

DRAINAGE AND GRADING PLAN FOR LOT 30, RICHFIELD PARK SUBDIVISION

DRAINAGE PLAN
THE FOLLOWING ITEMS CONCERNING LOT 30, RICHFIELD INDUSTRIAL PARK, GRADING AND DRAINAGE PLAN ARE CONTAINED HEREON:

1. VICINITY MAP
2. GRADING AND DRAINAGE PLAN
3. FLOODMAP
4. DRAINAGE CALCULATIONS

EXISTING CONDITIONS
AS SHOWN BY THE VICINITY MAP, THE SITE CONTAINS APPROXIMATELY 0.94 ACRES AND IS LOCATED ON WASHINGTON STREET, JUST NORTH OF COLUMBINE AVENUE. THE SITE CURRENTLY IS ZONED I-P AND IS UNDEVELOPED. THE SITE TOPOGRAPHY SLOPES FROM AN EAST TO WEST DIRECTION, FROM THE FRONT OF THE LOT TO THE REAR. THE SITE IS SPARSELY COVERED WITH MINIMAL NATIVE VEGETATION.

ACCORDING TO THE FLOOD INSURANCE RATE MAP, PANEL 35001C0136 D, DATED SEPTEMBER 20, 1996, THIS SITE DOES NOT LIE IN A DESIGNATED FLOODPLAIN.

PROPOSED CONDITIONS
AS SHOWN BY THE PLAN, THE PROJECT CONSISTS OF THE DEVELOPMENT OF AN OFFICE/WAREHOUSE BUILDING. THE PLAN SHOWS THE CONTOURS AND ELEVATIONS REQUIRED TO PROPERLY GRADE THE REQUIRED PAVING AND DRAINAGE IMPROVEMENTS. ALL DRAINAGE FLOWS WILL BE MANAGED ONSITE AND DISCHARGED TO A CONCRETE SWALE THAT LIES IN THE ADJACENT LOT 31 TO THE NORTH OF THIS SITE. THE DRAINAGE REPORT ON FILE FOR LOT 31 RECOGNIZES ACCEPTANCE OF THESE FLOWS FROM LOT 30. ALL DRIVEWAYS AND PARKING AREAS WILL BE PAVED, LANDSCAPING IS TO BE PROVIDED PER ZONING REQUIREMENTS.

THE CALCULATIONS WHICH APPEAR HEREON, ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6 HOUR RAINFALL RUNOFF FOR PEAK FLOWS AND STORM DURATION FOR VOLUME REQUIREMENTS. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS AS SET FORTH IN THE REVISION OF SECTION 22.7 HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993. THIS D.P.M. PROCEDURE IS USED FOR ANALYZING ONSITE FLOWS.

DOWNSTREAM CAPACITY
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 & ASSOC. 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, TRACT D-1. THE PROJECT WAS BUILT IN PHASES IN ACCORDANCE WITH THE PHASING PLAN OUTLINED IN THE APPROVED DRAINAGE REPORT. DEVELOPMENT OF TRACT D-1 IS IN PROGRESS. THE CITY OF ALBUQUERQUE HAS PURCHASED THE PROPERTY AND IS CONSTRUCTING A NEW BALLOON FIESTA PARK AND EASTDALE LITTLE LEAGUE. DEVELOPMENT OF TRACT D-1 WILL REPLACE THE INTERIM SWALES PRESENTLY LOCATED ON THE PROPERTY WITH PERMANENT IMPROVEMENTS.

THE DRAINAGE MASTER PLAN AND THE DRAINAGE PLAN FOR LOT 31 REQUIRES THAT LOT 31 ACCEPT FLOW FROM LOT 30 THROUGH A PAVED SWALE THAT EXIST ALONG THE WEST PROPERTY LINE OF LOT 30. THIS PAVED SWALE CONVEYS FLOWS FROM LOT 30 TO THE OUTFALL SWALE AS PREVIOUSLY MENTIONED.

EROSION CONTROL
TEMPORARY EROSION CONTROL WILL BE REQUIRED DURING THE CONSTRUCTION PHASE TO PROTECT DOWNSTREAM PROPERTY AND IMPROVEMENTS FROM SEDIMENT AND UNCONTROLLED RUNOFF. EARTH BERMS SHALL BE CONSTRUCTED AS TEMPORARY EROSION CONTROL MEASURES, THEY ARE TO BE PROVIDED ALONG THE WEST PROJECT BOUNDARIES TO HOLD RUNOFF DURING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY MAINTAIN THESE FACILITIES DURING THE CONSTRUCTION PHASE OF THE PROJECT.

OFFSITE FLOWS
THERE ARE NO OFFSITE FLOWS THAT ENTER THIS PROPERTY

- DRAINAGE CALCULATIONS
1. PRECIPITATION ZONE = 2
 2. DESIGN STORM = DEPTH (INCHES) AT 100-YEAR STORM 6-HOUR = 2.35 INCHES
 3. PEAK DISCHARGE (CFS/ACRE) FIR 100-YEAR, ZONE 2, TABLE A-9:
 $Q = 1.56 \text{ CFS/ACRE SOIL UNCOMPACTED "A"}$
 $Q = 2.28 \text{ CFS/ACRE LANDSCAPED "B"}$
 $Q = 3.14 \text{ CFS/ACRE COMPACTED SOIL "C"}$
 $Q = 4.70 \text{ CFS/ACRE IMPERVIOUS AREA "D"}$

FOR WATERSHEDS LESS THAN OR EQUAL TO 40 ACRES
EXCESS PRECIPITATION, E (INCHES), 6 HOUR STORM, ZONE 2, TABLE A-8:
 $E = 0.53 \text{ INCHES SOIL UNCOMPACTED "A"}$
 $E = 0.78 \text{ INCHES LANDSCAPED "B"}$
 $E = 1.13 \text{ INCHES COMPACTED SOIL "C"}$
 $E = 2.12 \text{ INCHES IMPERVIOUS AREA "D"}$

EXISTING CONDITIONS ONSITE, TREATMENT AREA (ACRES)

A	0.94
B	0
C	0
D	0

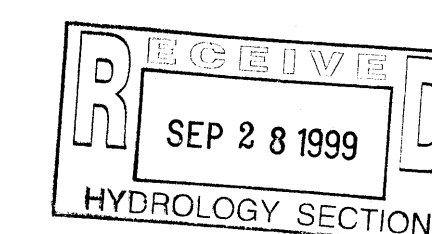
 TYPE "A" SOILS SINCE UNDISTURBED
 $Q(\text{EXISTING}) = (1.56 \times 0.94) = 1.47 \text{ CFS EXISTING ONSITE FLOW}$
 $V(\text{EXISTING}-6\text{HR}) = ((0.53 \times 0.94) / 12) \times 43,560 = 1,808 \text{ CF}$
 $= 0.042 \text{ AC}-\text{FT EXISTING ONSITE VOLUME}$

PROPOSED CONDITIONS ONSITE
TOTAL IMPERVIOUS AREA PROPOSED
 $ROOFS = 9500 \text{ SF} = 0.22 \text{ AC}$
 $\text{SIDEWALKS, DRIVEWAYS AND PAVING} = 25,442 \text{ SF} = 0.58 \text{ AC}$
 $\text{TOTAL IMP "D"} = 0.80 \text{ AC (PROPOSED)}$
 $\text{LANDSCAPED AREA "B"} = 5,921 \text{ SF} = 0.14 \text{ AC}$
 TREATMENT AREA (ACRES)

A	0
B	0.14
C	0
D	0.80

$Q(\text{PROPOSED}) = (2.28 \times 0.14) + (4.70 \times 0.80)$
 $V(\text{PROPOSED}) = ((0.78 \times 0.14) + (2.12 \times 0.809)) / 12 =$
 $= 0.152 \text{ AC}-\text{FT PROPOSED ONSITE VOLUME} = 6,622 \text{ CF}$
 $Q(\text{INCREASE DUE TO THIS DEVELOPMENT}) = 4.08 - 1.47 \text{ CFS} = 2.61 \text{ CFS}$
 $V(\text{INCREASE DUE TO THIS DEVELOPMENT}) = 0.152 \text{ AC}-\text{FT} = 0.0423 \text{ AC}-\text{FT}$
 $= 0.110 \text{ AC}-\text{FT} = 4,792 \text{ CF (6 HOUR VOLUME)}$

7. CHECK CHANNEL OPENING AT NORTHWEST CORNER
CHECK WEIR CAPACITY:
 $Q = C \times L \times H^{3/2}$
 $Q = 4.08 \text{ CFS}, H = 0.5 \text{ FEET}, C = 3.0$
 $L = 4.08 / 3.0 \times 0.5 \times 3/2$
 $L = 3.8 \text{ FEET WIDE USE 4 FOOT CHANNEL OPENING}$



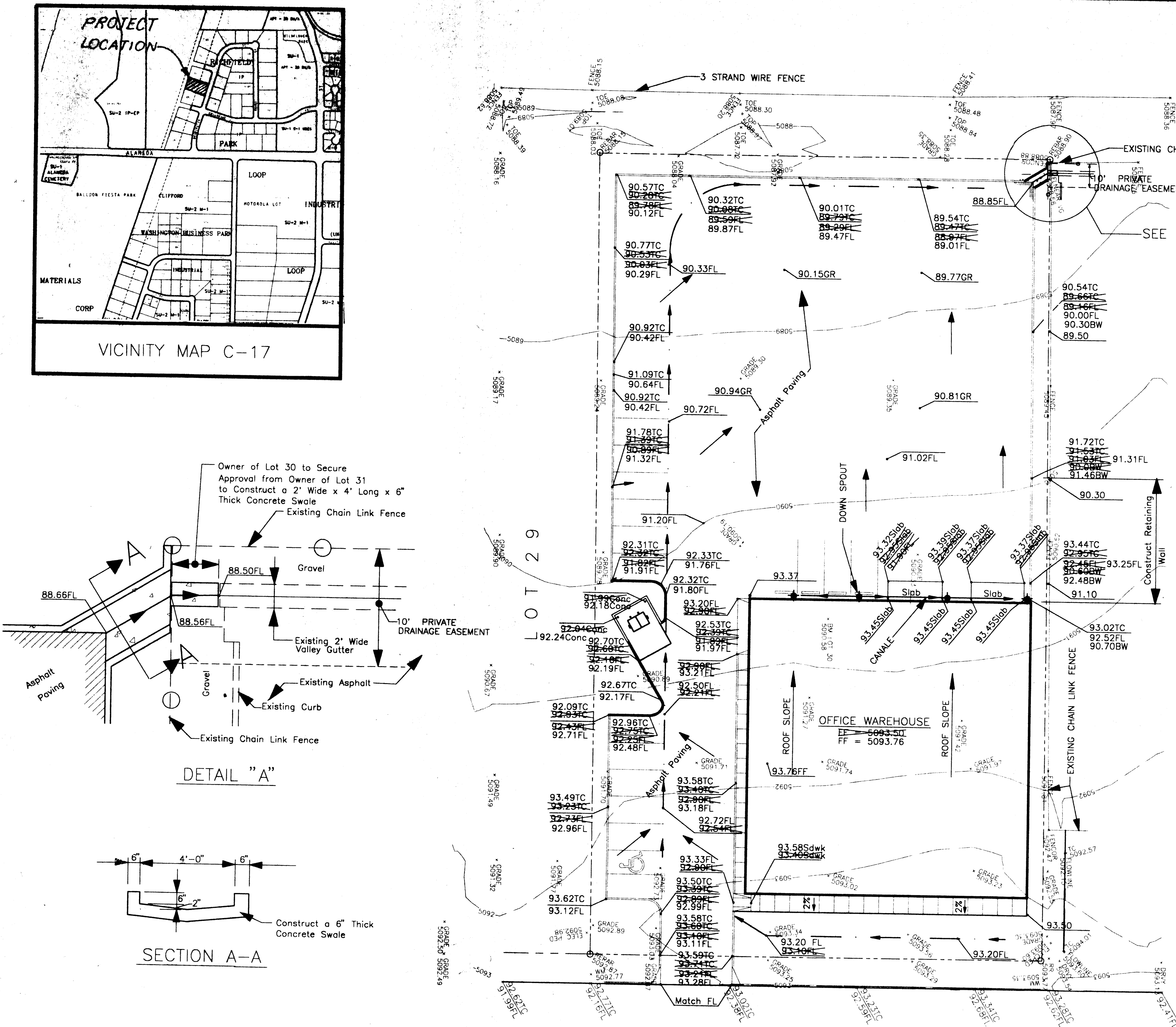
DRAINAGE CERTIFICATION

As indicated by the as-built information shown hereon, Lot 30, Richfield Industrial Park Grading and Drainage plan has been constructed in substantial compliance with the approved Grading and Drainage Plan. This Certification is presented in fulfillment of drainage requirements requested by the City of Albuquerque. The information shown hereon has been obtained by me or under my direct supervision and is true and correct to the best of my knowledge and belief.

Gilbert Aldaz
 Gilbert Aldaz, NMPE 10848
 Date 09-18-99

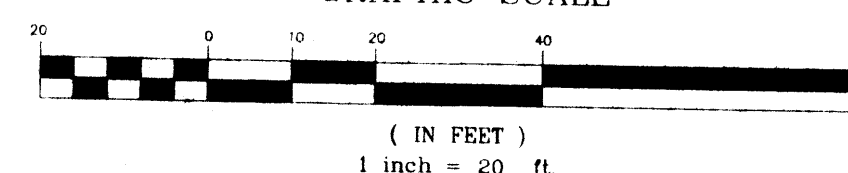
THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY 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.

PROPERTY BENCHMARK
 AMAFCA Brass Tablet stamped "NDC 7" located at North Division Channel, South of Alameda Blvd. NE.
 Elevation = 5062.60 feet MSLD
 Temporary Bench Mark (T.B.M.) - At the southeast property Corner a rebar with Elevation = 5101.52



WASHINGTON STREET

GRAPHIC SCALE



LEGEND

- | | | | |
|----------|---------------------------|--------------|----------------------------|
| 96.43Gr | PROPOSED GRADE ELEVATION | --- 5098 --- | EXISTING CONTOUR ELEVATION |
| 96.43 TC | PROPOSED TOP OF CURB | 98.77 TW | EXISTING SPOT ELEVATION |
| 95.93 FL | PROPOSED FLOWLINE OF CURB | 97.6 BW | PROPOSED TOP OF WALL |
| | DIRECTION OF FLOW | | PROPOSED BOTTOM OF WALL |