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community sciences corporation

# DRAINAGE MANAGEMENT PLAN
# FOR THE
# SUBDIVISION AND DEVELOPMENT OF
# HERITAGE EAST, UNIT II, TRACT B

PREPARED FOR:

BELLAMAH COMMUNITY DEVELOPMENT

PREPARED BY:

COMMUNITY SCIENCES CORPORATION

OCTOBER, 1986

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SURVEYING
ENGINEERING
LAND PLANNING

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# DRAINAGE INFORMATION SHEET

PROJECT TITLE: Subdivision of Heritage East Unit II, Tract B ZONE ATLAS/DRNG. FILE #: D-20/D3E

LEGAL DESCRIPTION: Heritage East, Unit II, Tract B

CITY ADDRESS: San Francisco Road, From Jacobo Dr. to Quintana Dr.

ENGINEERING FIRM: Community Sciences Corp. CONTACT: Mike Yost, P.E.

ADDRESS: P. O. Box 1328, Corrales, N.M. 87048 PHONE: 897-0000

OWNER: Bellamah Community Development CONTACT: Alan Ortega

ADDRESS: P. O. Box 3300, Alb., N.M. 87190 PHONE: 884-6606

ARCHITECT: N/A CONTACT:

ADDRESS: PHONE:

SURVEYOR: Community Sciences Corp. CONTACT: Skip Carleton, L.S.

ADDRESS: P. O. Box 1328, Corrales, N.M. 87048 PHONE: 897-0000

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

RECEIVED OCT 29 1986 HYDROLOGY SECTION

PRE-DESIGN MEETING:

X YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 86-611

EPC NO.

PROJ. NO.

TYPE OF SUBMITTAL:

X DRAINAGE REPORT

___ DRAINAGE PLAN

X CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

X EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

X PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

X FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 10/29/86

BY: Michael J. Yost

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A) Purpose and Scope

Bellamah Community Development is currently planning development of their 16 acre Heritage East, Unit II, Tract B in northeast Albuquerque. The Development will consist of approximately 63, one sixth acre, R1 lots intended for the tract home market. The purpose of this report is to present an overall drainage management plan for the project which is based on sound engineering practice and which is acceptable to both the City of Albuquerque and the Albuquerque Metropolitan Arroyo Flood Control Authority.

B) Site Location and Topography

Heritage East, Unit II, Tract B, is located in northeast Albuquerque between San Francisco Rd. and Quintana Dr., south of Jacobo Dr. (see plate 1).

The land slopes generally from east to west at an average rate of 3.5%, however the site is dotted with several, small arroyo beds which have created a rather rugged surface topography with slope gradients as high as 12% in various directions. Soils consist largely of alluvial sands and silts, and decomposed granite is the major soil constituent. All soils within project boundaries and offsite watersheds fall into hydrologic soil group B.



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## C) Design Criteria

### 1) Engineering Parameters

In accordance with AMAFCA and City of Albuquerque Drainage Criteria all hydrological analysis is based on the 100 year frequency - 6 hour duration storm as represented in the NOAA atlas for New Mexico. 10 year, six hour values were also used for some subcatchments in accordance with City drainage policies regarding 10 year street flow in residential, collector and arterial streets. The four rainfall values pertinent to the study are as follows:

| | 10 Year | 100 Year |
|---|---|---|
| One Hour | 1.35" | 2.2" |
| Six Hour | 1.85" | 2.8" |

A fraction impervious of 0.51 was calculated for onsite, R1 lots, and a curve number of 69 was selected for the balance of pervious areas.

### 2) Flood Control Regulations

The drainage plan presented in this report has been designed to comply with the current City of Albuquerque Drainage Ordinance (and associated technical criteria as published in the Development Process Manual).



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D) Computational Procedures

The analysis approach utilized follows standard engineering practice. Key points of confluence were selected, and subsequently the associated individual and aggregate contributing basins were defined.

Hydrological computations were accomplished by means of our MODSCS Computer model. This model is based upon the Soil Conservation Service Triangular unit hydrograph method, but the method has been modified to be more applicable to developed watershed conditions. The model avoids the common pitfall of grappling for an appropriate developed curve number by including percent impervious as an input variable. This fraction of the watershed is then modeled at a curve number of 95. An assigned curve number is applied to the balance of the watershed, and the runoffs are combined to yield the composite hydrograph.

In addition the model has the capacity to route hydrographs through reservoirs and channels, or to translate hydrographs in time for summation with other sub basins.

For basins with a mix of subcatchments and corresponding variations in fractions impervious, a composite value was calculated.



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Times of concentration were estimated by using a combination of approximated street flow velocities and overland flow velocities (as applicable) from the upper subcatchment reaches to the confluence point of interest. A convenient formula for overland flow velocity takes the form:

$$V_o = KY^{0.5}$$

where $V_o$ = overland flow velocity
$Y$ = average ground slope in percent
$K$ = a ground cover factor

Street velocities were estimated by use of the Manning equation for uniform flow.

for some watersheds with well defined stream beds the California Highways formula for time of concentration was used to estimate the parameter directly. The equation takes the form:

$$T_c = \left[\frac{11.9\ L^3}{H}\right]^{.385}$$

where

Tc is time of concentration in hours
L is reach length in miles
H is differential elevation in feet



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All the characteristic hydrological parameters for each subcatchment of interest and each key point of confluence are contained in Appendix A as part of the computer model output, and a summary of parameters and peak flow rates are given in Table 1.

Following hydrological modeling street flow characteristics were analyzed by various methods. For uniform flow conditions the Manning equation with an n of 0.017 was used supplemented by DPM street capacity charts. At intersections the worst of two conditions was assumed. The theoretical hydraulic jump depth for upstream flow conditions was computed followed by the theoretical pool depth to accelerate the flow from 0 velocity head to downstream conditions. Whichever value was higher was assumed to be the potential flood depth. It should be noted that this approach is valid only for incoming supercritical flow conditions at tae intersections. Subcritical flow conditions are not considered critical at intersections unless normal flow depth is above required limits. Table 2 summarizes uniform street flow conditions at key locations while Table 3 presents computed parameter values at critical intersections. Sample calculations are included in Appendix B.



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E) Offsite Drainage

Plate 2 illustrates the basins contributing runoff onto or toward the project site.

Runoff from Basin OFF2 will be diverted by existing Quintana Drive as specified in the drainage plan for Heritage East, Unit 4 prepared by Gardner, Mason and Assoc., Inc. in 1985

Runoff from Basin OFF1 is to be added to the runoff from onsite Basin A1 and A2 and directed to existing Lew Wallace Drive. The cumulative peak storm flow at the entrance of Lew Wallace Drive will be 35.2 cfs. This is much lower than the 66 cfs estimated in the drainage management plan for Heritage Hills East (prepared by Community Sciences Corp. in 1983) because a higher density land use was anticipated. However, this difference in estimated peak flows ensures adequate downstream capacity.

F) Onsite Drainage

The onsite drainage basins and the proposed drainage improvements are illustrated on Plate 3. The location of anticipated retaining walls are also shown on this plate. The exact amount of retaining wall specified on



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the final, construction quality grading plan may be more or less than shown here.

Basin A1 is to drain towards the access entrance to the project site, combine with runoff from Basin A2 and flow down existing Lew Wallace Drive.

Basin B1 is to drain to a proposed concrete drainage channel and discharge onto existing Jacobo Drive as shown on Plate 3. These storm flows combined with the storm flows from Basin 2 produce a cumulative peak flow of 31.4 cfs. This compares favorably with the 29.7 cfs estimated in the drainage plan for Heritage East, Unit 5 (by Gardner, Mason and Assoc., Inc. in 1986). It is therefore assumed downstream capacity is adequate.

G) Erosion Control

Control of excessive soil erosion into City Streets and drainage improvements during construction will be accomplished by use of temporary lot line, water-trap berms. These will be windrowed into place following mass grading operations and left in place until each home is constructed and sold. Plate 3 illustrates the dimensions of these berms, and they will be located along those boundaries of each lot which are common to City rights of way or public easement.



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TABLE 1

HYDROLOGICAL FLOW PARAMETERS

| AREA POINT DESIGNATION | AREA (SQ. MI.) | AREAS CONTRIBUTING | GROSS AREA (SQ. MI.) | FRACTION IMPERVIOUS | C N (PERVIOUS) | T C (MINUTES) | R(1)=1.35 R(6)=1.85 | R(1)=2.2 R(6)=2.9 | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| OFF1 | .0021 | OFF 1 | .0021 | .82 | 69 | 4 | 3.0 | 5.5 | EQUALS BASIN #15, HERITAGE EAST UNIT 4, GARDNER, MASON, INC., APRIL, 1985. |
| A2 | .0069 | A2,OFF 1 | .0090 | .51 | 69 | 4 | 9.6 | 18.6 | |
| A1 | .0086 | A1 | .0086 | .51 | 69 | 5 | 8.2 | 16.6 | |
| A1 | .0086 | A1,A2,OFF 1 | .0176 | - | - | - | 17.9 | 35.2 | |
| B1 | .0139 | B1 | .0139 | .51 | 69 | 7 | 13.3 | 26.8 | |
| B2 | .0018 | B1,B2 | .0157 | .80 | 69 | 4 | 15.0 | 31.4 | COMPARES WITH 29.7 CFS, HERITAGE EAST UNIT 5, 1986. |
| OFF2 | - | - | - | - | - | - | - | 77.2 | BASIN #7, HERITAGE EAST UNIT 4, GARDNER, MASON, INC., APRIL, 1985. |



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TABLE 2

STREET FLOW CHARACTERISTICS AT CRITICAL POINTS
(ASSUMING CURB AND GUTTER AND 2% CROWN)

| POINT DESIGNATION | 100 YR. PEAK FLOW (CFS) | 10 YR. PEAKFLOW (CFS) | ESTIMATED STREET SLOPE | ASSUMED STREET WIDTH | 100 YEAR FLOW DEPTH | 10 YEAR FLOW DEPTH | 10 YEAR VEL | 10 YEAR Y X D | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| A1 | 16.6 | 8.2 | .033 | 32 | 0.28 | 0.21 | 3.56 | 0.75 | O.K. |
| B1 | 26.8 | 13.3 | .05 | 32 | 0.31 | 0.24 | 4.56 | 1.09 | O.K. |



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TABLE 3

CRITICAL INTERSECTION ANALYSIS

| POINT DESIG-NATION | INTER-SECTION | LOCATION | Q | STREET WIDTH | SLOPE | D N | V N | F | D C | V C | JUMP DEPTH $\frac{-Y_1}{2}+\sqrt{\left(\frac{Y_1}{2}\right)^2+\frac{2V_1^2Y_1}{g}}$ | POOL DEPTH $D+\frac{1.25\,\Delta V^2}{2g}$ | SPECIAL REQUIREMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 | I1 | UPSTREAM | 16.6 | 32 | .033 | .28 | 4.25 | 2.01 | | | 0.44 | | O.K. |
| | | DOWNSTREAM | 16.6 | 44 | .01 | .35 | 2.69 | 1.13 | .37 | 2.43 | | 0.48 | O.K. |
| B1 | I2 | UPSTREAM | 26.8 | 32 | .05 | .31 | 5.60 | 2.51 | | | 0.64 | | O.K. |
| | | DOWNSTREAM | 26.8 | 12 | .0375 | N/A | N/A | N/A | .53 | 4.18 | | 0.87 | O.K. |



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OF THE ORIGINAL DOCUMENT.

# PLATE 1

**VICINITY MAP**
1"=800'

**D-20-Z**

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THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT.

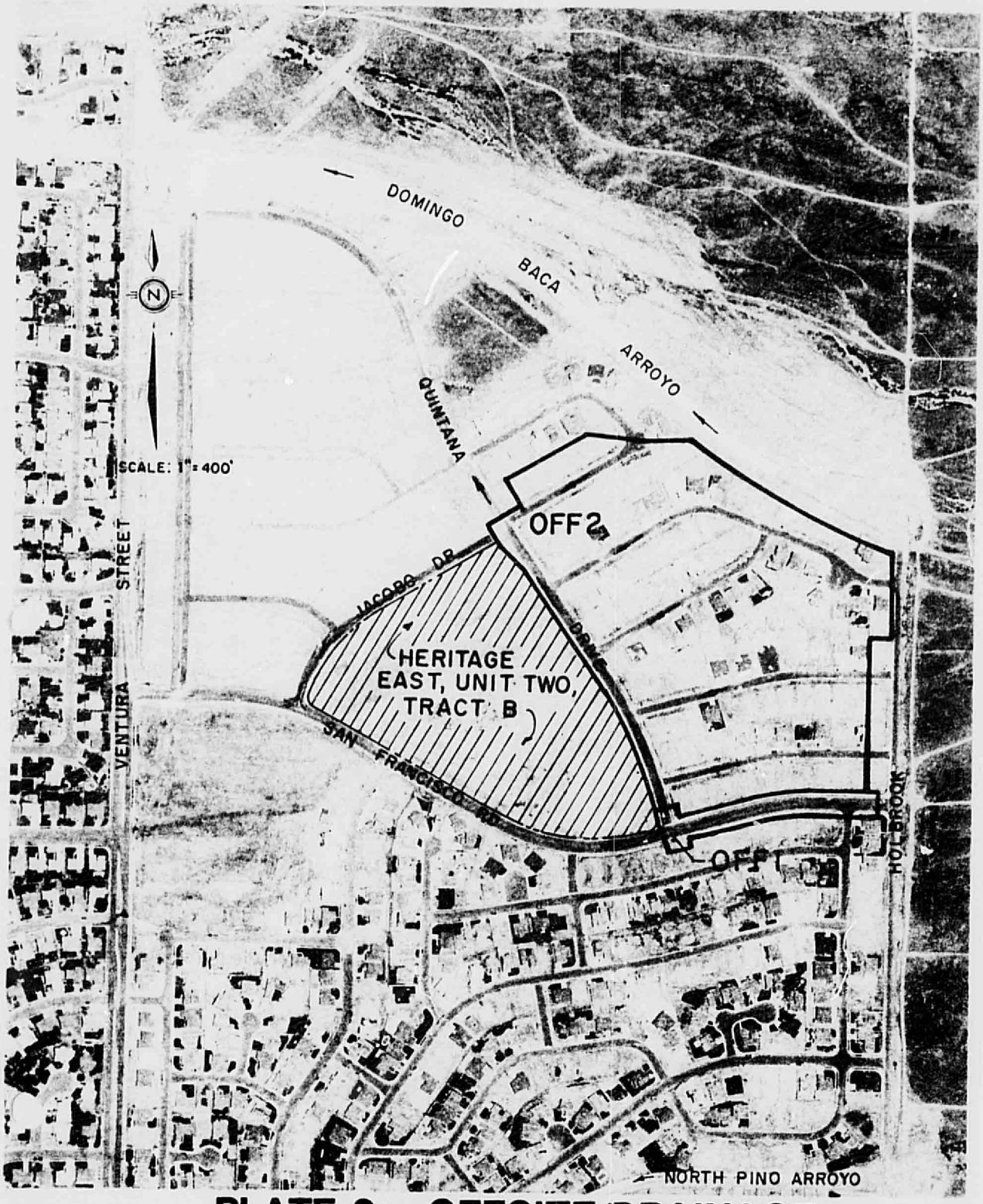


**PLATE 2 - OFFSITE DRAINAGE**

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Heritage East, Unit 2, Tract B, Subdivision
October, 1986

# APPENDIX A
# MODSCS OUTPUT

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100yr

AREA/POINT DESIGNATION = OFF1
AREA = .0021 SQ MI
1 HR RAIN = 2.2 INCHES
6 HR RAIN = 2.8 INCHES
TC= 4 MINUTES
FRAC IMPERV= .82
CN (PERVIOUS)= 69
CN (IMPERVIOUS)= 95

PEAK ONLY OUTPUTTED

| TIME | Q(CFS) |
|---|---|
| 240 | 5.5 |

VOL = 9517.369 CF

POINT OFF1 ADDED TO MAIN FLOWS

| TIME | Q(CFS) |
|---|---|
| 200 | 0.5 |
| 205 | 0.6 |
| 210 | 0.6 |
| 215 | 1.6 |
| 220 | 1.7 |
| 225 | 1.7 |
| 230 | 4.9 |
| 235 | 5.5 |
| 240 | 5.5 |
| 245 | 1.8 |
| 250 | 1.2 |
| 255 | 1.2 |
| 260 | 0.4 |
| 265 | 0.3 |
| 270 | 0.3 |
| 275 | 0.2 |
| 280 | 0.2 |
| 285 | 0.2 |
| 290 | 0.2 |
| 295 | 0.2 |
| 300 | 0.2 |
| 305 | 0.2 |
| 310 | 0.2 |
| 315 | 0.2 |
| 320 | 0.2 |
| 325 | 0.2 |
| 330 | 0.2 |

25×10

0000 0000 0805

| | |
|---|---|
| 335 | 0.2 |
| 340 | 0.1 |
| 345 | 0.1 |
| 350 | 0.1 |
| 355 | 0.1 |
| 360 | 0.1 |

DEPTH-1(GUESS) = .3 FT.
DEPTH-2 = 0 FT.
SIDESLOPE-1 = 0 HORZ/VERT
SIDESLOPE-2 = 0 HORZ/VERT
WIDTH = 48 FT.
N = .017
SLOPE = .04 FT./FT.
REACH LENGTH = 780 FT.

Time Route

HYDROGRAPH AT POINT OFF1 TIME TRANSLATED TO POINT A2

COMPUTED VELOCITY = 2.082701

| TIME | Q(CFS) |
|---|---|
| 205 | 0.4 |
| 210 | 0.5 |
| 215 | 0.6 |
| 220 | 1.3 |
| 225 | 1.7 |
| 230 | 1.7 |
| 235 | 4.1 |
| 240 | 5.3 |
| 245 | 5.5 |
| 250 | 2.7 |
| 255 | 1.4 |
| 260 | 1.2 |
| 265 | 0.6 |
| 270 | 0.3 |
| 275 | 0.3 |
| 280 | 0.2 |
| 285 | 0.2 |
| 290 | 0.2 |
| 295 | 0.2 |
| 300 | 0.2 |
| 305 | 0.2 |
| 310 | 0.2 |
| 315 | 0.2 |
| 320 | 0.2 |
| 325 | 0.2 |
| 330 | 0.2 |
| 335 | 0.2 |
| 340 | 0.2 |
| 345 | 0.1 |
| 350 | 0.1 |
| 355 | 0.1 |
| 360 | 0.1 |
| 365 | 0.1 |

25×10

0000 0000 0806

③

AREA/POINT DESIGNATION = A2
AREA = .0069 SQ MI
1 HR RAIN = 2.2 INCHES
6 HR RAIN = 2.8 INCHES
TC= 4 MINUTES
FRAC IMPERV= .51
CN (PERVIOUS)= 69
CN (IMPERVIOUS)= 95

PEAK ONLY OUTPUTTED

| TIME | Q(CFS) |
|---|---|
| 233 | 13.3 |

VOL = 22875.9 CF

POINT A2 ADDED TO MAIN FLOWS

| TIME | Q(CFS) |
|---|---|
| 135 | 0.1 |
| 140 | 0.1 |
| 145 | 0.1 |
| 150 | 0.1 |
| 155 | 0.1 |
| 160 | 0.1 |
| 165 | 0.1 |
| 170 | 0.2 |
| 175 | 0.2 |
| 180 | 0.2 |
| 185 | 0.2 |
| 190 | 0.3 |
| 195 | 0.3 |
| 200 | 1.1 |
| 205 | 1.6 |
| 210 | 1.7 |
| 215 | 3.8 |
| 220 | 4.9 |
| 225 | 5.2 |
| 230 | 13.6 |
| 235 | 17.4 |
| 240 | 18.6 |
| 245 | 10.2 |
| 250 | 6.0 |
| 255 | 4.6 |
| 260 | 2.3 |
| 265 | 1.4 |

25×10

0000 0000 0807

④

| | |
|---|---|
| 270 | 1.1 |
| 275 | 0.9 |
| 280 | 0.8 |
| 285 | 0.8 |
| 290 | 0.8 |
| 295 | 0.8 |
| 300 | 0.8 |
| 305 | 0.7 |
| 310 | 0.6 |
| 315 | 0.6 |
| 320 | 0.6 |
| 325 | 0.7 |
| 330 | 0.7 |
| 335 | 0.6 |
| 340 | 0.6 |
| 345 | 0.6 |
| 350 | 0.5 |
| 355 | 0.4 |
| 360 | 0.4 |
| 365 | 0.2 |

AREA/POINT DESIGNATION = A1
AREA = 8.599999E-03 SQ MI
1 HR RAIN = 2.2 INCHES
6 HR RAIN = 2.8 INCHES
TC= 5 MINUTES
FRAC IMPERV= .51
CN (PERVIOUS)= 69
CN (IMPERVIOUS)= 95

PEAK ONLY OUTPUTTED

| TIME | Q(CFS) |
|---|---|
| 237 | 16.6 |

VOL = 28512.01 CF

POINT A1 ADDED TO MAIN FLOWS

| TIME | Q(CFS) |
|---|---|
| 125 | 0.1 |
| 130 | 0.2 |
| 135 | 0.2 |
| 140 | 0.2 |
| 145 | 0.2 |
| 150 | 0.2 |
| 155 | 0.2 |

25×10

0000 0000 0808



| | |
|---|---|
| 160 | 0.2 |
| 165 | 0.3 |
| 170 | 0.3 |
| 175 | 0.3 |
| 180 | 0.3 |
| 185 | 0.5 |
| 190 | 0.5 |
| 195 | 0.6 |
| 200 | 2.4 |
| 205 | 3.0 |
| 210 | 3.2 |
| 215 | 7.7 |
| 220 | 9.3 |
| 225 | 9.7 |
| 230 | 28.3 |
| 235 | 34.0 |
| 240 | 35.2 |
| 245 | 16.1 |
| 250 | 10.0 |
| 255 | 8.6 |
| 260 | 3.8 |
| 265 | 2.4 |
| 270 | 2.1 |
| 275 | 1.7 |
| 280 | 1.6 |
| 285 | 1.5 |
| 290 | 1.6 |
| 295 | 1.6 |
| 300 | 1.6 |
| 305 | 1.2 |
| 310 | 1.1 |
| 315 | 1.1 |
| 320 | 1.3 |
| 325 | 1.3 |
| 330 | 1.3 |
| 335 | 1.1 |
| 340 | 1.1 |
| 345 | 1.1 |
| 350 | 0.9 |
| 355 | 0.8 |
| 360 | 0.8 |
| 365 | 0.2 |

25×10

0000 0000 0809

10 yr.

AREA/POINT DESIGNATION = OFF1
AREA = .0021 SQ MI
1 HR RAIN = 1.35 INCHES
6 HR RAIN = 1.85 INCHES
TC= 4 MINUTES
FRAC IMPERV= .82
CN (PERVIOUS)= 69
CN (IMPERVIOUS)= 95

PEAK ONLY OUTPUTTED

| TIME | Q(CFS) |
|---|---|
| 234 | 3.0 |

VOL = 5510.075 CF

POINT OFF1 ADDED TO MAIN FLOWS

| TIME | Q(CFS) |
|---|---|
| 200 | 0.3 |
| 205 | 0.3 |
| 210 | 0.3 |
| 215 | 0.8 |
| 220 | 0.9 |
| 225 | 0.9 |
| 230 | 2.7 |
| 235 | 3.0 |
| 240 | 3.0 |
| 245 | 1.0 |
| 250 | 0.7 |
| 255 | 0.7 |
| 260 | 0.3 |
| 265 | 0.2 |
| 270 | 0.2 |
| 275 | 0.2 |
| 280 | 0.2 |
| 285 | 0.2 |
| 290 | 0.2 |
| 295 | 0.2 |
| 300 | 0.2 |
| 305 | 0.1 |
| 310 | 0.1 |
| 315 | 0.1 |
| 320 | 0.1 |
| 325 | 0.1 |
| 330 | 0.1 |

25×10

0000 0000 0810



| | |
|---|---|
| 335 | 0.1 |
| 340 | 0.1 |
| 345 | 0.1 |

DEPTH-1(GUESS) = .2 FT.
DEPTH-2 = 0 FT.
SIDESLOPE-1 = 0 HORZ/VERT
SIDESLOPE-2 = 0 HORZ/VERT
WIDTH = 48 FT.
N = .017
SLOPE = .04 FT./FT.
REACH LENGTH = 780 FT.

HYDROGRAPH AT POINT OFF1 TIME TRANSLATED TO POINT A2

COMPUTED VELOCITY = 1.644045

| TIME | Q(CFS) |
|---|---|
| 200 | 0.3 |
| 205 | 0.3 |
| 210 | 0.3 |
| 215 | 0.8 |
| 220 | 0.9 |
| 225 | 0.9 |
| 230 | 2.7 |
| 235 | 3.0 |
| 240 | 3.0 |
| 245 | 1.0 |
| 250 | 0.7 |
| 255 | 0.7 |
| 260 | 0.3 |
| 263 | 0.2 |
| 270 | 0.2 |
| 275 | 0.2 |
| 280 | 0.2 |
| 285 | 0.2 |
| 290 | 0.2 |
| 295 | 0.2 |
| 300 | 0.2 |
| 305 | 0.1 |
| 310 | 0.1 |
| 315 | 0.1 |
| 320 | 0.1 |
| 325 | 0.1 |
| 330 | 0.1 |
| 335 | 0.1 |
| 340 | 0.1 |
| 345 | 0.1 |

25×10

0000 0000 0811

(3)

AREA/POINT DESIGNATION = A2
AREA = .0069 SQ MI
1 HR RAIN = 1.35 INCHES
6 HR RAIN = 1.85 INCHES
TC= 4 MINUTES
FRAC IMPERV= .51
CN (PERVIOUS)= 69
CN (IMPERVIOUS)= 95

PEAK ONLY OUTPUTTED

| TIME | Q(CFS) |
|---|---|
| 240 | 6.6 |

VOL = 12267.83 CF

POINT A2 ADDED TO MAIN FLOWS

| TIME | Q(CFS) |
|---|---|
| 170 | 0.1 |
| 175 | 0.1 |
| 180 | 0.1 |
| 185 | 0.2 |
| 190 | 0.2 |
| 195 | 0.2 |
| 200 | 0.8 |
| 205 | 0.9 |
| 210 | 0.9 |
| 215 | 2.5 |
| 220 | 2.8 |
| 225 | 2.8 |
| 230 | 8.6 |
| 235 | 9.6 |
| 240 | 9.6 |
| 245 | 3.4 |
| 250 | 2.3 |
| 255 | 2.3 |
| 260 | 1.0 |
| 265 | 0.8 |
| 270 | 0.8 |
| 275 | 0.6 |
| 280 | 0.6 |
| 285 | 0.6 |
| 290 | 0.6 |
| 295 | 0.6 |
| 300 | 0.6 |

25×10

0000 0000 0812



| | |
|---|---|
| 305 | 0.4 |
| 310 | 0.4 |
| 315 | 0.4 |
| 320 | 0.5 |
| 325 | 0.5 |
| 330 | 0.5 |
| 335 | 0.4 |
| 340 | 0.4 |
| 345 | 0.4 |
| 350 | 0.3 |
| 355 | 0.3 |
| 360 | 0.3 |

AREA/POINT DESIGNATION = A1
AREA = 8.599999E-03 SQ MI
1 HR RAIN = 1.35 INCHES
6 HR RAIN = 1.85 INCHES
TC= 5 MINUTES
FRAC IMPERV= .51
CN (PERVIOUS)= 69
CN (IMPERVIOUS)= 95

PEAK ONLY OUTPUTTED

| TIME | Q(CFS) |
|---|---|
| 339 | 8.2 |

VOL = 15290.33 CF

POINT A1 ADDED TO MAIN FLOWS

| TIME | Q(CFS) |
|---|---|
| 140 | 0.1 |
| 145 | 0.1 |
| 150 | 0.1 |
| 155 | 0.1 |
| 160 | 0.2 |
| 165 | 0.2 |
| 170 | 0.2 |
| 175 | 0.2 |
| 180 | 0.2 |
| 185 | 0.4 |
| 190 | 0.4 |
| 195 | 0.4 |
| 200 | 1.4 |
| 205 | 1.6 |
| 210 | 1.6 |

25×

0000 0000 0813



| | |
|---|---|
| 215 | 4.6 |
| 220 | 5.2 |
| 225 | 5.2 |
| 230 | 15.9 |
| 235 | 17.9 |
| 240 | 17.9 |
| 245 | 6.4 |
| 250 | 4.4 |
| 255 | 4.4 |
| 260 | 1.9 |
| 265 | 1.4 |
| 270 | 1.4 |
| 275 | 1.2 |
| 280 | 1.1 |
| 285 | 1.1 |
| 290 | 1.1 |
| 295 | 1.1 |
| 300 | 1.1 |
| 305 | 0.8 |
| 310 | 0.8 |
| 315 | 0.8 |
| 320 | 0.9 |
| 325 | 0.9 |
| 330 | 0.9 |
| 335 | 0.8 |
| 340 | 0.8 |
| 345 | 0.8 |
| 350 | 0.6 |
| 355 | 0.6 |
| 360 | 0.6 |

25×

0000 0000 0814



AREA/POINT DESIGNATION = B1
AREA = .0139 SQ MI
1 HR RAIN = 2.2 INCHES
6 HR RAIN = 2.8 INCHES
TC= 7 MINUTES
FRAC IMPERV= .51
CN (PERVIOUS)= 69
CN (IMPERVIOUS)= 95

PEAK ONLY OUTPUTTED

| TIME | Q(CFS) |
|---|---|
| 240 | 26.8 |

VOL = 46083.34 CF

POINT B1 ADDED TO MAIN FLOWS

| TIME | Q(CFS) |
|---|---|
| 130 | 0.1 |
| 135 | 0.1 |
| 140 | 0.1 |
| 145 | 0.1 |
| 150 | 0.1 |
| 155 | 0.2 |
| 160 | 0.2 |
| 165 | 0.2 |
| 170 | 0.2 |
| 175 | 0.2 |
| 180 | 0.2 |
| 185 | 0.3 |
| 190 | 0.4 |
| 195 | 0.5 |
| 200 | 1.1 |
| 205 | 2.0 |
| 210 | 2.3 |
| 215 | 4.1 |
| 220 | 6.4 |
| 225 | 7.6 |
| 230 | 14.5 |
| 235 | 23.6 |
| 240 | 26.8 |
| 245 | 19.2 |
| 250 | 9.5 |
| 255 | 6.4 |
| 260 | 4.6 |

25×10

0000 0000 0815

| | |
|---|---|
| 265 | 2.4 |
| 270 | 1.6 |
| 275 | 1.4 |
| 280 | 1.2 |
| 285 | 1.2 |
| 290 | 1.2 |
| 295 | 1.2 |
| 300 | 1.2 |
| 305 | 1.1 |
| 310 | 0.9 |
| 315 | 0.8 |
| 320 | 0.9 |
| 325 | 1.0 |
| 330 | 1.0 |
| 335 | 0.9 |
| 340 | 0.8 |
| 345 | 0.8 |
| 350 | 0.7 |
| 355 | 0.7 |
| 360 | 0.6 |
| 365 | 0.4 |

AREA/POINT DESIGNATION = B2
AREA = .0018 SQ MI
1 HR RAIN = 2.2 INCHES
6 HR RAIN = 2.8 INCHES
TC= 4 MINUTES
FRAC IMPERV= .8
CN (PERVIOUS)= 69
CN (IMPERVIOUS)= 95

PEAK ONLY OUTPUTTED

| TIME | Q(CFS) |
|---|---|
| 236 | 4.6 |

VOL = 8016.431 CF

POINT B2 ADDED TO MAIN FLOWS

| TIME | Q(CFS) |
|---|---|
| 130 | 0.2 |
| 135 | 0.2 |
| 140 | 0.2 |
| 145 | 0.2 |
| 150 | 0.2 |
| 155 | 0.2 |

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(13)

| | |
|---|---|
| 160 | 0.2 |
| 165 | 0.2 |
| 170 | 0.3 |
| 175 | 0.3 |
| 180 | 0.3 |
| 185 | 0.4 |
| 190 | 0.5 |
| 195 | 0.5 |
| 200 | 1.5 |
| 205 | 2.5 |
| 210 | 2.8 |
| 215 | 5.4 |
| 220 | 7.9 |
| 225 | 9.0 |
| 230 | 18.7 |
| 235 | 28.2 |
| 240 | 31.4 |
| 245 | 20.7 |
| 250 | 10.5 |
| 255 | 7.4 |
| 260 | 5.0 |
| 265 | 2.6 |
| 270 | 1.8 |
| 275 | 1.6 |
| 280 | 1.4 |
| 285 | 1.4 |
| 290 | 1.4 |
| 295 | 1.4 |
| 300 | 1.4 |
| 305 | 1.2 |
| 310 | 1.0 |
| 315 | 1.0 |
| 320 | 1.1 |
| 325 | 1.1 |
| 330 | 1.2 |
| 335 | 1.1 |
| 340 | 1.0 |
| 345 | 0.9 |
| 350 | 0.9 |
| 355 | 0.8 |
| 360 | 0.7 |
| 365 | 0.4 |

25×10

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AREA/POINT DESIGNATION = B1
AREA = .0139 SQ MI
1 HR RAIN = 1.35 INCHES
6 HR RAIN = 1.85 INCHES
TC= 7 MINUTES
FRAC IMPERV= .51
CN (PERVIOUS)= 69
CN (IMPERVIOUS)= 95

PEAK ONLY OUTPUTTED

| TIME | Q(CFS) |
|---|---|
| 240 | 13.3 |

VOL = 24713.43 CF

POINT B1 ADDED TO MAIN FLOWS

| TIME | Q(CFS) |
|---|---|
| 160 | 0.1 |
| 165 | 0.1 |
| 170 | 0.1 |
| 175 | 0.1 |
| 180 | 0.2 |
| 185 | 0.2 |
| 190 | 0.3 |
| 195 | 0.3 |
| 200 | 0.6 |
| 205 | 1.1 |
| 210 | 1.2 |
| 215 | 2.2 |
| 220 | 3.4 |
| 225 | 4.0 |
| 230 | 7.4 |
| 235 | 11.8 |
| 240 | 13.3 |
| 245 | 9.6 |
| 250 | 4.8 |
| 255 | 3.3 |
| 260 | 2.5 |
| 265 | 1.4 |
| 270 | 1.1 |
| 275 | 1.0 |
| 280 | 0.9 |
| 285 | 0.8 |
| 290 | 0.8 |

25×10

0000 0000 0818



| | |
|---|---|
| 295 | 0.8 |
| 300 | 0.8 |
| 305 | 0.8 |
| 310 | 0.6 |
| 315 | 0.6 |
| 320 | 0.6 |
| 325 | 0.7 |
| 330 | 0.7 |
| 335 | 0.7 |
| 340 | 0.6 |
| 345 | 0.6 |
| 350 | 0.5 |
| 355 | 0.5 |
| 360 | 0.5 |
| 365 | 0.3 |

AREA/POINT DESIGNATION = B2
AREA = .0018 SQ MI
1 HR RAIN = 1.35 INCHES
6 HR RAIN = 1.85 INCHES
TC= 4 MINUTES
FRAC IMPERV= .51
CN (PERVIOUS)= 69
CN (IMPERVIOUS)= 95

PEAK ONLY OUTPUTTED

| TIME | Q(CFS) |
|---|---|
| 233 | 1.7 |

VOL = 3200.303 CF

POINT B2 ADDED TO MAIN FLOWS

| TIME | Q(CFS) |
|---|---|
| 155 | 0.1 |
| 160 | 0.1 |
| 165 | 0.1 |
| 170 | 0.2 |
| 175 | 0.2 |
| 180 | 0.2 |
| 185 | 0.2 |
| 190 | 0.3 |
| 195 | 0.3 |
| 200 | 0.8 |
| 205 | 1.2 |
| 210 | 1.4 |

25×

0000 0000 0819



| | |
|---|---|
| 215 | 2.6 |
| 220 | 3.9 |
| 225 | 4.5 |
| 230 | 8.9 |
| 235 | 13.5 |
| 240 | 15.0 |
| 245 | 10.2 |
| 250 | 5.2 |
| 255 | 3.7 |
| 260 | 2.7 |
| 265 | 1.6 |
| 270 | 1.2 |
| 275 | 1.1 |
| 280 | 1.0 |
| 285 | 0.9 |
| 290 | 0.9 |
| 295 | 1.0 |
| 300 | 1.0 |
| 305 | 0.8 |
| 310 | 0.7 |
| 315 | 0.7 |
| 320 | 0.7 |
| 325 | 0.8 |
| 330 | 0.8 |
| 335 | 0.7 |
| 340 | 0.7 |
| 345 | 0.7 |
| 350 | 0.6 |
| 355 | 0.5 |
| 360 | 0.5 |
| 365 | 0.3 |

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# APPENDIX B
# SAMPLE CALCULATIONS

25X

0000 0000 0821

Heritage East, Unit 2, Tract B, Subdivision
October, 1986

CAPACITY OF 9 FOOT WIDE CONCRETE CHANNEL

Slope = .0375
Width = 9'
$SS_1 = SS_2 = 0$
n = .017
Q = 26.8 cfs
$Y_n$ = 0.36' < 0.75' (9") O.K.

25×

0000 0000 0822

community sciences corporation

RECEIVED
JUL 17 1987
HYDROLOGY SECTION

July 16, 1987

D20/D3G
D3E

Roger A. Green, P.E.
Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico 87103

Re: Heritage East, Units 6 and 7 Grading Plans

Dear Roger:

Please find attached a proposed revision to the grading plan for Heritage East, Units 6 and 7. We are suggesting this change to avoid cross-lot drainage (and the required private drainage easements).

If you find this scheme acceptable, please give us a call at your earliest convenience and we will adjust the originals accordingly as a formal change order to Unit 6 and a revision to Unit 7.

If you have any questions, or wish to discuss this matter further, please do not hesitate to call me at 897-0000.

Sincerely,

Kate Shattuck

MKS/bjc

Enclosure: as stated

cc: Alan Ortega, BCD

CSC# 73-37-062
HE-050

7/17/87
No Objection. Make required submittal.
(Talked to Mike Yost by phone)
R Green

P.O. Box 1328
Corrales, New Mexico 87048
(505) 897-0000

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LAND PLANNING
CIVIL ENGINEERING
DEVELOPMENT CONSULTANTS

25×

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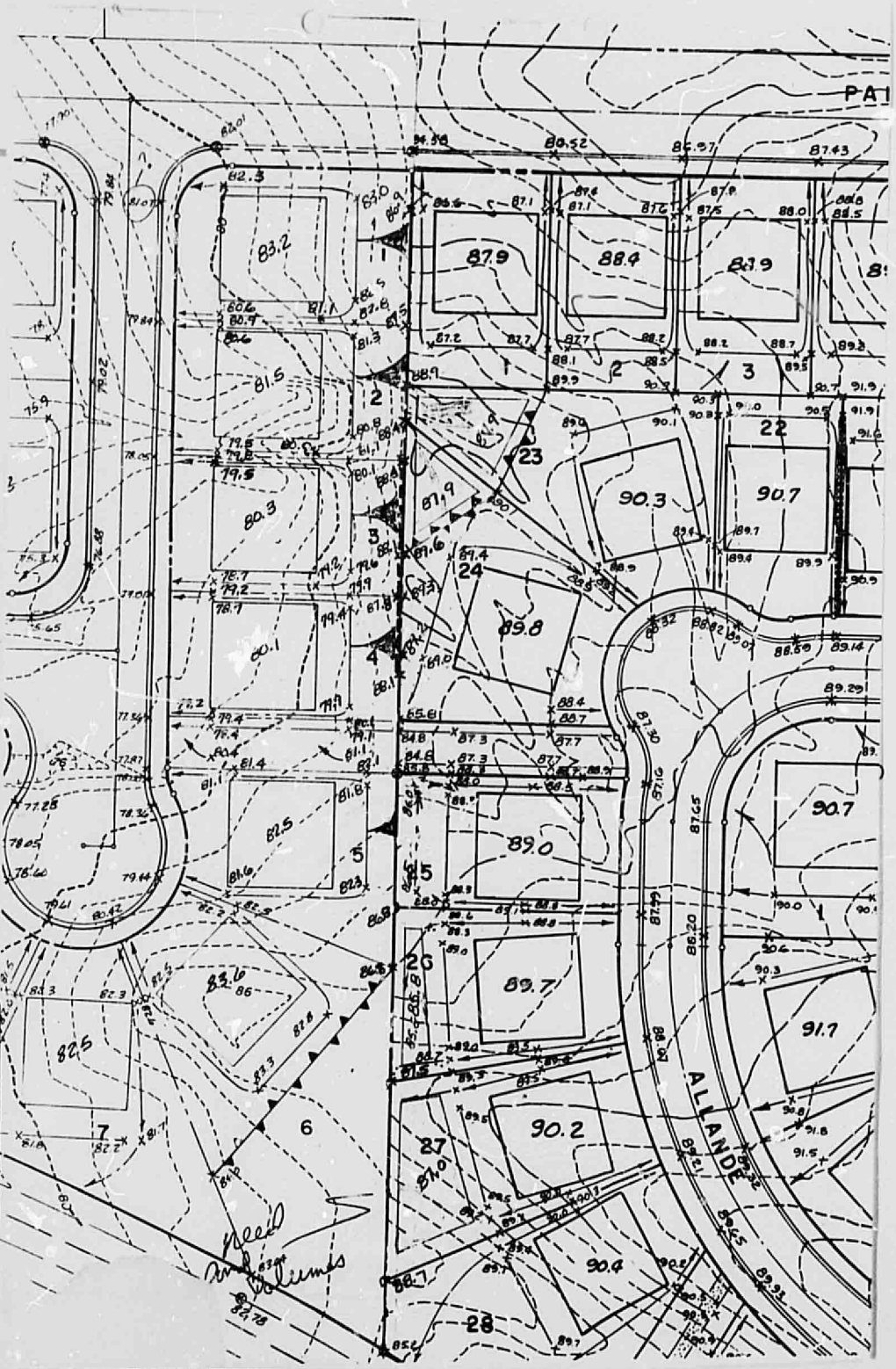
REPRODUCTION DUE TO THE POOR QUALITY
OF THE ORIGINAL DOCUMENT.




25×10 32×10

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**COMMUNITY SCIENCES CORPORATION**
P.O. Box 1328
CORRALES, NEW MEXICO 87048

(505) 897-0000

# LETTER OF TRANSMITTAL

| | |
|---|---|
| DATE 12/18/86 | JOB NO. 73-49-062 |
| ATTENTION BILLY GOOLSBY | |
| RE HERITAGE EAST 2B | |

TO PUBLIC WORKS/HYDROLOGY
CITY OF ALBUQUERQUE

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

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☒ SEE BELOW

| COPIES | DATE | NO. | DESCRIPTION |
|---|---|---|---|
| 1 | | 1. | DRAINAGE INFORMATION SHEET |
| 1 | | 2. | GRADING PLAN / ORIGINAL MYLAR |
| 1 | | 3. | " " / PRINT |
| 1 | | 4. | EROSION CONTROL PLAN / ORIGINAL MYLAR |
| 1 | | 5. | " " " / PRINT |
| | | | |
| | | | |
| | | | |

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS PLEASE CALL IF YOU HAVE ANY QUESTIONS.

RECEIVED
DEC 29 1986
HYDROLOGY SECTION

COPY TO ALAN ORTEGA, BCD

SIGNED: Mike Yost

PRODUCT 240-3 NEBS Inc., Groton, Mass. 01471

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

25 ×

0000 0000 0825

# DRAINAGE INFORMATION SHEET

EXISTING FILE

PROJECT TITLE: HERITAGE EAST 2B ZONE ATLAS/DRNG. FILE #: D-20/3E

LEGAL DESCRIPTION: HERITAGE EAST, UNIT II, TRACT B

CITY ADDRESS: SAN FRANCISCO Rd, from Jacobo Dr. to Quintana Dr.

ENGINEERING FIRM: COMMUNITY SCIENCES CORP CONTACT: MICHAEL YOST

ADDRESS: BOX 1328, CORRALES, 87048 PHONE: 897-0000

OWNER: BELAMAH COMMUNITY DEVELOPMENT CONTACT: ALLAN ORTEGA

ADDRESS: BOX 3300, ALBUQUERQUE 87190 PHONE: 884-6606

ARCHITECT: N/A CONTACT:

ADDRESS: PHONE:

SURVEYOR: COMMUNITY SCIENCES CORP. CONTACT: SKIP CARLETON

ADDRESS: BOX 1328, CORRALES, 87048 PHONE: 897-0000

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

- X YES
- ___ NO
- ___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 86-611

EPC NO.

PROJ. NO. 3121

RECEIVED DEC 29 1986 HYDROLOGY SECTION

TYPE OF SUBMITTAL:

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

CHECK TYPE OF APPROVAL SOUGHT:

- ___ SKETCH PLAT APPROVAL
- ___ PRELIMINARY PLAT APPROVAL
- ___ SITE DEVELOPMENT PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY APPROVAL
- X ROUGH GRADING PERMIT APPROVAL
- ___ GRADING/PAVING PERMIT APPROVAL
- X OTHER Approval for DRC construction plans per our letter dated 11/13/86 (SPECIFY)

DATE SUBMITTED: 12/18/86

BY: Michael A. Yost

25 x

0000 0000 0826

1. Drainage across sidewalk on Jacobo & San Francisco.

2. Route all flows to Mabry Ave. limit flows on to S.F.

25×10

0000 0000 0827

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

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

November 13, 1986

Michael J. Yost
Community Sciences Corporation
Post Office Box 1328
Corrales, New Mexico 87048

RE: CONCEPTUAL DRAINAGE REPORT SUBMITTAL FOR PRELIMINARY PLAT APPROVAL OF HERITAGE EAST UNIT II, TRACT B (D-20/D3E) RECEIVED OCTOBER 29, 1986

Dear Mike:

I have reviewed the above referenced submittal and hereby give conceptual approval for obtaining preliminary plat through DRB. Also, be advised that an approved infrastructure listing is required for preliminary plat.

Prior to Final Plat approval and sign-off in DRC, a detailed drainage report is required to be approved by this section.

This detailed report shall include, but not be limited to, top of curb elevations at appropriate locations, finished floor elevations (minimum of pad elevations, assuming F.F. is ± 1/2 foot), and all necessary details and hydraulic calculations for construction of required drainage and grading facilities.

One specific condition that will need to be maintained is the low-flow or nuisance collector drain at the intersection of San Francisco Road and Lew Wallace. The design of this intersection will be required to ensure that this facility will continue to function as designed. San Francisco is a collector street and the nuisance flows are not allowed to cross. Hence, the existing low-flow facility.

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

Cordially,

Billy J. Goolsby

Billy J. Goolsby, P.E.
C.E./Hydrology Section

BJG/bsj



25 x 10

0000 0000 0828

# DRAINAGE INFORMATION SHEET

PROJECT TITLE: Heritage East, Unit 2, Tract B ZONE ATLAS/DRNG. FILE #: D-20/D3E

LEGAL DESCRIPTION: Same

CITY ADDRESS: San Francisco Rd., NE at Jacobo Dr., NE

ENGINEERING FIRM: Community Sciences Corporation CONTACT: Michael Yost, P.E.

ADDRESS: P.O. Box 1328, Corrales, NM 87048 PHONE: 897-0000

OWNER: Bellamah Community Development CONTACT: Alan Ortega

ADDRESS: P. O. Box 3300, Albuquerque, NM 87190 PHONE: 884-6606

ARCHITECT: N/A CONTACT:

ADDRESS: PHONE:

SURVEYOR: Community Sciences Corporation CONTACT: Skip Carleton, L.S.

ADDRESS: P. O. Box 1328, Corrales, NM 87048 PHONE: 897-0000

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED JAN 05 1987 HYDROLOGY SECTION

DRB NO. 86-611

EPC NO.

PROJ. NO. 3121

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

X ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 1/5/87

BY: Michael J. Yost

25×10

0000 0000 0829

community sciences corporation

January 5, 1987

RECEIVED
JAN 05 1987
HYDROLOGY SECTION

Mr. Fred Aguirre, P.E.
Public Works/Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico 87103

Subject: Heritage East Unit Two, Tract B

Dear Fred:

This letter is a written recapitulation of our meeting December 31, 1986. At this meeting we discussed the concerns voiced by you, your staff, and members of the Design Review Committee. These issues are 1) draining the backyards of several lots onto the Jacobo Drive and San Francisco Road, and 2) drainage across San Francisco Road at Lew Wallace Drive. The manner we have addressed these concerns is discussed below in the same order:

1. We have put a note on the grading plan as we discussed. You and Billy Goolsby stated this note would allow your office to approve the rough grading plan. However, it 's the opinion of the engineering staff of Community Sciences Corporation this concern is unwarranted. We feel the best grading plan for an R-1 subdivision such as this this is to drain the lots away from the pads and onto public infrastructure with adequate capacity. It seems you and I agree the intent of the waste water ordinance is not to require on-site ponds for every lot.

2. The drainage pattern engineered for the Hertitage East Sector plan was coordinated with the City staff because of downstream drainage constraints. There are two drainage outfalls planned for the subject project; the surface channel that is to discharge onto existing Mabry Avenue (Heritage East Unit 5) and Lew Wallace Drive that is to discharge across San Francisco. The approved drainage plan for Heritage East Unit 5 dictated a peak flow for the 100-year, 6-hour storm event of 29.6 cfs at the intersections of Jacobo Dr. and Mabry Ave. Subsequent design and construction of downstream infrastructure was completed with this as a constraint. Our drainage report for Heritage East Unit 2, Tract B states we expect a peak flow of 31.4 cfs at this location for the aforementioned storm event. We feel these peak flows compare favorably. This was clearly stated in the drainage report (and discussed at the pre-design conference). Increasing this peak flow by some 30 cfs is not an acceptable alternative, and therefore, the drainage plan for the subject project will need to remain as we have proposed it.

P.O. Box 1328
Gonzales, New Mexico 87048
(505) 897-0000

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CIVIL ENGINEERING
DEVELOPMENT CONSULTANTS

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An existing "low-flow" drain exists at the intersection of San Francisco Rd. and Lew Wallace Dr. to prevent nuisance flows from crossing San Francisco. We are proposing discharging the flows from the larger storm events across San Francisco Rd., as dictated by the previous, approved Drainage Plan for Heritage East and the physical constraints of San Francisco Road. However, we expect a 100-year, peak flow at this location of much less than has been previously anticipated for because of lower land use intensity. This was also clearly stated in the Heritage East Unit 2, Tract B drainage report.

There has been talk among the City staff of upgrading this intersection. To upgrade this intersection when the expected storm flows are less than those used to originally design the intersection defies logic.

Please find attached the original mylars of the grading plan for the subject project. We request approval of this grading plan at your earliest convenience.

Billy approved the drainage report for the subject project conceptually. In his letter of approval he stated more detail would be required later. This drainage report specified constraints, peak flows and street flow characteristics for the 10-year and 100 year storm events, and the capacity of proposed infrastructure. We feel this drainage report and subsequent grading plan are both well-prepared, high-quality engineering documents. We request you consider the drainage submittal requirements for this project fulfilled. If you have any questions or wish to further discuss this matter, please do not hesitate to call me at 897-0000.

Sincerely,

Michael J. Yost

Michael J. Yost, P.E.

MJY/ll

CSC # 73-49-062

cc: Alan Ortega, BCD
Andre Houle, COA
Doug Reynolds, BCD
Kent Whitman, CSC

Enclosures: Grading Plan
Drainage Information Sheet

25×

0000 0000 0831

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

RECEIVED
JAN 13 1987
HYDROLOGY SECTION

DESIGN REVIEW COMMITTEE MEETING 1/09/87 1:45 p.m.

PROJECT: Heritage East Unit 2, Tract B, Project #3121

CONSULTANT: Community Sciences Corporation

IN ATTENDANCE: Andre Houle, DRC Chairman/Design Review Section
Bill Westmoreland, PWD/Engineering-Utility Development
Dave Harmon, Traffic Engineering
Billy Goolsby, PWD/Engineering-Hydrology
Mike Yost, Community Sciences Corporation

The above project was submitted to the DRC for final signature. Plans were approved by Mr. Goolsby for the Hydrology Department with no comments and by Mr. Westmoreland after delegating the following:

1. Sheet 9 - Consultant is to revise legend on water valves.

However, plans were not approved by Mr. Houle or Mr. Harmon due to the following:

Andre Houle:

1. Sheet 5 - City requires a ten foot wide valley gutter with a 3/4 inch invert across San Fransisco Rd.
2. Sheets 6 & 7 - Revise the return at Don Gaspar and Mabry to a 34' radius.

Dave Harmon:

1. Plot the grades to the flowline from the curb returns to the centerline of the street.

Originals were returned to Mike Yost. Plans will be approved by remaining DRC members after the above mentioned comments are incorporated.

AH/tar

cc: Attendees
James N. Hicks, Principal Engineer/Design Section
Project File #3121



25×10

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FILE COPY

# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 768-7644

November 13, 1986

Michael J. Yost
Community Sciences Corporation
Post Office Box 1328
Corrales, New Mexico 87048

RE: CONCEPTUAL DRAINAGE REPORT SUBMITTAL FOR PRELIMINARY PLAT APPROVAL OF HERITAGE EAST UNIT II, TRACT B (D-20/D3E) RECEIVED OCTOBER 29, 1986

Dear Mike:

I have reviewed the above referenced submittal and hereby give conceptual approval for obtaining preliminary plat through DRB. Also, be advised that an approved infrastructure listing is required for preliminary plat.

Prior to Final Plat approval and sign-off in DRC, a detailed drainage report is required to be approved by this section.

This detailed report shall include, but not be limited to, top of curb elevations at appropriate locations, finished floor elevations (minimum of pad elevations, assuming F.F. is ± 1/2 foot), and all necessary details and hydraulic calculations for construction of required drainage and grading facilities.

One specific condition that will need to be maintained is the low-flow or nuisance collector drain at the intersection of San Francisco Road and Lew Wallace. The design of this intersection will be required to ensure that this facility will continue to function as designed. San Francisco is a collector street and the nuisance flows are not allowed to cross. Hence, the existing low-flow facility.

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

Cordially,

Billy J. Goolsby

Billy J. Goolsby, P.E.
C.E./Hydrology Section

BJG/bsj



25×10

0000 0000 0833

THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT.

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

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: D20 DATE: [illegible]

PLANNING DIVISION NOS: EPC: _____ DRB: _____

SUBJECT: SF Subdivision

STREET ADDRESS (IF KNOWN): _____

SUBDIVISION NAME: Heritage Park Unit 2 Tract [illegible]

APPROVAL REQUESTED:

X PRELIMINARY PLAT

SITE DEVELOPMENT PLAN

OTHER

X FINAL PLAT

BUILDING PERMIT

ROUGH GRADING

| | WHO | REPRESENTING |
|---|---|---|
| ATTENDANCE: | Mike Vost | Bannerly Services Corp |
| | [illegible] | City Hydrology |
| | | |

FINDINGS:

(1) Drainage scheme must be consistent with previous Drainage Reports (the D20/D3 Master Plan), D-20/D3C (Unit 5) D-20/D3B (Unit 4)

(2) Approved Drainage and Grading Plan required with accept. Final to determine all infrastructure requirements for Preliminary Plat.

(3) Detailed Final Grading & Drainage Plan must be approved prior to Final Plat and DRC Construction Sit Sign-offs.

(4) No SIDEWALK CULVERTS ARE NORMALLY REQUIRED RETAINED RESIDENTIAL LOCAL STREETS AND Cut Concrete Rundowns within R.O.W.s. Use removable barriers at access.

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: [illegible] SIGNED: Michael L. Vost

TITLE: Civil Engineer TITLE: Project Engineer

DATE: 10-21-86 DATE: 10/21/86

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

25x

0000 0000 0834

PLANS/PLATS ON FILE

FILE DESC: D20/D3E

# PLANS/PLATS 3

25×10

D20/D3E

0000 0000 0835

25×10