

EDWARD A. GREBE, P.E.
 2006 Two Tree Lane
 Wauwatosa, Wisconsin 53213
 414-476-8432



MILLER BREWING CO.

SITE PLAN

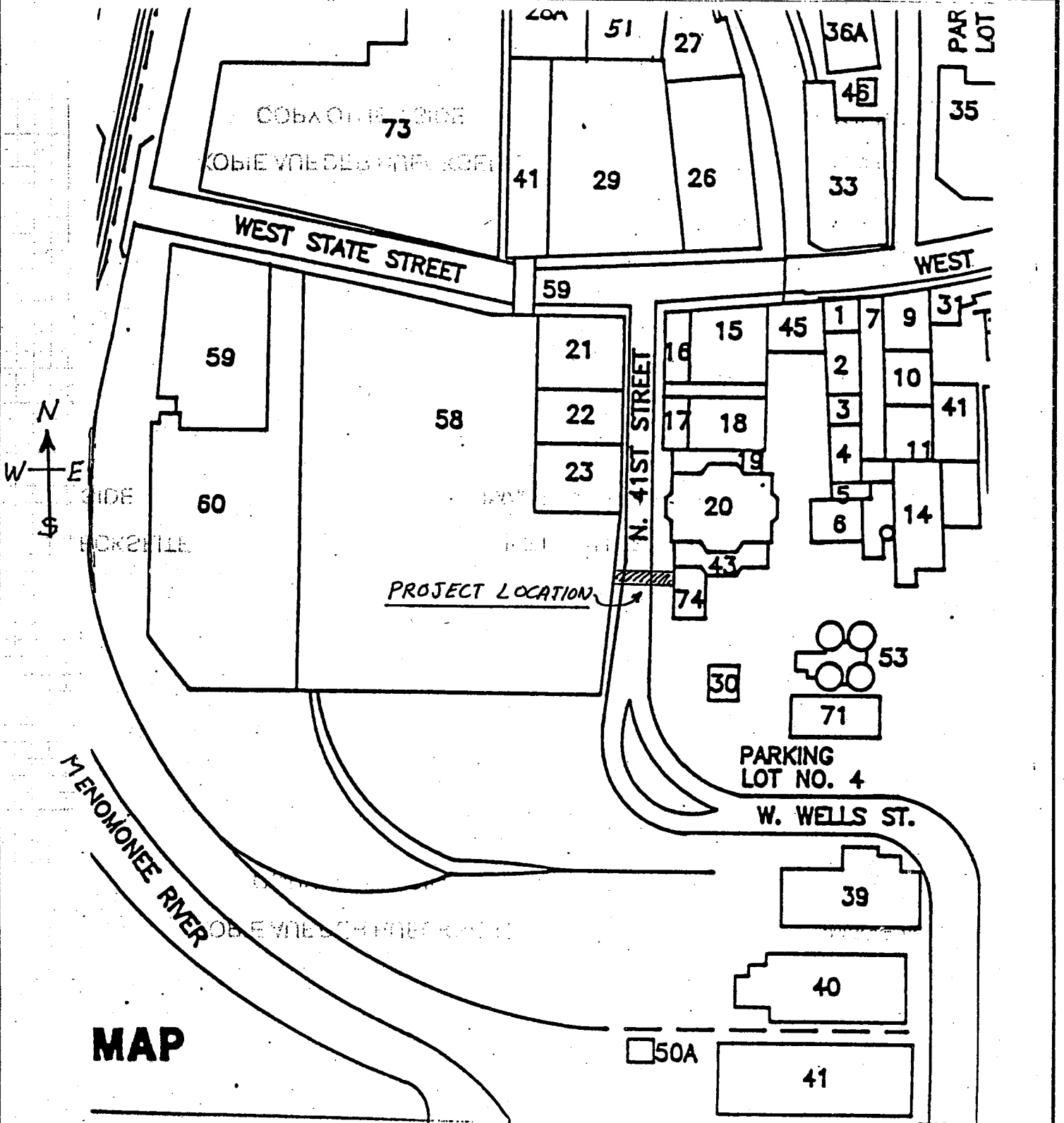
Sheet 51 of _____

Job No. _____

By _____ Date _____

Made EAG 6-30-03

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ENCLOSURE - PIPE BRIDGE

ACROSS 41ST ST. BLDG #53 to #74

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By _____ Date: _____

Made EAG 7-5-03

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DRAWING SUMMARY

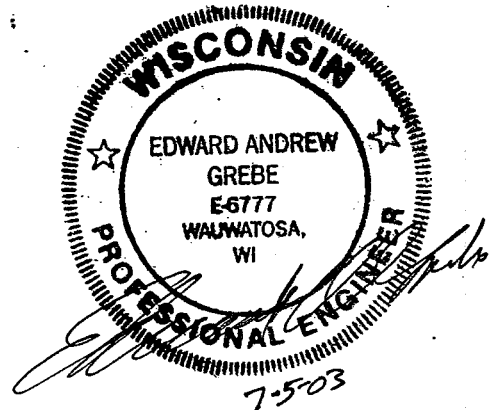
SITE LOCATION PLAN	S1	6-30-03
PLAN VIEW & SECTION	S2	7-5-03
ENLARGED PLAN & ELEVATION AT EAST END	S3	6-30-03
SECTIONS AND DETAILS	S4	6-30-03
SECTION C-C	S5	6-30-03

CALCULATIONS

ORIGINAL CALC.	C1	5-18-87
d ₁	C2	5-18-87
d ₂	C2A	6-7-87
REVIEW OF BRIDGE LOADS	C3	7-1-03

REFERENCE DRAWINGS.

ELEVATION - CERAMIC FILTER ROOM BRIDGE 174-02-100R 9-3-87



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PLAN - PIPE BRIDGE ACROSS 41ST ST.

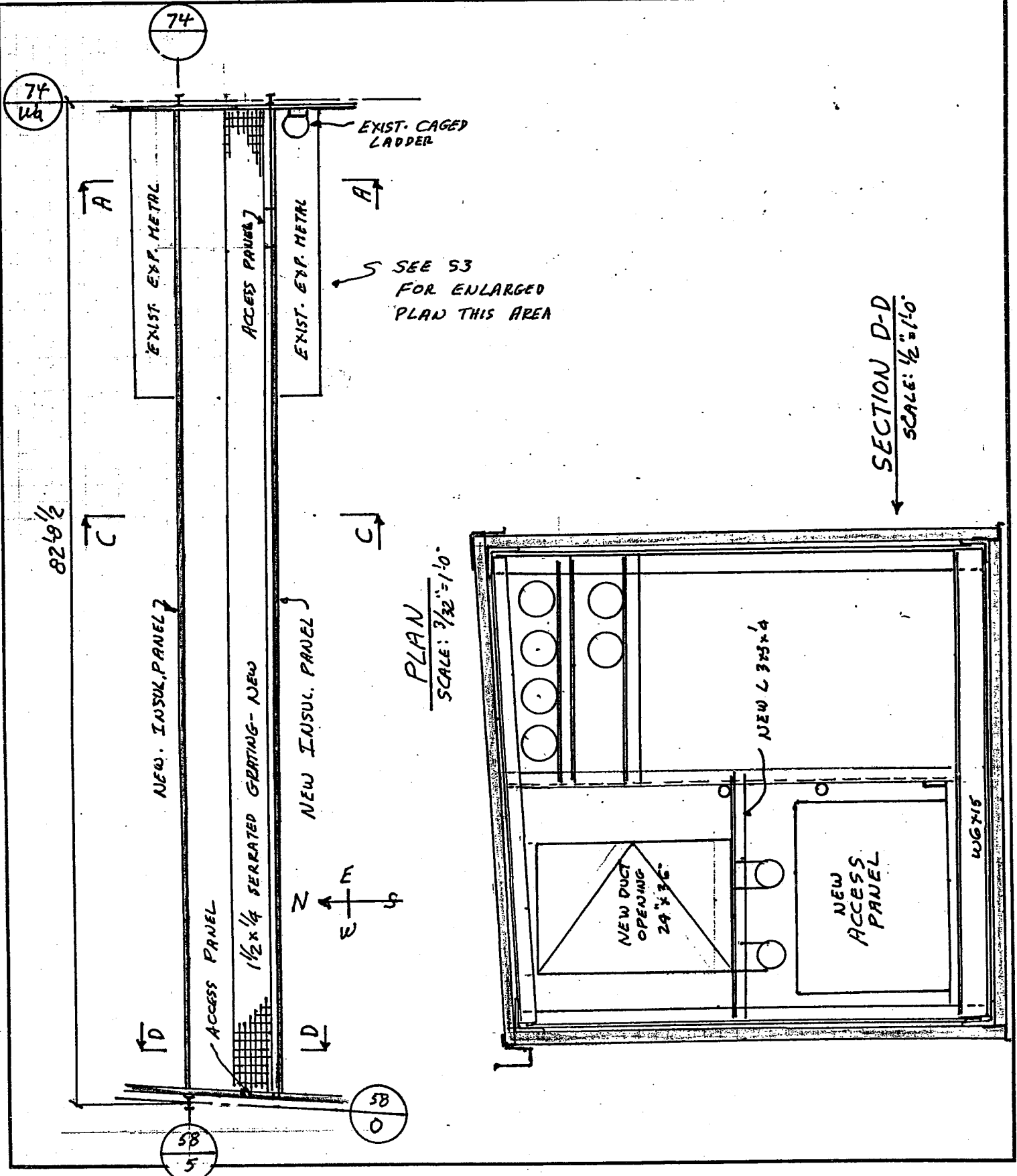
Sheet S2 of _____

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By _____ Date _____

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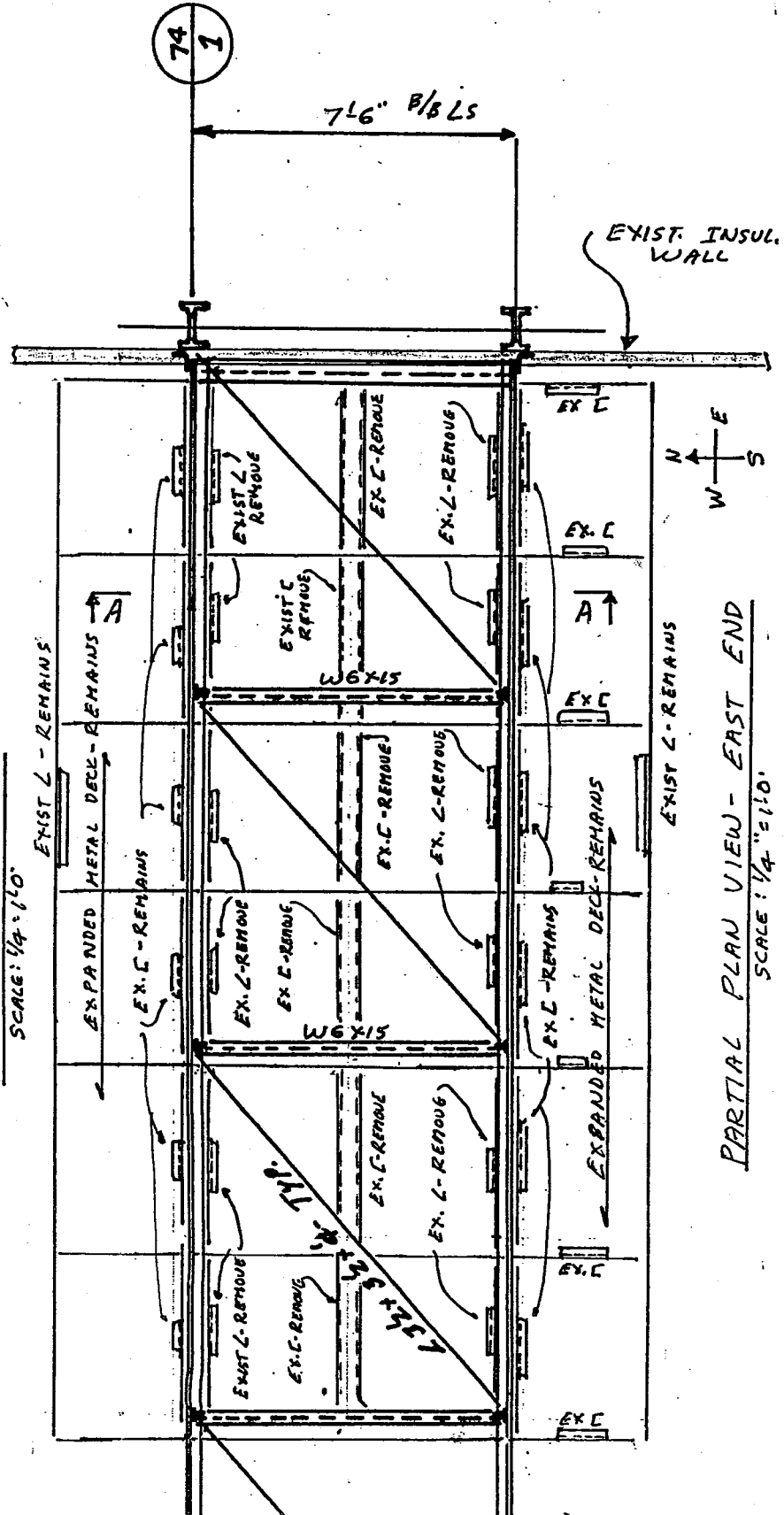
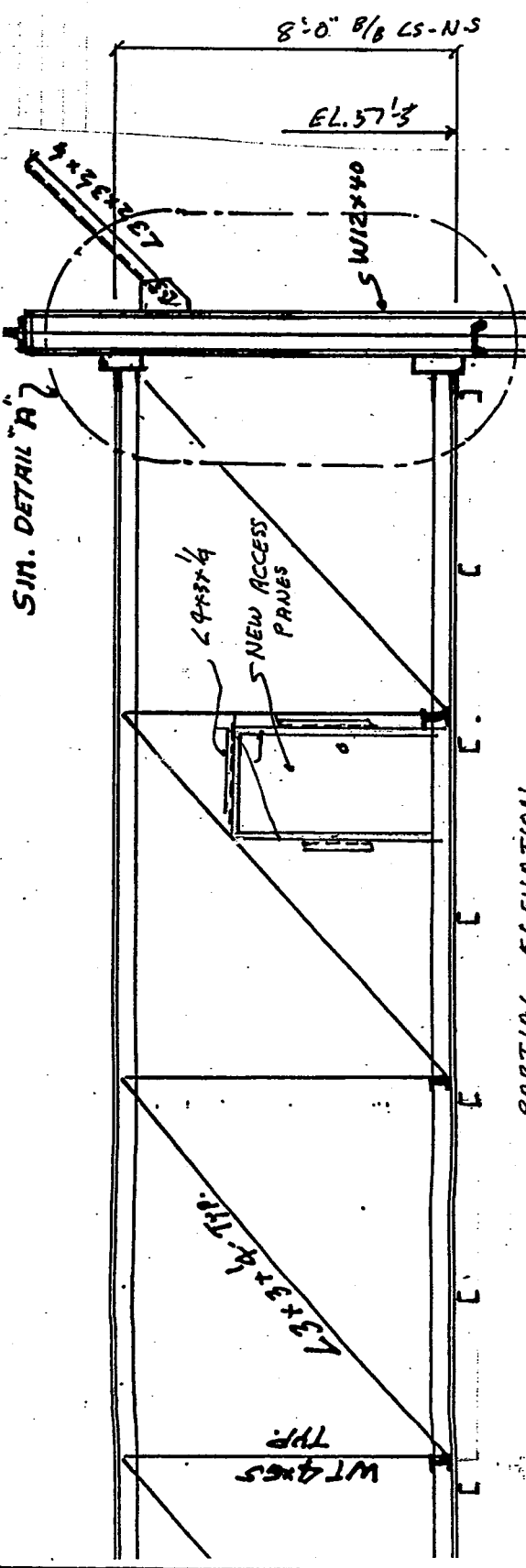
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EXIST. PLATFORM - EAST END OF BRIDGE

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PARTIAL ELEVATION
 SCALE: 3/4" = 1'-0"

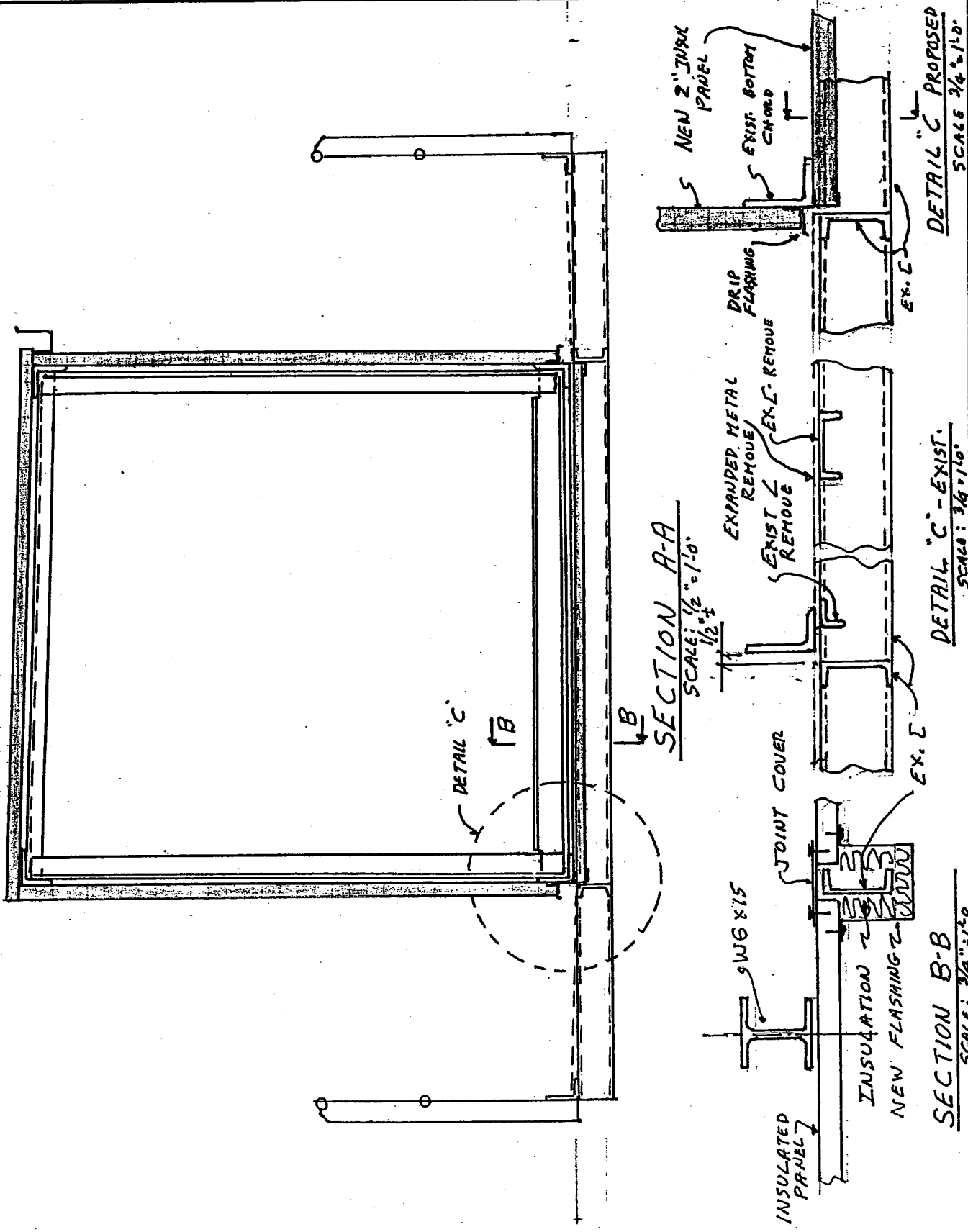
PARTIAL PLAN VIEW - EAST END
 SCALE: 1/4" = 1'-0"

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SECTION A-A
 SCALE: 1/2" = 1'-0"

DETAIL C - EXIST.
 SCALE: 3/4" = 1'-0"

DETAIL C PROPOSED
 SCALE: 3/4" = 1'-0"

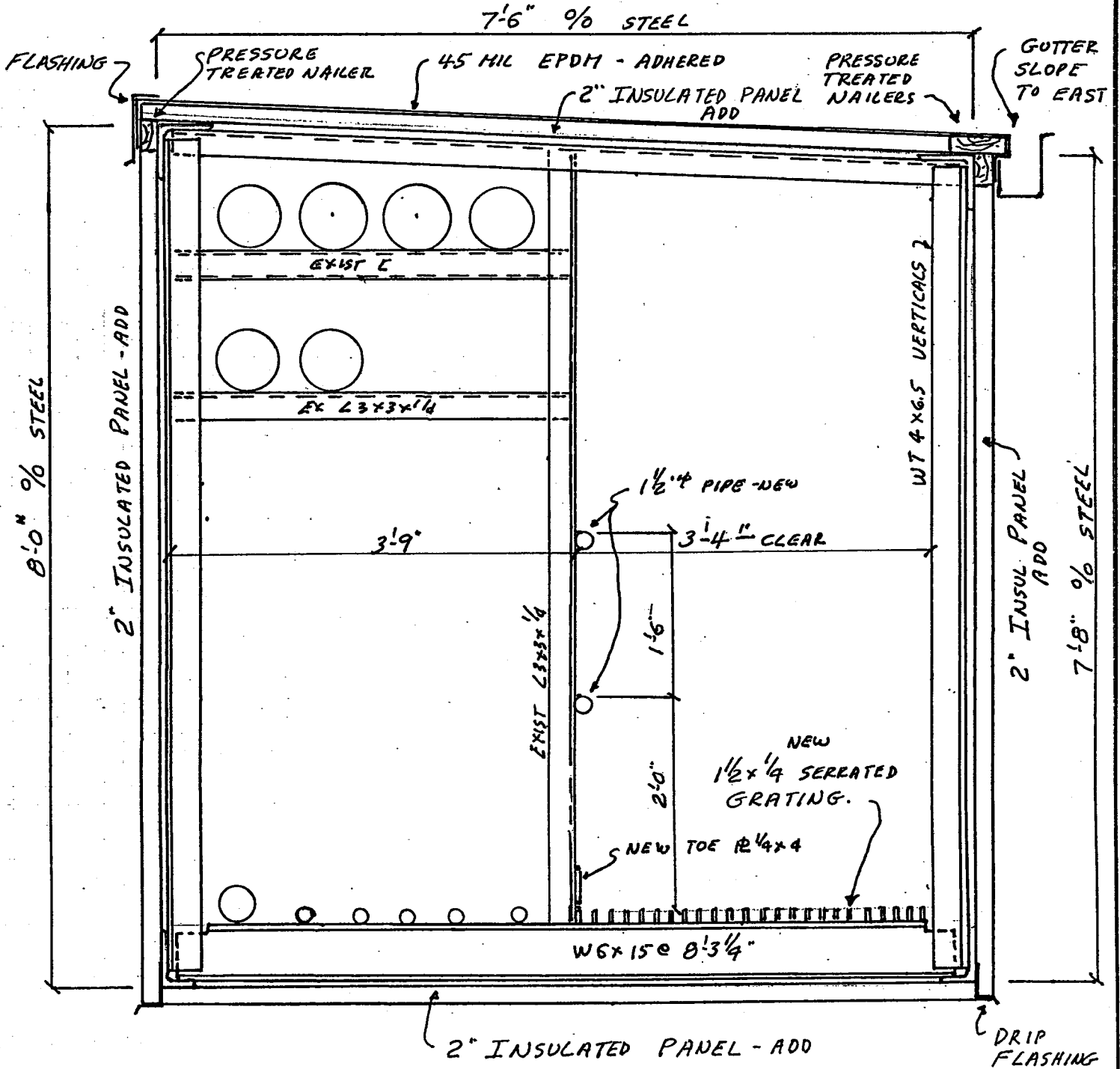
SECTION B-B
 SCALE: 3/4" = 1'-0"

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 ENCLOSURE - BRIDGE AT CERAMIC
 FILTER BLDG. * 74

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SECTION C-C LOOKING EAST THRU BRIDGE
 SCALE: 3/4" = 1'-0"



MILLER BREWING

MILWAUKEE

BRIDGE - 41ST ST.

Sheet C1 of _____

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By _____ Date _____

Made EAG 5-18-87

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BRIDGE LOADS

ROOF PANEL	5.0 psf.
FLOOR PANEL	5.0 psf.
WALL PANEL 2x8'5 1/8	10.0 psf.
BOX TRUSS RD PIP/B	15.0 psf.
GRATING	5.0 psf.
RACKING	5.0 psf.
DEAL LOAD	45.0 psf
SNOW LOAD	30.0 psf
WALKWAY 60x3/8'	= 25.0 psf
PIPING 200/8'	= 25.0 psf
TOTAL	125.0 psf

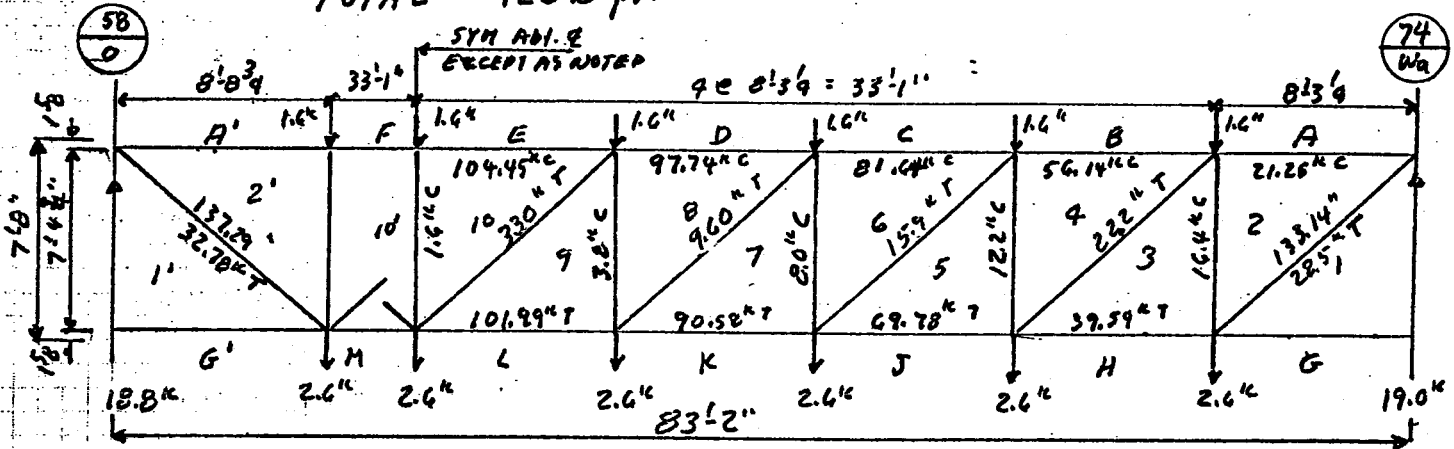
Top chord = $(5.0 + 1/2 + 15/2 + 30) 4' \times 8' 3/4$
 = 1.6"

BOTT. CHORD = $(5.0 + 1/2 + 15/2 + 5 + 5 + 50) 4' \times 18' 3/4$
 = 2.6"

$R_b = 9(1.6 + 2.6) \times 41' 4 1/4 / 83' 2" = 18.8''$

$M_E = \frac{WL^2}{12} = (5.0 + 30.0) 4' \times 8.35^2 = 9.76''$

$M_I = \frac{WL^2}{24} = 4.88''$



TOP CHORD

TRT $\angle 6 \times 6 \times 1/2$
 $\frac{l}{A} = \frac{99.25}{11.86} = 53.36$
 $F_a = 18.05 \text{ ksi}$ $F_c = 52.5$
 $f_a = \frac{104.45}{5.75} = 18.16 \text{ ksi}$
 $f_b = \frac{1/4 \times 4.88 \times 168}{19.9} = .41 \text{ ksi}$

$\frac{18.16}{18.05} + \frac{.85 \times .41}{(1 - \frac{18.16}{52.5})^2} = 1.006 + \frac{.34}{14.39}$
 = 1.006 + .024
 = 1.03 \times 1.0

USE $\angle 6 \times 6 \times 1/2$

BOTTOM CHORD

$A_{REQ'D} = \frac{P}{F_c} = \frac{101.99}{22} = 4.64 \text{ in}^2$

USE $\angle 6 \times 4 \times 1/2 = 4.75 \text{ in}^2$

MEMBER 2-3 $P = 16.4 \text{ k}$
 $l = 88.75'$ $\frac{l}{A} = \frac{88.75}{.843} = 105.3$
 $F_a = 12.29 \text{ ksi}$ $P = F_a \cdot A = 12.29 \times 1.92$
 $P = 23.6 \text{ k} > 16.4$

USE WT 4x6.5

MEMBER 1-2 $P = 28.5''$

$A_{REQ'D} = \frac{28.5}{22} = 1.30 \text{ in}^2$
 $\angle 3 \times 3 \times 1/4 = 1.44 \text{ in}^2$

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MILWAUKEE

BRIDGE 41ST ST.

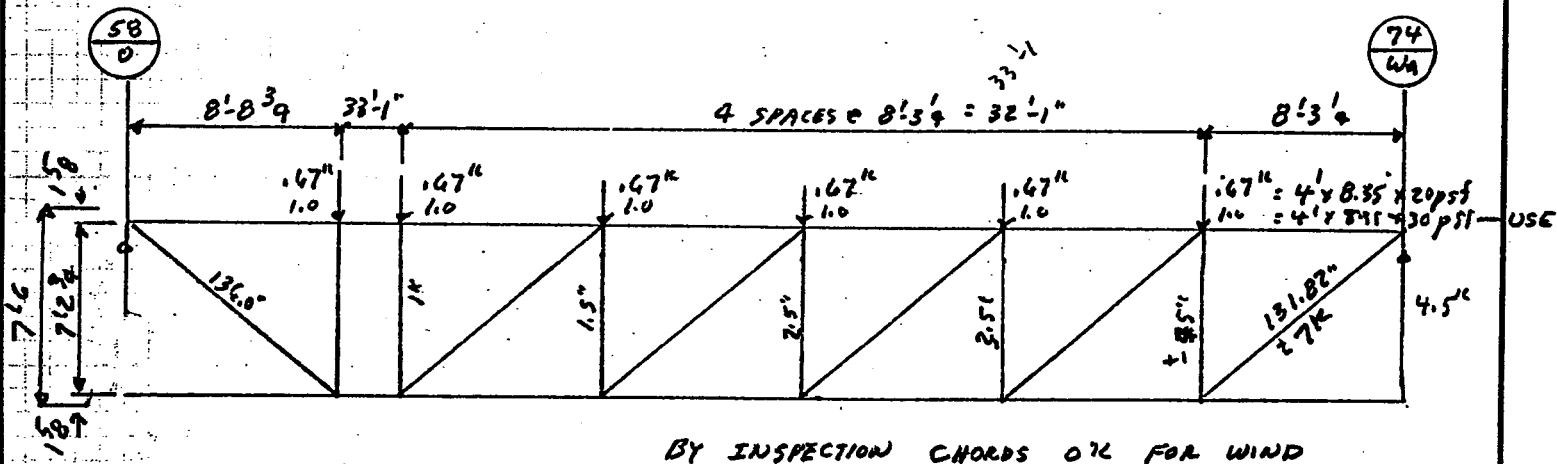
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BY INSPECTION CHORDS OK FOR WIND

DIAGONAL

$L = 131.82''$ $P = 7^k$

$A_{min} = \frac{131.82}{200} = .66$ in

USE $\angle 3\frac{1}{2} \times 3\frac{1}{2} \times \frac{5}{8} = .68$ in

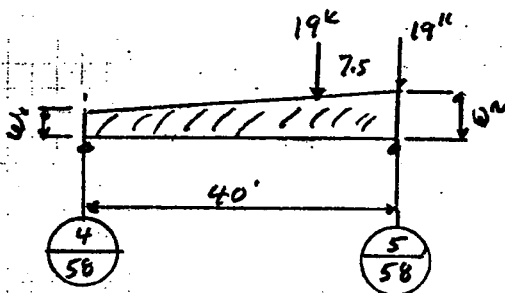
UPPER HORIZ MEMBER

$L = 90''$ $P = 4.5^k$

$A_{min} = \frac{90}{200} = .45$ in

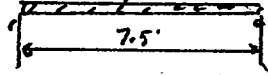
USE $\angle 3 \times 3 \times \frac{1}{4} = .59$ in

RAFTER - BLDG #5B



FLOOR BEAM

$W = 55 \text{ psf} \times 8.35 = 460 \text{ plf}$



$M = .46 \times 7.5^2 / 8 = 3.23^k$

USE $W 6 \times 15 = 9.72 \text{ in}^3$

$W_1 = 3\frac{1}{2} \times 50 \text{ psf} + 30' \times 2.33 \text{ plf} = 125 \text{ plf} + 70 = 195 \text{ plf}$

$W_2 = 3\frac{1}{2} \times 50 \text{ psf} + 30' \times 2.33 \text{ plf} = 175 \text{ plf} + 70 = 245 \text{ plf}$

$R_5 = \frac{195 \times 40}{2} + \frac{(245-195) \times 40}{3} + \frac{19^k \times 32.5'}{40'} + 19^k = 38.4^k$

$M = 19.4^k \times 7.5' - 2.65 \times 7.5^2 / 2 - .05 \times 7.5^3 / 8 = 0$
 $= 145.5^k - 74.4^k - .74^k = 70.4^k$

$W 10 \times 40 = 136.8^k \approx 139.92^k \therefore \text{OK}$

CHECK COLUMN 0-5

- TRUSS TB = 29.2^k
- Rafter 4 to 5 = 38.4^k
- Rafter 5 to 6 = $\frac{6.0^k}{73.6^k}$

$\therefore \text{OK}$

CAISSON AT 0-5

- COLUMN LOAD 73.6^k
- FOUN. WALL $\frac{40.0^k}{113.6^k} < 120^k$

$\therefore \text{OK}$

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MILWAUKEE, WI

BRIDGE - 41ST ST

Sheet C2A of _____

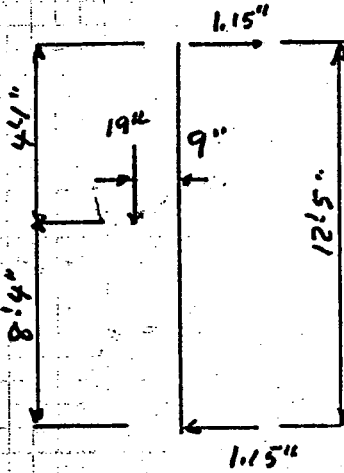
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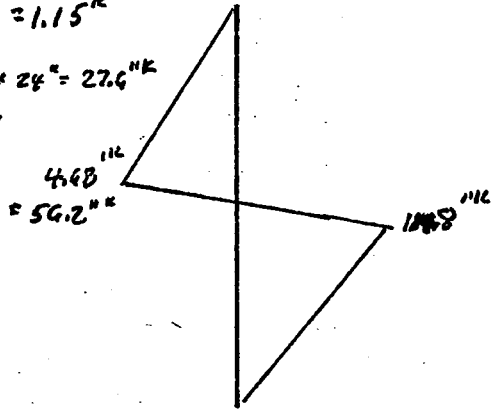
Support Post Liner We



$$C = T = 19^k \times 9'' / 149 = 1.15^k$$

$$M = 1.15'' \times 24'' = 27.6''^k$$

Bottom of Roller



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BRIDGE - 91ST ST.

REVIEW OF LOADS

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BOX TRUSS

TOP CHORDS $2 \times 19.6 \text{ plf} = 39.2 \text{ plf}$
 BOTTOM CHORD $2 \times 16.6 \text{ plf} = 33.2 \text{ plf}$
 TOP - VERT. $49 \text{ plf} \times 7.5 / 8.25 = 4.45 \text{ plf}$
 TOP - DIAG. $5.8 \text{ plf} \times 1.49 = 8.63 \text{ plf}$
 BUTT - VERT $15 \text{ plf} \times 7.5 / 8.25 = 13.60 \text{ plf}$
 BUTT DIAG $5.8 \text{ plf} \times 1.49 = 8.63 \text{ plf}$
 SIDE - VERT $6.5 \text{ plf} \times (80 + 267) \times \frac{1}{8.25} = 12.34 \text{ plf}$
 SIDE - DIAG $4.9 \text{ plf} \times 2 \times 1.377 = 13.50 \text{ plf}$
 132.75 plf.

BRIDGE LOADS

ROOF PANEL & EPDM 2.75 psf
 FLOOR PANEL 2.40 psf.
 WALL PANELS $(8.0 + 7.67) 2.4 \text{ PSF} / 7.83 = 2.40 \text{ psf}$.
 BOX TRUSS $133 \text{ PLF} / 7.83 = 17.0 \text{ psf}$.
 1/2" x 1/4" GRATING + TOE PL $= \text{psf}$.
 PIPE SUPPORTS $(7.83 + 3.67) 5.8 \text{ plf} / 7.83 = 8.5 \text{ psf}$.

DEAD LOAD = 43.0 psf < 45 PSF ASSUMED \therefore THEREFORE DEAD LOAD 0'K

SNOW LOAD = 30.0 psf

WALKWAY

$40 \text{ PSF} \times 3.33' \times \frac{5.42'}{7.5'} \times \frac{2}{7.83'} = 24.6 \text{ psf}$

PIPING

$200 \text{ PLF} \times \frac{1.83'}{7.5'} \times \frac{2}{7.83'} = 12.5 \text{ psf}$

110.1 psf < 125 PSF - ASSUMED