

FLOOR - EASI-SET BUILDING - FP-03 - 120" x 288"

[illegible]



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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 9:57:17 AM

PC: E. Bradley



Structure ID: FP-03 - Floor Panel 3

P1 CVBS

FLOOR - EASI-SET BUILDING - FP-03 - 120" x 288"



PT Check for FP-02/03 (PCI MNL - 116)

Material Data

(7) Wire lo-lax Strand - ASTM A416

Φ_{ps} 0.500 in,

A_s 0.153 in²

E_s 28500000 psi

f_{pu} 270 ksi

Strand Length 900 in

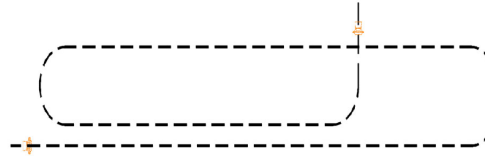
Assume (Info supplied by strand manufacturer)

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

= 5.35 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 $t = 606 \text{ lbs lbs}$ $\alpha = \text{curvature} = \pi(2.5) = 7.85 \text{ radians}$

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

= 0.641

Avg. strand force = 0.820 17.97% 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

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

= 0.800

Avg. strand force over

half of tendon = 0.900 9.98% Loss

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

Elong. Adjustment = 0.534 in

Force Adjustment = 2885 lbs

Total Force Required = 32408 lbs OK

Elongation Summary:

Gross Theoretical Elongation			
Basic Elongation		5.35 in	
Dead End Seating Loss		0.125 in	
Live End Seating Loss		0.125 in	
Friction Losses		0.534 in	
Total Elongation		6.13 in	
Rounded		6 2/16 in	
Tolerance limits	-7.0%	5.70 in	5 11/16 in
	+7.0%	6.56 in	6 9/16 in