Stricker Engineering
14500 Old Condor Bridge Road • Cloverdale, Oregon 97112 • 503-392-3112 • Fax 503-392-3502

NOV 1996

BUTCH OLSON
PO Box 3426
Bay City, OR 97107

GRAHAM & MICHELE KINSMAN
KINSMAN BUILDING
4402 Third Street
Tillamook, OR 97141

ADDITION
80' x 100' Warehouse/30' x 80' Office

REGISTERED PROFESSIONAL ENGINEER
12,808
OREGON
MAY 23, 1985
ANDREW WALTER STRICKER
EXP 6/98

STRUCTURAL CALCULATIONS

November 5, 1996

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Date 11/5/96 Client GRAHAM & MICHELE KINGMAN Job No 96004
By AWS Chk _____ Project THIRD STREET WAREHOUSE TILLAMOOK, OR

1.0 LOADS - FOUNDATION DESIGN ONLY

1.1 DEAD LOADS

ROOF & FRAMING (PER YORK MFGR)	5	psf
SLAB 4"	50	"
12"x18" PER BM	225	plf
18"x24" " "	450	"

1.2 LIVE LOADS

ROOF	30	psf
FLOOR (LIGHT WAREHOUSE)	125	"

1.3 WIND LOADS

SEE YORK BLDG DWGS & CALCS

1.4 SEISMIC

PER YORK

11-05-1996 12:01PM FROM STRICKER ENGINEERING 503 392 3502 P.3

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Date 11/15 Client CMK Job No 96100A
By AMS Chk ____ Project 39

2.0 FOUNDATION - BUILDING "A"

2.1 GRAVITY LOADS

END WALLS 32' AT RIDGE, 22' EAVE, 80' WIDE

$A_W = 22 \times 80 + \frac{10 \times 80}{2} = 2160$ sf

WALL DL = 2160 x 15 = 10,800 # PER FT $\frac{10800}{80} = 135$ plf

ROOF DL = $\frac{20}{2} \times 15 = 150$ plf

ROOF LL = $\frac{20}{2} \times 30 = 300$

CONC = 225

$\Sigma = 710$

$f_{avg} = \frac{710}{1.0} = 710$ psf

$F_{avg} = 1000 \times 1.15 = 1150$ psf > 710 OK

MAX COL SPCG = 13.40'

$\bar{M} = \frac{710 \times 13.40^2}{8} \times 1.7$ (CONS FACTOR) $= 15926$ #'

$d = 18 - 2.5 = 15.5''$ $A_s = 2 \times .20 = .40''^2$ $a = \frac{.4 \times 60}{.85 \times 3 \times 12} = .78''$

$M_u = .9 \times .40 \times \frac{60}{12}\left(15.5 - \frac{.78}{2}\right) = 27.2^{k'} > 15.9^{k'}$ OK

MIN $A_s = .002 \times 12 \times 18 = .43''^2$ USE 4-#4 TOTAL

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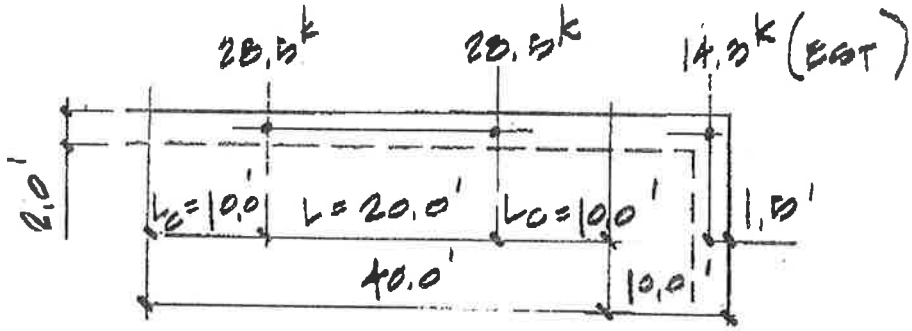
Date 11/15 Client GMK Job No 96|004
By AWS Chk _____ Project 35

$$\bar{V} = \frac{710 \times 13.40}{2} \times 1.7 = 8090^{\#}$$

$$V_u = 2\sqrt{3000}\,(12 \times 15.5) \times .70 = 14200^{\#} > 8090^{\#}$$

∴ PROVIDE STIRRUPS AT 18" OC & 1 EA COL
(SHEAR REINF NOT REQ'D)

SIDE WALLS



EFF CANT
PORTION OF FTG

$$\frac{wL_c^2}{2} = \frac{wL^2}{8} \quad \therefore \quad L_c = \frac{L}{2} = 10.0'$$

FRAMES: $\frac{28500 \times 2 + 14300}{50} = 1420$ plf

CONC $= 450$

$\Sigma = 1870$ plf

$$f_{berg} = \frac{1870}{2.0} = 938 \text{ psf}$$

$f_{berg} = 1150$ psf > 938 OK

NET LOAD (FOR BM DESIGN)

$W = \frac{1420}{1.5} = 950$ plf

$\bar{M} = \frac{950 \times 10^2}{2} \times 1.7 = 80,750$ #' (M BETWEEN SUPTS = 0 FOR THIS CASE)

$\bar{V} = 950 \times 10 \times 1.7 = 16,150$ #

$d = 15.5''$ $A_s = 4 \times .31 = 1.24''^2$ $a = \frac{1.24 \times 60}{.85 \times 3 \times 18} = 1.62''$

$M_u = .9 \times 1.24 \times \frac{60}{12}\left(15.5 - \frac{1.62}{2}\right) = 82.0^{k'} > 80.8$ OK

$V_u = 2\sqrt{3000}\,(18 \times 15.5) \times .70 = 21,390 > 16150$ OK

PROVIDE STIRRUPS AT 18" OC & 2 EACH COLUMN. NOT REQ'D PER CALCS

MIN $A_s = .002 \times 18^2 = .65$ OK < 1.24
PROVIDE 2-#4'S TOP FOR CONTINUITY

2.2 DEAD LOAD ONLY (FOR TOP STL)

$R_A = R_B = 28.5 - .03 \times 20 \times 40 = 4.5^k$ $W = \frac{4.5}{20} = .23$ klf

$\bar{M} = \frac{.23 \times 20^2}{8} \times 1.7 = 19.6^{k'}$

$d = 18 - 2.5 = 15.5''$ $A_s = 2 \times .20 = .40''^2$ $a = \frac{.40 \times 60}{.85 \times 3 \times 18} = .52''$

$M_u = .9 \times .40 \times \frac{60}{12}\left(15.5 - \frac{.52}{2}\right) = 27.4^{k'} > 19.6$ OK

V OK BY INSP

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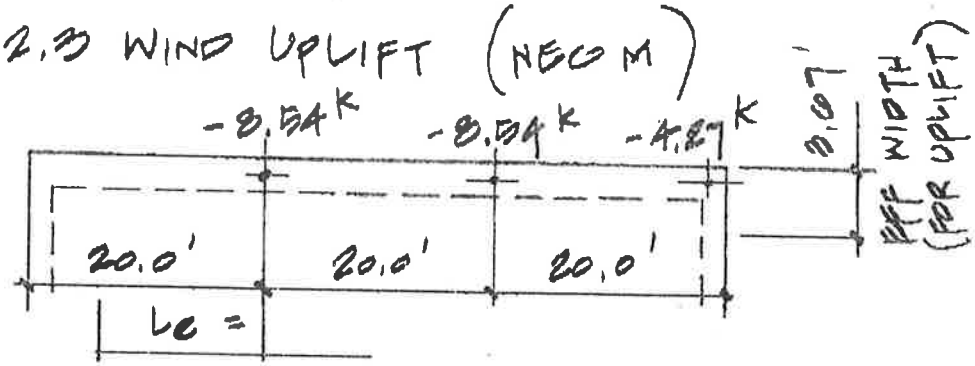
Date 11/5 Client GMK Job No 961004
By AWB Chk ___ Project 35

2.3 WIND UPLIFT (NEG M)



MIN FTG DL REQ'D $= 1.5(2 \times 8.54 + 4.27) = 32.0^k$

$60'$ FTG $= 60 \times .450 = 27.0^k$

∴ NET TO SLAB $32.0 - 27.0 = 5.00^k$

SHEAR/FT $= \frac{5000}{60} = 83$ plf $\quad w = \frac{83}{50} = 1.67'$

SLAB SHEAR $f_v = \frac{83}{2.0 \times 12} = 3.5$ psi OK

∴ OKAY FOR UPLIFT NO SHEAR REINFORCEMENT REQ'D

$L_{TOT} = \frac{8.54}{.45} = 18.98'$

$L_e = \frac{18.98}{2} = 9.50'$

$\bar{M} = \frac{.450 \times 9.50^2}{2} \times 1.4 = 28.4^{k'} \approx 27.4^{k'}$

$\bar{V} = .450 \times 9.50 \times 1.4 = 6.0^k$

V OK BY INSPECTION

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Date 11/3 Client GMK Job No 961004
By KWB Chk Project 3S

2.4 RIGID FRAME LAT LOAD = 14.41 k

TIE COLS TOGETHER ACROSS SLAB
USE 2 - #5's

$A_s = 2 \times .31 = .62''^2$

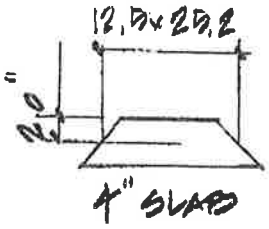
$f_t = \frac{14.41}{.62} = 23.2 \text{ ksi} < 24 \times 1.33 = 32 \text{ ksi}$ OK

2.5 SLAB 4" THK 6x6 - W1.4xW1.4 WOVEN WIRE MESH REINFORCEMENT

CHECK 18000# WHEEL LOAD

TIRE CONTACT $A = .01 \times 18000 = 180''^2$

$\frac{W^2}{2.5} = 180 \quad W = 21.2'' \quad L = 8.5''$



$f_v = \frac{18000}{2(12.5+25.2) \times 4.0} = 60 \text{ psi}$

$F_v = 2\sqrt{3000} \times .70 = 77 \text{ psi} > 60$ OK

3.0 BUILDING "B"

USE SIMILAR DETAILS TO BLDG "A".
MUCH LIGHTER LOADS ∴ OKAY BY INSPECTION

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No 1 of 2 Pages

Date 10/16/96 Client GRAHAM & MICHELE KINSMAN Job No 96/006
By AWS Chk _____ Project ADDITION - THIRD STREET

EXISTING

60' x 80' WHSE
20' x 20' OFFICE

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Tillamook County Planning Dept.

ADDITION

60' x 80' WHSE (OR 80' x 100')
30' x 60' OFFICE (OR 30' x 80')

TOTAL

WAREHOUSE 9600 sf MIN (M)
12800 sf MAX

OFFICE 2200 sf MIN (B)
2800 sf MAX

TOTAL 11800 - 15600 sf

USING TYPE III - 1 HR CONSTRUCTION 18000 sf MAX
III - NR " 12000 sf "

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Date 10 Client KINSMAN Job No 06|006
By AWZ Chk ____ Project WHSE ADDITION

MAX OCCUPANCY

OFFICE: $\frac{2800}{100}$ = 28.0

WHSE: $\frac{12800}{500}$ = 25.6

Σ = 53.6 (54)

PARKING:

OFFICE 1/500 sf $\frac{2800}{500}$ = 5.6

WHSE 1/2000 $\frac{12800}{2000}$ = 6.4

Σ = 12.0 < 25

EXISTING 8 STALLS ∴ ADD 4

1 ACCESSIBLE SPACE EXISTS ∴ OK

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Tillamook County
Planning
Dept.

BUILDING INFORMATION

OR

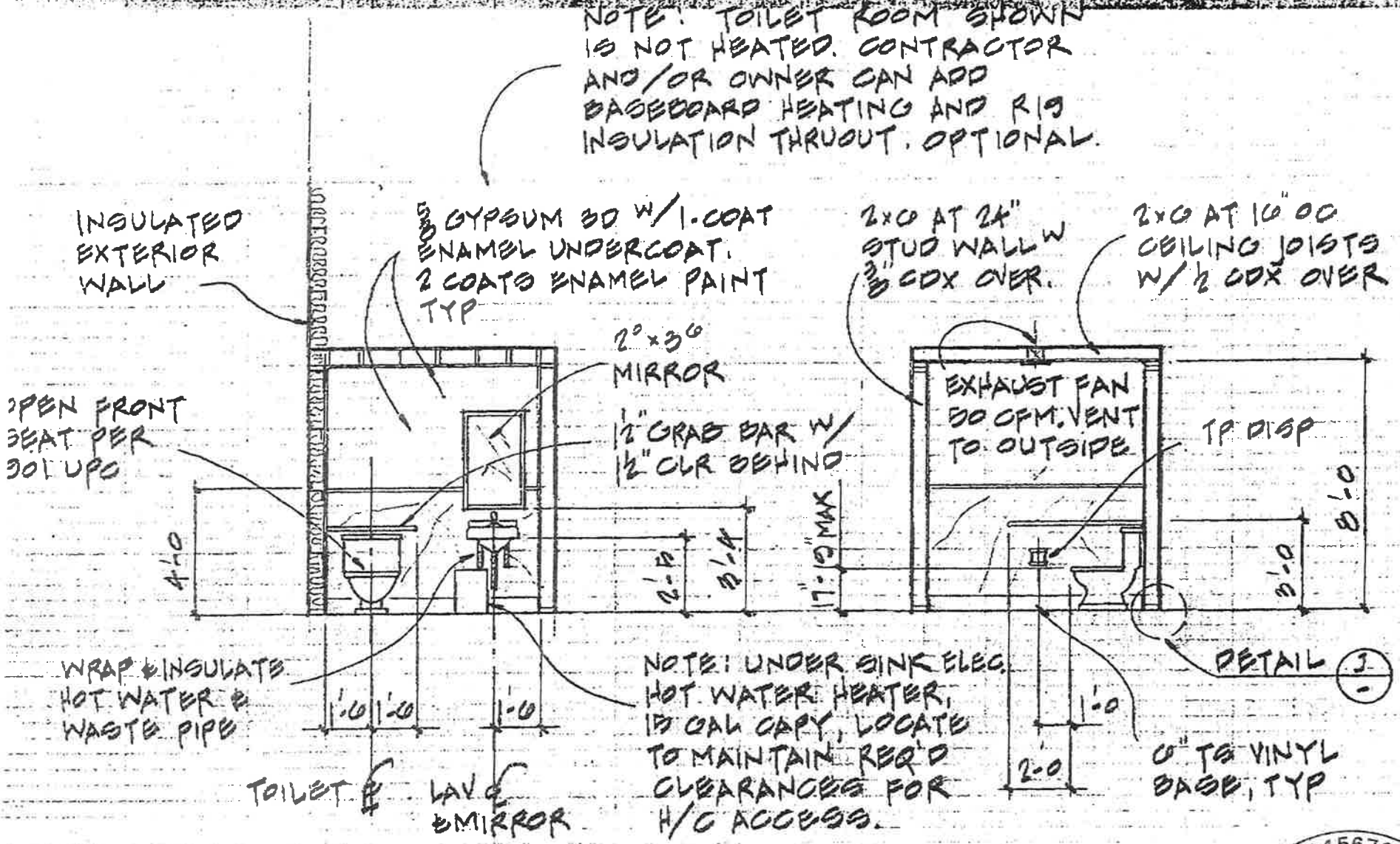
ZONE : LIGHT INDUSTRIAL LM.
CONSTRUCTION : TYPE II NON-RATED.
OCCUPANCY : B2 SALES OFFICE / WAREHOUSE
(AREA SEPARATION REQUIRED BETWEEN OFFICE / WAREHOUSE 1 HOUR)
BUILDING HEIGHT : 32'-0± (SINGLE STORY) MAX.
BUILDING AREA = (NEW 2800) OFFICE = ~~2400~~ SQ FT 2800
(NEW 2800) WAREHOUSE = ~~5000~~ SQ FT 2800
TOTAL SQ FT = ~~5000~~ SQ FT. 5000
LESS THAN 18000 SQ FT OKAY FOR ~~TYPE II NR~~ TYPE III - 1hr

NOTE : POST MAX OCCUPANCY SIGN " THE MAXIMUM CAPACITY APPROVED FOR THIS AREA IS

OFFICE 28 PERSONS
WAREHOUSE 20 PERSONS
54 TOTAL PERSONS.

CALCULATION : OFFICE $\frac{2800}{100} = 28.0$
WAREHOUSE $\frac{2800}{500} = 20$

1. THIS BUILDING IS
AND USABLE BY
AND DIMENSIONS
ANSI A117.1 STAN
OSSC / UBC CHAP
2. PARKING SIGNAG
THE OSSC / UBC.



TOILET ROOM ELEVATIONS F/A2

1/4" = 1'-0

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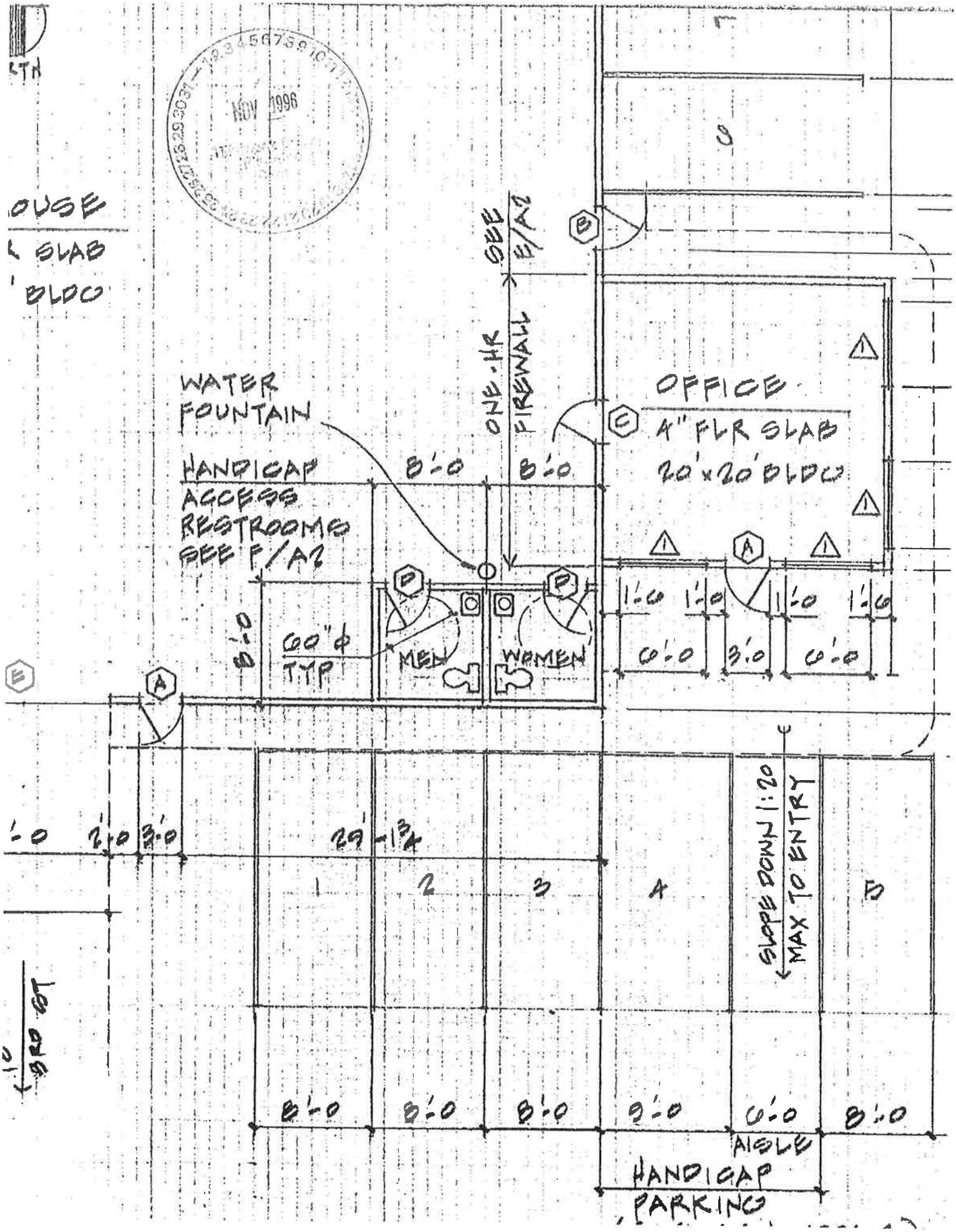
NOV 1996
OUSE
SLAB
BLDG
WATER FOUNTAIN
HANDICAP ACCESS RESTROOMS SEE F/A2
ONE-HR FIREWALL
SEE E/A2
OFFICE
4" FLR SLAB
20'x20' BLDG
8'-0
8'-0
60"ϕ TYP
MEN
WOMEN
1'-0
6'-0
3'-0
6'-0
29'-1¾
1
2
3
4
5
SLOPE DOWN 1:20 MAX TO ENTRY
8'-0
8'-0
8'-0
9'-0
6'-0
8'-0
AISLE
HANDICAP PARKING
3RD ST