



Submittal #055000-7.R2 055000 - Metal Fabrications

Brinkmann Constructors
11101 Switzer Road
Suite 310
Overland Park, Kansas 66210
Phone: (913) 717-9007
Fax: (913) 717-9407

Project: 1386 - Signature at West Pryor
2100 NW Lowenstein Dr.
Lee's Summit, Missouri 64081

Carport Shop Drawings

REVISION:	R2	SUBMITTAL MANAGER:	Nick Wintjen (Brinkmann Constructors)
STATUS:	Open	DATE CREATED:	03/9/2023
Date Ordered:			
ISSUE DATE:	03/9/2023	SPEC SECTION:	055000 - Metal Fabrications
RESPONSIBLE CONTRACTOR:	Ross & Barr, Inc.	RECEIVED FROM:	James Riley
RECEIVED DATE:		SUBMIT BY:	
FINAL DUE DATE:	03/13/2023	LOCATION:	
		COST CODE:	
		TYPE:	Shop Drawings
APPROVERS:	Clark Basinger (Bob D. Campbell & Company), Michaela Silva (TR,i Architects)		
BALL IN COURT:	Michaela Silva (TR,i Architects)		
DISTRIBUTION:	Nick Wintjen (Brinkmann Constructors)		
DESCRIPTION:			

SUBMITTAL WORKFLOW

NAME	SENT DATE	DUE DATE	RETURNED DATE	RESPONSE	ATTACHMENTS	COMMENTS
General Information Attachments					055000-7-R2 Carport Shop Drawings - 3.9.23.pdf	
Clark Basinger	03/09/2023	03/10/2023	03/09/2023	Approved as Noted	055000-7-R2 Carport Shop Drawings - 3.9.23.pdf (Current)	designer should specify member connections
Michaela Silva	03/09/2023	03/13/2023		Pending		

BY

DATE

COPIES TO



Structural Engineers – Since 1957

4338 Bellevue
Kansas City, MO 64111
(816) 531-4144 FAX (816) 531-8572

BOB D. CAMPBELL & CO., INC.

President
Michael J. Falbe, P.E.

Lee S. Johnson, P.E.
Steven R. Carroll, P.E.
Richard C. Crabtree, P.E.
Wayne E. Davis, P.E.
Jeffrey L. Wright, P.E.
Christopher W. Boos, P.E.

Administrative Manager
Paul M. Spena

TRANSMITTAL LETTER

DATE: March 9, 2023

TO: TR,i Architects

ADDRESS: 9812 Manchester Road
St. Louis, Missouri 63119

RE: Summit Phase 2

TRANSMITTING:

DESCRIPTION	REMARKS
055000-7-r2 carport shop drawings	REVIEWED
BDC SHOP DRAWING STAMP COMMENTARY <p>This review was performed only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Modifications or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the plans and specifications. Approval of a specific item does not include approval of the assembly of which the item is a component. Contractor is responsible for: dimensions to be confirmed and coordinated at the job site; information that pertains solely to the fabrication process or to the means, methods, techniques, sequences, and procedures of construction; coordination of the work of all trades; and for performing all work in a safe and satisfactory manner.</p> <p style="text-align: center;">DEFINITIONS</p> <p>APPROVED Submitted materials appear to satisfy design intent if installed using specified materials in a workmanlike manner. Fabrication and construction may proceed.</p> <p>FURNISH AS CORRECTED Submitted materials appeared basically satisfactory, but minor corrections were indicated by the reviewer. Fabrication and construction may proceed if the indicated corrections are included in the materials fabricated and installed prior to fabrication. Resubmittal of shop drawings is not required.</p> <p>REJECTED, REVISE AND RESUBMIT Significant errors or omissions were found in the submitted materials; refer to the review comments for detailed comments. The submitted materials do not satisfy design intent and / or specifications. Revise shop drawings to conform to design documents and resubmit for review.</p> <p>RETURNED NOT REVIEWED The materials submitted were not reviewed and are being returned without comments for one or more of the following reasons:</p> <ul style="list-style-type: none">• The submission contains materials not shown on structural design documents or called for in the structural general notes or applicable specifications.• The submitted materials were inadequate for review either in scope, quality, or sufficient detail.• The submitted materials do not require review by the structural engineer of record.• The submitted materials have not been reviewed first by the general contractor in compliance with the specifications and/or do not carry the general contractor's review stamp. <p>REVIEWED Review is for general compliance with the information provided in the contract documents and for general conformance with the design concepts of the project. Any item noted herein is subject to the requirements set forth in the contract documents.</p>	

BOB D. CAMPBELL & CO., INC.
Structural Engineers

BY: Clark A. Basinger, P.E.

VIA: Emailed by cbasinger@bdc-engrs.com

BDC Project No. TRI2101



Employee-Owned

TRANSMITTAL

Nick Wintjen, Project Engineer
Brinkmann Constructors
11101 Switzer Road, Suite 310
Overland Park, KS 66210

Date: 11/23/2022

To:
TR,i Architects
Attn: Michaela Silva
1790 S Brentwood Blvd
St. Louis, MO 63144

Re: **Signature at West Pryor**
2100 NW Lowenstein Dr.
Lee's Summit, MO 64081
Job #: 1386

We are sending:

- ☐ Product Data
- ☐ Reports
- ☒ Shop Drawings
- ☐ Samples
- ☐ Other

Transmitted as checked:

- ☒ For Approval
- ☒ For Your Use
- ☐ As Requested
- ☐ Approved as Submitted
- ☐ Other

Transmitted via:

- ☒ Via email (PDF)
- ☐ Copies to follow (USPS/Ground)

Submittal Number	Description	Date Submitted	Due Date
055000-7 R2	Carport Shop Drawings	3/9/23	3/10/23

Brinkmann Approval

Submittals bearing this stamp have been verified or will be verified as to materials, field measurements and construction criteria related thereto and have been coordinated with the Contract Documents. The Sub-contractor is responsible to the General Contractor for dimensions to be confirmed and correlated at the job site, and for information that pertains to the fabrication process or to the technique of construction and for coordination of the work with all trades.

By: Nick Wintjen

Date: 11/23/2022

Brinkmann Comments in Green

UTILITY NOTES:

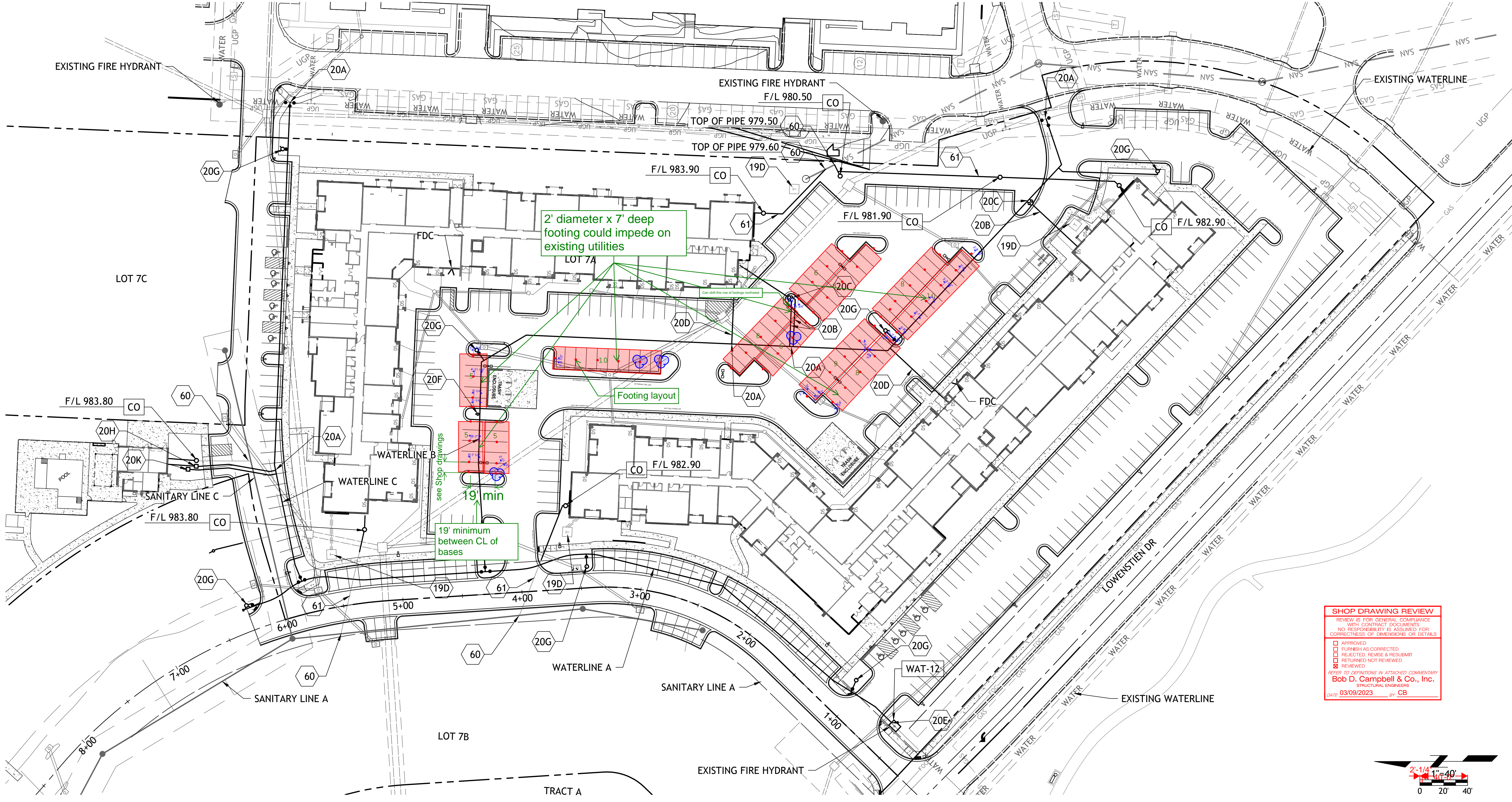
1. ALL UTILITY AND STORM SEWER TRENCHES CONSTRUCTED UNDER AREAS THAT RECEIVE PAVING SHALL BE BACKFILLED TO 18 INCHES ABOVE THE TOP OF THE PIPE WITH SELECT GRANULAR MATERIAL PLACED ON EIGHT-INCH LIFTS, AND COMPACTED TO 95% MODIFIED PROCTOR DENSITY.
2. CONTRACTOR SHALL NOT OPEN, TURN OFF, INTERFERE WITH, OR ATTACH ANY PIPE OR HOSE TO OR TAP ANY WATER MAIN BELONGING TO THE CITY UNLESS DULY AUTHORIZED TO DO SO BY THE CITY. ANY ADVERSE CONSEQUENCE OF ANY SCHEDULED OR UNSCHEDULED DISRUPTIONS OF SERVICE TO THE PUBLIC ARE TO BE THE LIABILITY OF THE CONTRACTOR. SM ENGINEERING AND OWNER ARE TO BE HELD HARMLESS.
3. ALL WATER AND SANITARY SEWER SYSTEMS THAT ARE TO BE PUBLIC LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH SPECIFICATIONS PREVIOUSLY APPROVED BY THE CITY OF LEE'S SUMMIT AND THE STATE OF MISSOURI AND SHALL BE INSPECTED BY THE CITY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT THIS INSPECTION OCCURS.
4. LOCATIONS SHOWN FOR PROPOSED WATER LINES ARE APPROXIMATE. VARIATIONS MAY BE MADE, WITH APPROVAL OF THE ENGINEER, TO AVOID CONFLICTS.
5. CONTRACTOR TO INSTALL TRACING TAPE ALONG ALL NON-METALLIC WATER MAINS AND SERVICE LINES PER SPECIFICATIONS.
6. CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICT AND POINTS OF CONNECTION PRIOR TO ANY CONSTRUCTION OF NEW UTILITIES.
7. WATER LINES SHALL HAVE A MINIMUM COVER OF 42 INCHES. ALL VALVES ON MAINS AND FIRE HYDRANT LEADS SHALL BE WITH VALVE BOX ASSEMBLIES. THE SIZE OF VALVE BOX ASSEMBLY TO BE INSTALLED IS DETERMINED BY THE TYPE AND SIZE OF VALVE. VALVE BOX CAPS SHALL HAVE THE WORD "WATER".
8. A MINIMUM HORIZONTAL DISTANCE OF 10 FEET SHALL BE MAINTAINED BETWEEN PARALLEL WATER AND SANITARY SEWER LINES. WHEN IT IS NECESSARY FOR ANY WATER LINE TO CROSS A SANITARY SEWER LINE, THE SEWER LINE SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE AT LEAST 10 FEET EITHER SIDE OF THE WATER LINE UNLESS THE WATER LINE IS AT LEAST 2 FEET CLEAR DISTANCE ABOVE THE SANITARY SEWER LINE.
9. INSTALL 2" TYPE "K" COPPER FROM THE MAIN TO THE METER AND EITHER TYPE "K" OR POLYETHYLENE PLASTIC TUBING (PE 3608) FROM METER TO STOP AND WASTE VALVE INSIDE BUILDING.

DETAILS

- MS1 TRENCH AND BEDDING DETAILS
WAT-12 DCD VAULT
WAT-11 WATER SERVICE CONNECTION
WAT-7 FIRE HYDRANT
CO CLEANOUT

NOTES

- 18A POINT OF CONNECTION - TELEPHONE SERVICE - COORDINATE WITH TELEPHONE COMPANY
18B UNDERGROUND TELEPHONE SERVICE PER LOCAL TELEPHONE COMPANY
18C 2-2" CONDUIT INSTALLED BY CONTRACTOR - TELEPHONE SERVICE
19A POINT OF CONNECTION - ELECTRICAL SERVICE
19B ELECTRICAL SERVICE (SEE NOTE 10)
19C 4" CONDUIT INSTALLED BY CONTRACTOR - ELECTRIC SERVICE
19D TRANSFORMER - PER EVERGY DETAIL 700-103
20A POINT OF CONNECTION - WATER SERVICE
20B 2-2" TAPS WITH WITH 4.0" SERVICE LINE AFTER METERS
20C 2-2" METERS
20D 6" FIRE LINE
60 6" SANITARY SEWER SERVICE LINE SDR-26 PVC CONNECTION SHALL BE A CUT-IN WYE
61 6" SANITARY SEWER SERVICE LINE SDR 26 PVC
20E INSTALL 8" BACKFLOW PREVENTION ASSEMBLY IN 8'X6' VAULT OR AS REQUIRED PER CLEARANCE SEE DETAIL WAT-12
20F 1" IRRIGATION METER & BFP
20H 1" WATER TAP & WATER METER
20G FIRE HYDRANT ASSEMBLY WITH 1-6" GATE VALVE
20K 5/8" TAP, METER AND BFP WITH 1" LINE AFTER METER FOR IRRIGATION



SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS. NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS.

APPROVED
FURNISH AS CORRECTED
REJECTED, REVISE & RESUBMIT
RETURNED NOT REVIEWED
REVISED

REFER TO DEFINITIONS IN ATTACHED COMMENTARY

Bob D. Campbell & Co., Inc.
STRUCTURAL ENGINEERS

DATE: 03/09/2023 BY: CB

Drawings and/or Specifications are original proprietary work and property of the Engineer and intended specifically for this project. Use of items contained herein without consent of the Engineer is prohibited. Drawings illustrate best information available to the Engineer. Field verification of actual elements, conditions, and dimensions is required.



- Revisions
- 6-4-21 CITY COMMENTS
 - 6-22-21 CITY COMMENTS
 - 7-12-21 DOUBLE GRATES
 - 8-16-21 STORM SEWER
 - 10-20-21 STORM SEWER
 - 10-26-21 NE ADA RAMP
 - 11-23-21 REV. STORM LINE B
 - 1-3-22 ADA STALLS
 - 2-15-22 IRRIGATION TAP

STREETS OF W. PRYOR
LOT 7A
LEES SUMMIT, MO.

DESIGN LOADS

GROUND SNOW LOAD: 20 PSF

WIND: 115 MPH

ASSUMED SOIL BEARING: 3,000 PSF

SPECIFICATIONS

COLUMNS: ASTM A-500 GRADE C (50 KSI).

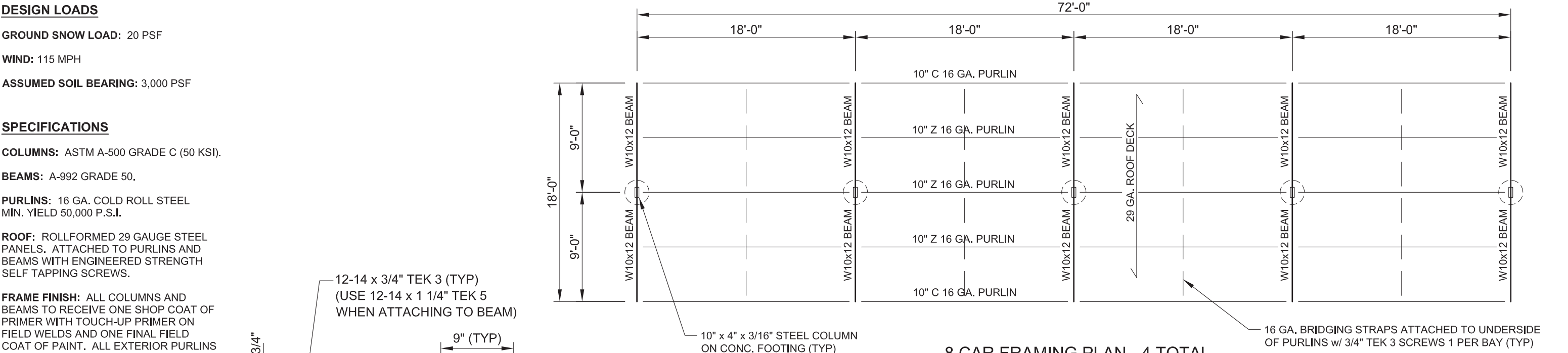
BEAMS: A-992 GRADE 50.

PURLINS: 16 GA. COLD ROLL STEEL
MIN. YIELD 50,000 P.S.I.

ROOF: ROLLFORMED 29 GAUGE STEEL
PANELS. ATTACHED TO PURLINS AND
BEAMS WITH ENGINEERED STRENGTH
SELF TAPPING SCREWS.

FRAME FINISH: ALL COLUMNS AND
BEAMS TO RECEIVE ONE SHOP COAT OF
PRIMER WITH TOUCH-UP PRIMER ON
FIELD WELDS AND ONE FINAL FIELD
COAT OF PAINT. ALL EXTERIOR PURLINS
SHALL BE GALVANIZED WITH FIELD PAINT
ON EXTERIOR FACE ONLY. ALL INTERIOR
PURLINS SHALL BE GALVANIZED AND
RECEIVE NO PAINT.

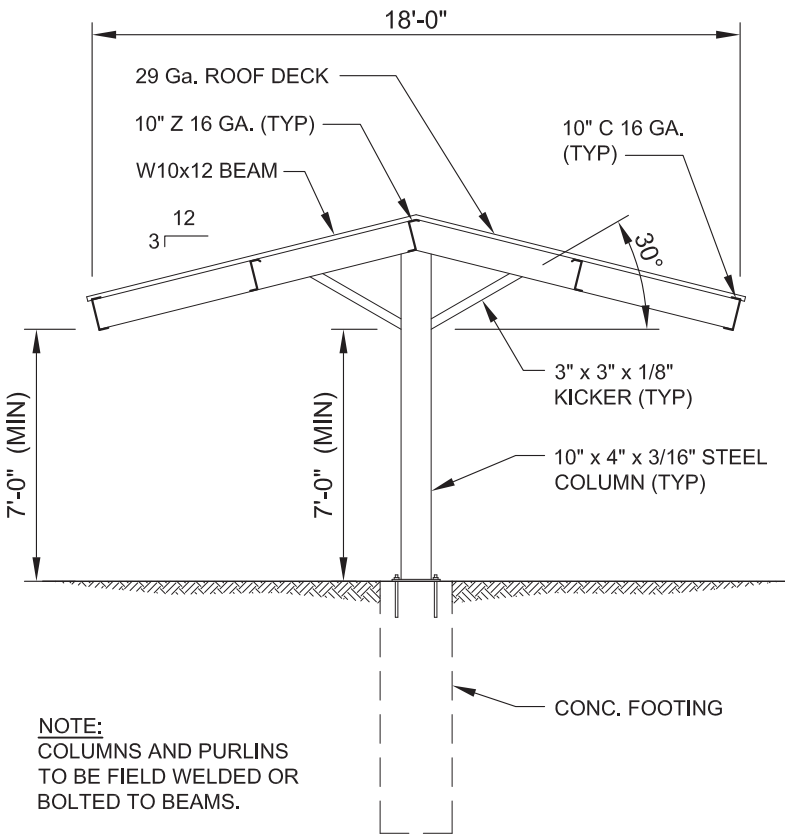
Paint to be black unless noted
otherwise



8 CAR FRAMING PLAN - 4 TOTAL

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

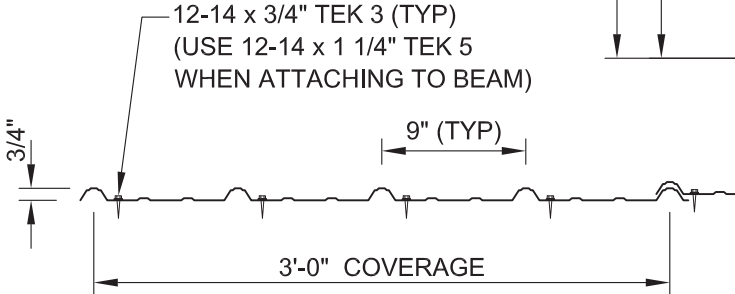
NOTE:
REFER TO NEXT PAGE FOR
ADDITIONAL CAR LAYOUT PLANS.



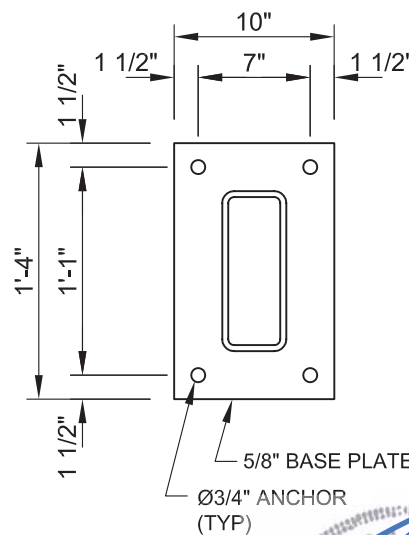
TYPICAL CROSS SECTION

SCALE: 3/16" = 1'-0"

ROOF PANEL FASTENING PATTERN

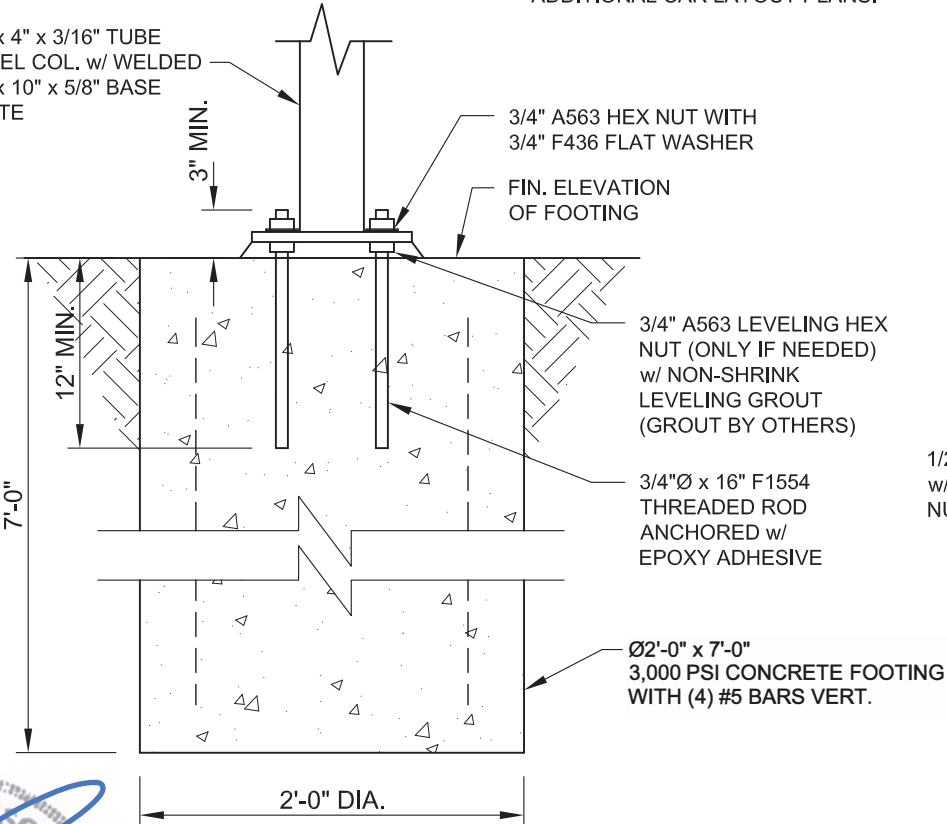


10" x 4" x 3/16" TUBE
STEEL COL. w/ WELDED
16" x 10" x 5/8" BASE
PLATE



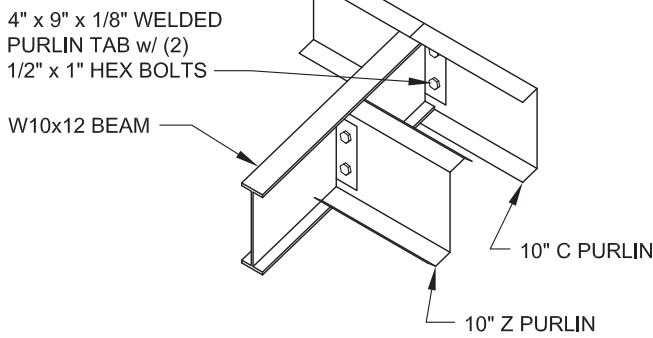
BASE PLATE ANCHOR LAYOUT

SCALE: 1" = 1'-0"



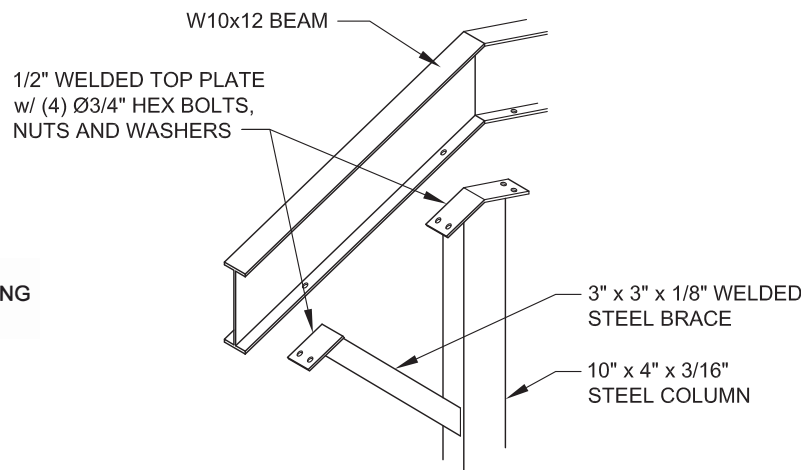
FOOTING DETAIL

SCALE: 1" = 1'-0"



PURLIN TO BEAM CONNECTION

SCALE: NTS



COLUMN TO BEAM CONNECTION

SCALE: NTS

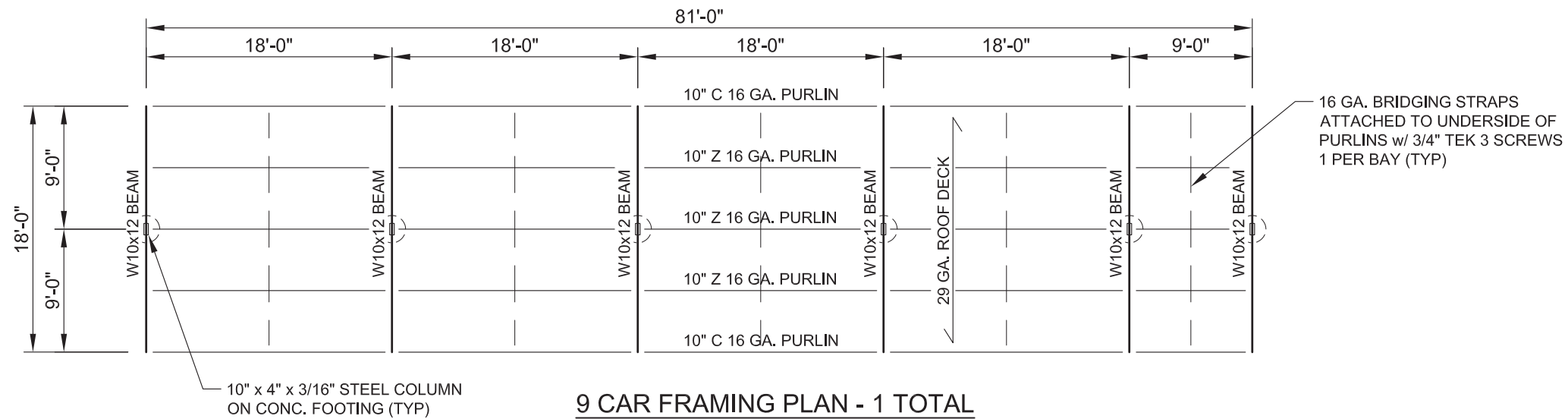
ROSS & BARR, INC.

11800 EAST NINE MILE ROAD
WARREN, MI 48089

PH: 586-754-2840 FAX: 586-754-9130

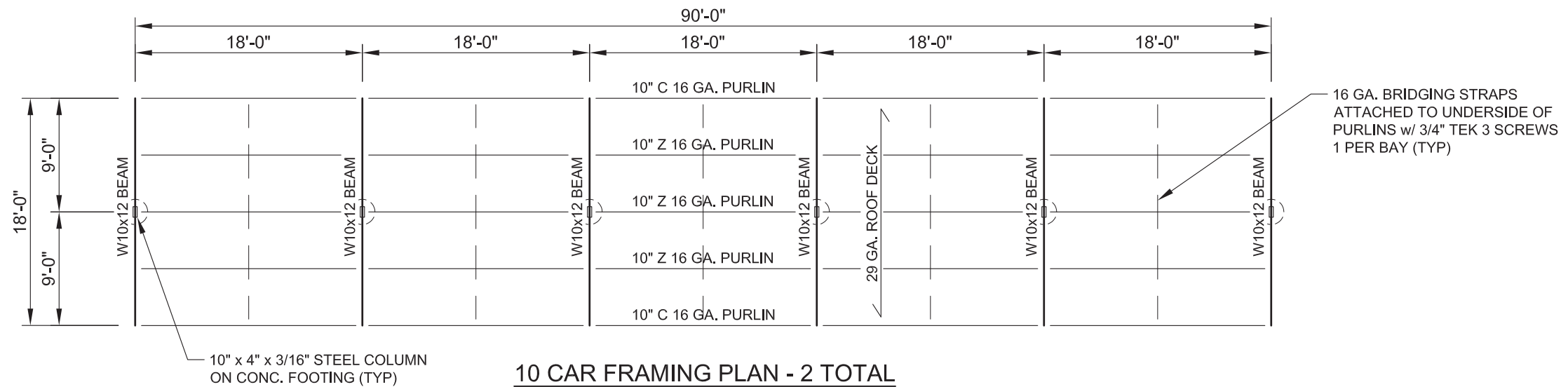
PROJECT: 88 Car Single Post Gable Carports
(3) 5 Car, (2) 6 Car, (4) 8 Car, (1) 9 Car & (2) 10 Car
LOCATION: Signature at West Pryor
2100 NW Lowenstein Dr.
Lee's Summit, MO 64081

PROJECT # 2714-22
DRAWN BY: RH
DATE: 3-8-23
SCALE: AS SHOWN
SHEET: 1 OF 2



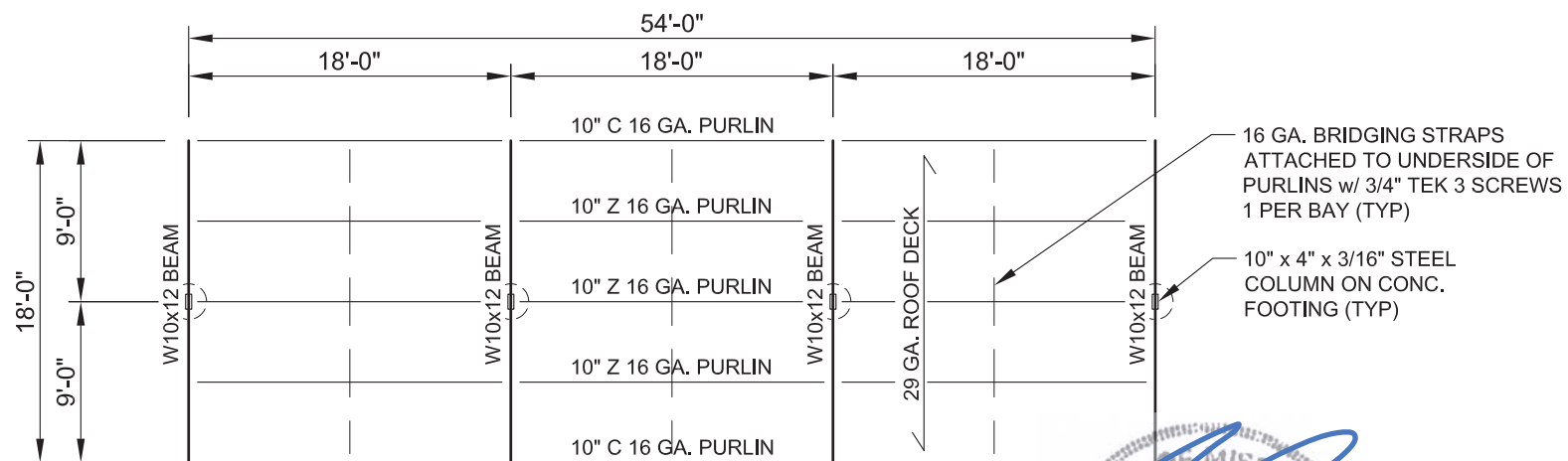
9 CAR FRAMING PLAN - 1 TOTAL

SCALE: 3/32" = 1'-0"



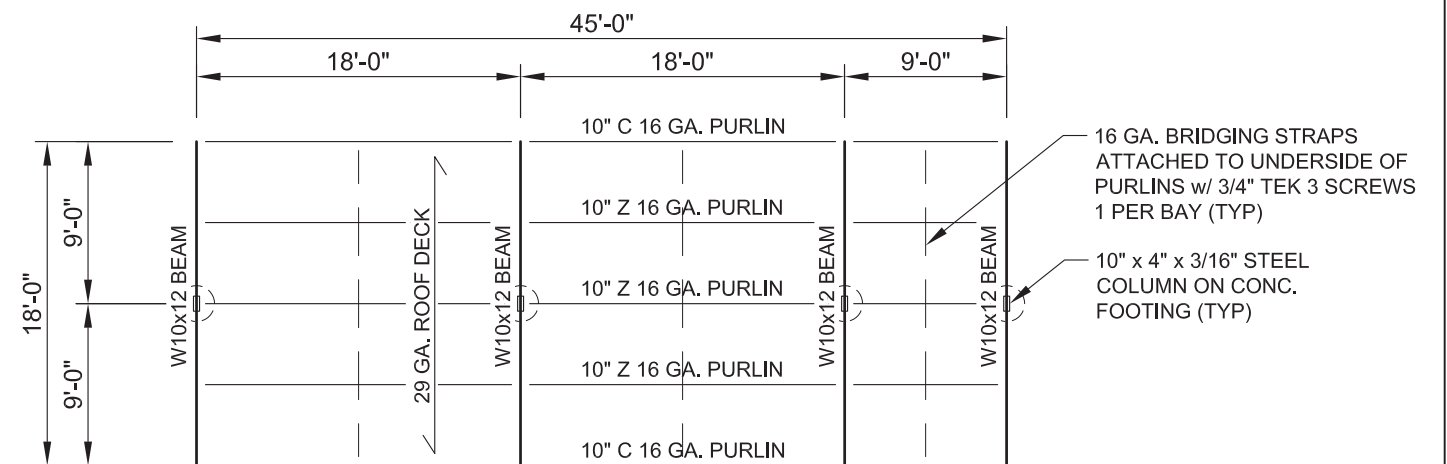
10 CAR FRAMING PLAN - 2 TOTAL

SCALE: 3/32" = 1'-0"



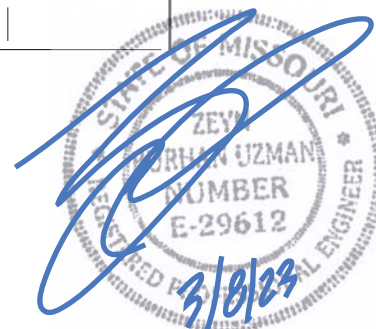
6 CAR FRAMING PLAN - 2 TOTAL

SCALE: 3/32" = 1'-0"



5 CAR FRAMING PLAN - 3 TOTAL

SCALE: 3/32" = 1'-0"



ROSS & BARR, INC.

11800 EAST NINE MILE ROAD
WARREN, MI 48089
PH: 586-754-2840 FAX: 586-754-9130

PROJECT: 88 Car Single Post Gable Carports
(3) 5 Car, (2) 6 Car, (4) 8 Car, (1) 9 Car & (2) 10 Car
LOCATION: Signature at West Pryor
2100 NW Lowenstein Dr.
Lee's Summit, MO 64081

PROJECT # 2714-22
DRAWN BY: RH
DATE: 3-8-23
SCALE: AS SHOWN
SHEET: 2 OF 2

Calcs provided as requested

STRUCTURAL CALCULATIONS
(ASCE 7-16)

SNOW LOAD

$p_g = 20 \text{ PSF}$

$p_f = 1.7 C_e C_t I_s p_g = 1.7(1)(1.2)(.8)(20) = 13.4 \text{ PSF}$

$p_{min} = .8(20) = 16 \text{ PSF}$

WIND LOAD

$V = 105 \text{ MPH}$

$P = q_h G C_N$

$q = 0.00256 K_z K_{zt} K_d V^2 \quad K_z = .57 \quad K_{zt} = 1.0 \quad K_d = .85$

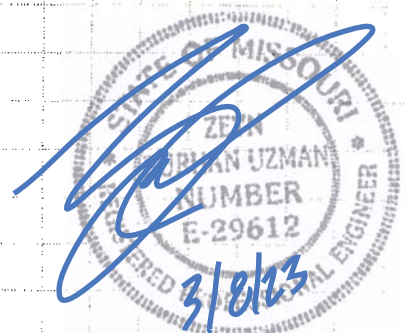
$q = 0.00256 (.57)(1)(.85)(105)^2 = 13.7 \text{ PSF}$

$G = .85 \quad C_N = 1.6$

$p = 13.7(.85)(1.6) = 18.6 \text{ PSF}$

ROOF LOAD

DECK	2
PURLINS	2
BEAMS	1
SNOW	20
TOTAL	25



CHAVES ASSOCIATES, INC.

Structural Engineers
38228 John P St.
CLINTON TWP, MI 48036
(586) 468-4314 Fax (586) 468-4314

JOB SIGNATURE AT W. PRYOR (22-242)

SHEET NO. _____ OF _____

CALCULATED BY GJC DATE 2/3/23

CHECKED BY _____ DATE _____

SCALE _____

18' PURLINS

$$W = 4.5'(.025) = 0.11 \text{ K/FT}$$

$$M = \frac{11(18)^2}{8} = 4.6 \text{ K-FT}$$

USE: 10" 16 GA. Z R=1.0 K

BEAM:

$$M_{\text{MAX}} = 2'(2.0) + 6.5'(1.0) = 10.5 \text{ K-FT}$$

USE: W10X12

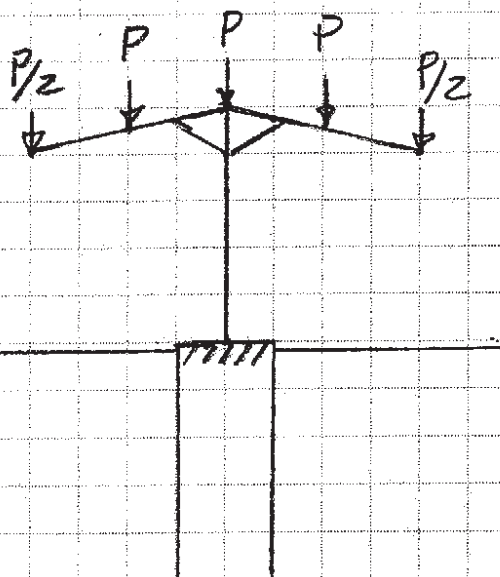
COL.:

$$P_{\text{MAX}} = 8 \text{ K}$$

WORST CASE

$$M_{\text{MAX}} = 11.8 \text{ K-FT}$$

USE: HSS 10X4 X 3/16 (FOR Δ)



FOUNDATION DESIGN:

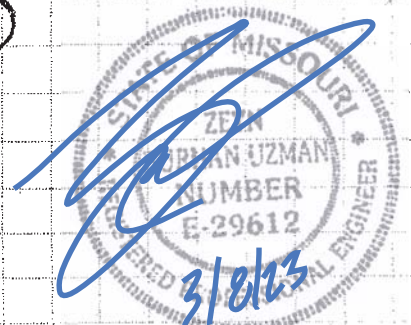
$$A_{\text{REQ'D}} = \frac{P}{f} = 2.67 \text{ FT}^2$$

USE: 2' Ø FTG

$$A = 3.1 \text{ FT}^2 \text{ OK}$$

$$M_R = 7(2')(1.2 \text{ K/FT}^2)(3.5) + 7(3.14)(.15)(1)$$

$$= 13.1 \text{ K-FT} > 11.8 \text{ OK}$$



CHAVES ASSOCIATES, INC.
Structural Engineers
38228 John P St.
CLINTON TWP, MI 48036
(586) 468-4314 Fax (586) 468-4314

JOB SIGNATURE AT W. PRYOR (22-242)

SHEET NO. _____ OF _____

CALCULATED BY GJC DATE 2/28/23

CHECKED BY _____ DATE _____

SCALE _____

UPLIFT ON PURLINS

$$W = [1.6(18.6) - 1.6(5)] \left(\frac{18}{4} \right) / 1000 = .0367 \text{ K/FT}$$

$$M_{UP} = \frac{.0367(18)^2}{8} = 1.49 \text{ K-FT} = 19.9 \text{ K-IN}$$

$$\text{FROM CHART } M_{ALL.} = 15.5 \left(\frac{50}{55} \right) \left(\frac{9.5}{10} \right) = 13.4 \text{ K-IN}$$

N.G.

PROVIDE STRAP @ CTR PT.

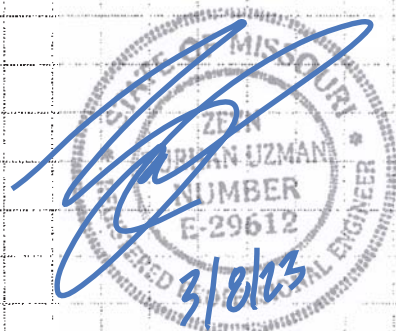


Chart II-3

**Nominal Flexural Strength
Purlins and Girts
Z-Sections With Lips ($F_y = 55$ ksi, $C_b = 1$)**

 $\Omega_b = 1.67$ (ASD) $\phi_b = 0.90$ (LRFD, LSD)