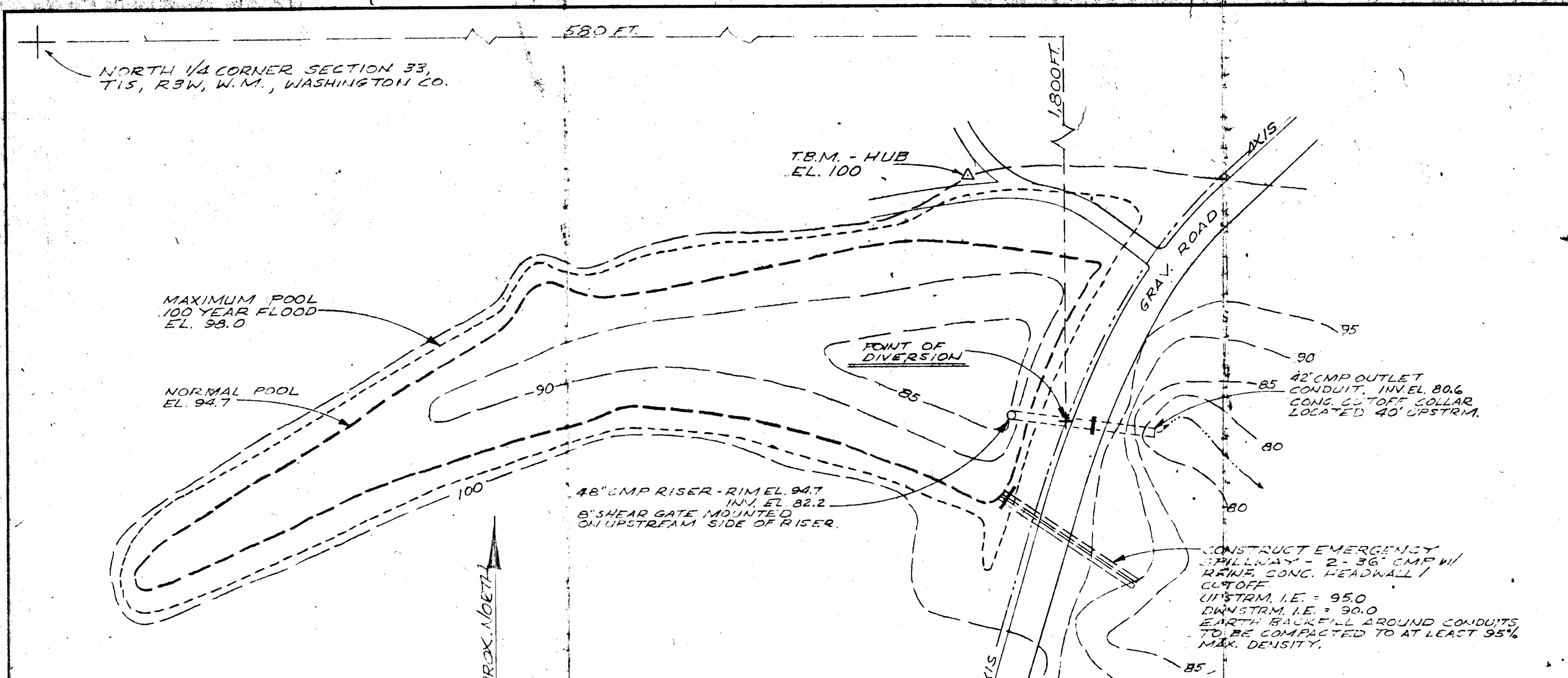
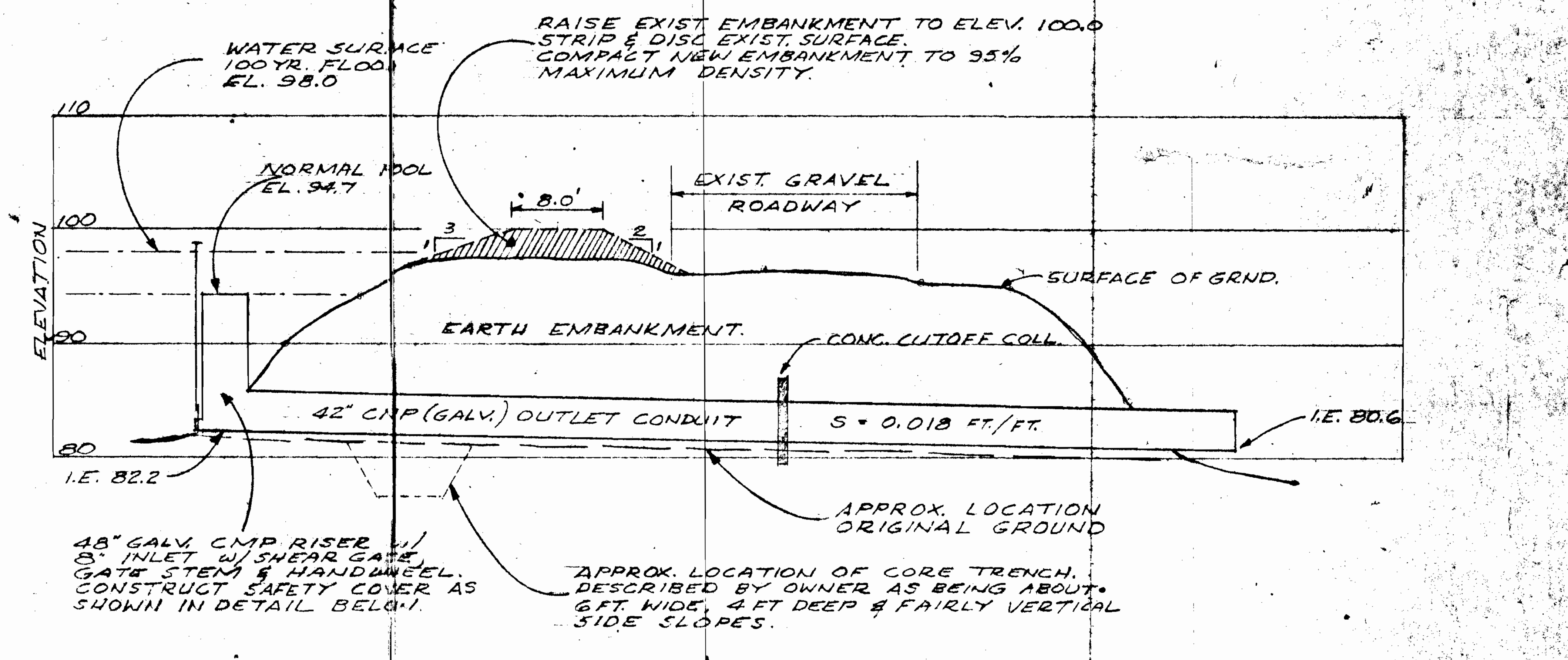
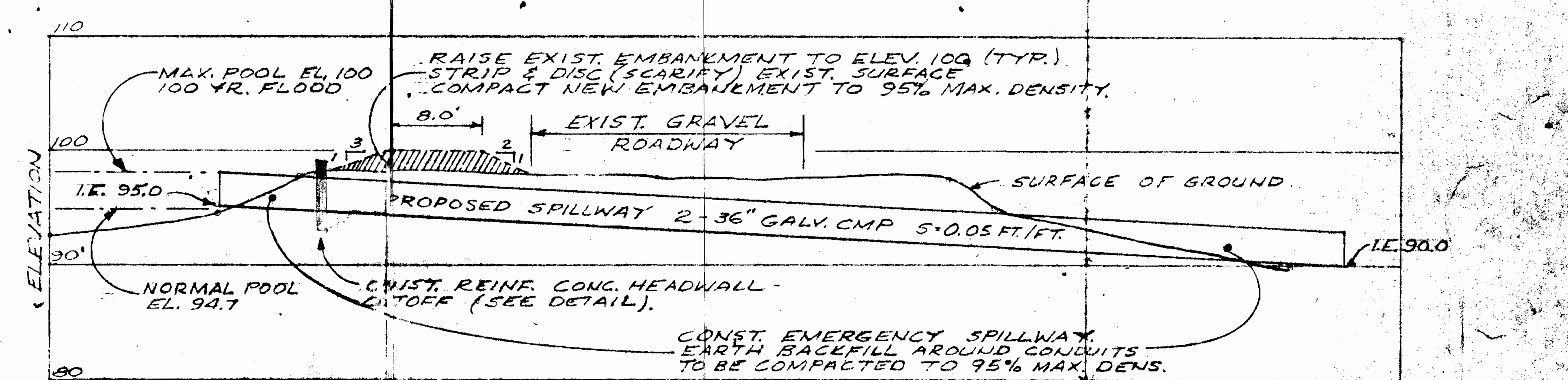


SITE PLAN
SCALE: 1" = 50'



CROSS SECTION THRU DAM AT OUTLET CONDUIT
SCALE: 1" = 10'



CROSS SECTION THRU DAM AT EMERG. SPILLWAY.
SCALE: 1" = 10'

SPILLWAY COMPUTATIONS

Q_{100} = 173 CFS

USE 2 - 36" CMP CULVERTS WITH INLET CONTROL

USE NOMOGRAPH FROM P. 189 - FIGURE 4 - 28, "HANDBOOK OF STEEL DRAINAGE & HIGHWAY CONSTRUCTION PRODUCTS".

GIVEN: HW/D = OR LESS THAN 1 FOR CONDITION 3 ENTRANCE TYPE - PROJECTING FROM FILL - COEF. = 0.9

FROM NOMOGRAPH
36" CMP
Q = 32 CFS
HW/D = 1.0
HW = 3.0 FT

TOP OF RISER (48") = 94.7 FT

SET I.E. OF 36" CMP SPILLWAY AT 95.0 FT

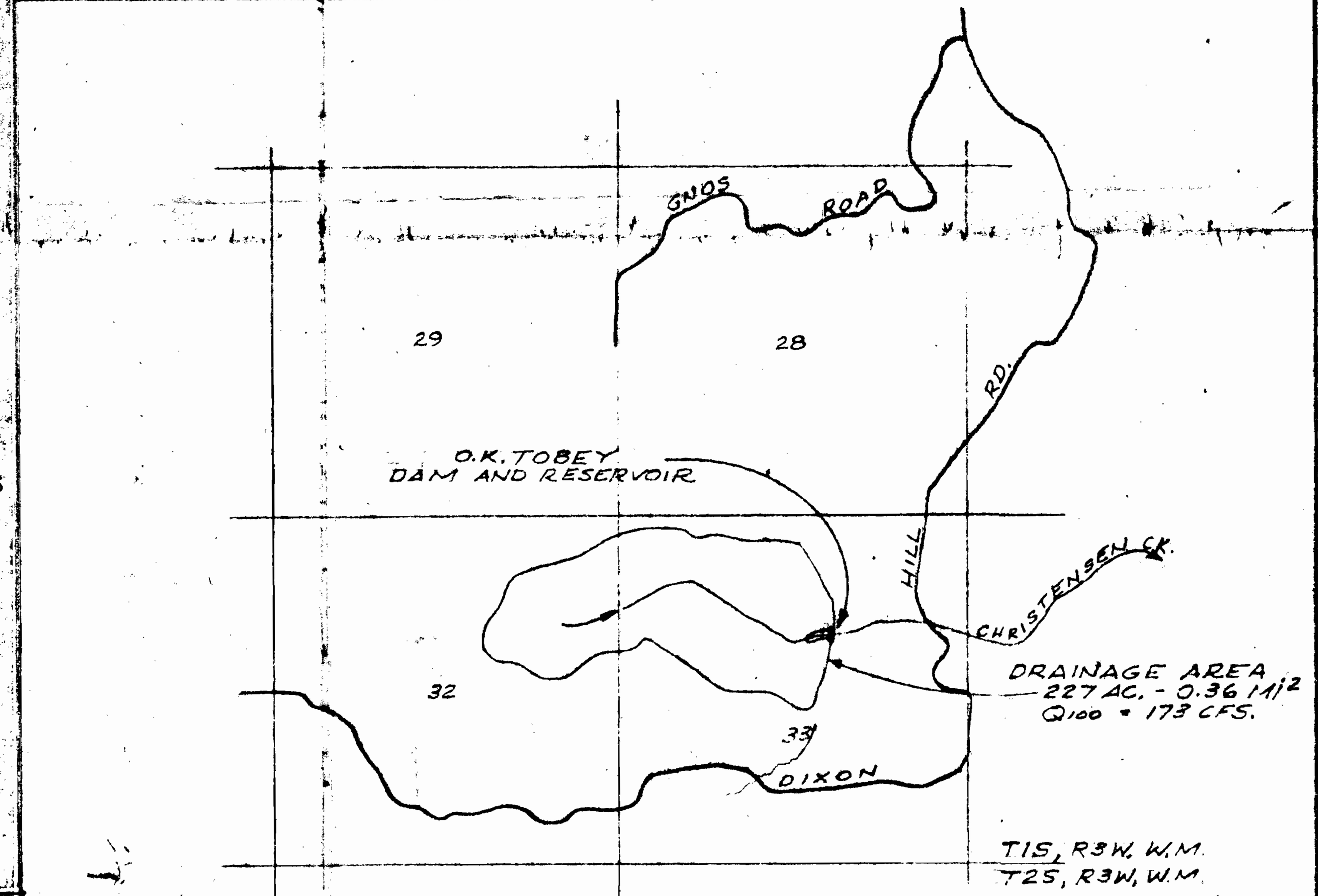
COMPUTE RISER FLOW AT TOP 36" CMP - EL. 98.0

FOR ORIFACE FLOW
$Q_o = 3.78\ D^2H^{1/2} = 3.78\ (4)^2\ (3.3)^{1/2}$ = 109.9CFS

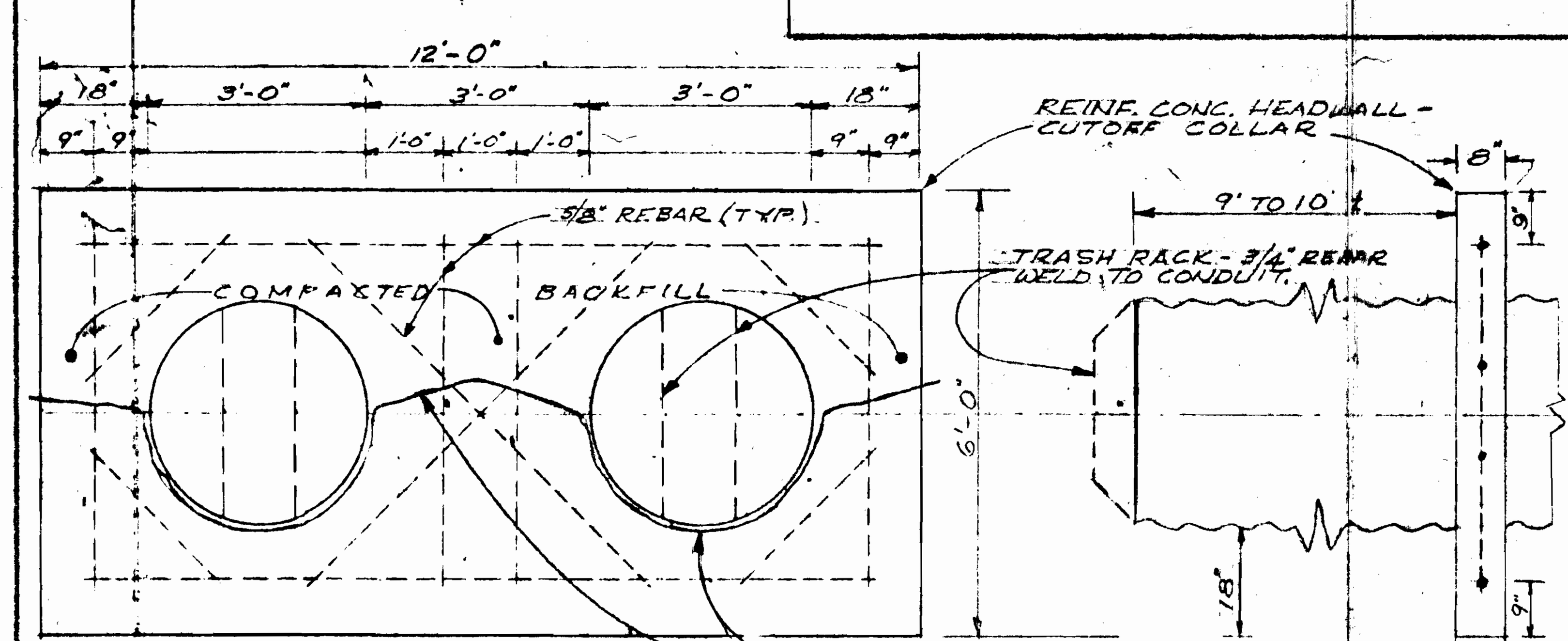
Q_{100} = 109.9 + 2(32) = 174 CFS

AREA CAPACITY TABLE

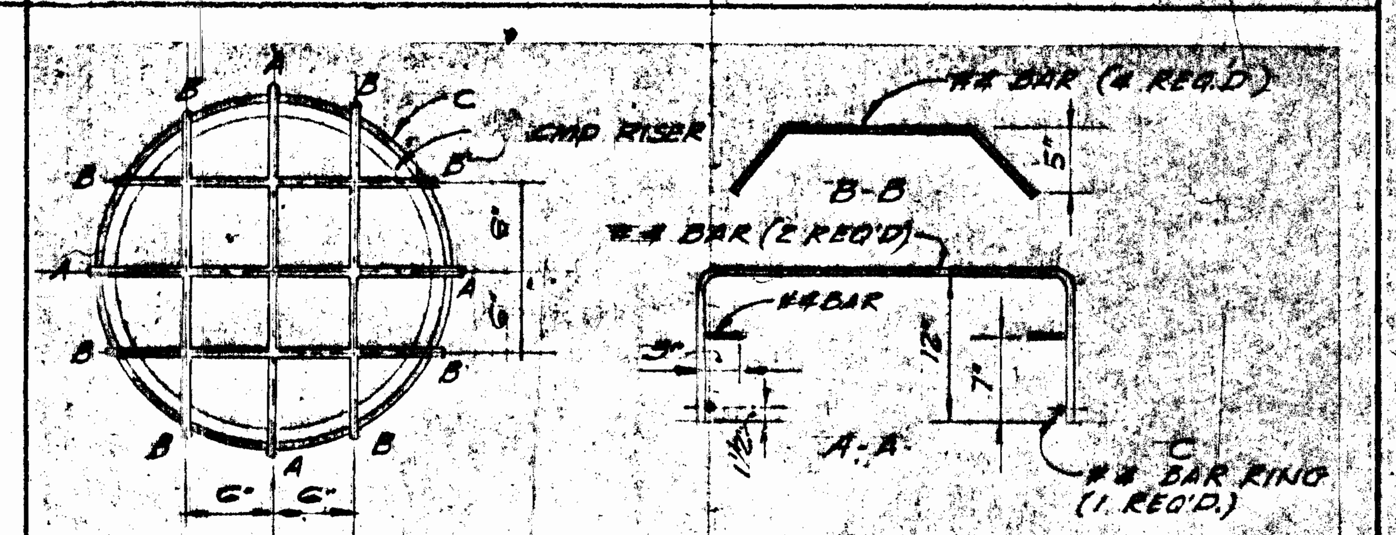
ELEV	AREA AC	ACC. VOL. AC - FT
82	0	0
85	0.13	0.2
90	0.47	1.7
94.5	1.11	6.3
98	1.63	11.1



VICINITY MAP
SCALE: 1" = 2000'



SPILLWAY DETAILS
SCALE: 1" = 2'



SAFETY COVER DETAILS
NO SCALE
(TRASH RACK FOR RISER)

NOTE:

THIS DRAWING DEPICTS A DAM AND RESERVOIR PREVIOUSLY CONSTRUCTED AND NOW EXISTING.

TO MEET OREGON DEPT. OF WATER RESOURCES REQUIREMENTS FOR STRUCTURES WITH HEIGHT OVER THE STATUTORY LIMIT, THE FOLLOWING MODIFICATIONS ARE NEEDED:

1. CONSTRUCT AN EMERGENCY SPILLWAY
2. RAISE THE HEIGHT OF THE DAM EMBANKMENT TO MAINTAIN (2) FEET OF FREEBOARD DURING THE 100 YEAR FLOOD EVENT.
3. CONSTRUCT A TRASH RACK (SAFETY COVER) ON THE EXISTING 48 INCH RISER.
4. CONSTRUCT A TRASH RACK ON THE INLET TO THE 36 INCH CMP EMERGENCY SPILLWAY.

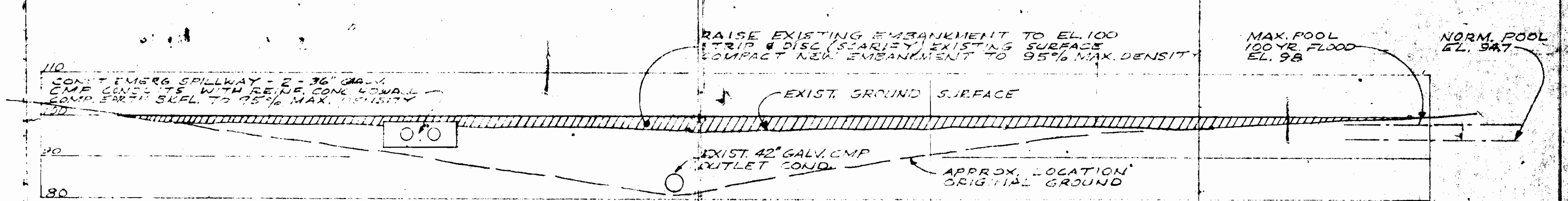
INFORMATION SHOWN ON THIS DRAWING RELATIVE TO ORIGINAL GROUND CONDITIONS UNDER THE EXISTING EMBANKMENT ARE VERY APPROXIMATE BEING BASED UPON EXISTING GROUND CONDITIONS OUTSIDE THE EMBANKMENT. CORE DRILLINGS WERE NOT MADE IN OR THROUGH THE EMBANKMENT TO DETERMINE SOIL DENSITIES OR THE LOCATION OF THE ORIGINAL GROUND.

THE LOCATION AND DIMENSIONS OF THE CORE TRENCH ARE BASED UPON INFORMATION OBTAINED FROM THE OWNER. ACTUAL FIELD OBSERVATIONS WERE NOT MADE FOR VERIFICATION.

Application No. R-68388 & 68389
Permit No. R10603 49601

DEPARTMENT OF WATER RESOURCES DO NOT SEND OUT

WATER RESOURCES DEPARTMENT
APPROVED: 2/10 1986
William H. Young
DIRECTOR
ENGINEER DAM SAFETY DIVISION



PROFILE ALONG AXIS OF DAM (LOOKING UPSTREAM)
SCALE: 1" = 20'

REGISTERED PROFESSIONAL ENGINEER 3296 OREGON ANDREW M. KLEIN
A. M. Klein

DATE	NO.	REVISION	BY

DESIGNED	APPROVED	
AMK		
DRAWN	SCALE	DATE
AMK	AS SHOWN	1-8-86
CHECKED	FILE	

KLEIN CONSULTING ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS
FOREST GROVE, OREGON

O. K. TOBEY DAM AND RESERVOIR

PLAN & PROFILES CROSS SECTIONS DETAILS VICINITY MAP

SHEET 1 / 1