

Job Name: 25-4520 - City Park Improvments
Job Location: Lathrop, MO
Contractor: Sands Construction Company

Plant: Beaver Dam

Tech: J. Coppage

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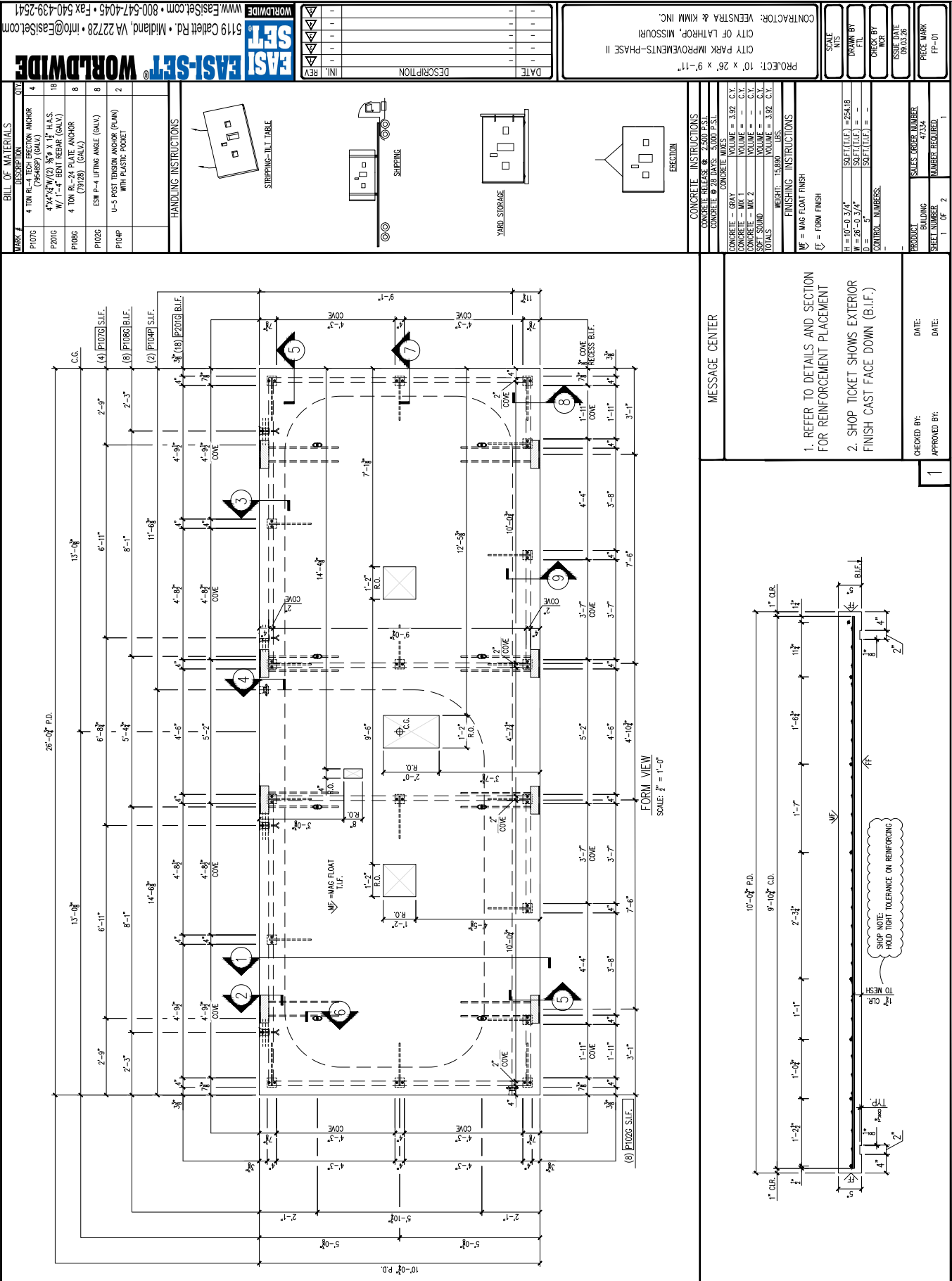
PC: E. Bradley



Structure ID: FP-01 - Floor Panel 1

P1 CVBS

FLOOR - EASI-SET BUILDING - FP-01 - 120" x 312"





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

REINFORCING SCHEDULE

MARK #	DESCRIPTION	QTY
MK001	#4 X 4'-0"	4
MK002	#3 X 25'-10"	8
MK003	#3 X 4'-2"	6
MK005	#3 X 5'-0"	2
MK006	#3 X 9'-10"	6
MK007	#4 X 1'-6"	32
SI	1/2" X 84'-6" LONG P.T. CABLE	1

MESH SCHEDULE

MARK #	DESCRIPTION	QTY
MT	WAVE 4'x4' WVG 25'-10" X 9'-10"	1

DESCRIPTION

DATE	INITIALS	REV

EAST EASI-SET WORLDWIDE
www.EasiSet.com • Fax 540-439-2541
5119 Callet Rd., Midland, VA 22728 • info@EasiSet.com

PROJECT: 10' x 26' x 9'-11"
CITY PARK IMPROVEMENTS--PHASE II
CITY OF LATHROP, MISSOURI
CONTRACTOR: VEENSTRA & KIM INC.

ISSUE DATE: 09/03/20
DRAWN BY: JMS
CHECKED BY: JMS
PIECE MARK: PP-01

PRODUCT: BUILDING NUMBER 47334
SHEET NUMBER: 2 OF 2
NUMBER REQUIRED: 1

NOTE:
1. CONSTRUCT REBAR-MESH CAGE ACCORDING TO THE DRAWINGS. SECURE LIFTING APPARATUS TO FORM AND ADD PROPER REINFORCEMENT. PLACE REBAR-MESH CAGE AND HARPINS AT INSERTS WITH PROPER CLEARANCES (PER DRAWINGS).

MESSAGE CENTER
1. REFER TO DETAILS AND SECTION FOR REINFORCEMENT PLACEMENT
2. SUPPLEMENTAL STEEL FOR STRIPPING AND HANDLING MAY BE ADDED AS REQUIRED.

REINFORCING VIEW
SCALE: 1/8" = 1'-0"

DETAILS:
Details 1 through 7 show cross-sections of the reinforcement cage at various points along the length of the structure. They illustrate the placement of rebar (#4, #3), mesh (MK001-MK007), and the overall dimensions of the cage sections. Details include labels for top/bottom reinforcement, mesh output, and specific rebar callouts like MK002(L) and MK003(BOTTOM).

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PT Check for Floor Panel FP-01 (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 978 in

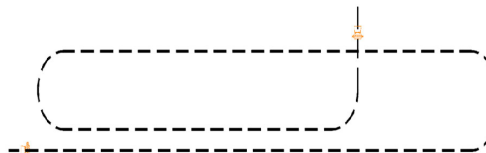
Assume (Info supplied by strand manufacturer)

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

= 5.81 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 $t = \frac{557 \text{ lbs lbs}}{28917 \text{ lbs}} \alpha = \text{curvature} = \pi(2.5) \quad 7.85 \text{ radians}$

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

= 0.638

Avg. strand force = 0.819 18.11% 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

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

= 0.799

Avg. strand force over

half of tendon = 0.899 10.07% Loss

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

Elong. Adjustment = 0.585 in

Force Adjustment = 2912 lbs

Total Force Required = 32386 lbs **OK**

Elongation Summary:

Gross Theoretical Elongation			
Basic Elongation	5.81 in		
Dead End Seating Loss	0.125 in		
Live End Seating Loss	0.125 in		
Friction Losses	0.585 in		
Total Elongation	6.65 in		
Rounded	6 10/16 in		
Tolerance limits	-7.0%	6.18 in	6 3/16 in
	+7.0%	7.11 in	7 2/16 in