

DRAINAGE INFORMATION SHEET

LA MESA DEL OESTE

PROJECT TITLE: SUBDIVISION, UNIT 1 ZONE ATLAS/DRNG. FILE #: H-10 /D7

LEGAL DESCRIPTION: TRACTS 294, 295 & 296, Town of Atlixed Grant, Unit #8

CITY ADDRESS: N/A

ENGINEERING FIRM: ISAACSON & ARFMAN, P.A. CONTACT: FRED C. ARFMAN

ADDRESS: 128 MONROE ST. N.E. PHONE: 268-8828

OWNER: SUNCOR DEVELOPMENT CORP. CONTACT: GREG PICKARD

ADDRESS: 7007 WYOMING BLVD PHONE: 828-1100

ARCHITECT: N/A CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: WILLIAM P. PETTIT CONTACT: BILL PETTIT

ADDRESS: _____ PHONE: 268-6631

CONTRACTOR: NA CONTACT: _____

ADDRESS: _____ PHONE: _____

PRE-DESIGN MEETING:

☒ YES

☐ NO

☐ COPY OF CONFERENCE RECAP
SHEET PROVIDED

DRB NO. _____

EPC NO. _____

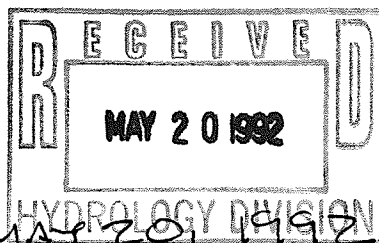
PROJ. NO. _____

TYPE OF SUBMITTAL:

- ☒ DRAINAGE REPORT (REQUESTED ADD'L
INFORMATION &
CALCULATIONS)
- ☐ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERTIFICATION

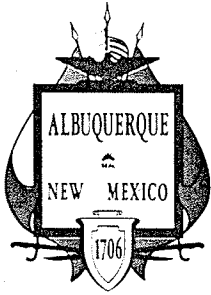
CHECK TYPE OF APPROVAL SOUGHT:

- ☐ 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 WORK ORDER (SPECIFY)



DATE SUBMITTED: MAY 20, 1992

BY: FRED C. ARFMAN, P.E. FOR
ISAACSON & ARFMAN, P.A.



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 2, 1992

Fred C. Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe Street, NE
Albuquerque, New Mexico 87108

RE: DRAINAGE PLAN FOR LA MESA DEL OESTE SUBDIVISION
ENGINEER'S STAMP DATED MAY 18, 1992 (H-10/D7)

Dear Mr. Arfman:

Based on the information provided on the referenced submittal received May, 20, 1992, the plan is approved for work order and final plat.

Prior to sign-off on the Final Plat, financial guarantees must be in place with DRC.

If you should have any questions, please do not hesitate to call me at 768-2650.

Cordially,

Gilbert Aldaz, P.E. & P.S.
Civil Engineer/Hydrology

GA
wp+1020

PUBLIC WORKS DEPARTMENT

SECTION A-A:

DITCH CALCULATIONS FOR A RECTANGULAR CHANNEL

$$S = .00549 \text{ ft/ft}$$

$$V = 6.019 \text{ fps}$$

$$d = .573 \text{ ft}$$

$$Q = 48.3 \text{ cfs}$$

$$n = .012$$

$$L = 91 \text{ ft}$$

$$Tt = .252 \text{ min}$$

CRITICAL FLOW INFORMATION

$$Sc = .002639 \text{ ft/ft}$$

$$Vc = 4.797 \text{ fps}$$

$$dc = .719 \text{ ft}$$

$$\text{Freeboard} = \cancel{1.13} \text{ } 1.43 \text{ FOR } 2' \text{ SIDE WALL HEIGHT}$$

$$B = 14 \text{ ft}$$

SECTION B-B: DITCH CALCULATIONS FOR A TRAPEZOIDAL CHANNEL (TEMPORARY ASPHALTIC)

$$S = .02571 \text{ ft/ft}$$

$$V = 9.551 \text{ fps}$$

$$d = .463 \text{ ft}$$

$$Q = 48.3 \text{ cfs}$$

$$n = .014$$

$$L = 35 \text{ ft}$$

$$Tt = .061 \text{ min}$$

CRITICAL FLOW INFORMATION

$$Sc = .003267 \text{ ft/ft}$$

$$Vc = 4.878 \text{ fps}$$

$$dc = .847 \text{ ft}$$

$$\text{Freeboard} = \cancel{1.18} \text{ } 1.04' \text{ WHERE } D(\text{SIDE-SLOPE}) = 1.5'$$

$$B = 10 \text{ ft}$$

$$Lt \text{ SS} = 2 : 1$$

$$Rt \text{ SS} = 2 : 1$$

SECTION B-B: DITCH CALCULATIONS FOR A TRAPEZOIDAL CHANNEL (TEMPORARY ASPHALTIC)

$$S = .09531 \text{ ft/ft}$$

$$V = 14.475 \text{ fps}$$

$$d = .314 \text{ ft}$$

$$Q = 48.3 \text{ cfs}$$

$$n = .014$$

$$L = 96 \text{ ft}$$

$$Tt = .111 \text{ min}$$

CRITICAL FLOW INFORMATION

$$Sc = .003267 \text{ ft/ft}$$

$$Vc = 4.878 \text{ fps}$$

$$dc = .847 \text{ ft}$$

$$\text{Freeboard} = \cancel{1.25} \text{ } 1.19' \text{ WHERE } D(\text{SIDE-SLOPE}) = 1.5'$$

$$B = 10 \text{ ft}$$

$$Lt \text{ SS} = 2 : 1$$

$$Rt \text{ SS} = 2 : 1$$

93006046

AGREEMENT AND COVENANT

0002802

This agreement and covenant, between the City of Albuquerque, New Mexico ("City") and Suncor Development Company, ("User") is made in Albuquerque, New Mexico and is entered into as of the date of recording this agreement with the Bernalillo County Clerk.

1. Recital. The User is the owner of certain real property ("User's Property") located at SE 1/4, 68th St. & Juniper, in Albuquerque, New Mexico, and more particularly described as:

Tracts A, B & C, La Mesa del Oeste Subdivision, Unit One

The City is the owner of certain real property, easement or public right-of-way ("City's Property") in the vicinity of, contiguous to, abutting or within User's Property, and more particularly described as:

100-foot-wide drainage right-of-way situated along the north right-of-way line of I-040 between 64th & 68th St., NW.

The User wishes to construct upon, improve or repair and to maintain the following "Improvement" on the City's Property (or already has done so):

Temporary asphaltic rundown starting at the end of the concrete rundown structure serving La Mesa del Oeste Subdivision and terminating at the bottom of the existing City detention pond.

SDC by *RL*
12/29/92 To be maintained by User through December 31, 1994, unless revoked *SDC by RL*
pursuant to Paragraph 12 and Paragraph 7 of this agreement. 1/12/93

A sketch of the proposed or existing Improvement is attached as Exhibit A and made a part of this agreement.

The City agrees to permit the Improvement to exist on the City's Property provided the User complies with the terms of this agreement.

2. City Use of City's Property and City Liability. The City has the right to enter upon the City's Property at any time and perform whatever inspection, installation, maintenance, repair, modification or removal ("Work") it deems appropriate without liability to the User. If the Work affects the Improvement the City will not be financially or otherwise responsible for rebuilding or repairing the Improvement. The user promptly will repair the Improvement to the City's satisfaction. The cost of repairing the Improvement will be paid by User.

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

93 JAN 20 AM 9:12

12-11-89

93-2 2802-2808
JUDY D. WOODWARD
CLERK & RECORDER

3. User's responsibility for Improvement. The User will be solely responsible for constructing, maintaining, repairing and, if required, removing the Improvement, all in accordance with standards required by the City and attached as Exhibit B. The User will be solely responsible for paying all related costs. The User will not permit the Improvement to constitute a hazard to the health or safety of the general public or to interfere with the City's use of the City's Property. The User will conform with all applicable laws, ordinances and regulations.

4. Use of the Improvement. If the City's Property is a public right-of-way, it shall be open to the use of the general public at all times, subject to reasonable curtailment during periods of construction, maintenance or repair.

5. Demand for Repair, Modification or Removal. The City may send written notice ("Notice") to the User requiring the User to repair, modify or remove the Improvement within 60 days ("Deadline") and the User will comply promptly with the requirements of the Notice. If removal is demanded, the City also may require the User to return the City's Property to its original condition by the Deadline. The User will perform all required work by the Deadline, at User's sole expense.

6. Failure to Perform by User and Emergency Work by City. If the User fails to comply with the terms of the Notice by the Deadline stated, or, if the City determines that an emergency condition exists, the City may perform the work itself. The City then may assess the User for the cost of the work and for any other expenses or damages which result from User's failure to perform. The User agrees promptly to pay the City the amount assessed. If the User fails to pay the City within thirty (30) days after the City gives the User written notice of the amount due, the City may impose a lien against User's Property for the total resulting amount.

7. Cancellation of Agreement and Release of Covenant. This agreement may be cancelled and User's covenants released by the City at will by the City's mailing to the User notice of the City's intention to record a Cancellation and Release with the Bernalillo County Clerk. The Cancellation and Release will be effective thirty (30) days after the date of mailing the notice to the User unless a later date is stated in the notice or the Cancellation and Release. After the effective date, the City will record the Cancellation and Release with the Bernalillo County Clerk.

8. Condemnation. If any part of the User's Property is ever condemned by the City, the User will forego all claims to compensation for any portion of User's structure which encroaches on City Property and for severance damage to the remaining portion of User's structure on User's Property.

9. Assessment. Nothing in this agreement shall be construed to relieve the User, his heirs, assigns and successors from an assessment against User's Property for improvements to the City Property under a duly authorized and approved Special Assessment District. The parties specifically agree that the value of the Improvement will not reduce the amount assessed by the City.

10. Notice. For purposes of giving formal written notice to the User, User's address is:

Suncor Development Company.
7007 Wyoming Boulevard, NE
Suite E-1
Albuquerque, NM 87109
Attn: Rick Daniels

Notice may be given to the User either in person or by mailing the notice by regular U.S. mail, postage paid. Notice will be considered to have been received by the User within 3 days after the notice is mailed if there is no actual evidence of receipt. The User may change User's address by giving written notice of the change by certified mail, return receipt requested, to the City Engineer at P.O. Box 1293, Albuquerque, New Mexico, 87103.

11. Indemnification. The User agrees to defend, indemnify and hold harmless the City, its officials, agents and employees from and the against any and all claims, actions, suits or proceedings of any kind brought against said parties as a result of User's use of the City's Property. To the extent, if at all, Section 56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney's fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the indemnitee, or the agents or employees of the indemnitee; or (2) the giving of or the failure to give direction or instructions by the indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property.

12. Term. This agreement shall continue until revoked by the City pursuant to Section 7 above.

13. Binding on User's Property. The covenants and obligations of the User set forth herein shall be binding on User, his heirs, assigns and successors and on User's Property and constitute covenants running with User's Property until released by the City.

14. Entire Agreement. This agreement contains the entire agreement of the parties and supersedes any and all other agreements or understandings, oral or written, whether previous to the execution hereof or contemporaneous herewith. This agreement shall not become binding or effective until signed by the Chief Administrative Officer for the City of Albuquerque.

12-11-89

SDC
by RA
1/12/93

15. Changes of Agreement. Changes to this agreement are not binding unless made in writing, signed by both parties.

16. Construction and Severability. If any part of this agreement is held to be invalid or unenforceable, the remainder of the agreement will remain valid and enforceable if the remainder is reasonably capable of completion.

17. Captions. The captions to the sections or paragraphs of this agreement are not part of this agreement and will not affect the meaning or construction of any of its provisions.

CITY OF ALBUQUERQUE

Approved By:

Robert E. Carr
DIRECTOR, PUBLIC WORKS DEPT.

Dated: 1-19-93

USER:

SUNCOR DEVELOPMENT COMPANY

Richard G. Daniels, President

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

The foregoing instrument was acknowledged before me this 29th day of December 19 92, by Ricky G. Daniels, President of Suncor Development Co.
(User)

Richard G. Daniels
Notary Public

My commission expires:

2-22-96

12-11-89

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

0002806

The foregoing instrument was acknowledged before me this 19th day
of January 1993, by ROBERT E. GURULE Director Public Works
Dept. of the City of Albuquerque, a municipal corporation, on behalf of said
corporation.

A. Carline S. Saavedra
Notary Public

My commission expires:

8-7-93

12-11-89

EXHIBIT "A"
AGREEMENT AND COVENANT

0002807

SKETCH OF PROPOSED OR EXISTING IMPROVEMENT

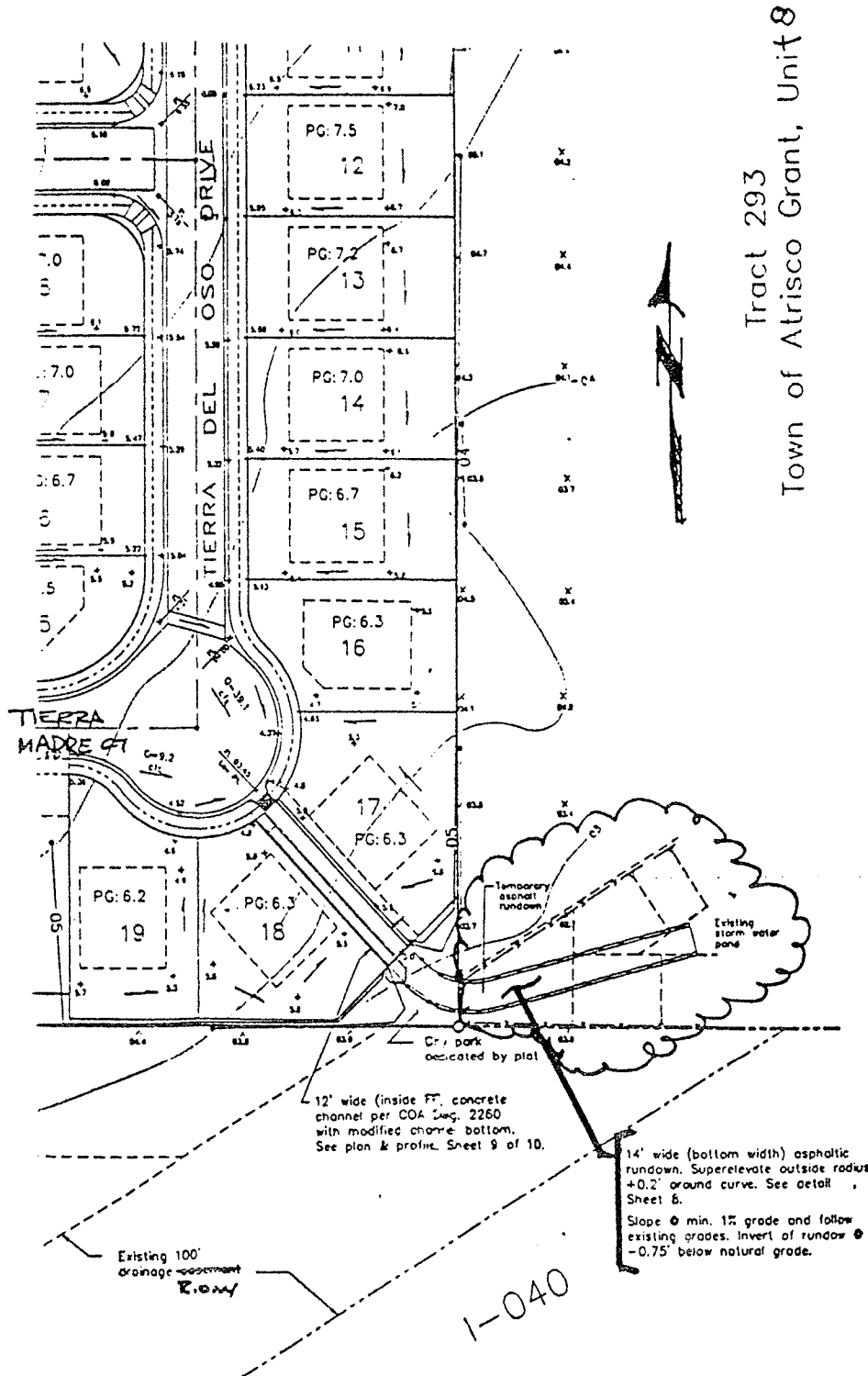


EXHIBIT 'B'
AGREEMENT AND COVENANT

0002808

All maintenance, repairs, and, if required, removal of the temporary structure shall be in accordance with the City of Albuquerque, New Mexico, Standard Specifications for Public Works Construction--1986, and as revised on all subsequent updates.

LA MESA DEL OESTE SUBDIVISION UNIT I

**28 SINGLE FAMILY LOTS
3 BULK LAND PARCELS**

APR 2 1992

SUPPLEMENTAL SITE INFORMATION AND HYDROLOGICAL CALCULATIONS

MARCH 1992

PREPARED BY:

**ISAACSON & ARFMAN, P.A.
128 MONROE STREET, NE
ALBUQUERQUE, NEW MEXICO**



GENERAL NOTES

LEGAL DESCRIPTION: TRACTS 294, 295 & 296, TOWN OF ATRISCO GRANT, UNIT No. 8, ALBUQUERQUE, NEW MEXICO, FILED FOR RECORD ON DECEMBER 7, 1944 IN VOLUME D, FOLIO 117.

ENGINEER: ISAACSON & ARFMAN, P.A.
128 MONROE STREET NE
ALBUQUERQUE, N.M. 87108
ATTN: FRED C. ARFMAN, P.E.

SURVEYOR: WILLIAM P. PETTIT, NMLS No. 3243
DATE OF SURVEY, JUNE 1991

BENCHMARK: ACS MONUMENT "2-H10", STAMPED BRASS TABLET ALONG THE WESTERLY RIGHT OF WAY LINE OF 64TH STREET APPROXIMATELY 1100 FEET SOUTH OF OURAY ROAD NW.
ELEVATION: 5108.81

TEMPORARY BENCHMARK: MIDDLE OF SANITARY SEWER MANHOLE RIM LOCATED AT THE INTERSECTION OF JUNIPER ROAD & 68TH STREET NW.
ELEVATION: 5110.3

ZONING: RD

NUMBER OF LOTS: 90 (ULTIMATE), 28 LOTS (PHASE ONE)

AREA: 15.00 ACRES (TOTAL): 4.74 AC. (PHASE ONE)

FLOOD HAZARD: NO PART OF THIS SUBDIVISION NOR THE ADJACENT PUBLIC ROADWAYS ARE SUBJECT TO A FLOOD HAZARD AREA AS DETERMINED BY PANEL No. 350002-0021 OF THE OCTOBER 14, 1983 EDITION OF THE F.E.M.A. MAPS.

LOCATION & DESCRIPTION:

THE LA MESA DEL OESTE SUBDIVISION IS LOCATED IN THE NORTHWEST MESA ADJACENT TO I-40 ON THE SOUTH, EAST OF 68TH STREET AND SOUTH OF JUNIPER ROAD NW. THE SUBDIVISION IS CREATED FROM THREE (3) TRACTS OF THE ORIGINAL PLATTING OF THE TOWN OF ATRISCO GRANT, UNIT No. 8.

EXISTING CONDITIONS:

THE SITE IS BORDERED BY TWO (2) FULLY IMPROVED CITY STREETS; ADJACENT TO THE NORTH IS JUNIPER ROAD AND TO THE WEST IS 68TH STREET. THESE ROADWAYS CARRY STORM WATER RUNOFF TO THE EAST AND TO THE SOUTH RESPECTIVELY, WHERE THOSE FLOWS ARE

ACCEPTED BY STORM DRAIN SYSTEMS. THESE DRAINS THEN DISCHARGE THEIR STORM WATERS INTO THE LINEAR PONDS ADJACENT TO THE NORTH RIGHT-OF-WAY LINE OF I-40. THEREFORE, THE SUBJECT 15 ACRE SITE DOES NOT ACCEPT ANY OFFSITE STORM WATER FLOWS.

STORM WATERS GENERATED ONSITE PRESENTLY SHEETFLOW TO THE WEST AND ARE INTERCEPTED BY THE AFOREMENTIONED DRAINAGE PONDS OR BY THE DRIVING SURFACE OF 64TH STREET.

PROPOSED CONDITIONS:

THE SUBDIVISION LAYOUT CALLS FOR 90 LOTS WITH ADJACENT PUBLIC ROADS TO BE CREATED IN MULTIPLE PHASES. ALL OF THE DRAINAGE IMPROVEMENTS REQUIRED FOR DEVELOPMENT WILL BE CONSTRUCTED AS PART OF THE PHASE I. ONLY PHASE ONE SHALL BE GRADED IN THE INITIAL PHASE. THE THREE CUL-DE-SACS SCHEDULED FOR CONSTRUCTION IN PHASE II & III SHALL HAVE THEIR GENERATED STORM WATERS CAPTURED WITHIN THE DETENTION PONDS ALONG I-40.

ALL DEVELOPED SITE RUNOFF, (PHASE I) SHALL BE ROUTED TO THE SOUTHEAST CORNER OF THE SUBDIVISION VIA STREET FLOW WHERE A TWELVE FOOT WIDE CONCRETE RUNDOWN (BETWEEN LOTS 13 & 14) AND A TEMPORARY ASPHALT RUNDOWN WILL CONVEY THE STORM WATERS TO THE RECEIVING POND TO THE EAST.

HYDROLOGY (EXISTING CONDITIONS):

LA MESA DEL OESTE SUBDIVISION IS WITHIN THE BOUNDARIES OF PARTICIPATION ZONE NO. 1 (WEST OF RIO GRANDE BLVD.); AS SUCH THE P_{360} (6-HR—100-YEAR STORM) HAS A DEPTH OF 2.2 INCHES.

THE TOTAL DRAINAGE BASIN IS COMPRISED OF THE SUBDIVISION 15.0 ACRES OF VACANT AND UNDISTURBED LAND AND HAS A CORRESPONDING LAND TREATMENT A CLASSIFICATION.

PEAK DISCHARGE (USING A 10-MINUTE TIME OF CONCENTRATION), CFS/AC 100 YR., ZONE 1 (TABLE 9) = 1.15 CFS/AC.

$$\begin{aligned}\text{DETERMINE TOTAL } Q_p &= Q_p A_A \\ &= (1.15)(15) \\ &= 17.25 \text{ CFS}\end{aligned}$$

HYDROLOGY (PROPOSED IMPROVEMENTS):

THE PROPOSED 90 LOT SUBDIVISION SHALL HAVE 28 LOTS DEVELOPED IN THE FIRST PHASE AND THE REMAINING LAND AREA LEFT IN ITS NATURAL AND UNDISTURBED CONDITION. THE ANALYSIS FOR DETERMINING THE MAXIMUM PEAK DISCHARGE FOR PHASE I & THE FUTURE PHASES ARE BASED ON LAND TREATMENTS AS FOLLOWS:

	PHASE I		FUTURE PHASES
	IMPROVED	UNIMPROVED	
TOTAL AREA	4.74 AC.	9.96 AC.	14.70 AC.
LAND TREATMENT			
A	0.00	9.96	0.00
B	1.20	0.00	4.47
C	2.20	0.00	2.00
D	1.34	0.00	8.23

FROM TABLE 9, EQUATION 10, DETERMINING TOTAL Q_p :

PHASE 1	=	27.5 CFS
PHASES (ALL)	=	48.3 CFS

THE ULTIMATE SUBDIVISION BUILD-OUT YIELDS THE GREATEST PEAK DISCHARGE, AND THE DRAINAGE RUNDOWNS WILL BE SIZED ACCORDINGLY.

TOTAL SITE (PHASE I & II) VOLUME OF RUNOFF

$$\text{WEIGHTED } E = \frac{(6.47)(0.61) + (8.23)(1.93)}{14.7} = 1.35 \text{ INCHES}$$

$$\text{VOLUME} = \frac{1.35}{12} \times 14.7 = 1.65 \text{ AC-FT} = 72,037 \text{ CU.FT.}$$

TRACT 'A' HAS A HISTORICAL DRAINAGE PATTERN OF OVERLAND FLOW TO THE SOUTHEAST AND INTO THE EXISTING STORM WATER DETENTION PONDS ALONG THE NORTH R.O.W. OF I-40. THIS DRAINAGE CHARACTERISTIC SHALL REMAIN UNTIL PHASE TWO IMPROVEMENTS ARE CONSTRUCTED.

TRACTS 'B' & 'C' HAVE SIMILAR NATURAL DRAINAGE CHARACTERISTICS AS TRACT 'A'. A MAJORITY OF THE UNIMPROVED AREA HAS ITS STORM WATER FLOWS CONVEYED OVERLAND IN AN UNOBSTRUCTED ROUTE TO THE EXISTING STORM WATER DETENTION PONDS ALONG I-40.

THE TWO (2) ACRE AREA ADJACENT AND TO THE NORTH OF THE IMPROVED LOTS SHOULD HAVE ITS GENERATED STORM WATERS DEFLECTED ALONG THE EDGE OF IMPROVEMENTS AND DISCHARGE TO THE SOUTHEAST. THIS STORM WATER MANAGEMENT PLAN FOR OVERLAND FLOWS WOULD VOID THE INTRODUCTION OF SILT LADEN FLOW FROM ENTERING ONTO THE PAVED STREETS OF PHASE ONE.

DRAINAGE RUNDOWN:

A 12-FOOT-WIDE CONCRETE RUNDOWN SHALL BE CONSTRUCTED PER C.O.A. DWG. 2260 WITH A MODIFIED BOTTOM TO ACCOMMODATE LOW FLOWS AND PEDESTRIAN TRAFFIC SIMULTANEOUSLY. STORM WATER ENTER THE CHANNEL VIA A TRIPLE SIDEWALK CULVERT STRUCTURE.

STREET CAPACITY:

THE 48.3 CFS GENERATED BY THE 100 YR. EVENT CONVERGE ON THE CHANNEL ENTRANCE FROM TIERRA MADRE COURT (9.2 CFS/D = 0.40' @ FL) AND FROM TIERRA DEL SOL (39.1 CFS/D = 0.60' @ FL). BOTH DEPTHS OF FLOWS ARE BELOW THE TOP OF CURB; THEREFORE, THE STREET STORM WATER CARRYING CAPACITY IS ADEQUATE (PLATE 22.3 D-1).

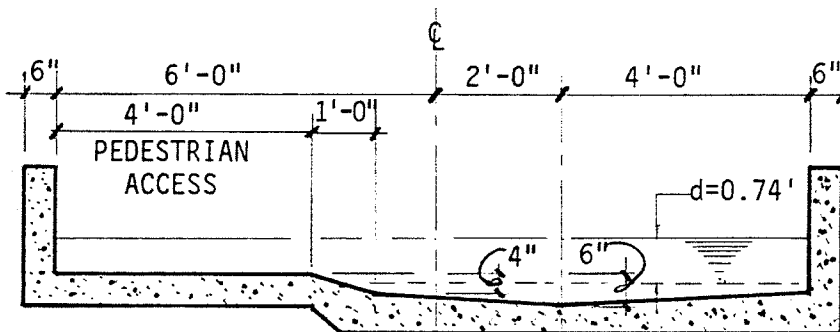
TRIPLE SIDEWALK CULVERT:

THIS FACILITY IS COMPRISED OF 3-24" WIDE OPENINGS. BY SOLVING THE ORIFICE EQUATION $Q = CA\sqrt{2gH}$, A FLOW RATE OF 25.6 CFS CAN BE EXPECTED TO BE CONVEYED TO THE CONCRETE RUNDOWN VIA THE SIDEWALK CULVERTS. THE REMAINING 22.7 CFS WILL ENTER INTO THE RUNDOWN VIA AN OVERFLOW WEIR SITUATION. THE DEPTH OF WATER OVER THE TOP OF THE SIDEWALK GRATE IS DERIVED FROM SOLVING THE WEIR EQUATION OF $Q = CLH^{3/2}$, $H = 0.79'$. THIS HEAD IS ACCOMMODATED WITHIN THE PUBLIC R.O.W. BY THE ENTRANCE STRUCTURE WING WALLS.

CHANNEL CAPACITY:

THE CHANNEL FLOW CARRYING CAPACITY AND FLOW DEPTH IS DERIVED FROM MANNING'S EQUATION. THE CROSS SECTIONAL DISPLACEMENT OF FLOWS DUE TO THE RAISED PEDESTRIAN PATH RESULTS IN EFFECTIVE BOTTOM DEPTH 2" ABOVE ACTUAL. SOLVING THE EQUATION USING THE FOLLOWING:

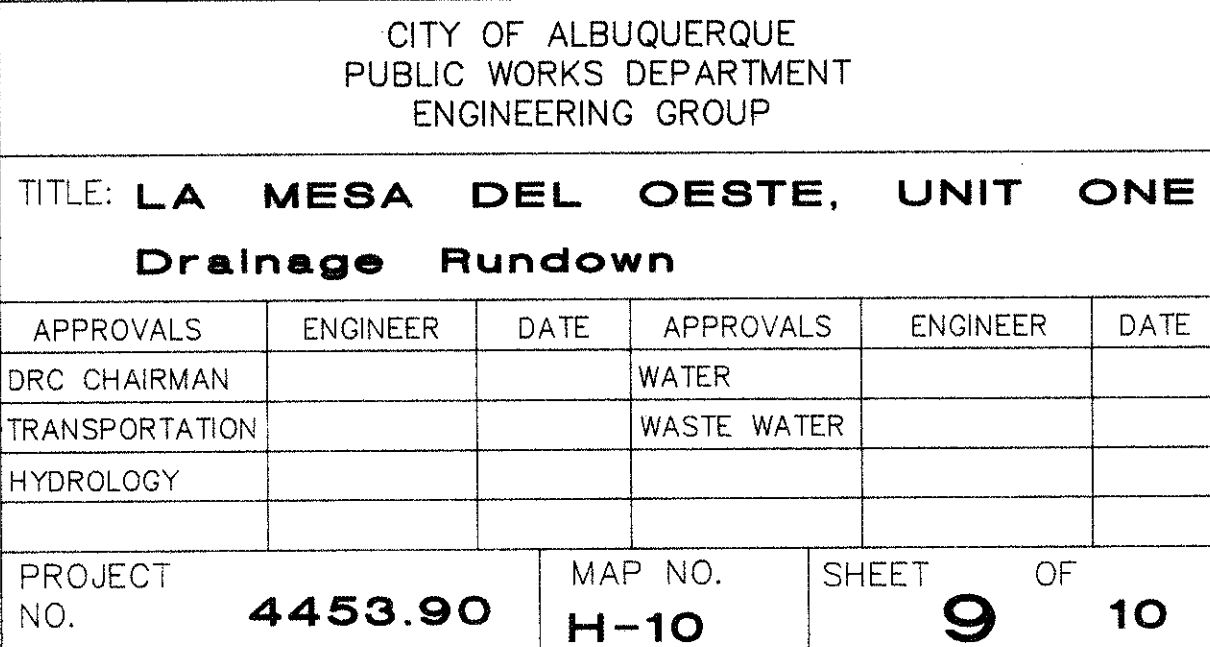
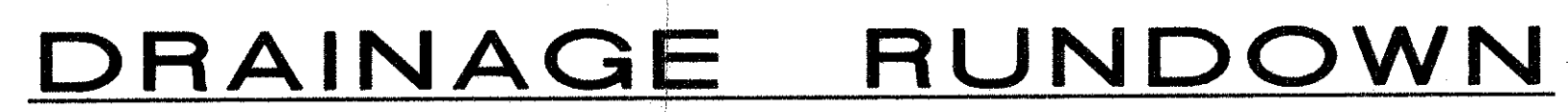
$$Q = 48.3, \quad n = 0.015, \quad S = 0.5\%$$

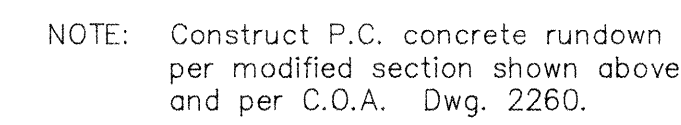


Use of
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not correct
only

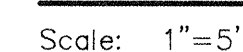
RESULTS: $V = 5.41 \text{ FPS}$
 $F\# = 1.11$
 $D = 0.74 \text{ FT}$

Froude so close to one,
could jump, depth should
be based on subcritical
conditions

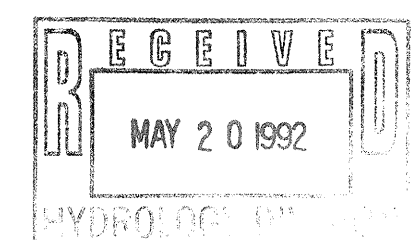




Scale: 1"=2'-0"



1. Double (2 cell) drainage sidewalk culvert with steel plate top per C.O.A. Dwg. 2236. Length = 4'-6".
2. 42" high pipe railing (4 horizontal 1 1/2" dia. pipes at 10 1/2" O.C.) along back of PCC sidewalk ramp and along edge of pedestrian ramp. Vertical pipe at ends and corner point to be 2" dia. All work shall be according to the general and construction notes of C.O.A. Dwg. 2251.
3. Pipe gate, top rail @ 42" ht., 9'-0" wide per COA Dwg. 2251.
4. 4" P.C.C. sidewalk to be constructed.
5. 4' wide pedestrian access ramp.
6. Begin Section A-A at end of ramp.



CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING GROUP					
TITLE: LA MESA DEL OESTE, UNIT ONE					
DETAILS					
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN			WATER		
TRANSPORTATION			WASTE WATER		
HYDROLOGY					
PROJECT NO.		MAP NO.		SHEET OF	
4453.90		H-10		10 10	