HYDROLOGY F21/D36 LEARNING TECHNICAL CENTE

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LEARNING

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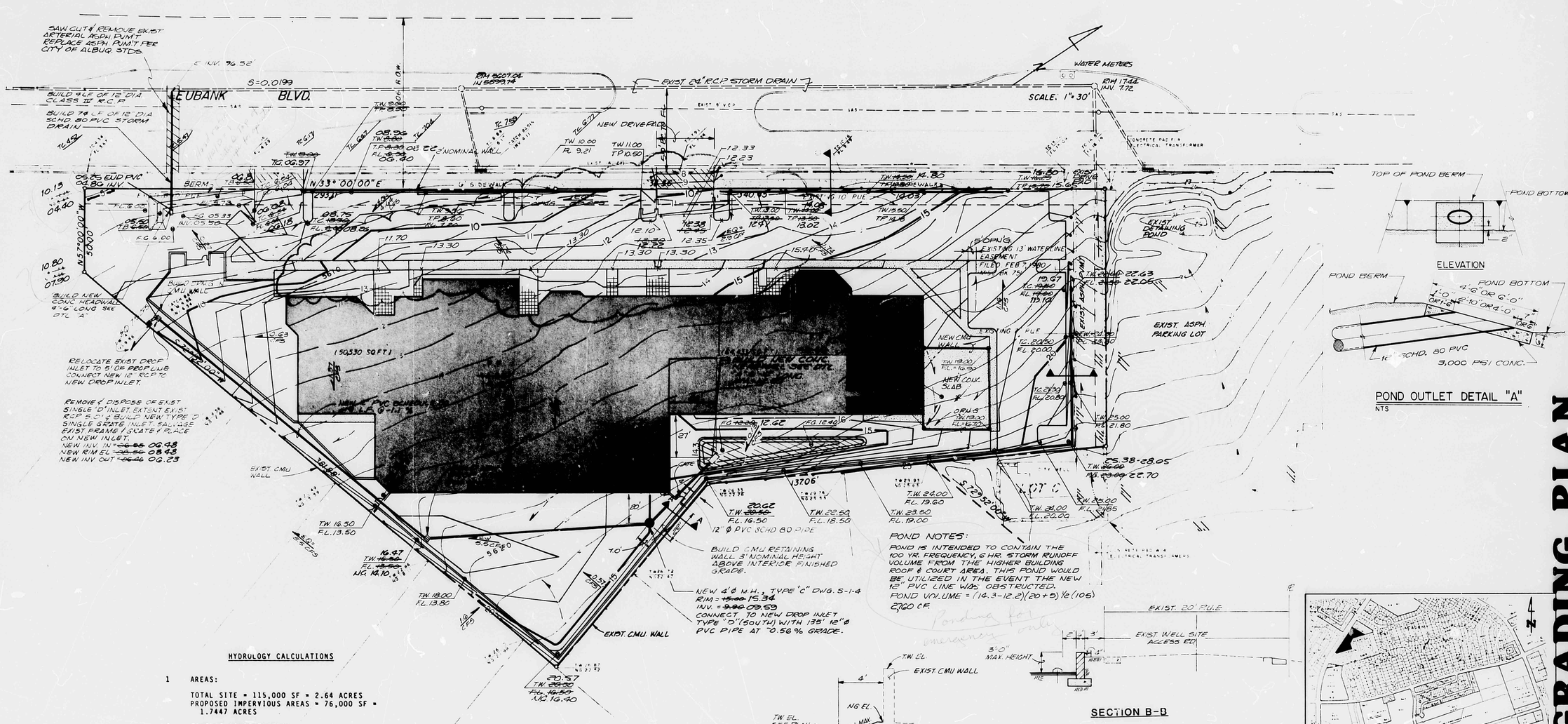
CENTER

1 PLAN



HYDROLOGY CALCULATIONS

1 AREAS:

TOTAL SITE = 115,000 SF = 2.64 ACRES
PROPOSED IMPERVIOUS AREAS = 76,000 SF = 1.7447 ACRES

2 TIME OF CONCENTRATION

$Tc = 0.0078 \frac{L^{0.77}}{S^{0.385}}$ WHERE L=652'

$S = \frac{H}{L} = \frac{26.8-5.0}{652} = 0.0334$ FT./FT.

$Tc = 0.0078\ (652)^{0.77} = 4.24$ MIN. - USE Tc=10 MIN.

SCS SOILS GROUP: TYPE B
6 HR - 100 YR. STORM = 2.5' (PLATE 22.2 B-1, PAGE 13)

$I_{100} = (2.5")(6.84)(10)^{-0.51} = 5.28$ IN/HR

3 UNDEVELOPED CONDITIONS

ONSITE FLOWS:

CN = 80 (PLATE 22.2 C-2, PG. 9)
CRCN = 83 (PLATE 22.2 C-3, PG. 10) FOR 0% IMPERVIOUS
DIRECT RUNOFF = 0.88" (PLATE 22.2 C-4, PG.11)
VOLUME OF RUNOFF = $\frac{(0.88")}{(12)}$(115,000 SF) =

8,433 CF

Q_{P1} = CIA = 0.38 (5.28 IN/HR)(2.64 ACRES) = 4.7 CFS

C=0.38 FOR 0% IMPERVIOUS (PLATE 22.2 C-1, PG. 8)

OFFSITE FLOWS: FLOWS COMING FROM BACKYARD LOT PONDS. 4 LOTS CONTRIBUTING.
C=SAME AS DEVELOPED SITE=0.67

Q_{P2}=(4 LOTS)(5,000 ACRES) (0.67)(5.28)=1.6 CFS

VOLUME OF RUNOFF=$\frac{(0.88")}{(12)}$(20,000 SF) = 1,470 CF

Q_{TOTAL} = 6.3 CFS V_{TOTAL} = 9,870 CFS

4 DEVELOPED CONDITIONS:

ONSITE FLOWS:

CN=88 (PLATE 22.2 C-2, PG.9)
CRCN=94 (PLATE 22.2 C-3, PG. 10)
DIRECT RUNOFF = 1.92 IN. (PLATE 22.2, C-4, PG. 11)
VOLUME OF RUNOFF = $\frac{(1.92)}{(12)}$(115,000)=18,430 CF

Q_{P3} = CIA = (0.64)(5.28)(2.64) = 8.9 CFS

C=0.64 (PLATE 22.2,, C-1, PG. 8)

5 DRAINAGE PLAN

1. ROUTE ROOF RUNOFF, PLAYGROUND AREAS AND OFFSITE FLOWS TO EXISTING INLET THAT WAS DESIGNED FOR 9 CFS.

V_{DISC}=11,480 CF Q_{DISC}=7.5 CFS LESS THAN 9.0 CFS DESIGN

2. ROUTE PARKING LOT RUNOFF TO NEW DROP INLET AT THE SOUTHWEST CORNER OF THE DEVELOPMENT.

V_{DISC}=8,430 CF Q_{DISC}=4.9 CFS = 4.7 CFS
(EQUAL TO UNDEVELOPED) (APPROXIMATELY EQUAL TO UN-DEVELOPED)

POND NOTES:

POND IS INTENDED TO CONTAIN THE 100 YR. FREQUENCY, 6 HR. STORM RUNOFF VOLUME FROM THE HIGHER BUILDING ROOF & COURT AREA. THIS POND WOULD BE UTILIZED IN THE EVENT THE NEW 12" PVC LINE WAS OBSTRUCTED.
POND VOLUME = (14.3-12.2)(20+8)½(105)
2760 CF.

NOTES:
1. CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ALL SEDIMENT AND SOIL OFF PUBLIC RIGHT-OF-WAY DURING ROUGH GRADING AND CONSTRUCTION PHASES.
2. ALL SUBGRADE UNDER PAVEMENT, CURBS AND GUTTERS SHALL BE COMPACTED TO 95% MODIFIED PROCTOR TO A 6-INCH MINIMUM DEPTH.
3. CONTRACTOR SHALL CONSTRUCT CATCH BASINS SUCH THAT ALL TOP OF RIM ELEVATIONS ARE 2-INCHES ABOVE THE SURROUNDING FINISHED GRADE TO CONTAIN NUISANCE FLOWS.
4. FLOOD HAZARD: CITY OF ALBUQUERQUE FLOODWAY MAPS SHOW THAT THE PROPOSED SITE DOES NOT LIE WITHIN NOR CONTRIBUTE TO ANY FLOOD HAZARD AREAS.
5. BENCH MARK: CITY OF ALBUQUERQUE B.M. EA1-E21; ELEVATION 5644.103
6. CURRENT ZONE STANDING: O-1
7. LEGAL DESCRIPTION: TRACT AR-1 ACADEMY KNOLLS SUBDIVISION

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR NO. 6948 NEW MEXICO ALBERT D. CORBIN

DRAINAGE & GRADING PLAN FOR LEARNING TECH CENTER

5528 EUBANK BLVD. N.E.
APPROVED AUGUST 24, 1984

I, D. MARK GOODWIN, N.M.P.E., Nº 6948, DO HEREBY CERTIFY THAT THIS PLAN AS NOTED HAS BEEN CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLAN.

CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT

"AS-BUILT"
REVISED 1-3-85
REVISED 11-21-84

MOLZEN-CORBIN & ASSOCIATES
CONSULTING ENGINEERS
ALBUQUERQUE, CARLSBAD - NEW MEXICO

LEGEND

PROPERTY LINE
SANITARY SEWER LINE
SANITARY SEWER MANHOLE
STORM DRAIN LINE
STORM DRAIN INLET (CATCH BASIN)
GAS LINE
WATER LINE
FIRE HYDRANT
CURB & GUTTER
SIDEWALKS
VALVES
ASPHALT
AVAILABLE 100 YR. STORM POND AREA.

F21/D36

DRAINAGE PLAN GRADING PLAN

LEARNING TECH CENTER
5528 EUBANK BLVD. N.E.
ALBUQUERQUE, NEW MEXICO

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