

- KEYED NOTES**
- 6" CONCRETE CURB
  - 24" SLIDING GATE
  - EXISTING DRAINAGE CHANNEL
  - CONSTRUCT CONC. VALLEY GUTTER PER CITY OF ALBUQUERQUE DWS 2420
  - EXIST CURB & GUTTER
  - EXIST CMU WALL
  - 6" CHAIN LINK FENCE
  - HANDICAP RAMP
  - PROPOSED CMU PRIVACY WALL
  - LANDSCAPING
  - ASPHALT PAVEMENT
  - CONCRETE SLAB
  - CONSTRUCT 24" SIDEWALK CULVERT PER COA STD DWG 2236
  - CONSTRUCT CONCRETE CHANNEL SEE SECTION (C)

HYDROLOGY - HYMO									
Precipitation Zone 2	P360 = 2.35 inches								
BASIN	AREA	Ao	Ad	Ac	Ad	E	Q100	VOL100	
acres	acres	acres	acres	acres	acres	inches	cts	ft	
EXISTING CONDITION:									
SITE	0.95	0.95				0.53	1.5	0.0420	
DEVELOPED CONDITION:									
A	0.46			0.39	0.07	1.28	1.6	0.019	
B	0.10		0.04	0.03	0.03	1.29	0.3	0.011	
C	0.39		0.02	0.01	0.36	2.02	1.8	0.066	
SITE	0.95		0.06	0.43	0.46	1.59	3.7	0.126	

- DRAINAGE PLAN NOTES**
- BLI recommends that the Owner obtain a Geotechnical Evaluation of the on-site soils prior to foundation/structural design.
  - This Plan recommends positive drainage away from all structures to prohibit ponding of runoff which may cause structural settlement. Future alteration of grades adjacent to the proposed structures is not recommended.
  - Irrigation within 10 feet of any proposed structure is not recommended. Introduction of irrigation water into subsurface soils adjacent to the structure could cause settlement.
  - This Plan is prepared to establish on-site drainage and grading criteria only. BLI assumes no responsibility for subsurface analysis, foundation/structural design, or utility design.
  - Local codes may require all footings to be placed in natural undisturbed soil. If the Contractor plans to place footings on engineered fill, a certification by a registered Professional Engineer will be required. If the contractor wishes BLI to prepare the Certification, we must be notified PRIOR to placement of the fill.
  - BLI recommends that the Owner obtain the services of a Geotechnical Engineer to test and inspect all earthwork aspects of the project.
  - The property boundary shown on this Plan is given for information only to describe the project limits. Property boundary information shown hereon does not constitute a boundary survey. A boundary survey performed by a licensed New Mexico Registered Professional Surveyor is recommended prior to construction.

**PURPOSE AND SCOPE:**  
Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Grading and Drainage Plan outlines the drainage management criteria for controlling developed runoff from the project site. The property is to be developed as an office/warehouse facility, with associated paving, landscaping, utility, grading, and drainage improvements.

**EXISTING CONDITIONS:**  
The project site is approximately 0.95 acres in size and is located on Columbine Avenue NE in the Richfield Park Subdivision. The site is bounded by Columbine Avenue on the south, developed office/warehouse property on the east, and undeveloped property on the west and north. Presently the site is undeveloped. Site topography slopes from east to west at approximately 2%. The site is sparsely covered with native vegetation.

On-site, all flow drains as sheet flow to the west into the adjoining undeveloped property. Off-site flows from the east are managed by a private paved channel located along the west property line of Lot 23, which discharges into Columbine Avenue. Columbine conveys all off-site and on-site flow west to Tract D-1, where existing improved channels convey runoff to an AMAFCA maintained channel located along the west boundary of Richfield Park Subdivision, Tract D-1. The AMAFCA channel drains north to the La Cueva Channel and North Diversion Channel. No off-site flows impact the property.

As shown by the attached FIRM Panel, this site appears to lie partially within a designated flood hazard zone. Constructed upstream drainage improvements have removed the floodplain from the property. Map revision is pending.

**ESTABLISHED DRAINAGE MANAGEMENT PLAN**  
The Richfield Park Subdivision improvements were constructed in 1987. The drainage management criteria for the project was established by the "Drainage Report for Richfield Park", prepared by Espey, Huston & Associates, Inc., dated August 1, 1986. Per the report, all lots are to free discharge into the public street system which conveys runoff to the existing AMAFCA channel located along the west boundary of Richfield Park Subdivision, Tract D-1. The project was built in phases in accordance with the phasing plan outlined in the approved drainage report. Interim paved channels were constructed to convey runoff from the public streets to the AMAFCA channel.

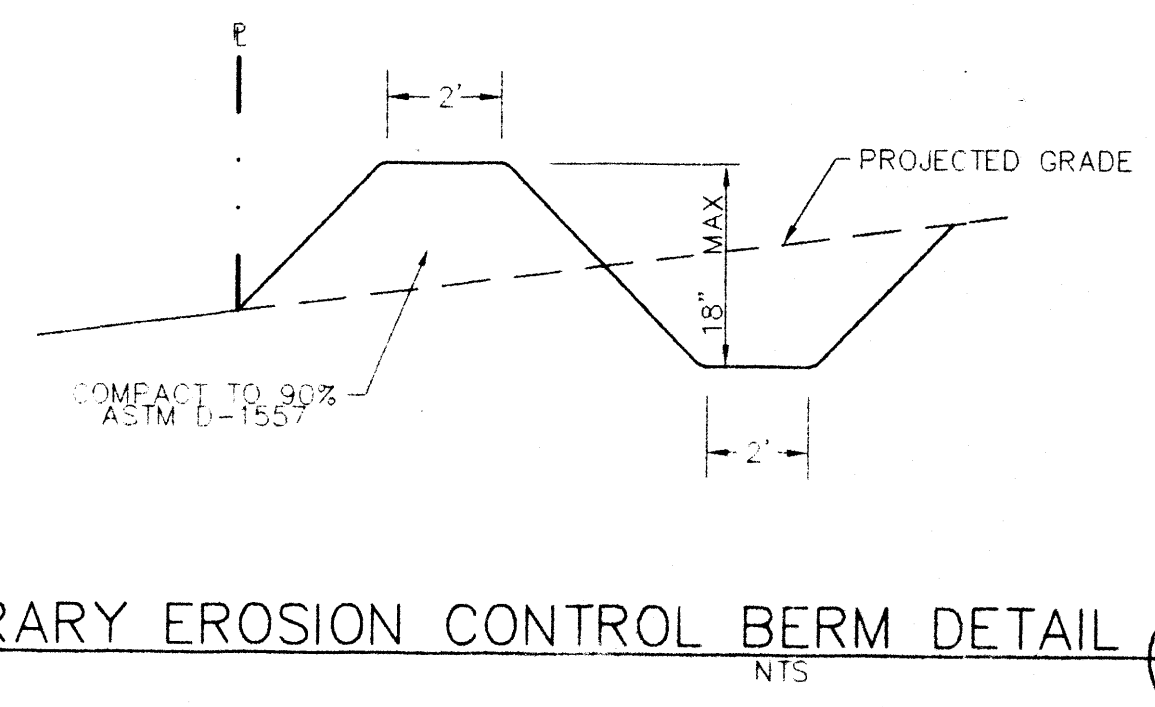
**DEVELOPED CONDITIONS:**  
As shown by the Plan, the project consists of the development of the property into an office/warehouse facility. The Plan shows the contours and elevations required to properly grade and construct the required paving and drainage improvements. The direction of drainage flows are given by flow arrows and the project hydrology is tabulated for both existing and developed conditions.

All drainage flows will be managed on-site and discharge to existing perimeter public street system in accordance with the established Drainage Management Plan.

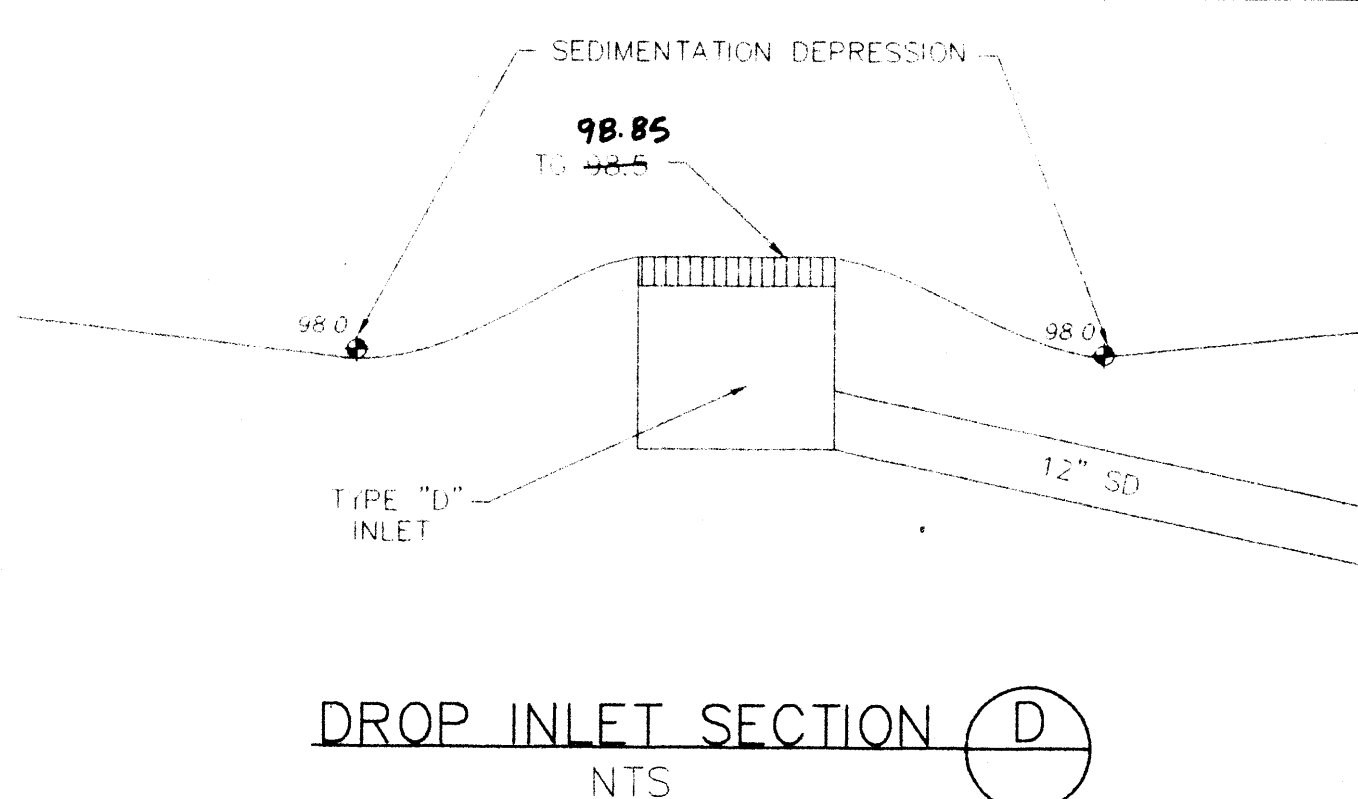
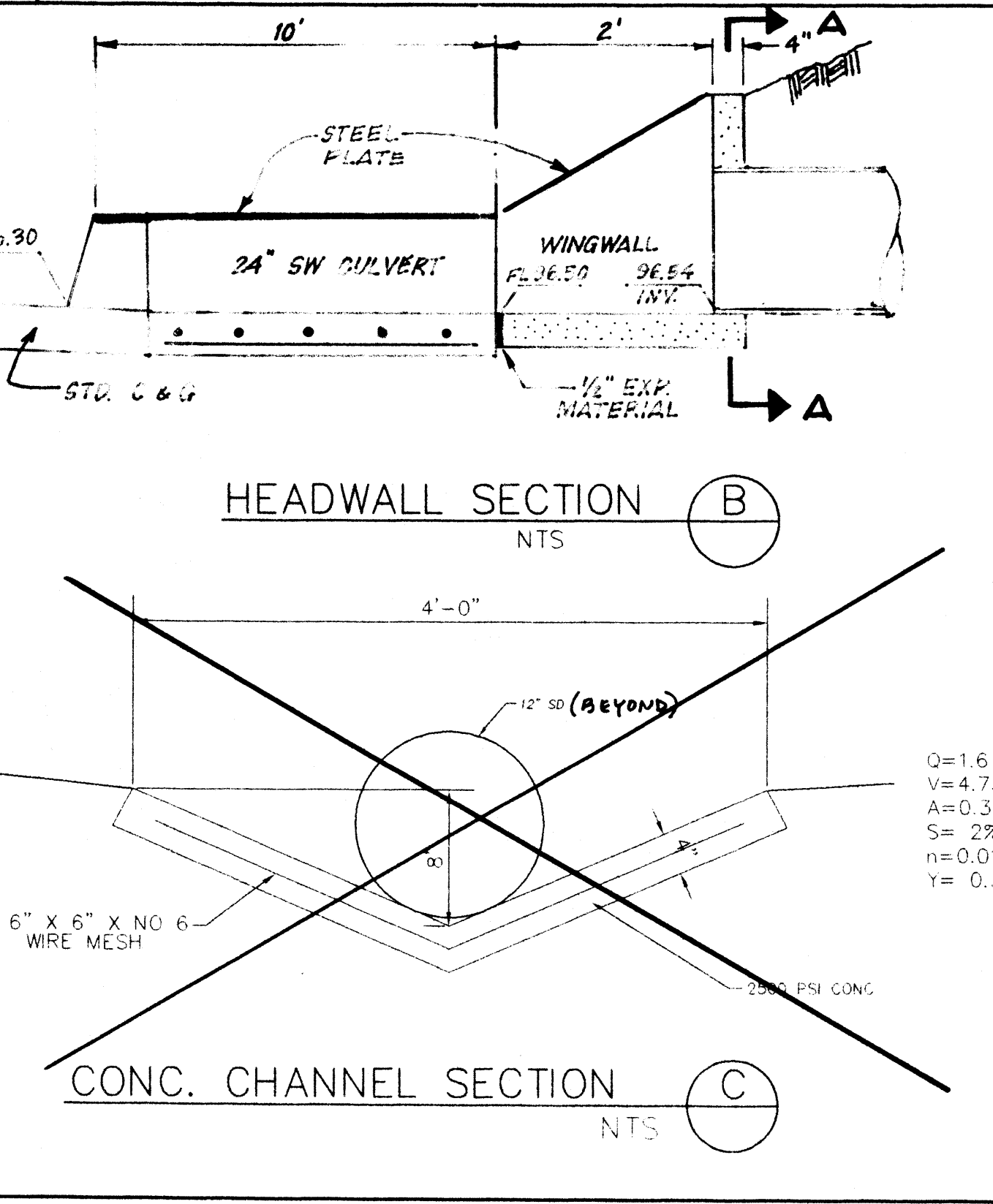
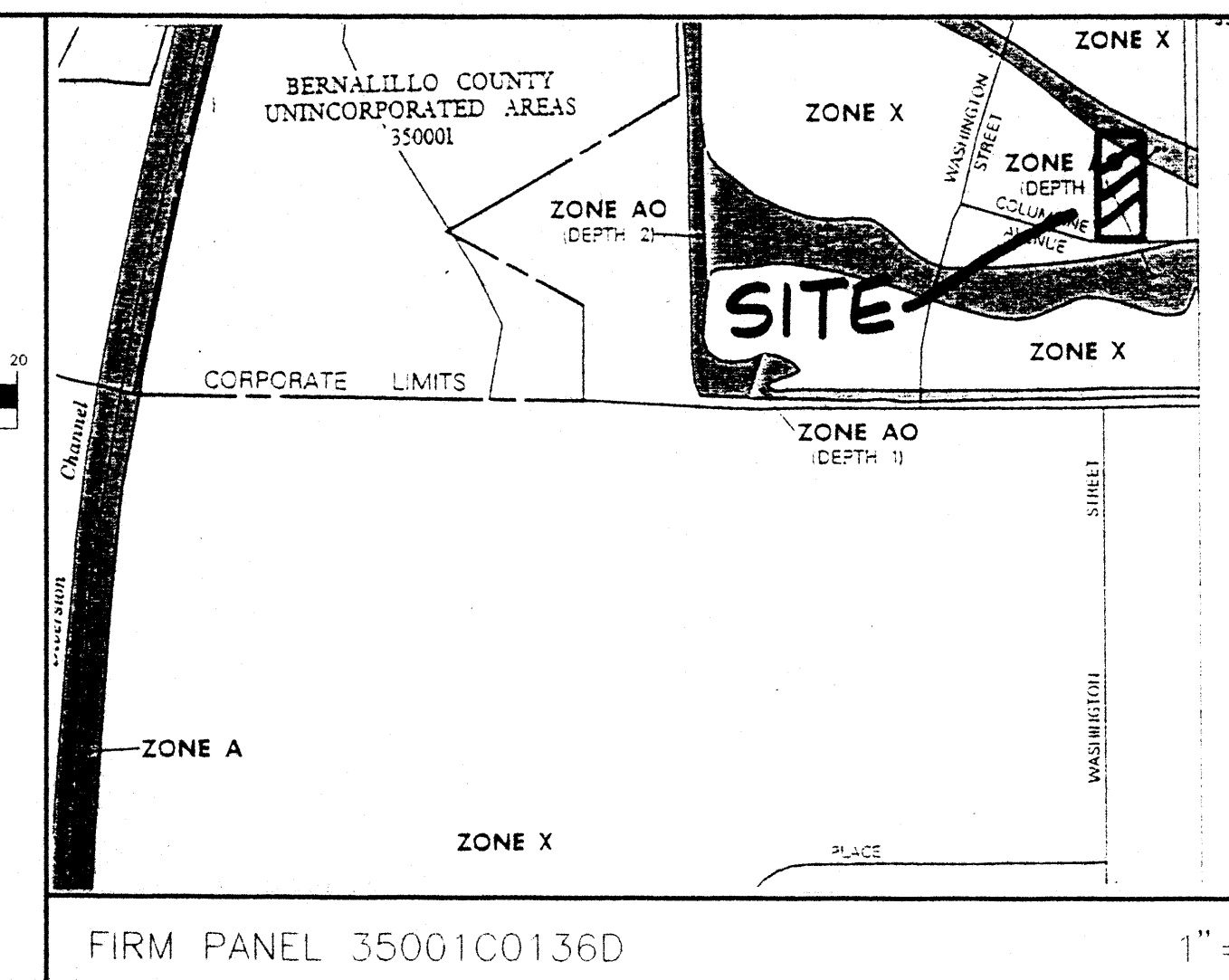
Development of Tract D-1 is pending. The City of Albuquerque has purchased the property and is planning for the construction of a new Balloon Fiesta Park. Upon development of Tract D-1, the interim swales presently located on the property will be replaced with permanent improvements.

**EROSION CONTROL**  
Temporary erosion control will be required during the construction phase to protect downstream property and improvements from sediment and uncontrolled runoff. As shown by the detail included with the plan, temporary erosion control measures will be provided along the west and south property boundaries to hold runoff during construction. It is the Contractor's responsibility to properly maintain these facilities during the construction phase of the project.

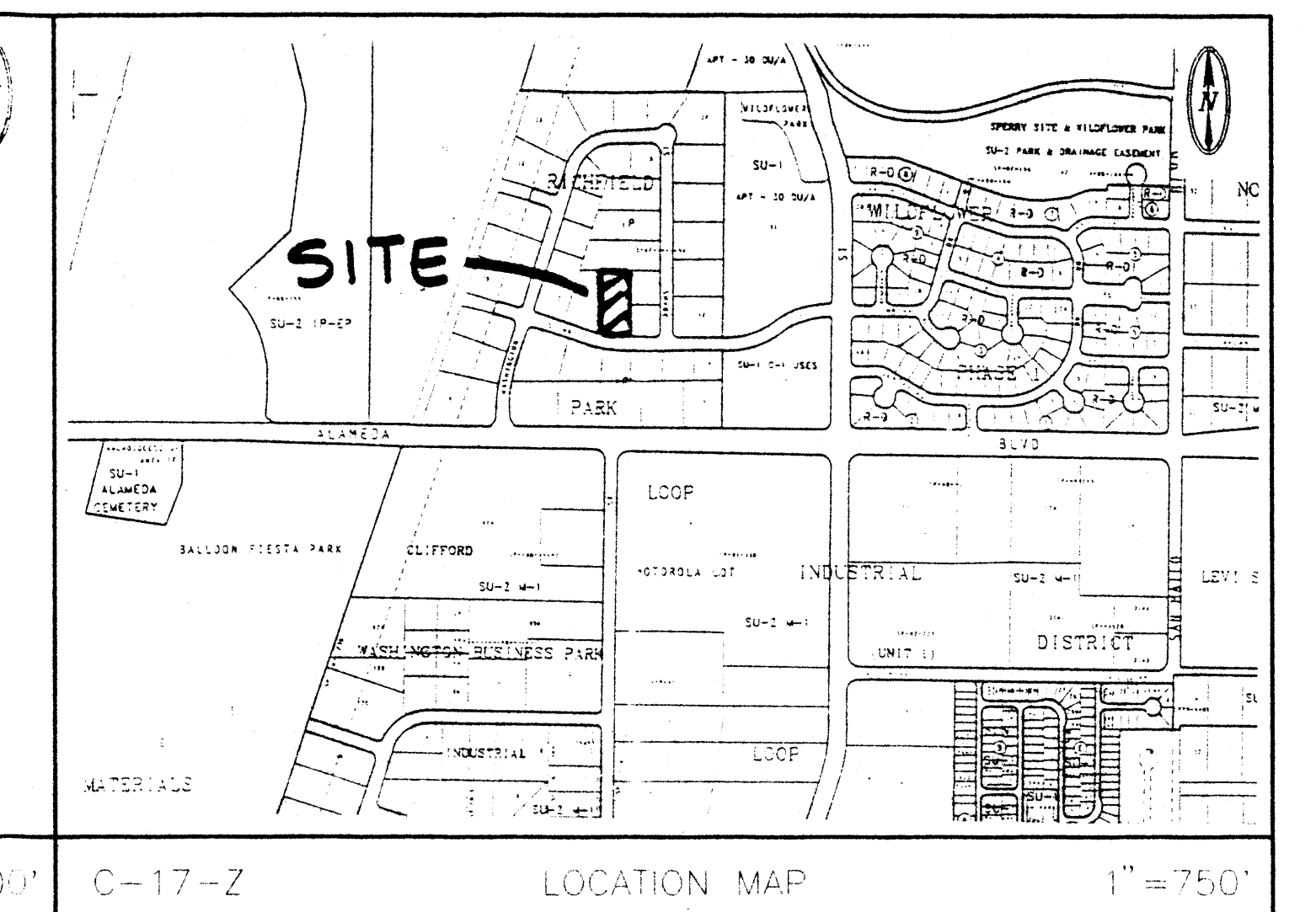
**CALCULATIONS:**  
The calculations shown hereon define the 100 year/6 hour design storm falling with the project area under existing and developed conditions. The Hydrology is per "Section 22.2, Part A, DPM, Vol 2" Dated January 1993.



**TEMPORARY EROSION CONTROL BERM DETAIL (A)**  
NTS



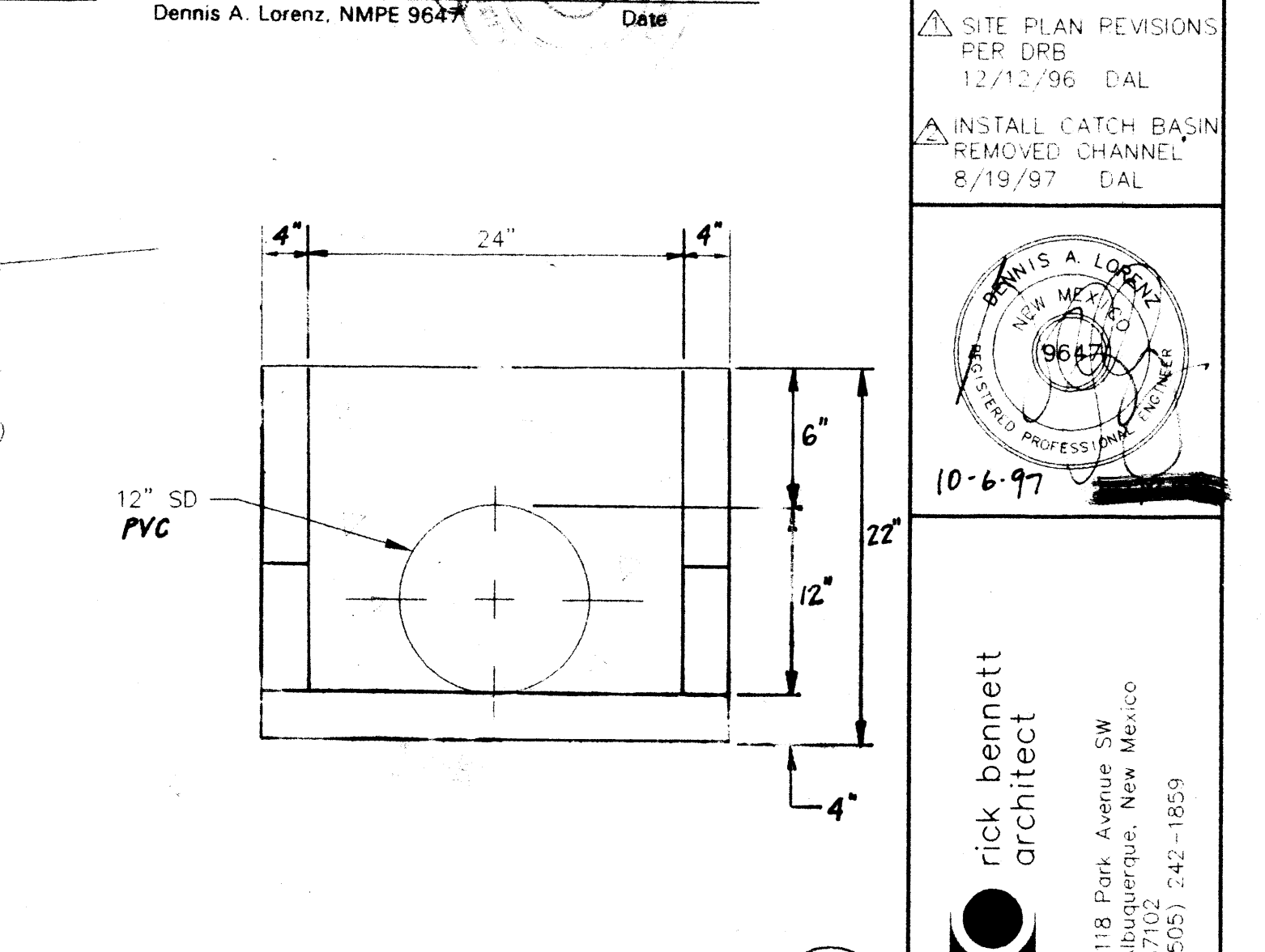
- LEGEND**
- 5100 EXISTING CONTOUR ELEVATION
  - 02.5 X EXISTING SPOT ELEVATION
  - 01 PROPOSED CONTOUR ELEVATION
  - PROPERTY LINE
  - 015 X PROPOSED SPOT ELEVATION (VERIFIED)
  - DIRECTION OF FLOW
  - DRAINAGE SWALE
  - DRAINAGE BASIN DIVIDE
  - EXISTING WATER METER
  - EXISTING TELEPHONE PEDESTAL
- PROPERTY ADDRESS**  
Columbine Avenue NE
- LEGAL DESCRIPTION**  
Lot 24, Richfield Park
- PROJECT BENCHMARK**  
TBM SW property corner, rebar w/ cap marked "LS 6540" Elev = 5097.89 feet
- SURVEY**  
Topographic and Field Measurement by Precision Surveys Inc. Dated September, 1996



- DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY NOTICE TO CONTRACTOR**
- An excavation/construction permit will be required before any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.
  - All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with the "City of Albuquerque Standard Specifications, Public Works Construction", 1986 Edition, with Update No. 6, and amendments through September 8, 1994.
  - Two working days prior to any excavation, the contractor must contact Line Locating Service, 560-1990, 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 arterial street use.
  - Maintenance of the facility shall be the responsibility of the owner of the property being served.

**ENGINEER'S CERTIFICATION**  
I, the undersigned, being a Professional Engineer in the State of New Mexico, do hereby certify that this drawing was prepared by me or under my supervision, and that the as-built information shown hereon is based on actual field measurements and inspections performed by Brasher & Lorenz, Inc. I further certify that the as-built condition of the site is in substantial compliance with the approved Grading and Drainage Plan prepared by Brasher & Lorenz, Inc., dated October 6, 1997.

Dennis A. Lorenz, NMPE 9647 Date 10-16-97



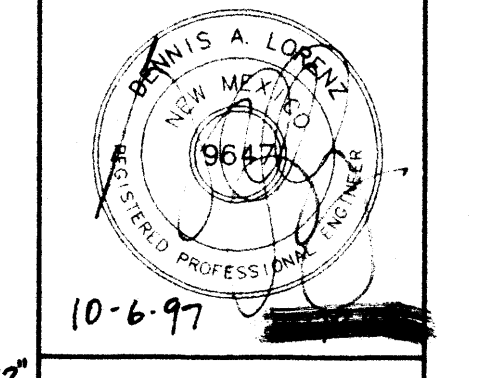
**STORM DRAIN HEADWALL SECTION (A)**  
NTS

**REVISION DATE**  
SITE PLAN REVISIONS PER DBP 12/12/96 DAL  
INSTALL CATCH BASIN REMOVED CHANNEL 8/19/97 DAL

**DATE**  
2-17-97

**SHEET NUMBER**  
C-3

**SOUTHWESTERN INDUSTRIAL INC.**  
GRADING AND DRAINAGE PLAN  
RICHFIELD PARK SUBDIVISION, LOT 24  
ALBUQUERQUE, NM  
PROJECT # 3696



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12-17-98