

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  
9/10/2026 9:57:18 AM

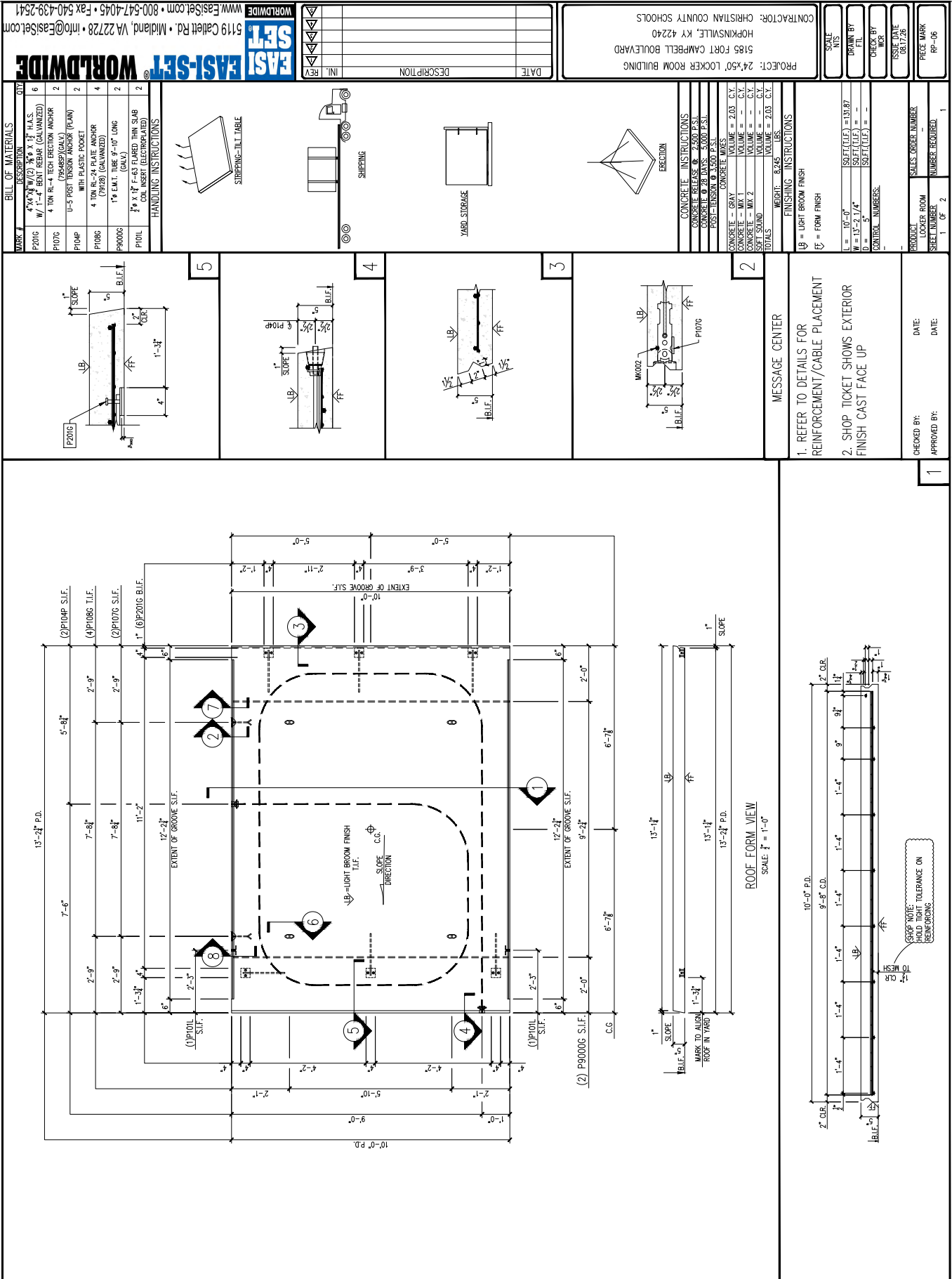
Tech: J. Coppage  
PC: E. Bradley



Structure ID: RP-06 - Roof Panel 6

P1 CVT

ROOF - EASI-SET BUILDING - RP-06 - 120" x 158"



[illegible]

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## Structure ID: RP-06 - Roof Panel 6

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ROOF - EASI-SET BUILDING - RP-06 - 120" x 158"



### PT Check for RP-03-06 (PCI MNL - 116)

#### Material Data

(7) Wire lo-lax Strand - ASTM A416

$\Phi_{ps}$  0.500 in,

A= 0.153 in<sup>2</sup>

E= 28500000 psi

fpu= 270 ksi

Strand Length 595 in

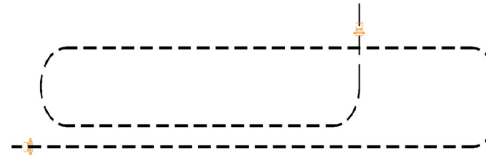
Assume (Info supplied by strand manufacturer)

k= 0.0007 Wobble Friction Coeff.

$\mu$ = 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

$$\text{Basic Elongation} = \frac{(\text{Force required beyond initial tension}) (\text{Length of strand between anchorages})}{(\text{Area of strand}) (\text{Modulus of Elasticity})}$$
$$= 3.54 \text{ in}$$

#### 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  $t = 916 \text{ lbs}$   $\alpha = \text{curvature} = \pi(2.5) = 7.85 \text{ radians}$

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

$$= 0.652$$

$$\text{Avg. strand force} = 0.826 \quad 17.39\% \text{ Loss}$$

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

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

$$= 0.808$$

Avg. strand force over

$$\text{half of tendon} = 0.904 \quad 9.62\% \text{ Loss}$$

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

Elong. Adjustment = 0.340 in

Force Adjustment = 2782 lbs

Total Force Required = 32615 lbs **OK**

#### Elongation Summary:

| Gross Theoretical Elongation |       |           |            |
|------------------------------|-------|-----------|------------|
| Basic Elongation             |       | 3.54 in   |            |
| Dead End Seating Loss        |       | 0.125 in  |            |
| Live End Seating Loss        |       | 0.125 in  |            |
| Friction Losses              |       | 0.340 in  |            |
| Total Elongation             |       | 4.13 in   |            |
| Rounded                      |       | 4 2/16 in |            |
| Tolerance limits             | -7.0% | 3.84 in   | 3 13/16 in |
|                              | +7.0% | 4.42 in   | 4 7/16 in  |