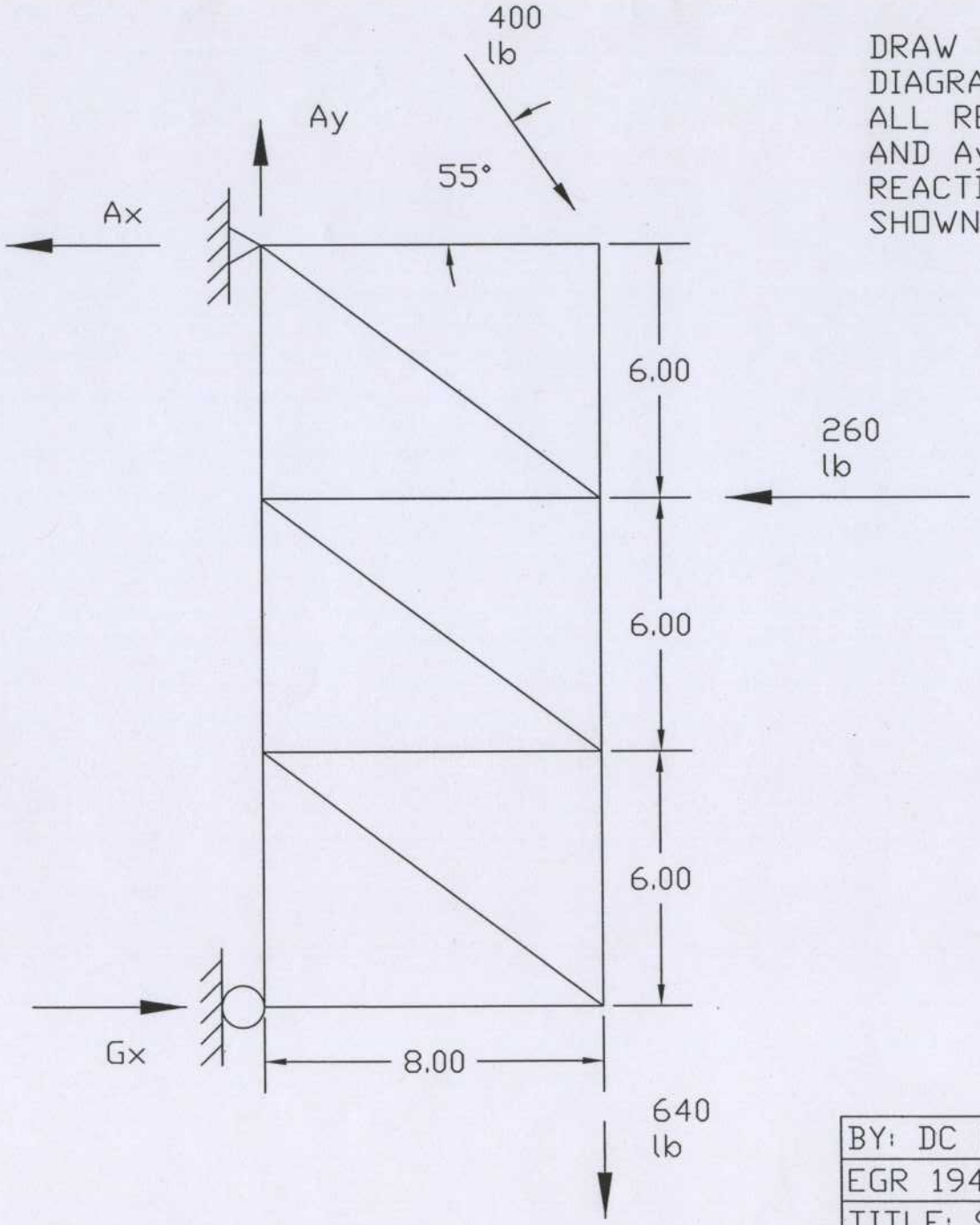
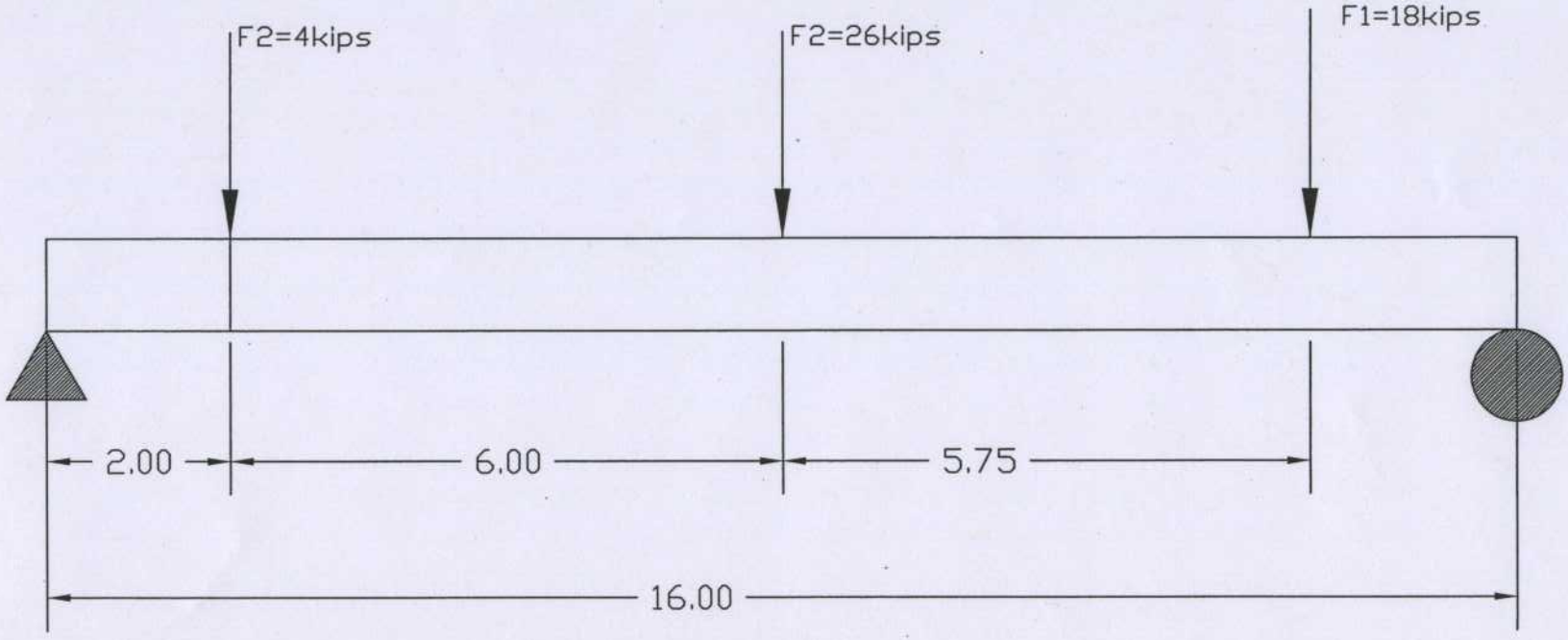


DRAW THE FREE BODY DIAGRAM AND SOLVE FOR ALL REACTIONS (Ax, Gx, AND Ay). NOTE: ASSUME THE REACTION DIRECTIONS AS SHOWN.

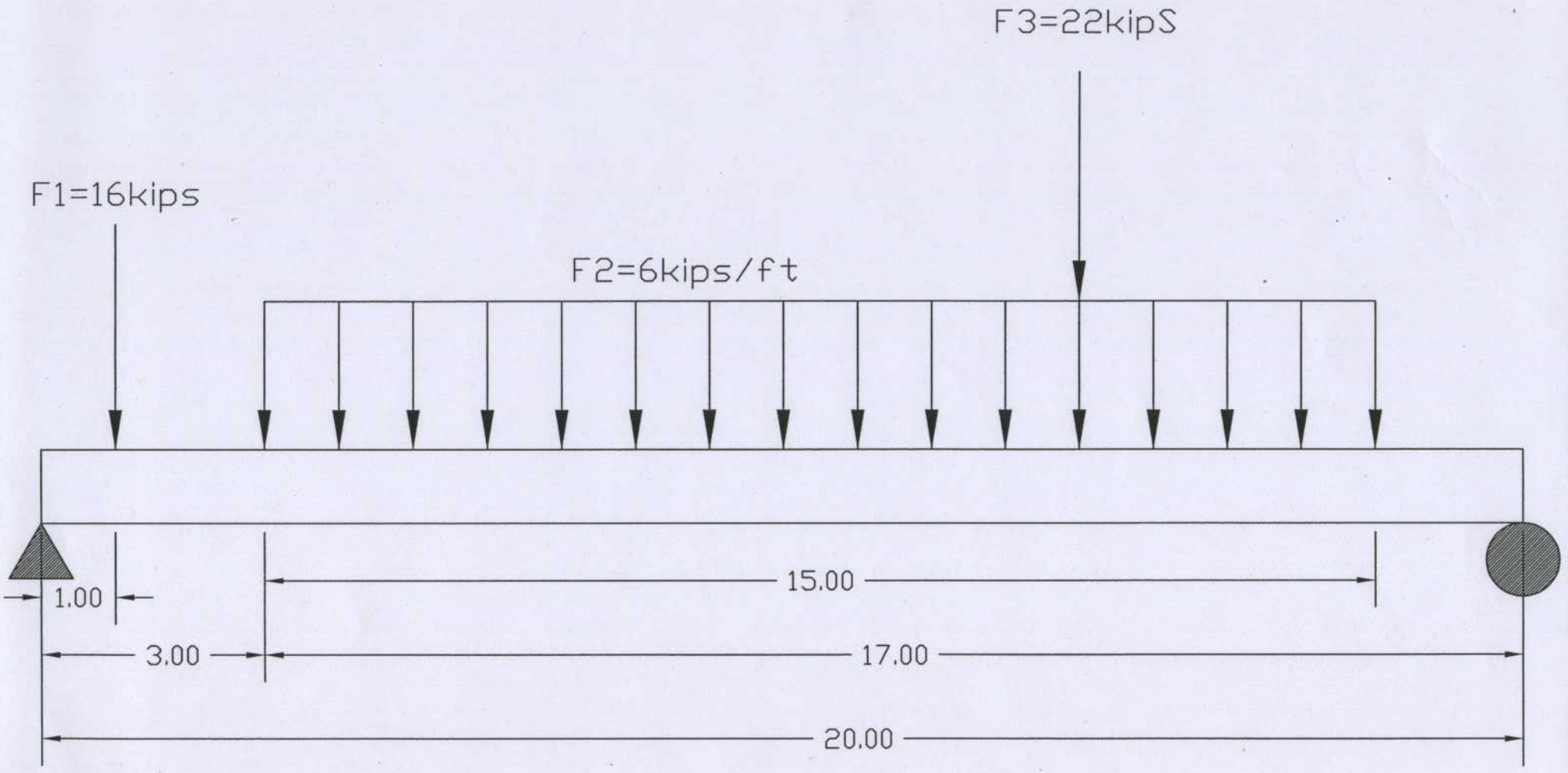
BY: DC EDWARDS	
EGR 194-01	DATE: 062408
TITLE: 94 LAYOUT	
DE_C4 MX	SCALE: 1:4



DRAW COMPLETE SHEAR AND MOMENT DIAGRAMS ON A SEPARATE SHEET FOR THE BEAM AND LOAD DISTRIBUTION ABOVE

A

BY: DC EDWARDS	
EGR 194-01	DATE: 073008
TITLE: 94 LAYOUT	
DE_C4 MX	SCALE: NTS

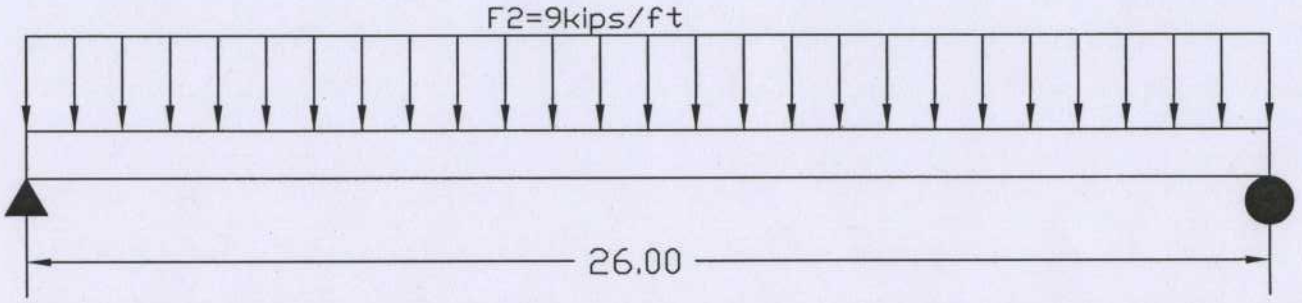


DRAW THE COMPLETE SHEAR
DIAGRAM ON A SEPARATE SHEET
FOR THE BEAM AND LOAD
DISTRIBUTION ABOVE

B

BY: DC EDWARDS	
EGR 194-01	DATE: 073008
TITLE: 94 LAYOUT	
DE_C4 MX	SCALE: NTS

W33x118 STEEL

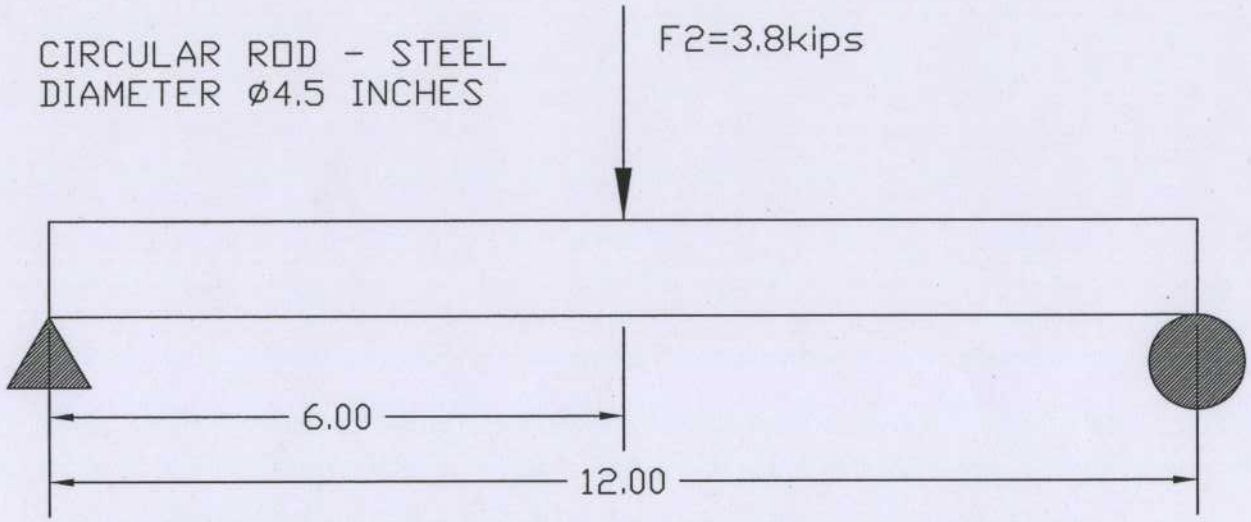


DETERMINE THE MAXIMUM
BENDING STRESS FOR THE BEAM
AND LOAD DISTRIBUTION ABOVE
- ENSURE YOU INCLUDE THE
BEAM WEIGHT

B

BY: DC EDWARDS	
EGR 194-01	DATE: 073008
TITLE: 94 LAYOUT	
DE_C4 MX	SCALE: NTS

CIRCULAR ROD - STEEL
DIAMETER ø4.5 INCHES



1)DETERMINE THE MAXIMUM DEFLECTION FOR THE BEAM AND LOAD DISTRIBUTION ABOVE - NEGLECT THE BEAM WEIGHT IN THIS CASE ONLY

2) THE MAXIMUMN PERMISSIBLE DEFLECTION IS $\frac{1}{300}$ OF SPAN - DOES THIS DESIGN PASS? CIRCLE YES OR NO.

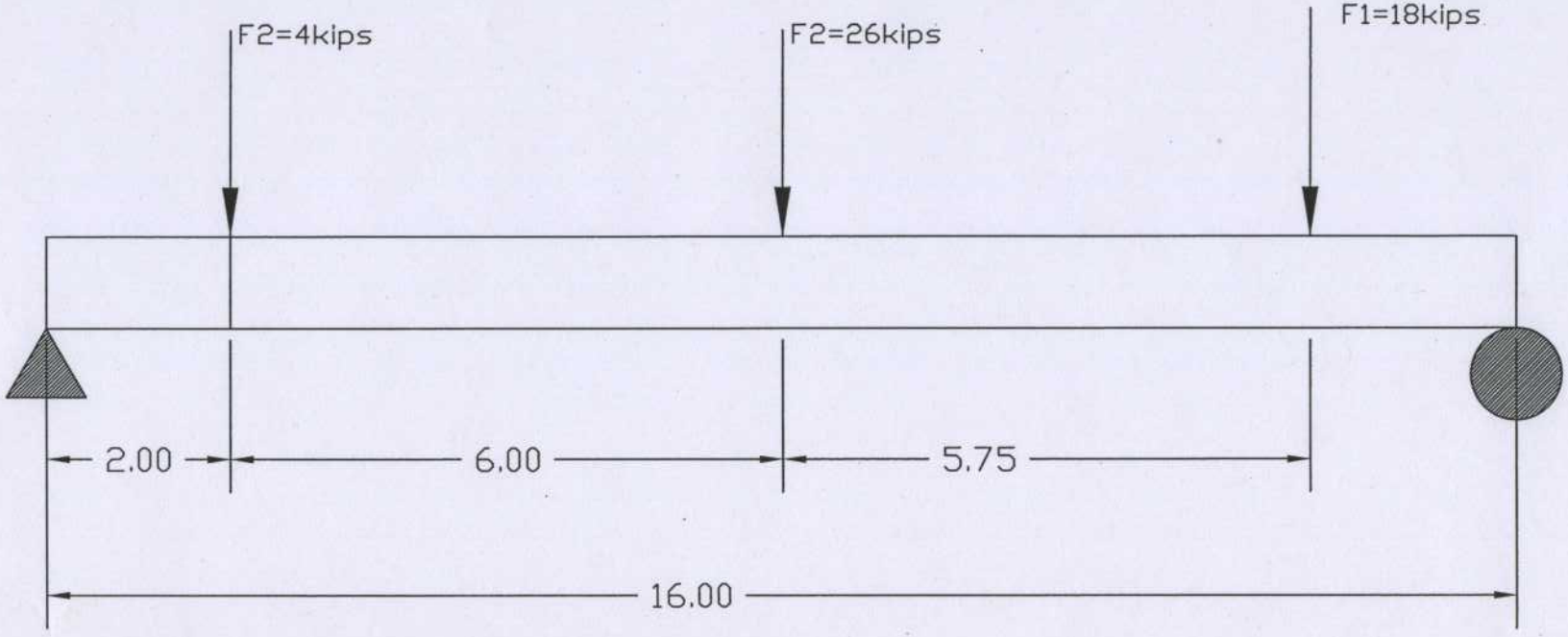
NOTE: MOMENT OF INERTIA
(CIRCULAR SECTION)
I = $\frac{1}{64}$*PI*D^4(UNITS ARE IN^4)

(RECTANGULAR SECTION)
I = (b*h^3) /12

MODULUS OF ELASTICITY FOR STEEL IS 30,000 KSI
MODULUS OF ELASTICITY FOR ALUMINUM IS 10,000 KSI
MODULUS OF ELASTICITY FOR TITANIUM IS 16,500 KSI
SHOW ALL WORK FOR FULL CREDIT

BY: DC EDWARDS	
EGR 194-01	DATE: 073008
TITLE: 94 LAYOUT	
DE_C4 MX	SCALE: NTS

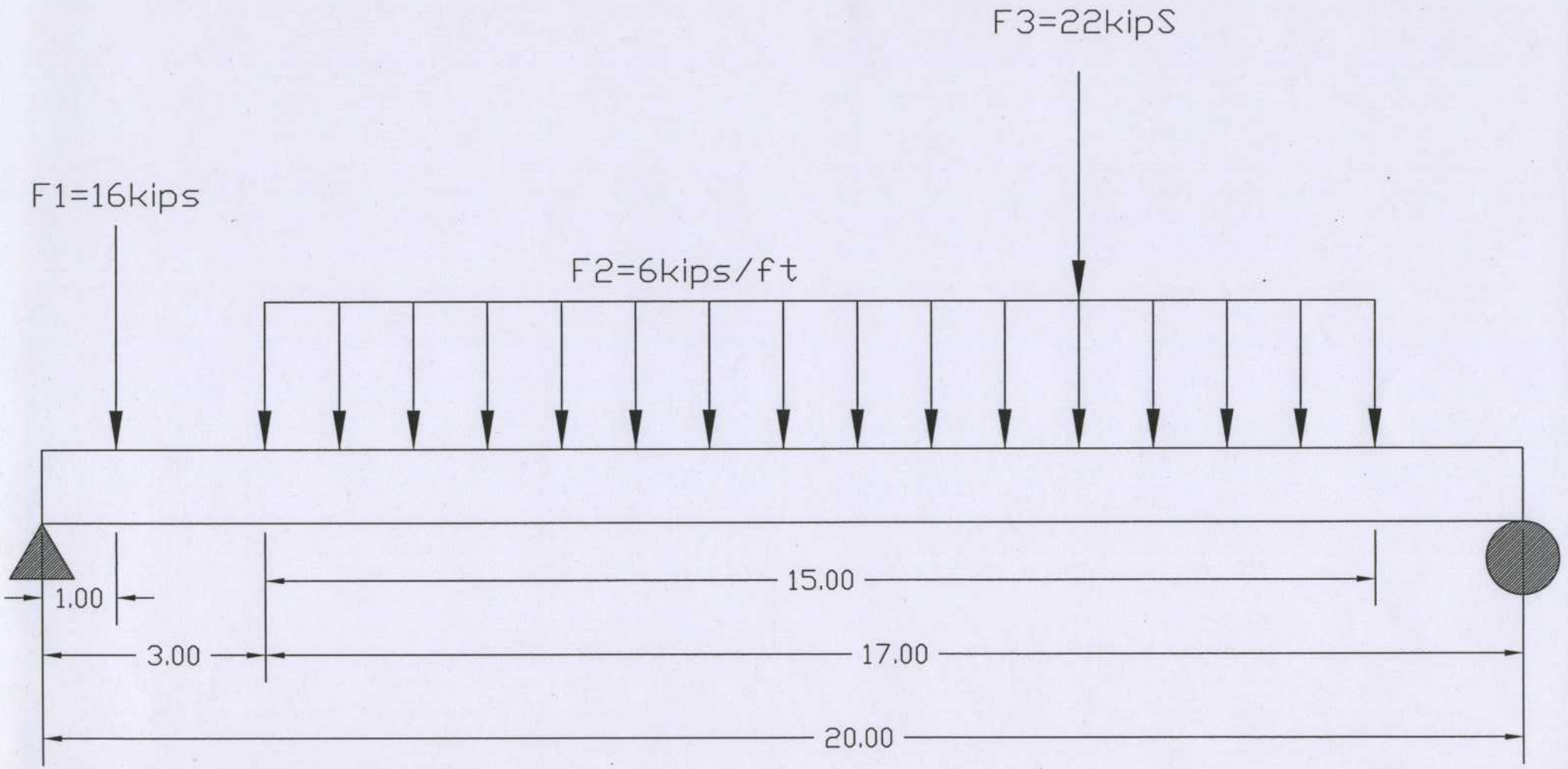
B



DRAW COMPLETE SHEAR AND MOMENT DIAGRAMS ON A SEPARATE SHEET FOR THE BEAM AND LOAD DISTRIBUTION ABOVE

A

BY: DC EDWARDS	
EGR 194-01	DATE: 073008
TITLE: 94 LAYOUT	
DE_C4 MX	SCALE: NTS

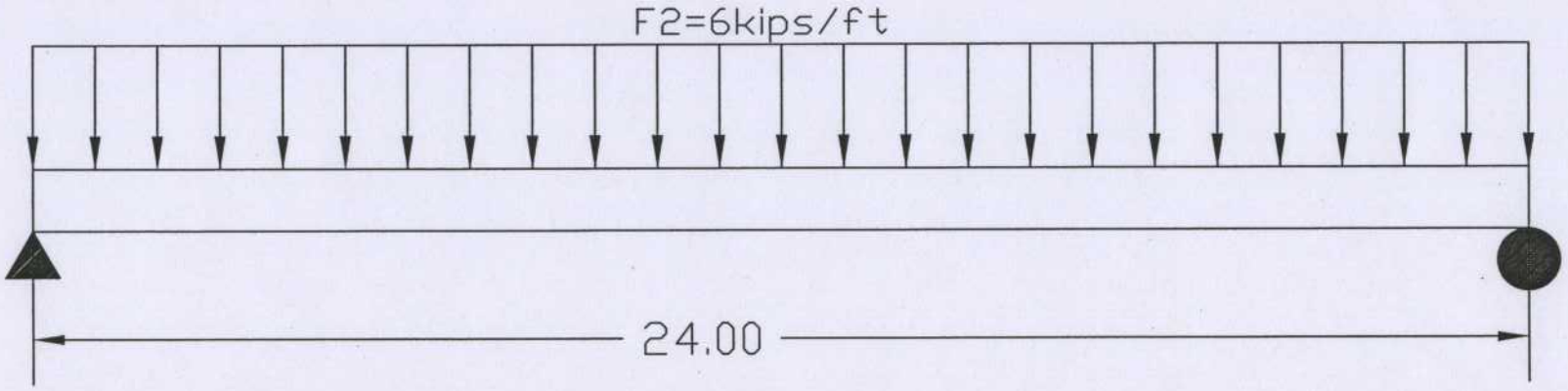


DRAW THE COMPLETE SHEAR
DIAGRAM ON A SEPARATE SHEET
FOR THE BEAM AND LOAD
DISTRIBUTION ABOVE

B

BY: DC EDWARDS	
EGR 194-01	DATE: 073008
TITLE: 94 LAYOUT	
DE_C4 MX	SCALE: NTS

W27x94 STEEL

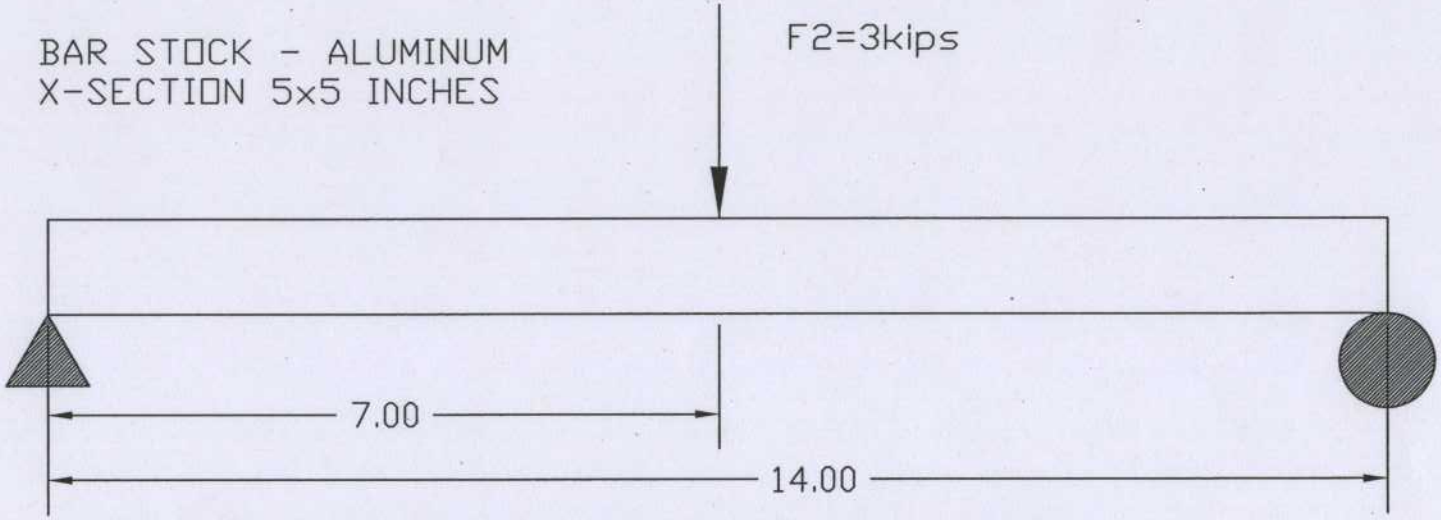


DETERMINE THE MAXIMUM
BENDING STRESS FOR THE BEAM
AND LOAD DISTRIBUTION ABOVE
- ENSURE YOU INCLUDE THE
BEAM WEIGHT

A

BY: DC EDWARDS	
EGR 194-01	DATE: 073008
TITLE: 94 LAYOUT	
DE_C4 MX	SCALE: NTS

BAR STOCK - ALUMINUM
X-SECTION 5x5 INCHES



1)DETERMINE THE MAXIMUM DEFLECTION FOR THE BEAM AND LOAD DISTRIBUTION ABOVE - NEGLECT THE BEAM WEIGHT IN THIS CASE ONLY

2) THE MAXIMUMN PERMISSIBLE DEFLECTION IS $\frac{1}{360}$ OF SPAN - DOES THIS DESIGN PASS? CIRCLE YES OR NO.

NOTE: MOMENT OF INERTIA
(CIRCULAR SECTION)
I = $\frac{1}{64}$*PI*D^4(UNITS ARE IN^4)

(RECTANGULAR SECTION)
I = (b*h^3) /12

MODULUS OF ELASTICITY FOR STEEL IS 30,000 KSI
MODULUS OF ELASTICITY FOR ALUMINUM IS 10,000 KSI
MODULUS OF ELASTICITY FOR TITANIUM IS 16,500 KSI
SHOW ALL WORK FOR FULL CREDIT

BY: DC EDWARDS	
EGR 194-01	DATE: 073008
TITLE: 94 LAYOUT	
DE_C4 MX	SCALE: NTS

A