.9800
    AREA =      .000134 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000


    K =   .130402HR    TP =   .133300HR    K/TP RATIO =   .978261     SHAPE CONSTANT, N =  3.610034
    UNIT PEAK =   4.3889    CFS   UNIT VOLUME =    .9981       B =   328.27      P60 = 1.9800
    AREA =      .001782 SQ MI    IA =    .49194 INCHES    INF =   1.22742 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=13  CODE=1

                                        HYDROGRAPH FROM AREA O-12


    RUNOFF VOLUME =      .88019 INCHES     =        .0900 ACRE-FEET
    PEAK DISCHARGE RATE =       2.97 CFS  AT   1.500 HOURS   BASIN AREA =   .0019 SQ. MI.


*S  ADD FOR THE TOTAL OFFSITE RUNOFF TO SITE.(11+12)
ADD HYD              ID=13  HYD=TOTAL_OFF  ID I=13  ID II=12
PRINT HYD            ID=13  CODE=1

                                        HYDROGRAPH FROM AREA TOTAL_OFF
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    RUNOFF VOLUME =      .87646 INCHES     =        .2119 ACRE-FEET
    PEAK DISCHARGE RATE =       7.04 CFS  AT   1.500 HOURS   BASIN AREA =   .0045 SQ. MI.


*S  ON-SITE BASIN (WEST SIDE COMMUNITY CENTER PROPERTY)
COMPUTE NM HYD      ID=1  HYD=ONSITE  DA=.00664 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   16.220    CFS   UNIT VOLUME =    1.000       B =   325.62      P60 = 1.9800
    AREA =      .006640 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE


    RUNOFF VOLUME =      .74776 INCHES     =        .2648 ACRE-FEET
    PEAK DISCHARGE RATE =       9.37 CFS  AT   1.500 HOURS   BASIN AREA =   .0066 SQ. MI.


*S  ADD FOR THE TOTAL EXISTING RUNOFF.(11+12+ONSITE)
ADD HYD             ID=1  HYD=TOTAL_EXIST  ID I=13  ID II=1
PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA TOTAL_EXIST


    RUNOFF VOLUME =      .79997 INCHES     =        .4767 ACRE-FEET
    PEAK DISCHARGE RATE =      16.41 CFS  AT   1.500 HOURS   BASIN AREA =   .0112 SQ. MI.


*S***************  COMPUTE THE RUNOFF FROM THE DEVELOPED BASINS  **************
*S
*S  ON-SITE BASIN D2(DIRECT RUNOFF FROM BUILDINS)
COMPUTE NM HYD      ID=1  HYD=ONSITED2  DA=.0009256 SQ MI
                                                          %A=0  %B=0  %C=0  %D=100

                                                          TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.6543    CFS   UNIT VOLUME =    .9959       B =   526.28      P60 = 1.9800
    AREA =      .000926 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITED2


    RUNOFF VOLUME =     2.42773 INCHES     =        .1198 ACRE-FEET
    PEAK DISCHARGE RATE =       2.70 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*S  ON-SITE BASIN D1 (SOUTH 1/2 OF PARKING LOT)
COMPUTE NM HYD      ID=2  HYD=ONSITE-D1  DA=.0008967 SQ MI
                                                          %A=0  %B=0  %C=0  %D=100

                                                          TP=0.1333  RAINFALL=-1


    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.5402    CFS   UNIT VOLUME =    .9959       B =   526.28      P60 = 1.9800
    AREA =      .000897 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-D1


    RUNOFF VOLUME =     2.42773 INCHES     =        .1161 ACRE-FEET
    PEAK DISCHARGE RATE =       2.62 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.
```

```
*S  ADD ON-SITE BASINS D1 & D2
ADD HYD             ID=2  HYD=D1-D2  ID I=1  ID II=2
PRINT HYD           ID=2  CODE=1

                                    HYDROGRAPH FROM AREA D1-D2


    RUNOFF VOLUME =     2.42740 INCHES     =        .2359 ACRE-FEET
    PEAK DISCHARGE RATE =       5.32 CFS  AT   1.500 HOURS   BASIN AREA =   .0018 SQ. MI.


*S  ROUTE THE OFF-SITE RUNOFF TO BASIN D THROUGH A CHANNEL
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
                                                          MIN ELEV=0  MAX ELEV=0.5
                                                          CH SLP=.04  FP SLP=.04   N=.013  DIST=2
                                                          DIST    ELEV
                                                          0       0.5
                                                          0       0
                                                          2       0
                                                          2       0.5

                                    RATING CURVE VALLEY SECTION  1.0
                                       WATER        FLOW         FLOW        TOP
                                     SURFACE        AREA         RATE       WIDTH
                                       ELEV        SQ FT         CFS         FT
                                         .00          .00          .00         .00
                                         .03          .05          .11        2.00
                                         .05          .11          .33        2.00
                                         .08          .16          .65        2.00
                                         .11          .21         1.04        2.00
                                         .13          .26         1.49        2.00
                                         .16          .32         2.00        2.00
                                         .18          .37         2.57        2.00
                                         .21          .42         3.19        2.00
                                         .24          .47         3.85        2.00
                                         .26          .53         4.55        2.00
                                         .29          .58         5.29        2.00
                                         .32          .63         6.07        2.00
                                         .34          .68         6.89        2.00
                                         .37          .74         7.73        2.00
                                         .39          .79         8.61        2.00
                                         .42          .84         9.52        2.00
                                         .45          .89        10.46        2.00
                                         .47          .95        11.42        2.00
                                         .50         1.00        12.41        2.00
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=30 SLP=.04

TRAVEL TIME TABLE
                                REACH=  1.0

                                WATER        AVERAGE      FLOW         TRAVEL
                                DEPTH        AREA         RATE         TIME
                                FEET         SQ.FT.       CFS          HRS
                                   .026         .053          .11        .0042
                                   .053         .105          .33        .0026
                                   .079         .158          .65        .0020
                                   .105         .211         1.04        .0017
                                   .132         .263         1.49        .0015
                                   .158         .316         2.00        .0013
                                   .184         .368         2.57        .0012
                                   .211         .421         3.19        .0011
                                   .237         .474         3.85        .0010
                                   .263         .526         4.55        .0010
                                   .289         .579         5.29        .0009
                                   .316         .632         6.07        .0009
                                   .342         .684         6.89        .0008
                                   .368         .737         7.73        .0008
                                   .395         .789         8.61        .0008
                                   .421         .842         9.52        .0007
                                   .447         .895        10.46        .0007
                                   .474         .947        11.42        .0007
                                   .500        1.000        12.41        .0007
```

```
ROUTE                ID=3 HYD=TO_D_INFLOW ID=2 DT=0.0333
PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_D_INFLOW


    RUNOFF VOLUME =     2.36577 INCHES     =        .2299 ACRE-FEET
    PEAK DISCHARGE RATE =       5.30 CFS  AT   1.499 HOURS   BASIN AREA =   .0018 SQ. MI.


*S  ON-SITE BASIN D (PLAY GROUND AREA)
COMPUTE NM HYD       ID=1  HYD=ONSITE-D  DA=.0012554 SQ MI
                                                              %A=0  %B=100  %C=0  %D=0

                                                              TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   3.0667    CFS   UNIT VOLUME =    .9970       B =   325.62      P60 = 1.9800
    AREA =      .001255 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-D


    RUNOFF VOLUME =      .74776 INCHES     =        .0501 ACRE-FEET
    PEAK DISCHARGE RATE =       1.78 CFS  AT   1.500 HOURS   BASIN AREA =   .0013 SQ. MI.


    *S  ADD RUNOFF ROUTED FROM D1-D2  TO BASIN D (TOTAL TO POND IN BASIN D)
    ADD HYD              ID=1  HYD=D1-D2-D  ID I=1  ID II=3
    PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA D1-D2-D


    RUNOFF VOLUME =     1.70572 INCHES     =        .2800 ACRE-FEET
    PEAK DISCHARGE RATE =       7.06 CFS  AT   1.499 HOURS   BASIN AREA =   .0031 SQ. MI.


    *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN D.
    ROUTE RESERVOIR      ID=2  HYD=BASIN_D_ROUTE  INFLOW ID=1  CODE=10
                                                          OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                          0               0                 4936.50
                                                          0.5             .01               4936.70
                                                          2.4             .24               4938.00


      * * * * * * * * * * * * * * * * * *
```

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	4936.50	.000	.00
.33	.00	4936.50	.000	.00
.67	.00	4936.50	.000	.00
1.00	.00	4936.50	.000	.00
1.33	1.92	4936.65	.008	.38
1.67	3.73	4937.33	.121	1.42
2.00	1.50	4937.44	.142	1.59
2.33	.34	4937.33	.122	1.42
2.66	.13	4937.16	.092	1.18
3.00	.07	4937.01	.065	.96
3.33	.04	4936.89	.043	.77
3.66	.03	4936.78	.025	.62
4.00	.03	4936.70	.010	.50
4.33	.03	4936.56	.003	.15
4.66	.03	4936.52	.001	.06
5.00	.03	4936.51	.001	.04
5.33	.03	4936.51	.001	.03
5.66	.03	4936.51	.001	.03
5.99	.04	4936.51	.001	.04
6.33	.04	4936.51	.001	.04
6.66	.04	4936.51	.001	.04

6.99	.03	4936.51	.001	.04
7.33	.03	4936.51	.001	.03
7.66	.03	4936.51	.001	.03
7.99	.03	4936.51	.001	.03
8.33	.03	4936.51	.001	.03
8.66	.03	4936.51	.001	.03
8.99	.03	4936.51	.001	.03
9.32	.03	4936.51	.001	.03
9.66	.03	4936.51	.001	.03
9.99	.03	4936.51	.001	.03
10.32	.03	4936.51	.001	.03
10.66	.03	4936.51	.001	.03
10.99	.03	4936.51	.001	.03
11.32	.03	4936.51	.001	.03
11.66	.03	4936.51	.001	.03
11.99	.03	4936.51	.001	.03
12.32	.03	4936.51	.001	.03
12.65	.02	4936.51	.001	.03
12.99	.02	4936.51	.000	.02
13.32	.02	4936.51	.000	.02
13.65	.02	4936.51	.000	.02
13.99	.02	4936.51	.000	.02
14.32	.02	4936.51	.000	.02
14.65	.02	4936.51	.000	.02
14.99	.02	4936.51	.000	.02
15.32	.02	4936.51	.000	.02
15.65	.02	4936.51	.000	.02
15.98	.02	4936.51	.000	.02
16.32	.02	4936.51	.000	.02
16.65	.02	4936.51	.000	.02
16.98	.02	4936.51	.000	.02
17.32	.02	4936.51	.000	.02
17.65	.02	4936.51	.000	.02
17.98	.02	4936.51	.000	.02
18.32	.02	4936.51	.000	.02

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
18.65	.02	4936.51	.000	.02
18.98	.02	4936.51	.000	.02
19.31	.02	4936.51	.000	.02
19.65	.02	4936.51	.000	.02

PEAK DISCHARGE = 1.589 CFS - PEAK OCCURS AT HOUR 1.96
MAXIMUM WATER SURFACE ELEVATION = 4937.445
MAXIMUM STORAGE = .1418 AC-FT INCREMENTAL TIME= .033300HRS

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA BASIN_D_ROUTE

RUNOFF VOLUME = 1.70346 INCHES = .2796 ACRE-FEET
PEAK DISCHARGE RATE = 1.59 CFS AT 1.965 HOURS BASIN AREA = .0031 SQ. MI.

*S ROUTE THIS RUNOFF(POND D) VIA A PIPE TO POND IN BASIN A.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05

DIA=0.6666 FT N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.03	.01	.01	.30
.07	.02	.06	.41
.10	.03	.14	.48
.14	.05	.26	.54
.17	.07	.40	.59
.21	.09	.57	.62
.24	.12	.77	.64
.28	.14	.98	.66
.31	.16	1.21	.67
.35	.18	1.45	.67
.38	.21	1.69	.67
.42	.23	1.93	.67
.45	.25	2.16	.67
.49	.27	2.38	.67
.52	.29	2.58	.67

```
                                    .56          .31          2.74          .67
                                    .59          .33          2.86          .67
                                    .63          .34          2.91          .67
                                    .67          .35          2.91          .67
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=190 SLP=.0063

                              TRAVEL TIME TABLE
                                        REACH=  1.0

                              WATER        AVERAGE      FLOW         TRAVEL
                              DEPTH        AREA         RATE         TIME
                              FEET         SQ.FT.       CFS          HRS
                                 .035         .007          .01        .0258
                                 .069         .019          .06        .0166
                                 .104         .035          .14        .0129
                                 .139         .053          .26        .0108
                                 .174         .072          .40        .0095
                                 .208         .093          .57        .0086
                                 .243         .115          .77        .0079
                                 .278         .138          .98        .0074
                                 .313         .161         1.21        .0070
                                 .347         .184         1.45        .0067
                                 .382         .207         1.69        .0065
                                 .417         .230         1.93        .0063
                                 .452         .252         2.16        .0061
                                 .486         .273         2.38        .0060
                                 .521         .293         2.58        .0060
                                 .556         .311         2.74        .0060
                                 .591         .327         2.86        .0060
                                 .625         .340         2.91        .0062
                                 .667         .349         2.91        .0063
ROUTE              ID=3 HYD=TO_A_INFLOW ID=2 DT=0.0333
PRINT HYD          ID=3 CODE=1

                                    HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =     1.70323 INCHES     =        .2796 ACRE-FEET
    PEAK DISCHARGE RATE =       1.59 CFS  AT   1.965 HOURS   BASIN AREA =   .0031 SQ. MI.


*S  ON-SITE BASIN A (TEMPORARY PONDING AREA)
COMPUTE NM HYD     ID=1  HYD=ONSITE-A  DA=.0016249 SQ MI
                                                    %A=0  %B=100  %C=0  %D=0

                                                    TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   3.9693    CFS   UNIT VOLUME =    .9979       B =   325.62      P60 = 1.9800
    AREA =      .001625 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD          ID=1  CODE=1

                                    HYDROGRAPH FROM AREA ONSITE-A


    RUNOFF VOLUME =      .74776 INCHES     =        .0648 ACRE-FEET
    PEAK DISCHARGE RATE =       2.30 CFS  AT   1.500 HOURS   BASIN AREA =   .0016 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN D TO BASIN A
ADD HYD            ID=15  HYD=D1-D2-012-D-A  ID I=1  ID II=3
PRINT HYD          ID=15  CODE=1

                                    HYDROGRAPH FROM AREA D1-D2-012-D-A


    RUNOFF VOLUME =     1.37305 INCHES     =        .3444 ACRE-FEET
    PEAK DISCHARGE RATE =       3.27 CFS  AT   1.532 HOURS   BASIN AREA =   .0047 SQ. MI.


*S  ON-SITE BASIN E-1 (NORTH 1/2 OF PARKING LOT)
COMPUTE NM HYD     ID=1  HYD=ONSITE-E1  DA=.0008967 SQ MI
                                                    %A=0  %B=0  %C=0  %D=100

                                                    TP=0.1333  RAINFALL=-1
```

```
    K =   .072649HR     TP =   .133300HR     K/TP RATIO =   .545000      SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   3.5402     CFS   UNIT VOLUME =    .9959        B =   526.28       P60 = 1.9800
    AREA =       .000897 SQ MI     IA =    .10000 INCHES     INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-E1


    RUNOFF VOLUME =     2.42773 INCHES     =         .1161 ACRE-FEET
    PEAK DISCHARGE RATE =       2.62 CFS  AT   1.500 HOURS   BASIN AREA =   .0009 SQ. MI.


*S  ROUTE THE ON-SITE RUNOFF TO BASIN E THROUGH A CHANNEL
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEGS=1
                                                          MIN ELEV=0  MAX ELEV=0.5
                                                          CH SLP=.04  FP SLP=.04   N=.013  DIST=2
                                                          DIST    ELEV
                                                          0       0.5
                                                          0       0
                                                          2       0
                                                          2       0.5

                                    RATING CURVE VALLEY SECTION  1.0
                                       WATER        FLOW         FLOW         TOP
                                     SURFACE        AREA         RATE        WIDTH
                                       ELEV       SQ FT          CFS         FT
                                         .00         .00          .00         .00
                                         .03         .05          .11        2.00
                                         .05         .11          .33        2.00
                                         .08         .16          .65        2.00
                                         .11         .21         1.04        2.00
                                         .13         .26         1.49        2.00
                                         .16         .32         2.00        2.00
                                         .18         .37         2.57        2.00
                                         .21         .42         3.19        2.00
                                         .24         .47         3.85        2.00
                                         .26         .53         4.55        2.00
                                         .29         .58         5.29        2.00
                                         .32         .63         6.07        2.00
                                         .34         .68         6.89        2.00
                                         .37         .74         7.73        2.00
                                         .39         .79         8.61        2.00
                                         .42         .84         9.52        2.00
                                         .45         .89        10.46        2.00
                                         .47         .95        11.42        2.00
                                         .50        1.00        12.41        2.00
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=30 SLP=.04

TRAVEL TIME TABLE
                        REACH=  1.0

WATER          AVERAGE        FLOW          TRAVEL
DEPTH          AREA           RATE          TIME
FEET           SQ.FT.         CFS           HRS
   .026           .053           .11         .0042
   .053           .105           .33         .0026
   .079           .158           .65         .0020
   .105           .211          1.04         .0017
   .132           .263          1.49         .0015
   .158           .316          2.00         .0013
   .184           .368          2.57         .0012
   .211           .421          3.19         .0011
   .237           .474          3.85         .0010
   .263           .526          4.55         .0010
   .289           .579          5.29         .0009
   .316           .632          6.07         .0009
   .342           .684          6.89         .0008
   .368           .737          7.73         .0008
   .395           .789          8.61         .0008
   .421           .842          9.52         .0007
   .447           .895         10.46         .0007
   .474           .947         11.42         .0007
```

```
                                .500        1.000        12.41        .0007
ROUTE                ID=3 HYD=TO_E_INFLOW ID=1 DT=0.05
PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_E_INFLOW


    RUNOFF VOLUME =     2.42839 INCHES     =         .1161 ACRE-FEET
    PEAK DISCHARGE RATE =       2.62 CFS  AT    1.500 HOURS   BASIN AREA =    .0009 SQ. MI.


*S  ON-SITE BASIN E (NORTH PLAY GROUND)
COMPUTE NM HYD       ID=1  HYD=ONSITE-E  DA=.0012196 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =    .131726HR     TP =    .133300HR     K/TP RATIO =    .988190      SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =    2.9792     CFS   UNIT VOLUME =     .9964        B =    325.62       P60 = 1.9800
    AREA =       .001220 SQ MI     IA =     .50000 INCHES     INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .050000
PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-E


    RUNOFF VOLUME =       .74776 INCHES     =         .0486 ACRE-FEET
    PEAK DISCHARGE RATE =       1.73 CFS  AT    1.500 HOURS   BASIN AREA =    .0012 SQ. MI.


*S  ADD RUNOFF ROUTED FROM E1-TO BASIN E (TOTAL TO POND IN BASIN E)
ADD HYD              ID=1  HYD=EI  ID I=1  ID II=3
PRINT HYD            ID=1  CODE=1

                                        HYDROGRAPH FROM AREA EI


    RUNOFF VOLUME =     1.45944 INCHES     =         .1647 ACRE-FEET
    PEAK DISCHARGE RATE =       4.35 CFS  AT    1.500 HOURS   BASIN AREA =    .0021 SQ. MI.


*S  ROUTE THE RUNOFF FROM OFFSITE BASIN 20 VIA A PIPE TO BASIN E.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.0056
                                                          DIA=1.0 FT N=.013

                                RATING CURVE PIPE SECTION  1.0
                                   WATER        FLOW         FLOW         MAX
                                  SURFACE       AREA         RATE        WIDTH
                                   ELEV         SQ FT        CFS         FT
                                     .00          .00          .00          .00
                                     .05          .02          .01          .44
                                     .10          .04          .06          .61
                                     .16          .08          .14          .73
                                     .21          .12          .25          .81
                                     .26          .16          .40          .88
                                     .31          .21          .57          .93
                                     .36          .26          .76          .96
                                     .42          .31          .97          .99
                                     .47          .36         1.19         1.00
                                     .52          .41         1.43         1.00
                                     .57          .47         1.67         1.00
                                     .63          .52         1.91         1.00
                                     .68          .57         2.14         1.00
                                     .73          .61         2.35         1.00
                                     .78          .66         2.55         1.00
                                     .83          .70         2.71         1.00
                                     .89          .74         2.82         1.00
                                     .94          .77         2.87         1.00
                                    1.00          .79         2.87         1.00
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=300 SLP=.0056

                                TRAVEL TIME TABLE
                                                REACH=  1.0

                                WATER        AVERAGE      FLOW         TRAVEL
                                DEPTH        AREA         RATE         TIME
```

FEET	SQ.FT.	CFS	HRS
.052	.016	.01	.0930
.104	.043	.06	.0596
.156	.078	.14	.0463
.208	.119	.25	.0389
.261	.163	.40	.0342
.313	.210	.57	.0309
.365	.259	.76	.0285
.417	.310	.97	.0267
.469	.362	1.19	.0252
.521	.414	1.43	.0241
.573	.466	1.67	.0233
.625	.517	1.91	.0226
.677	.566	2.14	.0221
.730	.614	2.35	.0217
.782	.659	2.55	.0216
.834	.700	2.71	.0215
.886	.736	2.82	.0217
.938	.765	2.87	.0222
1.000	.785	2.87	.0228

```
    ROUTE                ID=3 HYD=OFFSITE20 INFLOW ID=13 DT=0.05
TRAVEL TIME TABLE EXCEEDED
    PRINT HYD            ID=3 CODE=1

                                   HYDROGRAPH FROM AREA OFFSITE20

    RUNOFF VOLUME =      .87664 INCHES     =        .2119 ACRE-FEET
    PEAK DISCHARGE RATE =       6.64 CFS  AT   1.550 HOURS   BASIN AREA =   .0045 SQ. MI.


*S  ADD RUNOFF ROUTED FROM OFFSITE BASIN 20 TO BASIN E(020+E1=E)
ADD HYD              ID=17  HYD=020-E1-E  ID I=3  ID II=1
PRINT HYD            ID=17  CODE=1

                                   HYDROGRAPH FROM AREA 020-E1-E

    RUNOFF VOLUME =     1.06201 INCHES     =        .3766 ACRE-FEET
    PEAK DISCHARGE RATE =      10.57 CFS  AT   1.550 HOURS   BASIN AREA =   .0066 SQ. MI.


*S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN E.
ROUTE RESERVOIR      ID=2  HYD=BASIN_E_ROUTE  INFLOW ID=17  CODE=10
                                                    OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                    0               0                  4936.50
                                                    0.1             .01                4936.70
                                                    2.4             .23                4938.00

    * * * * * * * * * * * * * * * * * *
```

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	4936.50	.000	.00
.50	.00	4936.50	.000	.00
1.00	.00	4936.50	.000	.00
1.50	10.28	4937.09	.077	.80
2.00	1.66	4937.95	.222	2.31
2.50	.30	4937.64	.168	1.75
3.00	.09	4937.32	.115	1.20
3.50	.03	4937.09	.077	.80
4.00	.02	4936.94	.051	.52
4.50	.02	4936.84	.034	.35
5.00	.02	4936.77	.023	.23
5.50	.02	4936.73	.016	.16
6.00	.02	4936.71	.011	.11
6.50	.02	4936.66	.008	.08
7.00	.02	4936.62	.006	.06
7.50	.02	4936.60	.005	.05
8.00	.02	4936.58	.004	.04
8.50	.02	4936.57	.003	.03
9.00	.02	4936.56	.003	.03
9.50	.02	4936.55	.003	.03
10.00	.02	4936.55	.002	.02
10.50	.02	4936.54	.002	.02

11.00	.02	4936.54	.002	.02
11.50	.02	4936.54	.002	.02
12.00	.02	4936.54	.002	.02
12.50	.02	4936.54	.002	.02
13.00	.02	4936.54	.002	.02
13.50	.02	4936.53	.002	.02
14.00	.02	4936.53	.002	.02
14.50	.02	4936.53	.002	.02
15.00	.01	4936.53	.002	.02
15.50	.01	4936.53	.002	.02
16.00	.01	4936.53	.002	.02
16.50	.01	4936.53	.001	.01
17.00	.01	4936.53	.001	.01
17.50	.01	4936.53	.001	.01
18.00	.01	4936.53	.001	.01
18.50	.01	4936.53	.001	.01
19.00	.01	4936.52	.001	.01
19.50	.01	4936.52	.001	.01
20.00	.01	4936.52	.001	.01
20.50	.01	4936.52	.001	.01
21.00	.01	4936.52	.001	.01
21.50	.01	4936.52	.001	.01
22.00	.01	4936.52	.001	.01
22.50	.01	4936.52	.001	.01
23.00	.01	4936.52	.001	.01
23.50	.01	4936.52	.001	.01
24.00	.01	4936.52	.001	.01
24.50	.00	4936.51	.001	.01
25.00	.00	4936.51	.000	.00

PEAK DISCHARGE = 2.350 CFS - PEAK OCCURS AT HOUR 1.90
MAXIMUM WATER SURFACE ELEVATION = 4937.972
MAXIMUM STORAGE = .2252 AC-FT INCREMENTAL TIME= .050000HRS

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA BASIN_E_ROUTE

RUNOFF VOLUME = 1.06199 INCHES = .3766 ACRE-FEET
PEAK DISCHARGE RATE = 2.35 CFS AT 1.900 HOURS BASIN AREA = .0066 SQ. MI.

*S ROUTE THIS RUNOFF TO BASIN A VIA A PIPE FROM POND IN BASIN E.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05
DIA=0.666 FT N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.03	.01	.01	.30
.07	.02	.06	.41
.10	.03	.14	.48
.14	.05	.26	.54
.17	.07	.40	.58
.21	.09	.57	.62
.24	.11	.77	.64
.28	.14	.98	.66
.31	.16	1.21	.66
.35	.18	1.44	.67
.38	.21	1.69	.67
.42	.23	1.93	.67
.45	.25	2.16	.67
.49	.27	2.38	.67
.52	.29	2.57	.67
.56	.31	2.74	.67
.59	.33	2.85	.67
.62	.34	2.90	.67
.67	.35	2.90	.67

COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=190 SLP=.005

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.035	.007	.01	.0259
.069	.019	.06	.0166

.104	.035	.14	.0129
.139	.053	.26	.0108
.174	.072	.40	.0095
.208	.093	.57	.0086
.243	.115	.77	.0079
.278	.137	.98	.0074
.312	.160	1.21	.0070
.347	.184	1.44	.0067
.382	.207	1.69	.0065
.416	.229	1.93	.0063
.451	.251	2.16	.0061
.486	.272	2.38	.0060
.521	.292	2.57	.0060
.555	.310	2.74	.0060
.590	.326	2.85	.0060
.625	.339	2.90	.0062
.666	.348	2.90	.0063

ROUTE ID=3 HYD=TO_A_INFLOW ID=2 DT=0.05
PRINT HYD ID=3 CODE=1

HYDROGRAPH FROM AREA TO_A_INFLOW

RUNOFF VOLUME = 1.06184 INCHES = .3766 ACRE-FEET
PEAK DISCHARGE RATE = 2.35 CFS AT 1.900 HOURS BASIN AREA = .0066 SQ. MI.

*S ADD RUNOFF ROUTED FROM POND IN BASIN E TO BASIN A(D+O12+A)
ADD HYD ID=16 HYD=D1-D2-O1-D-A-E ID I=3 ID II=15
PRINT HYD ID=16 CODE=1

HYDROGRAPH FROM AREA D1-D2-O1-D-A-E

RUNOFF VOLUME = 1.18332 INCHES = .7164 ACRE-FEET
PEAK DISCHARGE RATE = 4.61 CFS AT 1.632 HOURS BASIN AREA = .0114 SQ. MI.

*S ON-SITE BASIN B (SOUTH END OF SOCCER FIELD)
COMPUTE NM HYD ID=1 HYD=ONSITE-B DA=.00043044 SQ MI
%A=0 %B=100 %C=0 %D=0

TP=0.1333 RAINFALL=-1

K = .131726HR TP = .133300HR K/TP RATIO = .988190 SHAPE CONSTANT, N = 3.573071
UNIT PEAK = 1.0515 CFS UNIT VOLUME = .9882 B = 325.62 P60 = 1.9800
AREA = .000430 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

PRINT HYD ID=1 CODE=1

HYDROGRAPH FROM AREA ONSITE-B

RUNOFF VOLUME = .74776 INCHES = .0172 ACRE-FEET
PEAK DISCHARGE RATE = .61 CFS AT 1.500 HOURS BASIN AREA = .0004 SQ. MI.

*S ADD RUNOFF ROUTED FROM OFFSITE BASIN O-11.5 TO BASIN B
ADD HYD ID=19 HYD=11.5-B ID I=11 ID II=1
PRINT HYD ID=19 CODE=1

HYDROGRAPH FROM AREA 11.5-B

RUNOFF VOLUME = .84252 INCHES = .0781 ACRE-FEET
PEAK DISCHARGE RATE = 2.65 CFS AT 1.500 HOURS BASIN AREA = .0017 SQ. MI.

*S ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN B.
ROUTE RESERVOIR ID=2 HYD=BASIN_B_ROUTE INFLOW ID=19 CODE=10

OUTFLOW (CFS)	STORAGE (AC_FT)	ELEVATION
0	0	4936.50
0.2	.001	4936.70

```
                                .555        .310        2.74        .0060
                                .590        .326        2.85        .0060
                                .625        .339        2.90        .0062
                                .666        .348        2.90        .0063
ROUTE                ID=3 HYD=TO_A_INFLOW ID=2 DT=0.05
PRINT HYD            ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =      .84287 INCHES     =        .0782 ACRE-FEET
    PEAK DISCHARGE RATE =       1.06 CFS  AT   1.750 HOURS   BASIN AREA =   .0017 SQ. MI.


*S  ADD RUNOFF ROUTED FROM POND IN BASIN B TO BASIN A(012+E+D)
ADD HYD              ID=17  HYD=A-B-D-E-012  ID I=3  ID II=16
PRINT HYD            ID=17  CODE=1

                                        HYDROGRAPH FROM AREA A-B-D-E-012


    RUNOFF VOLUME =     1.13804 INCHES     =        .7946 ACRE-FEET
    PEAK DISCHARGE RATE =       5.62 CFS  AT   1.665 HOURS   BASIN AREA =   .0131 SQ. MI.


*S RUNOFF FROM BASIN C (NORTH END OF SOCCER FIELD)
COMPUTE NM HYD       ID=2  HYD=ONSITE-C  DA=.00031566 SQ MI
                                                          %A=0  %B=100  %C=0  %D=0

                                                          TP=0.1333  RAINFALL=-1


    K =   .131726HR    TP =   .133300HR    K/TP RATIO =   .988190     SHAPE CONSTANT, N =  3.573071
    UNIT PEAK =   .77109    CFS   UNIT VOLUME =    .9844       B =   325.62      P60 = 1.9800
    AREA =      .000316 SQ MI    IA =   .50000 INCHES    INF =   1.25000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .050000

PRINT HYD            ID=2  CODE=1

                                        HYDROGRAPH FROM AREA ONSITE-C


    RUNOFF VOLUME =      .74776 INCHES     =        .0126 ACRE-FEET
    PEAK DISCHARGE RATE =       .45 CFS  AT   1.500 HOURS   BASIN AREA =   .0003 SQ. MI.


*S  ADD RUNOFF ROUTED FROM OFFSITE BASIN O-11.5 TO BASIN C
ADD HYD              ID=19  HYD=O11.5-C   ID I=2  ID II=11
PRINT HYD            ID=19  CODE=1

                                        HYDROGRAPH FROM AREA O11.5-C


    RUNOFF VOLUME =      .84922 INCHES     =        ..0736 ACRE-FEET
    PEAK DISCHARGE RATE =       2.49 CFS  AT   1.500 HOURS   BASIN AREA =   .0016 SQ. MI.


    *S  ROUTE THIS RUNOFF THROUGH THE DETENTION POND IN BASIN C.
    ROUTE RESERVOIR     ID=2  HYD=BASIN_C_ROUTE  INFLOW ID=19  CODE=10
                                                      OUTFLOW (CFS)   STORAGE (AC_FT)
ELEVATION
                                                      0               0                4936.500
                                                      1.0             0.01             4936.70
                                                      10.0            0.13             4938.00

    * * * * * * * * * * * * * * * * * *

      TIME       INFLOW     ELEV       VOLUME     OUTFLOW
      (HRS)      (CFS)      (FEET)     (AC-FT)    (CFS)

       .00         .00    4936.50        .000        .00
       .50         .00    4936.50        .000        .00
      1.00         .00    4936.50        .000        .00
      1.50        2.49    4936.73        .013       1.20
      2.00         .27    4936.61        .006        .55
```

1.5 .052 4938.00

* * * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	4936.50	.000	.00
.50	.00	4936.50	.000	.00
1.00	.00	4936.50	.000	.00
1.50	2.65	4937.09	.016	.59
2.00	.28	4937.32	.025	.82
2.50	.06	4936.87	.008	.37
3.00	.01	4936.53	.000	.03
3.50	.00	4936.50	.000	.00

PEAK DISCHARGE = 1.060 CFS - PEAK OCCURS AT HOUR 1.70
MAXIMUM WATER SURFACE ELEVATION = 4937.561
MAXIMUM STORAGE = .0348 AC-FT INCREMENTAL TIME= .050000HRS

PRINT HYD ID=2 CODE=1

HYDROGRAPH FROM AREA BASIN_B_ROUTE

RUNOFF VOLUME = .84252 INCHES = .0781 ACRE-FEET
PEAK DISCHARGE RATE = 1.06 CFS AT 1.700 HOURS BASIN AREA = .0017 SQ. MI.

*S ROUTE THIS RUNOFF TO BASIN A VIA A PIPE FROM POND IN BASIN B.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05

DIA=0.666 FT N=.013

RATING CURVE PIPE SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.03	.01	.01	.30
.07	.02	.06	.41
.10	.03	.14	.48
.14	.05	.26	.54
.17	.07	.40	.58
.21	.09	.57	.62
.24	.11	.77	.64
.28	.14	.98	.66
.31	.16	1.21	.66
.35	.18	1.44	.67
.38	.21	1.69	.67
.42	.23	1.93	.67
.45	.25	2.16	.67
.49	.27	2.38	.67
.52	.29	2.57	.67
.56	.31	2.74	.67
.59	.33	2.85	.67
.62	.34	2.90	.67
.67	.35	2.90	.67

COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=190 SLP=.005

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.035	.007	.01	.0259
.069	.019	.06	.0166
.104	.035	.14	.0129
.139	.053	.26	.0108
.174	.072	.40	.0095
.208	.093	.57	.0086
.243	.115	.77	.0079
.278	.137	.98	.0074
.312	.160	1.21	.0070
.347	.184	1.44	.0067
.382	.207	1.69	.0065
.416	.229	1.93	.0063
.451	.251	2.16	.0061
.486	.272	2.38	.0060
.521	.292	2.57	.0060

```
     2.50        .06   4936.52        .001        .09
     3.00        .01   4936.50        .000        .02
     3.50        .00   4936.50        .000        .00
 PEAK DISCHARGE =         1.684 CFS - PEAK OCCURS AT HOUR    1.65
 MAXIMUM WATER SURFACE ELEVATION =     4936.799
 MAXIMUM STORAGE =          .0191 AC-FT      INCREMENTAL TIME=     .050000HRS

PRINT HYD           ID=2  CODE=1

                                        HYDROGRAPH FROM AREA BASIN_C_ROUTE


    RUNOFF VOLUME =      .84922 INCHES     =        .0736 ACRE-FEET
    PEAK DISCHARGE RATE =       1.68 CFS  AT   1.650 HOURS   BASIN AREA =    .0016 SQ. MI.


*S  ROUTE THIS RUNOFF TO BASIN A VIA A PIPE FROM POND IN BASIN C.
COMPUTE RATING CURVE CID=1 VS NO=1 CODE=-1 SLP=.05
                                                          DIA=1.00 IN N=.013

                                    RATING CURVE PIPE SECTION  1.0
                                       WATER        FLOW         FLOW         MAX
                                     SURFACE        AREA         RATE        WIDTH
                                      ELEV          SQ FT        CFS         FT
                                        .00          .00          .00          .00
                                        .05          .02          .04          .44
                                        .10          .04          .18          .61
                                        .16          .08          .42          .73
                                        .21          .12          .76          .81
                                        .26          .16         1.18          .88
                                        .31          .21         1.69          .93
                                        .36          .26         2.26          .96
                                        .42          .31         2.89          .99
                                        .47          .36         3.57         1.00
                                        .52          .41         4.27         1.00
                                        .57          .47         4.99         1.00
                                        .63          .52         5.70         1.00
                                        .68          .57         6.38         1.00
                                        .73          .61         7.03         1.00
                                        .78          .66         7.61         1.00
                                        .83          .70         8.09         1.00
                                        .89          .74         8.43         1.00
                                        .94          .77         8.57         1.00
                                       1.00          .79         8.57         1.00
COMPUTE TRAVEL TIME ID=3 REACH=1 VS NO=1 L=160 SLP=.005

                                    TRAVEL TIME TABLE
                                                REACH=  1.0

                                    WATER        AVERAGE      FLOW         TRAVEL
                                    DEPTH        AREA         RATE         TIME
                                    FEET         SQ.FT.       CFS          HRS
                                       .052          .016          .04          .0166
                                       .104          .043          .18          .0106
                                       .156          .078          .42          .0083
                                       .208          .119          .76          .0070
                                       .261          .163         1.18          .0061
                                       .313          .210         1.69          .0055
                                       .365          .259         2.26          .0051
                                       .417          .310         2.89          .0048
                                       .469          .362         3.57          .0045
                                       .521          .414         4.27          .0043
                                       .573          .466         4.99          .0042
                                       .625          .517         5.70          .0040
                                       .677          .566         6.38          .0039
                                       .730          .614         7.03          .0039
                                       .782          .659         7.61          .0038
                                       .834          .700         8.09          .0038
                                       .886          .736         8.43          .0039
                                       .938          .765         8.57          .0040
                                      1.000          .785         8.57          .0041
ROUTE               ID=3 HYD=TO_A_INFLOW ID=2 DT=0.05
PRINT HYD           ID=3 CODE=1

                                        HYDROGRAPH FROM AREA TO_A_INFLOW


    RUNOFF VOLUME =      .84930 INCHES     =        .0736 ACRE-FEET
    PEAK DISCHARGE RATE =       1.69 CFS  AT   1.650 HOURS   BASIN AREA =    .0016 SQ. MI.
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*S  ADD RUNOFF ROUTED FROM POND IN BASIN C TO BASIN A(A+B+D+E+011+012)
ADD HYD             ID=18  HYD=A-B-C-D-E-011-012  ID I=3  ID II=17
PRINT HYD           ID=18  CODE=1

                                        HYDROGRAPH FROM AREA A-B-C-D-E-011-012


    RUNOFF VOLUME =     1.10611 INCHES     =        .8681 ACRE-FEET
    PEAK DISCHARGE RATE =       7.29 CFS  AT   1.665 HOURS   BASIN AREA =   .0147 SQ. MI.


FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 13:37:13
```

APPENDIX B

ADDITIONAL REPORTS

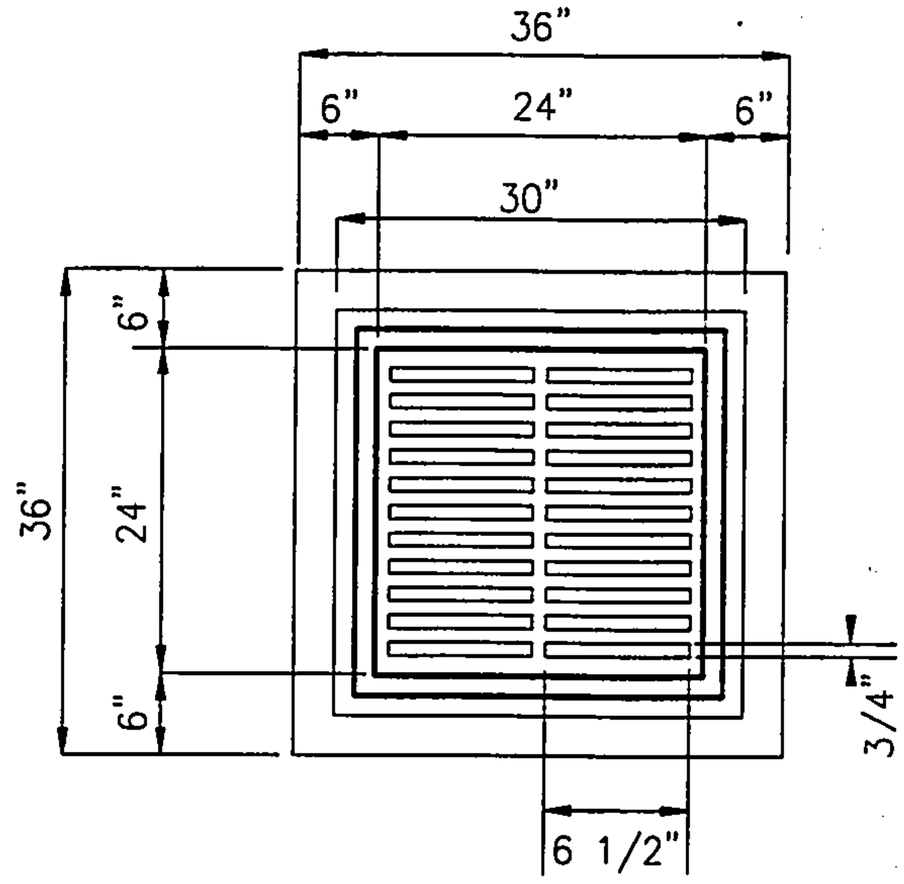
&

HYDRAULIC COMPUTATIONS

PIPE AND INLET GRATE INFORMATION

GRATE CAPACITY

NEENAH FOUNDRY COMPANY
CAT NO. R-1979-A66



GRATE AREA
ANET = 28 SLOTS AT 3/4" X 6 1/2" = 0.9479 ft2
ANET =0.9479 ft2

ORIFICE EQUATION $Q = 0.6\ A\ (2GH)^{1/2}$

$Q = 0.6\ (0.9479)\ (2*32.2*1.5)^{1/2}$

$Q = 5.59$ cfs

USE A 30% CLOGGING FACTOR
GRATE CAPACITY = 3.91 cfs

ALL DROP INLETS HAVE ADEQUATE CAPACITY FOR THE PROPOSED PONDS INTAKE FLOWS

PIPE DISCHARGE AND CAPACITIES

ANTICIPATED FLOW TO POND LOCATED IN BASIN A FROM:

BASIN B	8" PVC	$Q_{capacity}$ =2.90 cfs Qactual =1.07 cfs	yd = 0.312' PIPE = 47% FULL
BASIN C	8" PVC	Qcapacity = 2.90 cfs Qactual = 0.86 cfs	yd = 0.278' PIPE = 42% FULL
BASIN D	8" PVC	Qcapacity = 2.90 cfs Qactual = 2.10 cfs	yd = 0.452' PIPE = 67% FULL
	SIDEWALK 0.5' X 2' CULVERT	Qcapacity = 12.41 cfs Qactual = 8.43 cfs	yd = 0.421' Channel = 84% FULL
BASIN E	8" PVC	Qcapacity = 2.90 cfs Qactual = 2.57 cfs	yd = 0.521' PIPE = 78% FULL
	SIDEWALK 0.5' X 2' CULVERT	Qcapacity = 12.41 cfs Qactual = 8.46 cfs	yd = 0.395' Channel = 79% FULL

March 12, 1996

MEMORANDUM FOR RECORD

TO: Craig Hagelgantz

FROM: Paul J. Gonzales PG

RE: Westside Community Center Detention Basin

Westside Community Center

I have revised the runoff model so that basin P17.1 includes only the area immediately surrounding Isleta Blvd. The ***24 hour, 100 year return event*** develops approximately ***1.03 acre-feet*** of runoff in basins P17.1 and P17.2. The ***24 hour, 5 year return event*** results in approximately ***0.37 acre-feet*** of runoff. The ***24 hour, 2 year return event*** results in approximately ***0.22 acre-feet*** of runoff. This runoff is to be detained in a pond south of Isleta Blvd., near the Westside Community Center. These amounts are significantly less than previoulsy modeled due to a reduction in the contributing surface area. After much considerartion, it was determined that it would be unrealistic to assume that the runoff from the Garden View area, north of Isleta Blvd, would reach the storm drain system. The area is geographically depressed. Therefore, the area was re-assessed and runoff re-calculated. Outflow from this pond can be transported via 18" and 24" diameter RCP directly to the main trunk line at the intersection of Arenal and Lopez.

It should be noted that the flows out of the Westside Community Center Detention Pond are only estimated values at this time. The outflow rating curve for the pond is the same as previoisly modeled under the NEWXXXXX.IN AHYMO models. The hydraulic calculations need to be performed and the outlet structure re-assessed to accomodate incoming flows and required detention times.

Table 1

ISLETA BOULEVARD IMPROVEMENTS

AHYMO BASIN PARAMETER WORKSHEET
BASIN PEAK FLOWS AND VOLUMES

BASIN	AREA (ACRE)	AREA (SQ. MI.)	LENGT (FT)	ELEV. DIFF. (FT)	SLOPE (%)	K	VEL (FPS)	T(c) (HR)	T(p) (HR)	LAND TREATMENT (%) A	B	C	D	100 YR EVENT PEAK FLOW (24 HR) (CFS)	100 YR EVENT RUNOFF VOLUME (AC-FT)	5 YR EVENT PEAK FLOW (24 HR) (CFS)	5 YR EVENT RUNOFF VOLUME (AC-FT)	2 YR EVENT PEAK FLOW (24 HR) (CFS)	2 YR EVENT RUNOFF VOLUME (AC-FT)
P18.1	38.191	0.059673	400 920	3.25 2.75	0.81 0.30	0.7 2	0.63 1.09	0.18 0.23 0.41	0.12 0.16 0.27	0	52	5	43	79.97	4.622	33.07	1.965	20.69	1.282
Brother Detention Pond														19.19		6.9		3.79	
P18.2	8.577	0.013402	400 970	0.5 1.5	0.13 0.15	0.7 2	0.25 0.79	0.45 0.34 0.79	0.30 0.23 0.53	0	52	5	43	11.23	1.038	4.73	0.441	3.04	0.288
P18.3	6.988	0.010919	400 520	1.5 2	0.38 0.38	0.7 2	0.43 1.24	0.26 0.12 0.38	0.17 0.08 0.25	0	52	5	43	15.24	0.846	6.31	0.359	3.94	0.235
Waldo Detention Pond														4.75		2.21		1.19	
P18.4	15.096	0.023588	400 550	1.5 1.5	0.38 0.27	0.7 2	0.43 1.04	0.26 0.15 0.41	0.17 0.10 0.27	0	52	5	43	31.63	1.827	13.08	0.777	8.18	0.507
Bletcher Detention Pond														5.75		2.51		1.74	
P18.5	16.308	0.025481	400 1270	1 1.9	0.25 0.15	0.7 2	0.35 0.77	0.32 0.46 0.77	0.21 0.30 0.52	0	61	5	34	19.47	1.767	7.57	0.699	4.67	0.438
P18.6	42.130	0.065828	400 1150	2 4	0.50 0.35	0.7 2	0.49 1.18	0.22 0.27 0.50	0.15 0.18 0.33	0	69	5	26	64.16	4.092	22.34	1.486	12.62	0.88
Deadmans Detention Pond														7.36		2.77		1.86	
P18.7	16.253	0.025395	400 1530	2 2	0.50 0.13	0.7 2	0.49 0.72	0.22 0.59 0.81	0.15 0.39 0.54	0	59	5	36	30.19	1.807	11.78	0.728	7.14	0.461
P18.8	49.095	0.076711	400 1600 220	1.8 2.7 0.5	0.45 0.17 0.23	0.7 2 3	0.47 0.82 1.43	0.24 0.54 0.04 0.82	0.16 0.36 0.03 0.55	0	69	5	26	50.72	4.769	17.88	1.732	10.39	1.026
P17.1	20.546	0.032103	400 525	2 1	0.50 0.19	0.7 2	0.49 0.87	0.22 0.17 0.39	0.15 0.11 0.26	0	52	5	43	43.92	2.487	18.13	1.057	11.3	0.69
P17.2	8.437	0.013183	400 250	1 2	0.25 0.80	0.7 2	0.35 1.79	0.32 0.04 0.36	0.21 0.03 0.24	0	88	5	7	12.73	0.594	3.01	0.145	1.04	0.057
Westside Community Center Detention Pond														5.63		2.41		1.71	
P17.3	4.046	0.006322	400 200	1.4 0.4	0.35 0.20	0.7 2	0.41 0.89	0.27 0.06 0.33	0.18 0.04 0.22	0	54	5	41	9.49	0.478	3.84	0.2	2.35	0.13
P16.1	23.62	0.036906	400 625	2.8 1	0.70 0.16	0.7 2	0.59 0.80	0.19 0.22 0.41	0.13 0.14 0.27	0	60	5	35	45.76	2.593	17.62	1.035	10.55	0.652
P16.2	17.309	0.027045	400 1200	2.5 1.2	0.63 0.10	0.7 2	0.55 0.83	0.20 0.53 0.73	0.13 0.35 0.49	0	88	5	7	32.39	1.876	12.37	0.742	7.39	0.465
P16.3	36.52	0.057063	400 1200	2.1 7.9	0.53 0.66	0.7 2	0.51 1.62	0.22 0.21 0.42	0.15 0.14 0.28	0	61	5	34	30.78	2.572	7.19	0.628	2.74	0.245
Arena/Lopez Detention Pond														7.21		7.1		4.58	
Total	303.12	0.473619												Total =	31.368	Total =	11.994	Total =	7.356

NOTE: 1. Time of concentration, T(c), for each subarea must be greater than or equal to 0.2 hour as per DPM Section 22.2, page B-2

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
149 Jackson, NE., Albuquerque, N.M. 87108
Telephone (505) 265-6631 • FAX (505) 266-8112

Project ISLETA BLVD. IMPROVEMENTS Sheet 1 of 2
HYDRAULIC CALCULATIONS Job No. 567
By PG Chk'd Date 9/14/95

LOPEZ / ARENAL CONFLUENCE TO MANHOLE A1

375' @ S = 0.0012 → ΔE = 0.45 FT

INVERT ELEVATION OF 30" DIA. RCP @ L/A = 4930.05

MANHOLE A1 : INVERT ELEVATION (OUT) = 4930.50
INVERT ELEVATION (IN) = 4930.55

MANHOLE A1 TO MANHOLE A2 (AP-110)

375' @ S = 0.0012 ⇒ ΔE = 0.45 FT

MANHOLE A2 : INVERT ELEVATION (OUT) = 4931.00
INVERT ELEVATION (IN) = 4931.10
24" DIA RCP FROM MH. A3
INVERT ELEVATION 24" DIA RCP (IN) = 4931.05
FROM PT.3

MANHOLE A2 TO MANHOLE A3

225' @ S = 0.002 ⇒ ΔE = 0.45 FT

MANHOLE A3 : INVERT ELEVATION (OUT) = 4931.55
INVERT ELEVATION (IN) = 4931.60

24" DIA RCP

MANHOLE A3 TO MANHOLE A4

225' @ S = 0.002 ⇒ ΔE = 0.45 FT

MANHOLE A4 : INVERT ELEVATION (OUT) = 4932.05
INVERT ELEVATION (IN) = 4932.10

MANHOLE A4 TO WESTSIDE COMM CTR DETENTION POND RISER PIPE

≈ 150' @ S = 0.0012 ⇒ ΔE = 0.18 FT

≈ INVERT ELEVATION (DP RISER) = 4932.28 (APPROXIMATE)
≈ SOFFIT ELEVATION 24" DIA RCP = 4933.78 (APPROXIMATE)
18" DIA. RCP

APPROXIMATE ELEVATION OF SOCCER FIELD = 4935

ANDREWS, ASBURY & ROBERT, INC.
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Project ISLETA BLVD IMPROVEMENTS Sheet 1 of 2
WCC - DETENTION POND INVERT ELEVATIONS Job No. 567
By _____ Chk'd _____ Date 9/18/95

WESTSIDE COMMUNITY CTR. DETENTION POND

INVERT ELEV @ OUTFALL = 32.28

CHANNEL LENGTH, L = 460 FT

CHANNEL SLOPE, S = 0.001

$\Delta E_{INLET-OUTLET}$ = 0.46 FT

INVERT ELEVATION @ INLET = 32.74

DETENTION POND INLET OPTIONS: $Q_{REQ'D} \approx 44$ CFS

OPTION #1: (FLOW CAPACITIES DETERMINED BY MANNING EQN)

ONE 36" DIA RCP @ S = 0.0044

LENGTH, L = 90 FT, Q = 44.24 CFS

ΔE = 0.40 FT

INVERT ELEVATION	=	33.24
SOFFIT ELEVATION	=	36.24
TOP OF PIPE	=	36.64

LT. FLOWLINE - ISLETA BLVD = 37.96

AVAILABLE COVER = 1.32 FT

OPTION #2:

TWO 30" DIA. RCP @ S = 0.003
LENGTH, L = 90 FT, Q = 45 CFS
ΔE = 0.27 FT

INVERT ELEVATION	=	33.01
SOFFIT ELEVATION	=	35.51
TOP OF PIPE	=	35.87

AVAILABLE COVER = 2.09 FT

DRAFT

SCALE: 1"=500'

NOTE: DRAINAGE DIVIDES NOT TO SCALE.

ISLETA BLVD.

GOFF RD.

ARENAL RD.

GATEWOOD RD.

ATRISCO DITCH

NASHVILLE AVE.

LA FONT RD.

BLETCHER RD.

WALDIE RD.

SUNBEAM RD.

LOVATO RD.

BRIDGE BLVD.

MIRAMON AVE.

ARMIJO DR.

HARDY AVE.

LOPEZ RD.

ATRISCO LATERAL

LA VEGA DR.

RIVERSIDE DR.

RIVERSIDE DRAIN

RIO GRANDE

P16.1 P16.2 P16.3 P17.1 P17.2 P17.3 P18.1 P18.2 P18.3 P18.4 P18.5 P18.6 P18.7 P18.8

I2 I3 I4 I5.1 I6.1 I7 I8 I9 I10 I11 I12 I13 I14 I3.1 I4.1

3.1 Ac.Ft. 3 Ac.Ft. 3 Ac.Ft. 1 Ac.Ft. 1 Ac.Ft.

4'X7.25'CBC

42" 24" 54" 48" 36" 30"

LEGEND

- DRAINAGE BASIN BOUNDARY
- 36" PIPE SIZE & DIRECTION OF FLOW
- I9 ANALYSIS POINT
- P17.1 DRAINAGE BASIN DESIGNATION
- DETENTION POND

COUNTY OF BERNALILLO, NEW MEXICO

ISLETA BOULEVARD
IMPROVEMENT PROJECT (NORTH)
FIGURE 1—DRAINAGE REPORT
REVISED ALTERNATE "C"

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
ALBUQUERQUE NEW MEXICO

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344-4080 · FAX (505) 343-8759

GRADING AND DRAINAGE PLAN

FOR

WESTSIDE COMMUNITY CENTER

ALBUQUERQUE, NEW MEXICO

APRIL, 1996

CHAVEZ · GRIEVES
CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344·4080 · FAX (505) 343·8759

JOE P. KELLEY NEW MEXICO 9996 REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S STATEMENT

I certify that I am a Registered Professional Engineer in the State of New Mexico and that this report was prepared by me or under my supervision. I have personally inspected this land, and it appears that no grading, filling, or excavation has occurred thereon since the existing contour map was prepared.

Joe P. Kelley 9/9/96

RECEIVED APR 19 1996 HYDROLOGY DIVISION

MOLZEN-CORBIN & Associates
ENGINEERS/PLANNERS/CONSULTANTS

☒ 2701 Miles Road Southeast, Albuquerque, NM 87106
505-242-5700

☐ 205 West Boutz Number 4, Suite Number 5, P.O. Box 1360, Las Cruces, NM 88004
505-525-2397

LETTER OF TRANSMITTAL

TO City/County Building
5th and Marquette, Room 301
(505) 768-2650

DATE	JOB NO.
April 15, 1996	
ATTENTION: Floodplain Administration	
RE: Drainage Reviews	

GENTLEMEN:
WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

COPIES	DATE	NO.	DESCRIPTION
1			PWD-96-56 New Review
1			PWD-96-57 Rev Review
1			PWD-96-58 New Review

THESE ARE TRANSMITTED as checked below:

☐ For approval ☒ For your use ☐ As requested ☐ For review and comment

☐ Other _____

REMARKS _____

COPY TO _____

SIGNED: Renee Flores

If enclosures are not as noted, kindly notify us at once.

CASE

PWP - 96 - 56

M-12, B.16, 17, 18 & 19, LOWER BROADWAY ADDN.

DRAN- ____

DRE - 1

INSP - 4

PLAN - 4

Original F.P.A.
4-15-96 4-15-96

DUE DATE

APR. 1 9 1996

PWD - 96-56

COUNTY OF BERNALILLO

APPLICATION FOR CASE REVIEW

Please complete the following application for review of your case. **Submit THREE bluelines of plat, drawings, or information with case submittals and THREE bluelines of plat, drawings, or information with final sign-of applications. Submit a County Zone Atlas Map with subject property marked on the map.** If a Grading and Drainage plan is not included with a land division, replat, or conceptual plan, please submit one 8.5"x11" photocopy of a USGS quad map with the subject property superimposed.

NOTE: INCOMPLETE APPLICATIONS WILL BE RETURNED WITHOUT REVIEW.

Z M-12

1. **APPLICANT INFORMATION:**

a. Applicant is (check one):

OWNER SURVEYOR X AGENT

____ENGINEER ____DRAINAGE ENGINEER

b. Date of this application: April 10, 1996

c. Signature of applicant:
(print) Craig Hagelgantz (sign) Craig Hagelgantz

d. OWNER: Bernalillo Co. Parks & Recreation PHONE: 764-6856

ADDRESS: 620 Lomas NW Albuquerque NM

ZIP CODE: 87102

e. AGENT: Chaves - Grieves Engineers PHONE: 344-4080

ADDRESS: 5639 Jefferson NE

ZIP CODE: 87109

f. OTHER (specify): Chaves - Grieves Engineers PHONE: 344-4080

ADDRESS: 5639 Jefferson NE

ZIP CODE: 87109

2. **TYPE OF SUBMITTAL (check one):**

____REPLAT
____LAND DIVISION (MINOR SUBDIVISION)
____MAJOR SUBDIVISION
____CONSTRUCTION DRAWINGS
_X_ GRADING/DRAINAGE PLAN
____AS-CONSTRUCTED GRADING/DRAINAGE PLAN
____VARIANCE REQUEST
____TRAFFIC IMPACT ANALYSIS/TRAFFIC STUDY
____INFRASTRUCTURE LIST/DESIGN REVIEW FEE
____OTHER (specify):

APR 1 9 1996

RECEIVED

APR 1 0 1996

Bernalillo County
Public Works