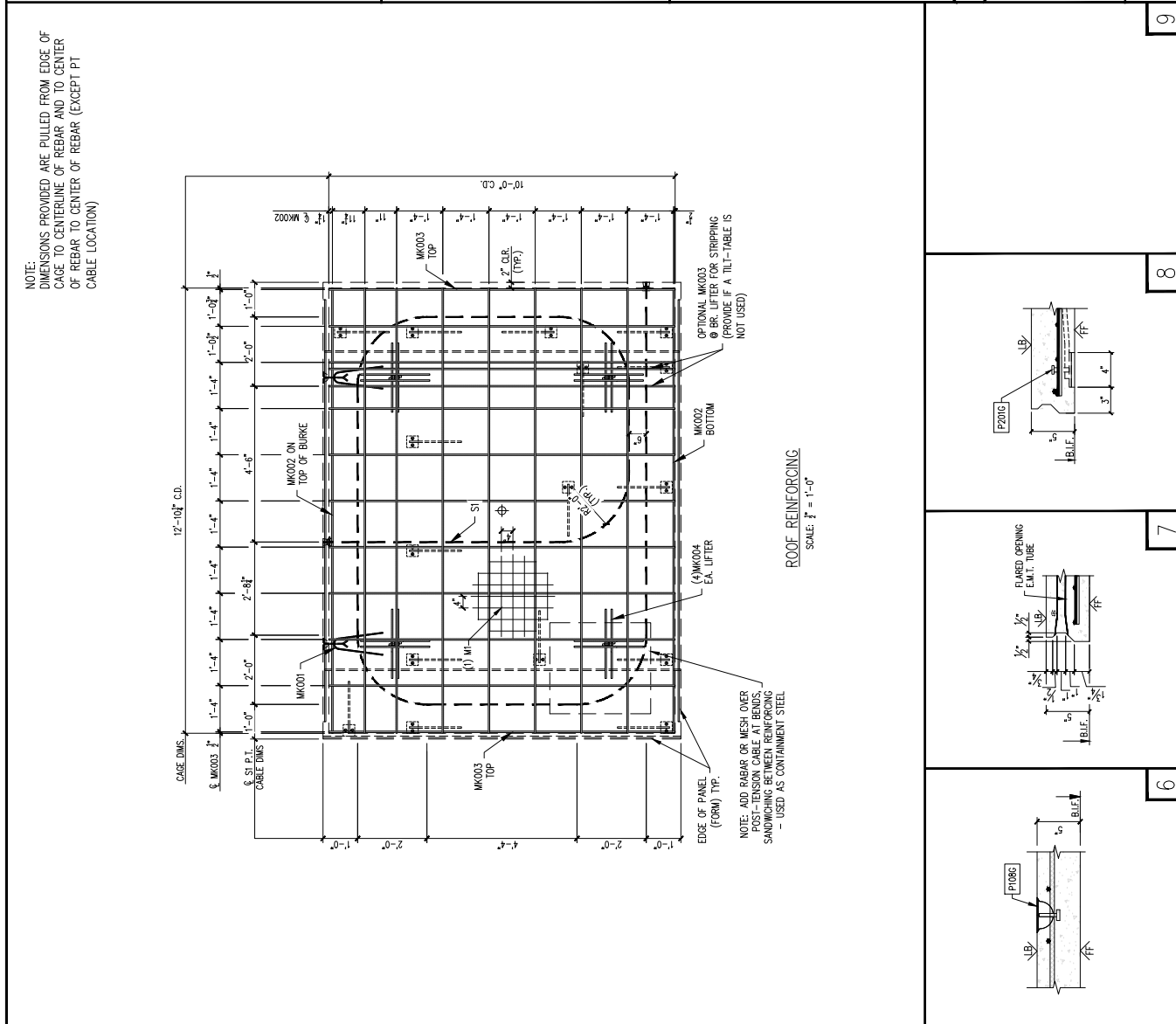
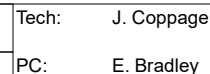


ROOF - EASI-SET BUILDING - RP-07 - 124" x 158"

[illegible]



Job Name: 25-3470P8 CCHS Precast Building
Job Location: 5185 Fort Campbell BLVD
Contractor: Christian County Board of Education C/O A&K Construction

Plant: Beaver Dam

Tech: J. Coppage

9/10/2026 9:57:18 AM

PC: E. Bradley



Structure ID: RP-07 - Roof Panel 7

P1 CVT

ROOF - EASI-SET BUILDING - RP-07 - 124" x 158"



PT Check for RP-07/08 (PCI MNL - 116)

Material Data

(7) Wire lo-lax Strand - ASTM A416

Φ_{ps} 0.500 in,

A= 0.153 in²

E= 28500000 psi

fpu= 270 ksi

Strand Length 607 in

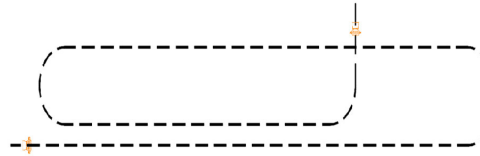
Assume (Info supplied by strand manufacturer)

k= 0.0007 Wobble Friction Coeff.

μ = 0.05 Curvature friction coeff. (Initial tension of 3,000 lbs)

Strand is to be stressed 70% of ultimate

= 28917 lbs



Cable Configuration

Adjustments to tensioning

1) Dead end anchor wedge seating loss

~ Expected to be 1/8 in

2) Live end anchor wedge seating loss

~ Expected to be 1/8 in, recommend over pull 1/8"

3) Elastic Shortening

Neglect for this pnl

4) Friction Loss

Additional force to overcome frictional forces between strand and sheathing

Tensioning Computations

Basic Elongation =
$$\frac{(\text{Force required beyond initial tension}) (\text{Length of strand between anchorages})}{(\text{Area of strand}) (\text{Modulus of Elasticity})}$$

= 3.61 in

Adjustments

a) Dead end anchor wedge seating: Add 1/8" to elong. No force adjustment req'd

Add 1/8 in

b) Live end seating: over pull by 1/8"

1/8 in

Force adjustment t = 898 lbs lbs α = curvature = $\pi(2.5)$ 7.85 radians

c) Friction losses
$$\frac{PD}{PS} = e^{-[kL + \mu\alpha]}$$

= 0.652

Avg. strand force = 0.826 17.41% Loss

Recommend sequential jacking at both ends of the tendon be used to reduce the overstressing the strand at the live end

Friction loss at mid-point of tendon

$$\frac{PD}{PS} = e^{-\frac{[kL + \mu\alpha]}{2}}$$

= 0.807

Avg. strand force over half of tendon = 0.904 9.63% Loss

Total force and elongation at live end must be increased to compensate for friction losses

Elong. Adjustment = 0.348 in

Force Adjustment = 2786 lbs

Total Force Required = 32601 lbs OK

Elongation Summary:

Gross Theoretical Elongation			
Basic Elongation	3.61 in		
Dead End Seating Loss	0.125 in		
Live End Seating Loss	0.125 in		
Friction Losses	0.348 in		
Total Elongation	4.21 in		
Rounded	4 3/16 in		
Tolerance limits	-7.0%	3.91 in	3 15/16 in
	+7.0%	4.50 in	4 8/16 in