GRADING & DRAINAGE PLAN

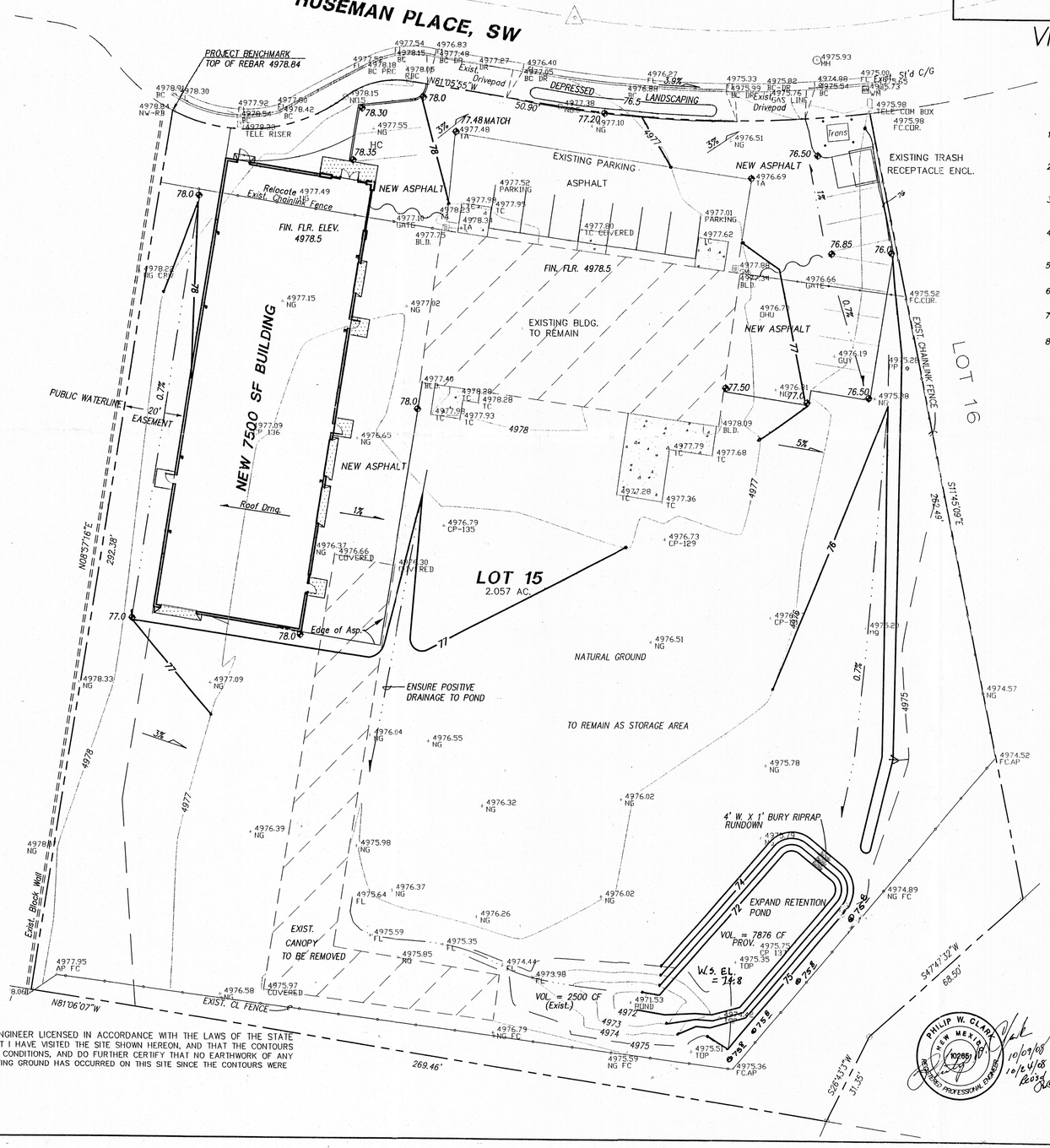
THE PROPOSED COMMERCIAL PROJECT IS LOCATED IN THE SOUTHWEST MESA AREA OF THE CITY OF ALBUQUERQUE LIMITS APPROXIMATELY 4.5 MILES FROM THE DOWNTOWN CORE OF THE CITY OF ALBUQUERQUE, NM. THE GRADING AND DRAINAGE SCHEME HEREON IS IN COMPLIANCE WITH THE CITY OF ALBUQUERQUE DRAINAGE ORDINANCE AND COUNTY FLOOD HAZARD ORDINANCE, NO. 88-46. THE PLAN IS REQUIRED IN ORDER TO FACILITATE THE OWNER'S REQUEST FOR BUILDING PERMIT. THE PLAN SHOWS:

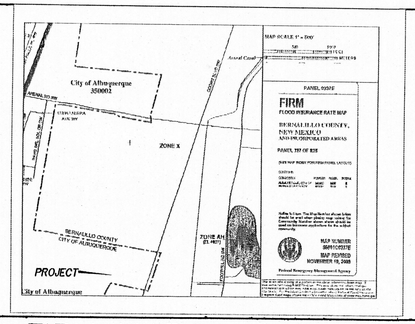
1. EXISTING CONTOURS, SPOT ELEVATIONS, EXISTING OFFICE-WAREHOUSE BUILDING, AND EXISTING DRAINAGE PATTERNS.
2. PROPOSED IMPROVEMENTS: 7500 SQUARE FOOT STRUCTURE/OFFICE SHOP, CONCRETE FLATWORK, ASPHALT PARKING AND AISLES, ON-SITE DRAINAGE RETENTION, AND NEW GRADE ELEVATIONS.
3. CONTINUITY BETWEEN EXISTING AND PROPOSED ELEVATIONS.
4. ON-SITE ANALYSIS AS TO STORM WATER MANAGEMENT AND EROSION CONTROL.

THE PURPOSE OF THE PLAN IS TO ESTABLISH CRITERIA FOR CONTROLLING STORM RUNOFF AND EROSION, AND ESSENTIALLY ALLOWING HISTORIC FLOWS TO CONTINUE TO DRAIN THROUGH THE PROPERTY. PRESENTLY, THE SITE IS BOUNDED ON THE EAST, WEST AND SOUTH BY DEVELOPED PROPERTY. HUSEMAN PLACE ON THE NORTH IS A 40' WIDE PAVED, CURB/GUTTER/CITY MAINTAINED LOCAL ROADWAY. THE SITE GENERALLY FALLS FROM WEST TO EAST AT SLOPES OF 1%. ALL OFFSITE FLOWS ARE QUANTIFIED ON THE PLAN, AND ADDRESSED IN THE CALCULATIONS.

THE SITE IS NOT ENCUMBERED BY A DESIGNATED FEMA FLOOD HAZARD ZONE.

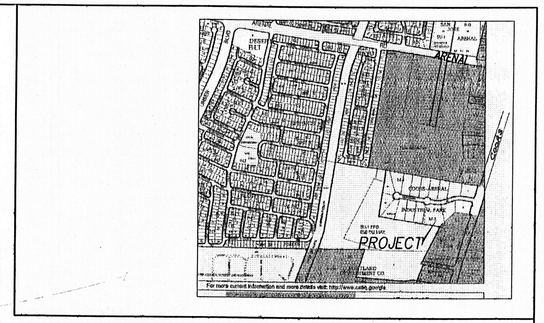
HISTORICAL SITE RUNOFF OUTFALL LOCATIONS WILL REMAIN UNCHANGED IN DEVELOPMENT. SINCE HUSEMAN IS IMPROVED AND UPGRADES PROPOSED ONLY MINIMAL GRADING IS PROPOSED WITHIN THE CITY R.O.W. FREE DISCHARGE OF DEVELOPED FLOW IS NOT ACCEPTABLE SINCE THE PROJECT HAS NO DISCERNIBLE IMPROVED OUTFALL FOR DRAINAGE, THEREFORE RETENTION MEASURES ARE PROVIDED.





FIRM MAP PANEL # 337 E

NOTE: REF: 2003 FIRM MAPS, USING NAVD 88 DATUM



VICINITY MAP ZONE: M-10 1" = 1000' ±

NOTES

1. ALL WORK WITHIN THE RIGHT-OF-WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECS. FOR PUBLIC WORKS CONSTRUCTION, 7TH EDITION W/ UPDATES.
2. AN EXCAVATION/CONSTRUCTION PERMIT IS REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY R.O.W. AN APPROVED COPY OF THIS PLAN MUST BE SUBMITTED AT THE TIME OF APPLICATION.
3. 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.
4. ALL LANDSCAPING AREA SHALL BE SOFT-LINED WITH NATIVE VEGETATION AND/OR GRAVEL. ASPHALT PARKING AREA SHALL DRAIN DIRECTLY TO EXISTING CURB CUT.
5. LANDSCAPING IRRIGATION SYSTEM SHALL BE DRIP-TYPE. CONTRACTOR SHALL INSTALL SYSTEM PRIOR TO PLACEMENT OF PAWNG.
6. CONTRACTOR SHALL ENSURE THAT NO SITE SOILS/SEDIMENT OR SILT ENTER THE RIGHT-OF-WAYS DURING CONSTRUCTION.
7. REVEGETATE ALL AREAS DISTURBED DUE TO CONSTRUCTION PER CITY OF ALBUQ. SPEC. 1011, NATIVE SEED MIX.
8. MAXIMUM SITE GRADING WITHOUT EROSION PROTECTION: 3 HORIZONTAL TO 1 VERTICAL, 3:1. ALL DIMENSIONS TO FACE OF CURB, UNLESS NOTED OTHERWISE.

LEGEND

+24.0	EXIST. SPOT ELEVATION
10	EXIST. CONTOUR
◆ 24.0	NEW SPOT ELEVATION
12	NEW CONTOUR
	EXIST. EDGE OF ROAD
	NEW SWALE
	DRAINAGE DIRECTION
EA	EDGE OF ASPHALT
O PP	EXISTING POWER POLE
	NEW RIP RAP EROSION PROTECTION, 6" AVG. DIA. ROCK
	NEW CONCRETE

CALCULATIONS

DESIGN CRITERIA

HYDROLOGIC METHODS PER SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL (DPM) REVISED JANUARY 1993 FOR CITY OF ALBUQUERQUE ADOPTED BY THE COUNTY OF BERNALILLO
DISCHARGE RATE: Q=QPEAK x AREA.."Peak Discharge Rates For Small Watersheds"
VOLUMETRIC DISCHARGE: VOLUME = EWeighted x AREA
P100 = 2.2 Inches, Zone 1 Time of Concentration, TC = 10 Minutes
DESIGN STORM: 100-YEAR/6-HOUR, 10-YEAR/6-HOUR Where [ ] = 10 YEAR VALUES

HISTORIC CONDITIONS (Undeveloped)

LOT AREA = 2.0 ACRES, WHERE EXCESS PRECIP. 'A' =0.49 In. [0.08]
PEAK DISCHARGE, Q100 = 2.6 CFS [0.5], WHERE UNIT PEAK DISCHARGE 'A'= 1.29 CFS/AC. [0.24]
THEREFORE: VOLUME 100 = 3557 CF [581]

DEVELOPED CONDITIONS

DETERMINE LAND TREATMENTS, PEAK DISCHARGE AND VOLUMETRIC DISCHARGE FOR STUDY AREA

	AREA	LAND TREATM'T	Q Peak	E
UNDEVELOPED/	0.40 Ac.(20%)	A	1.29[0.24]	0.49[0.08]
LANDSCAPING/POND	0.44 Ac.(22%)	B	2.03[0.76]	0.67[0.22]
GRAVEL & COMPACTED SOIL	0.56 Ac.(28%)	C	2.87[1.49]	0.99[0.44]
ROOF - PAVEMENT	0.60 Ac.(30%)	D	4.40[2.90]	1.97[1.24]
	2.0 Ac.			

THEREFORE: $E_{Weighted}$ = 1.12 In.[0.56] & Q100 = 5.65 CFS VOLUME 100 = 8131 CF
Q10 = 3 CFS VOLUME 10 = 4066 CF

QUANTIFY UPSTREAM RUNOFF IMPACTING THE PROPERTY

NONE

DETERMINE POND REQUIREMENTS

$VOL_{10-DAY\ (Imp.)} = VOL_{100} + A_D(P_{10-Day} - P_{100})/12 * 43560$
$= 8131 + 0.60(1.47)/12 \times 43560 = 11332$ CF

$VOL_{10-DAY\ (Allow)} = VOL_{100} + A_D(P_{10-Day} - P_{100})/12 * 43560$
$= 3557 + 0 = 3557$ CF

VOLUME REQ. = $VOL_{10\ Day\ (Imp.)}$ - $VOL_{10\ Day(Allow)}$ = 11332 - 3557 = 7775 CF (If Retention)

[Area (72 Contour)= 1500 SF + Area (75 Contour) = 3750 SF, /2] x 3' Depth = 7875 CF...OK

$Q = CLH^{1.5}$ WHERE: H = 0.5', C = 2.7
Q = 5.5 CFS
THEN L = 5.8', USE 6' WIDE SPILLWAY

I, PHILIP W. CLARK, A PROFESSIONAL ENGINEER LICENSED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT I HAVE VISITED THE SITE SHOWN HEREON, AND THAT THE CONTOURS SHOWN REPRESENT THE EXISTING GROUND CONDITIONS, AND DO FURTHER CERTIFY THAT NO EARTHWORK OF ANY KIND, NOR ANY DISTURBANCE OF THE EXISTING GROUND HAS OCCURRED ON THIS SITE SINCE THE CONTOURS WERE DETERMINED.

PHILIP W. CLARK NMPE #10265

RECEIVED
OCT 27 2008
HYDROLOGY SECTION

PROJECT DATA

LEGAL DESCRIPTION

LOT 15 OF THE COORS-ARENAL INDUSTRIAL PARK ALBUQUERQUE, NEW MEXICO

PROJECT BENCHMARK

TOP OF REBAR AT THE NORTHWEST PROPERTY CORNER
MSL ELEVATION = 4978.84 (NAVD 88) GPS SURVEY PERFORMED

TOPOGRAPHIC SURVEY

COMPILED BY CLARK CONSULTING ENGINEERS, DATE 10/03/08 FROM FIELD SURVEY PROVIDED BY TERRAMETRICS OF NEW MEXICO, PHILIP W. TURNER, NMPS 10204

PHILIP W. CLARK NEW MEXICO 10265 REGISTERED PROFESSIONAL ENGINEER 10/09/08 10/24/08 10/27/08

Clark Consulting Engineers
19 Ryan Road
Edgewood, New Mexico 87015
Tele: (505) 281-2444 Fax: (505) 281-2444

DATE	REVISION
10/24/08	Addr. C&A
	Comments Rec'd

LOT 15, COORS-ARENAL INDUSTRIAL PARK
CITY OF ALBUQUERQUE, NEW MEXICO
PERFORMANCE PLUS ADDITIONS

Grading & Drainage Plan

DESIGNED BY: PWC	DRAWN BY: CCE	JOB #: PERF_PLUS	1 OF 1
CHECKED BY: PWC	DATE: 10/03/08	FILE #: G/D	

M-10/D166