

NO ASPHALT OPTION 963  
8-13-11

INV RATIO U1L3 =  $\frac{44.76 - 43.27}{27.6} = \frac{1.49}{27.6} = 0.05 \Rightarrow 0.71 \Rightarrow 10.7 \text{ Ton}$   
 OPP RATIO U1L3 =  $\frac{61.03 - 43.27}{27.6} = \frac{17.76}{27.6} = 0.64 \Rightarrow 19.5 \text{ Ton}$

INV RATIO U2L4 =  $\frac{35.75 - 26.1}{23.7} = \frac{9.65}{23.7} = 0.41 \Rightarrow 6.1 \text{ Ton}$

OPP RATIO U2L4 =  $\frac{48.75 - 26.1}{23.7} = \frac{22.65}{23.7} = 0.96 \Rightarrow 14.3 \text{ Ton}$

INV RATIO U3L5 =  $\frac{25.02 - 8.74}{19.83} = \frac{16.28}{19.83} = 0.82 \Rightarrow 12.3 \text{ Ton}$

OPP RATIO U3L5 =  $\frac{34.12 - 8.74}{19.83} = \frac{25.38}{19.83} = 1.28 \Rightarrow 19.2 \text{ Ton}$

INV + OPP RATIO OF L3U5 = 99.9 SINCE NO REVERSES  
 DL OR LL SHEAR EXIST IN PANEL U3U4 THUS  
 INV + OPP RATIO = 99.9

SPI LOADING  $\Rightarrow$  2F1 TRUCK  $\Rightarrow$  15 Ton

U2L4 DL =  $(15.54)(11.66) = 26.1^k$   
 U2L4 LLT =  $(14.31)(11.66) = 23.7^k$  LLT =  $(12.11) \frac{21}{35.24} = 14.23^k$   
 U2L4 DL =  $(18.8)(12.524) = 26.1^k$   
 U2L4 LLT =  $(17.1)(12.524) = 21.7^k$   
 U2L4 LLT =  $(14.31)(11.66) = 23.7^k$   
 U2L4 LLT =  $(12.11) \frac{21}{35.24} = 14.23^k$   
 U2L4 LLT =  $(18.8)(12.524) = 26.1^k$   
 U2L4 LLT =  $(17.1)(12.524) = 21.7^k$   
 U2L4 LLT =  $(14.31)(11.66) = 23.7^k$   
 U2L4 LLT =  $(12.11) \frac{21}{35.24} = 14.23^k$   
 U2L4 LLT =  $(18.8)(12.524) = 26.1^k$   
 U2L4 LLT =  $(17.1)(12.524) = 21.7^k$   
 U2L4 LLT =  $(14.31)(11.66) = 23.7^k$   
 U2L4 LLT =  $(12.11) \frac{21}{35.24} = 14.23^k$   
 U2L4 LLT =  $(18.8)(12.524) = 26.1^k$   
 U2L4 LLT =  $(17.1)(12.524) = 21.7^k$   
 U2L4 LLT =  $(14.31)(11.66) = 23.7^k$   
 U2L4 LLT =  $(12.11) \frac{21}{35.24} = 14.23^k$

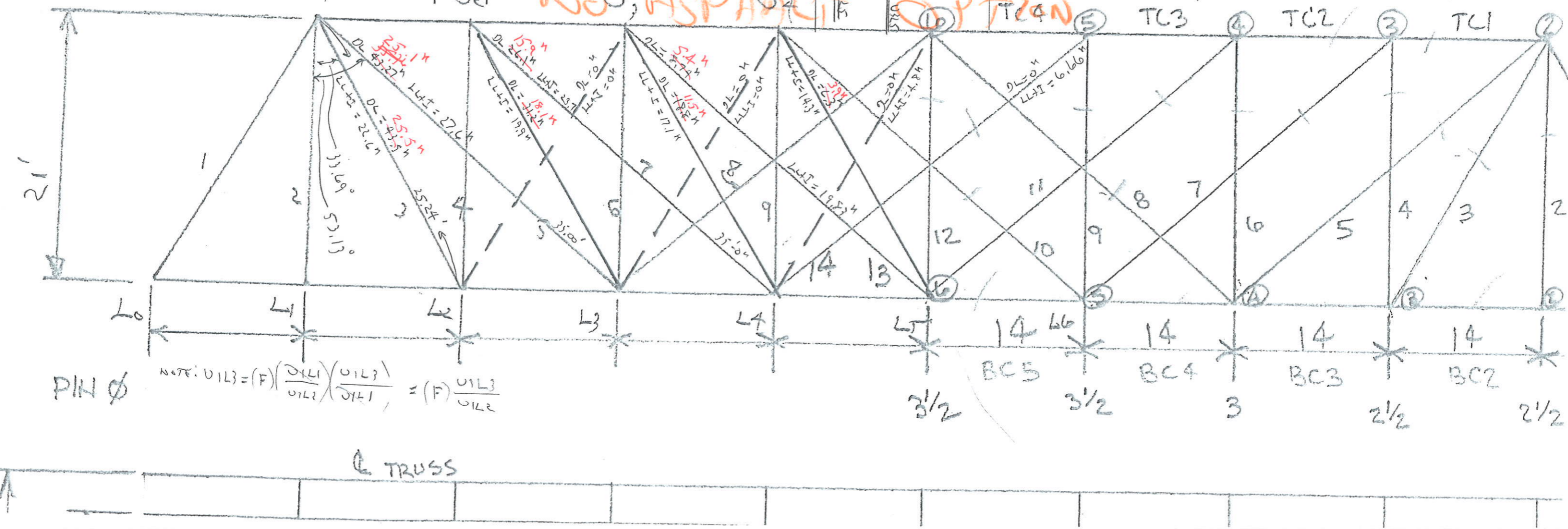
2F1 L RATIO U3L5 INV =  $(0.55)(26.41)(17.7) = 8.74$   
 OPP RATIO U3L5 INV =  $(0.75)(26.41)(17.7) = 19.2 \text{ Ton}$

INV RATIO + OPP RATIO OF L1U5 = 99.9  
 NO REVERSES OR LL SHEAR EXIST IN PANEL U3U4

INV RATIO L4U6 =  $\frac{(5.57)(26)(12.26)}{(4.8)(25.24)} = 0$   
 OPP RATIO L4U6 =  $\frac{(7.5)(26)(12.26)}{(6.6)(25.24)} = 3.69 \Rightarrow 55.3 \text{ Tons}$

INV RATIO L4U6 =  $\frac{18.01 - 0}{6.6} = 2.7 \Rightarrow 40.5 \text{ Tons}$   
 OPP RATIO L4U6 =  $\frac{24.57 - 0}{6.6} = 3.69 \Rightarrow 55.3 \text{ Tons}$

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SP2 LOADING  $\Rightarrow$  3 F1  $\Rightarrow$  23 TONS

$$\text{INV RATIO } U_{1L3} = \frac{44.7^m - 23.1^m}{41.46} = \frac{21.6}{41.46} = 0.52 \Rightarrow 10.9 \text{ Ton}$$

$$\text{OPP RATIO } U_{1L3} = \frac{41.03^m - 23.1^m}{41.46} = \frac{17.93}{41.46} = 0.43 \Rightarrow 9.85 \text{ Ton}$$

$$\text{INV RATIO } U_{2L4} = \frac{35.75^m - 26.1^m}{35.6} = \frac{9.65}{35.6} = 0.27 \Rightarrow 6.27 \text{ Ton}$$

$$\text{OPP RATIO } U_{2L4} = \frac{48.75^m - 26.1^m}{35.6} = \frac{22.65}{35.6} = 0.63 \Rightarrow 14.49 \text{ Ton}$$

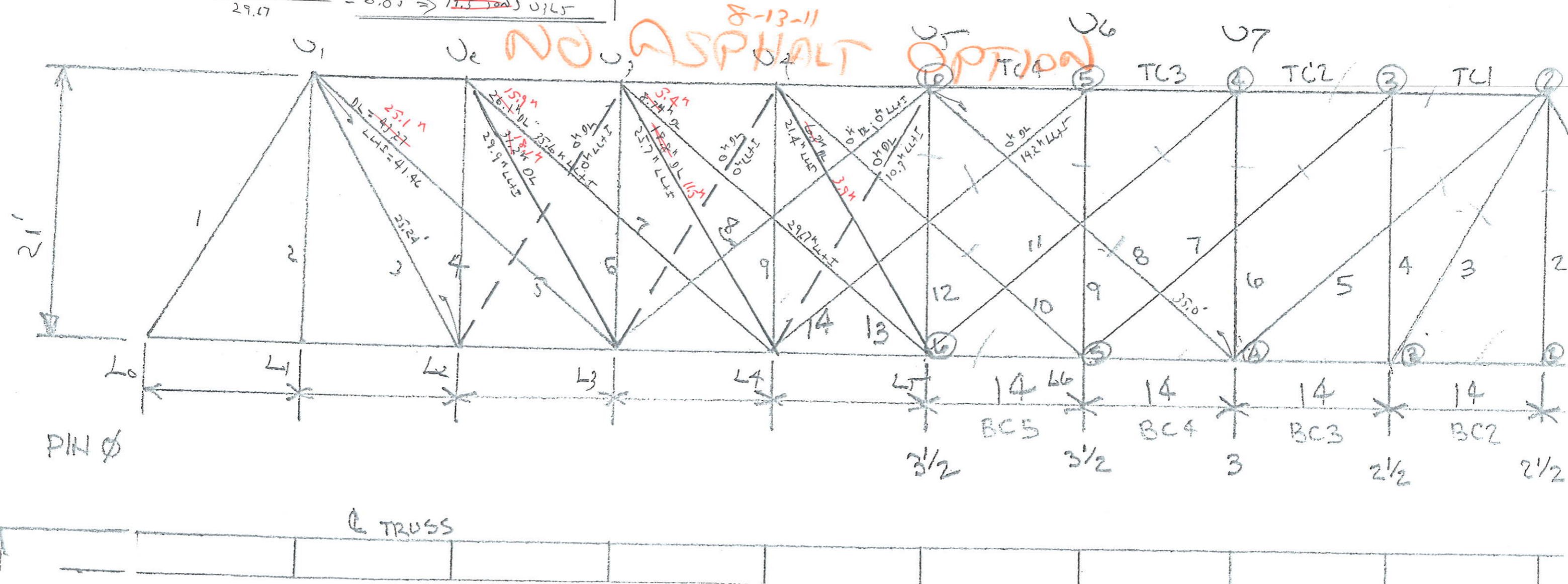
$$\text{INV RATIO } U_{3L5} = \frac{25.02^m - 8.74^m}{29.67} = \frac{16.28}{29.67} = 0.55 \Rightarrow 12.8 \text{ Ton}$$

$$\text{OPP RATIO } U_{3L5} = \frac{34.12^m - 8.74^m}{29.67} = \frac{25.38}{29.67} = 0.85 \Rightarrow 22.37 \text{ Ton}$$

INV RATIO + OPP RATIO L3U5 = 99.9 AS DL & LLT <sup>REVERSE</sup> SHOWN IN PANEL U3U4 = 0

$$\text{INV RATIO } L4U6 = \frac{18.01^m - 0}{14.2^m} = 1.26 \Rightarrow 29 \text{ Ton } L4U6$$

$$\text{OPP RATIO } L4U6 = \frac{24.57^m - 0}{14.2^m} = 1.73 \Rightarrow 39.79 \text{ Ton } L4U6$$



**NO ASPHALT OPTION** 060  
8-13-11

SP3 LOADING  $\Rightarrow$  4F1 TRUCK 27 TONS

INV RATING U1L3 =  $\frac{44.74 - 23.1}{47.70} = \frac{0.41}{0.33} \Rightarrow 11.1 \text{ Ton}$   
~~0.84 Ton~~

OPP RATING U1L3 =  $\frac{61.03 - 23.1}{47.7} = \frac{0.70}{0.37} \Rightarrow 20.3 \text{ TONS}$   
~~9.99 Ton~~

INV RATING U2L4 =  $\frac{35.77 - 26.1}{40.77} = \frac{0.48}{0.29} \Rightarrow 13.1 \text{ Ton}$   
~~6.4 Ton~~

OPP RATING U2L4 =  $\frac{48.75 - 26.1}{40.77} = \frac{0.80}{0.55} \Rightarrow 21.7 \text{ Ton}$   
~~15.0 Ton~~

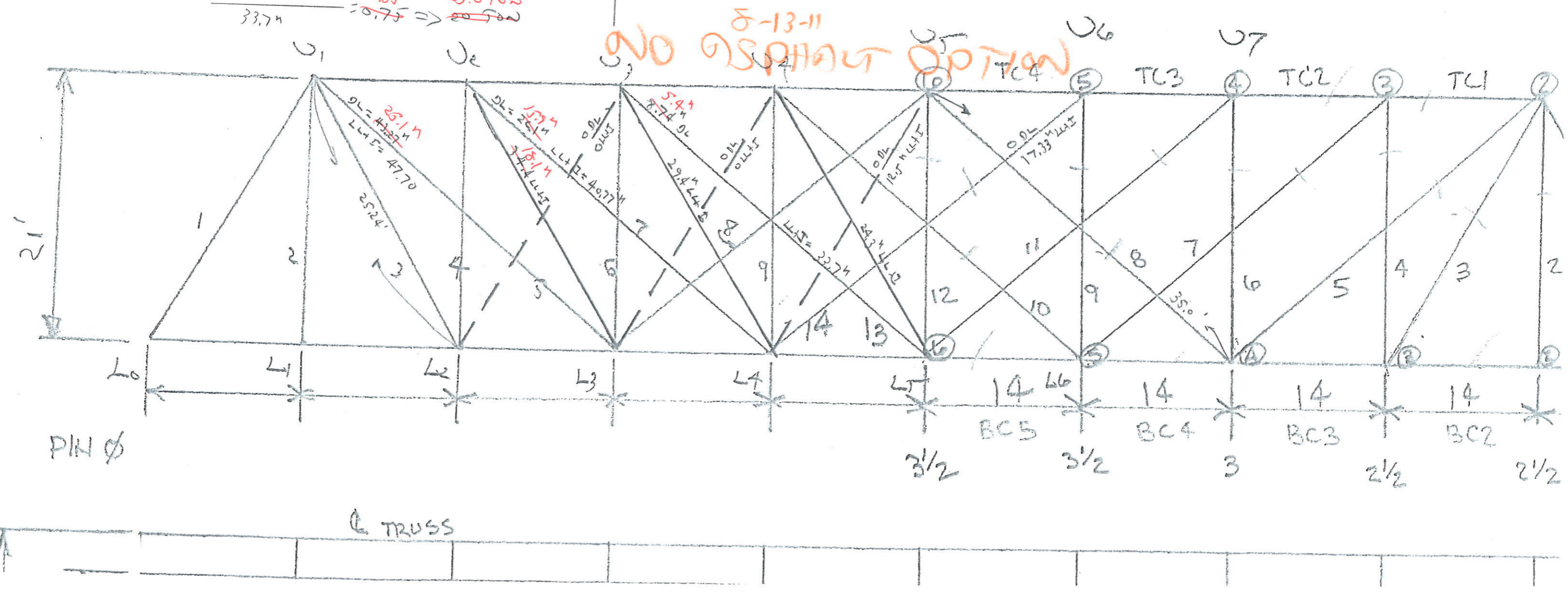
INV RATING U3L5 =  $\frac{25.02 - 8.74}{33.7} = \frac{0.58}{0.48} \Rightarrow 15.7 \text{ Ton}$   
~~13 Ton~~

OPP RATING U3L5 =  $\frac{34.12 - 8.74}{33.7} = \frac{0.85}{0.75} \Rightarrow 23.0 \text{ TONS}$   
~~20 Ton~~

INV + OPP RATING L3U5 = 99.9 AS DL  $\perp$  2L4E SHEAR IN PAEL U3 U4 = 0

INV. RATING L4U6 =  $\frac{18.01 - 0}{17.33} = 1.04 \Rightarrow 28 \text{ Ton}$

OPP RATING L4U6 =  $\frac{24.57 - 0}{17.33} = 1.42 \Rightarrow 38.3 \text{ Ton}$



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8-13-11

SP4 LOADING  $\Rightarrow$  SCI TRUCK

INV RATING U1L3 =  $\frac{44.76 - 43.27}{57.27} = 0.26 \Rightarrow 13.7 \text{ Ton}$   
~~1.04 Ton~~

OPP RATING U1L3 =  $\frac{61.03 - 43.27}{57.27} = 0.31 \Rightarrow 12.4 \text{ Ton}$   
~~25.1 Ton~~

INV RATING U2L4 =  $\frac{35.75 - 26.1}{47} = 0.20 \Rightarrow 8.2 \text{ Ton}$   
~~16.9 Ton~~

OPP RATING U2L4 =  $\frac{47.75 - 26.1}{47} = 0.48 \Rightarrow 19.2 \text{ Ton}$   
~~27.9 Ton~~

INV RATING U3L5 =  $\frac{25.02 - 8.74}{36.33} = 0.448 \Rightarrow 17.9 \text{ Ton}$   
~~21.6 Ton~~

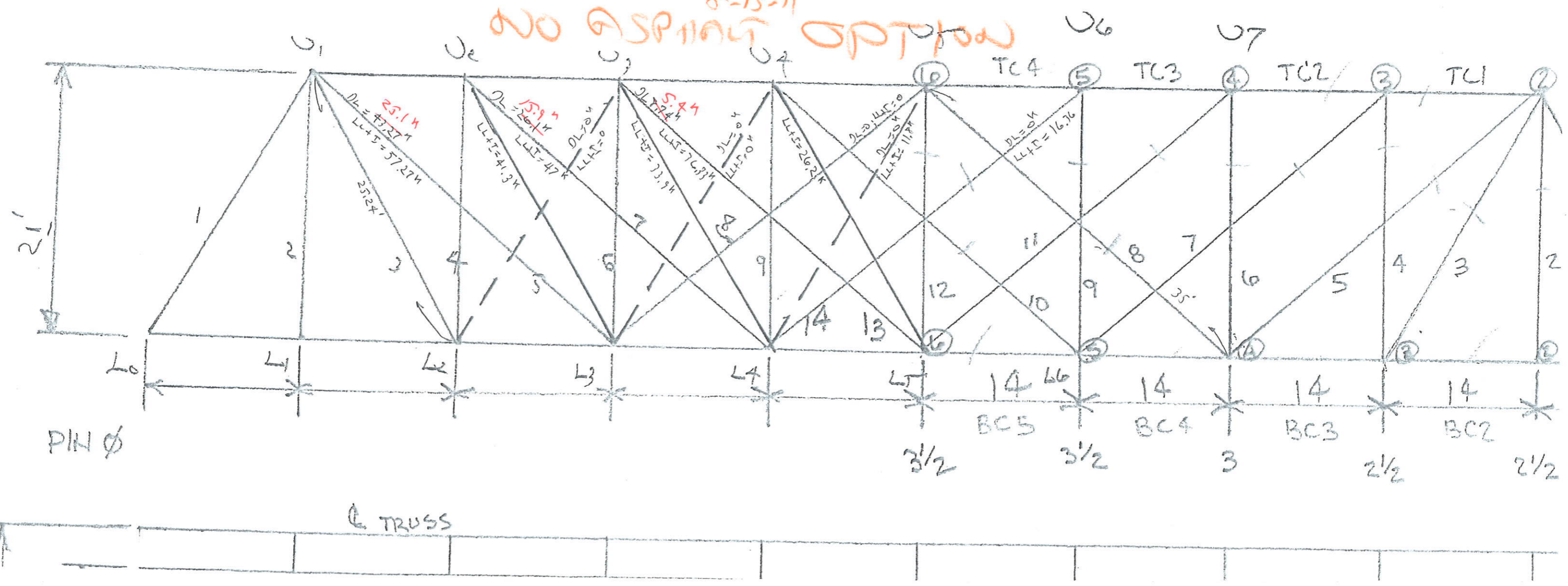
OPP RATING U3L5 =  $\frac{34.12 - 8.74}{36.33} = 0.70 \Rightarrow 28 \text{ Ton}$   
~~31.6 Ton~~

INV! OPP RATING L3U5 = 99.9 AS DL  $\frac{1}{2}$  LHS REVERSE SHEAR = ok in PANEL U3U4

INV RATING L4U6 =  $\frac{18.01 - 0}{16.76} = 1.10 \Rightarrow 44 \text{ Ton}$

OPP RATING L4U6 =  $\frac{24.57 - 0}{16.76} = 1.50 \Rightarrow 60.0 \text{ Ton}$

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DES

SP5 LOADING => H520 DESIGN TRUCK

INV RATING U1L3 =  $\frac{44.76 - 43.27^k}{61.98^k} = \frac{1.49}{61.98} = 0.024 \Rightarrow 0.8 \text{ TON}$   
 SPP RATING U1L3 =  $\frac{41.03 - 43.27^k}{61.98^k} = \frac{-2.24}{61.98} = -0.36 \Rightarrow 16.1 \text{ TON}$

INV RATING U2L4 =  $\frac{35.75 - 26.1^k}{52.8^k} = \frac{9.65}{52.8} = 0.18 \Rightarrow 6.5 \text{ TON}$   
 SPP RATING U2L4 =  $\frac{48.75 - 26.1^k}{52.8^k} = \frac{22.65}{52.8} = 0.43 \Rightarrow 15.5 \text{ TON}$

INV RATING U3L5 =  $\frac{25.02 - 8.74^k}{43.40^k} = \frac{16.28}{43.40} = 0.37 \Rightarrow 13.5 \text{ TONS}$   
 SPP RATING U3L5 =  $\frac{34.12 - 8.74^k}{43.40^k} = \frac{25.38}{43.40} = 0.58 \Rightarrow 20.9 \text{ TONS}$

INV + OPP RATING L3U5 = 99.9 AS DL AND LLT REVERSE SHEAR = 0<sup>k</sup> IN PANEL U3U4

INV RATING L4U6 =  $\frac{18.01 - 0^k}{24.54^k} = 0.73 \Rightarrow 26.3 \text{ TON}$   
 SPP RATING L4U6 =  $\frac{24.57 - 0^k}{24.54^k} = 1.0 \Rightarrow 36 \text{ TON}$

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