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JOB 06-13
SHEET NO. 1 OF
CALCULATED BY MDJ DATE 10-31-06
CHECKED BY DATE
SCALE

— CALCULATIONS —

1. DECK PLATING (3/8" PLT)

$t = 0.00218\, S\sqrt{h} + 0.06$

$S = 12"$

$h = lb/FT^2/45$

$h = \left(\frac{0.375 - 0.06}{0.00218 \times 12}\right)^2$

$= 145.0$

AND SINCE THE UNIFORMLY DISTRIBUTED LOAD IN $lbs/FT^2 = h \times 45$, THE ALLOWABLE LOAD IN PSF IS 45×145 OR

6,525 PSF

2. DECK LONG'L. (L 5×3×1/2)

ALLOW LOADING = $SM_{AVAILABLE} \times 21{,}600 \times 12 / WL^2$

$SM_A = 9.29\,IN^3$

$WL = lbs/IN$

$S = 1.0\,FT$

$L = 60\,IN.$

ALLOW $\sigma = 21{,}600\,PSI$

$W = 668.88\ lbs/IN$

THEN PSF $= 668.88 \times 60IN/5FT^2$

$= 8{,}027$ PSF

3. TRANSV. TRUSS DECK CHORD

ALLOW LOADING = $SM_{AVAILABLE} \times 21{,}600 \times 12 / WL^2$

$SM_A = 9.03$

$WL = lbs/IN$

$S = 5.0\,FT$

$L = 32.1\,IN$

ALLOW $\sigma = 21{,}600\,PSI$

$W = 2{,}271.5\ lbs/IN.$

THEN PSF $= 2271.5 \times 32.1 / 2.675 \times 5$

$= 5{,}451.6$ PSF

4. TRANSV. TRUSS VERTICAL STANCHIONS

WL = LOAD lbs.

L 5×5×3/8:

AREA $= 3.61\,IN^2$

r (RADIUS OF GYRATION) $= 0.99\,IN$

$KL = 58\,IN$

$KL/r = 58.59$

ALLOW $\sigma = 17{,}567\,PSI$

ALLOW $W = 17{,}567 \times 3.61 / 5 \times 2.675$

$= 4{,}741$ PSF

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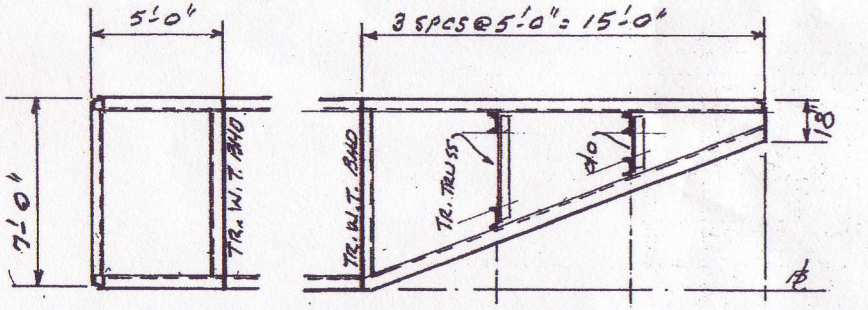
ALLOWABLE DECK LOAD CALCULATIONS ON A 140' x 45' x 7'-0" DECK BARGE FOR BREATHWIT MARINE CONTRACTORS

SCOPE:
- DETERMINE MAXIMUM ALLOWABLE UNIFORM DECK LOADING (POUNDS PER FT^2 - PSF) BASED UPON AISC ALLOWABLE STRESS.

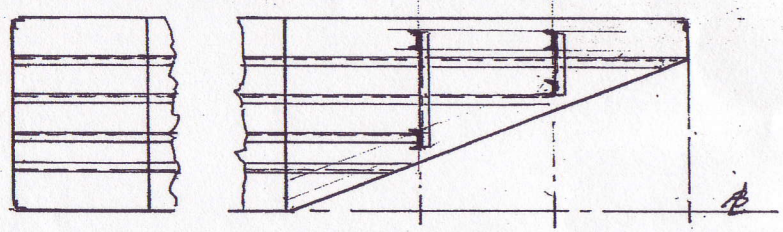
DISCUSSION:
- THE MAXIMUM ALLOWABLE DECK LOADING WILL BE DETERMINED BY EVALUATING THE GOVERNING STRUCTURAL MEMBERS: DECK PLATING; DECK LONG'LS; TRANSV. TRUSS' DECK CHORD & VERTICAL STANCHIONS.

CONCLUSION:

BASED UPON THE CALCULATIONS ON PAGE 1, THE MAXIMUM ALLOWABLE UNIFORM DECK LOADING IS **4,741** PSF, LIMITED BY THE TRANSV. TRUSS VERTICAL STANCHIONS



LONG'L ELEVATION



℄ ELEVATION (SIDE SHELL SIMILAR)

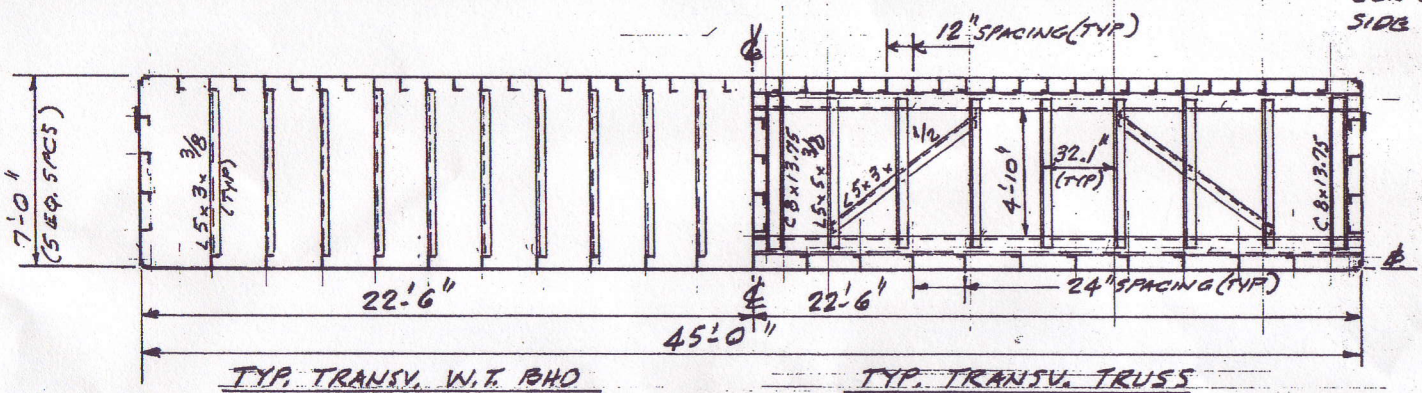
TABLE OF SCANTLINGS.

PLATING

BOTT. PLT	= 3/8"
SIDE "	= 3/8"
DECK "	= 3/8"
TRANSV. BHD. PLT	= 5/16" (MIN)
LONG'L ℄ " "	= 5/16" (MIN)
STERN.	= 3/8"
HEADLOG PLT	= 1/2" (MIN)

SHAPES

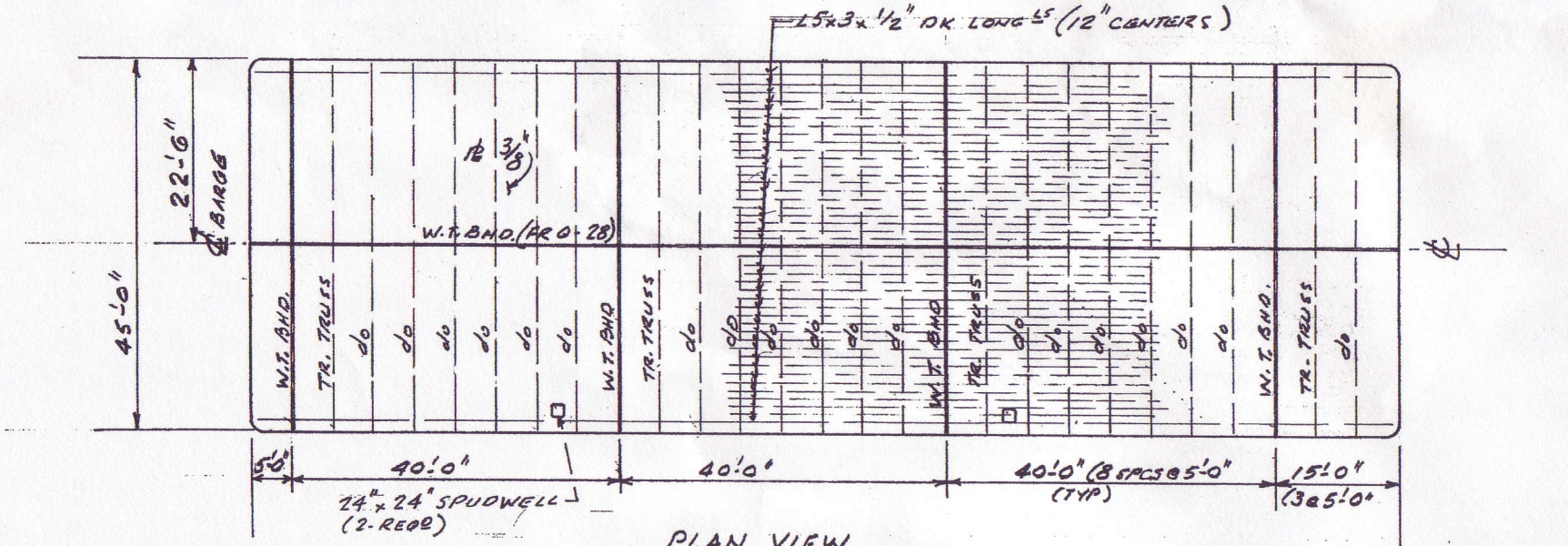
BOTT. LONG'LS	= L 5 x 3 x 3/8
SIDE "	= do
DECK "	= L 5 x 3 x 1/2
℄ BHD "	= L 5 x 3 x 3/8
TRANSV. BHD. VERT'LS	= do
TR. TRUSS BOTT. CHORD	= C 8 x 13.75#
" " DECK "	= do
" " ℄ & SIDE CHORD	= do
" " VERT'L STANCH	= L 5 x 5 x 3/8
" " DIAGONALS	= L 5 x 3 x 1/2
STERN VERT'LS	= L 5 x 3 x 3/8
GUN'L & BILGE LS	= L 3 x 3 x 1/2
SIDE RUB BAR	= F.B. 6 x 1/2



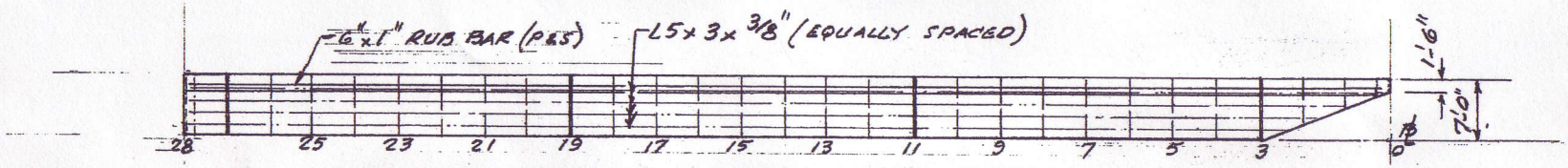
TYP. TRANSV. W.T. BHD TYP. TRANSV. TRUSS

MIDSHIP SECTION

M. DAN JONES & ASSOC.
BREATHWIT MARINE CONTRACTORS LTD.
140' x 45'-0" x 7'-0" DECK BARGE
MIDSHIP SECTION & ELEVATIONS
DWG NO. 06-13-32 ALT. 0.



PLAN VIEW



SIDE ELEVATION

M. DAN JONES & ASSOC.
BREATHWIT MARINE CONTRACTORS, LPD
140' x 45' x 7'-0" DECK BARGE
PLAN & ELEVATION.
DWG. NO. 06-13-S1 ALT. 0