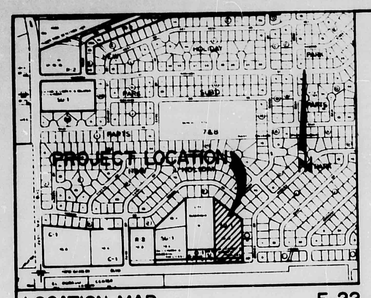
HYDROLOGY

F22/D21
1 PLAN

F22/D21

1 PLAN



LOCATION MAP
SCALE: 1"=800

F-22

SCALE: 1"=40'
0 10 20 40 60 100

GRADING AND DRAINAGE PLAN

This grading and drainage plan shows 1)existing and proposed elevations indicated by spot elevations and contours at 2'-0" intervals; 2)continuity between existing and proposed elevations; 3)proposed buildings, parking areas, paved roadways, and landscaped areas; and 4)drainage patterns and proposed drainage structures.

The proposed improvements are located on Montgomery Blvd. N.E. between Cairo Dr. N.E. and Jamaica Dr. N.E. The site is more particularly described as Tracts 'H-1' and 'H-2', New Holiday Park Subdivision. At present the site is undeveloped.

As shown by plate F-22 of the Albuquerque Master Drainage Study, Volume III, this site does not lie within a designated Flood Hazard Zone. No offsite flows enter the site.

The Conceptual Drainage Plan for Tract 'H' (approved June 6,1984) outlines the drainage criteria for this site. Following a downstream analysis it was determined that a 5.4 cfs discharge from Tract 'H' was allowed. Therefore, the remaining storm water will be stored in a detention pond.

As shown by the plan, all storm runoff will be routed overland to a detention pond. The detention pond will drain at a controlled rate of 5.4 cfs through three 6-inch drainlines. An overflow spillway will be provided to release storm water in excess of the 100yr-6hr estimated pond volume. For purposes of pond sizing, Tract 'H-2' was considered fully developed.

Erosion will not result due to this development as all exposed soil will be ultimately covered. Temporary erosion control measures will be taken during the construction phase to eliminate the transportation of sediment. A ditch-dike system will be placed along the south and west boundaries of the site until the permanent drainage facilities are in place.

The following calculations analyze both the 100yr-6hr and the 10yr-6hr design storms for the existing and developed conditions. The Rational Method of estimating runoff is used in accordance with the Development Process Manual, Volume II, Chapter 22.

CALCULATIONS

1. DESIGN CRITERIA
   P100=2.55 IN. P10=1.67 IN.
   Tc=0.0078L*0.77/S*0.385
   i=P6.84Tc*(-0.51)
   Q=CiA
   VOLUME=FCA
   SOIL: EMBUDO TIJERAS COMPLEX - SOIL GROUP 'B'
   TIJERAS SERIES - SOIL GROUP 'B'

2. EXISTING CONDITION
   A=4.00 ACRES
   C=0.34
   Tc=10 MIN.
   i100=5.97 IN/HR i10=3.54 IN/HR
   Q100=7.3 CFS Q10=4.8 CFS
   V100=12590 CF V10=8270 CF

3. DEVELOPED CONDITION
   A. TRACT 'H-1' & TRACT 'H-2' COMBINED - FULLY DEVELOPED
      AREA=4.00 ACRES
      C=0.88
      Tc=10 MIN.
      i100=5.39 IN/HR i10=3.54 IN/HR
      Q100=19.0 CFS Q10=12.5 CFS
      V100=32580 CF V10=21425 CF
      ALLOWABLE DISCHARGE=1.34 CFS/AC (PER OFFSITE ANALYSIS)
      Qr=5.4 CFS

      BY SOLVING HYDROGRAPH: POND VOLUME=16675 CF

   B. SPILLWAY DESIGN
      USING WEIR EQUATION: Q=3.33LH*1.5

      WHERE: Q=19.0 CFS
      H=0.67 FT

      THEN: L=10 FT

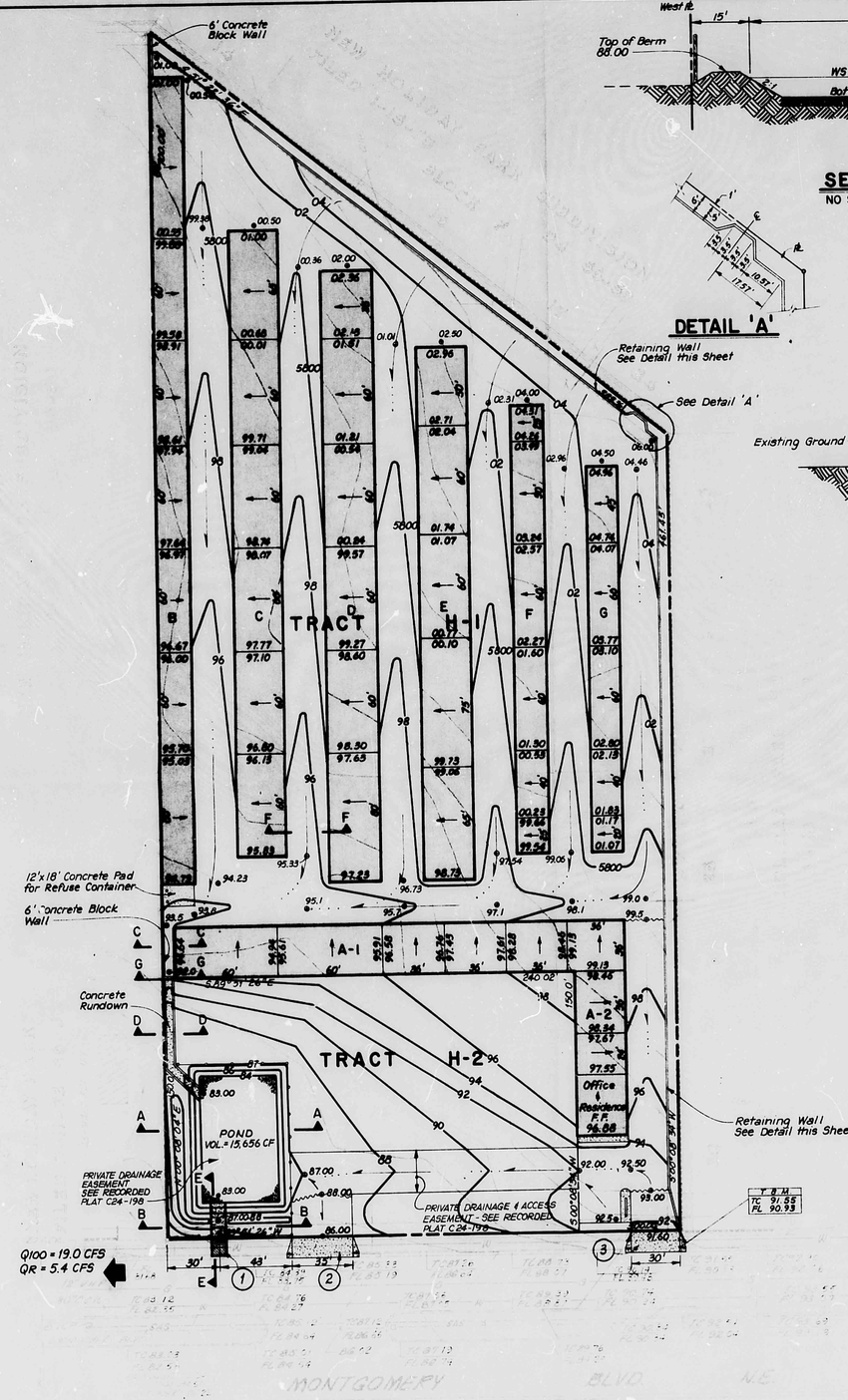
   C. OUTLET PIPE SIZING
      USING ORIFICE EQUATION: Q=CA(2GH)*0.5

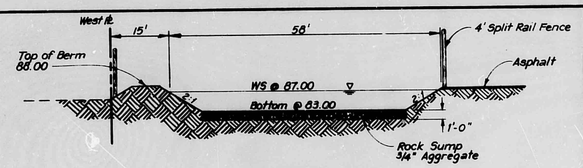
      WHERE: C=0.8
      A=0.20 SF (6 INCH PIPE)
      H=3.75 FT
      G=32.2 FT/S*2

      THEN: Q=1.7 CFS/PIPE
      NO. PIPES=5.4/1.7=3.2
      USE 3-6 INCH PIPES

   D. POND SIZING
      AT ELEVATION 5887: AREA=4930 SF
      AT ELEVATION 5883: AREA=2898 SF
      VOLUME=(4930+2898/2)4=15656 CF
      REQUIRED VOLUME=16675 CF
      A ROCK BOTTOM COMPOSED OF 3/4 INCH CLEAN AGGREGATE WILL ACCOUNT FOR THE REMAINDER OF THE VOLUME

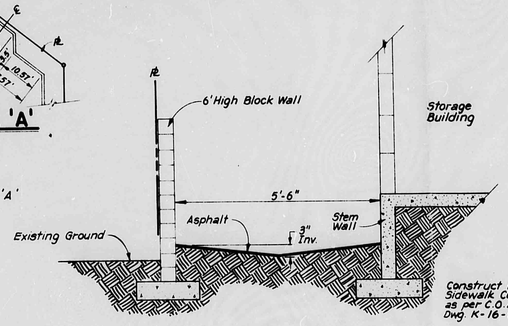
      REQUIRED VOLUME OF VOIDS=16675-15656=1019 CF
      USING 3/4 INCH ROCK WITH n=40% :
      VOLUME OF ROCK=1019 CF/0.40=2548 CF OR 94 CY
      SURFACE AREA OF ROCK BOTTOM=2898 SF
      DEPTH OF ROCK BOTTOM=2548 CF/2898 SF=0.88 FT USE 1.0 FT





SECTION A-A
NO SCALE

DETAIL 'A'



SECTION C-C
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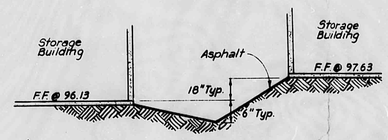

SECTION F-F
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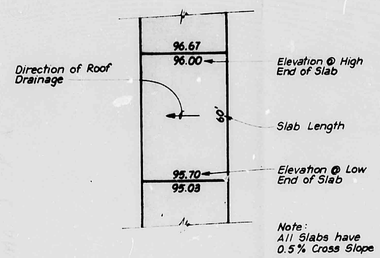
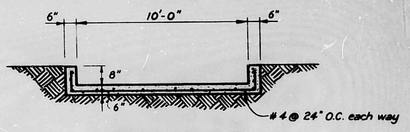
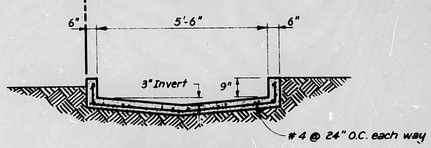


TYPICAL SLAB GRADING
NO SCALE



SECTION B-B
NO SCALE



SECTION D-D
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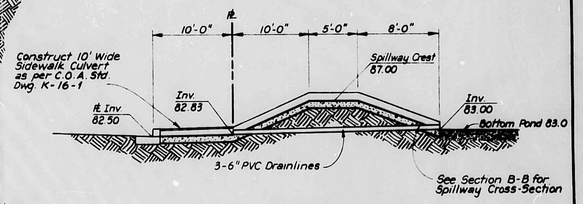

SECTION E-E
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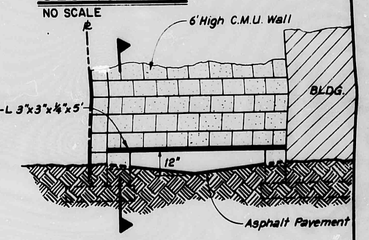
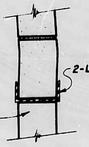
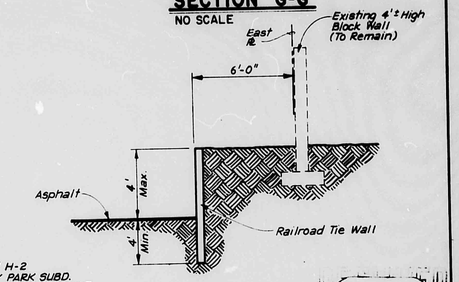




SECTION

SECTION G-G
NO SCALE



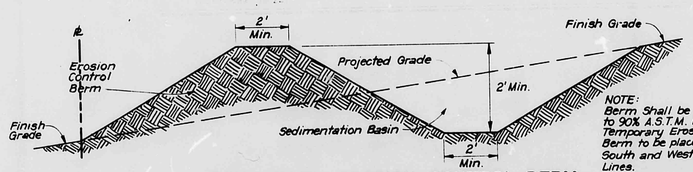
RETAINING WALL DETAIL
NO SCALE

SEP 20 1984
HYDROLOGY SECTION

LEGAL DESCRIPTION: TRACTS H-1 & H-2 NEW HOLIDAY PARK SUBD.
PROPERTY ADDRESS: 11801 MONTGOMERY BLVD. N.E.

PROJECT BENCHMARK: STANDARD ACS BRASS TABLET STAMPED "12-F22-1978" SET IN TOP OF A CONCRETE POST PROJECTING 0.3 FT. ABOVE GROUND. ELEV. = 5769.44 FEET (MSLD)

NOTES:
1. CONSTRUCT 10' WIDE SIDEWALK CULVERT AS PER CITY OF ALBUQ. STD. DWG. K-16-1
2. CONSTRUCT 35' DRIVEPAD AS PER C.O.A. STD. DWG. P-11-3
3. CONSTRUCT 30' DRIVEPAD AS PER C.O.A. STD. DWG. P-11-3



NOTE: Berm Shall be compacted to 90% A.S.T.M. D-1557. Temporary Erosion Control Berm to be placed on the South and West Property Lines.

TEMPORARY EROSION CONTROL BERM
NO SCALE

LEGEND

	EXISTING CONTOUR	--SAS--	EXISTING SANITARY SEWER
—02—	PROPOSED CONTOUR	--W--	EXISTING WATER LINE
+5810.6	EXISTING SPOT ELEVATION	—G—	EXISTING GAS LINE
•91.60	PROPOSED SPOT ELEVATION	--UE--	EXISTING UNDERGROUND ELECT.
TC 92.40 FL 92.26	EXIST. TOP OF CURB & FLOWLINE ELEVATIONS		PROPOSED BUILDING
	DIRECTION OF FLOW		PROPERTY LINE
	EXISTING BLOCK WALL		NEW FENCE (SPLIT RAIL)
	NEW CONCRETE		ASPHALT PAVING

NO.	REVISIONS	BY	DATE

NATIONAL SELF STORAGE
DRAINAGE & GRADING PLAN

ESPEY, HUSTON & ASSOC., INC.
Engineering & Environmental Consultants
4801 INDIAN SCHOOL ROAD N.E. SUITE 204
ALBUQUERQUE, NEW MEXICO 87110
PHONE (505) 255-1625

DESIGNED BY D.L. DATE AUGUST 1984 SHEET NO.
DRAWN BY R.D. FB
CHECKED BY D.L. JOB NO. 5317-02 OF SHEETS
APPROVED BY