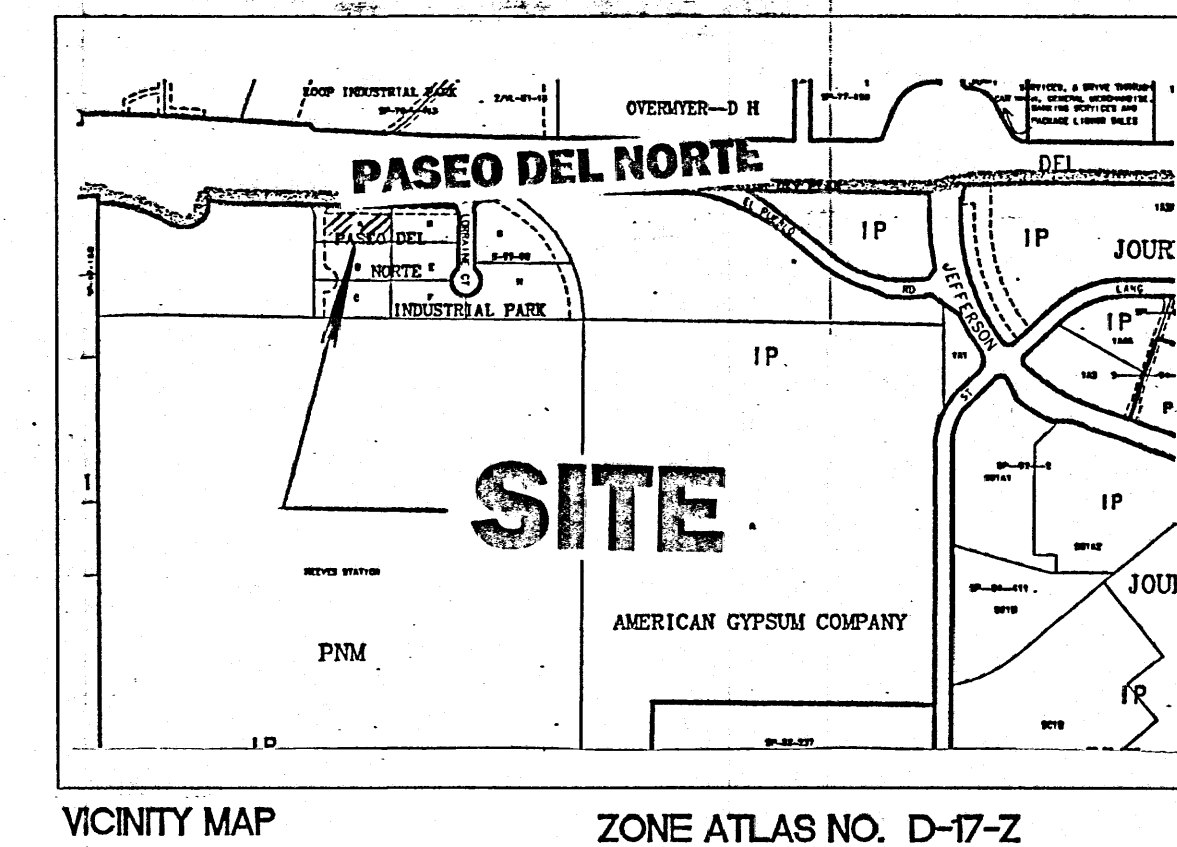


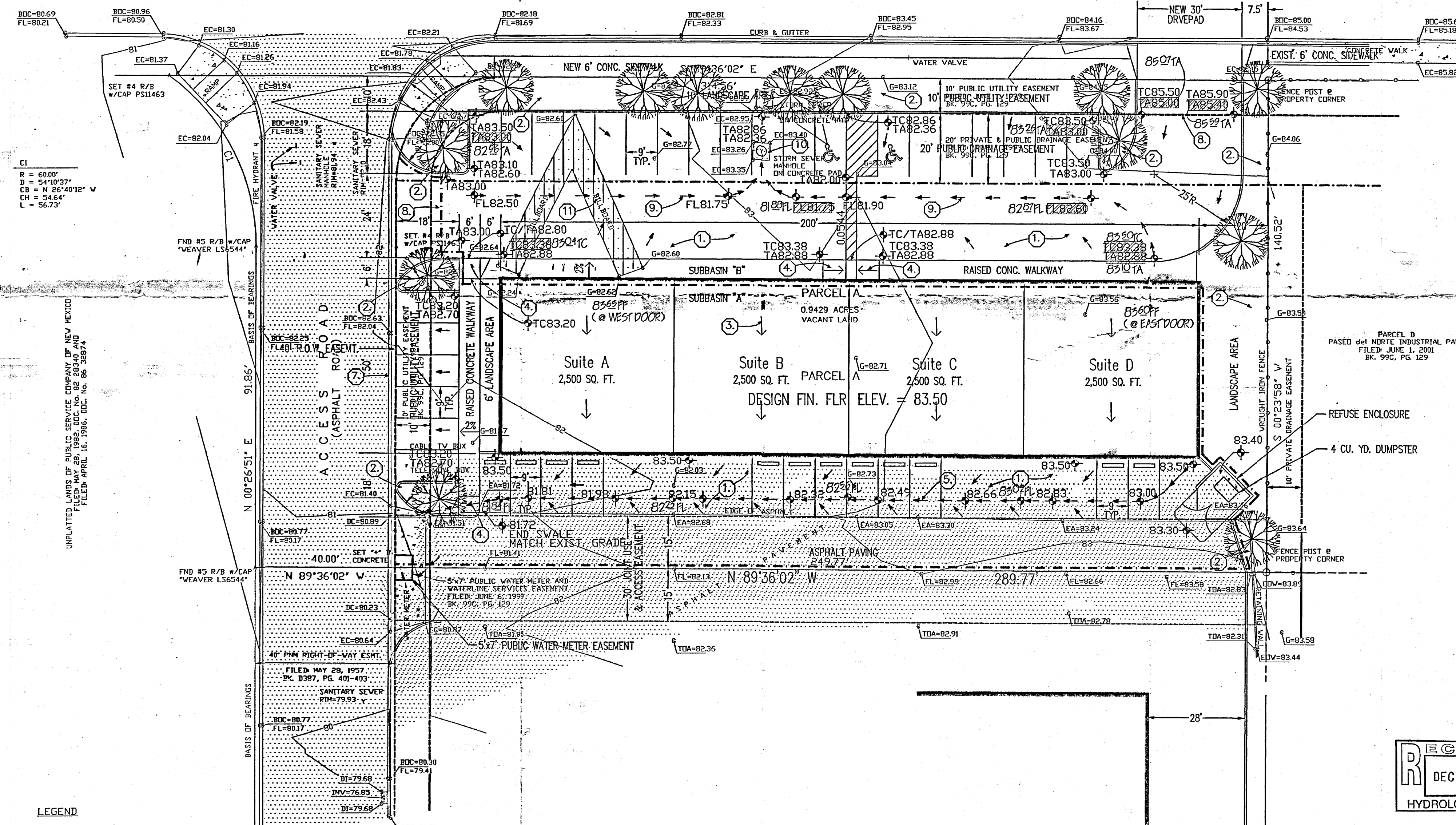
LOCATED AT 4300 PASEO DEL NORTE NL, ALBUQUERQUE, NEW MEXICO

PO BOX 24-0001 • CHICAGO, ILL 60624-0001 • 8708

<u>PARKING REQUIRED:</u>	
GROUND LEVEL	REAR OFFICE: 4,775/200=23.88
UPPER LEVEL OFFICE:	1,455/300=4.85
WAREHOUSE:	5,383/2,000=2.69
<u>REQUIRED PARKING (TOTAL):</u> 32 SPACES	
<u>PARKING PROVIDED:</u> 37 SPACES	
<u>REQUIRED H.C. PARKING:</u> 2 SPACES	
<u>H.C. PARKING PROVIDED:</u> 2 SPACES	



4300 Paseo Del Norte NE



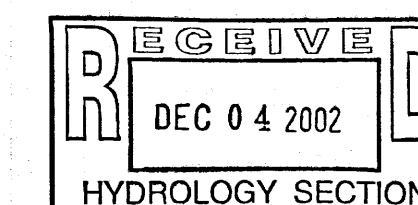
ENGINEER'S CERTIFICATION:

HAVING FIELD-INSPECTED THE SITE AND HAVING TAKEN SPOT ELEVATIONS AT CRITICAL LOCATIONS, I HEREBY CERTIFY THAT THE AS-CONSTRUCTED FACILITY IS IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED GRADING AND DRAINAGE PLAN WITH ENGINEER'S STAMP DATED FEBRUARY 12, 2002.

FRANK D. LOVELADY
FRANK D. LOVELADY, P.E.
NOVEMBER 22, 2002
DATE

LEGAL DESCRIPTION:

PARCEL LETTERED 'A' OF THE SUBDIVISION PLAT OF PARCELS A THRU H, PASEO DEL NORTE INDUSTRIAL PARK, ALBUQUERQUE, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT THEREOF, FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON JUNE 1, 1999 IN VOLUME 99C, FOLIO 129.



DRAINAGE CALCULATIONS:

EXISTING CONDITIONS:

The site is located on Parcel 'A' of Paseo del Norte Industrial Park at the Southeast corner of the South Paseo del Norte South Frontage Road and the unnamed access easement. The South Frontage Road is paved with Standard Curb and Gutter. The unnamed access easement is also paved with standard curb and gutter. The property on the East, Southeast and South of the site are all developed. Each of the adjacent lots must detain some runoff to limit the discharge to 1.66 cfs per acre. All surrounding lots discharge to a 42" cnp owned by the NMSHD. Drainage is conveyed to that culvert by a public storm drainage system.

REFERENCES:

The following is a list of previously approved grading and drainage plans for this site. This list may not be inclusive, however, it represents a summary of those plans which are known to this preparer.

- Plant World conceptual grading and drainage plan for site development plan approval prepared by Jeff Mortensen & Associates Dated 4/27/90 (D17/D67).
- Master Drainage Plan and Calculations, Paseo Del Norte Industrial Park prepared by Jeff Mortensen & Associates and dated 01/28/99, a copy of which is in the Hydrology files.

PROPOSED CONDITIONS:

It is proposed to construct a retail and warehouse facility on the site as shown. The roof runoff will drain to the south and enter the existing Type 'A' inlet in the unnamed access easement. Runoff from the North side of the building will enter the public storm drain system via a new perforated MH cover.

DRAINAGE CRITERIA:

The calculations shown on this plan were prepared in accordance with Section 22.2, Hydrology, of the Development Process Manual, Volume 2, Design Criteria, for the City of Albuquerque in cooperation with Bernalillo County, New Mexico and the Metropolitan Arroyo Flood Control Authority, January, 1993.

PRECIPITATION ZONE:

The site is between the Rio Grande River and San Mateo Blvd. and is, therefore, in Precipitation Zone 2.

LAND TREATMENT AREAS, EXCESS PRECIPITATION AND UNIT PEAK DISCHARGE:

The peak discharge per acre and excess precipitation are shown for the four land treatments in Zone 2 in the table below, and the values shown are from the City of Albuquerque D.P.M. Also shown are the existing and proposed land treatment areas.

LAND TREAT.	100-yr.	10-yr.	100-yr.	10-yr.	E (in)	Existing Site Areas	Developed Site Areas
	q(cfs/acre)					% Sq.Ft. Acres	% Sq.Ft. Acres
A	1.56	0.38	0.53	0.13	0.0	0 0.0000	0.0 0 0.0000
B	2.28	0.95	0.78	0.28	0.0	0 0.0000	12.4 4,342 0.0997
C	3.14	1.71	1.13	0.52	100.0	34,897 0.8011	0.0 0 0.0000
D	4.70	3.14	2.12	1.34	0.0	0 0.0000	87.6 30,555 0.7014
Totals						100.0 34,897 0.8011	100.0 34,897 0.8011

PEAK DISCHARGE:

EXISTING CONDITIONS:

$$Q_{100} = 0.8011 \times 3.14 = 2.51 \text{ cfs}$$

$$Q_{10} = 0.8011 \times 1.71 = 1.37 \text{ cfs}$$

DEVELOPED CONDITIONS:

$$Q_{100} = 0.0997 \times 2.28 + 0.7014 \times 4.70 = 3.52 \text{ cfs}$$

$$Q_{10} = 0.0997 \times 0.95 + 0.7014 \times 3.14 = 2.30 \text{ cfs}$$

VOLUME, 100-YEAR AND 10-YEAR, 6-HOUR:

EXISTING CONDITIONS:

$$V_{100} = (34,897 \times 1.13) / 12 = 3,286 \text{ cf}$$

$$V_{10} = (34,897 \times 0.52) / 12 = 1,512 \text{ cf}$$

DEVELOPED CONDITIONS:

$$V_{100} = (4,342 \times 0.78 + 30,555 \times 2.12) / 12 = 5,680 \text{ cf}$$

$$V_{10} = (4,342 \times 0.28 + 30,555 \times 1.34) / 12 = 3,513 \text{ cf}$$

SUMMARY OF ON-SITE VOLUMES AND PEAK DISCHARGE RATES:

	V100(CF)	V10(CF)	Q100(CFS)	Q10(CFS)
DEVELOPED	5,680	3,513	3.52	2.30
EXISTING	3,286	1,512	2.51	1.37
INCREASE	2,394	2,001	1.01	0.93

DOWNSTREAM CAPACITY:

THE MASTER DRAINAGE PLAN INDICATED THAT THE DOWNSTREAM CAPACITY FOR THE SITE WAS LIMITED. ALL OF THE OTHER TRACTS IN THE SUBDIVISION WERE DEVELOPED WITH DETENTION PONDS WHICH RESTRICTED RUNOFF TO 1.66 CFS PER ACRE. FOR PARCEL 'A' THIS IS 1.3 CFS. RUNOFF FROM PARCELS 'D', 'E', 'F', 'G' AND 'H' IS COLLECTED IN A PUBLIC DOUBLE 'D' STORM INLET WHICH IS IN THE NW CORNER OF PARCEL 'D'. RUNOFF FROM PARCEL 'B' AND 'C' IS COLLECTED IN A PRIVATE DOUBLE THROAT TYPE 'A' STORM INLET. RUNOFF FROM THESE TWO INLETS IS CONVEYED BY TWO 24" DIAMETER RCP STORM DRAIN LINES THAT MEET AT A 6' DIAMETER STORM DRAIN MANHOLE ON THE NORTH SIDE OF THE SITE. THE OUTLET OF THIS MANHOLE IS A 12" LONG SECTION OF 24" RCP STORM DRAIN WHICH CONNECTS TO A 6' DIAMETER STORM DRAIN MANHOLE, THE OUTLET OF WHICH IS A 42" CMP WHICH IS THE ORIGINAL DRAINAGE CULVERT CONSTRUCTED WITH PASEO DEL NORTE.

IF THERE IS A CAPACITY PROBLEM IT WOULD LIKELY OCCUR AT THE 6' MANHOLE WITH TWO 24" RCP SD LINES ENTERING AND ONE 24" RCP SD LINE LEAVING THE MANHOLE. FROM THE MASTER PLAN, Q ENTERING FROM THE EAST IS 16.6 CFS (CAPACITY IS 25.0 CFS), AND Q ENTERING FROM THE WEST IS 12.0 CFS (CAPACITY IS 15 CFS). THEREFORE, A TOTAL OF 28.6 CFS MUST BE DISCHARGED THROUGH THE 24" DIA. OUTLET INTO THE NORTHERLY MANHOLE. THE DEPTH OF WATER IN THE MANHOLE REQUIRED TO DISCHARGE THIS QUANTITY CAN BE CALCULATED BY THE ORIFICE EQUATION.

$$Q = C A (2GH)^{1/2} \quad C = 0.6 \quad A = \pi D^2 / 4 = 3.14 \text{ SF}$$
$$H = (Q^2) / (C^2 A^2 2G) = (28.6)^2 / (0.6^2 \times 3.14^2 \times 2 \times 32.2) = 3.58'$$

DOUBLE CHECK THIS VALUE BY PLUGGING IT BACK IN TO THE ORIFICE EQUATION AND SOLVING FOR Q.

$$Q = C A (2GH)^{1/2} = 0.6 \times 3.14 \times (2 \times 32.2 \times 3.58)^{1/2} = 28.6 \text{ CFS.}$$

THE INVERT ELEVATION IS 74.55. THE WATER DEPTH IN THE MANHOLE WILL REACH 74.55 + 1.0 + 3.58 = 79.13 IF THE FLOW BACKS UP IN THE DOUBLE THROAT TYPE 'A' MANHOLE TO 6' ABOVE THE GRATE (ELEV. 79.86) H BECOMES 0.73' MORE.

$$Q = C A (2GH)^{1/2} = 0.6 \times 3.14 \times (2 \times 32.2 \times 4.31)^{1/2} = 31.4 \text{ CFS.}$$

31.4 - 28.6 = 2.8 CFS. Therefore, there is sufficient capacity for free discharge.

FREE DISCHARGE INTO THE STORM DRAIN SYSTEM.

JUSTIFICATION FOR FREE DISCHARGE FROM PARCEL 'A'

THE SITE PLAN AND BUILDING WERE DESIGNED TO DISCHARGE ALL ROOF RUNOFF TO THE SOUTH. DUE TO THE VERY NARROW AREA BETWEEN THE BUILDING AND THE PAVED PRIVATE ACCESS EASEMENT TO THE SOUTH, IT IS VERY DIFFICULT TO TAKE THE ROOF DRAINAGE BACK AROUND TO THE NORTH PARKING AREA WHERE IT IS LOGICAL TO POND. FROM THE STANDPOINT OF ICE BUILD-UP, IT IS PREFERABLE TO DISCHARGE ALL ROOF RUNOFF TO THE SOUTH SINCE THE NORTH SIDE OF THE BUILDING IS IN THE SHADE. SINCE ALL OF THE OTHER PARCELS IN THE SUBDIVISION ARE NOW DEVELOPED (OR BEING DEVELOPED), AND SINCE THERE IS CAPACITY, AS SHOWN ABOVE, FREE DISCHARGE FOR PARCEL 'A' IS JUSTIFIED.

DRAINAGE BASINS:

The site has three drainage basins:

Basin 'A' which drains South and West into the unnamed access easement.

$$\text{Area} = 19,342 \text{ sf} = 0.4440 \text{ ac.}$$

$$Q_{100} = 0.4440 \times 4.70 = 2.09 \text{ cfs}$$

Subbasin 'B' which drains to a low point in the North parking lot.

$$\text{Area} = 34,897 \text{ sf} - (19,342 \text{ sf} + 4,342 \text{ sf}) = 11,213 \text{ sf} = 0.2574 \text{ ac.}$$

$$Q_{100} = 0.2574 \times 4.70 = 1.21 \text{ cfs}$$

Subbasin 'C' which includes all landscaping areas which are depressed

so that they will retain all runoff.

$$\text{Area} = 4,342 \text{ sf} = 0.0997 \text{ ac.}$$

$$Q_{100} = 0.0997 \times 2.28 = 0.23 \text{ cfs}$$

EROSION CONTROL MEASURES:

- THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR INTO PRIVATE PROPERTY.
- THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING CARRIED DOWN THE STREET DURING HEAVY RAINFALL.
- THE CONTRACTOR SHALL SECURE *TOPSOIL DISTURBANCE PERMIT* PRIOR TO BEGINNING CONSTRUCTION.
- ANY AREAS OF EXCESS DISTURBANCE (TRAFFIC AREAS, STORAGE YARD, EXCAVATED MATERIAL, ETC.) SHALL BE RE-SEEDING ACCORDING TO C.D.A. SPECIFICATION 1012 *NATIVE GRASS SEEDING*. THIS WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION, THEREFORE, NO SEPARATE PAYMENT WILL BE MADE.

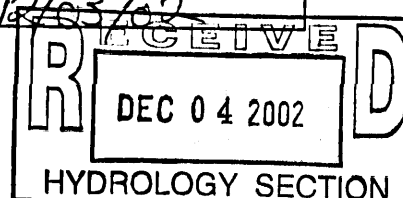
CONSTRUCTION NOTES:

- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (STATEWIDE), FOR LOCATION OF EXISTING UTILITIES.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INTERPRETATIONS IT MAKES WITHOUT FIRST CONTACTING THE ENGINEER AS REQUIRED.
- ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
- ALL CONSTRUCTION IN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE AND NMSHD STANDARDS AND PROCEDURES. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS CONDUCTED ONLY PRELIMINARY INVESTIGATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES. THIS INVESTIGATION IS NOT CONCLUSIVE, AND MAY NOT BE COMPLETE. THEREFORE, THE ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR SAID UTILITY LOCATION INVESTIGATION AND MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE OR PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.
-

CITY OF ALBUQUERQUE DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY (S.O. 19) NOTICE TO CONTRACTORS

- AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING 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 THIS PLAN TO BE PERFORMED UNDER CONTRACT, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986, AS UPDATED THROUGH REVISION NO. 6.
- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, INC., 260-1990, FOR LOCATION FOR EXISTING UTILITIES.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. 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.

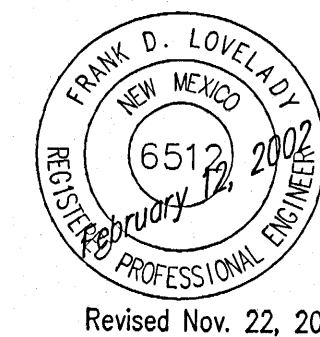
APPROVAL FOR PCC RUNDOWN	NAME	DATE
INSPECTOR:	CO A SPN M. J. [Signature]	11/23/02



ENGINEER'S CERTIFICATION:

HAVING FIELD-INSPECTED THE SITE AND HAVING TAKEN SPOT ELEVATIONS AT CRITICAL LOCATIONS, I HEREBY CERTIFY THAT THE AS-CONSTRUCTED FACILITY IS IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED GRADING AND DRAINAGE PLAN WITH ENGINEER'S STAMP DATED FEBRUARY 12, 2002.

FRANK D. LOVELADY
NOVEMBER 22, 2002
DATE



GRADING AND DRAINAGE PLAN
PROPOSED RETAIL AND WAREHOUSE FACILITY
LOCATED AT 4300 PASEO DEL NORTE NE, ALBUQUERQUE, NM

FRANK D. LOVELADY, P.E.
(505) 345-2267 • Fax (505) 345-2115 • 300 ALAMOSA RD. NW • Albuquerque, NM • 87107

JOB NO: 630

DATE: November 22, 2002

REVISIONS

SHEET NO.

2 OF 2