

CITY OF ALBUQUERQUE



August 1, 2007

Jeffrey Mortensen, P.E.
High Mesa Consulting Group
6010-B Midway Park Blvd. NE
Albuquerque, NM 87109

**Re: Ventana Ranch Elementary Temporary Parking Lot, 6801 Ventana
Ranch Road NW, Grading and Drainage Plan
Engineer's Stamp dated 7-25-07 (B9-D003H)**

Dear Mr. Mortensen,

Based upon the information provided in your submittal received 7-26-07, the above referenced plan is approved for Paving Permit and Grading Permit. Upon completion of the project, please provide an Engineer Certification for our files.

P.O. Box 1293

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. In addition to submitting an NOI to the EPA and preparing a SWPPP, please send a copy of the SWPPP on a CD in .pdf format to the following address:

Albuquerque

New Mexico 87103

Department of Municipal Development
Storm Drainage Division
P.O. Box 1293, One Civic Plaza, Rm. 301
Attn: Kathy Verhage
Albuquerque, NM 87103

www.cabq.gov

If you have any questions regarding this permit please feel free to call the DMD Storm Drainage Design section at 768-3654 (Kathy Verhage).

If you have any questions, you can contact me at 924-3981.

Sincerely,

A handwritten signature in black ink, appearing to read "K. D. Metro".

Kristal D. Metro, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

C: Kathy Verhage, DMD Storm Drainage Design
File

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/28/2003rd)

PROJECT TITLE: VENTANA RANCH ELEMENTARY - EAST ZONE ATLAS/DRNG. FILE #: B09 D 3H
 DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: TRACT 26B1-A, VENTANA RANCH
 CITY ADDRESS: 6801 VENTANA RANCH ROAD NW (SCHOOL SITE)

ENGINEERING FIRM: HIGH MESA CONSULTING GROUP CONTACT: JEFF MORTENSEN
 ADDRESS: 6010-B MIDWAY PARK BLVD. NE PHONE: (505) 345-4250
 CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87109

OWNER: CITY OF ALBUQUERQUE PARKS DEPT CONTACT: CHRISTINA SANDOVAL
 ADDRESS: ONE CIVIC PLAZA PHONE: 505-768-3808
 CITY, STATE: ALBUQUERQUE, NM ZIP CODE: _____

DEVELOPER: ALBUQUERQUE PUBLIC SCHOOLS (DFPC) CONTACT: MYRON JOHNSON
 ADDRESS: 915 OAK STREET SE PHONE: 505-242-5865
 CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87106

SURVEYOR: HIGH MESA CONSULTING GROUP (NMPS 11184) CONTACT: CHUCK CALA
 ADDRESS: 6010-B MIDWAY PARK BLVD. NE PHONE: (505) 345-4250
 CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87109

CONTRACTOR: NOT SELECTED CONTACT: _____
 ADDRESS: _____ PHONE: _____
 CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

- DRAINAGE REPORT
 DRAINAGE PLAN 1st SUBMITTAL, **REQUIRES TCL or equal**
 DRAINAGE PLAN RESUBMITTAL
 CONCEPTUAL GRADING & DRAINAGE PLAN
 GRADING & PAVING PLAN (TEMPORARY PARKING LOT)
 EROSION CONTROL PLAN
 ENGINEER'S CERTIFICATION (HYDROLOGY)
 CLOMR/LOMR
 TRAFFIC CIRCULATION LAYOUT (TCL)
 ENGINEER'S CERTIFICATION (TCL)
 ENGINEER'S CERTIFICATION (DRB APPR. SITE PLAN)
 OTHER -

CHECK TYPE OF APPROVAL SOUGHT:

- SIA/FINANCIAL GUARANTEE RELEASE
 PRELIMINARY PLAT APPROVAL
 S. DEV. PLAN FOR SUB'D APPROVAL
 S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
 SECTOR PLAN APPROVAL
 FINAL PLAT APPROVAL
 FOUNDATION PERMIT APPROVAL
 BUILDING PERMIT APPROVAL
 CERTIFICATE OF OCCUPANCY (PERM.)
 CERTIFICATE OF OCCUPANCY (TEMP.)
 GRADING PERMIT APPROVAL
 PAVING PERMIT APPROVAL
 WORK ORDER APPROVAL
 OTHER (SPECIFY) - SO # 19

WAS A PRE-DESIGN CONFERENCE ATTENDED:

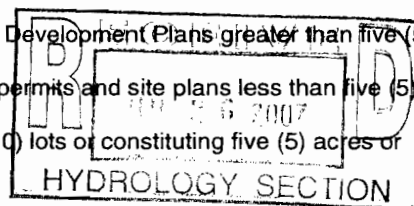
- YES (INFORMAL DISCUSSION WITH BRAD BINGHAM)
 NO
 COPY PROVIDED

DATE SUBMITTED: 07/25/2007 BY: JEFFREY G. MORTENSEN

XC: MARTIN ECKERT, APS REAL ESTATE

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based upon the following:

- Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
- Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
- Drainage Report:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.



DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THIS PROJECT, LOCATED IN THE VENTANA RANCH AREA OF THE NORTHWEST MESA, REPRESENTS A TEMPORARY GRADING AND PAVING ON A PORTION OF CITY PARKS PROPERTY WITHIN AN INFILL AREA. THE PROPOSED IMPROVEMENTS LIE WITHIN THE UNDEVELOPED PORTION OF THE SITE CONFIGURED TO CONTAIN THE RUNOFF GENERATED WITHIN THE PROPERTY. THE DEVELOPMENT CONCEPT WILL BE TO DISTURB THE EXISTING SITE AS LITTLE AS POSSIBLE AND TO CONTINUE TO CAPTURE THE RUNOFF GENERATED ONSITE FOR WATER HARVESTING BENEFITING THE EXISTING NATIVE VEGETATION.

THIS DRAINAGE SUBMITTAL IS MADE IN SUPPORT OF GRADING AND PAVING PERMIT APPROVAL.

II. PROJECT DESCRIPTION

AS SHOWN BY THE VICINITY MAP, THE SITE IS LOCATED AT THE NORTHWEST QUADRANT OF THE VENTANA VILLAGE ROAD NW/UNIVERSE BLVD. NW INTERSECTION. THE LAND IS PRESENTLY OWNED BY THE CITY OF ALBUQUERQUE PARKS DEPARTMENT. THE TEMPORARY PARKING LOT WILL BE APPROVED AND ALLOED BY AGREEMENT BETWEEN THE ALBUQUERQUE PUBLIC SCHOOLS AND THE CITY PARKS DEPARTMENT. THE EXISTING LEGAL DESCRIPTION IS TRACT 26B-1-A, VENTANA RANCH. AS INDICATED BY PANEL 103 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, NOVEMBER 19, 2003, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE. AS IDENTIFIED ABOVE, THE SITE DOES NOT CONTRIBUTE RUNOFF TO DESIGNATED FLOOD HAZARD ZONES.

THE PROJECT CONSISTS OF THE LIMITED CLEARING AND GRUBBING OF A PORTION OF THE SITE AND THE TEMPORARY PAVING OF THAT PORTION. UPON EXPIRATION OF THE AGREEMENT BETWEEN APS AND THE CITY, THE IMPROVEMENTS WILL EITHER BE REMOVED OR REVERT TO THE CITY.

III. BACKGROUND DOCUMENTS & RESEARCH

THE FOLLOWING DOCUMENTS WERE REVIEWED AND REFERENCED IN THE PREPARATION OF THIS DRAINAGE SUBMITTAL:

A. BOUNDARY AND TOPOGRAPHIC PREPARED BY HIGH MESA CONSULTING GROUP (NMPS 11184) DATED 06-20-2007. THIS SURVEY PROVIDES THE EXISTING CONDITIONS FOR THIS SUBMITTAL AREA AND IDENTIFIES A BLANKET DRAINAGE EASEMENT PREVIOUSLY GRANTED BY PLAT. THE SITE DOES NOT RECEIVE OFFSITE FLOWS FROM ADJACENT PROPERTY, HENCE THE PURPOSE OF THIS EASEMENT IS NOT CLEAR. REGARDLESS, THIS PROJECT WILL NOT BLOCK OFFSITE FLOWS.

IV. EXISTING CONDITIONS

AT PRESENT, THE SITE IS UNDEVELOPED WITH THE EXCEPTION OF A SMALL CITY NEIGHBORHOOD PARK AT ITS NORTHWEST CORNER. THE UNDEVELOPED PORTION IS CHARACTERIZED BY NATURAL TERRAIN AND MATURE NATIVE VEGETATION. PRESENTLY, THE SITE DOES NOT OUTFALL TO PUBLIC RIGHT-OF-WAY AND AS SUCH CONTAINS ITS RUNOFF ONSITE WITHIN NATURAL DEPRESSIONS. AS INDICATED ABOVE, THERE ARE NO OFFSITE FLOWS ENTERING THE PROJECT LIMITS.

V. DEVELOPED CONDITIONS

THE PROPOSED CONSTRUCTION CONSISTS OF THE CLEARING AND GRUBBING OF A LIMITED PORTION OF THE SITE AND THE TEMPORARY PAVING OF AN INTERIM PARKING LOT TO SERVE THE ADJACENT VENTANA RANCH ELEMENTARY SCHOOL. THE TEMPORARY IMPROVEMENTS WILL BE GRADED TO DISRUPT THE NATURAL TERRAIN AND VEGETATION AS LITTLE AS POSSIBLE AND TO MAINTAIN THE EXISTING DRAINAGE CONCEPT OF SELF-CONTAINMENT. ALL DISTURBED AREAS WILL BE STABILIZED BY PAVING OR REVEGETATED. TO DISCOURAGE DISRUPTION AND/OR DISTURBANCE OF THOSE AREAS BEYOND THE WORK LIMITS, A POST AND CABLE FENCE WILL BE INSTALLED.

VI. GRADING PLAN

THE GRADING PLAN SHOWS 1.) EXISTING AND PROPOSED GRADES INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS, 2.) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS, 3.) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS, AND 4.) CONTINUITY BETWEEN EXISTING AND PROPOSED GRADES. AS SHOWN BY THIS PLAN, THE PROPOSED IMPROVEMENTS WILL CONSIST OF THE CONSTRUCTION OF A TEMPORARY PARKING LOT. THE TEMPORARY IMPROVEMENTS HAVE BEEN DESIGN GRADED TO DRAIN TO THE EXISTING NATURAL DEPRESSION SITUATED AT THE SOUTHWEST CORNER OF THE SITE. THE NATURAL DEPRESSION HAS ADEQUATE CAPACITY TO CONTAIN THE DEVELOPED RUNOFF AS CALCULATED WITHOUT OVERFLOWING TO CITY RIGHT-OF-WAY OR ONTO ADJACENT PROPERTY.

VII. CALCULATIONS

THE CALCULATIONS THAT APPEAR HEREON ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS, AS SET FORTH IN THE REVISION OF SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993, HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. AS SHOWN BY THESE CALCULATIONS, THE PROPOSED IMPROVEMENTS WILL RESULT IN A MINOR INCREASE IN PEAK DISCHARGE AND VOLUME OF RUNOFF GENERATED. THIS INCREASE CAN BE ACCOMMODATED ONSITE IN THE EXISTING NATURAL DEPRESSION PREVIOUSLY MENTIONED. THIS ABILITY IS DEMONSTRATED BY THE VOLUME CALCULATIONS BASED UPON THE AVERAGE END-AREA METHOD.

VIII. CONCLUSION

THE CONTINUED DISCHARGE OF RUNOFF FROM THIS SITE TO THE EXISTING ONSITE NATURAL DEPRESSION IS APPROPRIATE FOR THE FOLLOWING FACTORS:

1. MAINTAINING THE EXISTING DRAINAGE CONCEPT
2. ADEQUATE CAPACITY EXISTS
3. THE PROPOSED DEVELOPMENT WILL NOT ADVERSELY IMPACT DOWNSTREAM CAPACITY
4. NO IMPACT ON EXISTING FLOOD HAZARD AREAS
5. THE PROPOSED DEVELOPMENT WILL NOT ADVERSELY IMPACT ADJACENT PROPERTIES
6. NO IMPACT ON EXISTING FLOOD HAZARD AREAS

CALCULATIONS

SITE CHARACTERISTICS

1. PRECIPITATION ZONE = 1
2. $P_{6,100} = P_{360} = 2.20$
3. TOTAL PROJECT AREA (A_T) = 196,550 SF
4.51 AC
4. EXISTING LAND TREATMENT

TREATMENT	AREA (SF/AC)	%
B	196,550 / 4.51	100

5. DEVELOPED LAND TREATMENT

TREATMENT	AREA (SF/AC)	%
B	120,890 / 2.78	61
C	50,620 / 1.16	26
D	25,040 / 0.57	13

EXISTING CONDITION

1. VOLUME
 $E_w = (E_{AA} + E_{BB} + E_{CC} + E_{DD}) / A_T$
 $E_w = (0.67 * 4.51) / 4.51 = 0.67$ IN
 $V_{100} = (E_w / 12) A_T = (0.67 / 12) 4.51 = 0.2519$ AC-FT = 10,970 CF

2. PEAK DISCHARGE
 $Q_p = Q_{pAA} + Q_{pBB} + Q_{pCC} + Q_{pDD}$
 $Q_p = Q_{100} = (2.03 * 4.51) = 9.2$ CFS

3. POND STORAGE CAPACITY (AVERAGE-END AREA METHOD)

ELEV	AREA (SF)	VOL (CF)	ΣVOL (CF)
18.6	0	26	26
19.0	130	1865	1891
20.0	3600	5700	7591
21.0	7800	10340	17931
22.0	12880		

$V_{STORAGE} = 17,930$ CF > $V_{100,DEV} = 15,070$ CF, OK

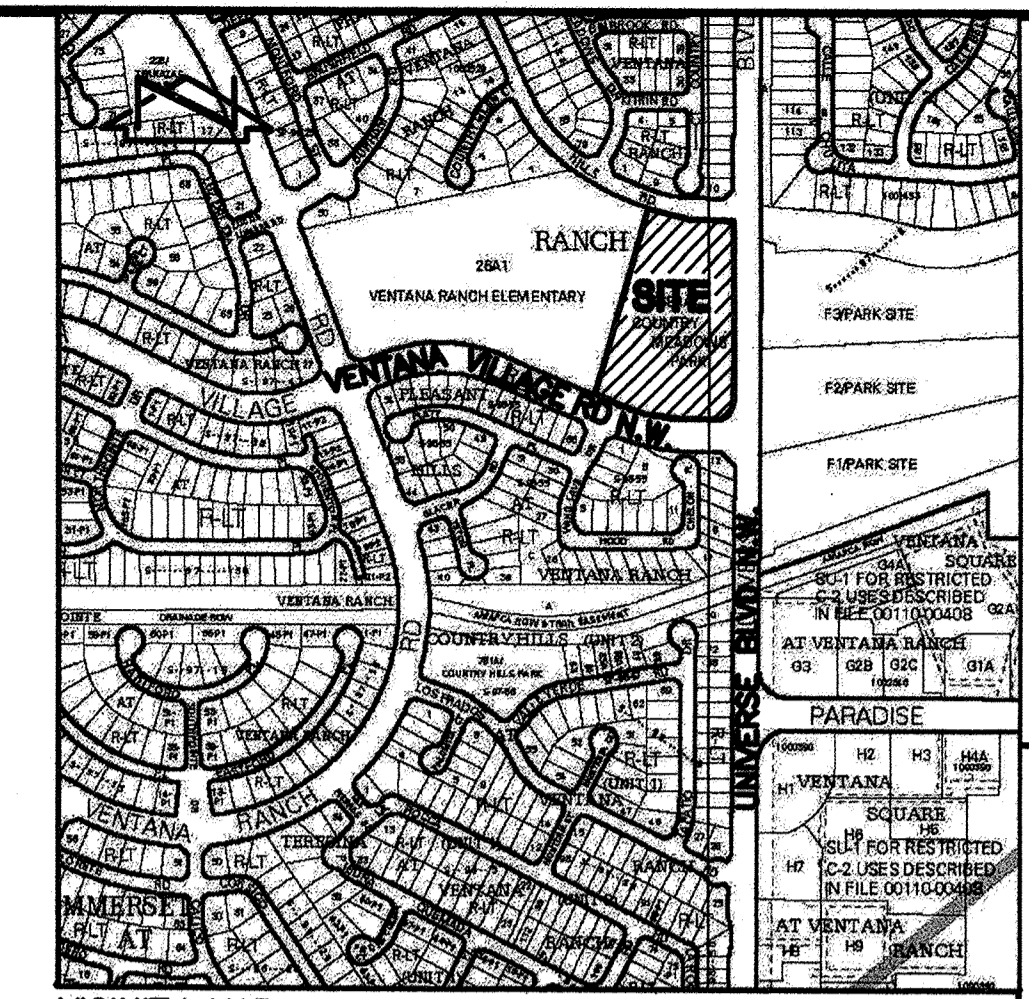
DEVELOPED CONDITION

1. VOLUME
 $E_w = (E_{AA} + E_{BB} + E_{CC} + E_{DD}) / A_T$
 $E_w = ((0.67 * 2.78) + ((0.99 * 1.16) + (1.97 * 0.57))) / 4.51 = 0.92$ IN
 $V_{100} = (E_w / 12) A_T = (0.92 / 12) 4.51 = 0.3459$ AC-FT = 15,070 CF

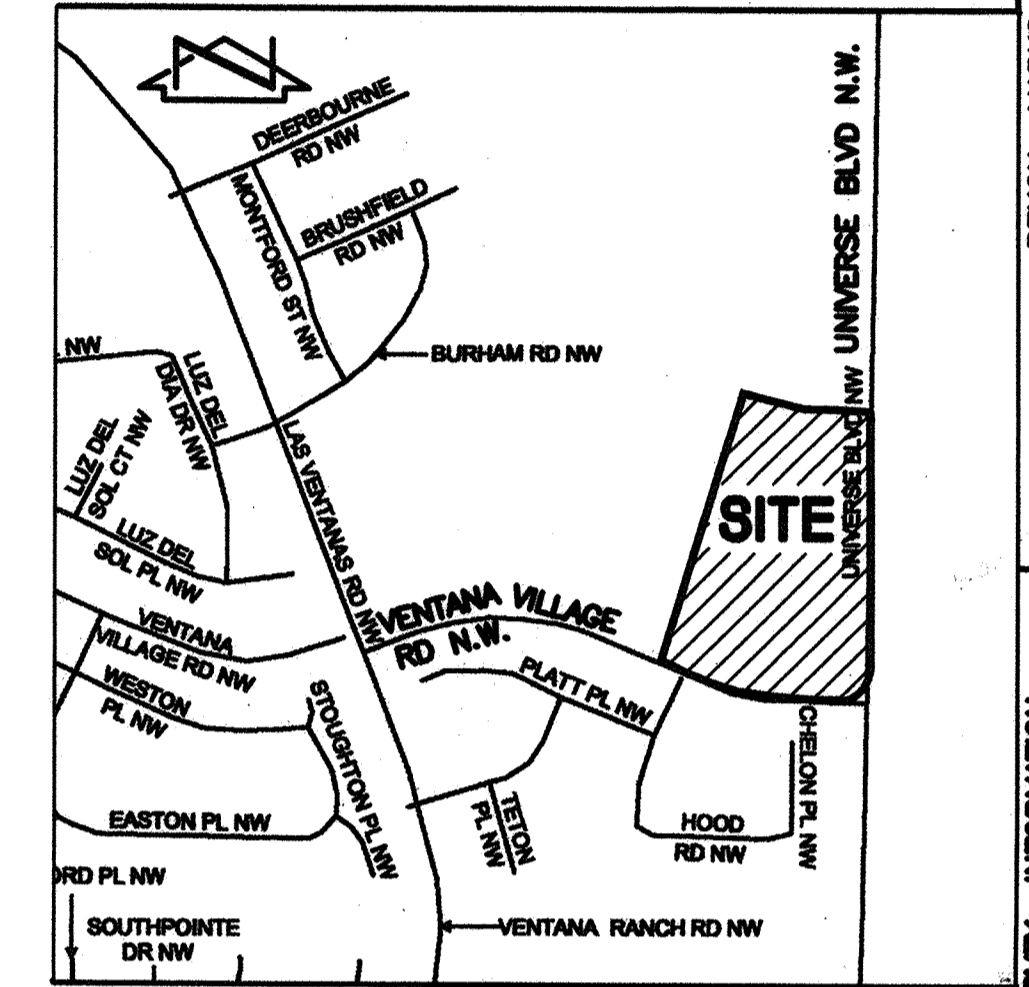
2. PEAK DISCHARGE
 $Q_p = Q_{pAA} + Q_{pBB} + Q_{pCC} + Q_{pDD}$
 $Q_p = Q_{100} = ((2.03 * 2.78) + (2.87 * 1.16) + (4.37 * 0.57)) = 11.5$ CFS

COMPARISON

1. VOLUME
 $\Delta V_{100} = 15,070 - 10,970 = 4,100$ CF (INCREASE)
2. PEAK DISCHARGE
 $\Delta Q_{100} = 11.5 - 9.2 = 2.3$ CFS (INCREASE)



VICINITY MAP
SCALE: 1" = 750'



F.I.R.M.
SCALE: 1" = 500'

LEGAL DESCRIPTION

TRACT 26B-1-A, VENTANA RANCH, ALBUQUERQUE, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON SEPTEMBER 16, 1998, BOOK 98C, PAGE 281.

PROJECT BENCHMARK

A STANDARD USC&GS BRASS TABLET STAMPED "UNION 1969", CEMENTED IN A DRILL HOLE IN LAVA ROCK, LOCATED ON THE NORTHEAST SIDE OF THE SOUTHERN UNION GAS CO. PIPELINE DIRT ROAD APPROXIMATELY A HALF MILE NORTH OF THE SOUTHERN BOUNDARY OF THE TOWN OF ALAMEDA GRANT LINE. ELEVATION = 5522.15 FEET (NGVD 1929)

THE ELEVATIONS OF T.B.M. #1 AND T.B.M. #2 ARE BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY THIS FIRM IN OCTOBER, 2001 AND THE PUBLISHED ELEVATION OF "UNION 1969" WHICH WAS SUBSEQUENTLY RE-ESTABLISHED BY TRIGONOMETRIC METHODS.

T.B.M. #1

A CHISELED "C" ON TOP BACK OF CURB, AS SHOWN ON THIS SHEET. ELEVATION = 5421.47 FEET (NGVD 1929)

T.B.M. #2

A P.K. NAIL AND WASHER STAMPED "NMPS 11184", AS SHOWN ON THIS SHEET. ELEVATION = 5429.48 FEET (NGVD 1929)

HIGH MESA Consulting Group
FORMERLY JEFF MORTENSEN AND ASSOCIATES, INC.
4010-B MIDWAY PARK BLVD. NE • ALBUQUERQUE, NEW MEXICO 87109
PHONE: 505.345.4250 • FAX: 505.345.4254 • www.highmesacg.com
2006.186.1

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: DRAINAGE PLAN AND CALCULATIONS
TEMPORARY PARKING LOT
VENTANA RANCH ELEMENTARY SCHOOL - EAST

Design Review Committee	City Engineer Approval	Mr./Ms./Dr.	Mr./Ms./Dr.
		Checked By	J.G.M.
		Drawn By	C.F.A.
Designed By	J.G.M.	Date	07-07
Checked By	J.G.M.	Date	07-07

City Project No. N/A Zone Map No. B-9, B-10 Sheet 5 of 7

Plot Date: 07-25-2007
Plot Time: 07:40 am
File Path: E:\WORK\2006\186\1\DWG
File Name: 61861.DWG

AS BUILT INFORMATION	
CONTRACTOR	
DATE	
INSPECTOR	
DATE	
ACCEPTANCE BY	
DATE	
VERIFICATION BY	
DATE	
DRAWINGS	
DATE	
CORRECTED BY	
DATE	
RECORDED BY	
NO.	

ENGINEER'S SEAL

NO.	DATE	BY	REVISIONS