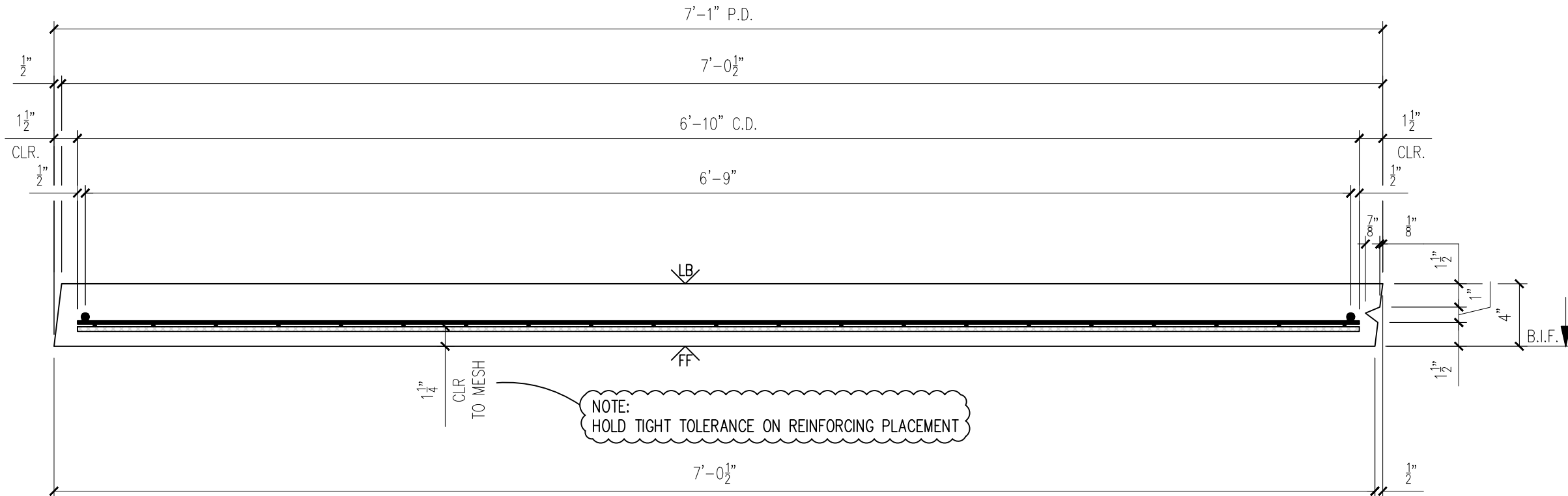
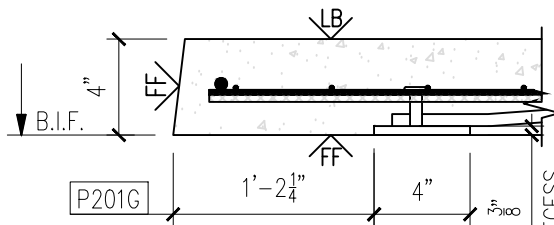
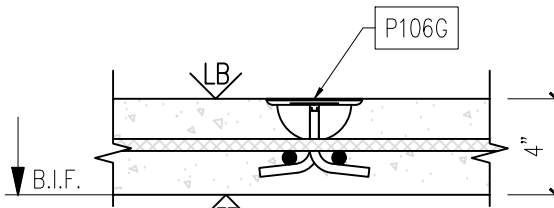
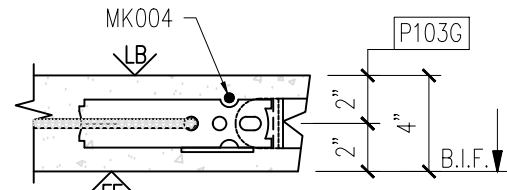
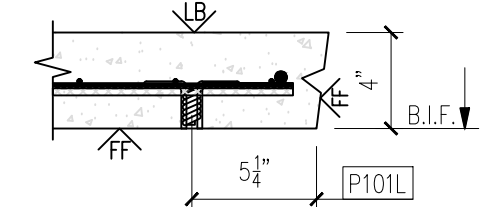
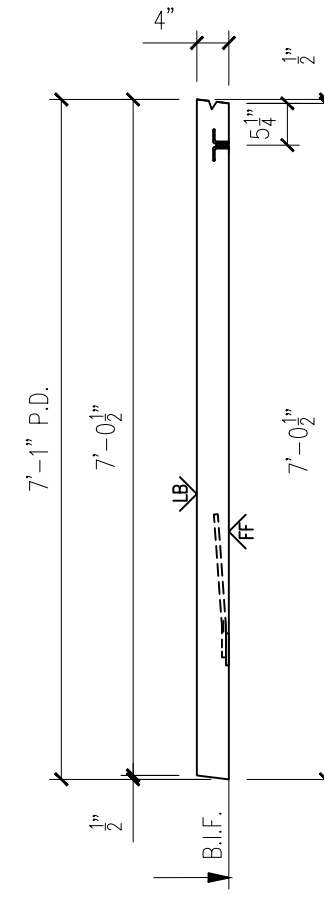


1 Required



APPROVED BY: _____ DATE: _____

2

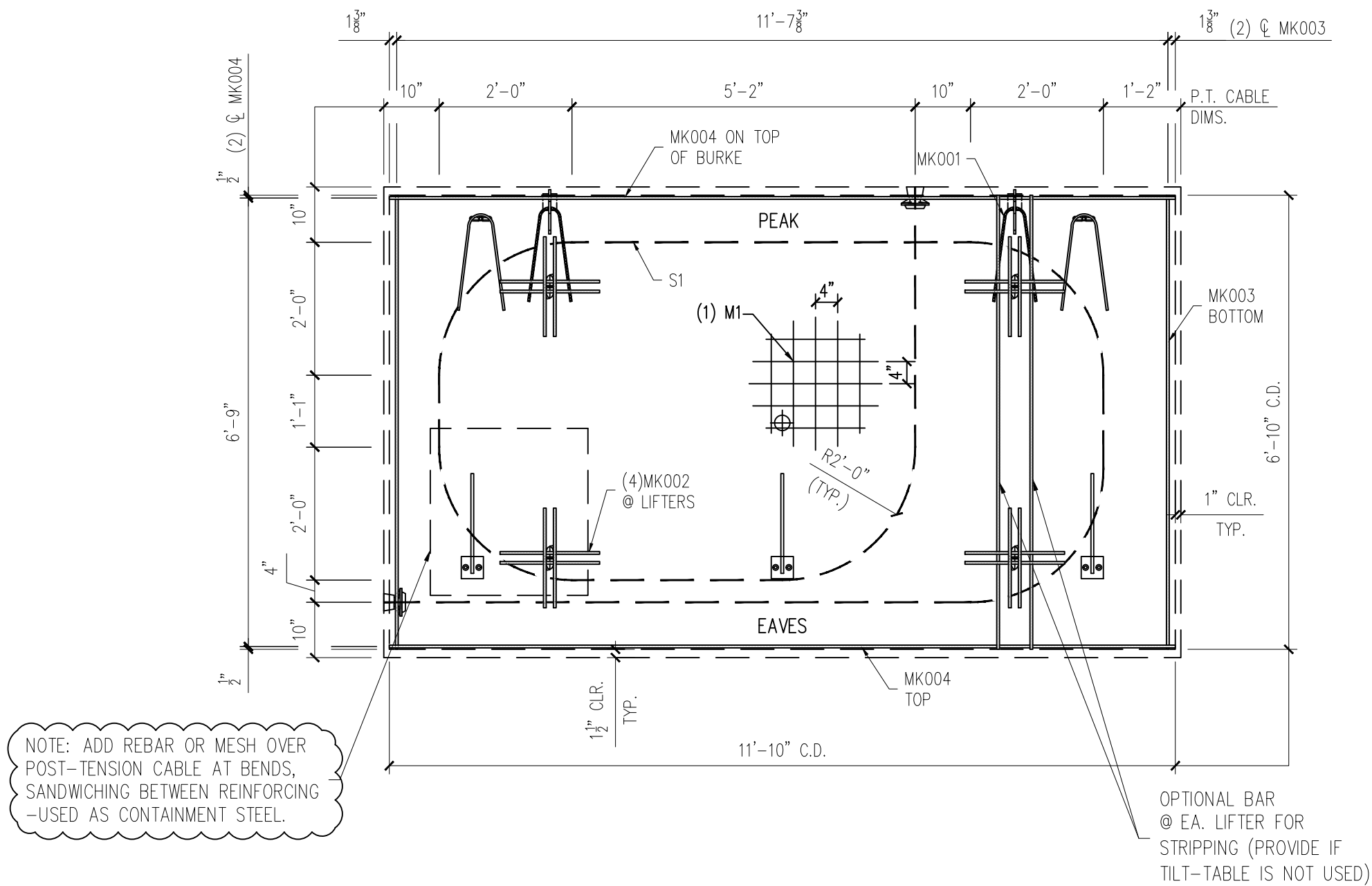
1

PIECE MARK
RP-01

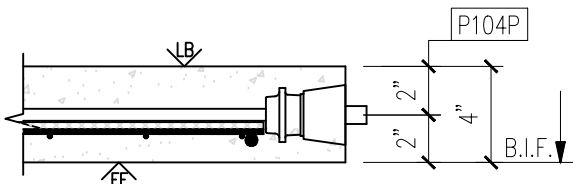
PROJECT: 10'X12'X8' GATE HOUSE BUILDING
5185 FORT CAMPBELL BOULEVARD
HOPKINSVILLE, KY 42240
CONTRACTOR: CHRISTIAN COUNTY SCHOOLS

25-3470
CCHS Precast Buildings
ID - CTS
Roof - RP-01B
Weight - 4,220
1 Required

NOTE:
DIMENSIONS PROVIDED ARE PULLED FROM EDGE OF
CAGE TO CENTERLINE OF REBAR AND TO CENTER
OF REBAR TO CENTER OF REBAR



ROOF REINFORCING VIEW
SCALE: 1/2" = 1'-0"



MESSAGE CENTER

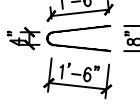
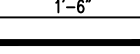
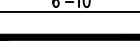
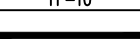
1. REFER TO DETAILS FOR REINFORCEMENT/CABLE PLACEMENT

2. SUPPLEMENTAL STEEL FOR STRIPPING AND HANDLING MAY BE ADDED AS REQUIRED.

CHECKED BY: DATE:
APPROVED BY: DATE:

- NOTES:
1. TRIM PLASTIC SHEATH AT BOTH ENDS OF THE PT CABLE TO FIT BETWEEN U-5 ANCHOR PLATES
 2. CONSTRUCT REBAR-MESH CAGE ACCORDING TO THE DRAWINGS. SECURE LIFTING APPARATUS TO FORM AND ADD PROPER REINFORCEMENT. PLACE REBAR-MESH CAGE AND HAIRPINS AT INSERTS WITH PROPER CLEARANCES (PER DRAWINGS).
 3. PLACE AND SECURE PT CABLE AS INDICATED ON THE DRAWINGS (REINFORCING VIEW)

PRODUCT	SALES ORDER NUMBER
BUILDING	101208C
SHEET NUMBER	NUMBER REQUIRED
2 OF 2	2

REINFORCING SCHEDULE		
MARK #	DESCRIPTION	QTY
MK001	#3 X 3'-0" 	4
MK002	#4 X 1'-6" 	16
MK003	#3 X 6'-10" 	2
MK004	#3 X 11'-10" 	2
S1	1/2" X 43'-2" LONG P.T. CABLE	1
MESH SCHEDULE		
MARK #	DESCRIPTION	QTY
M1	W4XW4 4"x4" WWF 11'-10" X 6'-10"	1

DATE	REV	INI.	DESCRIPTION
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

PROJECT: 10'X12'X8' GATE HOUSE BUILDING
5185 FORT CAMPBELL BOULEVARD
HOPKINSVILLE, KY 42240
CONTRACTOR: CHRISTIAN COUNTY SCHOOLS

SCALE NTS
DRAWN BY FTL
CHECK BY WCR
ISSUE DATE 07.01.26
PIECE MARK RP-01

EASI-SET® WORLDWIDE

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www.EasiSet.com • 800-547-4045 • Fax 540-439-2541

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PT Check for Gate House Roof RP-01 (PCI MNL - 1)

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 **480 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

Adjustments to tensioning

1) Dead end anchor wedge seating loss

~ Expected to be 1/8 in

2) Live end anchor wedge seating loss

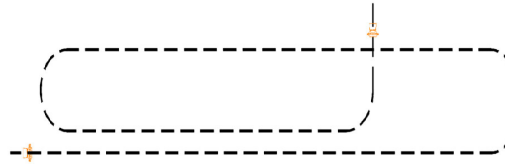
~ Expected to be 1/8 in, recommend over pull 1/8"

3) Elastic Shortening

Neglect for this pnl

4) Friction Loss

Additional force to overcome frictional forces between strand and sheathing



Cable Configuration

25-3470

CCHS Precast Buildings

ID - CTS

Roof - RP-01B

Weight - 4,220

1 Required

Tensioning Computations

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

= 2.85 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 $t = \frac{1136 \text{ lbs}}{1136 \text{ lbs}} \alpha = \text{curvature} = \pi(2.5) = 7.85 \text{ radians}$

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

= 0.657

Avg. strand force = 0.828 17.17% 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

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

= 0.810

Avg. strand force over

half of tendon = 0.905 9.48% Loss

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

Elong. Adjustment = 0.271 in

Force Adjustment = 2743 lbs

Total Force Required = 32795 lbs **OK**

Elongation Summary:

	Gross Theoretical Elongation		
Basic Elongation	2.85 in		
Dead End Seating Loss	0.125 in		
Live End Seating Loss	0.125 in		
Friction Losses	0.271 in		
Total Elongation	3.37 in		
Rounded	3	6/16 in	
Tolerance limits	-7.0%	3.14 in	3 2/16 in
	+7.0%	3.61 in	3 10/16 in