

## DRAINAGE INFORMATION SHEET

PROJECT TITLE: QUAIL SQUARE RETAIL CENTER ZONE ATLAS/DRNG. FILE #: H-11/D9  
 LEGAL DESCRIPTION: LOT A OF McBARK SUBDIV. AND A PORTION OF TRACT A-23, NORTHEAST UNIT  
 CITY ADDRESS: TOWN OF ATRISCO GRANT, BERNALILLO COUNTY N.M.

ENGINEERING FIRM: EASTERLING & ASSOC. CONTACT: C.M. EASTERLING

ADDRESS: 5643 PARADISE BLVD. N.W. PHONE: 898-8021

OWNER: CONTINENTAL WEST. CONTACT: ED. BECKARIK

ADDRESS: WESTERN BANK BLDG  
505 MARQUETTE SUITE 1819 PHONE: 243-1325

ARCHITECT: DESIGN COLLABRATIVE CONTACT: MARC SCHIFF

ADDRESS: 105 4TH ST. S.W. PHONE: 843-9639

SURVEYOR: \_\_\_\_\_ CONTACT: \_\_\_\_\_

ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_ CONTACT: \_\_\_\_\_

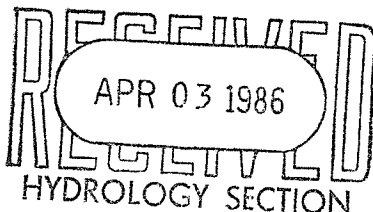
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

## PRE-DESIGN MEETING:

☐ YES

☒ NO

☐ COPY OF CONFERENCE RECAP  
 SHEET PROVIDED



DRB NO. \_\_\_\_\_

EPC NO. \_\_\_\_\_

PROJ. NO. \_\_\_\_\_

## TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT

☐ DRAINAGE PLAN

☒ CONCEPTUAL GRADING & DRAINAGE PLAN

☐ GRADING PLAN

☐ EROSION CONTROL PLAN

☐ 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

☐ ROUGH GRADING PERMIT APPROVAL

☐ GRADING/PAVING PERMIT APPROVAL

☐ OTHER \_\_\_\_\_ (SPECIFY)

DATE SUBMITTED: 4-4-86

BY: Ward L. Smith





# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 27, 1990

Terry O. Brown, P.E.  
D. Mark Goodwin and Associates  
Post Office Box 90606  
Albuquerque, New Mexico 87199

RE: DRAINAGE REPORT FOR LOT "A", M<sup>C</sup>BARK SUBDIVISION, (H-11/D9)  
ENGINEER'S STAMP DATED DECEMBER 3, 1990

Dear Mr. Brown:

The information provided on the referenced submittal received December 10, 1990 is approved by the Hydrology Development for Preliminary Plat.

Please be advised that the first Building Permit request in lots 2-4 will require construction of the conveyance system, detention pond and will also need to enter into a maintenance covenant agreement.

If you have any questions, please don't hesitate to call me at 768-2650.

Cordially,

Gilbert Aldaz, P.E. & L.S.  
City/County Floodplain Administrator

GA  
wp+2194

PUBLIC WORKS DEPARTMENT

Walter H. Nickerson, Jr., P.E.  
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

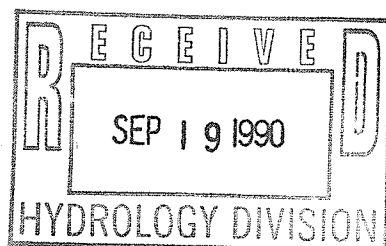
AN EQUAL OPPORTUNITY EMPLOYER



**DRAINAGE REPORT**  
**for**  
**LOT "A", MCBARK SUBDIVISION**  
**TOWN OF ATRISCO GRANT**

**Prepared for**  
**DESIGN COLLABORATIVE SOUTHWEST**

**September 1990**





#### EXISTING CONDITIONS

The subject property is currently platted as Lot "A", McBark Subdivision, Town of Atrisco Grant, and is located at the southeast corner of Coors Boulevard and Quail Road NW. Existing drainage of the tract is in an easterly direction toward Corona Drive NW. The tract is 6.0905 acres in size, and has been utilized in the past as a trucking facility. The entire site is paved with the exception of a dirt ponding area in the northeast corner and along the east edge of the Lot.

$$\begin{aligned}T_c &= 0.0078 (L^{0.77} / S^{0.385}) \\L &= 750 \text{ feet} \\S &= (5101 - 5098.6) / 750 = 0.003 \text{ ft/ft} \\T_c &= 12 \text{ minutes} \\I &= 2.3(6.84)^{T_c} \\I &= 4.43\end{aligned}$$

$$I = 6.84(10)^{-0.51} = 2.11$$

$$\begin{aligned}Q_{\text{peak}} &= CIA \\Q_{\text{peak}} &= 0.95 \times 4.43 \times 6.0905 \\Q_{\text{peak}} &= \underline{25.6 \text{ cfs}}\end{aligned}$$

$$I = 2.3 \times 2.11 = 4.9$$

$$0.95 \times 4.9 \times 6.1 = 28.2 \text{ cfs}$$

CISE  
SCS  
method  
for calculating volumes  
→

$$\begin{aligned}\text{Runoff Volume} &= C_d A \\ \text{Runoff Volume} &= 0.95 \times (2.3/12) \times (6.0905)(43,560) \\ \text{Runoff Volume} &= \underline{48,300 \text{ cubic feet runoff}}\end{aligned}$$

#### PROPOSED CONDITIONS

It is proposed to subdivide the 6 acre tract into four parcels as illustrated on the map in the pocket at the back of this report. The drainage criterion required for the subdivision and/or development of this land is dictated in part by the drainage report for SAD 217. The SAD 217 drainage report designates the subject Lot "A" as part of Basin C. The report states that "... the allowable developed surface flows from basins D & C to Corona should be limited to not exceed 2.45 cfs per acre until Ouray is ultimately improved and the required additional street flow capacity is achieved above the 98 cfs storm drain capacity." Therefore, the allowable runoff from the four proposed tracts of the subject development is 6.0905 acres times 2.45 cfs per acre (or 14.9 cfs) until Ouray is improved in the future.

A proposed Kentucky Fried Chicken Restaurant is to be immediately constructed on Lot 1 once the site plan is approved. It is intended to direct discharge 100% of the runoff from this site onto Quail Road NW and Coors NW at a peak discharge rate of 2.3 cfs onto Quail and 0.5 cfs onto Coors (2.8 cfs total). The KFC site is approximately 0.69 acres. Therefore, the remaining 5.4 acres of the subject site will be permitted 12.1 cfs peak discharge (14.9 cfs - 2.8 cfs) in accordance with the SAD 217 drainage plan. To accomplish this restricted rate, it will be necessary to construct two temporary detention pond facilities on the east side of the proposed development along Corona Drive NW, and controlled



discharge structures to permit no more than the allowable discharge rate. The discharge rate from each pond will be controlled via a series of 6" PVC pipes discharging from each pond into sidewalk culverts, all properly sized to restrict the discharge rates to no more than that allowable. See detailed drawings in the Appendix of this report.

The anticipated drainage characteristics of the proposed developments will decrease the runoff rate and volume from the current rate and volume due to the fact that landscaping of the new developments will be required. The existing C Factor is 0.95. The proposed C Factor is calculated as follows:

$$C = 0.85(0.95) + 0.15(0.25) = 0.85$$

with 85% impervious and 15% landscaping.

Therefore, the projected runoff rate for the future developments combined are as follows:

$$Q_{peak} = CIA = 0.85 \times 4.43 \times 6.0905 = 22.9 \text{ cfs}$$

Subdivision of the subject property is going to require that runoff be collected on each site except the Kentucky Fried Chicken site, and transported in drainage channels to the proposed temporary ponding structure. This will require new private drainage easements on proposed Lots 3 & 4 as shown on the map in the pocket at the end of this report. The proposed easement will be 20 feet in width and will contain an asphaltic pavement V-ditch to convey runoff to the proposed detention ponds. The capacity of each V-ditch will be 17 cfs based on a 15 foot wide ditch being 0.6' deep at the center and having a minimum slope of 0.500%. See nomograph for determining ditch capacity in the Appendix of this report.

Proposed drainage of the development will be as defined on the drainage map in the map pocket at the end of this report. There are three basic drainage basins for the property. Drainage basin I (I-A, I-B-1, and I-B-2) discharges directly onto Coors Boulevard or Quail Road NW. Drainage basins II and III discharge to each of the two proposed detention ponds on Lot 4 via paved drainage V-ditches located in proposed 20' wide private drainage easements. Private drainage easements are also required for the two proposed pond locations on Lot 4. The two temporary ponds are sized to contain 100% of the 100 year runoff volume from basins II and III respectively. The ponds will then discharge at the rate allowed by the SAD 217 drainage report. With a total detention volume of 35,400 cubic feet of runoff and a maximum allowable discharge rate of 12.1 cfs, the ponds will take approximately 0.81 hours to drain. Discharge of the ponds shall be accomplished through a series of 6" diameter drain pipes from the pond to proposed sidewalk culverts along Corona Drive NW. The capacity of each drain pipe is 1.3 cfs.

$$Q = C_a 2gh = 0.6 \times .1963 \text{ s.f.} \times 11.3 = \underline{1.3 \text{ cfs}}$$

$$\text{Total No. of Pipe Required} = 12.1/1.3 = \underline{9 \text{ pipes}}$$



Therefore, a total of 9 drain pipes will be required to discharge both ponds. Three pipes will be installed in the north pond and the remaining six pipes in the south pond. Typical drawings of the discharge structure are found in the Appendix of this report.

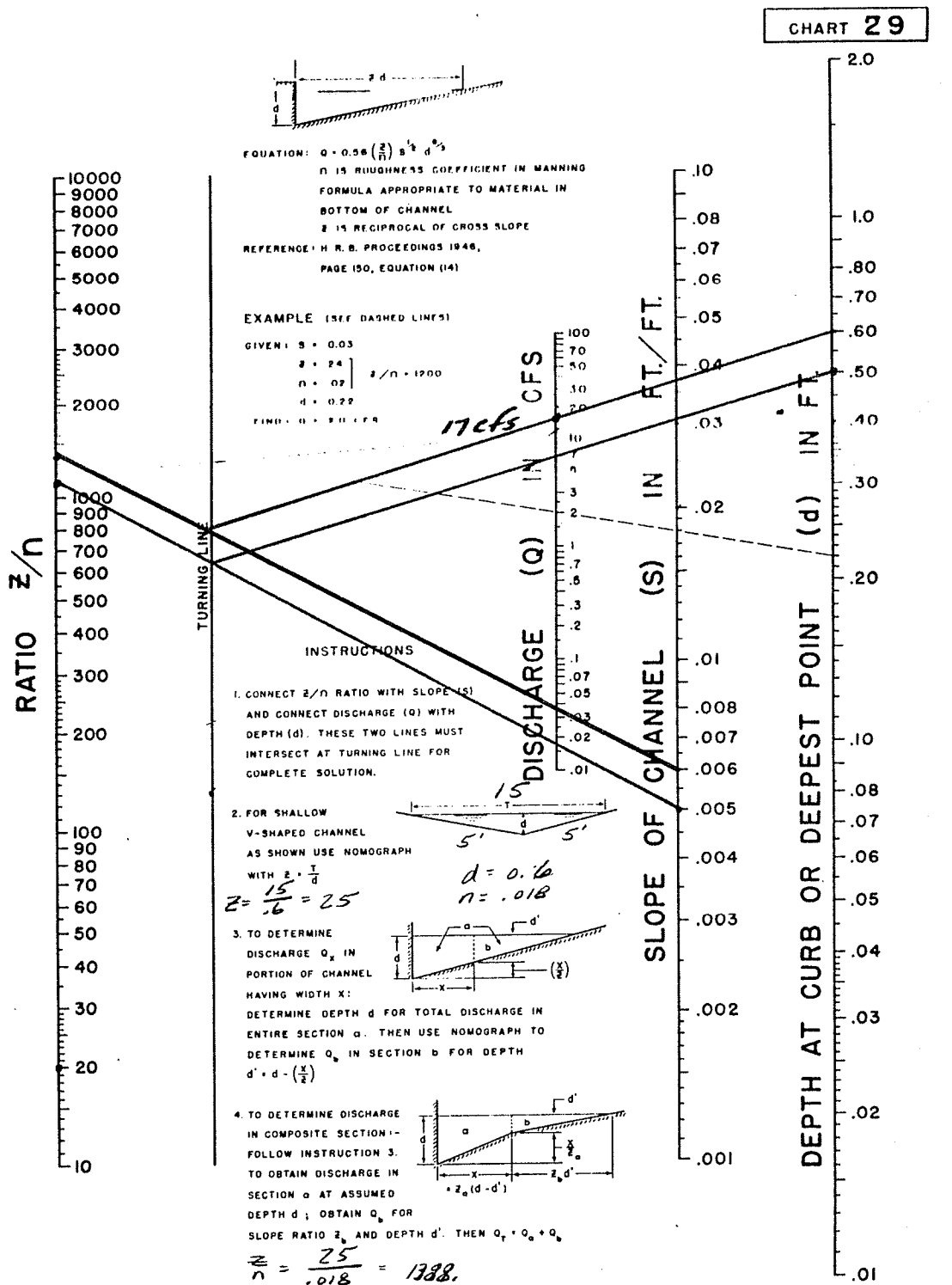
In summary, the proposed drainage criteria utilized for this report consists of City of Albuquerque Policies and Standards, and those outlined in the drainage report for SAD 217. In accordance with the requirements of the SAD 217 report, an interim drainage measure is proposed for this site to restrict discharge onto Corona Drive NW until Ouray Road NW between Coors Boulevard and Alamagordo Drive is improved to carry surface flows in addition to the existing underground storm sewer pipe. Temporary ponds are being proposed on proposed Lot 4 to accomplish this interim requirement. By City Ordinance, the temporary ponds are required as a condition of subdivision of this property. The requirements of SAD 217 also trigger this infrastructure requirement. When the Ouray improvements are constructed and sufficient downstream capacity can be demonstrated, then the temporary ponds can be eliminated and direct discharge onto Corona Drive NW is permitted. Private drainage easements are being proposed as shown on the drainage map in the map pocket of this report to permit the efficient conveyance of drainage across private property to Corona Drive. This is preferable as the alternative to larger earthwork fill requirements and excessive retaining wall construction.



A P P E N D I X



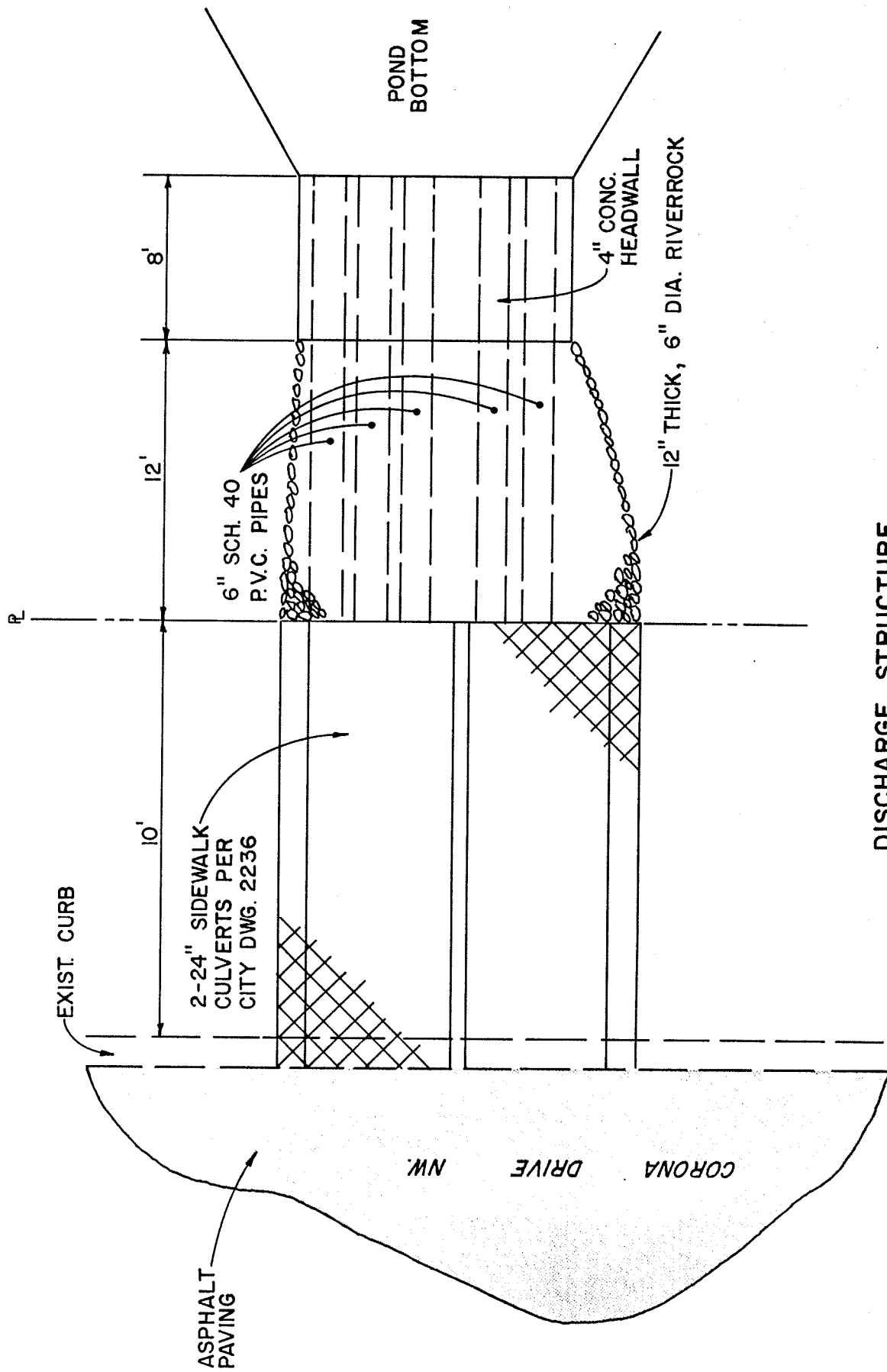
# Capacity of Proposed V-ditches



NOMOGRAPH FOR FLOW  
IN TRIANGULAR CHANNELS

Use 15' wide channel (V-ditch) and depth = 0.6'  
 $Q_{cap} = 17 \text{ cfs}$

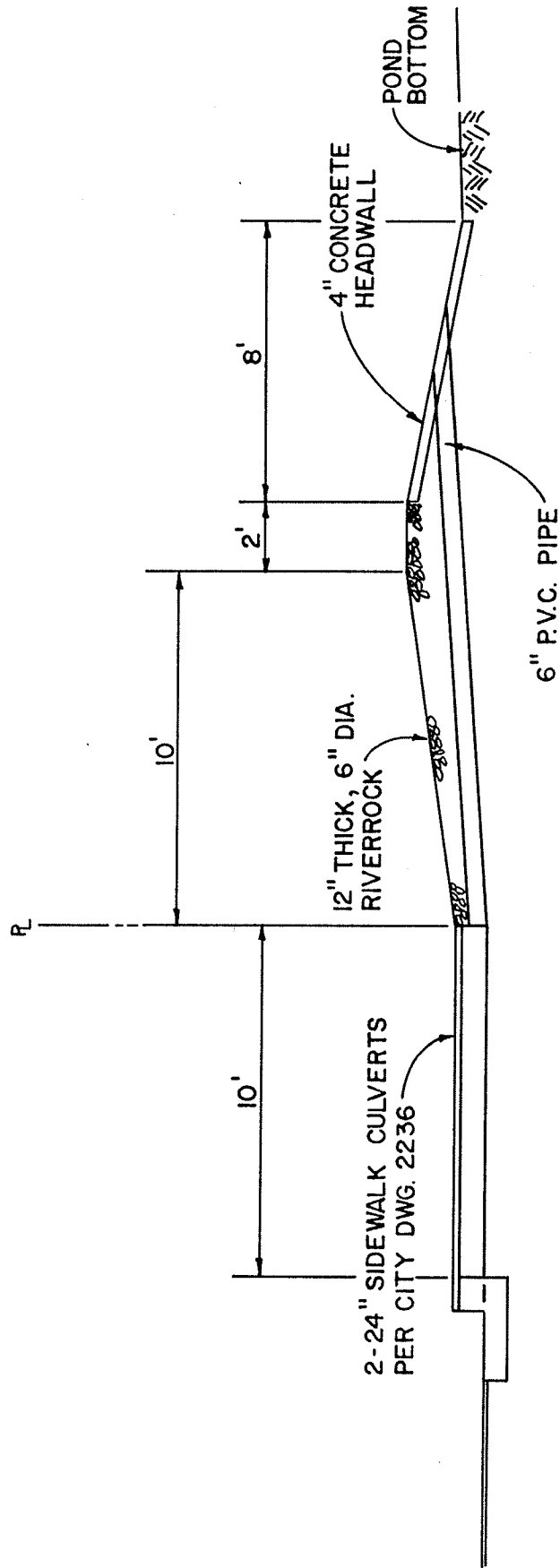




# DISCHARGE STRUCTURE

No Scale





# TYPICAL DETAIL DISCHARGE STRUCTURE

No Scale



28 June 76

Michael M. Emery

Bohannon Westman Huston and Associates

4125 Carlisle Boulevard NE

Albany NM 87107

Re: Drainage report for Pacific  
Intermountain Express Addition.

Dear Mr. Emery:

The subject report is approved.

VTY

Kleston H Laws.



DRAINAGE REPORT  
FOR  
PACIFIC INTERMOUNTAIN EXPRESS ADDITION  
ZONE ATLAS SHEET NO. H-11-Z

JUNE, 1976

PREPARED BY  
BOHANNAN WESTMAN HUSTON & ASSOCIATES, INC.  
4125 Carlisle Boulevard, N.E.  
Albuquerque, New Mexico 87107



*Michial M. Emery*  
\_\_\_\_\_  
MICHAL M. EMERY  
N.M.P.E. NO. 5194



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## LIST OF PLATES

PLATE I - PROJECT LOCATION

PLATE II - SPOT ELEVATIONS AND POND DETAILS



## PACIFIC INTERMOUNTAIN EXPRESS ADDITION

150X680

### PURPOSE

The purpose of this report is to describe the drainage characteristics of the property for the Pacific Intermountain Express Addition and to design two retention/infiltration ponds capable of retaining the site runoff from a 100 year, 6 hour storm without increasing the runoff volume or peak discharge beyond the predevelopment level.

### LOCATION AND PROJECT DESCRIPTION

The Pacific Intermountain Express Addition is a 2.4 acre extension to the existing commercial freight truck and car parking facility on the east side of Coors Boulevard approximately 0.6 miles north of Interstate 40. This is illustrated on Plate I at the back of the report. The function of the addition is to increase employee parking and to permit parking for P.I.E. trucks. Improvements include the paved parking area, a P.I.E. dispatch building, and two retention ponds. Existing facilities at the site include paved parking for commercial freight employees and trucks, a C.F. dispatch building, a service station building with fuel pumps, and storm water retention ponds.

### DESIGN CONCEPT

Two ponds will be designed to operate together to retain storm runoff from the developed site based on runoff volumes produced by the 100 year, 6 hour storm. Each pond will serve a portion of the total area. The largest pond, receiving runoff from approximately 80 percent of the site, will be capable of handling the design storm even when full without discharging more than the predevelopment peak runoff. This will be accomplished by providing additional volume in the pond beyond that required



for a single 100 year storm event while furnishing a weir to discharge the additional volume at a controlled rate. The additional volume shall be computed according to procedures presented in PRACTICES IN DETENTION OF URBAN STORMWATER RUNOFF produced by the American Public Works Association.

#### DESIGN PROCEDURE

The P.I.E. Addition is divided into two areas: one drains east, the other west. This is done since the south edge of the proposed parking area must match the north edge of the existing lot (which also divides the flow east and west) and also to take advantage of the ponding areas previously designated at the east and west extremes of the property. Runoff volumes from the respective areas were determined for the developed site based on 2.4 inches of rain. The small pond on Coors Boulevard is designed to retain all of the runoff from the 100 year storm, whereas the large pond on Corona Avenue has a permanent volume equal to the developed runoff volume from 80 percent of the total area minus the undeveloped runoff volume from the entire 2.4 acres. This, in effect, will allow the undeveloped runoff volume to escape from the developed site.

In the event the large pond on Corona is full prior to the 100 year storm, an additional detention volume has been added to the permanent retention volume. Runoff rising into the detention portion of the pond is discharged over a weir sized so that the average head on the weir does not produce a discharge greater than the predevelopment peak discharge.

Calculations for determining the detention volume of the Corona pond are given in the Appendix on Page 2. It is based on finding the storm duration which yields the greatest difference between developed and undeveloped runoff volumes. Each runoff volume is equal to the product of peak discharge and storm duration.



## RECOMMENDATIONS

A topographic map of the area should be developed before construction begins. Spot elevations shown on Plate II were extrapolated from elevations given on the existing commercial freight parking lot. Some adjustments may have to be made to insure that the top of the Coors pond is above the invert of the roadside ditch and that the bottom of the weir on the Corona pond is above the existing ground at that point. Problems may also exist where the north side of the property ties into existing ground.

Recommendations made in the soils report for the Grants Fueling Center by Albuquerque Testing Laboratory should be adhered to in this project.

## CONCLUSIONS

The Pacific Intermountain Express Addition will use on-site retention ponding and controlled weir flow to limit the runoff volume and peak discharge from the developed site to its predevelopment level. Plate II illustrates the location and general construction of the ponds.



APPENDIX  
CALCULATIONS



DRAINAGE STUDY  
FOR  
PACIFIC INTERMOUNTAIN EXPRESS  
ADDITION

1. TOTAL AREA : 103,540 SF = 2.38 ACRES

2. RUNOFF VOLUME : (100 YR 6 HR STORM  $\rightarrow$  2.4")

UNDEVELOPED  
RUNOFF COEFFICIENT = 0.35  
VOL =  $\frac{0.35(2.4)(103,540)}{(12)}$

VOL = 7248 CF

DEVELOPED  
RUNOFF COEFFICIENT = 1.0  
VOL =  $\frac{1.0(2.4)(103,540)}{(12)}$

VOL = 20,708 CF

APPROXIMATELY 18% OF THE AREA WILL DRAIN WEST TO THE POND ALONG COORS BLVD.

3. VOL REQUIRED FOR COORS POND

$$0.18(20,708) = 3728 \text{ CF}$$

POND DIMENSIONS (IF CONSTRUCTED W/ VERTICAL SIDES)  
15' x 150' x 1.66' DEEP

4. VOL REQUIRED FOR CORONA POND (RETENTION VOLUME)

$$20,708 - 3728 - \boxed{7248} = 9732'$$

DEPTH REQUIRED FOR THIS VOL :

$$9732 / (150 \times 85) = 0.763' \text{ (USE } 0'-9")$$

5. PEAK DISCHARGE :

UNDEVELOPED

$$T_0 = \log^{-1} [ .3641 (E) + .3854 \log(L) - .197 \log(S) - .3613 ]$$



PROJECT NAME P.I.E. ADDITION

PROJECT NO. 76-098

SUBJECT DRAINAGE REPORT

SHEET 1 OF       

BY RWM DATE 5-25-76

CH'D        DATE



WHERE :

$L$  = LENGTH TO FARTHEST POINT (FT)

$S$  = SLOPE, %

$B$  = GROUND FACTOR (1.84 POOR GRASS)

$T_c$  = TIME OF CONCENTRATION, MINUTES

$$T_c = \log^{-1} [ .3641 (1.84) + .3854 \log (675) - .197 \log (0.5) - .3613 ]$$

$$T_c = \log^{-1} (1.4584)$$

$$T_c = 28.7 \text{ MINUTES}$$

$$\therefore L = 189 / (28.7 + 25) = 3.52 \text{ IN/HR}$$

MASTER PLAN OF  
DRAINAGE, 1962

$$Q = C_i A = (0.35) (3.52) (2.38)$$

$$Q = 2.93 \text{ CFS}$$

DEVELOPED (SIDE DRAINING TOWARD CORONA)

$$Q = C_i A = 1.0 (5.4) (2.38 - .18 (2.38)) = 5.4 (1.95)$$

$$Q = 10.54 \text{ CFS}$$

$L = 10 \text{ MINUTES}$

### 6. ADDITIONAL POND VOLUME REQUIREMENTS FOR CORONA POND (DETENTION VOLUME)

100YR STORM DURATION (MIN)	INTENSITY (IN/HR)	PEAK FLOW RATE (CFS)	STORM RUNOFF VOLUME (FT <sup>3</sup> )	RELEASE FLOW (FT <sup>3</sup> )	ADDITIONAL REQUIRED STORAGE VOLUME (FT <sup>3</sup> )
10	5.4	10.54	6324	1758	4566
15	4.73	9.22	8298	2637	5661
20	4.2	8.19	9828	3516	6312
25	3.78	7.37	11055	4395	6660
30	3.44	6.71	12078	5274	6804*
35	3.15	6.14	12894	6153	6741
40	2.91	5.67	13608	7032	6576
45	2.70	5.27	14229	7911	6318

\* MAXIMUM REQUIRED STORAGE IN ADDITION  
TO STORAGE DETERMINED IN ITEM (4) ABOVE



PROJECT NAME P.I.E. ADDITION

PROJECT NO. 76-098

DRAINAGE REPORT

SHEET 2

BY RWM

CH'D

OF 5-25-76

DATE



# 7. TOTAL VOLUME FOR CORONA POND

$$6804 + 9.732 = 16536 \text{ CU. FT.}$$

## POND DIMENSIONS

150' x 85' x 1.30' DEEP

# 8. WEIR DESIGN

ASSUME A BROADCRESTED WEIR:

$$\text{THEN } Q = CLH^{2/3}$$

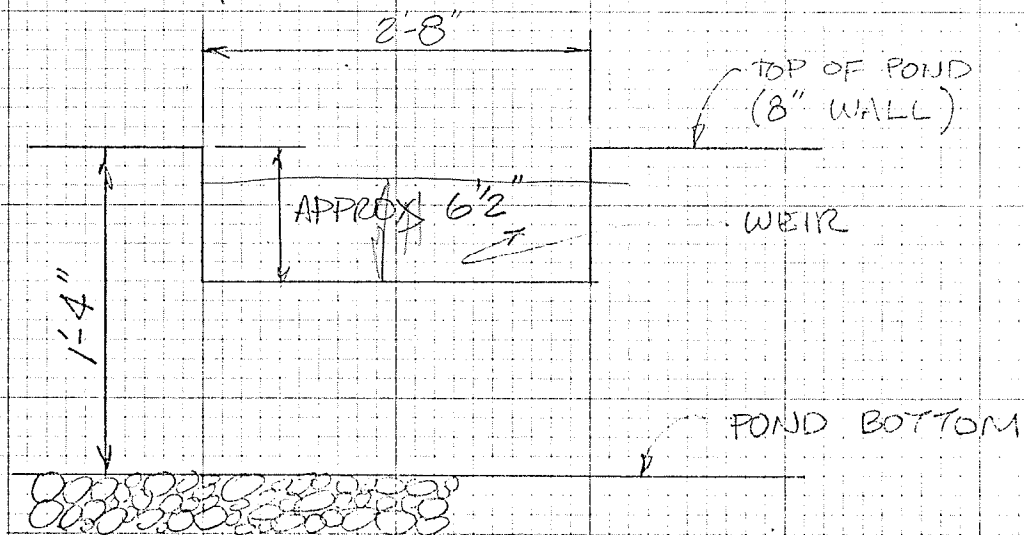
$$\text{AVERAGE HEAD, } H = 0.54/2 = 0.27'$$

$$\text{BREADTH OF WEIR} = 8''$$

$$\therefore C = 2.75 \quad (\text{KING \& BRATER HANDBOOK OF HYDRAULICS, 5TH ED.})$$

$$L = \frac{Q}{CH^{2/3}} = \frac{2.93}{2.75(0.27)^{2/3}}$$

$$L = 2.55' \quad (\text{USE } 2'-8'' \text{ CONFORMS W/ MASONRY DIMENSIONS})$$



PROJECT NAME P.I.E. ADDITION

PROJECT NO. 76-098

SUBJECT DRAINAGE REPORT

SHEET 3

BY RWM

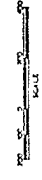
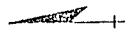
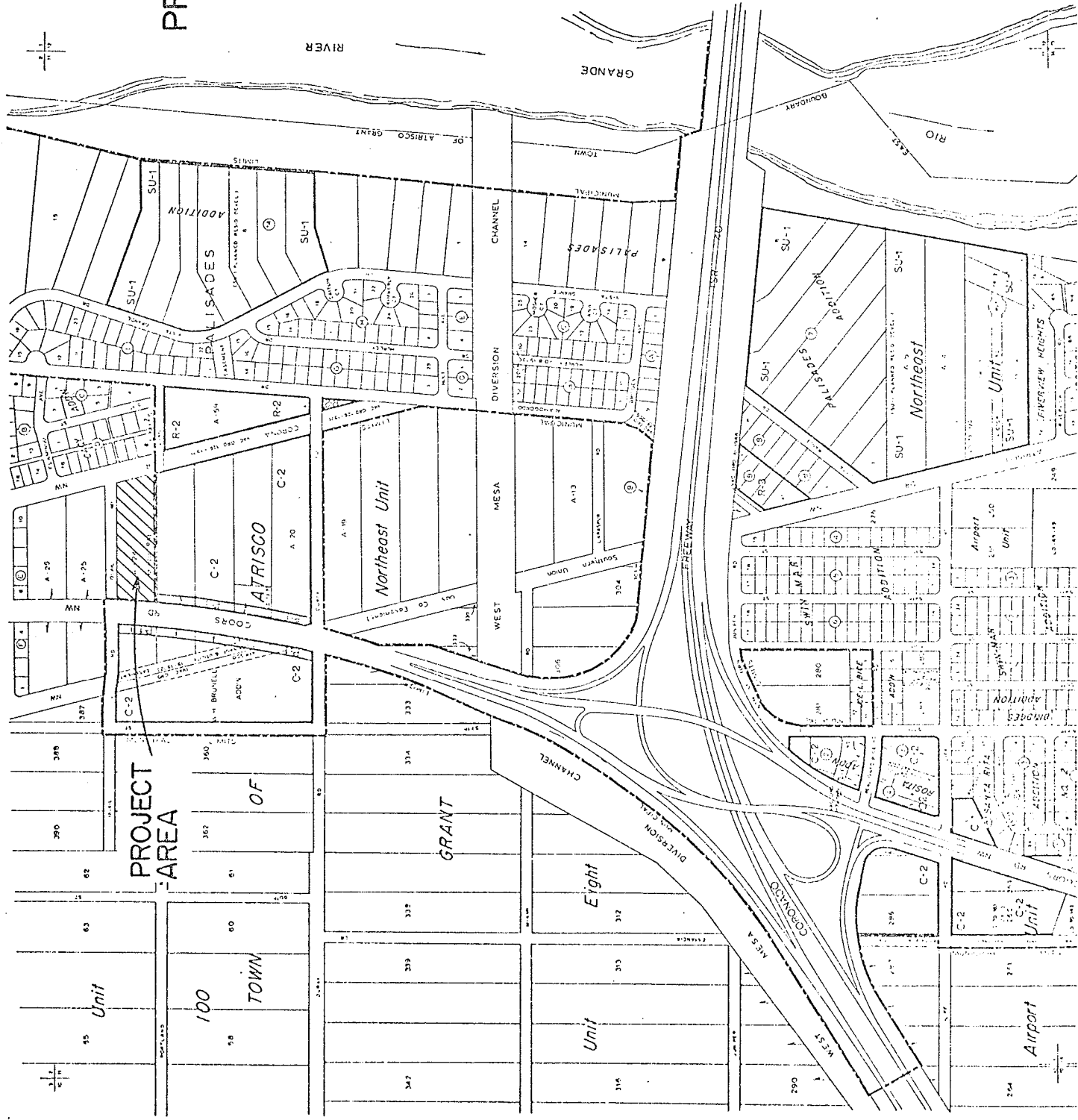
CH'D

OF 5 DATE 5-25-76

DATE



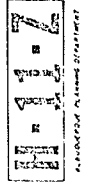
# PLATE I PROJECT LOCATION



LEGAL DESCRIPTION  
T. 10 N.  
R. 1 E.  
SEC. 11

UNITED STATES CODE  
100-1000

U.S. DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
NOVEMBER 1970





Lot 2

$$T_c = \frac{0.0078 (300')^{0.77}}{(0.005)^{0.385}} = 4.8 \text{ min}$$

EASEMENT

$$L = 500' \quad S = 0.005$$

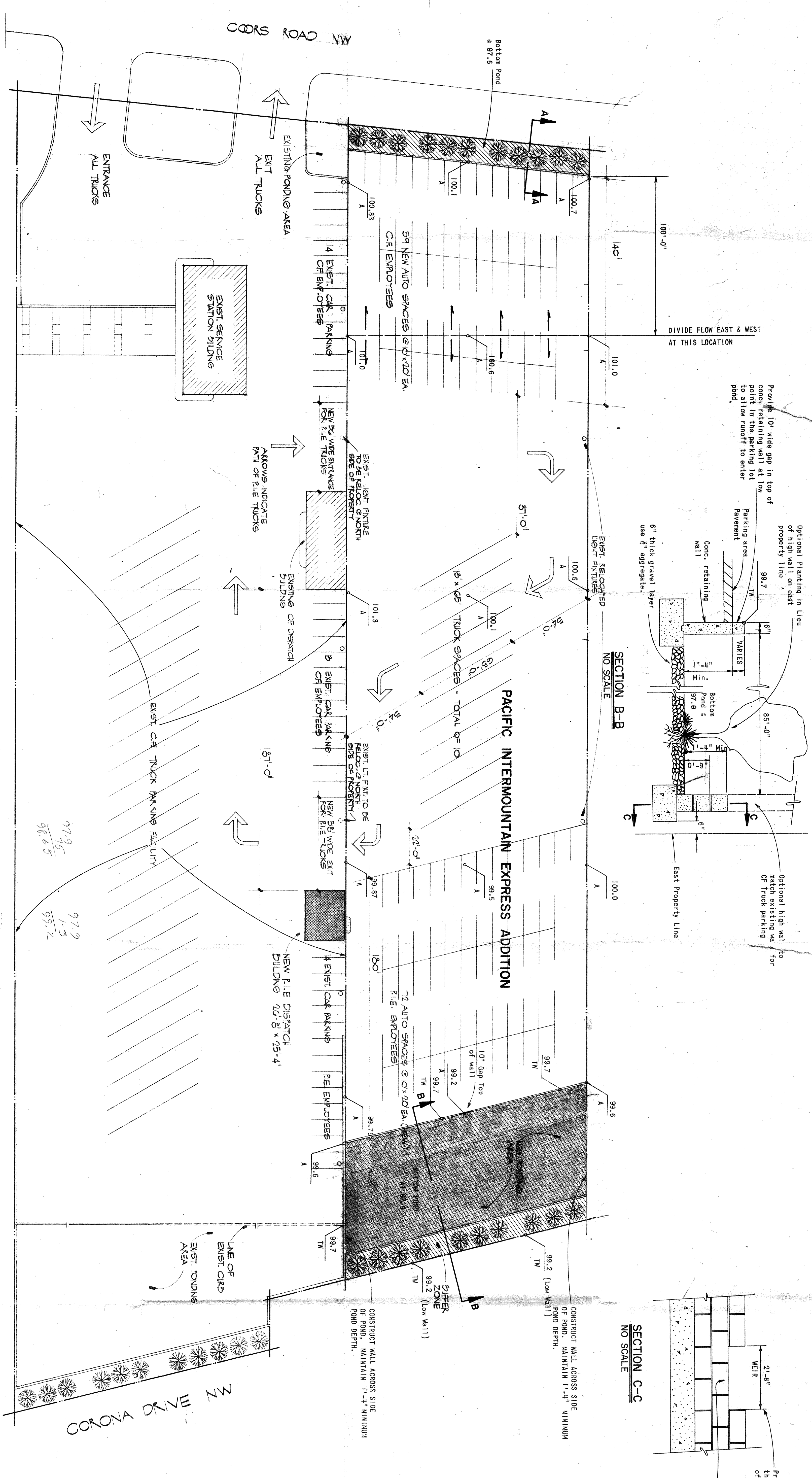
SAY  $V = 2 \text{ fps}$

$$T_c = \frac{L}{V} = \frac{500'}{2(60)} = 4.1 \text{ min}$$

$$\dot{T}_{c \text{ total}} \approx 10 \text{ min.}$$



GRANTS FUELING CENTER • 2040 COOKS ROAD NW, ALBUQUERQUE, NEW MEXICO



**SECTION C-C**  
**NO SCALE**

Provide a 2'-8" long weir in the 3rd course near the center of the pond.


Grout Fill Blocks  
Beneath Weir

NOTE: IF THE OPTIMAL HIGH WALL IS CONSTRUCTED, PROVIDE FLIGHT (8) 4-INCH WIDE GAPS IN THE THIRD COURSE, EVENLY SPACED ACROSS THE LENGTH OF THE WALL.

**SECTION A-A**  
**NO SCALE**

4/30/76  
SITE REVISIONS  
5/5/76

**PLATE 11**  
**SPOT ELEVATION**  
**AND**  
**POND DETAIL**

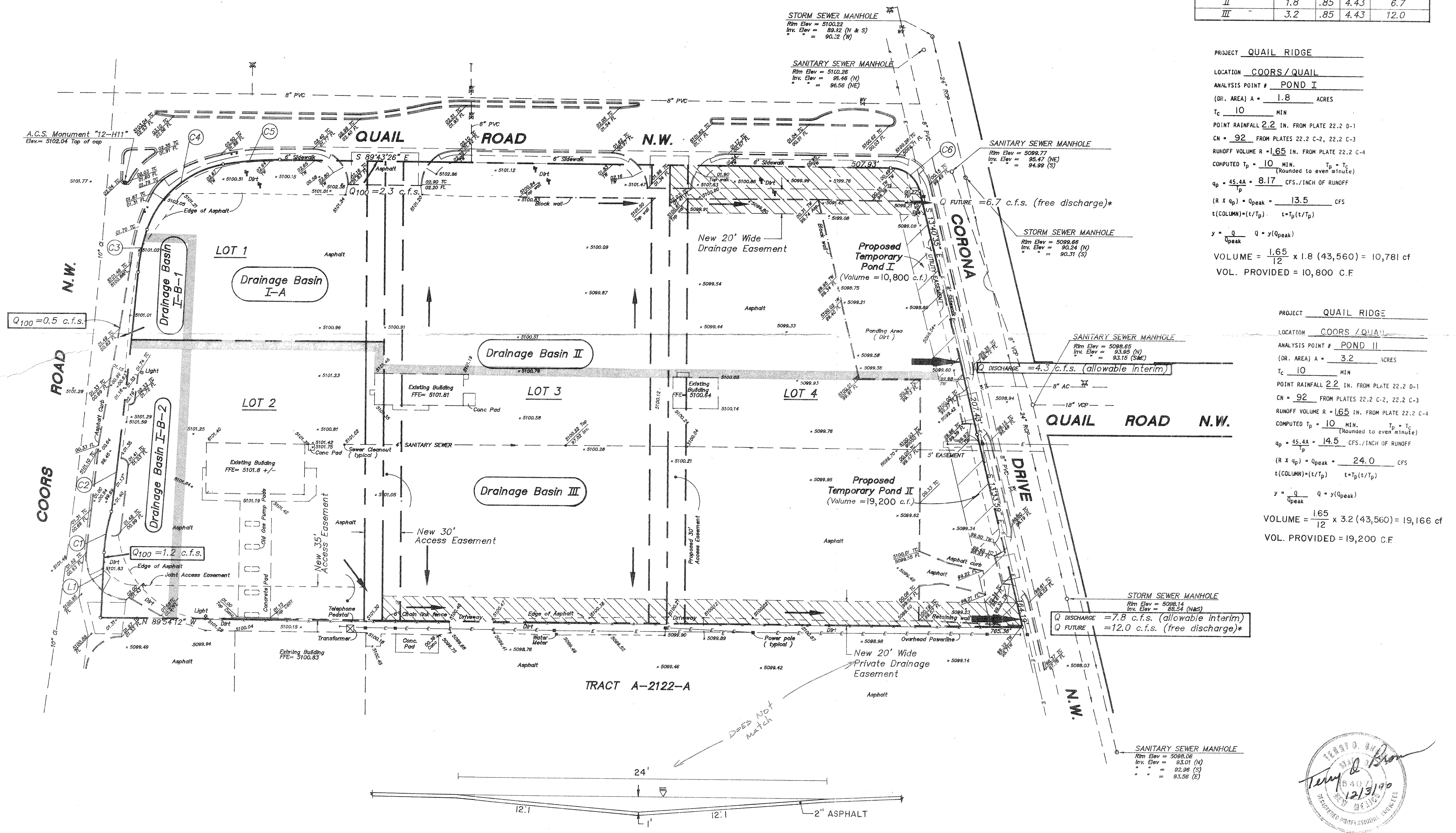
A technical drawing showing a spot elevation and a pond detail. The spot elevation is a small, irregular shape with a central point. The pond detail is a larger, irregular shape with a central point. The drawing is labeled with 'BOHANNAN' and 'WESTMAN' along the top and bottom edges, and 'HUSTON' along the left edge.



CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	136.00'	34.73'	17.46'	34.64'	S 09°46'22" W	113°7'59"
C2	5812.30'	199.61'	99.81'	199.60'	N 05°53'20" E	01°58'04"
C3	150.00'	36.31'	18.24'	36.22'	S 11°17'54" W	13°52'05"
C4	82.00'	87.57'	43.78'	83.47'	S 48°49'36" W	81°11'20"
C5	250.00'	47.37'	23.75'	47.30'	S 84°50'54" W	10°51'20"
C6	25.00'	33.18'	19.55'	30.80'	N 51°42'00" W	78°02'51"

LINE	DIRECTION	DISTANCE
L1	N 02°27'23" E	54.06'

DESCRIPTION	AREA	C	I	Q (c.f.s.)
I-A	.6	.85	4.43	2.3
I-B-1	.13	.85	4.43	.5
I-B-2	.33	.85	4.43	1.2
II	1.8	.85	4.43	6.7
III	3.2	.85	4.43	12.0



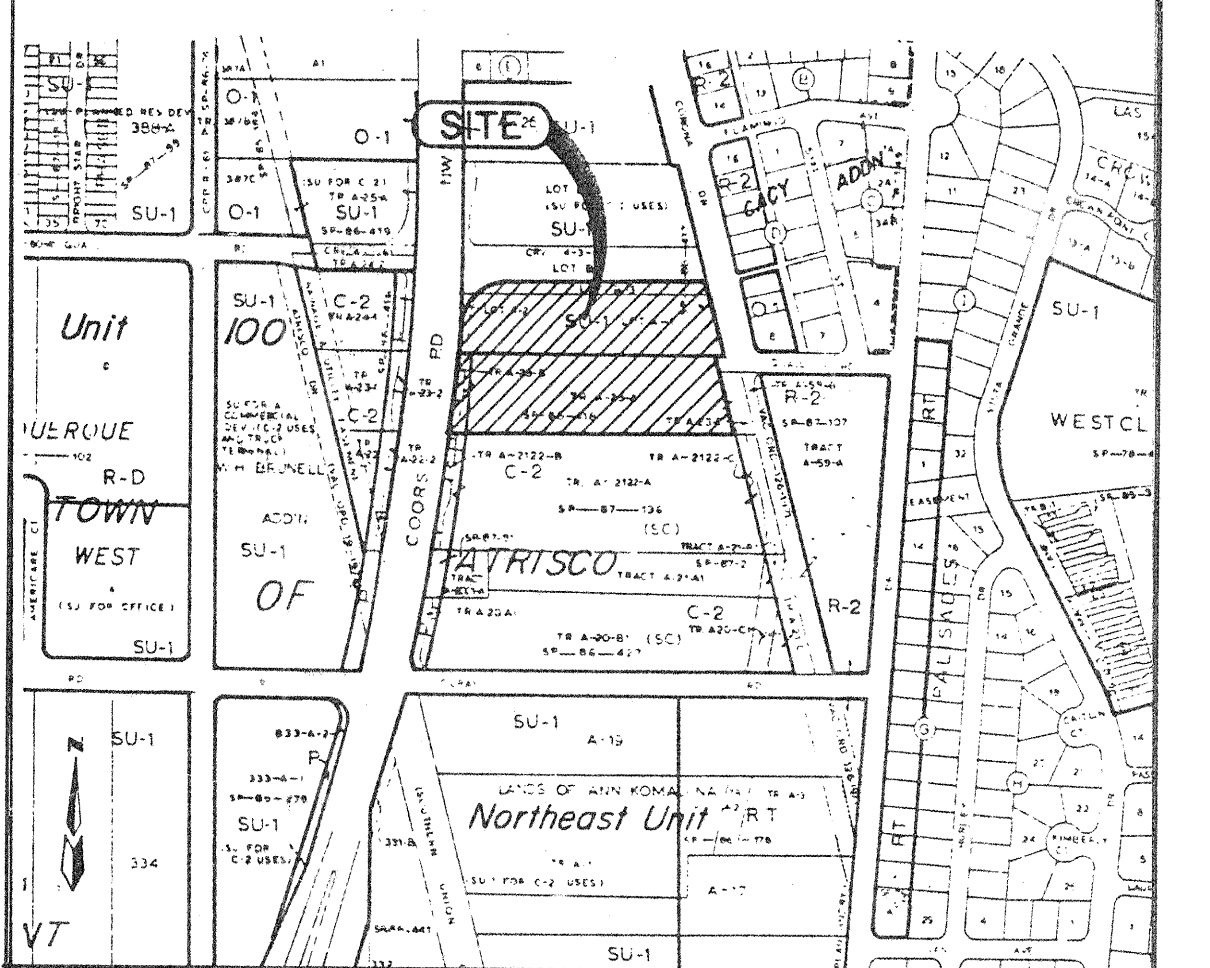
PROJECT: QUAIL RIDGE  
 LOCATION: COORS / QUAIL  
 ANALYSIS POINT # POND I  
 (DR. AREA) A = 1.8 ACRES  
 $T_c = 10$  MIN  
 POINT RAINFALL 2.2 IN. FROM PLATE 22.2 D-1  
 $CN = .92$  FROM PLATES 22.2 C-2, 22.2 C-3  
 RUNOFF VOLUME R = 1.65 IN. FROM PLATE 22.2 C-4  
 COMPUTED  $T_p = 10$  MIN.  $T_p = T_c$   
 (Rounded to even minute)  
 $Q_p = 45.44 = 8.17$  CFS./INCH OF RUNOFF  
 $(R \times Q_p) = Q_{peak} = 13.5$  CFS  
 $t(COLUMN) = (t/T_p) \times t_p = 1.5$   
 $VOLUME = \frac{1.65}{12} \times 1.8 (43,560) = 10,781$  cf  
 VOL. PROVIDED = 10,800 C.F.

PROJECT: QUAIL RIDGE  
 LOCATION: COORS / QUAIL  
 ANALYSIS POINT # POND II  
 (DR. AREA) A = 3.2 ACRES  
 $T_c = 10$  MIN  
 POINT RAINFALL 2.2 IN. FROM PLATE 22.2 D-1  
 $CN = .92$  FROM PLATES 22.2 C-2, 22.2 C-3  
 RUNOFF VOLUME R = 1.65 IN. FROM PLATE 22.2 C-4  
 COMPUTED  $T_p = 10$  MIN.  $T_p = T_c$   
 (Rounded to even minute)  
 $Q_p = 45.44 = 14.5$  CFS./INCH OF RUNOFF  
 $(R \times Q_p) = Q_{peak} = 24.0$  CFS  
 $t(COLUMN) = (t/T_p) \times t_p = 1.5$   
 $VOLUME = \frac{1.65}{12} \times 3.2 (43,560) = 19,166$  cf  
 VOL. PROVIDED = 19,200 C.F.

STORM SEWER MANHOLE  
 Rim Elev = 5098.06  
 Inv. Elev = 5088.06 (N)  
 Inv. Elev = 5088.06 (S)  
 Inv. Elev = 5088.06 (E)  
 Inv. Elev = 5088.06 (W)

ASPHALT DRAINAGE SWALE  
 Not to Scale  
 $Q_{cap} @ 0.50\% \text{ SLOPE} = 52 \text{ cfs}$

\* NOTE: Free discharge rates are permitted when Quail Road is improved to criteria defined in SAD 217 report.

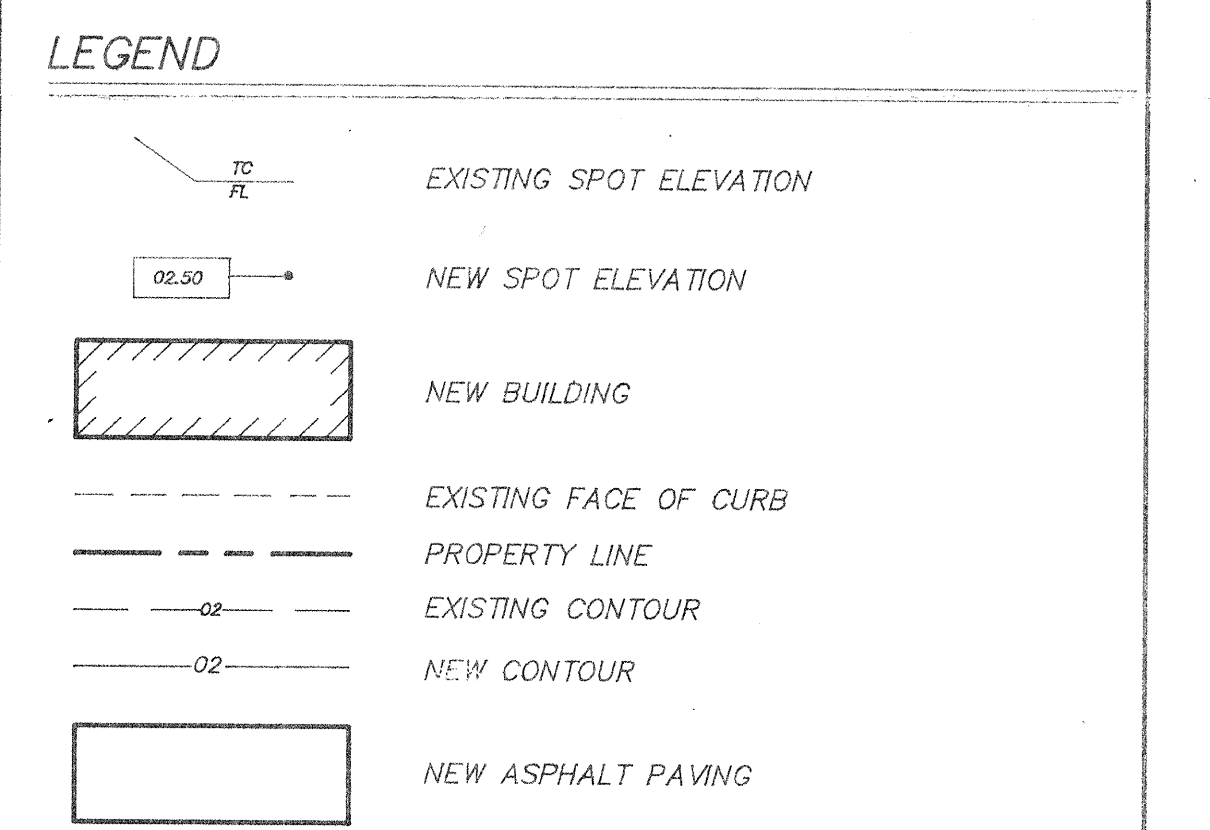


VICINITY MAP  
 ZONE ATLAS H-11  
 NOT TO SCALE

LEGAL DESCRIPTION  
 LOT "A", McBARK SUBDIVISION, TOWN OF ATRISCO GRANT

ACS BENCHMARK  
 A 1 3/4" ALUMINUM DISC STAMPED "ACS BM 9-H11" IN THE CONCRETE BASE OF THE FIRST STEEL POWER POLE EAST OF COORS RD., 0.1 MILE NORTH OF OURAY RD. N.W. ON THE WEST SIDE OF THE POLE.  
 $Z = 5101.39$

TBM (TEMPORARY BENCHMARK)  
 TOP OF RETAINING WALL AT THE SOUTHEAST CORNER OF THE PROPERTY.  
 $Z = 5099.32$



- GENERAL NOTES
- SITE DOES NOT LIE IN OR CONTRIBUTE TO THE 100 YR. FLOOD PLAIN.
  - NO OFFSITE FLOWS ENTER THIS SITE.
  - ALL ELEVATIONS ARE MSL (MEAN SEA LEVEL).
  - ADD 5000 TO ALL ELEVATIONS.
  - CONTOUR INTERVAL = 1'.
  - SEE ARCHITECTURAL SITE PLANS FOR ALL DIMENSIONS.
  - 12" COMPACTED SUBGRADE TO A MINIMUM OF 95% ASTM D-1557 UNDER ALL AREAS TO BE PAVED.
  - TOPOGRAPHIC SURVEY PERFORMED BY HUGG SURVEYING CO.

QUAIL RIDGE SUBDIVISION  
 LOT 'A', McBARK SUBDIVISION  
 CONCEPTUAL GRADING & DRAINAGE PLAN

dmg D. MARK GOODWIN & ASSOCIATES, P.A.  
 CONSULTING ENGINEERS & SURVEYORS  
 P.O. BOX 90606  
 ALBUQUERQUE, NEW MEXICO 87199  
 (505) 828-2200

Designed: TOB Drawn: RJA Checked: TOB Sheet 1 of 1  
 Scale: 1"=50' Date: 9/90 Job: 9044

