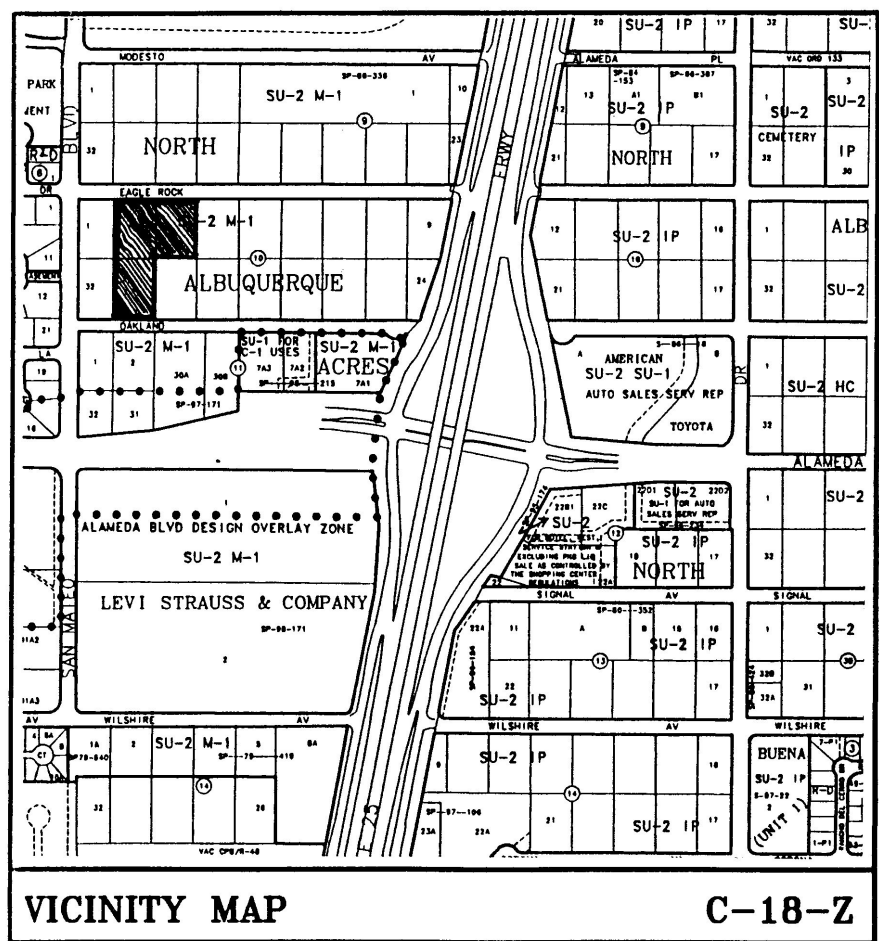




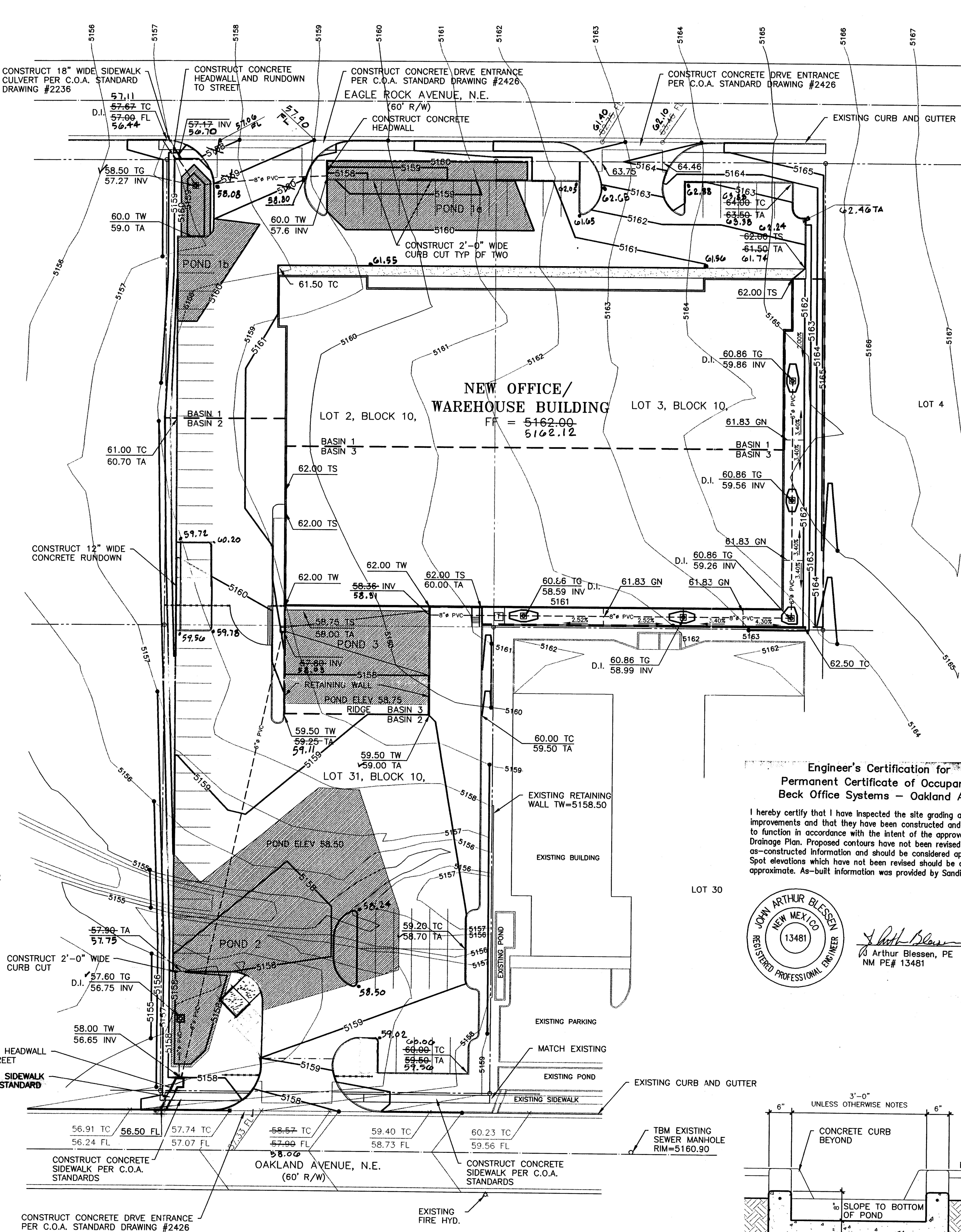
ADDRESS:
EAGLE ROCK AVE.
LEGAL DESCRIPTION:
LOTS 2,3, AND 31 BLOCK 10 TRACT A UNIT B
NORTH ALBUQUERQUE ACRES

BENCH MARK:
ACS MONUMENT 10-CD18
ELEVATION = 5219.41 FT.

EXISTING SPOT ELEVATION
NEW SPOT ELEVATION

EXISTING CONTOUR
NEW CONTOUR
VERIFIED ELEVATION
AS BUILT ELEVATION
BASIN BOUNDARY
PROPERTY LINE

D.I. DROP INLET
FL FLOW LINE
GND GROUND
INV INVERT
TA TOP OF ASPHALT
TC TOP OF CURB
TG TOP OF GRATE
TS TOP OF CONCRETE SLAB
TW TOP OF WALL
TBM TEMPORARY BENCH MARK

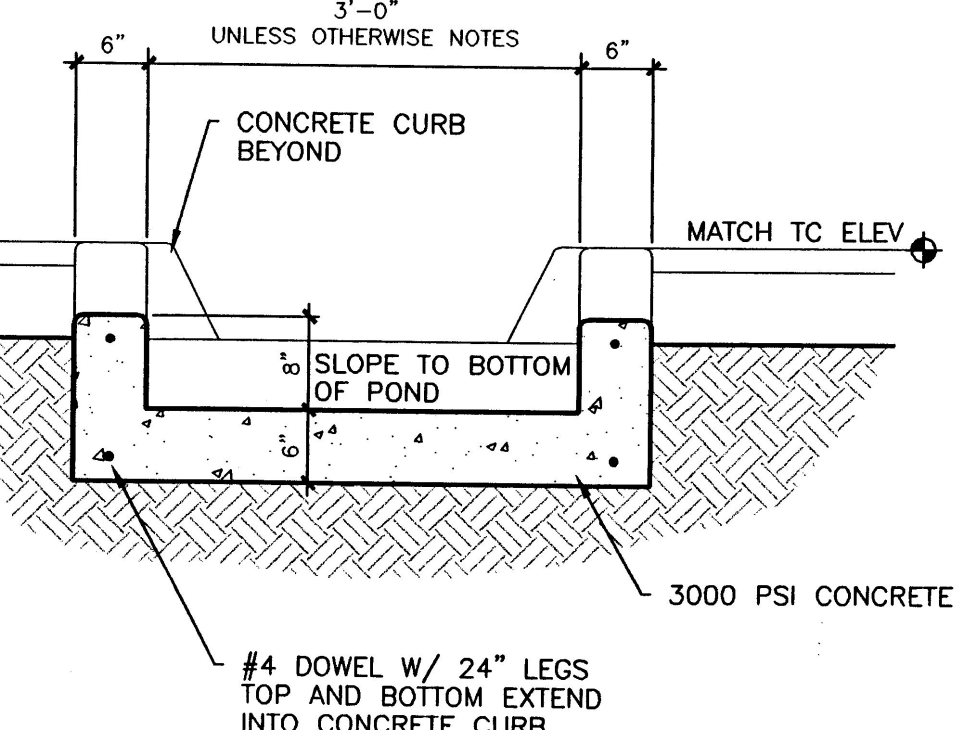


Engineer's Certification for
Permanent Certificate of Occupancy
Beck Office Systems - Oakland Ave

I hereby certify that I have inspected the site grading and drainage improvements and that they have been constructed and are expected to function in accordance with the intent of the approved Grading and Drainage Plan. Proposed contours have not been revised to reflect the as-constructed information and should be considered approximate. Spot elevations which have not been revised should be considered approximate. As-built information was provided by Sandia Land Surveying



John Arthur Blessen, PE
NM PE# 13481
9/30/00
date



CONCRETE RUNDOWN
SCALE: 3/4" = 1'-0"

THE CALCULATIONS, WHICH APPEAR BELOW, ANALYZE THE EXISTING AND PROPOSED CONDITIONS FOR THE 6-HOUR, 100 YEAR RAINFALL EVENT. THE ANALYSIS IS IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL, VOLUME II, AS SHOWN BY THESE CALCULATIONS, THE RATE AND VOLUME OF RUNOFF WILL INCREASE, BUT THE POND(S) WITH CONTROLLED OUTLETS WILL MITIGATE THE INCREASES. THIS PLAN IS IN CONFORMANCE WITH THE MASTER DRAINAGE PLAN.

PRECIPITATION ZONE = 3
TOTAL SITE AREA 2.659 ACRES

BASIN 1
EXISTING CONDITIONS
AREA = 1.019 ACRES
LAND TREATMENT C=100%
E = 1.29 (1.00) = 1.29 INCHES
V = 1.29 (1.019) / 12 = 0.110 ACRE FEET
Q = 3.45 (1.00) (1.019) = 3.52 CFS

DEVELOPED CONDITIONS
LAND TREATMENT B=10% D=90%
E = 0.912 (0.10) + 2.36 (0.90) = 2.21 INCHES
V = 2.21 (1.019) / 12 = 0.188 ACRE FEET
Q = [2.60 (0.10) + 5.02 (0.90)] (1.019) = 4.86 CFS

INCREASE IN RATE OF RUNOFF = 4.86 - 3.52 = 1.34 CFS
INCREASE IN VOLUME OF RUNOFF = 0.188 - 0.110 = 0.078 ACRE FEET

DISCHARGE PIPE SIZES
Q=1.75(1.019)=1.78 = 0.60 A $\sqrt{2 (32.2) (1.5)}$ DIA = 7.5 IN
USE 8" DIA DISCHARGE PIPE

POND VOLUME
T_s = 0.2 HR 0.25 Ad/At = 0.25(0.90)/60 = 0.225 HR
T_b = 2.107 E At/Qp - 0.25 Ad/At = 0.752 HR
T_p = (0.7 Tc) + ((1.6-Ad/At))/12 = 0.199 HR
V_{required} = 4332 CF
VOLUME @ ELEV 5160.0
V_a = [0.5*(3356+1985)*0.5+0.5*(1985+867)*.5+0.5*(867+60)] = 3,582 CF
V_b = [0.5*(1613)+250] = 818CF
V = 4,400 CF

BASIN 2
EXISTING CONDITIONS
AREA = 0.984 ACRES
LAND TREATMENT C=100%
E = 1.29 (1.00) = 1.29 INCHES
V = 1.29 (0.984) / 12 = 0.106 ACRE FEET
Q = 3.45 (1.00) (0.984) = 3.39 CFS

DEVELOPED CONDITIONS
LAND TREATMENT B=14% D=86%
E = 0.912 (0.14) + 2.36 (0.86) = 2.16 INCHES
V = 2.16 (0.984) / 12 = 0.177 ACRE FEET
Q = [2.60 (0.14) + 5.02 (0.86)] (0.984) = 4.61 CFS

INCREASE IN RATE OF RUNOFF = 4.61 - 3.39 = 1.21 CFS
INCREASE IN VOLUME OF RUNOFF = 0.177 - 0.106 = 0.071 ACRE FEET

DISCHARGE PIPE SIZES
Q=1.75(0.984)=1.72 = 0.60 A $\sqrt{2 (32.2) (0.9)}$ DIA = 8.3 IN
USE 8" DIA DISCHARGE PIPE

POND VOLUME
T_s = 0.2 HR 0.25 Ad/At = 0.25(0.90)/60 = 0.215 HR
T_b = 2.107 E At/Qp - 0.25 Ad/At = 0.736 HR
T_p = (0.7 Tc) + ((1.6-Ad/At))/12 = 0.202 HR
V_{required} = 3,993 CF
VOLUME @ ELEV 5158.5
V = 0.5*(9519+3498)*0.5+0.5*(3498+16) = 4,132 CF

BASIN 3
EXISTING CONDITIONS
AREA = 0.656 ACRES
LAND TREATMENT C=100%
E = 1.29 (1.00) = 1.29 INCHES
V = 1.29 (0.656) / 12 = 0.071 ACRE FEET
Q = 3.45 (1.00) (0.656) = 2.26 CFS

DEVELOPED CONDITIONS
LAND TREATMENT B=29% D=71%
E = 0.912 (0.29) + 2.36 (0.71) = 1.95 INCHES
V = 1.95 (0.656) / 12 = 0.106 ACRE FEET
Q = [2.60 (0.29) + 5.02 (0.71)] (0.656) = 2.84 CFS

INCREASE IN RATE OF RUNOFF = 2.84 - 2.26 = 0.58 CFS
INCREASE IN VOLUME OF RUNOFF = 0.106 - 0.071 = 0.036 ACRE FEET

DISCHARGE PIPE SIZES
Q=1.75(0.656)=1.15 = 0.60 A $\sqrt{2 (32.2) (0.95)}$ DIA = 6.7 IN
USE 6" DIA DISCHARGE PIPE

POND VOLUME
T_s = 0.2 HR 0.25 Ad/At = 0.25(0.71)/60 = 0.178 HR
T_b = 2.107 E At/Qp - 0.25 Ad/At = 0.769 HR
T_p = (0.7 Tc) + ((1.6-Ad/At))/12 = 0.214 HR
V_{required} = 2,156 CF
VOLUME @ ELEV 5158.75
V = 0.5*(3456+2382)*0.75+0.5*(2382)*.2 = 2,427 CF

GRADING AND DRAINAGE PLAN LOTS 2,3, & 31 BLOCK 10 TRACT A UNIT B NORTH ALBUQUERQUE ACRES

DRAINAGE PLAN
THE FOLLOWING ITEMS CONCERNING THE TRACT LOTS 2,3 & 31 BLOCK 10 TRACT 10, UNIT B GRADING AND DRAINAGE PLAN ARE CONTAINED HEREON:
VICINITY MAP
GRADING PLAN
CALCULATIONS

THE PROPOSED IMPROVEMENTS, AS SHOWN BY THE VICINITY MAP, ARE LOCATED EAST OF SAN MATEO BLVD. BETWEEN OAKLAND AVE. AND EAGLE ROCK AVE. THE SITE IS UNDEVELOPED AND SLOPES FROM EAST TO WEST AT AN APPROXIMATE SLOPE OF 2.5%. THE SITE DOES NOT LIE WITHIN THE FLOOD HAZARD ZONE.

THE MASTER PLAN FOR THIS DEVELOPMENT WAS PREPARED BY RESOURCE TECHNOLOGY, INC. (OCT 1998) THE MASTER PLAN ESTABLISHES A DISCHARGE RATE OF 1.75 CFS PER ACRE.

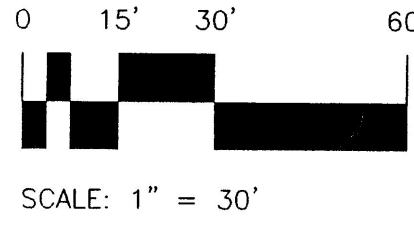
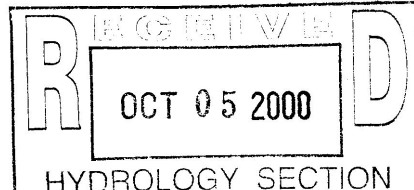
THE SITE IS HIGHER THAN THE LAND TO THE WEST. THE STREETS ALONG THE NORTH AND SOUTH PREVENT OFFSITE FLOWS FROM THOSE DIRECTIONS. THE PROPOSED DEVELOPMENTS TO THE EAST WILL ELIMINATE AND REDIRECT THE OFFSITE FLOWS FORM THAT DIRECTION. THEREFORE OFFSITE FLOWS ARE NOT CONSIDERED SIGNIFICANT.

- THE GRADING PLAN SHOWS:
1. THE EXISTING AND PROPOSED GRADES, INDICATED BY SPOT ELEVATIONS AND CONTOURS AT 1'-0" INTERVALS.
 2. CONTINUITY BETWEEN EXISTING AND PROPOSED ELEVATIONS.
 3. THE LIMIT AND CHARACTER OF EXISTING IMPROVEMENTS, AND
 4. THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS.

THE PROPOSED IMPROVEMENTS CONSIST OF AN OFFICE / WAREHOUSE WITH ASSOCIATED PARKING AND LANDSCAPING. THE SITE IS DIVIDED INTO THREE DRAINAGE BASINS. BASIN 1 FLOWS TO TWO PONDS ALONG THE NORTH PROPERTY LINE AND DISCHARGES INTO EAGLE ROCK AVENUE. BASIN 2 FLOWS TO A POND AT THE SOUTHWEST CORNER AND DISCHARGES INTO OAKLAND AVENUE. BASIN 3 COLLECTS THE RUNOFF FROM THE SOUTH HALF ON THE ROOF AND THE LANDSCAPED AREA ALONG THE EAST AND SOUTH SIDE OF THE BUILDING. THE RUNOFF FLOWS TO A POND AT THE LOADING DOCK AND DISCHARGES VIA UNDERGROUND PIPING INTO OAKLAND AVENUE. THE DISCHARGE IS CONTROLLED AT EACH POND TO CONFORM TO THE DISCHARGE RATE OF 1.75 CFS PER ACRE.

GENERAL NOTES

1. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
2. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS CONCERNING CONSTRUCTION, SAFETY, AND HEALTH.
3. TWO (2) WORKING DAY PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL NOTIFY THE LINE LOCATING SERVICE AT 260-1990 FOR THE LOCATIONS OF ANY EXISTING SURFACE AND SUBSURFACE UTILITIES.



GRADING & DRAINAGE PLAN
MARCH 3, 2000
1"=30'-0"

CLAUDIO VIGIL ARCHITECTS

BECK OFFICE SYSTEMS
OFFICE / WAREHOUSE
OAKLAND AVE
ALBUQUERQUE, NEW MEXICO

SHEET
C-1

1305 Tijeras NW Albuquerque, NM 87102-2882
Phone: 505/842-1113 Fax: 505/842-1330