

#1000856

**GRADING AND DRAINAGE PLAN  
LOT A-1-A-1-A**

**DRAINAGE PLAN**  
THE FOLLOWING ITEMS CONCERNING THE LOTS A-1-A-1-A, WEST 66 ADDITION AIRTRSCO BUSINESS PARK, GRADING AND DRAINAGE PLAN ARE CONTAINED HEREON:  
1. VICINITY MAP  
2. GRADING PLAN  
3. CALCULATIONS

THE PROPOSED IMPROVEMENTS, AS SHOWN BY THE VICINITY MAP, ARE LOCATED ON THE WEST SIDE OF AIRPORT DRIVE NW, NORTH OF CENTRAL AVENUE NW. LOT A-1-A-1-A IS CURRENTLY DEVELOPED. THE EXISTING RUNOFF IS ROUTED TO THE EXISTING DETENTION POND LOCATED AT THE SOUTH EAST CORNER OF LOT A-1-A-1-A.

THE MASTER DRAINAGE PLAN FOR THIS SUBDIVISION WAS PREPARED BY EASTERLING AND ASSOCIATES. THE MASTER PLAN ESTABLISHED A DISCHARGE RATE OF 0.1 CFS/ACRE. THE EXISTING CONTROL OUTLET HAS A DISCHARGE RATE OF .67 CFS.

THE LANDS TO THE WEST AND TO NORTH SLOPE AWAY FROM THE SITE. THE SITE TO THE SOUTH HAS BEEN DEVELOPED WITH FLOWS DIRECTED TO AN ON SITE DETENTION POND PREVENTING OFF SITE FLOW FROM THAT DIRECTION, THEREFORE OFF SITE FLOWS ARE CONSIDERED INSIGNIFICANT.

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 A WAREHOUSE / OFFICE ADDITION WITH ASSOCIATED PARKING AND LANDSCAPING. THE EXISTING POND WILL BE MODIFIED TO ACCEPT THE ADDITIONAL RUNOFF. THE DEPTH OF THE PROPOSED POND IS TO BE INCREASED 3.5 FT. A SUBMERSIBLE PUMP WILL LIFT THE WATER ABOVE THE CURRENT BOTTOM OF POND ELEVATION.

THE EXISTING DISCHARGE IS 1.02 CFS. THE ALLOWABLE DISCHARGE RATE FOR THE COMBINED SITE IS 0.1 CFS/ACRE x 10.576 ACRES = 1.06 CFS. THE PROPOSED RUNOFF RATE IS TO REMAIN 1.02 CFS.

THE CALCULATIONS 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.

**CONSTRUCTION NOTES**  
1. TWO WORKING DAY PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CALL FOR LOCATION OF EXISTING UTILITIES.  
2. ALL WORK WITHIN THE CITY RIGHT OF WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE CITY OF ALBUQUERQUE STANDARD AND PROCEDURE.  
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, LAWS, AND RULES CONCERNING SAFETY AND HEALTH.  
4. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY THE EXISTING SITE CONDITIONS AND INFORM THE ARCHITECT / ENGINEER OF ANY DISCREPANCY BETWEEN THE INFORMATION SHOWN THE PLANS AND THOSE OF THE EXISTING SITE.  
5. THE OWNER SHALL VERIFY LOCATIONS OF PONDS WITH GEOTECHNICAL ENGINEER PRIOR TO PROCEEDING WITH ANY CONSTRUCTION WORK ON THIS PROJECT, AND INFORM THE ARCHITECT / ENGINEER OF ANY ADDITIONAL REQUIREMENTS.  
6. THE CONTRACTOR SHALL PROVIDE THE ARCHITECT/ENGINEER WITH AN AS-BUILD SURVEY OF THE SITE UPON COMPLETION OF WORK.

**CALCULATIONS**  
PRECIPITATION ZONE = 1  
TOTAL SITE AREA = 10.576 ACRES  
EXISTING CONDITIONS  
LAND TREATMENT A=45% B=4% C=0% D=52%  
E = 0.44(0.45)+0.67(0.03)+1.97(0.52) = 1.24 INCHES  
V = 1.24(10.576) / 12 = 1.091 ACRE FEET  
Q = [ 1.29(0.45) + 2.03(0.03) + 4.37(0.52) ] 10.576 = 30.73 CFS

DEVELOPED CONDITIONS  
LAND TREATMENT A=0% B=10% C=0% D=90%  
E = 0.67(0.10)+1.97(0.90) = 1.84 INCHES  
V = 1.84(10.576) / 12 = 1.632 ACRE FEET  
Q = [ 2.03(0.10) + 4.37(0.90) ] 10.576 = 43.74 CFS

INCREASE IN VOLUME OF RUNOFF = 1.622 - 1.091 = 0.531 ACRE FT  
INCREASE IN RATE OF RUNOFF = 43.74 - 30.73 = 13.01 CFS

**POND A - VOLUME**  
T = 0.2 HR      0.25 Ad/At = 0.25(0.90)/60 = 0.375 HR  
T<sub>p</sub> = 2.107 E At/Op - 0.25 Ad/At = 0.712 HR  
T = (0.7 T<sub>p</sub>) + ((1.6 - Ad/At)/12) = 0.198 HR  
DISCHARGE RATE ALLOWED = 1.06 CFS  
V<sub>required</sub> = 71,210 CF  
VOLUME @ ELEV 5090.5  
V = 0.5\*(31683+21676)\*1.5+0.5\*21676+11798+7282+0.5\*3313+0.5\*3313\*0.5 = 72,422 CF

**CONCRETE CURB/WALL**  
1/2"=1'-0"

6" CONCRETE WITH WWF 6x6x6  
CONCRETE PAVING  
1'-6"      1/2" EXPANSION JOINT  
1/2" EXPANSION JOINT

0 20' 40' 80'  
1" = 40'-0"

**GRADING AND DRAINAGE PLAN**

MAY 15, 2002      SCALE: 1" = 40'-0"

**CLAUDIO VIGIL ARCHITECTS**

**ZANIOS FOODS**  
WAREHOUSE ADDITION PHASE 4  
221 AIRPORT ROAD, N.W.  
ALBUQUERQUE, NEW MEXICO

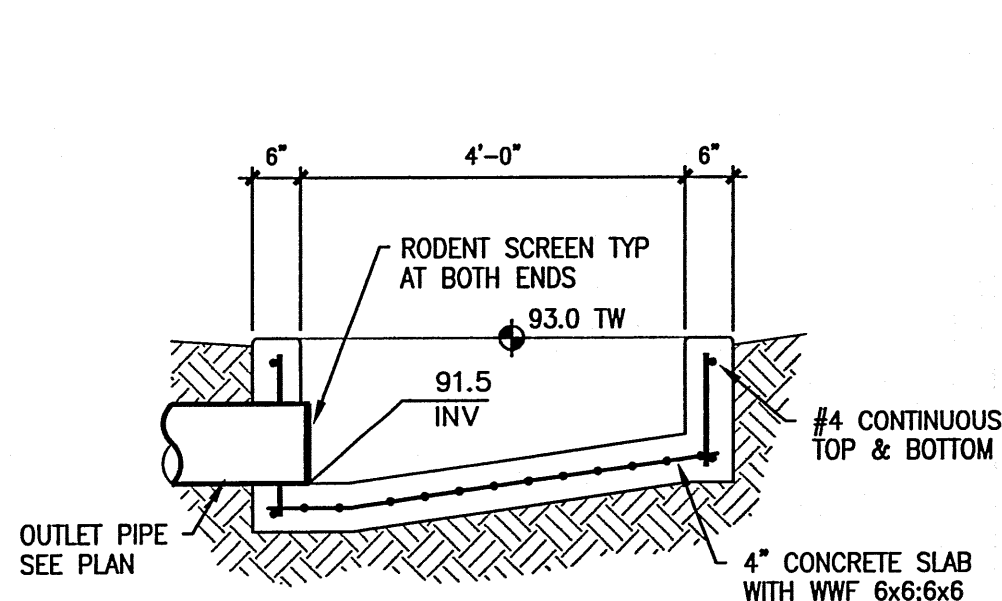
**JOHN ARTHUR BLESSEN**  
REGISTERED PROFESSIONAL ENGINEER  
NEW MEXICO  
13481  
7/11/02

**SHEET C-1**  
01055

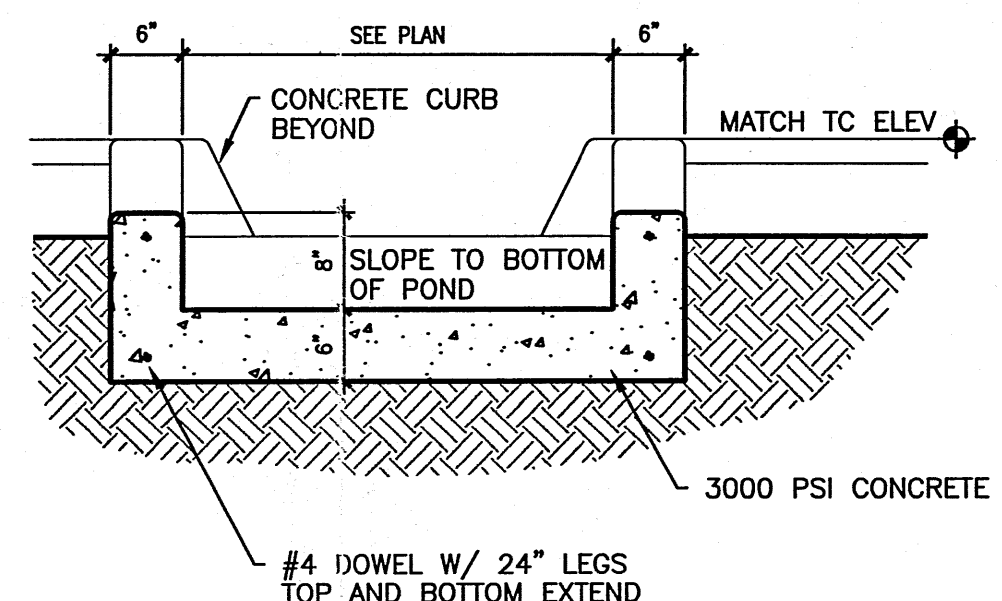
**OWNERSHIP OF INSTRUMENTS OF SERVICE**  
All design concepts, details, plans, specifications, computer files, field data, notes and other documents and instruments prepared by Claudio Vigil Architects, P.C. as instruments of service shall remain the property of Claudio Vigil Architects, P.C. Claudio Vigil Architects, P.C. shall retain all common law, statutory and other reserved rights, including the copyright thereto.

1801 Rio Grande NW, #2, Albuquerque, NM 87104  
Phone: 505/842-1113 Fax: 505/842-1330

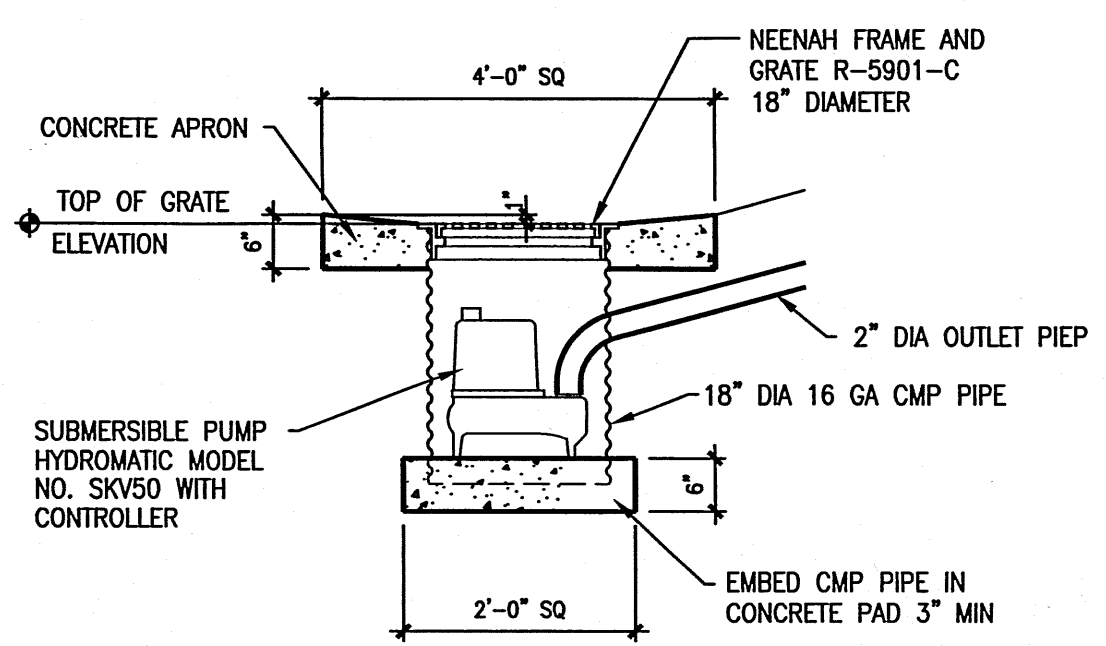
- LEGEND:**
- 51.0 EXISTING SPOT ELEVATION
  - 51.00 NEW SPOT ELEVATION
  - 51— EXISTING CONTOUR
  - 51— NEW CONTOUR
  - SWALE
  - 51.0 ✓ AS BUILT ELEVATION
  - BASIN BOUNDARY
  - PROPERTY LINE
  - FL FLOW LINE
  - GND GROUND
  - INV INVERT
  - TA TOP OF ASPHALT
  - TC TOP OF CURB
  - TG TOP OF GRATE
  - TS TOP OF CONCRETE SLAB
  - TW TOP OF WALL
  - TBM TEMPORARY BENCH MARK
- [Pattern] NEW ASPHALT PAVING
  - [Pattern] NEW CONCRETE WALK
  - [Pattern] NEW GRAVEL RUNDOWN
  - [Pattern] POND AREA



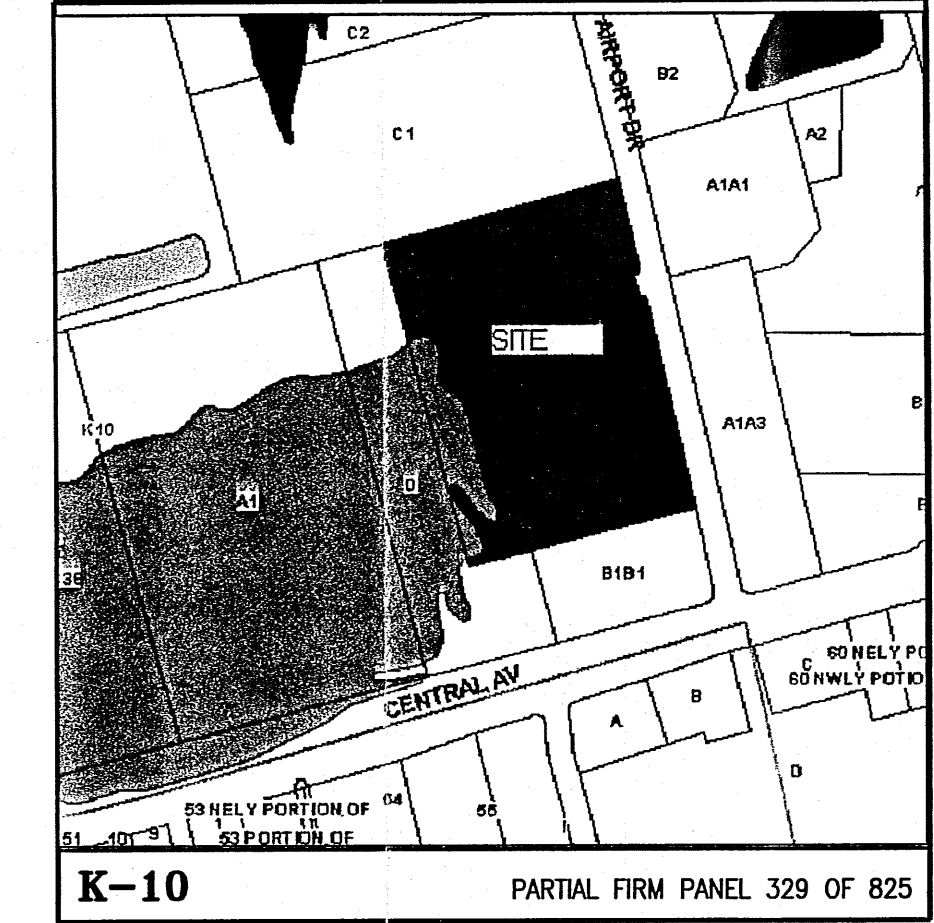
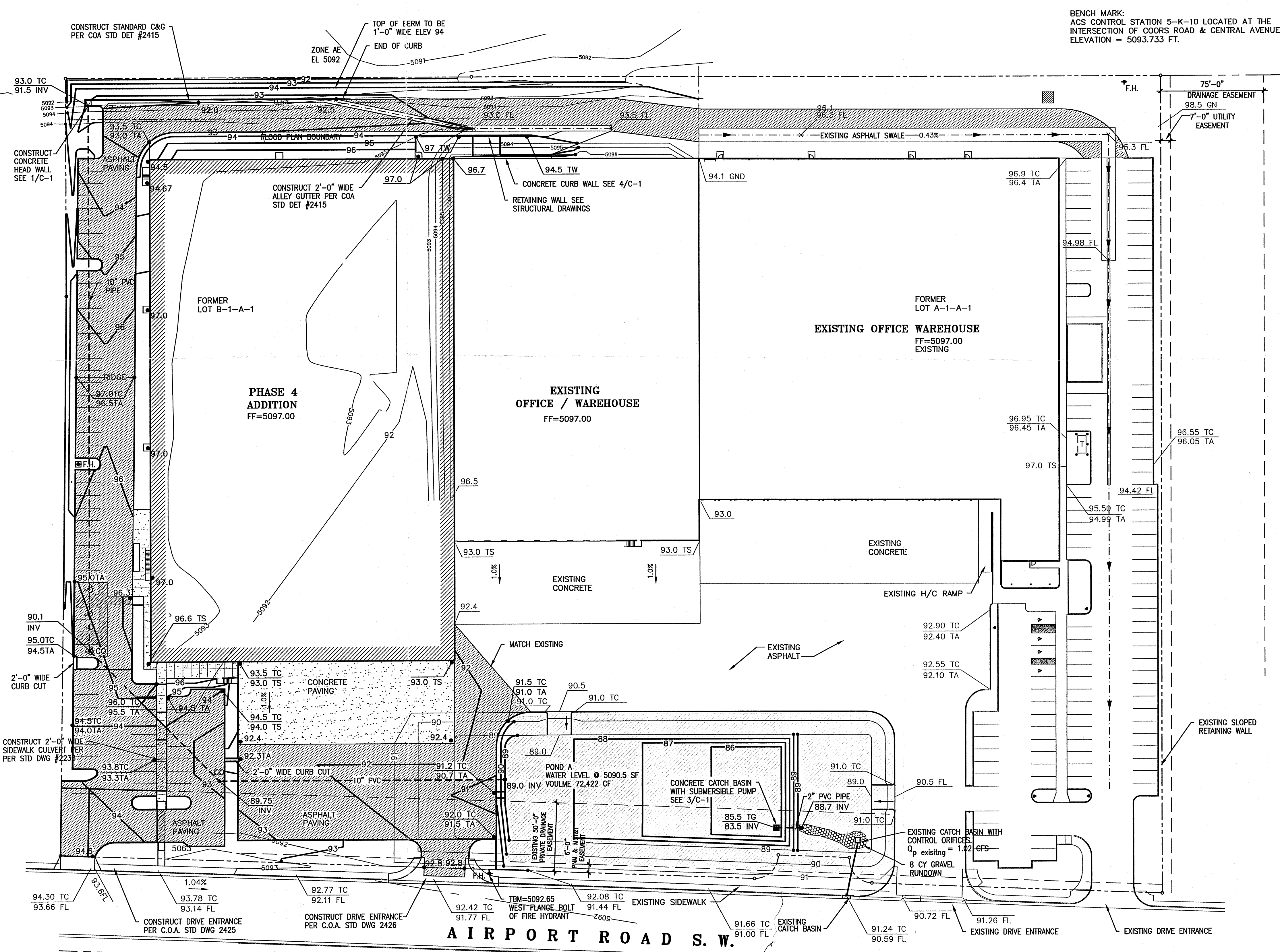
**1 CONCRETE HEADWALL**  
1/2"=1'-0"



**2 CONCRETE RUNDOWN**  
3/4"=1'-0"



**3 SUMP PUMP PIT**  
3/4"=1'-0"



**K-10** PARTIAL FIRM PANEL 329 OF 825  
ADDRESS: 221 AIRPORT ROAD NW  
LEGAL DESCRIPTION: LOTS A-1-A-1-A WEST 66 ADDITION  
PREVIOUS DRAINAGE FILE #K10-D21A  
FIRM FLOOD HAZARD ZONE

THE EAST EDGE OF THE SITE FALL WITHIN THE FIRM FLOOD HAZARD ZONE AE (FIRM PANEL 329 OF 825). THE BUILDING ADDITION DOES NOT FALL WITHIN THE FLOOD HAZARD ZONE.

**CONSTRUCTION NOTES**  
1. TWO WORKING DAY PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CALL FOR LOCATION OF EXISTING UTILITIES.  
2. ALL WORK WITHIN THE CITY RIGHT OF WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE CITY OF ALBUQUERQUE STANDARD AND PROCEDURE.  
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, LAWS, AND RULES CONCERNING SAFETY AND HEALTH.  
4. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY THE EXISTING SITE CONDITIONS AND INFORM THE ARCHITECT / ENGINEER OF ANY DISCREPANCY BETWEEN THE INFORMATION SHOWN THE PLANS AND THOSE OF THE EXISTING SITE.  
5. THE OWNER SHALL VERIFY LOCATIONS OF PONDS WITH GEOTECHNICAL ENGINEER PRIOR TO PROCEEDING WITH ANY CONSTRUCTION WORK ON THIS PROJECT, AND INFORM THE ARCHITECT / ENGINEER OF ANY ADDITIONAL REQUIREMENTS.  
6. THE CONTRACTOR SHALL PROVIDE THE ARCHITECT/ENGINEER WITH AN AS-BUILD SURVEY OF THE SITE UPON COMPLETION OF WORK.

**CALCULATIONS**  
PRECIPITATION ZONE = 1  
TOTAL SITE AREA = 10.576 ACRES  
EXISTING CONDITIONS  
LAND TREATMENT A=45% B=4% C=0% D=52%  
E = 0.44(0.45)+0.67(0.03)+1.97(0.52) = 1.24 INCHES  
V = 1.24(10.576) / 12 = 1.091 ACRE FEET  
Q = [ 1.29(0.45) + 2.03(0.03) + 4.37(0.52) ] 10.576 = 30.73 CFS

DEVELOPED CONDITIONS  
LAND TREATMENT A=0% B=10% C=0% D=90%  
E = 0.67(0.10)+1.97(0.90) = 1.84 INCHES  
V = 1.84(10.576) / 12 = 1.632 ACRE FEET  
Q = [ 2.03(0.10) + 4.37(0.90) ] 10.576 = 43.74 CFS

INCREASE IN VOLUME OF RUNOFF = 1.622 - 1.091 = 0.531 ACRE FT  
INCREASE IN RATE OF RUNOFF = 43.74 - 30.73 = 13.01 CFS

**POND A - VOLUME**  
T = 0.2 HR      0.25 Ad/At = 0.25(0.90)/60 = 0.375 HR  
T<sub>p</sub> = 2.107 E At/Op - 0.25 Ad/At = 0.712 HR  
T = (0.7 T<sub>p</sub>) + ((1.6 - Ad/At)/12) = 0.198 HR  
DISCHARGE RATE ALLOWED = 1.06 CFS  
V<sub>required</sub> = 71,210 CF  
VOLUME @ ELEV 5090.5  
V = 0.5\*(31683+21676)\*1.5+0.5\*21676+11798+7282+0.5\*3313+0.5\*3313\*0.5 = 72,422 CF

**CONCRETE CURB/WALL**  
1/2"=1'-0"

6" CONCRETE WITH WWF 6x6x6  
CONCRETE PAVING  
1'-6"      1/2" EXPANSION JOINT  
1/2" EXPANSION JOINT

0 20' 40' 80'  
1" = 40'-0"

**GRADING AND DRAINAGE PLAN**

MAY 15, 2002      SCALE: 1" = 40'-0"

**CLAUDIO VIGIL ARCHITECTS**

**ZANIOS FOODS**  
WAREHOUSE ADDITION PHASE 4  
221 AIRPORT ROAD, N.W.  
ALBUQUERQUE, NEW MEXICO

**JOHN ARTHUR BLESSEN**  
REGISTERED PROFESSIONAL ENGINEER  
NEW MEXICO  
13481  
7/11/02

**SHEET C-1**  
01055

**OWNERSHIP OF INSTRUMENTS OF SERVICE**  
All design concepts, details, plans, specifications, computer files, field data, notes and other documents and instruments prepared by Claudio Vigil Architects, P.C. as instruments of service shall remain the property of Claudio Vigil Architects, P.C. Claudio Vigil Architects, P.C. shall retain all common law, statutory and other reserved rights, including the copyright thereto.

1801 Rio Grande NW, #2, Albuquerque, NM 87104  
Phone: 505/842-1113 Fax: 505/842-1330

C:\SOSK\PROJ\CAMERON\ZANIOS-4\ZANIOS-GRADING.dwg Thu Jul 18 08:53:34 2002

RECEIVED  
JUL 18 2002  
HYDROLOGY SECTION