

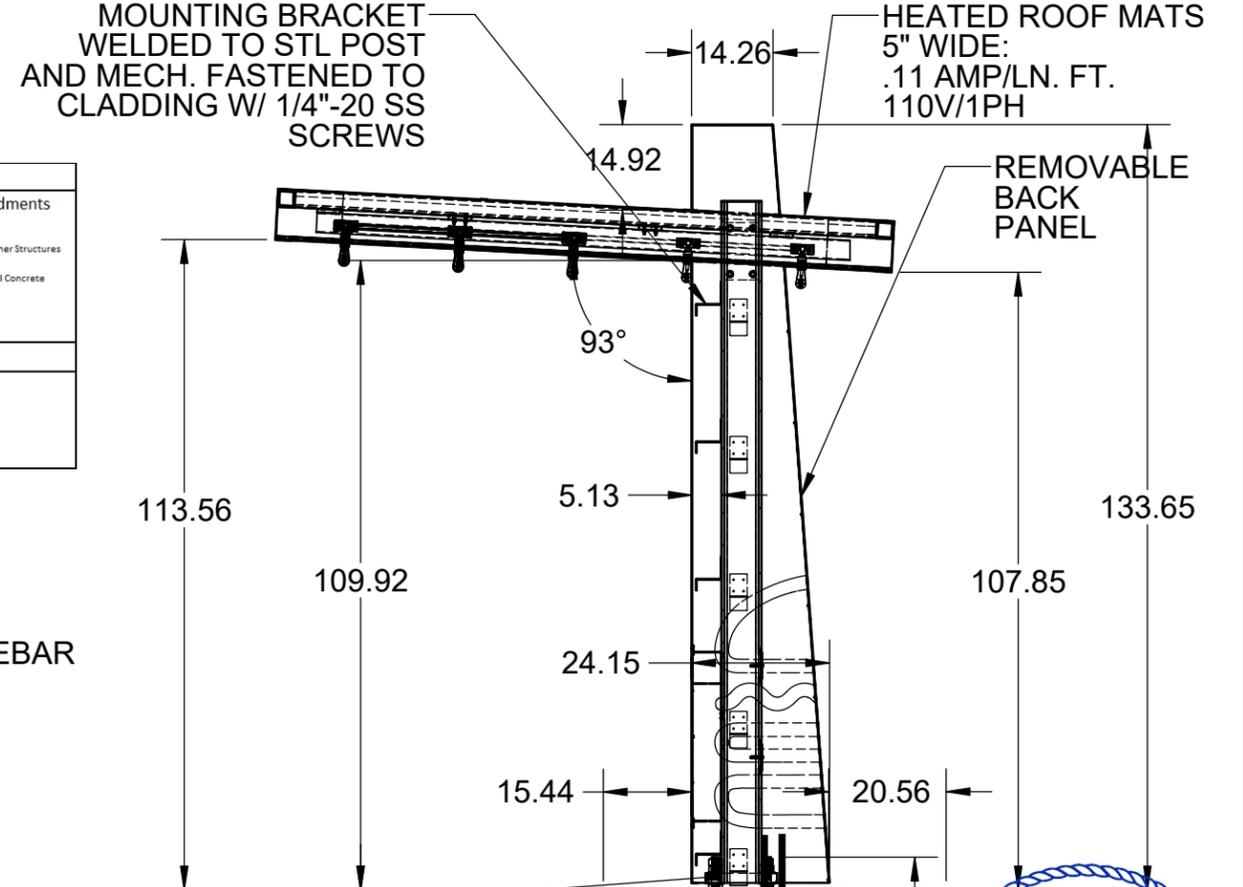
| DESIGN SPECIFICATIONS | |
|-----------------------|---|
| IBC 2018 | with MO amendments |
| ASCE 7-16 | Minimum Design Loads for Buildings & Other Structures |
| ACI 318-14 | Building Code Requirements for Structural Concrete |
| ANSI/AISC 360-16 | Specification for Structural Steel Buildings |
| DESIGN LOADS | |
| Wind | V = 115 mph |
| Exposure | C |
| Risk Cat. | II |
| Grnd. Snow | Pg = 20 psf |

ENGINEERS NOTES:
 * 6" SQ. X 3/8" STL. TUBE WELDED TO 12-1/2" SQ. X 1-3/4" STL. BASE PLATE W/ (4) ϕ 1-3/8" MIN. A36 ANCHOR BOLTS.
 *FOOTING OPTIONS:
 1. ϕ 36" AUGURED X 6'-0" DEEP MIN./ AS SHOWN W/ REBAR
 2. 48" X 72" X 4'-6" DEEP MIN. W/ VERTICAL REBAR MAT AROUND THE ENTIRE PERIMETER OF FOOTING OF (4) #5RB HORIZONTAL AND #5RB VERTICALS @ 12" O.C. SPACING (4" MIN. EDGE CLEARANCE). FOOTING IS ACCEPTABLE TO BE INSTALLED PARALLEL OR PERPENDICULAR TO SIGN FACE.

12-1/2" X 12-1/2" X 1-3/4" STL. BASE PLATE WELDED TO 7" SQ. STL. TUBE COLUMN

CONDUIT PER CITY ELEC. CODE / CITY SPECIFICATIONS (BY OTHERS)

3000 PSI CONC. FOOTING W/ (4) ϕ 1-3/8" X 36" LONG ANCHOR RODS W/ DBL HEAVY HEX NUTS OVER HEAVY HEX LEVELING NUTS W/ (9) #5 REBAR VERTICALS AND (9) #4 REBAR HORIZONTALS @ 3" O.C. @ TOP, THEN FILL BALANCE @ 12" MAX O.C. TO BOTTOM OF FOOTING

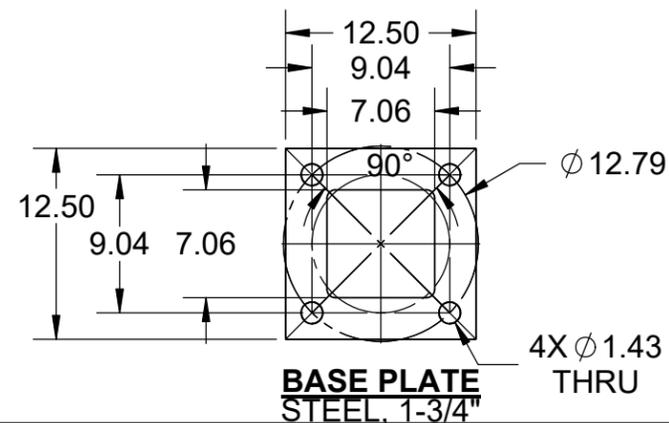
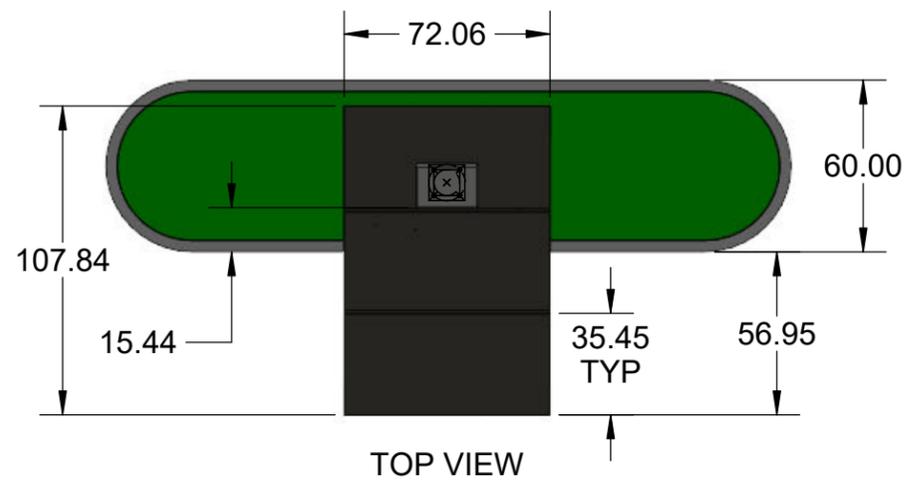


SECTION AB
 SCALE 1 : 32

NOTE:
 CONG. PIER IS TO BE POURED TIGHT AGAINST UNDISTURBED SOIL. BACKFILL IS NOT ACCEPTABLE

NOTE:
 ELECTRICAL WIRING W/ NON-METAL CONDUIT TO RUN FROM JUNCTION BOX AND RETURN TO POST

ATTENTION:
 FOOTINGS ARE TYPICAL. MUST CHECK LOCAL CODES AND ORDINANCES. USE OF THIS TYPICAL DESIGN IS AT THE USER'S RISK AND CARRIES NO IMPLIED OR INFERRED GUARANTEE AGAINST FAILURE OR DEFECTS.



STATE OF MISSOURI
 JERE MURDOCH
 NUMBER
MURDOCH
 ENGINEERING
 SIGNATURE PROFESSIONAL
 2 HUMMINGBIRD CT N A Project: 2132052
 HOWELL, NJ 07731
 (913) 570-8719
Jere Murdoch
Jere Murdoch, PE 6/30/2021
 Professional Engineer Rev. 7/20/2021
 MO PE Lic. #2014038163 PN# 2132636
 Exp. 12/31/2022

Visual Graphics Systems
 330 Washington Avenue
 Carlstadt, NJ 07072
 t 800 203 0301 f 201 528 0890
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TITLE: **DRIVE THRU CANOPY**
 72" X 108" X 133"
 DWG. NO. **DT-SGL-LEG-CANOPY-[SS]-TYP**

SIZE **B**
 REV **B**

DTC.1 DRIVE THRU CANOPY (QTY 2)

2051 NW Lowenstein Drive
Lee's Summit, MO 64081



FRONT VIEW
(STRUCTURE)

6" X 6" X 3/8" WALL
STL. SUPPORT TUBE

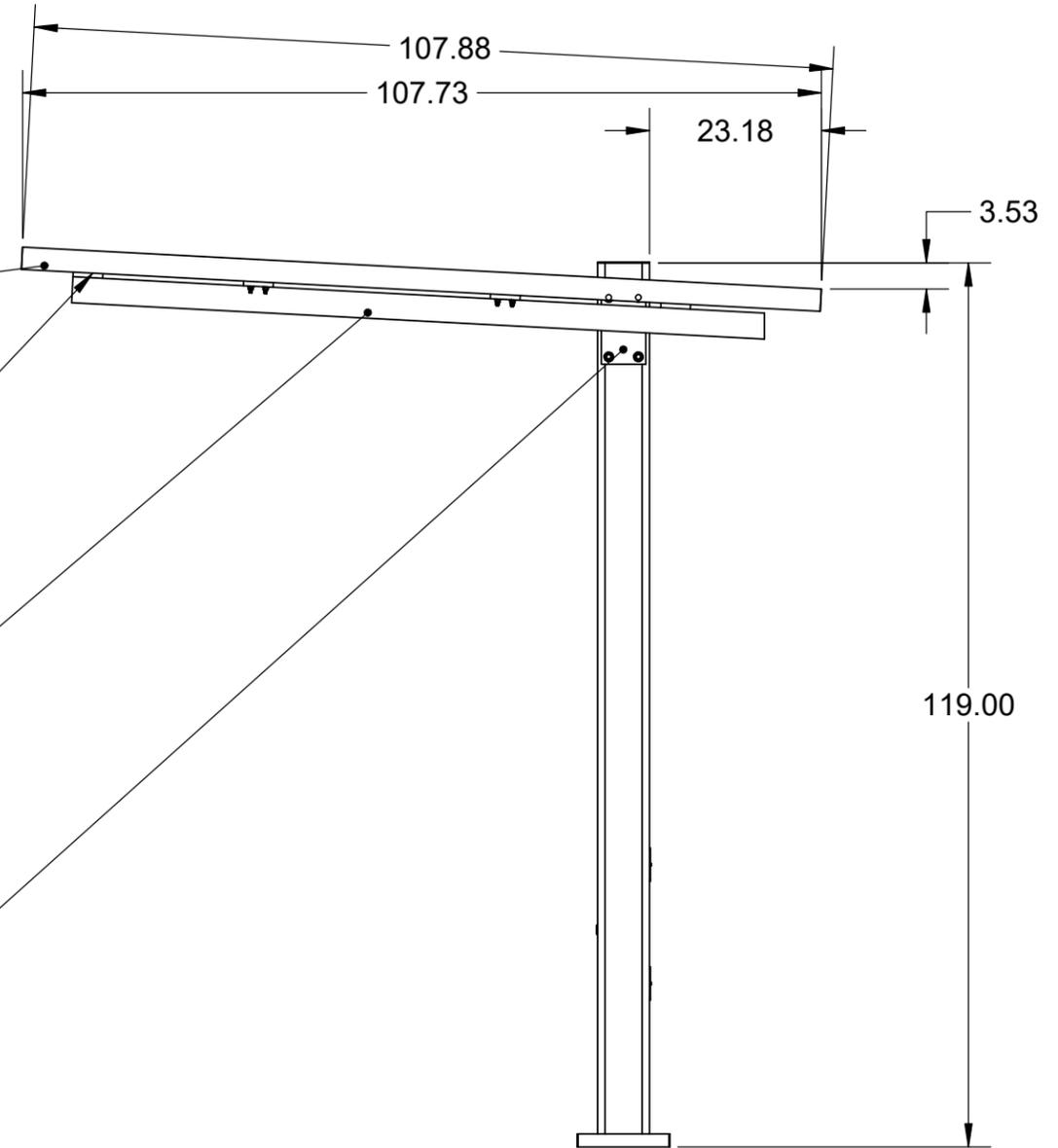
4" X 4" ALUM.
SUPPORT TUBE
FRAME WELDMENT

4" X 5/8" STL. PLATES
W/ 3/8"-16 X 1-3/4"L
STL. BOLTS, WASHERS
AND NUTS

3-1/2" X 3-1/2" X 3/16" WALL
STL. SUPPORT TUBE

12-1/2" X 12-1/2" X 1-3/4"
STL. BASE PLATE W/
CONTINUOUS WELD
BOTH SIDES

6" X 10" X 3/16" STL
PLATE WELDED TO
HSS 3-1/2" SQ. STL.
TUBE AND MECH.
FASTENED TO STL.
SUPPORT TUBE



SIDE VIEW
(STRUCTURE)

| DESIGN SPECIFICATIONS | |
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| DESIGN LOADS | |
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| Exposure | C |
| Risk Cat. | II |
| Grnd. Snow | Pg = 20 psf |

JERE MURDOCH
 NUMBER
 PE-2014038163
MURDOCH ENGINEERING
 SIGN STRUCTURE PROFESSIONALS, INC.
 2 HUMMINGBIRD CT. Project: 2132052
 HOWELL, NJ 07731
 (973) 570-8215
Jere Murdoch
Jere Murdoch, PE 6/30/2021
 Professional Engineer Rev. 7/20/2021
 MO PE Lic. #2014038163 Rev. 8/6/2021
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Visual Graphics Systems
330 Washington Avenue
Carlstadt, NJ 07072
t 800 203 0301 f 201 528 0890

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ANGULAR: MACH ± 1° BEND ± 1°
TWO PLACE DECIMAL ± 0.03
THREE PLACE DECIMAL ± .015

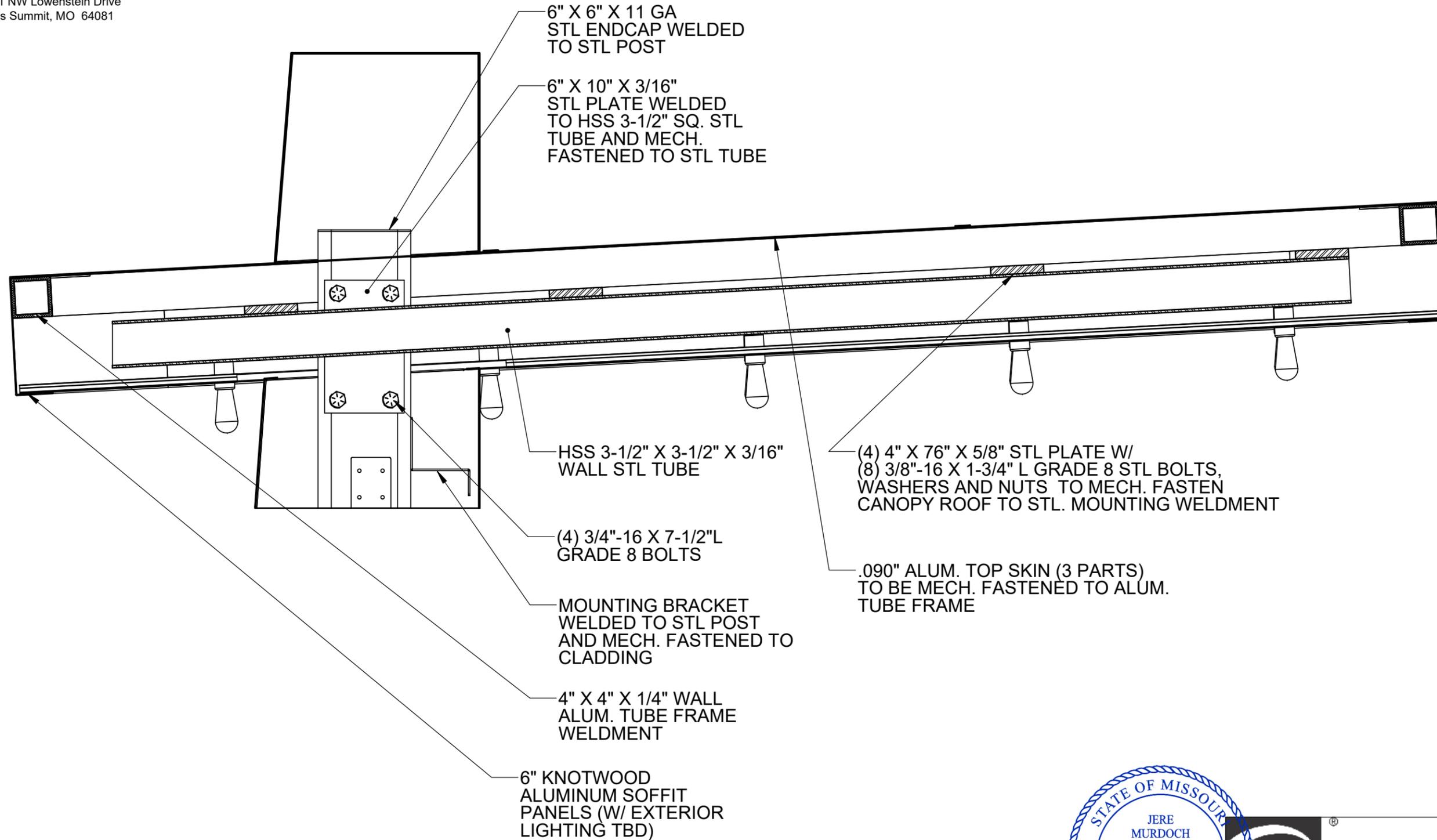
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72" X 108" X 133"

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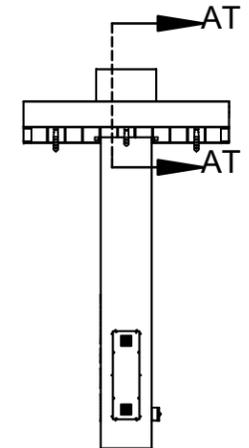
SIZE **B**
REV **B**

DTC.1 DRIVE THRU CANOPY (QTY 2)

2051 NW Lowenstein Drive
Lee's Summit, MO 64081



SECTION AT



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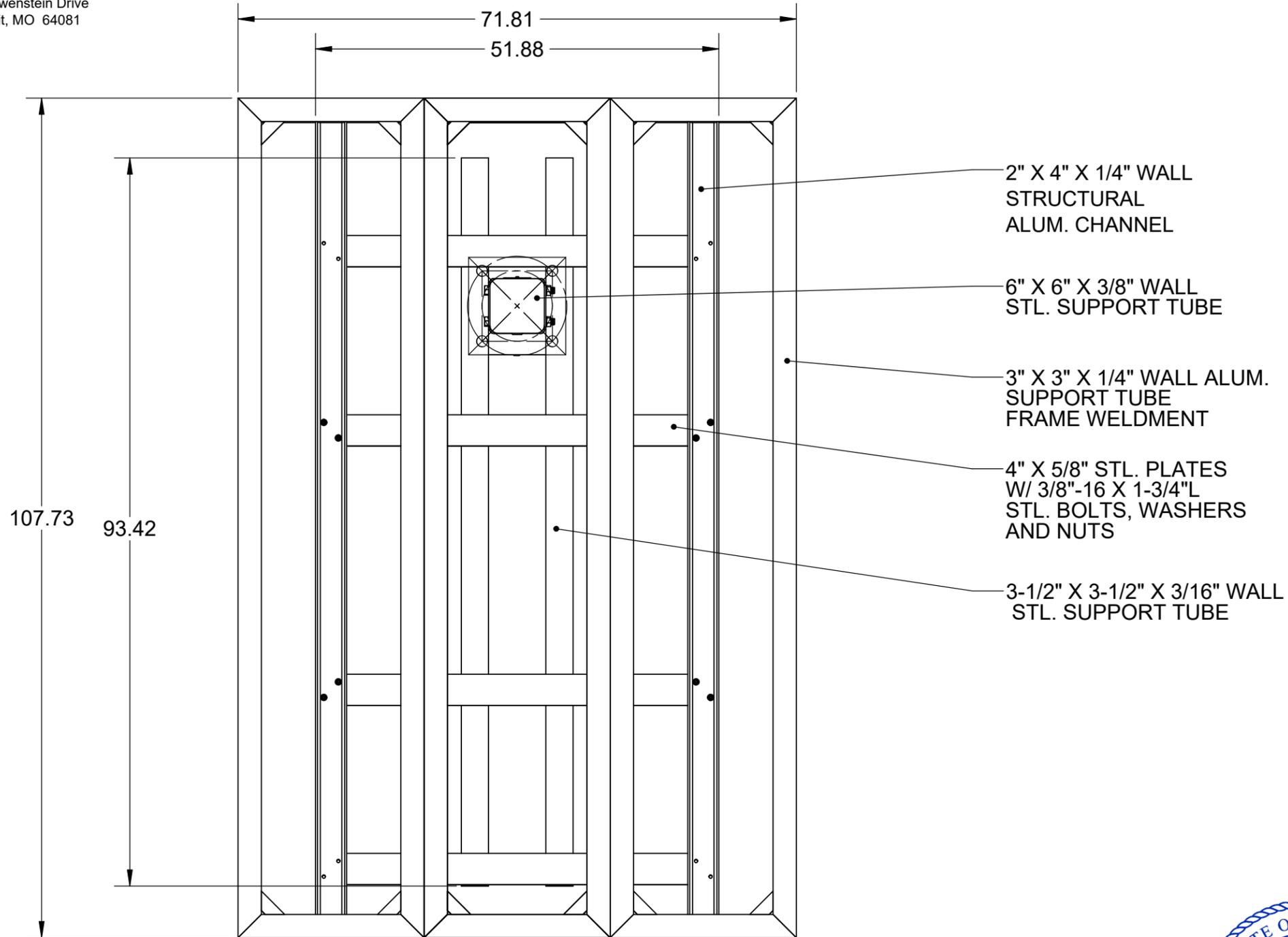
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| | | |
|----------|---|------------------|
| TITLE: | DRIVE THRU CANOPY 72" X 108" X 133" | SIZE B |
| DWG. NO. | DT-SGL-LEG-CANOPY-[SS]-TYP | REV B |

DTC.1 DRIVE THRU CANOPY (QTY 2)

2051 NW Lowenstein Drive
Lee's Summit, MO 64081



TOP VIEW
(STRUCTURE)

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| | | | |
|----------|-----------------------------------|------|----------|
| TITLE: | DRIVE THRU CANOPY | SIZE | B |
| | 72" X 108" X 133" | | |
| DWG. NO. | DT-SGL-LEG-CANOPY-[SS]-TYP | REV | B |

GENERAL:

- ALL MATERIALS AND WORK SHALL CONFORM TO THE REQUIREMENTS OF THE APPLICABLE INTERNATIONAL BUILDING CODE (IBC).
- CONSTRUCTION METHODS AND PROJECT SAFETY: DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE METHODS, PROCEDURES, OR SEQUENCE OF CONSTRUCTION. TAKE NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE DURING CONSTRUCTION. THE EOR WILL NOT ENFORCE SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL DESIGN, CONSTRUCT, AND MAINTAIN ALL SAFETY DEVICES AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS, AND REGULATIONS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES OR INCONSISTENCIES THAT ARE FOUND. NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. DO NOT SCALE DRAWINGS.
- ALL OMISSIONS AND/OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND FIELD INSPECTOR. THE ENGINEER SHALL PROVIDE A SOLUTION PRIOR TO PROCEEDING WITH ANY WORK AFFECTED BY THE CONFLICT OR OMISSION.
- WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF THE WORK, CONSTRUCT IN ACCORDANCE WITH THE STEEL CONSTRUCTION MANUAL, 14TH EDITION OR 2010 ALUMINUM DESIGN MANUAL.
- WHEN A DETAIL IS IDENTIFIED AS TYPICAL, THE CONTRACTOR IS TO APPLY THIS DETAIL IN ESTIMATING AND CONSTRUCTION TO EVERY LIKE CONDITION WHETHER OR NOT THE REFERENCE IS REPEATED IN EVERY INSTANCE.
- ANY CHANGE TO THE DESIGN AS SHOWN ON THE DRAWINGS REQUIRES PRIOR WRITTEN APPROVAL FROM DESIGN ENGINEER OF RECORD BEFORE CONSTRUCTION.
- WORK PERFORMED IN CONFLICT WITH THE STRUCTURAL DRAWINGS OR APPLICABLE BUILDING CODE REQUIREMENTS SHALL BE CORRECTED AT THE EXPENSE OF THE CONTRACTOR.
- VERIFICATION: VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK. NOTIFY THE EOR IMMEDIATELY OF ANY DISCREPANCIES.

EXISTING CONDITIONS:

- IF EXISTING CONDITIONS ARE NOT AS DETAILED IN THIS DESIGN, THE INSTALLER SHALL CEASE WORK AND NOTIFY MURDOCH ENGINEERING IMMEDIATELY.
- MURDOCH ENGINEERING WILL NOT BE PERFORMING ON-SITE INSPECTIONS OR VERIFICATIONS. IT IS THE RESPONSIBILITY OF THE INSTALLER, STRUCTURE OWNER, AND PROPERTY OWNER TO IDENTIFY EXISTING CONDITIONS AND CONTACT MURDOCH ENGINEERING WITH ANY DISCREPANCIES OR CONCERNS.
- INSTALLER SHALL CONFIRM THE DIAMETER AND THICKNESS OF EXISTING MEMBERS AND NOTIFY MURDOCH ENGINEERING OF ANY DISCREPANCIES.
- INSTALLER SHALL INSPECT AND CONFIRM THE QUALITY OF EXISTING STRUCTURE AS "IN GOOD REPAIR". IF THERE ARE ANY INDICATIONS THAT THIS IS NOT THE CASE, INSTALLER SHALL CEASE WORK IMMEDIATELY AND NOTIFY MURDOCH ENGINEERING.
- ANY EXISTING INFORMATION SHOWN HAS BEEN FURNISHED BY THE PERSON(S) OR COMPANY THIS DOCUMENT WAS PREPARED FOR (SEE TITLE BLOCK). MURDOCH ENGINEERING IN NO WAY CERTIFIES THIS INFORMATION AS "AS-BUILT". IF THERE IS ANY REASON TO BELIEVE THE EXISTING CONDITIONS DETAILED HEREIN ARE NOT ACCURATE, MURDOCH ENGINEERING SHALL BE NOTIFIED IMMEDIATELY.

STEEL

- STEEL SHAPES SHALL CONFORM TO THE FOLLOWING:

| | | |
|-----------------|-----------------|----------------|
| ROUND HSS | ASTM A500, GR B | Fy=42 KSI MIN. |
| SQUARE/RECT HSS | ASTM A500, GR B | Fy=46 KSI MIN. |
| THREADED ROD | ASTM A36 | Fy=46 KSI MIN. |
| STEEL PLATE | ASTM A36 ASTM | Fy=36 KSI MIN. |
| STD. PIPE | A53, GR B | Fy=35 KSI MIN. |
- BOLTS SHALL CONFORM TO ASTM A307 UNO..
- BOLTS AND THREADED ROD SHALL BE HOT-DIP GALVANIZED PER ASTM F2329 UNO.
- ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 UNO.
- NUTS SHALL CONFORM TO ASTM A563.
- WASHERS SHALL CONFORM TO ASTM F844.
- STEEL HARDWARE SHALL BE HOT-DIP GALVANIZED PER ASTM A153 UNO
- WELDING:
 - WELD STRUCTURAL STEEL IN COMPLIANCE WITH ANSI/AWS D1.1 AND AISC SPECIFICATION, CHAPTER J. WELDERS SHALL BE CERTIFIED AS REQUIRED BY GOVERNING CODE AUTHORITY. WELDING SHALL BE DONE BY ELECTRIC ARC PROCESS USING LOW-HYDROGEN ELECTRODES WITH SPECIFIED TENSILE STRENGTH NOT LESS THAN 70 KSI UNLESS NOTED OTHERWISE.
 - ALL SHOP AND FIELD WELDS SHALL BE PERFORMED BY AN AWS OR ICC CERTIFIED WELDER WITH ACTIVE STATUS AT TIME OF WELDING
 - UNLESS A LARGER WELD SIZE IS INDICATED, PROVIDE MINIMUM SIZE WELDS PER AISC SPECIFICATION, SECTION J2, TABLE J2.4
 - BASE PLATES SHALL BE WELDED ON TOP AND BOTTOM WITH CONTINUOUS WELDS OF AT LEAST 1/4" (IF PLATE IS CUT TO FIT TUBE INTO PLATE)

ALUMINUM:

- FABRICATE AND ERECT ALUMINUM IN COMPLIANCE WITH THE ALUMINUM ASSOCIATION (AA) 2010 ALUMINUM DESIGN MANUAL (ADM) 1, THE SPECIFICATIONS FOR ALUMINUM SHEET METAL WORK (ASM35), AND IBC CHAPTER 20.
- PIPE AND TUBE SHALL BE 6061-T6 PER ASTM B241 OR B429 WITH Ft_u=38 KSI MIN, Fty=35 KSI MIN, Ft_w=24 KSI MIN, Fty_w=15 KSI MIN.
- STD STRUCTURAL PROFILES SHALL BE 6061-T6 PER B308 WITH Ft_u=38 KSI MIN, Fty=35 KSI MIN, Ft_w=24 KSI MIN, Fty_w=15 KSI MIN.
- SHEET AND PLATE SHALL BE 6061-T6 PER ASTM B209 WITH Ft_u=42 KSI MIN, Fty=35 KSI MIN, Ft_w=24 KSI MIN, Fty_w=15 KSI MIN.
- EXTRUSIONS SHALL BE 6061-T6 PER ASTM B241 OR B429 WITH Ft_u=38 KSI MIN, Fty=35 KSI MIN, Ft_w=24 KSI MIN, Fty_w=15 KSI MIN.
- ALL SHOP AND FIELD WELDS SHALL BE PERFORMED BY AN AWS OR ICC CERTIFIED WELDER WITH CURRENT STATUS AT TIME OF WELDING
- UNLESS A LARGER WELD SIZE IS INDICATED, PROVIDE MINIMUM SIZE WELD PER ADM. ALL ALUMINUM WELDED JOINTS SHALL HAVE WELD SIZES OF AT LEAST 1/4 INCH
- FILLET WELDS SHALL NOT EXCEED THINNEST MEMBER WALL THICKNESS JOINED.
- ALUMINUM WELD FILLER SHALL BE 5356 ALLOY
- WELDING PROCESS GMAW OR GTAW SHALL BE IN ACCORDANCE WITH AWS D1.2
- ALUMINUM CHANNEL LETTERS SHALL BE CONSTRUCTED OF 0.090" RETURNS AND 0.125" BACKS MINIMUM, UNLESS A LARGER SIZE IS INDICATED ON DRAWINGS. THIS NOTE SHALL SUPERCEDE DRAWING DETAILS.
- PROVIDE NEOPRENE GASKET BETWEEN DISSIMILAR METALS TO PREVENT GALVANIC CORROSION
- ALUMINUM DIRECTLY EMBEDDED INTO CONCRETE SHALL BE CAPPED AT BOTTOM AND COATED WITH BITUMINOUS COATING OR POLYURETHANE WHERE IN CONTACT WITH CONCRETE.
- FASTENERS BETWEEN DISSIMILAR METALS SHALL BE STAINLESS STEEL 316.

CONCRETE & REINFORCEMENT

- MINIMUM 28-DAY COMPRESSIVE STRENGTH (f_c') SHALL BE 3,000 PSI. THE MAXIMUM WATER TO CEMENT RATIO SHALL BE 0.45 BY WEIGHT. A MINIMUM OF 5-3/4 BAGS OF CEMENT SHALL BE USED PER CUBIC YARD WITH A SLUMP OF 4" +/- 1.
- REINFORCEMENT TO BE ASTM A615 GR 60, Fy=60 KSI UNO
- CALCIUM CHLORIDE OR ADDED CHLORIDE IS NOT PERMITTED
- VIBRATION: ALL REINFORCED CONCRETE SHALL BE CONSOLIDATED WITH MECHANICAL VIBRATORS
- CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318-11
- PROVIDE A MINIMUM OF 2-1/2" COVER OF ALL EMBEDDED STEEL REBAR AND A MINIMUM OF 6 INCHES OF COVER FOR DIRECT BURIED PIPE OR TUBE MEMBERS.

FOUNDATIONS

- CONCRETE POURED INTO CONSTRAINED EARTH EXCAVATIONS MUST CURE UNDER PROPER CONDITIONS FOR A MINIMUM OF 7 DAYS PRIOR TO SIGN BOX INSTALLATION. (EXCEPTION: IF THE OVERALL HEIGHT OF THE SIGN IS LESS THAN 20 FEET AND THE SIGN IS ADEQUATELY BRACED AGAINST WIND LOADS FOR A MINIMUM OF 4 DAYS, THE BOX MAY BE INSTALLED THE SAME DAY AS THE FOOTING IS POURED)
- FOOTINGS MUST BE POURED AGAINST UNDISTURBED EARTH. SOIL BACKFILL IS UNACCEPTABLE. WHEN A SONOTUBE IS USED AS THE FORM, 3/4" BLUESTONE OR CONCRETE SHALL BE USED TO BACKFILL THE SPACE BETWEEN THE SONOTUBE AND UNDISTURBED EARTH.
- COLD WEATHER PLACEMENT: PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH THAT COULD BE CAUSED BY FROST, FREEZING ACTIONS OR LOW TEMPERATURES. DO NOT POUR CONCRETE DURING OR WHEN FREEZING TEMPERATURES ARE ANTICIPATED WITHIN 3 DAYS OF POUR.
- REINFORCEMENT IS NOT REQUIRED FOR DIRECT BURIAL TYPE SIGN FOOTINGS FOR SIGNS OF 25 FEET OVERALL HEIGHT OR LESS, DIRECT BURIED STEEL SHALL EXTEND TO 6 INCHES FROM BOTTOM OF FOOTING.
- FOR ANCHOR BOLT/ BASE PLATE - SQUARE FOOTINGS, PROVIDE A MINIMUM OF #5 VERTICAL REBAR @ 12" O.C., 4" OFFSET FROM PERIMETER, TOP AND BOTTOM OF FOOTING. PROVIDE #3 HORIZONTAL TIES @ 12" O.C. Unless otherwise noted.
- FOR ANCHOR BOLT/ BASE PLATE - ROUND FOOTINGS, PROVIDE A MINIMUM OF SIX (6) VERTICAL #5 REBARS, EVENLY SPACED, 4" OFFSET FROM FOOTING PERIMETER & #3 HORIZONTAL TIES, 12" O.C. Unless otherwise noted.
- ANCHOR BOLTS SHALL BE TIED TO REBAR CAGE AT A MINIMUM OF TWO LOCATIONS PER ANCHOR BOLT
- FOOTING DESIGN ASSUMES FOOTING SHALL BE EXCAVATED AND POURED IN UNDISTURBED NATURAL EARTH, CAPABLE OF WITHSTANDING A MINIMUM 1,500 PSF VERTICAL DESIGN BEARING PRESSURE AND 150 PSF/FT OF DEPTH OF LATERAL BEARING PRESSURE BASED ON SOIL DATA OBTAINED FROM THE USGS SOIL SURVEY.
- IF CLAY, SILTY - CLAY, ORGANIC OR FILL SOIL IS ENCOUNTERED UPON EXCAVATION, CONTACT MURDOCH ENGINEERING FOR FOOTING DESIGN MODIFICATION PRIOR TO CONSTRUCTION.

SCOPE OF WORK:

- LIMITS OF LIABILITY TO EXTEND ONLY TO THE QUANTITY INDICATED. ATTEMPTS IN PART OR IN WHOLE TO INSTALL GREATER QUANTITIES THAN THOSE SPECIFIED WITHOUT CONSULTING MURDOCH ENGINEERING SHALL VOID ALL PROFESSIONAL LIABILITY AND COVERAGE.



murdochengineering.com
(973) 570-8215
73 Paterson St. 2nd Floor
New Brunswick, NJ 08901

PREPARED FOR:



PROJECT TITLE: SHAKE SHACK

PROJECT ADDRESS: 2051 NW Lowenstein Drive
Lee's Summit, MO 64081



2 HUMMINGBIRD CT. Project: 2132052
HOWELL, NJ 07731
(973) 570-8215

Jere Murdoch **6/30/2021**
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DWG TITLE: **GENERAL NOTES**

SHEET: **S.1** SIZE: **B**

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