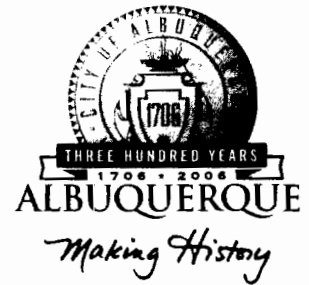


# CITY OF ALBUQUERQUE



February 3, 2006

Mr. Hugh Floyd, PE  
**EASTERLING CONSULTANTS, LLC**  
3613 NM 528 NW, Suite E-2  
Albuquerque, NM 87114

**Re: SHOPS AT COTTONWOOD PARK**  
**10205 Cottonwood Park NW**  
**Approval of Permanent Certificate of Occupancy (C.O.)**  
**Engineer's Stamp dated 02/23/2005 (A-14/D16)**  
**Certification dated 02/06/2006**

Dear Hugh,

P.O. Box 1293

Based upon the information provided in your submittal received 02/06/2006, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

Albuquerque

If you have any questions, you can contact me at 924-3982.

New Mexico 87103

[www.cabq.gov](http://www.cabq.gov)

Sincerely,

Arlene V. Portillo  
Plan Checker, Planning Dept. - Hydrology  
Development and Building Services

C: CO Clerk  
File



|                                                                                   |                      |                      |                                                                                   |                                   |
|-----------------------------------------------------------------------------------|----------------------|----------------------|-----------------------------------------------------------------------------------|-----------------------------------|
|  | 40.35 FL<br>39.85 FL | SPOT ELEVATION       |  | SUBMERSIBLE PUMP                  |
|  | TC                   | TOP OF CURB/CONCRETE |  | BASIN BOUNDARY                    |
|  | TOS                  | TOP OF GROUND        |  | 100 YEAR STORM<br>PONDING EXTENTS |
|  | FL                   | FLOWLINE             |                                                                                   |                                   |
|  |                      | SLOPE ARROW          |                                                                                   |                                   |
|  |                      | FLOW ARROW           |                                                                                   |                                   |

**DRAINAGE CERTIFICATION WITH VERIFICATION BY ENGINEER OF RECORD**  
**DRAINAGE CERTIFICATION**

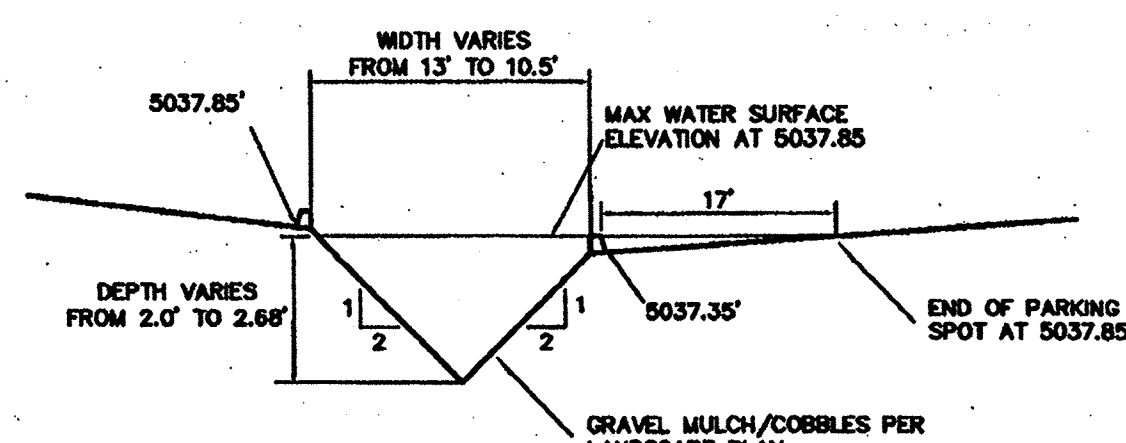
1, HUGH W. FLOYD, NMPE #16633, OF THE FIRM EASTERLING CONSULTANTS LLC, HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED DECEMBER 12, 2004 (REVISED FEBRUARY 23, 2005). THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY ME OR UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR CERTIFICATE OF OCCUPANCY.

DUE TO SEVERAL "BRIDGES" AND THE INCREASED ELEVATIONS IN THE MAIN MEDIAN PONDING AREA, 620 CU. FT. OF STORAGE IS LOST FROM THIS PONDING AREA, BUT THE 90" PIPE LENGTH WAS INCREASED BY 10' (ADDING 441 CU. FT.). THE VOLUME REMOVED BY THE PUMP WITHIN THE 24-HR STORM DURATION (324 CU. FT.) WAS NOT INCLUDED IN THE ORIGINAL CALCULATIONS AND OFFSETS THE NET LOSS IN VOLUME (179 CU. FT.).

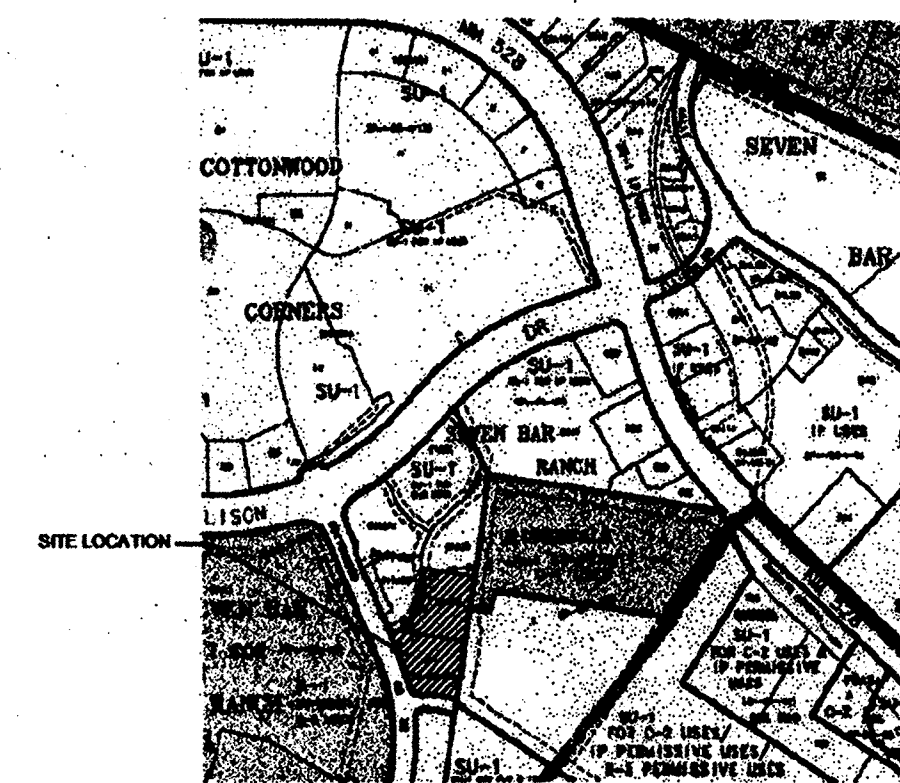
THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THE PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF THE ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

HUGH W. FLOYD, NMPE, #86533

February 6  
OCTOBER 19, 2005



**CROSS SECTION B-B**  
**NOT TO SCALE**



VICINITY MAP-NO FLOOD PLAIN PER PANEL 35001C0109F

## SHOPS AT COTTONWOOD PARK

The project area generally slopes to the north and east, and is comprised of sandy, hummocky soils. It is covered by SAD 223, and thus, there is a maximum permissible peak flow rate. The site is designated TRACT G-1A-1 Seven Bar Ranch. From "SAD No. 223 Cabezon Channel Capacity Analysis" (June-1991, prepared by Easterling & Associates, Inc., for COA PWD, the permissible flow rate from TRACT G-1-A is 0.73 cfs per acre. TRACT G-1-A-1 is 1.366 acres, and thus has a permissible 0.97 cfs discharge. The adjacent site on the north (G-1A-2C) is coordinated to not exceed the same system as this site. Therefore, the flow rate for this site only in conceptual phase and this system would serve only as an outflow for the site and no detention is designated for G-1A-2C. This means the flow rate and/or max w elevation of flows received from this neighboring lot would be restricted to enter and use this system.

Hydrology calculations were performed based on the Albuquerque DPM Chapter 22.2. The site is in Zone 1 (Figure A-1 of DPM). Thus a rainfall of 2.66" is used for the 100 yr 24 hr storm. The site is broken into four sub-basins for analysis. The areas and calculated runoff volumes and peak flow rates are shown below.

## HYDROLOGY SUMMARY

**PROJECT NAME:** Shops at Cottonwood Park

NAME: \_\_\_\_\_  
JOB \_\_\_\_\_  
NUMBER: 23-04-01 S

| BASIN       | COND. | AREA<br>(acres) | LAND TREATMENT |       |       |   | D<br>72.5 |
|-------------|-------|-----------------|----------------|-------|-------|---|-----------|
|             |       |                 | A              | B     | C     |   |           |
|             |       |                 |                |       |       |   |           |
| Sub-basin 1 | DEV   | 0.51            | 0.0%           | 13.8% | 13.8% | % | 87.2      |
| Sub-basin 2 | DEV   | 0.47            | 0.0%           | 3.4%  | 9.4%  | % | 98.3      |
| Sub-basin 3 | DEV   | 0.42            | 0.0%           | 0.0%  | 1.7%  | % | 90.0      |
| Off-site 1  | DEV   | 1.05            | 0.0%           | 0.0%  | 10.0% | % |           |

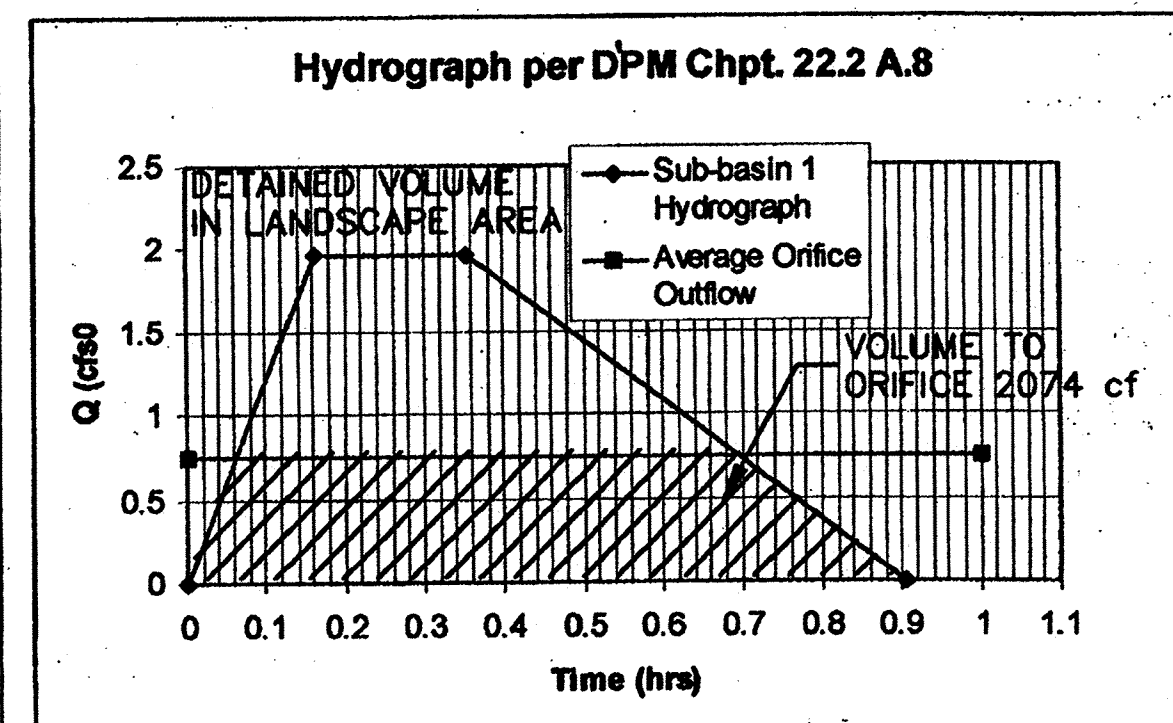
|             | 10 YEAR |                 |       | 100 YEAR |                 |       |
|-------------|---------|-----------------|-------|----------|-----------------|-------|
|             | Q       | VOLUME (ac.ft.) |       | Q        | VOLUME (ac.ft.) |       |
|             | (cfs)   | 6 HR            | 24 HR | (cfs)    | 6 HR            | 24 HR |
| Sub-basin 1 | 1.2     | 0.04            | 0.05  | 2.0      | 0.07            | 0.08  |
| Sub-basin 2 | 1.3     | 0.04            | 0.05  | 1.9      | 0.07            | 0.09  |
| Sub-basin 3 | 1.2     | 0.04            | 0.05  | 1.8      | 0.07            | 0.08  |
| Off-site 1  | 2.9     | 0.10            | 0.13  | 4.4      | 0.16            | 0.20  |

The entire site will be drained to the backside of an existing inlet on Cottonwood Drive N.W., as shown on the plan. The 1.5" pressure line will tee into the 6" gravity prior to crossing the property boundary.

The gravity line drains Sub-basin 1, which contains the building. Building runoff drains to the western landscape/detention area. A 6" pipe with a 4.5" orifice plate, will allow 0.65 cfs when the water surface elevation matches the grate elevation and increases to 0.88 cfs as the elevation rises. As can be seen from the hydrograph plot below, the inlet/orifice accounts for 2074 cubic feet of the runoff from Sub-basin 1. The rest of the volume is temporarily detained in the landscape area. This hydrograph was created with a tc equal to the minimum and an average orifice flow rate of 0.75 cfs.

The runoff from Sub-basin 2 is collected to the large median on the eastern end of the site (see detail). The median stores 287 cu ft. (0.06 ac-ft) and flow will be controlled by a 1.5" orifice allowing less than 0.09 cfs. This restriction reduces the volume of storage necessary in the underground pipe. In a 100-yr storm event this storage area will overflow to the inlet in the underground pipe. This inlet also directly receives all surface runoff from Sub-basin 3. This runoff drains directly to a 105' underground 90" CMP and provides 4,684 cubic ft. (0.108 ac-ft) of storage. So of a total 11,158 cu. ft. (0.256 ac-ft) of total runoff, 6547 is stored above ground or drains directly to the street inlet. The remaining 4611 is stored in the 90" CMP and then pumped to the street inlet. The CMP will house two 40 GPM (0.09 cfs) submersible effluent pumps (one is for back-up), which will be connected to the existing inlet in Cottonwood Park by a PVC pressure line. It should be noted that 0.09 cfs (pump flow rate) when combined with the maximum effluent flow rate (0.88 cfs) is equal to the permissible 0.97 cfs for Tract G-1A-1. It should also be noted that in a 100-yr storm the maximum parking lot depth is 0.5', and there is no ponding in the parking lot in a 10-yr storm. Any future detention facilities on Tract G-1A-2C draining to this system must restrict the maximum free water surface elevation to less than the top of pipe elevation (5033.50). This ensures that the system function for Tract G-1A-1 is not compromised and the system would only act as a slow drain for Tract G-1A-2C.

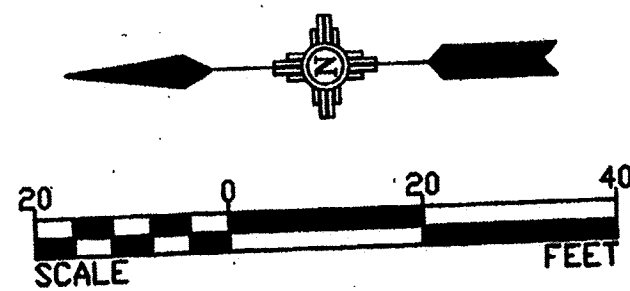
Spot elevations, and contours where necessary, are shown to convey the final grade. The final grade is similar to the existing grades as it falls off from the north and east.



**SHOPS AT COTTONWOOD PARK**  
**REVISED DRAINAGE PLAN**  
**(FOR INFORMATION ONLY)**

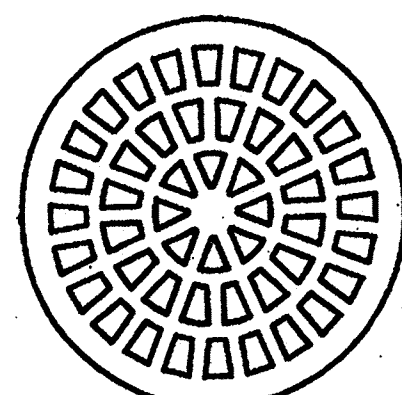
***Easterling Consultants, LLC***  
CONSULTING ENGINEERS  
3613 NM 528 NW, Suite E-2  
Albuquerque, New Mexico 87114  
(505) 821-6646 FAX (505) 897-2965

|                     |                  |                        |                 |
|---------------------|------------------|------------------------|-----------------|
| DESIGNED BY<br>HWF  | DRAWN BY:<br>HWF | CHECKED BY:<br>CME     | C-1 02<br>OF 22 |
| JOB NO:<br>23-04-01 |                  | DATE :<br>23 FEB. 2005 |                 |

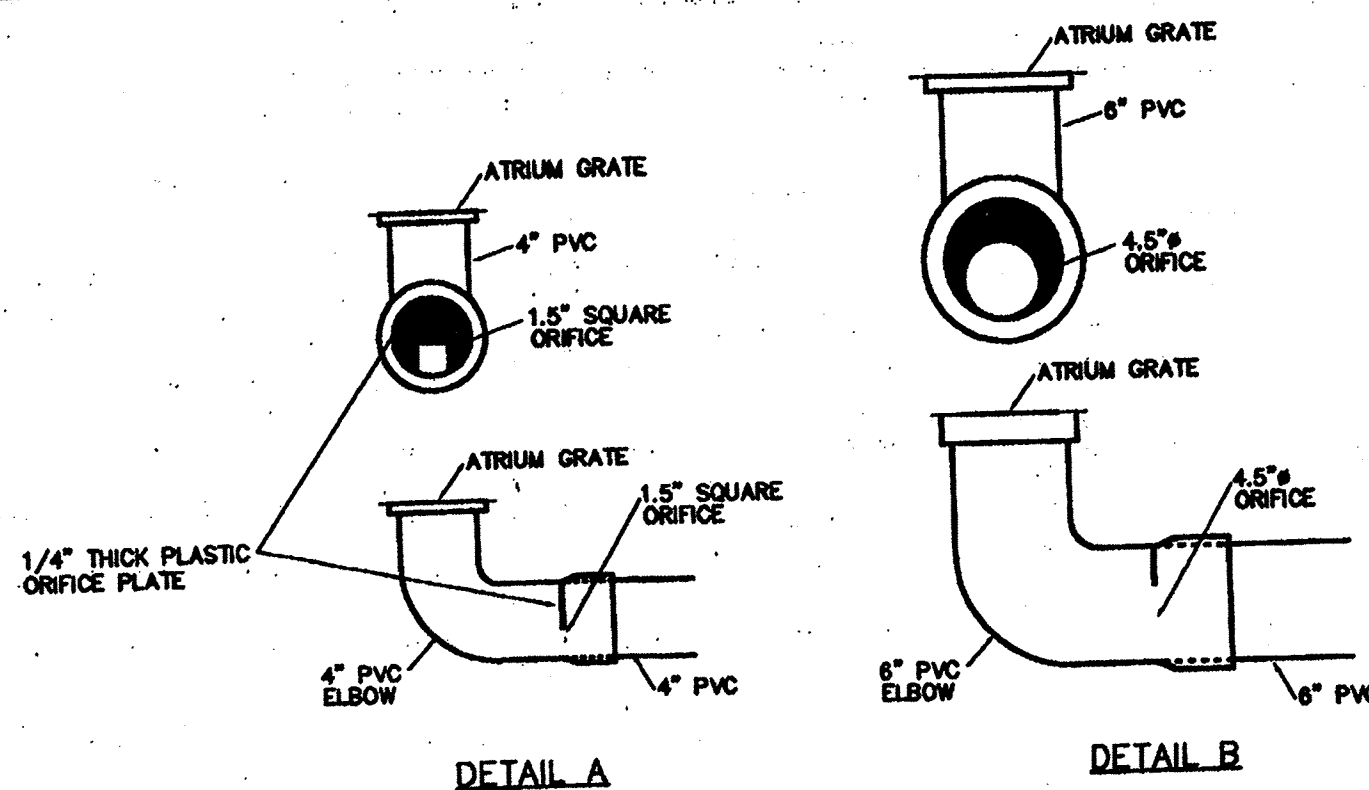


# LEGEND

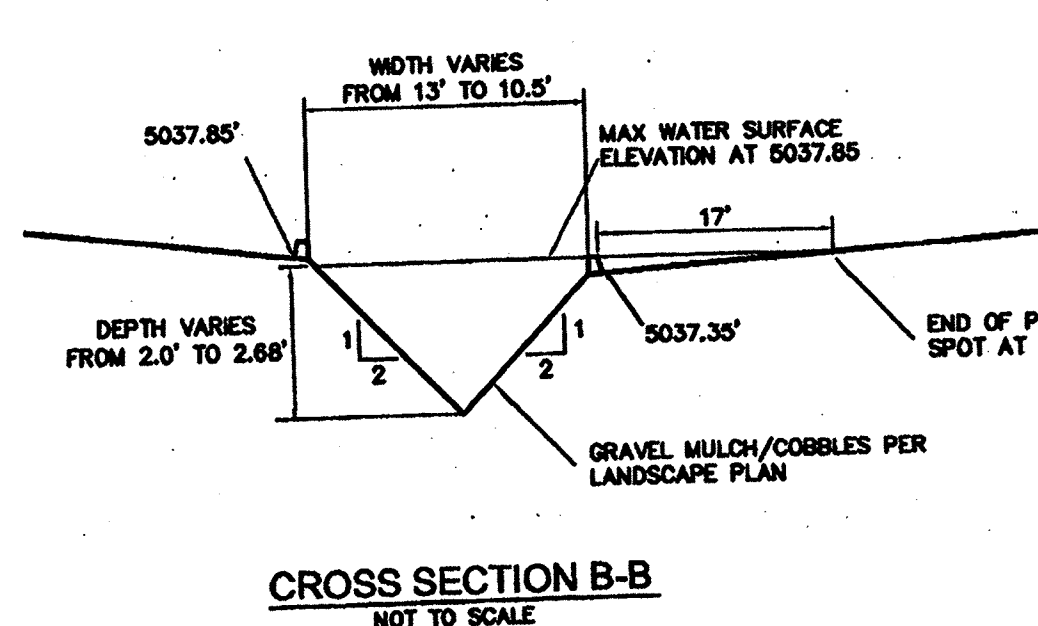
- 40.35 FL
- 39.85 FL
- TC
- TOG
- FL
- SPOT ELEVATION
- TOP OF CURB/CONCRETE
- TOP OF GROUND
- FLOWLINE
- SLOPE ARROW
- FLOW ARROW
- SUBMERSIBLE PUMP



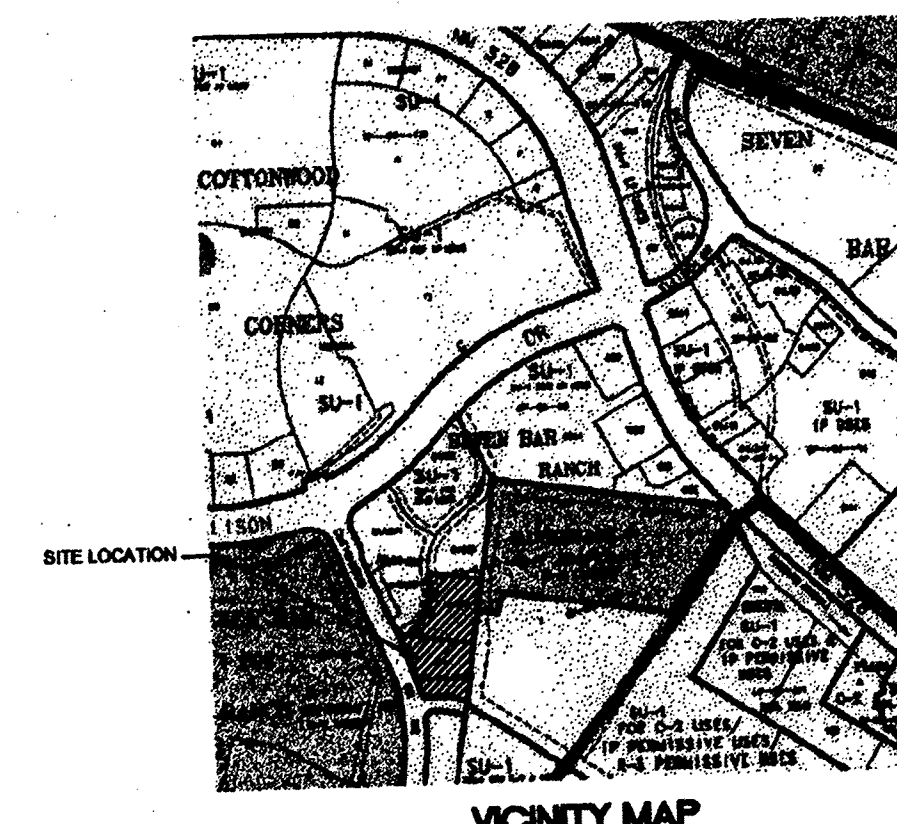
GRADED MANHOLE COVER  
(MUNICIPAL CASTINGS, INC.  
#344-B O.A.E.)



ORIFICE DETAILS  
NOT TO SCALE



CROSS SECTION B-B  
NOT TO SCALE



VICINITY MAP

80-19

## NOTICE TO CONTRACTORS

- AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
- ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
- TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 785-1234, FOR LOCATION OF EXISTING UTILITIES.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
- BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
- MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
- WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

| APPROVAL  | NAME | DATE |
|-----------|------|------|
| INSPECTOR |      |      |

TYP. CURB OPENING  
NOT TO SCALE

## DRAINAGE CERTIFICATION WITH VERIFICATION BY ENGINEER OF RECORD

I, HUGH W. FLOYD, NMPE #16633, OF THE FIRM EASTERLING CONSULTANTS LLC, HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED DECEMBER 12, 2004 (REVISED FEBRUARY 23, 2005). THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY ME OR UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR CERTIFICATE OF OCCUPANCY.

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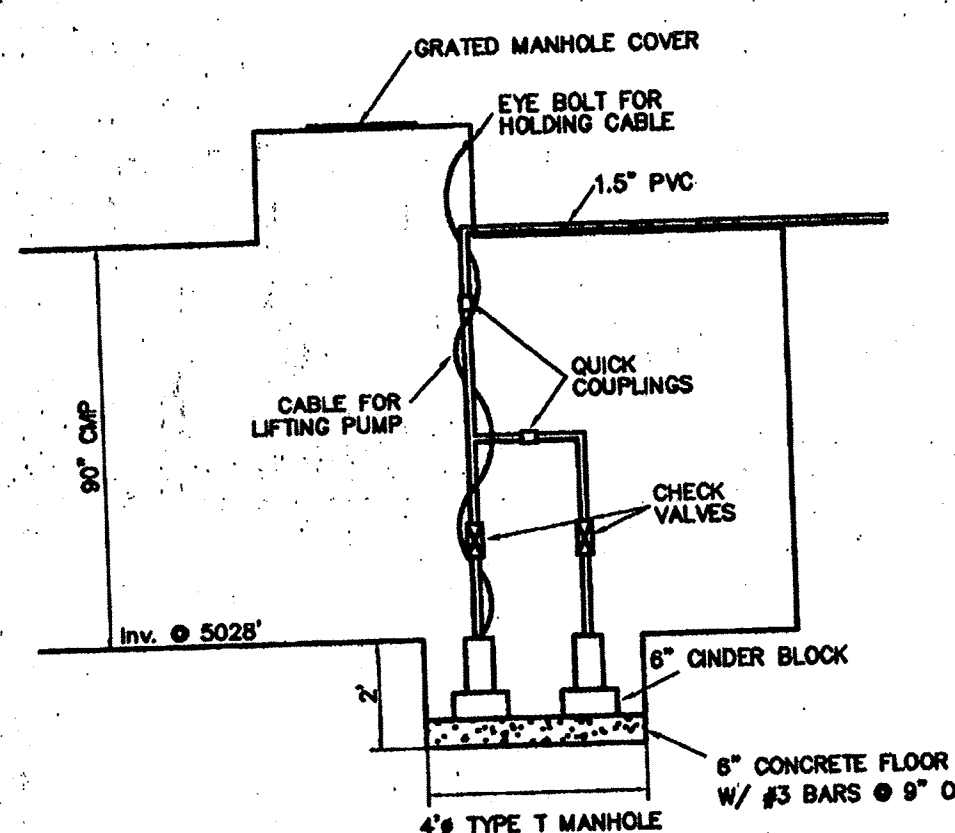
HUGH W. FLOYD  
REGISTERED PROFESSIONAL ENGINEER  
NEW MEXICO  
#16633

February 06, 2006

## TRACT G-1A-2C SEVEN-BAR RANCH

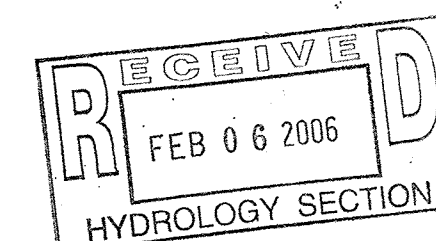
## TRACT G-1A-1 SEVEN-BAR RANCH

FF=5041.00

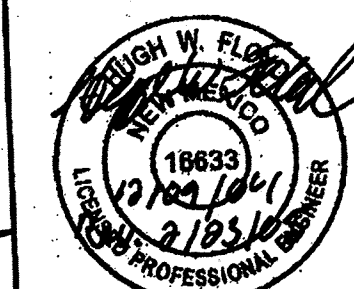


SECTION A-A  
NOT TO SCALE

- INSTALL GOULDS MODEL LE07, 3/4 HP, 115 V PUMPS WITH 3/4" SOUNDS HANDING OR ENGINEER APPROVED EQUIVALENT.
- SET PRIMARY PUMP FLOAT "ON" AT 4" ABOVE CMP INVERT, AND THE "OFF" AT 6" BELOW CMP INVERT.
- SET BACK-UP PUMP FLOAT "ON" AT 1" BELOW CMP SOFFIT, AND THE "OFF" AT 6" BELOW CMP INVERT.
- ACTIVATION OF BACK-UP PUMP WILL TRIGGER FLOOD ALARM TO INDICATE FAILURE OF PRIMARY PUMP OR MAJOR STORM EVENT (AT LEAST 100-YEAR).



## SHOPS AT COTTONWOOD PARK REVISED GRADING PLAN



Easterling Consultants, LLC  
CONSULTING ENGINEERS  
3613 NM 528 NW, Suite E-2  
Albuquerque, New Mexico 87114  
(505) 821-6646 FAX (505) 897-2965

|                     |                      |                   |        |
|---------------------|----------------------|-------------------|--------|
| DESIGNED BY<br>HWF  | DRAWN BY<br>HWF      | CHECKED BY<br>CME | C-1 03 |
| JOB NO.<br>23-04-01 | DATE<br>23 FEB. 2005 | OF 22             |        |