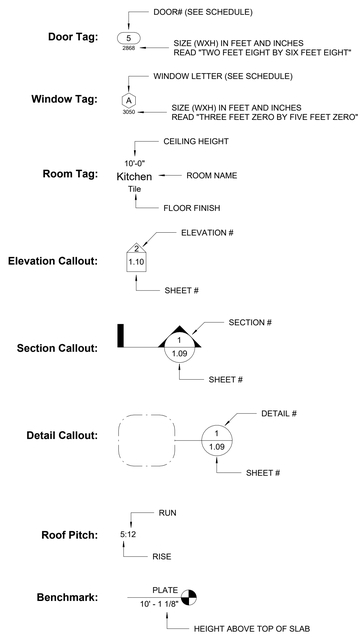
Abbreviations

ADJ Adjustable
AFF Above Floor Finish
ARCH Architectural
BD Board
BLKG Blocking
BO Bottom Of
BRG Bearing
CAB Cabinet
CANT Cantilever
CJ Ceiling Joist
CMU Concrete Masonry Unit
CLG Ceiling
CLO Closet
COL Column
CONC Concrete
CONT Continuous
CORR Corridor
CPT Carpet
CTR Center
D Dryer
DBL Double
DET Detail
DH Double Hung
DIA Diameter
DIM Dimension
DN Down
DO Door Opening
DW Dishwasher
DWR Drawer
DWG Drawing
EA Each
ELEV Elevation
EQ Equal
EW Each Way
EXT Exterior
FD Floor Drain
FE Fire Extinguisher
FIN Finish
FL Floor
FO Face of
FS Full Size
FT Foot or Feet
FTG Footing
FURR Furring
FZR Freezer
GAS Gas Bib
GB Grab Bar
GL Glass
GALV Galvanized
Gyp Gypsum
HB Hose Bib
HC Handicap
HDR Header
HR Hour
INT Interior
JT Joint
LAM Laminate
LAV Lavatory
LIN Linen
LVL Laminated Veneer Lumber
MAX Maximum
MC Medicine Cabinet
MECH Mechanical
MET Metal
MFR Manufacturer
MIN Minimum
MISC Miscellaneous
MTD Mounted
MUL Mullion
MW Microwave
NIC Not in Contract
NTS Not To Scale
OC On Center
OH Opposite Hand
OHD Overhead Door
OSB Oriented Strand Board
PL Plate
PR Pair
PTN Partition
RAD Radius
REF Refrigerator
RM Room
RO Rough Opening
SF Square Feet
SH Single Hung
SHT Sheet
SIM Similar
SPEC Specification
SS Stainless Steel
STD Standard
STL Steel
SYM Symmetrical
TC Trash Compactor
PH Telephone
TG Tongue and Groove
UNO Unless Noted Otherwise
VCT Vinyl Composition Tile
VERT Vertical
VWC Vinyl Wall Covering
W Washer
WD Wood
WH Water Heater
WP Waterproof
WWM Welded Wire Mesh

Symbols



General Notes

1. Written dimensions take precedence over scaled dimensions.
2. On Floor Plans, dimensions are to face of frame, or face of masonry, u.n.o.
3. On foundation plans dimensions are to edge of foundation, u.n.o.
4. On Interior Elevations, dimensions are to face of sheet rock, u.n.o.
5. Larger scale drawings take precedence over smaller scaled drawings.
6. change in floor materials occurs at centerline of door leaf.
7. All work performed shall be in accordance with all applicable codes, regulations, and ordinances having jurisdiction.
8. Attic access shall not be less then 22" x 30". Attic stair shall have a 25 1/2" x 54" rough opening, and shall be located to provide 30" minimum clear head room above the access opening.
9. Provide sound attenuating batts around all bathrooms and mechanical equipment spaces.
10. Any Mechanical, Electrical, or Plumbing shown on these plans are schematic only. Each sub-contractor is responsible to design and install their respective systems and equipment in conformance to local codes.
11. Unless Otherwise Noted, doors shall be located 6" from an adjacent wall, or centered between two adjacent walls.
12. Window sizes shown are nominal unit sizes. coordinate actual rough opening requirements with window manufacturer.
13. Locate all plumbing and mechanical vent stacks toward the rear of the building when possible, and paint to match roof color.
14. Final selection for all finish materials to be made by the Builder/Owner.
15. All bath and toilet area walls shall have water resistant gypsum board.
16. builder shall coordinate all closet shelving requirements with Owner.
17. Handrails shall be mounted 32" - 34" above nosing of stairs. Guard rails shall be 42" high.

Disclaimer

The Builder is responsible for ensuring compliance with all local codes and ordinances. Before construction begins, the Builder should thoroughly review these plans and notify Delineations Inc. immediately of any discrepancies or errors in the plans. The Builder acknowledges and understands the risks associated with adapting this home design to local construction site, such as climate, soil conditions, grade, seismic zone, etc. Therefore, the Builder should consult a local engineer prior to construction in order to establish adequate structural design and construction methods. The Builder is also responsible for obtaining a local Architect's Seal if required to satisfy the local governing authority. The Builder is responsible for MEP design. Delineations Inc. shall not be held responsible for construction means or methods, construction costs, quality of materials, or workmanship. Delineations Inc. shall not be held responsible for deviations from the plans. it is up to the Builder to notify Delineations immediately of any discrepancies before continuing construction. Delineations Inc. hereby grants permissions to build only one structure from this set of plans. Any subsequent construction beyond the structure for which this plan was purchased is strictly prohibited. Do not use these plans for construction unless each sheet is labeled and issued "For Construction."

YMCA Renovation

Burnet, Texas

Project Information

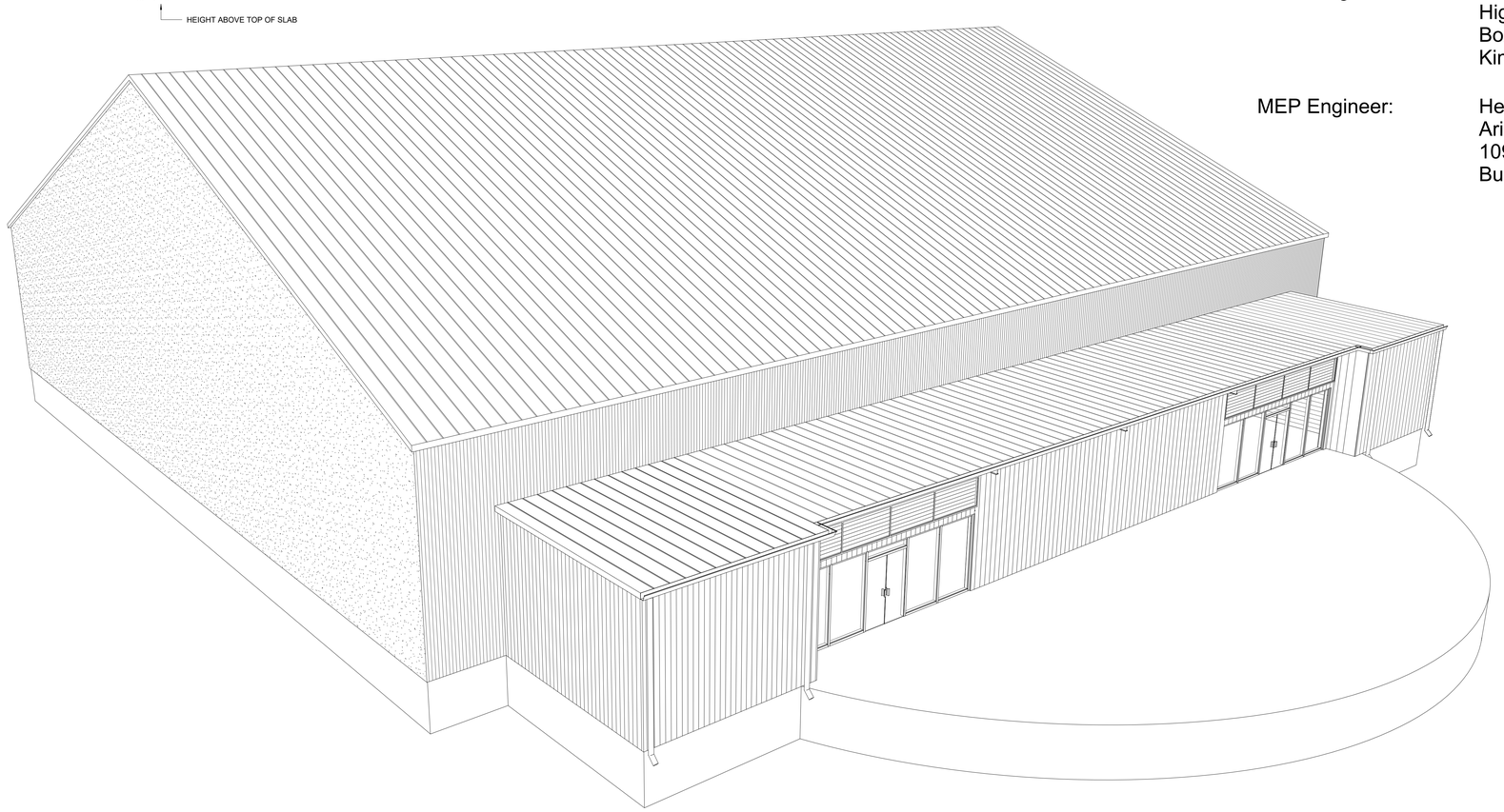
Owners: YMCA Burnet

Location: Burnet, Texas

Design by: Jerome A. Rugen, CPBD
Delineations, Inc.
518 Main Street
Marble Falls, TX 78654

Structural Engineer: Brad Shaw PE
Highland Lakes Engineering
Box 1164
Kingsland, TX 78639

MEP Engineer: Henry Romo, PE
Aries Engineered Solutions, Inc.
10900 Ranch Rd 2341
Burnet, TX 78611



Drawing List	
Sheet Number	**Sheet Name**
A1.01	Cover Sheet
A1.02	Area Plan & Schedules
A1.03	Existing Floor Plan
A1.04	Demolition Plan
A1.05	Floor Plan
A2.01	Exterior Elevations
A2.02	Elevations
A2.03	Sections
E-1.0	Floor Plan - Lighting
E-2.0	Floor Plan - Power
E-3.0	Electrical Riser Diagram
E-4.0	Electrical Schedules
M-1.0	Floor Plan - Mechanical
MEP-1.0	Mechanical & Plumbing Symbols & Abbreviations
MEP-2.0	Electrical Symbols, Abbreviations & Specifications
MEP-3.0	Mechanical Specifications
MEP-4.0	IECC Requirements
P-1.0	Floor Plan - Plumbing
P-2.0	Floor Plan - Plumbing Enlarged
P-3.0	Plumbing - Gas Riser
SF1	Structural Plan
SF2	Framing Elevations
SF3	Rigid Frames
Grand total: 23	

Delineations incorporated
Designs & Reprographics
518 Main Street
Marble Falls, TX 78654
Tel. (830) 693-9408
www.delineations.com

CERTIFIED PROFESSIONAL BUILDING DESIGNER
NATIONAL COUNCIL OF BUILDING DESIGNERS & CERTIFICATION
JEROME A. RUGEN
CPBD

YMCA Renovation
Rich Carlton
1601 South Water Street
Burnet, Texas 78611

No.	Description	Date
	REVISIONS	6-30-2023

Construction R2

6.30.2023

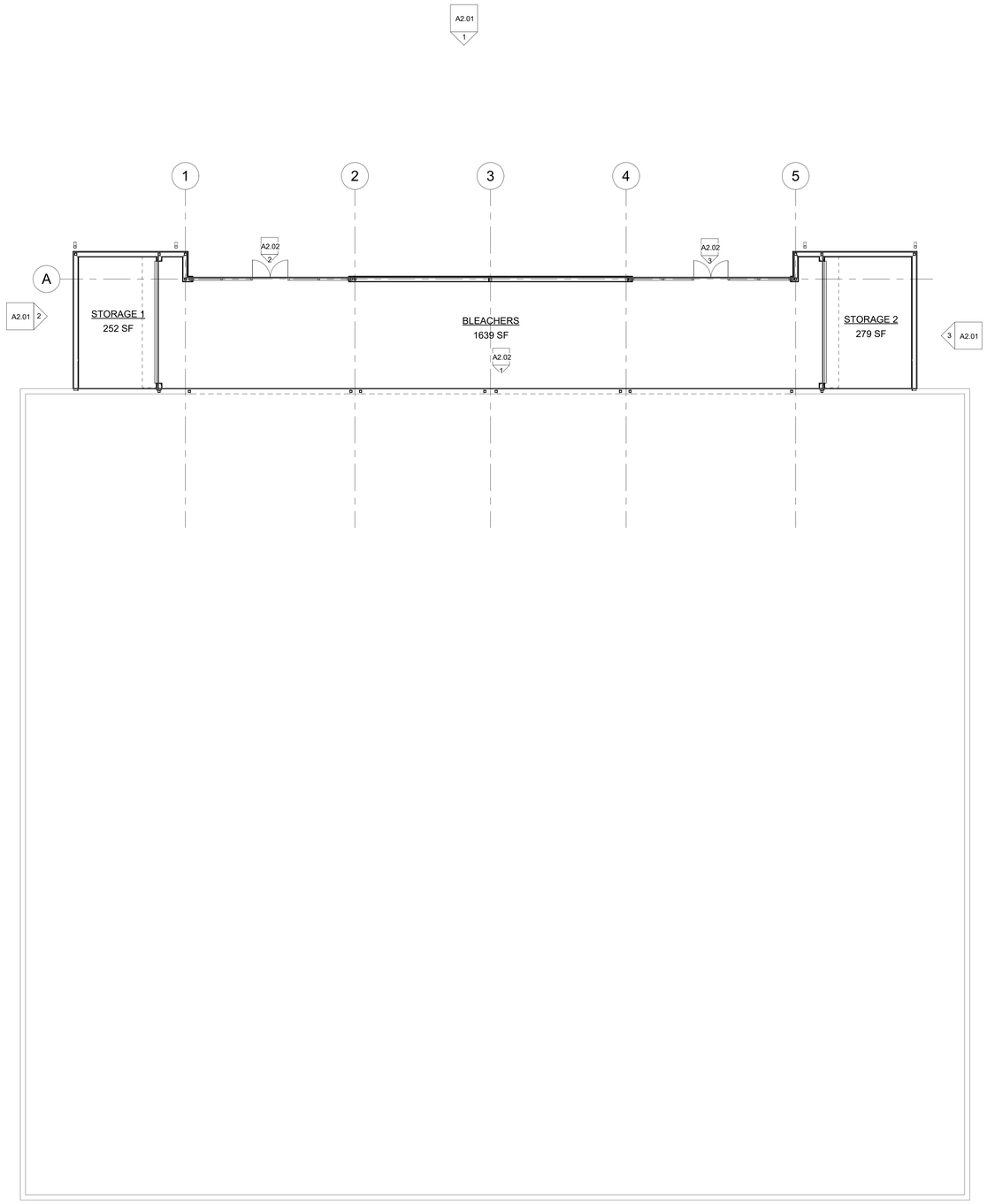
Cover Sheet

Project number	**231019**
Drawn by	**Jerome**
Checked by	**Jerome**

A1.01

Scale 1/4" = 1'-0"

6/30/2023 3:34:57 PM



1 T.O. Slab
1/8" = 1'-0"

Area Schedule		
Name	***Area***	***Comments***
STORAGE 1	252 SF	
BLEACHERS	1639 SF	
STORAGE 2	279 SF	
: 3	2170 SF	
Grand total: 3	2170 SF	

Delineations incorporated
Designs & Reprographics
518 Main Street
Marble Falls, TX 78654
Tel. (830) 693-9408
www.delineations.com

Certified Professional Building Designer
National Council of Professional Building Designers
Jerome A. Eugen
#2131

YMCA Renovation

Rich Carlton

1601 South Water Street
Burnet, Texas 78611

No.	Description	Date
	REVISIONS	6-30-2023

Construction R2

6.30.2023

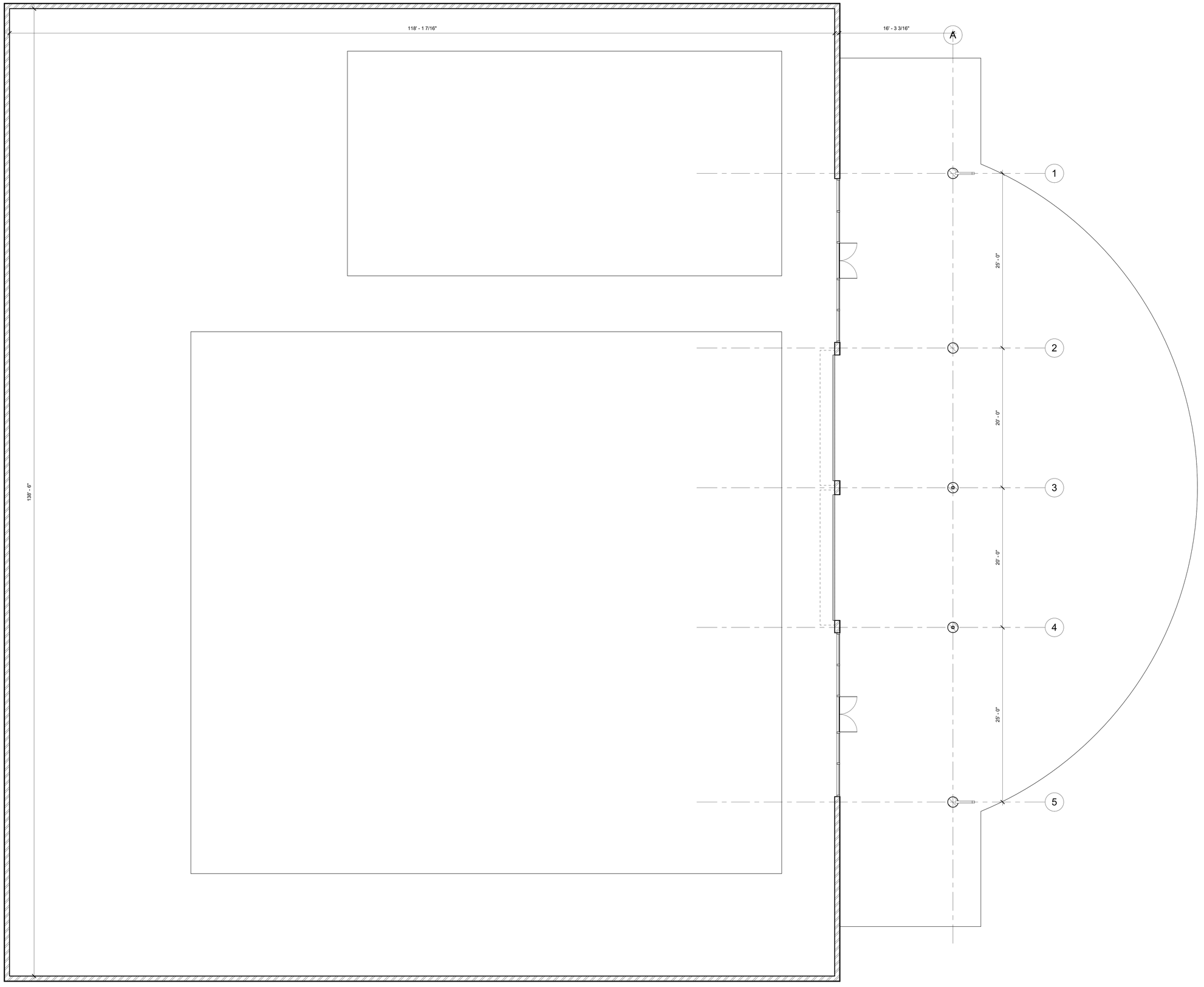
Area Plan & Schedules

Project number	**231019**
Drawn by	**Jerome**
Checked by	**Jerome**

A1.02

Scale 1/8" = 1'-0"

6/30/2023 3:34:58 PM



1 Floor Plan - Existing
3/16" = 1'-0"

Delineations
incorporated
Designs & Reprographics

518 Main Street
Marble Falls, TX 78654

Tel. (830) 693-9408
www.delineations.com

Certified Professional Building Designer
National Council of Professional Building Designers
Jerome A. Zugen
CPBD

YMCA Renovation

Rich Carlton

1601 South Water Street
Burnet, Texas 78611

No.	Description	Date
	REVISIONS	6-30-2023

Construction R2

6.30.2023

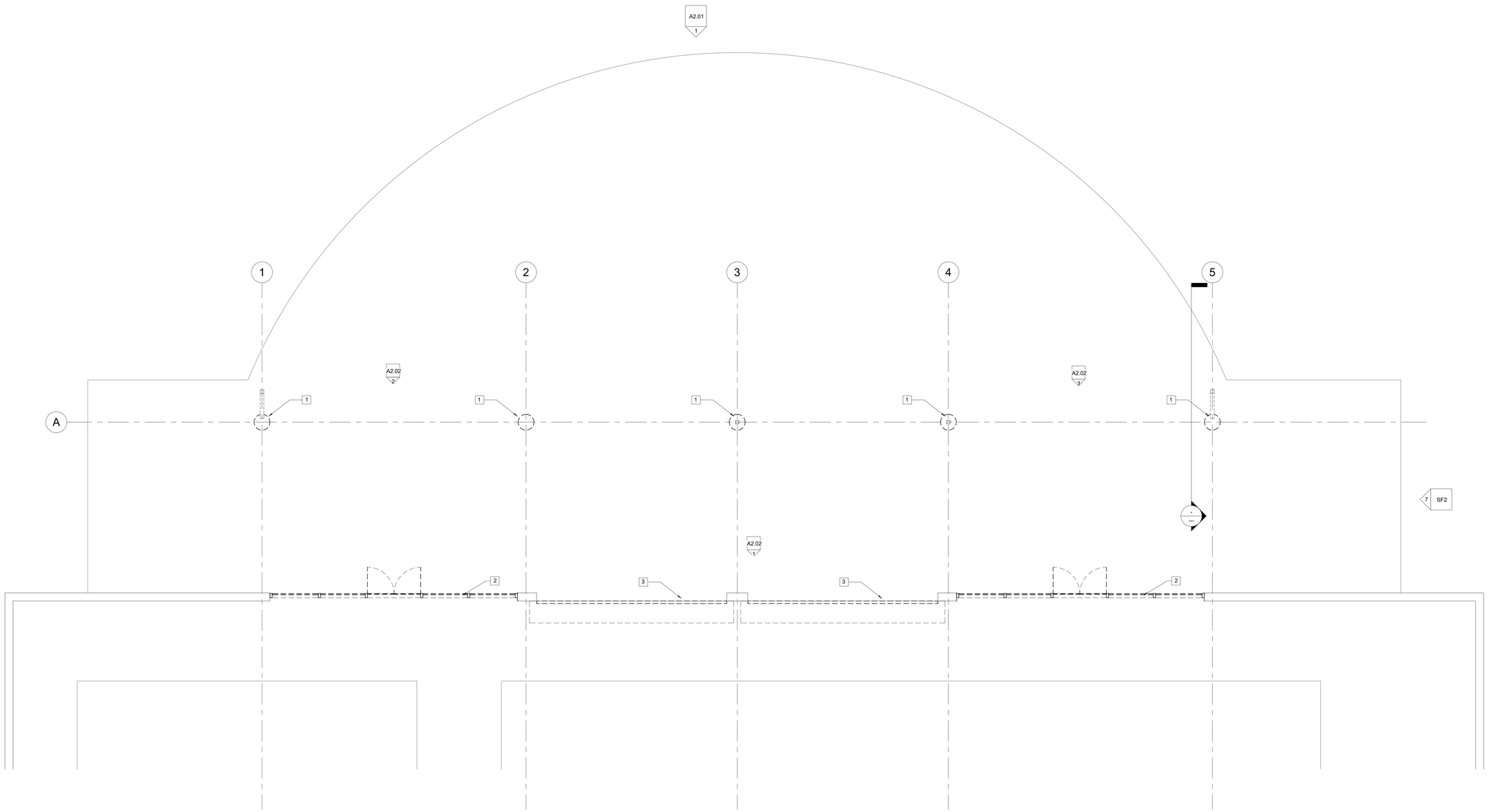
Existing Floor Plan

Project number	**231019**
Drawn by	**Jerome**
Checked by	**Jerome**

A1.03

Scale 3/16" = 1'-0"

6/30/2023 3:34:59 PM



1 Floor Plan - Demo Plan
1/4" = 1'-0"

Demolition Schedule

1	Demolish existing round column covers. Steel columns and downspouts to remain.
2	Remove existing curtainwall and louvers, relocate, opening to remain. See plan for location
3	Remove existing rollup door and relocate, opening to remain. See plan for location

Delineations incorporated
Designs & Reprographics

518 Main Street
Marble Falls, TX 78654

Tel. (830) 693-9408
www.delineations.com

CERTIFIED PROFESSIONAL BUILDING DESIGNER
NATIONAL COUNCIL OF BUILDING DESIGNERS & CERTIFICATION
JEROME A. EUGEN
CBDS

YMCA Renovation

Rich Carlton

1601 South Water Street
Burnet, Texas 78611

No.	Description	Date
	REVISIONS	6-30-2023

Construction R2

6.30.2023

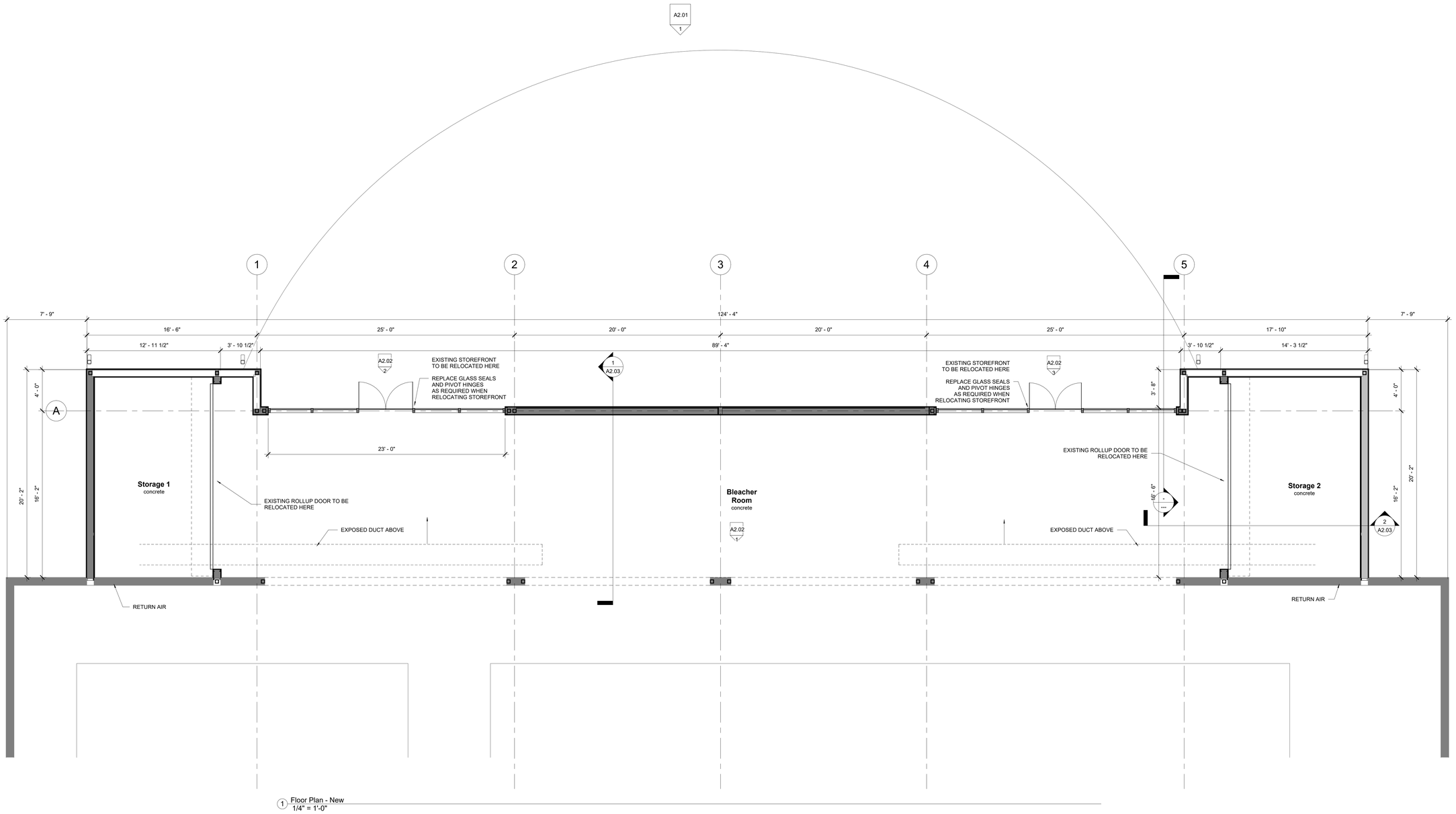
Demolition Plan

Project number	231019
Drawn by	jr
Checked by	Jerome

A1.04

Scale 1/4" = 1'-0"

6/30/2023 3:35:00 PM



1 Floor Plan - New
1/4" = 1'-0"

Delineations
incorporated
Designs & Reprographics

518 Main Street
Marble Falls, TX 78654

Tel. (830) 693-9408
www.delineations.com

CERTIFIED PROFESSIONAL BUILDING DESIGNER
NATIONAL COUNCIL OF
JEROME A. EUGEN
CPBD

YMCA Renovation

Rich Carlton

1601 South Water Street
Burnet, Texas 78611

No.	Description	Date
	REVISIONS	6-30-2023

Construction R2

6.30.2023

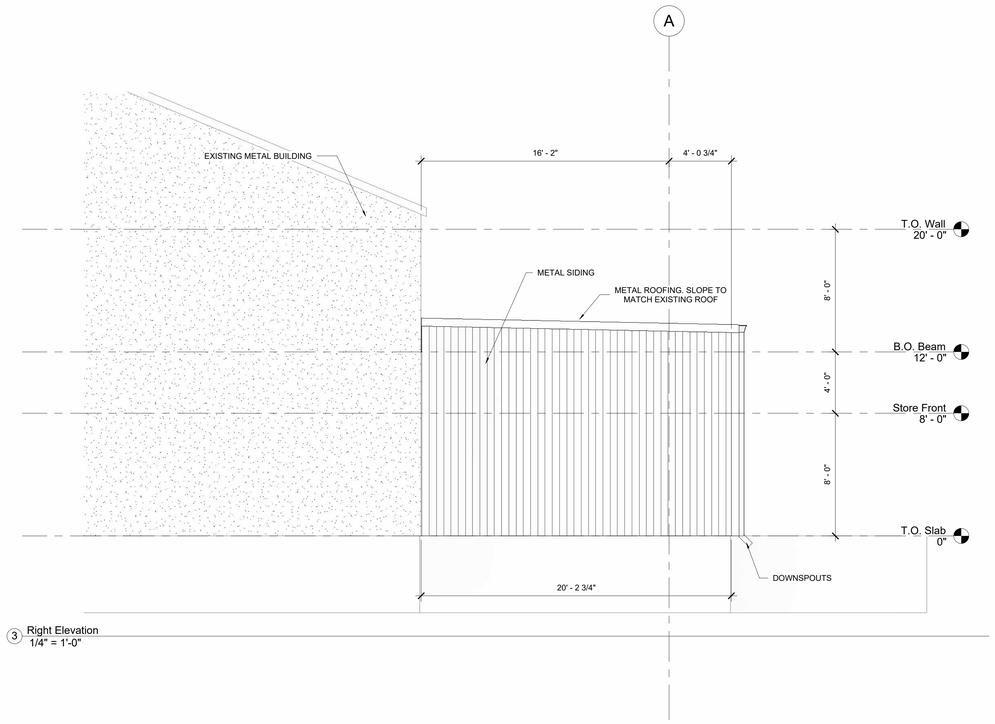
Floor Plan

Project number	231019
Drawn by	jr
Checked by	Jerome

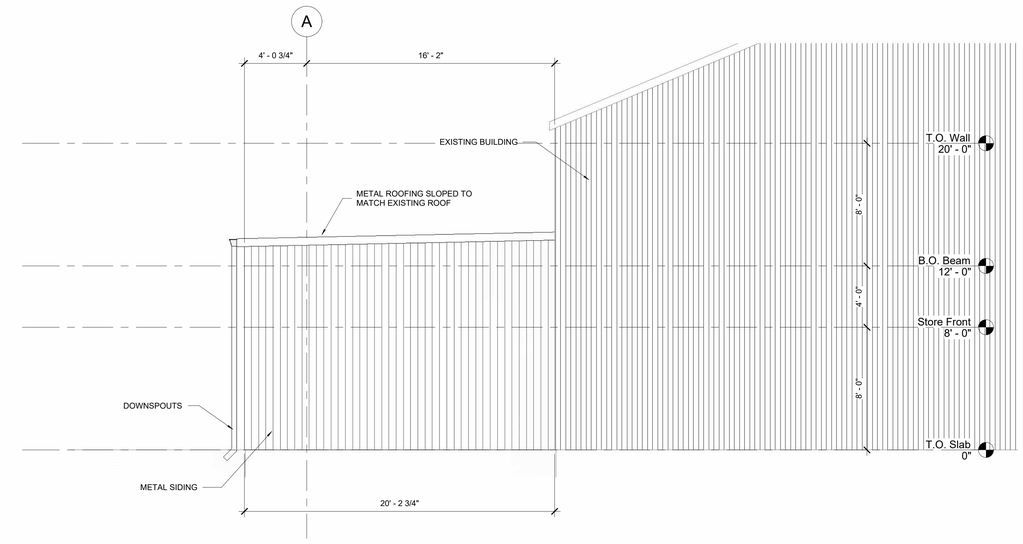
A1.05

Scale 1/4" = 1'-0"

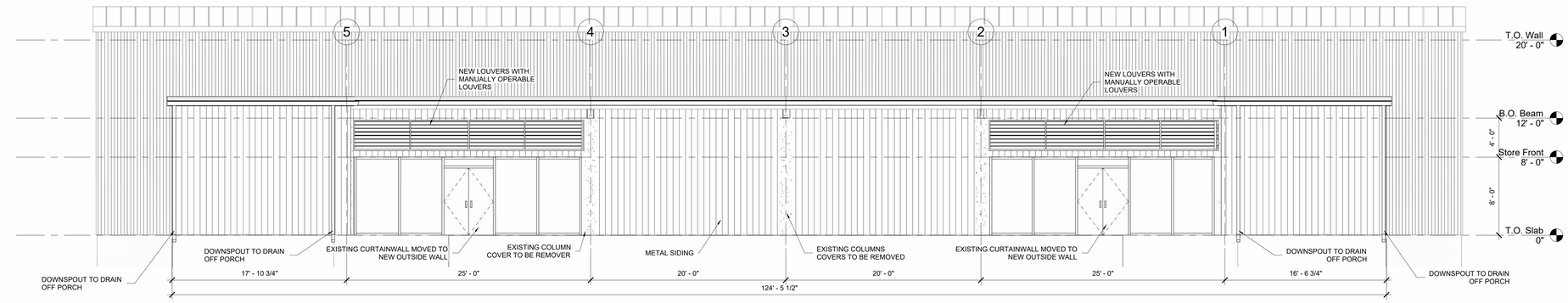
6/30/2023 3:35:01 PM



3 Right Elevation
1/4" = 1'-0"



2 Left Elevation
1/4" = 1'-0"



1 Back Elevation
3/16" = 1'-0"

Delineations
incorporated
Designs & Reprographics
518 Main Street
Marble Falls, TX 78654
Tel. (830) 693-9408
www.delineations.com

Certified Professional Building Designer
National Council of Professional Building Designers
Jerome A. Eugen
CPBD

YMCA Renovation

Rich Carlton

1601 South Water Street
Burnet, Texas 78611

No.	Description	Date
	REVISIONS	6-30-2023

Construction R2

6.30.2023

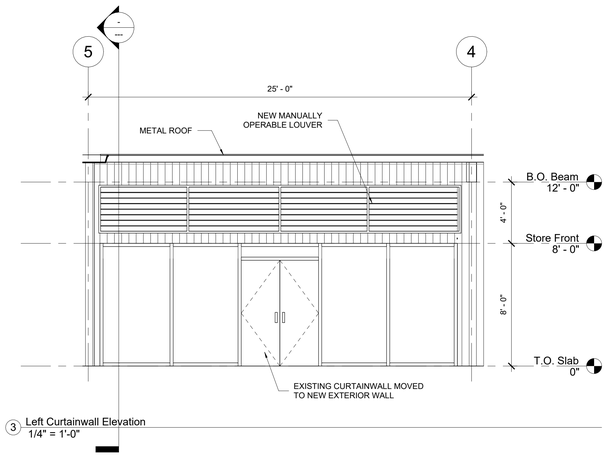
Exterior Elevations

Project number	**231019**
Drawn by	**jr**
Checked by	**Jerome**

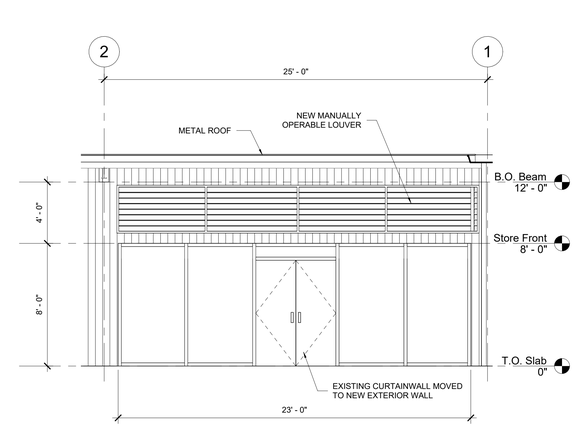
A2.01

Scale: As indicated

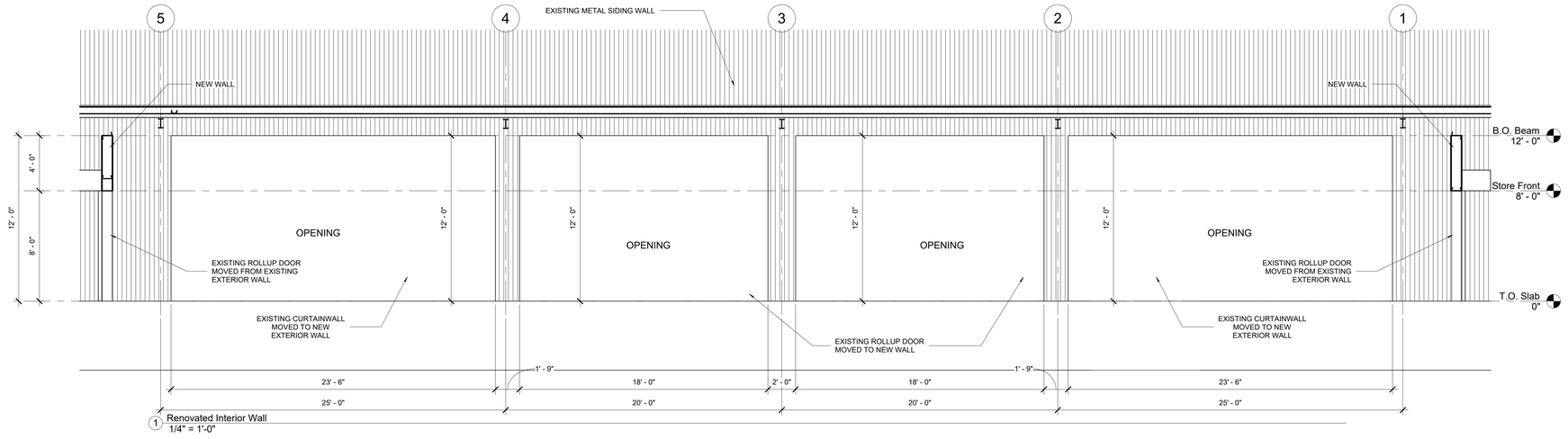
6/30/2023 3:35:06 PM



3 Left Curtainwall Elevation
1/4" = 1'-0"



2 Right curtainwall Elevation
1/4" = 1'-0"



1 Renovated Interior Wall
1/4" = 1'-0"

Delineations incorporated
Designs & Reprographics

518 Main Street
Marble Falls, TX 78654

Tel. (830) 693-9408
www.delineations.com

Certified Professional Building Designer
National Council of Professional Building Designers
Jerome A. Zugen
CPBD

YMCA Renovation

Rich Carlton

1601 South Water Street
Burnet, Texas 78611

No.	Description	Date
	REVISIONS	6-30-2023

Construction R2

6.30.2023

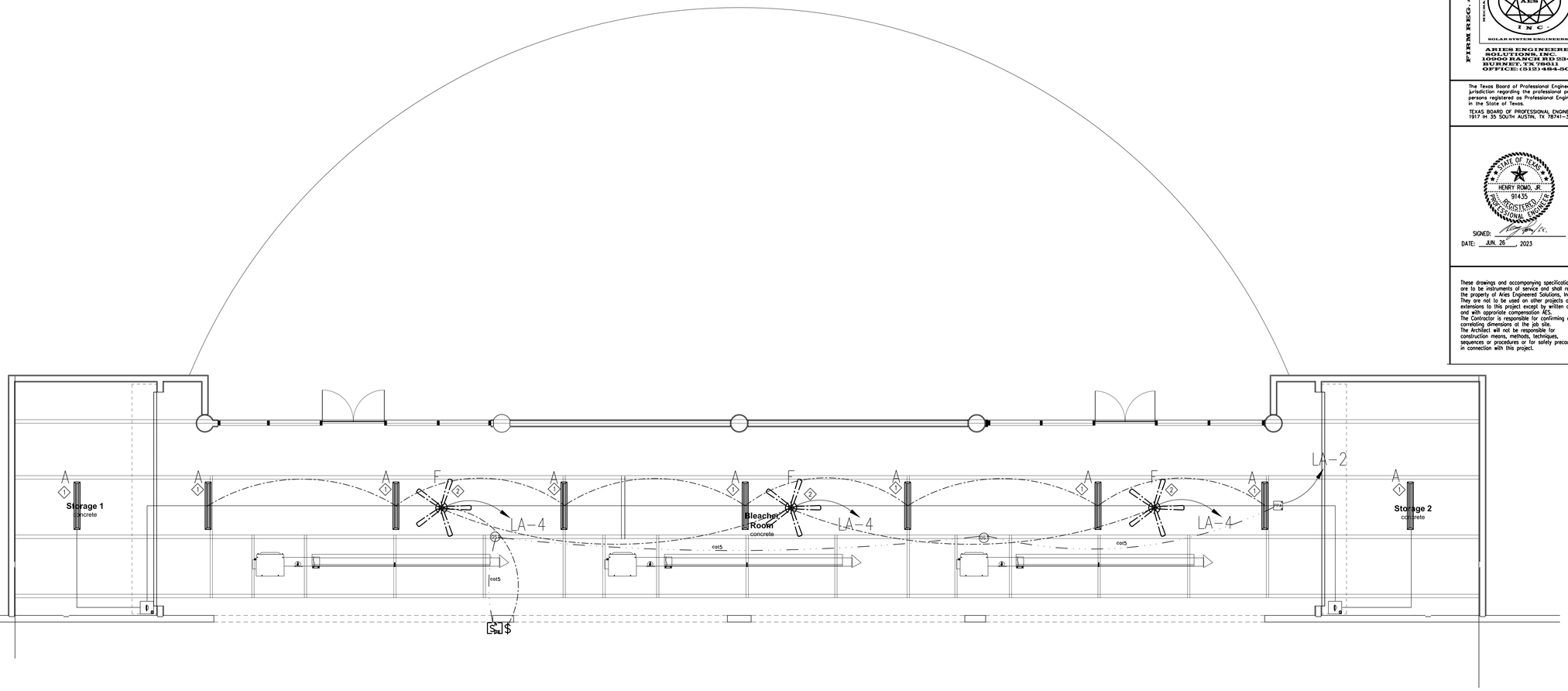
Elevations

Project number	231019
Drawn by	jr
Checked by	Jerome

A2.02

Scale 1/4" = 1'-0"

6/30/2023 3:35:07 PM



1 FLOOR PLAN - LIGHTING

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

GENERAL NOTES : ELECTRICAL

A. THE DRAWINGS ARE PARTLY DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW IN DETAIL ALL FEATURES OF THE WORK. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THESE SPECIFICATIONS, THE DRAWINGS AND LOCAL AND GOVERNING CODES. CONTACT THE ARCHITECT/ENGINEER WITH ANY DISCREPANCIES.

B. ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING CITY, INCLUDING APPLICABLE SECTIONS OF ANY INTERIM AMENDMENTS AT THE TIME OF THE PROPOSAL. PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.

C. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATIONS OF ALL CEILING AND WALL MOUNTED LIGHTING FIXTURES.

D. ALL WALL SWITCHES AND WIRING DEVICES SHALL BE COMMERCIAL SPECIFICATION GRADE WITH COLOR AS SELECTED BY ARCHITECT PROVIDE CIRCUIT IDENTIFICATION LABELS AS REQUIRED BY THE NEC.

E. ALL WIRING CONDUCTORS SHALL BE COPPER (#10AND SMALLER SHALL BE SOLID).

F. ALL ELECTRICAL HOMERUNS FROM PANELBOARD TO FIRST DEVICE SERVED SHALL BE IN FIBERGLASS (RTRC) CONDUIT.

G. ALL ELECTRICAL DEVICES SHALL BE RATED TO WITHSTAND THE CORROSIVE EFFECTS OF THE CHLORINE GAS EMANATING FROM THE SWIMMING POOLS.

LIGHTING KEYED NOTES

1. SURFACE MOUNT ENVIROSEAL LIGHTING FIXTURE ON CROSS BEAMS AS SHOWN. (NOTE ENVIROSEAL FIXTURE IS RATED FOR NATOTORUIM ENVIRONMENT)
2. SURFACE MOUNT CEILING FANS ON CROSS BEAMS AS SHOWN.

LIGHTING CONTROL DEVICE LEGEND

SYMBOL	DESCRIPTION	MODEL NO.	MOUNTING	NOTES
	DIMMING SWITCH	ACUITY # WSXA MWO PDT D	WALL	
OS	SENSORSWITCH	#CM-PDT-10-RJB	CEILING	1, 2.
PPA	SENSORSWITCH	#nPP16 D EFP	CEILING	
	SENSORSWITCH	#nPODM-DX	WALL	

1. FACTORY SET TO AUTO ON
2. OCCUPANCY SENSORS ARE TO BE RESET FOR MANUAL ON/OFF EXCEPT THOSE IN RESTROOMS, CORRIDORS AND LOBBIES.

SWITCH LEG
POWER CIRCUIT
CAT5 CABLE — cat5 —

FIRM REG. # 10627

ARIES ENGINEERED SOLUTIONS, INC.
16000 TUSCANY RIDGE 2341
BURNET, TX 78611
OFFICE: (512) 484-5018

The Texas Board of Professional Engineers has jurisdiction regarding the professional practice of persons registered as Professional Engineers in in the State of Texas.

TEXAS BOARD OF PROFESSIONAL ENGINEERS
1917 IH 35 SOUTH AUSTIN, TX 78741-3702

STATE OF TEXAS
HENRY ROMO, JR.
91435
REGISTERED PROFESSIONAL ENGINEER

SIGNED:
DATE: JUN. 26, 2023

Delineations incorporated
Designs & Reprographics

518 Main Street,
Marble Falls, TX 78654
(830) 693-9408
www.delineations.com

Project Name
YMCA RENOVATION

Client Name
RICH CARLTON

Project Address
1601 South Water St.
Burnet, Texas
78611

Status
CONSTRUCTION DOCUMENTS

Log

Project Number
211035

Drawn By
Author

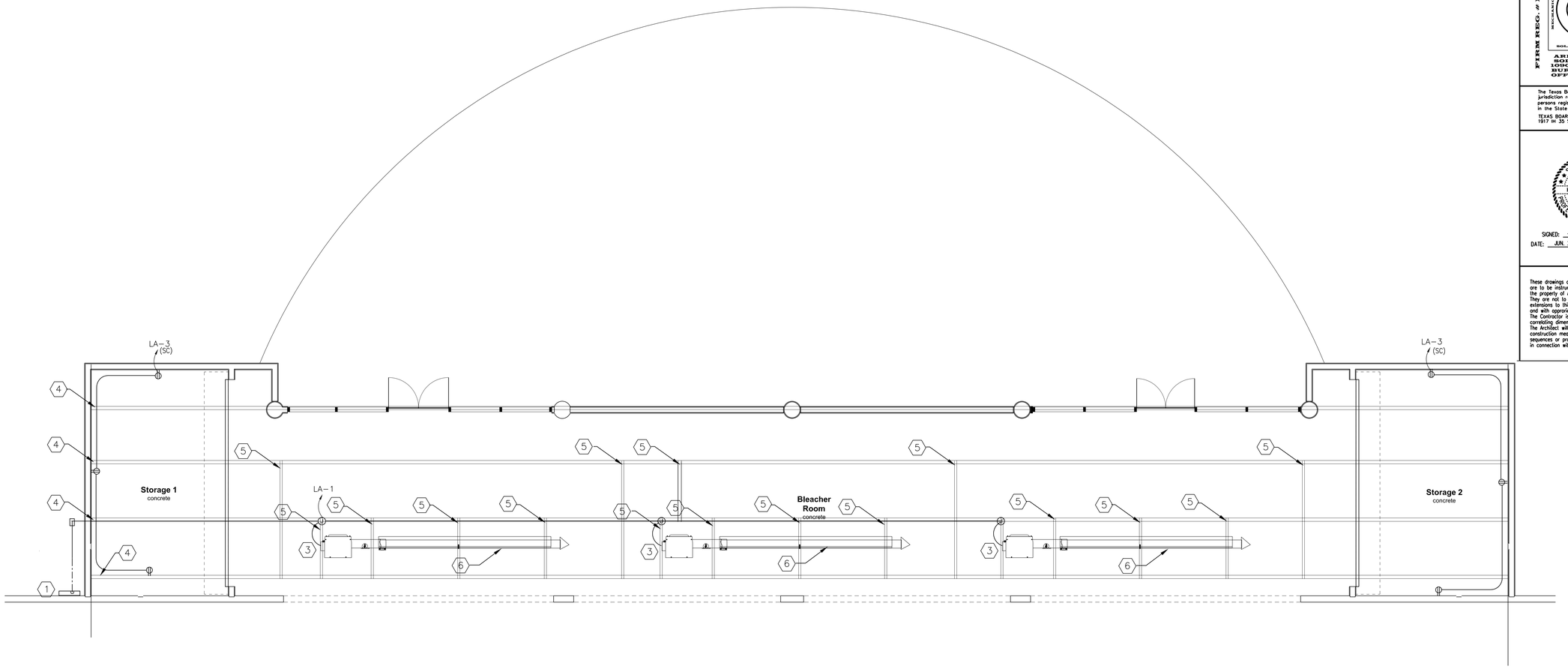
Checked By
Checker

Scale
As Indicated

Print Date
4/26/2022 2:09:12 PM

Sheet Name
FLOOR PLAN - LIGHTING

Sheet Number
E-1.0



1 FLOOR PLAN - POWER
SCALE: 3/16" = 1'-0"

GENERAL NOTES : ELECTRICAL

1. COLOR CODED ELECTRICAL WIRING SHALL BE AS REQUIRED BY LOCAL CODES.
2. DISTRIBUTION BOX/INTERFACE CONNECTION BOX SHALL HAVE ITS WIRING SYSTEM COLOR CODED SIMILAR TO BUILDING CIRCUIT WIRING.
3. HVAC EQUIPMENT DISCONNECT SWITCHES SHALL BE RATED NEMA 3R, 480 VOLTS ROOF STRUCTURE. REFER TO THE ROOF FLOOR PLAN AND THE POWER FLOOR PLAN FOR DISCONNECT SWITCH RATINGS REQUIRED.
4. ALL DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE AND TAMPER PROOF.
5. ALL WIRING SHALL BE RUN THRU A RACEWAY SYSTEM. ALL WIRING SHALL BE COPPER TYPE THW-THHN AND SHALLL MEET NEC REQUIREMENTS.
6. CONTRACTOR SHALL INDICATE CIRCUIT SERVING EACH RECEPTACLE BY PROVIDING TYPE WRITTEN LABELING ON THE INSIDE FACE OF EACH RECEPTACLE COVER PLATE.
7. ALL LIGHTING AND ELECTRICAL CIRCUIT WIRING SHALL BE MINIMUM 1-#12 HOT, 1-#12 NUETRAL, AND 1-#12 GROUND TYPE THW-THHN COPPER WIRES IN 1/2" CONDUIT. GROUND CONDUCTOR MAY BE OMITTED FROM LIGHTING CIRCUITS WHERE ALLOWED BY CODE. ON 20A-120V CIRCUITS, WIRING AND CONDUIT SIZE SHALL BE INCREASED IF ROUTING OF LINES CAUSES WIRE LENGTH TO BE GREATER THAN THE FOLLOWING:

LENGTH ONE WAY UP TO:	MIN. WIRE SIZE	MIN. CONDUIT SIZE	
		3 WIRE	4 WIRE
75'	12	1/2"	1/2"
100'	10	1/2"	1/2"
180'	8	3/4"	1"
300'	6	1"	1"
450'	4	1"	1 1/4"

8. CONTRACTOR SHALL NOT ADD ELECTRICAL LOADS UNLESS OTHERWISE REQUESTED IN WRITING THRU THE ENGINEER.
9. THERE IS MORE THAN ONE NOMINAL VOLTAGE SYSTEM IN THIS BUILDING. IN ACCORDANCE WITH THE NEC, EACH UNDERGROUND CONDUCTOR MUST BE IDENTIFIED BY PHASE OR LINE AND SYSTEM AT ALL TERMINATION, CONNECTION, AND SPLICE POINTS. THE MEANS OF IDENTIFICATION SHALL BE BY SEPARATE COLOR CODING, MARKING TAPE, TAGGING, OR OTHER APPROVED MEANS.
10. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
11. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF EQUIPMENT AND ASSOCIATED RECEPTACLES AND JUNCTION BOXES.
12. ALL RECEPTACLES LOCATED IN RESTROOMS, JANITOR CLOSETS, MECHANICAL ROOMS, ELEVATOR PITS OR SHAFTS, ELEVATOR EQUIPMENT ROOMS, ELECTRIC DRINKING FOUNTAINS, VENDING MACHINES THAT ARE LOCATED WITHIN 6' OF A SINK MUST BE GFCI RATED.
13. ALL SIMPLEX AND DUPLEX RECEPTACLES INDICATED TO BE SERVED BY A DEDICATED 120 VOLT, 20 AMP CIRCUIT SHALL BE NEMA 5-20R TYPE MINIMUM. EACH GFCI PROTECTED RECEPTACLE SHARING THE SAME CIRCUIT SHALL HAVE ITS OWN RE-SET AND TEST BUTTON.
14. ALL WALL SWITCHES AND WIRING DEVICES SHALL BE CORROSION RESISTANT, COMMERCIAL SPECIFICATION GRADE WITH COLOR AS SELECTED BY ARCHITECT PROVIDE CIRCUIT IDENTIFICATION LABELS AS SPECIFIED ON MEP-2.0.

KEYED NOTES

1. RUN CONDUIT DOWN TO NEW PANEL 'LA' AT SERVICE ENTRANCE WALL IN POOL EQUIPMENT AREA.
2. ALL EXPOSED ELECTRICAL CONDUIT, J-BOX'S AND FITTINGS SHALL BE NEC COMPLIANT AND CORROSION RESISTANT TO THE CHLORINE GAS EMANATING FROM THE SWIMMING POOLS.
3. NEMA 5-15P PLUG TYPE' # 12 CU CONDUCTOR IN CORROSION RESISTANT FLEXIBLE CONDUIT.
4. EXISTING STEEL ROOF SUPPORT BEAMS.
5. NEW EPOXY COATED (DURA GREEN) STEEL CROSS MEMBERS.
6. INFRA-RED HEATERS.

FIRM REG. # 10627
ELECTRICAL
MECHANICAL
PLUMBING
ARIES ENGINEERED SOLUTIONS
AES
INC
SOLAR SYSTEM ENGINEERS
ARIES ENGINEERED SOLUTIONS, INC.
16000 TRINITY BLVD. #203-341
BURNET, TX 78611
OFFICE: (512) 484-5018

STATE OF TEXAS
HENRY ROMO, JR.
91435
REGISTERED
PROFESSIONAL ENGINEER
SIGNED:
DATE: JUN. 26, 2023

Delineations incorporated
Designs & Reprographics
518 Main Street,
Marble Falls, TX 78654
(830) 693-9408
www.delineations.com

Project Name
YMCA RENOVATION

Client Name
RICH CARLTON

Project Address
1601 South Water St.
Burnet, Texas
78611

Status
CONSTRUCTION DOCUMENTS

Log

Project Number
211035

Drawn By
Author

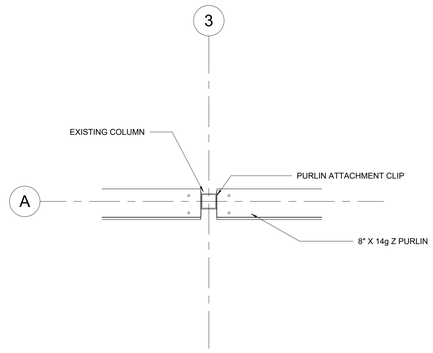
Checked By
Checker

Scale
As Indicated

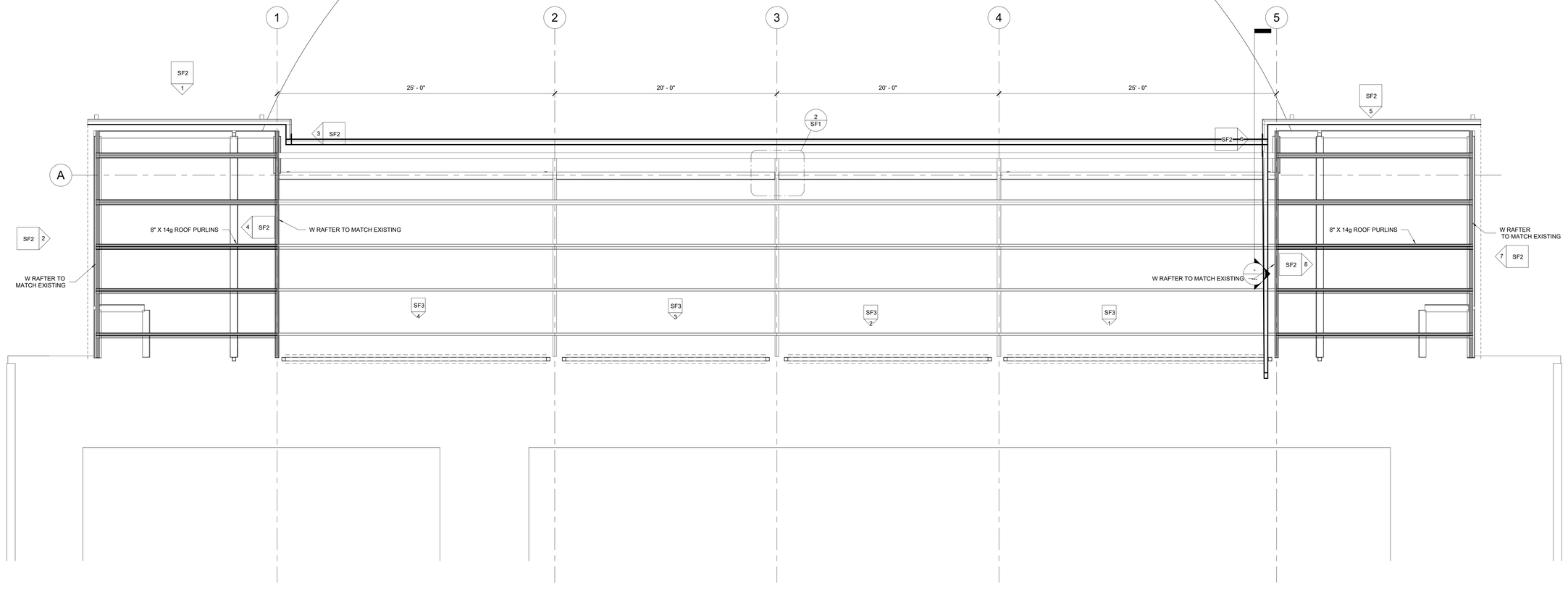
Print Date
4/26/2022 2:09:12 PM

Sheet Name
FLOOR PLAN - POWER

Sheet Number
E-2.0



2 Floor Plan - Structural New - Callout 1
3/4" = 1'-0"



1 Floor Plan - Structural New
1/4" = 1'-0"

Delineations incorporated
Designs & Reprographics

518 Main Street
Marble Falls, TX 78654

Tel. (830) 693-9408
www.delineations.com

6.30.2023
STATE OF TEXAS
BRADLEY W. SHAW
44268
REGISTERED PROFESSIONAL ENGINEER

BUILDER TO CONTACT ENGINEER PRIOR TO STARTING CONSTRUCTION AND AT ANY TIME DURING CONSTRUCTION WITH ANY QUESTIONS OR CONCERNS

HIGHLAND LAKES ENGINEERING

BOX 1164
KINGSLAND, TEXAS 78639
Tel. : (830) 637-9584
TX. REG. # F-9209

YMCA Renovation

Rich Carlton

1601 South Water Street
Burnet, Texas 78611

No.	Description	Date

Construction R2

6.30.2023

Structural Plan

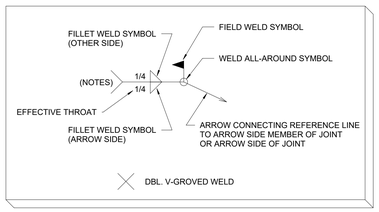
Project number	**231019**
Drawn by	**jr**
Checked by	**BS**

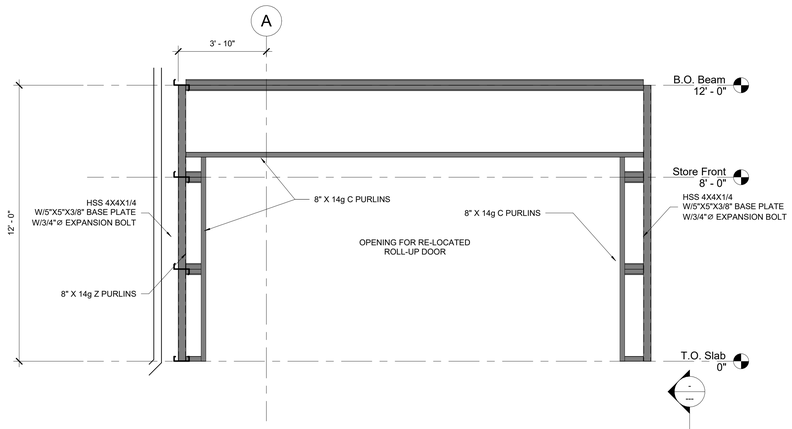
SF1

Scale: As indicated

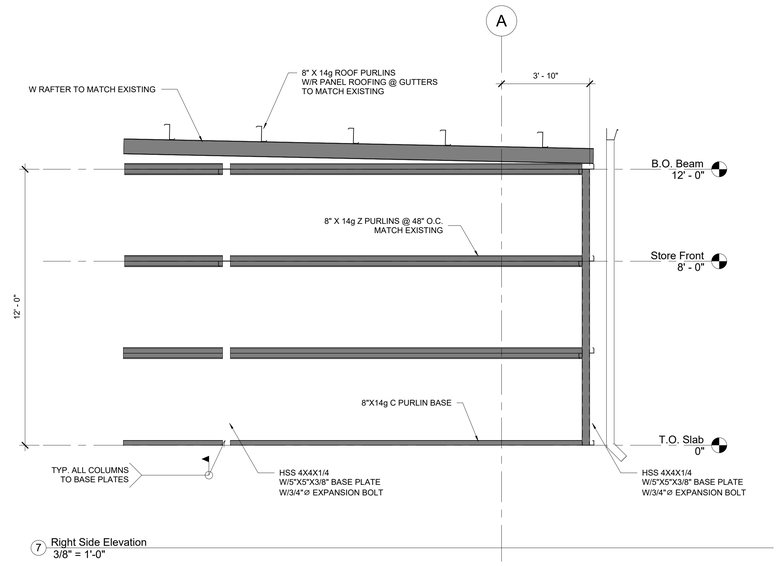
6/30/2023 3:35:15 PM

WELDED JOINTS SYMBOLS

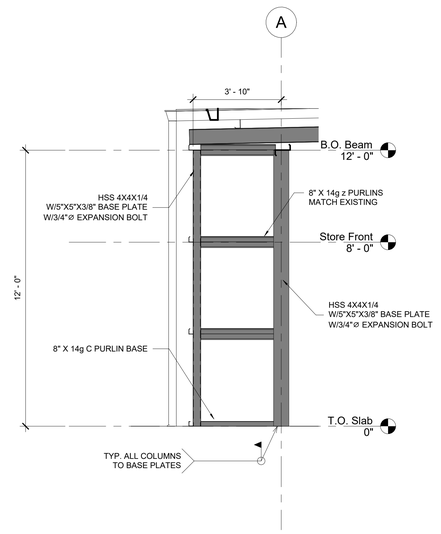




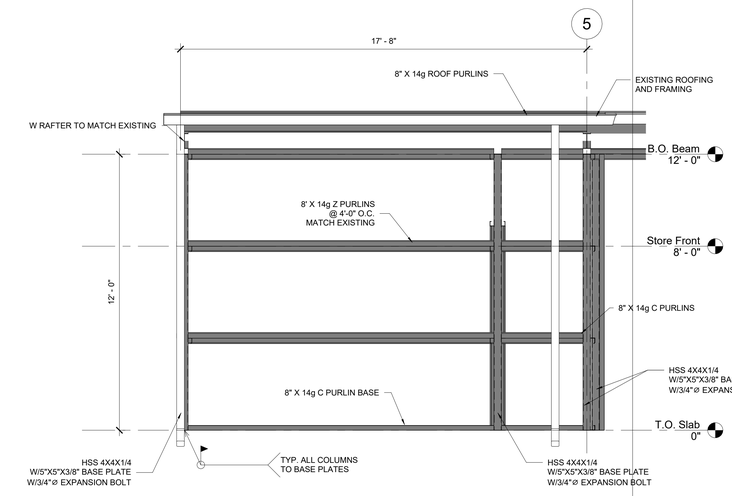
8 Right Storage Wall Elevation
3/8" = 1'-0"



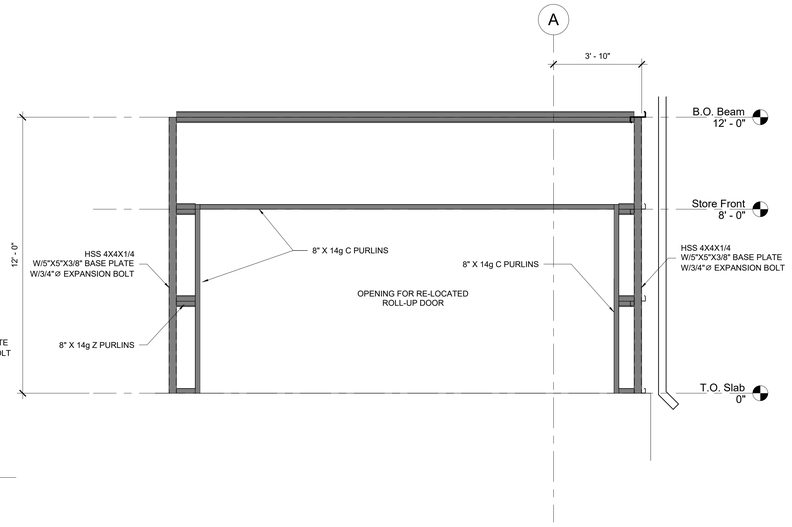
7 Right Side Elevation
3/8" = 1'-0"



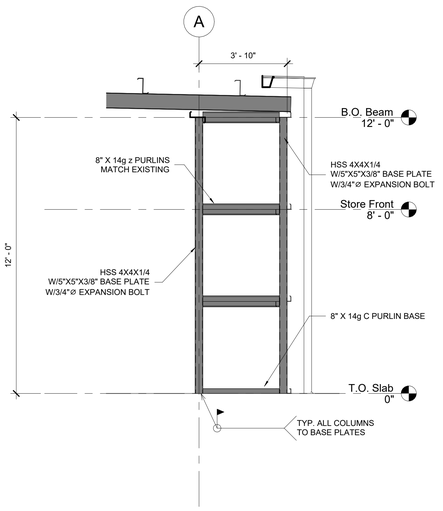
6 Right Return Elevation
3/8" = 1'-0"



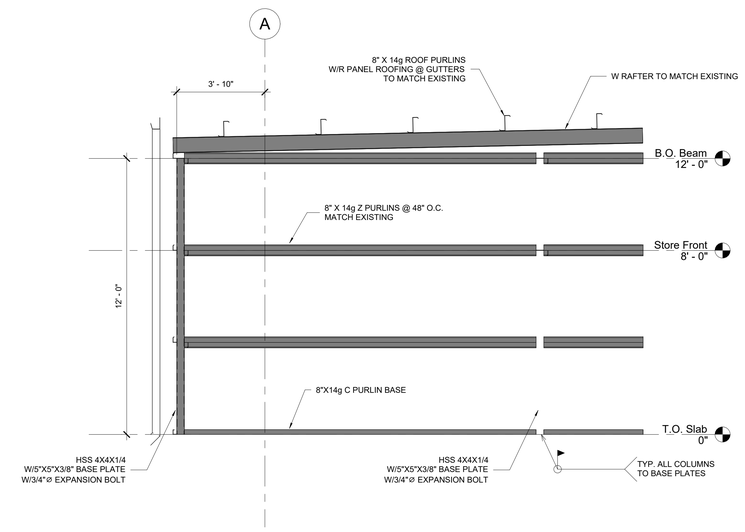
5 Right Back Elevation
3/8" = 1'-0"



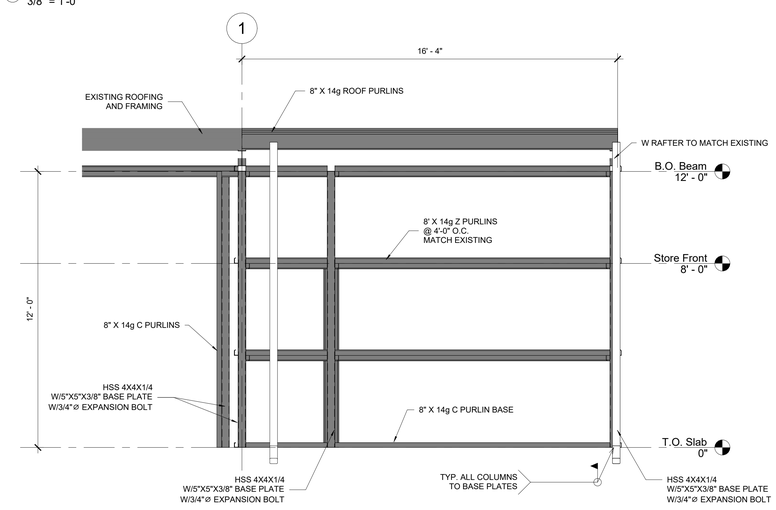
4 Left Storage Wall Elevation
3/8" = 1'-0"



3 Left Return Elevation
3/8" = 1'-0"



2 Left Side Elevation
3/8" = 1'-0"



1 Left Back Elevation
3/8" = 1'-0"

Delineations incorporated
Designs & Reprographics
518 Main Street
Marble Falls, TX 78654
Tel. (830) 693-9408
www.delineations.com

6.30.2023
STATE OF TEXAS
BRADLEY W. SHAW
44268
REGISTERED
PROFESSIONAL ENGINEER

BUILDER TO CONTACT ENGINEER PRIOR TO STARTING CONSTRUCTION AND AT ANY TIME DURING CONSTRUCTION WITH ANY QUESTIONS OR CONCERNS

HIGHLAND LAKES ENGINEERING
BOX 1164
KINGSLAND, TEXAS 78639
Tel. : (830) 637-9584
TX. REG. # F-9209

YMCA Renovation

Rich Carlton

1601 South Water Street
Burnet, Texas 78611

No.	Description	Date

Construction R2

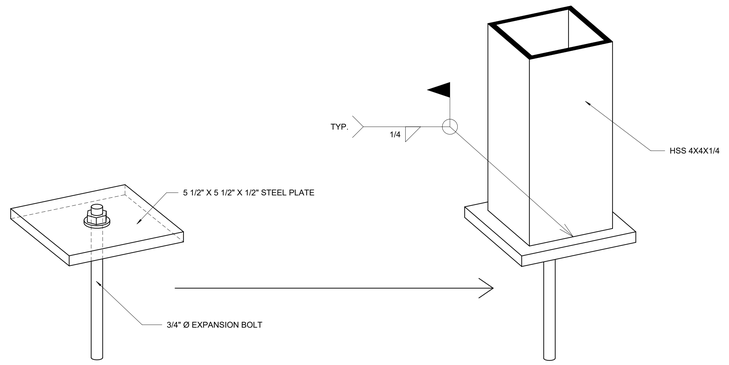
6.30.2023

Framing Elevations

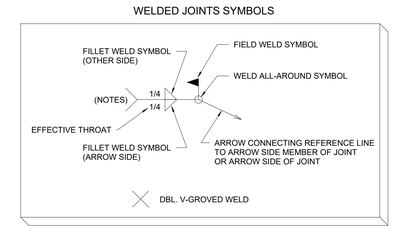
Project number	**231019**
Drawn by	**jr**
Checked by	**BS**

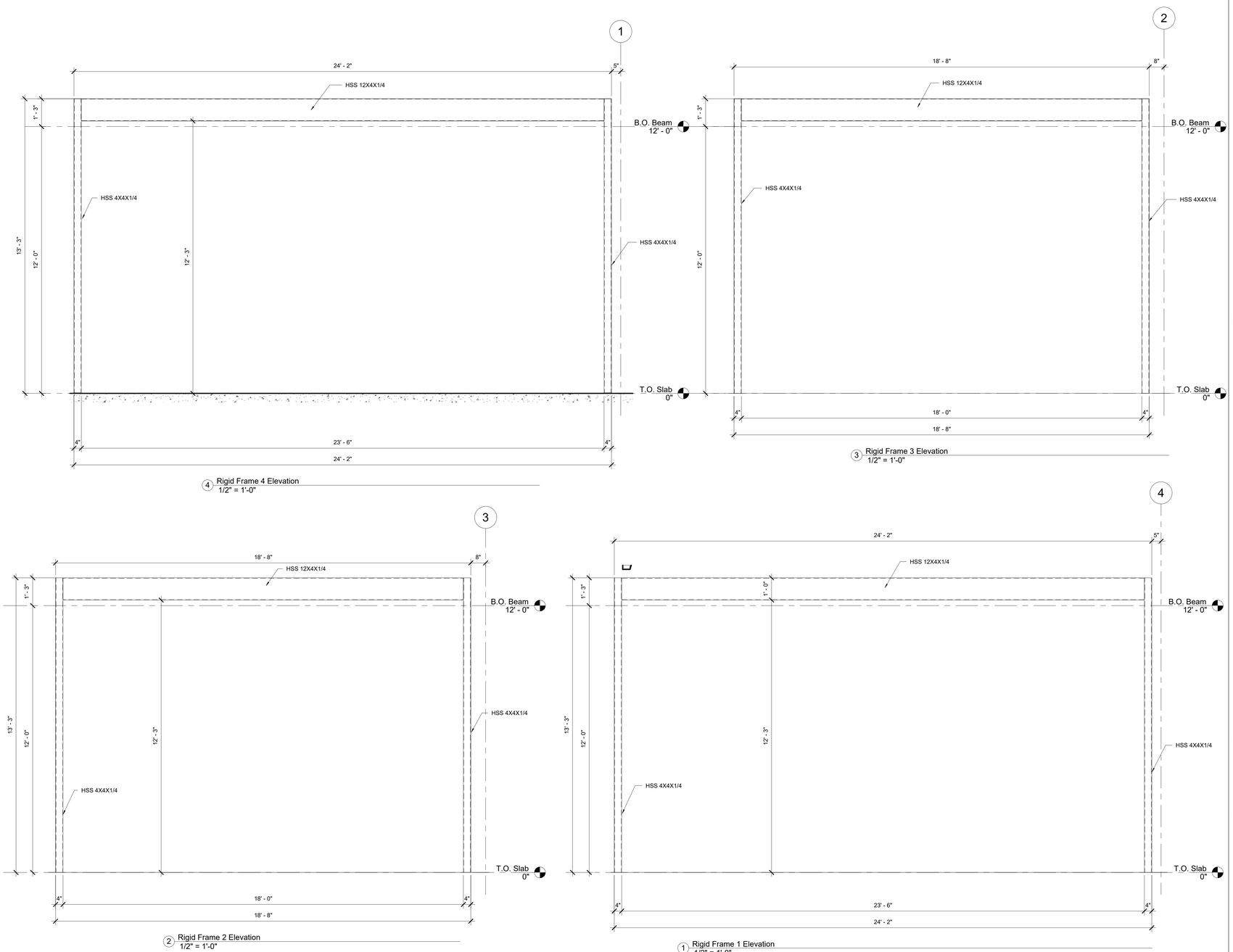
SF2

Scale 3/8" = 1'-0"



CONNECTION FOR HSS4X4X1/4 COLUMNS





Delineations incorporated
Designs & Reprographics
518 Main Street
Marble Falls, TX 78654
Tel. (830) 693-9408
www.delineations.com

6.30.2023
STATE OF TEXAS
BRADLEY W. SHAW
44268
REGISTERED PROFESSIONAL ENGINEER

BUILDER TO CONTACT ENGINEER PRIOR TO STARTING CONSTRUCTION AND AT ANY TIME DURING CONSTRUCTION WITH ANY QUESTIONS OR CONCERNS

HIGHLAND LAKES ENGINEERING
BOX 1164
KINGSLAND, TEXAS 78639
Tel. : (830) 637-9584
TX REG. # F-9209

YMCA Renovation

Rich Carlton

1601 South Water Street
Burnet, Texas 78611

No.	Description	Date

Construction R2

6.30.2023

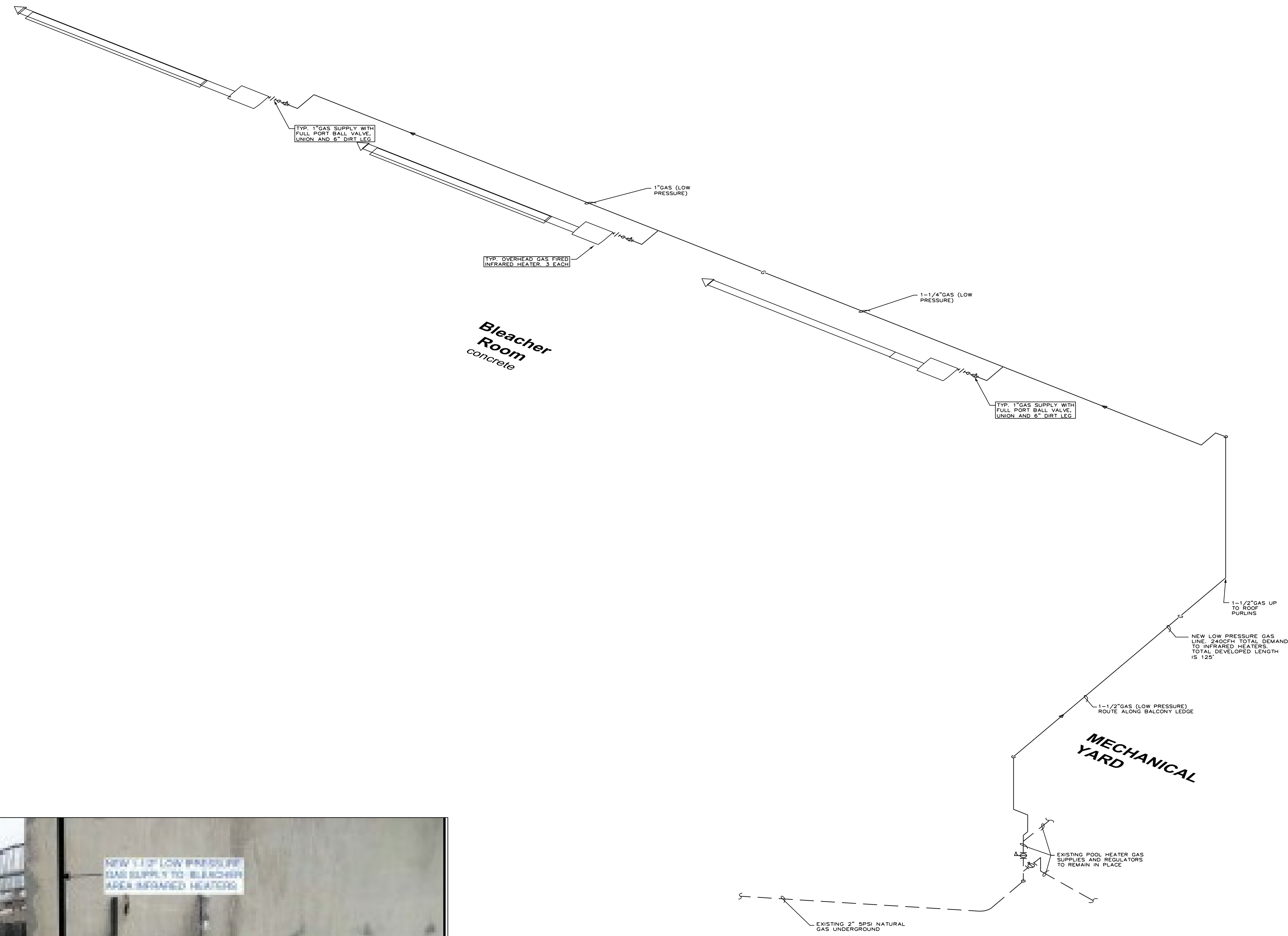
Rigid Frames

Project number	231019
Drawn by	jr
Checked by	BS

SF3

Scale As indicated

6/30/2023 3:35:17 PM



1 NATURAL GAS RISER
SCALE: NONE

2 NATURAL GAS RISER DETAIL
SCALE: NONE

NATURAL GAS LOAD ANALYSIS

THREE SLAB MOUNTED HVAC RTU'S WERE DEMOLISHED AND 360CFH IS BEING REMOVED FROM THE TOTAL GAS DEMAND. THE ADDITIONAL GAS FIRED INFRARED HEATERS (80CFH EACH) ARE BEING ADDED TO THE BLEACHER AREA FOR A TOTAL ADDITION OF 240CFH. THE NEW TOTAL LOAD FOR THIS 2" 5PSI BRANCH LINE IS:

EXISTING GAS FIRED POOL HEATER	1800 CFH
EXISTING GAS FIRED POOL HEATER	500 CFH
NEW GAS FIRED INFRARED HEATERS AT 80 CFH EACH	240 CFH
NEW TOTAL	2540 CFH

THE 2" 5PSI BRANCH LINE STUBBING UP IN THE MECHANICAL YARD WILL PROVIDE AN ESTIMATED 6,740 CFH AT 265' OF TOTAL DEVELOPED LENGTH.

THE DEVELOPED LENGTH FOR THE NEW 1-1/2" LOW PRESSURE LINE SERVING THE GAS FIRED INFRARED HEATERS IS 125'. THE AVAILABILITY OF 532CFH EXCEEDS THE HEATERS TOTAL DEMAND. THE INFRARED HEATERS TOTAL DEMAND IS 240CFH.

FIRM REG. # 10827
ARIES ENGINEERED SOLUTIONS, INC.
10900 RANCH RD 2341
BURNET, TX 78611
OFFICE: (512) 484-5018

STATE OF TEXAS
HENRY ROMO, JR.
91435
REGISTERED PROFESSIONAL ENGINEER
SIGNED:
DATE: JUN. 26, 2023

Delineations incorporated
Designs & Reprographics
518 Main Street,
Marble Falls, TX 78654
(830) 693-9408
www.delineations.com

Project Name
YMCA RENOVATION

Client Name
RICH CARLTON

Project Address
1601 South Water St.
Burnet, Texas
78611

Status
CONSTRUCTION DOCUMENTS

Log

Project Number
211035

Drawn By
Author

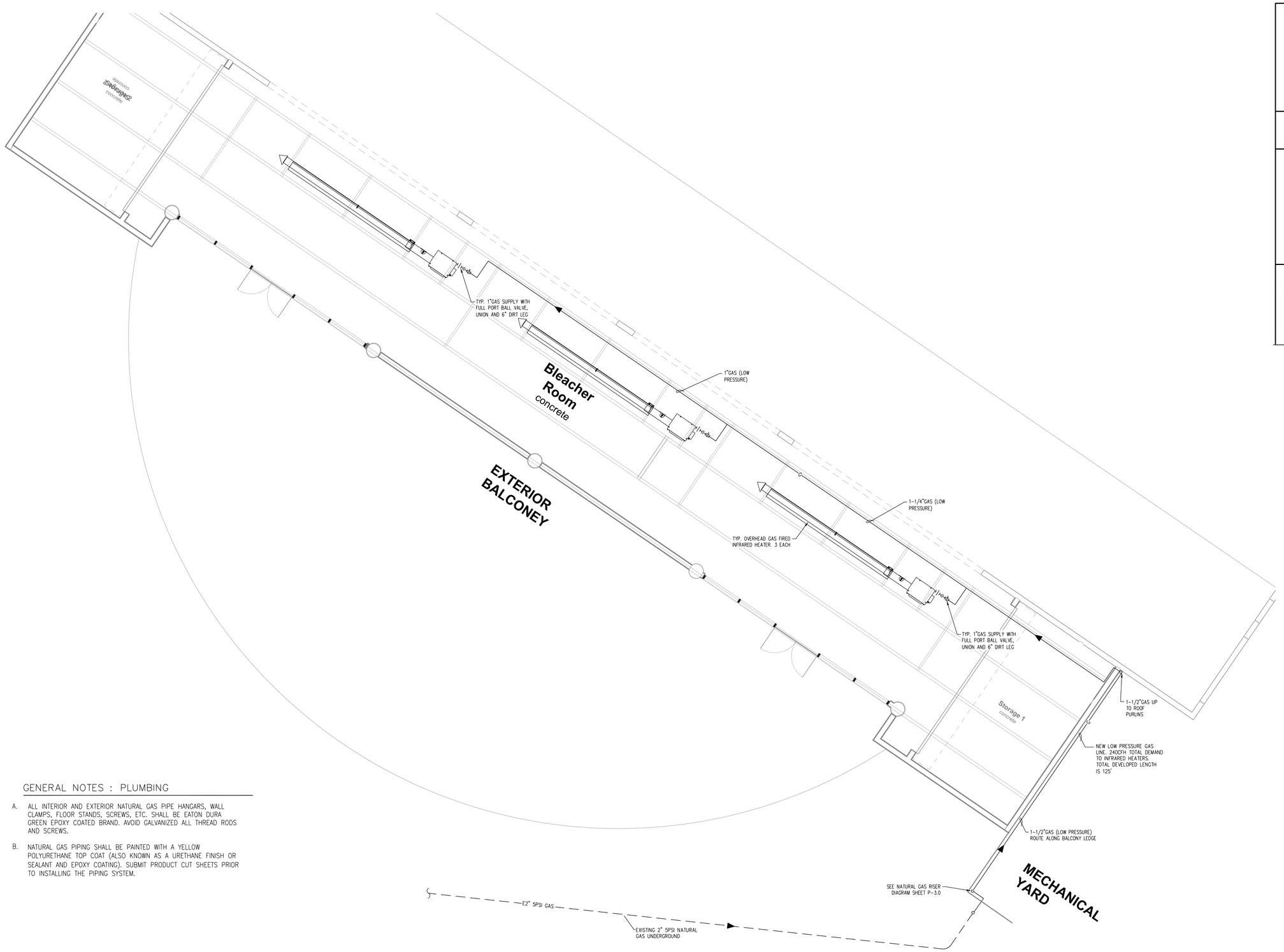
Checked By
Checker

Scale
As indicated

Print Date
4/26/2022 2:09:12 PM

Sheet Name
PLUMBING-
GAS RISERS

Sheet Number
P-3.0



GENERAL NOTES : PLUMBING

A. ALL INTERIOR AND EXTERIOR NATURAL GAS PIPE HANGARS, WALL CLAMPS, FLOOR STANDS, SCREWS, ETC. SHALL BE EATON DURA GREEN EPOXY COATED BRAND. AVOID GALVANIZED ALL THREAD RODS AND SCREWS.

B. NATURAL GAS PIPING SHALL BE PAINTED WITH A YELLOW POLYURETHANE TOP COAT (ALSO KNOWN AS A URETHANE FINISH OR SEALANT AND EPOXY COATING). SUBMIT PRODUCT CUT SHEETS PRIOR TO INSTALLING THE PIPING SYSTEM.

1 ENLARGED PLUMBING PLAN
SCALE: 1/4"=1'-0"

FIRM REG. # 10627
ARIES ENGINEERED SOLUTIONS, INC.
1600 TOWNE CROSSING BLVD #341
BURNET, TX 78611
OFFICE: (512) 484-5018

STATE OF TEXAS
HENRY ROMO, JR.
91435
REGISTERED PROFESSIONAL ENGINEER

SIGNED:
DATE: JUN. 26, 2023

Delineations incorporated
Designs & Reprographics
518 Main Street,
Marble Falls, TX 78654
(830) 693-9408
www.delineations.com

Project Name
YMCA RENOVATION

Client Name
RICH CARLTON

Project Address
1601 South Water St.
Burnet, Texas
78611

Status
CONSTRUCTION DOCUMENTS

Log

Project Number
211035

Drawn By
Author

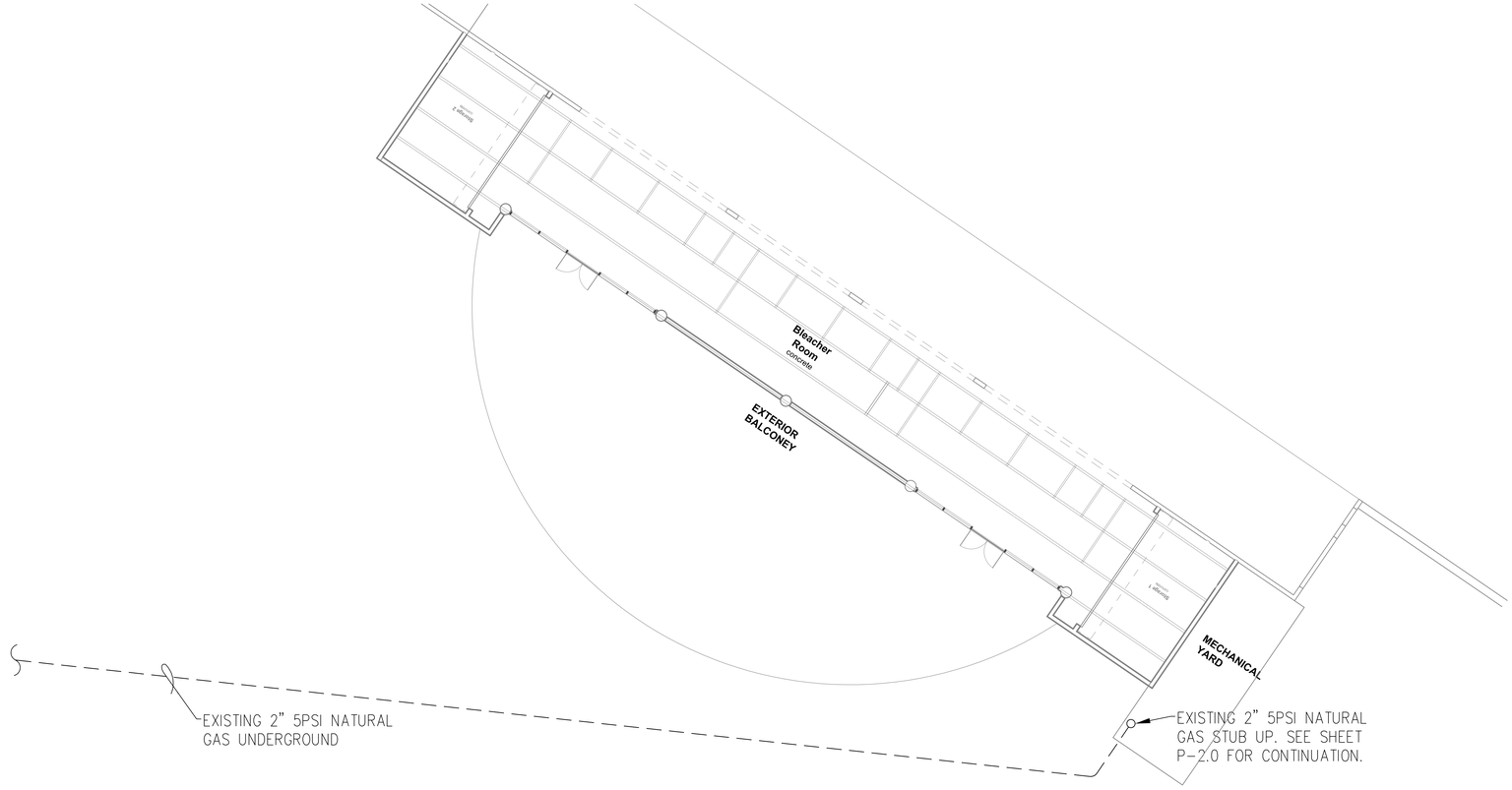
Checked By
Checker

Scale
As indicated

Print Date
4/26/2022 2:09:12 PM

Sheet Name
FLOOR PLAN - PLUMBING-ENLARGED

Sheet Number
P-2.0



2 SITE PLAN – AERIAL VIEW
SCALE: 1/4"=1'-0"

3 NATURAL GAS METER – EXISTING
SCALE: 1/4"=1'-0"

FIRM REG. # 10627
ARIES ENGINEERED SOLUTIONS, INC.
1600 TOWN CENTER DR. #2341
BURNET, TX 78611
OFFICE: (512) 484-5018

STATE OF TEXAS
HENRY ROMO, JR.
91435
REGISTERED PROFESSIONAL ENGINEER
SIGNED:
DATE: JUN. 26, 2023

Delineations incorporated
Designs & Reprographics
518 Main Street,
Marble Falls, TX 78654
(830) 693-9408
www.delineations.com

Project Name
YMCA RENOVATION

Client Name
RICH CARLTON

Project Address
1601 South Water St.
Burnet, Texas
78611

Status
CONSTRUCTION DOCUMENTS

Log

Project Number
211035

Drawn By
Author

Checked By
Checker

Scale
As Indicated

Print Date
4/26/2022 2:09:12 PM

Sheet Name
FLOOR PLAN - PLUMBING

Sheet Number
P-1.0

2018 IECC - REQUIREMENTS CHECKLIST

NOTE: NOT ALL REQUIREMENTS MAY APPLY.

PROJECT REQUIREMENTS

Plan Review
C406.1 Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.

Post Construction: C408.1 Building operations and maintenance documents will be provided to the owner Documents will cover manufacturers information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.

C405.6 Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405 6.

C405.7 Electric motors meet the minimum efficiency requirements of Tables C405.7. Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist)

C405.1 Total voltage drop across the combination of feeders and branch circuits NTE 5%.

LIGHTING CONTROLS:

C405.2 Occupancy sensors installed in classrooms/lectureftraining rooms, conference/meeting/multipurpose rooms, copy/printrooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, warehouse storage areas, and other spaces <=300 sq ft that are enclosed by floor-to-ceiling height partitions.

C405.2 Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor.

C4052 1 31 Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sqft have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas<= 600 SQft within the space,
2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by >=80% of the full zone general.

C405.2 Each area not served by occupancy sensors have time-switch controls and functions detailed in sections C405. 22.

C405.2. Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >=50 percent .

C405.2, Daylight zones provided with individual controls that control the lights independent of general area control function and section C405.2. 3 Sidelit zone.

C405.2 Separate lighting control devices for specific uses installed per approved lighting plans.

LIGHTING REQUIREMENTS

Plan Review
C103.2 Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.

Post Construction
C303 3, C408. Furnished O&M instructions for systems and equipment to the building owner or designated representative.

C408.2 Furnished as-built drawings for electric power systems within go days of system acceptance.

C408.3 Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.

Wattage
C405.2. Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.

C405. 3 Exit signs do not exceed 5 watts per face .

Controls
C405.2. Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%. o
Plan Review.

C103.2 Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.

HVAC:

C403.1 Systems that heat outside the building envelope are radiant heat systems controlled by an occupancy sensing device or timer switch.
C403.2 HVAC systems and equipment capacity does not exceed calculated loads.
C403.4 Thermostatic controls have a 5 deg F deadband.
C403.2 Temperature controls have setpoint overlap restrictions.
C403.2 Each zone equipped with setback controls using automatic time clock or programmable control system.
C403.2 Automatic Controls Setback to 55deg F (heat) and 85degF (cool), 7-day clock, 2-hour occupant override, 10-hour backup.
C403.2 Natural or mechanical ventilation is provided in accordance with International Mechanical Code Chapter 4. Mechanical ventilation has capability to reduce outdoor air supply to minimum per IMC Chapter 4.
C403.7 Demand control ventilation provided for spaces >500 ft2 and >25 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow > 3000 cfm.
C403.7 Exhaust air energy recovery on systems meeting Table C403.7 4(1) and C403 7.4(2) 12.
C403.7 Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria.
C403.1 HVAC ducts and plenums insulated in accordance with C403.11 and constructed in accordance with C403. 11. Verification may need to occur during foundation Inspection.
C408.2 Air outlets and zone terminal devices have means for air balancing.
C403. 5 Refrigerated display cases, walk-in coolers or walk-in freezers served by remote compressors and remote condensers not located in a condensing unit, have fan-powered condensers that comply with Sections C403. 5 and refrigeration compressor systems that comply with C403.5.

C403.1 HVAC piping insulation insulated in accordance with Table C403.11.3.
Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation.

C403.2 Heating and cooling to each zone is controlled by a thermostat control Minimum one humidity control device per installed humidification/dehumidification system.
C403.2 Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.

MECHANICAL REQUIREMENTS

HVAC:

C403.2 Systems include optimum start controls .

C404.5 Heated water supply piping conforms to pipe length and requirements Refer to section details.

C404. 7 Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature ofthe water entering the cold-water piping to 104 deg F.

C403. 8 Motors for fans that are not less than 1/12 hp and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent.

C403.8 Each DX cooling system > 65 kbtu and chiller water/evaporatwe cooling system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with detailed requirements.

WATER HEATING:

C404.3 Heat traps installed on supply and discharge piping of non-circulating systems.
C404.4 All piping insulated in accordance with section details and Table C403. 1.
C404.5 Heated water supply piping conforms to pipe length and volume requirements.
C404. 6 Automatic time switches installed to automatically switch off the recirculating hot-water system or heat trace.
C404. 6 Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to 5 minutes after end of heating cycle.
C404.7 Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104 deg F.

Plan Review
C103.2 Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed load calculations per acceptable engineering standards and handbooks.

C103.2 Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed Hot water system sized per manufacturers sizing guide.

Post Construction.

C303.3, C408. 2 Furnished O&M manuals for HVAC systems within 90 days of system acceptance.

C408.2 An air and/or hydronic system balancing report is provided for Hvac systems.

C408 2 11 Commissioning plan developed by registered design professional or approved agency.

C40823 ll HVAC equipment has been tested to ensure proper operation

C408.2 Hvac control systems have been tested to ensure proper operation, calibration and adjustment.

NOTE: THESE SPECIFICATIONS SUPERCEDE THE GENERAL SPECIFICATIONS ON SHEETS MEP-1.0, 2.0 & 3.0.

MECHANICAL ELECTRICAL PLUMBING
FIRM REG. # 10827
ARIES ENGINEERED SOLUTIONS, INC.
SOLAR SYSTEM ENGINEERS
ARIES ENGINEERED SOLUTIONS, INC.
10900 RANCH RD 2341
BURNET, TX 78611
OFFICE: (512)484-5018

STATE OF TEXAS
HENRY ROMO, JR.
91435
REGISTERED
PROFESSIONAL ENGINEER
SIGNED:
DATE: JUN. 26 2023

Delineations incorporated
Designs & Reprographics
518 Main Street,
Marble Falls, TX 78654
(830) 693-9408
www.delineations.com

Project Name
YMCA RENOVATION

Client Name
RICH CARLTON

Project Address
1601 South Water St.
Burnet, Texas
78611

Status
CONSTRUCTION DOCUMENTS

Log

Project Number
211035

Drawn By
Author

Checked By
Checker

Scale
As indicated

Print Date
4/26/2022 2:09:12 PM

Sheet Name
IECC REQUIREMENTS

Sheet Number
MEP-4.0

MECHANICAL SPECIFICATIONS - DIVISION 15

GENERAL

THE GENERAL CONDITIONS OF THE GENERAL SPECIFICATIONS, ALONG WITH ALL APPLICABLE INSTRUCTIONS TO BIDDERS, SHALL FORM A PART OF THIS SECTION OF THE SPECIFICATIONS. REFERENCE IS MADE TO REQUISITES FOR BIDDERS AND CONTRACTORS UNDER OTHER SECTIONS OF THESE SPECIFICATIONS, WHICH SHALL BE CONSIDERED BINDING, UNLESS OTHERWISE NOTED, UNDER THIS SECTION.

SCOPE

EACH CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE CONSTRUCTION DETAILS BEFORE SUBMITTING HIS BID AS NO ALLOWANCES WILL BE MADE BECAUSE OF THE CONTRACTOR'S UNFAMILIARITY WITH THESE DETAILS. ALL PERFORMANCE OF CONSTRUCTION SHALL BE AS REQUIRED BY THE PACE OF THE GENERAL CONSTRUCTION.

INSPECTION OF SITE

ALL PROPOSALS SHALL ASSUME THAT THE CONTRACTOR IS FAMILIAR WITH JOB SITE CONDITIONS AND UTILITY LOCATIONS AND THE LACK OF SPECIFIC INFORMATION ON THE DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY.

GUARANTEE

ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER DATE OF ACCEPTANCE.

ALL WORK FOUND TO BE DEFECTIVE SHALL BE REPAIRED OR REPLACED BY THIS SUB-CONTRACTOR WITHOUT ADDITIONAL CHARGE TO THE OWNER. REFER TO HVAC SPECIFICATIONS FOR ADDITIONAL WARRANTIES.

PERMITS

ALL PERMITS AND LICENSES NECESSARY FOR THE PROPER EXECUTION OF THE WORK SHALL BE SECURED AND PAID FOR BY THE SUBCONTRACTOR INVOLVED. WHERE APPLICABLE.

CODE REQUIREMENTS

ALL WORK UNDER THIS CONTRACT SHALL COMPLY WITH THE PROVISIONS OF SPECIFICATIONS, DRAWINGS OR AS DIRECTED BY THE OWNER, AND SHALL SATISFY ALL APPLICABLE CODES, ORDINANCES, OR REGULATIONS OF THE GOVERNING BODIES, WHETHER SO SHOWN OR NOT, AND ALL MODIFICATIONS REQUIRED BY SUCH AUTHORITIES SHALL BE MADE BY THE CONTRACTOR WITHOUT ANY ADDITIONAL COST TO THE OWNER.

CODES IN FORCE

INTERNATIONAL PLUMBING CODE – 2015
INTERNATIONAL MECHANICAL CODE – 2015
NATIONAL ELECTRIC CODE – 2017
INTERNATIONAL BUILDING CODE 2015
INTERNATIONAL FIRE CODE – 2015
INTERNATIONAL ENERGY CONSERVATION CODE – 2015

MATERIALS AND WORKMANSHIP

A. ALL MANUFACTURED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE APPLIED AS RECOMMENDED BY THE MANUFACTURERS, AND UNLESS OTHERWISE SPECIFIED SHALL BE NEW, AND FREE FROM ANY DEFECTS. ALL LIKE MATERIALS USED SHALL BE OF THE SAME MANUFACTURER AND QUALITY UNLESS OTHERWISE SPECIFIED.

B. ALL WORK UNDER THIS CONTRACT SHALL BE PERFORMED BY COMPETENT WORKMEN AND EXECUTED IN A NEAT AND WORKMANLIKE MANNER. WORK SHALL BE PROPERLY PROTECTED DURING CONSTRUCTION. ON COMPLETION, THE INSTALLATION SHALL BE THOROUGHLY CLEANED AND ALL DEBRIS PRESENT AS A RESULT OF THIS CONTRACT SHALL BE REMOVED FROM THE PREMISES.

CODES AND REGULATIONS

EACH SUBCONTRACTOR SHALL COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS BEARING ON THE CONDUCT OF THE WORK AS DRAWN OR SPECIFIED. IF A SUBCONTRACTOR OBSERVES THAT THE DRAWINGS AND SPECIFICATIONS ARE AT A VARIANCE, HE SHALL PROMPTLY NOTIFY THE THE GENERAL CONTRACTOR AND THE OWNER IN WRITING. IF ANY SUBCONTRACTOR PERFORMS ANY WORK KNOWING IT TO BE CONTRARY TO LAWS, ORDINANCES, RULES AND REGULATIONS AND WITHOUT GIVING SUCH NOTICE, THE SUBCONTRACTOR SHALL BEAR ALL COSTS ARISING THEREFROM.

PROTECTION OF WORK AND PROPERTY

A. EACH SUBCONTRACTOR SHALL CONTINUOUSLY MAINTAIN ADEQUATE PROTECTION OF ALL HIS WORK FROM DAMAGE AND SHALL PROTECT THE OWNER'S PROPERTY FROM INJURY OR LOSS ARISING FROM HIS WORK. HE SHALL MAKE GOOD ANY SUCH DAMAGE, INJURY, OR LOSS, EXCEPT SUCH AS MAY BE DIRECTLY DUE TO CAUSES BEYOND HIS CONTROL AND NOT TO HIS FAULT OR NEGLIGENCE. HE SHALL ADEQUATELY PROTECT ADJACENT PROPERTY AS WELL.

B. EACH SUBCONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF THEIR EMPLOYEES ON THE JOB AND SHALL COMPLY WITH ALL PROVISIONS OF FEDERAL, STATE AND LOCAL BUILDING CODES AND SAFETY LAWS TO PREVENT ACCIDENTS OR INJURY TO PERSONS ON OR ADJACENT TO THE PREMISES WHERE THE WORK IS BEING PERFORMED. EACH SUBCONTRACTOR SHALL MAINTAIN ALL INSURANCE REQUIRED TO PROTECT HIMSELF, OWNER AND TENANT FOR THE DURATION OF THE WORK AGAINST PROPERTY DAMAGE AND PUBLIC LIABILITY.

CHANGES IN THE WORK

THE OWNER, WITHOUT INVALIDATING THE CONTRACT, MAY ORDER EXTRA WORK OR MAKE CHANGES BY ALTERING, ADDING TO OR DEDUCTING FROM THE WORK, THE CONTRACT SUM BEING ADJUSTED ACCORDINGLY.

COOPERATION

ALL WORK UNDER THESE SPECIFICATIONS SHALL BE ACCOMPLISHED IN CONJUNCTION WITH OTHER CONTRACTORS AND TRADES ON THIS PROJECT IN A MANNER WHICH WILL ALLOW EACH CONTRACTOR AND TRADE ADEQUATE TIME AT THE PROPER STAGE OF CONSTRUCTION TO FULFILL HIS CONTRACTS. REFERENCE SHALL BE MADE TO THE OWNER/CONTRACTOR FOR INSTRUCTIONS SHOULD ANY QUESTIONS ARISE BETWEEN TRADES AS TO THE PLACING OF LINES, DUCTS, CONDUITS, FIXTURES, OR EQUIPMENT, OR SHOULD IT APPEAR DESIRABLE TO REMOVE ANY GENERAL CONSTRUCTION WHICH WOULD AFFECT THE APPEARANCE OF STRENGTH OF THE STRUCTURE.

SUBSTITUTION OF MATERIALS

MANUFACTURER'S NAMES ARE LISTED HEREIN TO ESTABLISH A STANDARD. THE PRODUCTS OF OTHER MANUFACTURERS WILL BE ACCEPTABLE, IF IN THE OPINION OF THE CONTRACTOR/ENGINEER, THE SUBSTITUTE MATERIAL IS OF A QUALITY AS GOOD OR BETTER THAN THE MATERIAL SPECIFIED, AND WILL SERVE WITH EQUAL EFFICIENCY AND DEPENDABILITY, THE PURPOSE FOR WHICH THE ITEMS SPECIFIED WERE INTENDED.

SHOP DRAWINGS

SHOP DRAWINGS AND CATALOGUE DATA ON ALL MAJOR ITEMS OR EQUIPMENT AND SYSTEMS, AND SUCH OTHER ILLUSTRATIVE MATERIAL AS MAY BE CONSIDERED NECESSARY BY THE ARCHITECT, SHALL BE SUBMITTED BY THIS CONTRACTOR IN ADEQUATE TIME TO PREVENT DELAY AND CHANGES DURING CONSTRUCTION.

DRAWINGS AND SPECIFICATIONS

A. THE DRAWINGS SHOW DIAGRAMMATICALLY THE LOCATIONS OF THE VARIOUS LINES, DUCTS, CONDUITS, FIXTURES, AND EQUIPMENT AND THE METHOD OF CONNECTING AND CONTROLLING THEM. IT IS NOT INTENDED TO SHOW EVERY CONNECTION IN DETAIL AND ALL FITTINGS REQUIRED FOR A COMPLETE SYSTEM.

B. SHOULD ANY CHANGES BE DEEMED NECESSARY BY THE CONTRACTOR IN ITEMS SHOWN ON CONTRACT DRAWINGS, THE SHOP DRAWINGS, DESCRIPTIONS, AND THE REASON FOR THE PROPOSED CHANGES SHALL BE SUBMITTED TO THE CONTRACTOR FOR APPROVAL.

RESPONSIBILITY

THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE SATISFACTORY AND COMPLETE EXECUTION OF ALL WORK INCLUDED IN HIS CONTRACT. HE SHALL PRODUCE COMPLETE FINISHED OPERATING SYSTEMS AND PROVIDE ALL INCIDENTAL ITEMS REQUIRED AS PART OF HIS WORK, REGARDLESS OF WHETHER SUCH ITEM IS PARTICULARLY SPECIFIED OR INDICATED.

H.V.A.C.

GENERAL

1. ALL HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS MUST BE DESIGNED AND INSTALLED IN COMPLIANCE WITH THE STATE AND LOCAL BUILDING CODES, LOCAL FIRE DEPARTMENT REGULATIONS, AND THE LATEST EDITION OF SMACNA AND ASHRAE STANDARDS.
2. DUCTWORK AND ALL OTHER HVAC CONSTRUCTION MUST BE DESIGNED TO CLEAR ANY INTERIOR CONSTRUCTION THAT OCCURS IN OFFICE SPACES.
3. EXHAUST DUCT, PLUMBING VENTS OR EQUIPMENT SHALL NOT BE LOCATED WITHIN 10'-0" OF ANY EXTERIOR WALL.
4. ALL ROOF WORK SHALL BE COORDINATED WITH THE ARCHITECTS FIELD REPRESENTATIVE.
5. H.V.A.C. CONTRACTOR SHALL PAY ALL FEES, OBTAIN ALL PERMITS AND INSPECTIONS AS REQUIRED FOR THIS PORTION OF THE WORK.
6. H.V.A.C. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE FULL EXTENT OF HIS WORK. ANY DISCREPANCIES WITH PLANS SHALL BE REPORTED TO CONTRACTOR REPRESENTATIVE PRIOR TO BIDDING.
7. ALL NEW MATERIALS, EQUIPMENT AND WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FOLLOWING DATE OF ACCEPTANCE BY ARCHITECT/CONTRACTOR, EXCEPT WHERE A LONGER WARRANTY PERIOD IS PROVIDED BY THE MANUFACTURERS OF EQUIPMENT OR COMPONENTS. PROVIDE AN ADDITIONAL FOUR YEAR WARRANTY FOR ALL ROOF TOP HVAC UNITS.
8. PRIOR TO THE START UP OF H.V.A.C. SYSTEM, THE H.V.A.C. CONTRACTOR SHALL CLEAN ALL DUCTWORK AND EQUIPMENT TO REMOVE ANY DIRT, RUBBISH OR DEBRIS.
9. THE COMPLETE H.V.A.C. SYSTEM EQUIPMENT SHALL BE TESTED, BALANCED, AND ADJUSTED BY THE TESTING AND BALANCING CONTRACTOR TO INSURE PROPER AIR FLOW TO ALL AREAS. A REPORT SHALL BE FURNISHED TO THE OWNER AND ENGINEER.
10. FOR ADDITIONAL H.V.A.C. INFORMATION REFER TO MECHANICAL DETAILS AND DRAWINGS.
11. ALL DUCTWORK SHALL BE SHEETMETAL (UNLESS OTHERWISE NOTED). SHEETMETAL DUCTWORK SHALL BE EXTERNALLY WRAPPED (2.0" INSULATION) AND SHALL COMPLY WITH LOCAL CODE REQUIREMENTS.

SCOPE

FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY FOR A COMPLETE FULLY OPERATIVE HEATING, VENTILATING, AND AIR CONDITIONING SYSTEM EXCEPT AS SPECIFICALLY EXCLUDED BY THE DRAWINGS, AND/OR ARCHTECTS/OWNER/CONTRACTORS DIRECTIONS.

EQUIPMENT

1. PACKAGED AIR HANDLING AIR CONDITIONING UNITS – UNITS SHALL BE FACTORY ASSEMBLED AND PRE-TESTED INCLUDING CASINGS, FANS, MOTORS, COILS, HEAT EXCHANGERS, FILTERS, DRIVES, AND CONTROLS. UNITS SHALL HAVE NET CAPACITY RATINGS DETERMINED AT THE SPECIFIED DESIGN CONDITIONS. THESE NET CAPACITY RATINGS SHALL BE DETERMINED BY DEDUCTING FOR MOTOR HEAT. THE AIR CONDITIONING UNITS SUPPLIED SHALL HAVE A TOTAL SYSTEM ENERGY RATIO (EER) OF NOT LESS THAN 13.0.
2. FILTERS – FILTERS SHALL BE 2" PLEATED MERV 8 AND EQUAL TO FARR 30/30.
3. EXHAUST FANS –
   A. TOILET EXHAUST – SEE MECHANICAL EQUIPMENT SCHEDULE.
4. ALL DX PACKAGED SYSTEMS WILL BE EQUIPPED WITH WALL MOUNTED PROGRAMMABLE NIGHT SET BACK WITH CLEAR LOCKING COVER. MOUNT AT 48" A.F.F. IN OFFICES AREA FOR ADA COMPLIANCE.
5. HVAC SUB-CONTRACTOR SHALL IDENTIFY ALL ROOF MOUNTED HVAC EQUIPMENT AND APPARATUS WITH 2" HIGH PAINTED STENCILED FACILITY NAME ON SIDE OF EQUIPMENT.
6. SMOKE DETECTORS-INSTALL DUCT MOUNTED SMOKE DETECTORS IN SUPPLY AND RETURN OF EACH AIR CONDITIONING SYSTEM. DUCT SMOKE DETECTORS SHALL BE FURNISHED BY MECHANICAL DIVISION. DETECTORS SHALL BE UL LISTED, 120V, AND SHALL BE OF THE PHOTOELECTRIC, SAMPLING TUBE TYPE. DETECTORS SHALL LOCK IN ON ALARM AND SHALL HAVE REMOTE TEST AND ALARM/TROUBLE INDICATION CAPABILITY. PROVIDE A MOMENTARY CONTACT RESET SWITCH IN POWER SOURCE TO SMOKE DETECTOR. CONNECT AUXILIARY CONTACT TO SHUT DOWN FAN OR AIR HANDLING UNIT WHEN ABNORMAL SMOKE CONDITION OCCURS.
7. THE AIR DISTRIBUTION AND EXHAUST SYSTEMS SHALL BALANCED TESTED AND ADJUSTED TO MEET THE AIR FLOW REQUIREMENTS INDICATED ON SHEET M-1. VERIFY AND RECORD THE THE DUCT TESTING RESULTS PERFORMED BY THE MECHANICAL CONTRACTOR. THE OUTSIDE AIR, SUPPLY AIR, RETURN AIR, AND EXHAUST AIR FOR EACH SYSTEM SHALL BE ADJUSTED PLUS AND MINUS +/-5% OF THE VALUE SCHEDULED ON THE DRAWINGS.
   A COPY OF THE TEST RESULTS SHOULD BE PROVIDED TO THE MEP ENGINEER UPON COMPLETION OF THE TESTING AND BALANCING.

DUCTWORK

1. DUCT SYSTEMS IN ALL AREAS TO BE FABRICATED FROM OWENS #800 1"QUIET OR EQUIVALENT. DUCT SYSTEM SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURERS PUBLISHED INSTRUCTIONS. FLEXIBLE INSULATED DUCT WILL BE ALLOWED WITH A SIX FEET MAXIMUM DISTANCE TO ANY AIR DEVICE.
2. 1ST LEVEL ROUND DUCT SYSTEM TO BE FABRICATED FROM GALVANIZED SHEET METAL INTERNALLY LINED SPIRAL PIPE AND FITTINGS. DUCT SYSTEMS SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURERS PUBLISHED INSTRUCTIONS. FLEXIBLE INSULATED DUCT WILL BE ALLOWED WITH A SIX FEET MAXIMUM DISTANCE TO ANY AIR DEVICE.
3. DUCTS SHALL BE SECURLY ANCHORED TO THE BUILDING USING APPROVED TYPE WIRE HANGERS AND SHALL BE INSTALLED TO BE COMPLETELY FREE FROM VIBRATIONS WHEN THE THE SYSTEM IS IN OPERATION. PROVIDE FLANGE METAL FRAMES AT ALL RUN-OUTS THRUUGH WALL MATERIAL. DUCT RUN-OUTS MUST BE COMPLETELY FLUSH WITH OUTER WALL MATERIAL.
4. ALL DUCTWORK SHALL BE MADE AIR TIGHT WITH MASTIC AND PRESSURE SENSITIVE TAPE.
5. CONTRACTOR RESPONSIBLE FOR ALL CUTTING, CORING AND PATCHING REQUIRED FOR MECHANICAL INSTALLATION.
6. CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCE DURING CONSTRUCTION.
7. CONTRACTOR SHALL COORDINATE FINAL DIFFUSER/GRILLE LOCATION WITH ARCHITECTURAL AND ELECTRICAL TRADES.
8. PROVIDE MANUAL VOLUME DAMPERS IN ALL BRANCH DUCTS TO GRILLES AND ALL BRANCH TAKE-OFFS. MOUNT IN ACCESSIBLE LOCATION. PROVIDE YOUNG REGULATORS AT LOCATIONS ABOVE GYPSUM BOARD CEILINGS WITH EXTENSION TO ACCESSIBLE LOCATION.
9. CONTRACTOR SHALL FIELD VERIFY AVAILABLE DUCT SPACE BELOW STRUCTURE AND COORDINATE WITH SPRINKLER PIPING, WATER PIPING, CONDUITS, ETC. BEFORE PURCHASING ANY EQUIPMENT OR FABRICATING DUCTWORK.
10. DUCT SYSTEMS SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURERS PUBLISHED INSTRUCTIONS. FLEXIBLE INSULATED DUCT WILL BE ALLOWED WITH A SIX FEET MAXIMUM DISTANCE TO ANY AIR DEVICE.
11. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH LATEST SMACNA STANDARDS.

DUCT INSULATION

1. INSULATE SUPPLY AND RETURN DUCTWORK LOCATED IN UNCONDITIONED SPACES WITH 2 INCH THICK 0.75 PCF DENSITY, FOIL-SCRIM-KRAFT FACED GLASS FIBER INSULATION. SEAL ALL JOINTS AND BREAKS IN THE VAPOR BARRIER WITH VAPOR BARRIER SEALANT AND TAPE OF THE SAME FACING MATERIAL AS THE INSULATION. MINIMUM R-VALUE = 6 INSTALLED. RETURN AIR DUCT BOOTS ABOVE CEILING SHALL BE INTERNALLY LINED WITH 1" LINER.
2. SUPPLY AND RETURN DUCTWORK LOCATED IN CONDITIONED SPACES SHALL BE INSULATED WITH FIBERGLASS DUCT LINER, MIN R-6. KNAUF OR OWENS-CORNING. DUCT DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS. CONTRACTORS SHALL SIZE DUCTS TO ALLOW FOR DUCT LINER.
3. FLEXIBLE DUCT SHALL BE FLEXMASTER TYPE 1M U CLASS 1 AIR DUCT: METAL FLEXIBLE DUCTING, GLASS FIBER INSULATION AND VAPOR BARRIER JACKET. RATED FOR 25/50 FLAME/SMOKE SPREAD.

HANGERS AND SUPPORTS

1. ALL HORIZONTAL DUCTS HAVING A DIMENSION OF 40 INCHES AND LESS SHALL BE SUPPORTED BY MEANS OF BAND IRON HANGERS OF NO. 18 U.S. GAUGE ATTACHED TO THE DUCT BY MEANS OF RIVETS, SCREWS, OR CLAMPS, AND FASTENED TO STRUCTURE ABOVE BY TOGGLE BOLTS OR OTHER MEANS. EACH SECTION OF DUCTWORK SHALL HAVE AT LEAST ONE PAIR OF SUPPORTS. VERTICAL DUCTS SHALL BE SUPPORTED WITH 1-1/4" X 1-1/4"
2. X 1-1/4" ANGLES WHERE THEY PASS THROUGH THE FLOOR LINES.

   ALL HORIZONTAL DUCTS HAVING A DIMENSION OF 40 INCHES AND MORE SHALL BE SUPPORTED BY MEANS OF ANGLE IRON TRAPEZE HANGERS. EACH SECTION OF DUCTWORK SHALL HAVE AT LEAST
3. ONE PAIR OF SUPPORTS.

   DUCTWORK SHALL BE SUPPORTED AT ALL TURNS AND TRANSITIONS SUPPORT STRAIGHT DUCT EVERY 8' UP TO 35", EVERY 6' FOR
4. DUCT FROM 36" TO 59", AND EVERY 4' FOR DUCT 60" AND OVER.

   HANGER DESIGN SHALL BE AS DESCRIBED IN THE LATEST EDITION OF THE "SMACNA" MANUAL. REINFORCEMENT MEMBERS MAY BE USED TO SUPPORT THE DUCT SYSTEM PROVIDED DETAILS OUTLINED IN THE AFOREMENTIONED DOCUMENTS ARE ADHERED TO.

REINFORCEMENT

1. ALL DUCTS REQUIRING REINFORCEMENT SHALL BE REINFORCED ACCORDING TO THE LATEST EDITION OF "SMACNA" MANUAL.
2. MATERIALS FOR REINFORCEMENT MEMBERS SHALL BE GALVANIZED

FLASHING

1. CONTRACTOR WILL PROVIDE WATER TIGHT 24 GA. SHEET METAL FLASHING AT ALL EXTERIOR WALLS AND ROOF PENETRATIONS.
2. ALL CUTTING OF ROOF OPENINGS, SUPPORTS FOR ROOF OPENINGS, FLASHINGS, AND COUNTER FLASHINGS ASSOCIATED WITH HVAC SHALL BE THE RESPONSIBILITY AND PART OF THE CONTRACT OF THE HVAC SUB-CONTRACTOR. HE SHALL EMPLOY THE CONTRACTOR'S ROOFERS FOR THIS WORK SO AS TO MAINTAIN THE ROOF BOND.

ACCESSORY ITEMS

ALL MANUAL DAMPERS, TURNING VANES, REGISTER CONNECTIONS, ACCESS DOORS OR OTHER ASSOCIATED ACCESSORIES SHALL BE INSTALLED ACCORDING TO THE LATEST EDITION OF "SMACNA" MANUAL.

DAMPERS

1. SPLITTER DAMPERS SHALL BE FABRICATED OF SHEET STEEL NOT LESS THAN NO. 16 U.S. GAUGE WITH THE LEADING EDGE HEMMED. EACH DAMPER SHALL BE LARGE ENOUGH TO COVER THE SMALLER OF THE TWO OPENINGS IT CONTROLS. DAMPERS SHALL BE CONTROLLED AS FOLLOWS:

   CONCEALED DUCTWORK – LOCKING QUADRANT EQUAL TO YOUNG REGULATOR NO. 315 (CHROMIUM PLATED WITH DAMPER ROD END BEARINGS ON BOTH ENDS).

2. VOLUME DAMPERS SHALL BE OF OPPOSED INTERLOCKING TYPE AS MANUFACTURED BY AMERICAN FOUNDRY AND FURNACES CO. (AFFCO) OR EQUAL. BLADES SHALL BE OF NO. 16 GAUGE SHEET METAL AND SHALL NOT EXCEED 48" IN LENGTH OR 12" IN WIDTH. BLADES SHALL BE ON ONE-HALF INCH (1/2") DIAMETER RUSTPROOF AXLE. BEARINGS SHALL BE OF THE SELF-LUBRICATING FERRULE TYPE.

3. JOB FABRICATED TURNING VANES SHALL BE ACCEPTABLE IN SQUARE ELBOWS. PROVIDE AND INSTALL BARBER-COLMAN AIRTURNS OR EQUAL. TURNING VANES SHALL BE OF THE SAME GAUGE METAL AS THE DUCT IN WHICH THEY ARE INSTALLED. RADIUS ELBOWS SHALL HAVE A CENTERLINE RADIUS OF ONE AND ONE-HALF (1-1/2") TIMES THE DUCT WIDTH.

PIPING

1. PIPING AND FITTINGS SHALL BE OF THE WEIGHTS AND TYPES SHOWN ON THE DRAWINGS. SIZES SHOWN ON THE DRAWINGS ARE NOMINAL PIPE SIZES.
2. ALL PIPING SHALL BE INSTALLED PARALLEL TO, OR AT RIGHT ANGLES TO THE BUILDING WALLS AND PARTITIONS AND SHALL BE INSTALLED WITH THE PROPER PITCH.
3. BEFORE INSTALLATION ALL PIPING SHALL BE UPENDED AND POUNDED TO REMOVE ANY FOREIGN MATTER PRESENT AND SHALL BE SWABBED IF NECESSARY.

RESPONSIBILITY NOTES

1. H.V.A.C. EQUIPMENT AND RELATED WORK SHALL BE THE RESPONSIBILITY OF THE H.V.A.C. SUBCONTRACTOR.
2. ROOF OPENINGS FOR PLUMBING AND RELATED WORK SHALL BE THE RESPONSIBILITY OF THE PLUMBING SUBCONTRACTOR. HE SHALL EMPLOY THE CONTRACTOR'S ROOFER FOR THIS WORK TO MAINTAIN THE ROOF BOND.
3. ALL WIRING, CONDUITS, ETC., REQUIRED FOR H.V.A.C. CONTROLS SYSTEMS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL SUBCONTRACTOR. H.V.A.C. SUBCONTRACTOR SHALL SUPPLY THE CONTROLS AND WIRING DIAGRAMS.

TEMPORARY SERVICES

THE CONTRACTOR SHALL PROVIDE THE FOLLOWING SPECIFIC ITEMS OF TEMPORARY SERVICES:

TELEPHONE – THE TENANT'S GENERAL CONTRACTOR SHALL PROVIDE A JOB SITE TELEPHONE AND NOTIFY OWNER AS LISTED BY CONTRACTOR OF THE TELEPHONE NUMBER AND THE NAME OF THE SUPERINTENDENT.

TEMPORARY WATER – WATER REQUIRED IN THE PERFORMANCE OF THE CONTRACT SHALL BE PROVIDED AND PAID FOR BY THE CONTRACTOR. WATER USED FOR HUMAN CONSUMPTION SHALL CONFORM TO REQUIREMENTS OF THE STATE AND LOCAL AUTHORITIES FOR POTABLE WATER.

TEMPORARY HEAT – WHEN REQUIRED FOR PROPER INSTALLATION OR PROTECTION OF ANY PORTION OF THE WORK, THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY HEATING UNITS AS APPROVED BY THE OWNER OR LOCAL AUTHORITY.

PLUMBING

GENERAL

A. All piping shall be concealed where possible.
B. Waste and vent pipes concealed beneath a floor slab or in a wall above finished floor may be Schedule 40 PVC provided the piping is not in a plenum as defined by the International Mechanical Code.
C. The IMC definition of a plenum is an enclosed portion of the building structure, other than an occupiable space being conditioned, that is designed to allow air movement, and thereby serve as part of the air distribution system. An occupiable space is an enclosed space intended for human activities excluding those spaces intended primarily for other purposes, such as storage rooms and equipment rooms, that are only intended to be occupied occasionally and for short periods of time. Plastic piping with a flame spread index of not more than 25 and a smoke developed index of not more than 50 when tested in accordance with ASTM E84.
D. Any plastic waste and vent piping or water piping passing through a rated wall or floor shall pass through UL tested fire-rated assembly approved for the fire rating of the wall being penetrated. The assembly shall be approved by the A/E of record before being installed.
E. Any sewer or grease waste below the foundation level shall be cast iron if receiving water or waste at a temperature greater than 120 degrees F. for a distance of at least 25 linear feet.
F. Hot and cold water lines may be PEX in sizes ½" and ¾" in concealed walls or plumbing chases inaccessible by inmates if the piping is not in a plenum as defined by the International Mechanical Code.
G. Where any piping is exposed in areas accessible to inmates, flush or threaded type joints shall be used. Piping shall be Type L copper for water lines and service weight cast iron for sewer and vent lines in these areas. Pro Press fittings for copper lines shall be acceptable.
H. Requirements for grease, oil and soil interceptors are described in Section 15450.
I. Requirements for security are describe in Section 15010.2.
J. Use of piping greater than 8" diameter may be approved by exception only.
K. Dielectric protection must be provided for dissimilar metals used in piping or mounting of piping.

1.0

2.0 INTERIOR WASTE AND VENT LINES

A. Pipes shall be concealed where possible. Where piping is exposed in areas accessible to inmates, ductile pipe with flush type joints shall be used.
B. Waste and vent line concealed in walls shall be Schedule 40 PVC.
C.

3.0 FLOOR DRAINS AND CLEANOUTS

A. Drains and clean out covers shall be secured using tamper proof fasteners in all areas. Tamper proof fasteners shall be as indicated in Section 05051.
   1. Floor drains shall be provided in inmate toilets.
   2. Floor drains shall not be provided at small staff toilets, but staff dorm toilets or other staff toilets with a shower shall have a floor drain.
   3. Kitchen drains shall be a minimum of 4" diameter and the trap shall be encased in concrete a minimum of 2" thick on bottom of trap.
   4. Strainers in drains shall have openings not greater than 1/2" diameter.
B. Avoid locating clean outs in inmate accessible areas where possible.

4.0 BAFFLES IN DRAIN LINES

Sanitary waste piping connections for water closets in inmate rooms where installed back-to-back with common chase shall be piped utilizing a fitting with integral factory installed baffle/flapper so that there cannot be any direct passthrough in the piping.

5.0 DOMESTIC WATER PIPING

A. Piping shall be concealed where possible. Exposed piping shall have a colored identification band at approximately 20 foot intervals or at least once per room or space.
B. Sectional valves to isolate sections of piping for maintenance and repairs shall be provided in areas not accessible to inmates.
C.

6.0 FREEZE PROTECTION

A. All exterior exposed plumbing piping shall be protected from freezing.
B. Assume ASHRAE 0.2% standard temperature for design.
C. Use insulation in lieu of heat trace where insulation alone will provide the required protection at the ASHRAE design temperature.
D. Where no ASHRAE temperature is listed for the site, confer with TDCJ for selection of appropriate design temperature.

ELECTRICAL
MECHANICAL
ARIES ENGINEERED SOLUTIONS, INC.
SOLAR SYSTEM ENGINEERS
FIRM REG. # 10527
ARIES ENGINEERED SOLUTIONS, INC.
10900 RANCH RD 2341
BURNET, TX 78611
OFFICE: (512) 484-5018

STATE OF TEXAS
HENRY ROWO, JR.
91435
REGISTERED
PROFESSIONAL ENGINEER

SIGNED:
DATE: JUN. 26 , 2023

Delineations incorporated
Designs & Reprographics
518 Main Street,
Marble Falls, TX 78654
(830) 693-9408
www.delineations.com

Project Name
YMCA RENOVATION

Client Name
RICH CARLTON

Project Address
1601 South Water St.
Burnet, Texas
78611

Status
CONSTRUCTION DOCUMENTS

Log

Project Number
211035

Drawn By
Author

Checked By
Checker

Scale
As indicated

Print Date
4/26/2022 2:09:12 PM

Sheet Name
MECHANICAL SPECIFICATIONS

Sheet Number
MEP-3.0

ELECTRICAL SYMBOLS, ABBREVIATIONS AND SPECIFICATIONS

(NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED ON THIS PROJECT)

LEGEND

LIGHTING

- A — LED OR FLUORESCENT LIGHT FIXTURE, LETTER(S) DENOTES TYPE.
- AE OR BE — FIXTURE CONNECTED TO EMERGENCY LIGHTING CIRCUIT; OR EQUIPPED WITH BATTERY PACK.
- STRIP LIGHT FIXTURE, LED
- B — LED, FLUORESCENT OR HIGH INTENSITY DISCHARGE LIGHT FIXTURE, LETTER(S) DENOTES TYPE. BRACKET " " WHEN USED INDICATES WALL MOUNTED.
- RECESSED DOWN LIGHT FIXTURE, CEILING MOUNTED–6" DIA
- XB — EMERGENCY BATTERY BACKED UNIT EQUIPMENT, W/HEADS AS INDICATED.
- XA — EXIT LIGHT FIXTURE, LETTER(S) DENOTES TYPE. ARROW(S) WHEN USED, INDICATE DIRECTION OF CHEVRONS. SHADED AREAS INDICATE FACE(S). BRACKET " ⊥ " WHEN USED INDICATES WALL

WIRING DEVICES

- S — SINGLE POLE SWITCH, INSTALL 48" AFF UON.
- S_K — KEYED SINGLE POLE SWITCH, INSTALL 48" AFF UON.
- S_2 — DOUBLE POLE SWITCH, INSTALL 48" AFF UON.
- S_3 — THREE–WAY SWITCH, INSTALL 48" AFF UON.
- S_4 — FOUR–WAY SWITCH, INSTALL 48" AFF UON.
- S_P — SWITCH AS DESCRIBED ABOVE WITH RED PILOT LIGHT, LIGHTED WHEN "ON" UON, INSTALL 48" AFF UON.
- S_{WP} — SWITCH WITH WEATHER PROOF COVER. INSTALL 48" AFF UON.
- S_D — DIMMER, 600W UON, INSTALL 48" AFF UON.
- OS — OCCUPANCY SENSOR SWITCH; WATT STOPPER W–2000A WITH POWER PACK, UON. CEILING MOUNTED, UON.
- OS — OCCUPANCY SENSOR – WALL MTD
- OS — OCCUPANCY SENSOR – CLG MTD
- P — PHOTOCEL
- C — DUPLEX RECEPTACLE, 18" AFF UON. ('C' INDICATES CEILING MOUNTED). NEMA 5–20R, UON.
- GFI WP — DUPLEX RECEPTACLE WITH INTERNAL GROUND FAULT PROTECTION, INSTALL 18" AFF UON. ('WP' INDICATES WEATHERPROOF).
- IG — ISOLATED GROUND DUPLEX RECEPTACLE, INSTALL 18" AFF UON.
- SS — TRANSIENT VOLTAGE SURGE SUPPRESSION DUPLEX RECEPTACLE, INSTALL 18" AFF UON.
- QUADRUPLEX RECEPTACLE AS DESCRIBED ABOVE, 18" AFF UON.
- SIMPLEX RECEPTACLE, INSTALL 96" AFF UON. 'CLK' INDICATES CLOCK HANGER RECEPTACLE, INSTALL 96" AFF UON.
- SPECIAL PURPOSE RECEPTACLE, SIZE AND NEMA CONFIGURATION AS INDICATED, INSTALL 18" AFF UON.
- RECEPTACLE AS DESCRIBED ABOVE, INSTALLED IN A FLUSH FLOOR BOX.
- DUPLEX RECEPTACLE HORIZONTALLY MOUNTED 6" ABOVE COUNTER TOP, UON.
- DUPLEX RECEPTACLE ON EMERGENCY POWER
- COMBINATION RECEPTACLE AND TELE/DATA OUTLET INSTALLED IN
- CEILING MTD FAN

COMMUNICATIONS AND DATA

- TELEPHONE TERMINAL BOARD, 4' X 8' X 3/4" THICK, UON.
- P — TELEPHONE OUTLET. INSTALL 18" AFF UON. 4" SQUARE BOX WITH A SINGLE DEVICE PLASTER RING AND 3/4"C WITH PULLING LINE STUBBED OUT TO ABOVE NEAREST ACCESSIBLE CEILING. P = PAYPHONE WITH OUTLET @ 44" AFF; W = WALL MOUNTED @ 48" AFF.
- DATA OUTLET. INSTALL 18" AFF UON. 4" SQUARE BOX WITH A SINGLE DEVICE PLASTER RING AND 3/4"C WITH PULLING LINE STUBBED OUT TO ABOVE NEAREST ACCESSIBLE CEILING.
- COMBINATION TELEPHONE AND DATA OUTLET. INSTALL 18" AFF UON. 4" SQUARE BOX WITH A SINGLE DEVICE PLASTER RING AND 3/4"C WITH PULLING LINE STUBBED OUT TO ABOVE NEAREST ACCESSIBLE CEILING.
- OUTLET AS DESCRIBED ABOVE, INSTALLED IN A FLUSH FLOOR BOX.
- TV — OUTLET BOX WITH 3/4" CONDUIT WITH PULLING LINE STUBBED OUT TO ABOVE ACCESSIBLE CEILING FOR CATV, INSTALL 18" AFF, UON.
- S — SPEAKER – CLG MTD
- S — SPEAKER – WALL MTD

LEGEND

DISTRIBUTION & CONTROLS

- ELECTRICAL PANELBOARD (480Y/277 VOLT).
- ELECTRICAL PANELBOARD (208Y/120 VOLT).
- B — ENCLOSED CIRCUIT BREAKER, RATING AND NO OF POLES AS INDICATED.
- NON–FUSED DISCONNECT SWITCH. 30A/3P NEMA 1 UON. 30A = SWITCH RATING, 3P = NO OF POLES, NEMA 1 = ENCLOSURE STYLE.
- FUSED DISCONNECT SWITCH. 30A/3P NEMA 1 UON. FUSE SIZE AS NOTED. 30A = SWITCH RATING, 3P = NO OF POLES, NEMA 1 = ENCLOSURE STYLE.
- MAGNETIC MOTOR STARTER. SIZE 1, NEMA 1 UON.
- COMBINATION DISCONNECT AND MAGNETIC STARTER. SIZE 1, NEMA 1 UON.
- CONTROLLER PROVIDED WITH EQUIPMENT (HVAC, ELEVATOR, ETC.) INSTALLED BY DIVISION 16.
- S_M — MANUAL MOTOR STARTER WITH THERMAL OVERLOAD(S) UON, SIZED PER ACTUAL NAMEPLATE RATING.
- C — CONTACTOR, RATING AND NO OF POLES AS INDICATED.
- PE — PHOTO–ELECTRIC SWITCH. INSTALL WITH SENSOR ELEMENT FACING NORTH, FLUSH MOUNTED WHERE POSSIBLE, UON.
- TS — TIME SWITCH.
- J — JUNCTION BOX.
- M — MOTOR.
- MD — MOTORIZED DAMPER.
- T — TRANSFORMER, RATING AS INDICATED.
- CURRENT TRANSFORMER, RATING AND NO AS INDICATED.
- DRAW–OUT POWER CIRCUIT BREAKER, RATING AND NO. OF POLES, AS INDICATED.
- THERMAL AND/OR MAGNETIC CIRCUIT BREAKER, RATING AND NO OF POLES AS INDICATED.
- FUSE, RATING AS INDICATED.
- SURGE ARRESTER, RATING AS INDICATED.
- MFM — DIGITAL SOLID STATE MULTI–FUNCTION METER.
- M — UTILITY COMPANY REVENUE METER UON.
- PUSHBUTTON, TYPE AS SPECIFIED ON DRAWING.
- SELECTOR SWITCH.
- E — EQUIPMENT CONNECTION. COORDINATE WITH MANUFACTURERS' REPRESENTATIVE.
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR SYSTEM.
- PB — PULL BOX, SIZE PER NEC, UON.

GROUNDING

- 3/4" DIAMETER BY 10'–0" LONG COPPER CLAD GROUND ROD.
- G — GROUND CONDUCTOR. SIZE AS INDICATED.
- GROUND CONNECTION.
- G — GROUND BUS AS NOTED ON DRAWINGS AND SPECIFICATIONS

SITE

- –AT– AERIAL TELEPHONE UTILITY
- –UT– UNDERGOUND TELEPHONE UTILITY
- HA — LIGHTING STANDARD WITH LUMINAIRE. LETTERS DENOTE TYPE.
- UTILITY POLE
- DOWN GUY
- TRANSFORMER POLE
- T — PAD MOUNTED UTILITY SERVICE TRANSFORMER
- P__ — PRECAST MANHOLE OR HANDHOLE AS INDICATED FOR POWER (P) OR COMMUNICATIONS (C) CABLES. SIZE AS NOTED.

CONDUIT AND WIRE

- CONDUIT RUN CONCEALED IN CEILING, WALL, FLOOR, OR ABOVE SUSPENDED CEILING.
- CONDUIT RUN IN OR BELOW SLAB OR GROUND.
- SWITCH LEG.
- LA–1,3,5 — HOMERUN TO PANEL AND CIRCUIT DESIGNATION. BRANCH CIRCUIT SHALL BE MINIMUM 3#12 AWG EXCLUDING NEUTRAL AND GROUND, 1/2"C. U.O.N. ON DRAWINGS OR SPECIFICATIONS.

(NOTE: ALL SYMBOLS SHOWN ARE NOT NECESSARILY USED ON DRAWINGS)

CONDUIT AND WIRE

- E — EMPTY CONDUIT WITH PULLING LINE, SIZE AS INDICATED.
- CAPPED CONDUIT.
- CONDUIT TURNED UP.
- CONDUIT TURNED DOWN.
- LA–1,3 — HOMERUN TO PANEL AND CIRCUIT DESIGNATION. BRANCH CIRCUIT SHALL BE MINIMUM 3#12 AWG EXCLUDING NEUTRAL AND GROUND, 1/2"C. U.O.N. ON DRAWINGS OR SPECIFICATIONS.

FIRE ALARM SYSTEM

- FACP — FIRE ALARM CONTROL PANEL.
- ANN — FIRE ALARM REMOTE ANNUNCIATOR.
- F — FIRE ALARM MANUAL STATION, INSTALL 48" AFF.
- F_T — FIRE ALARM AREA SMOKE DETECTOR, INSTALL ON CEILING UON. "T", INDICATES UNDER RAISED FLOOR.
- SD_B — DUCT MOUNTED SMOKE DETECTOR.
- DUCT MOUNTED SMOKE DETECTOR REMOTE INDICATING LIGHT, INSTALL 54" AFF.
- R — FIRE ALARM FIXED–TEMPERATURE RATE–OF–RISE HEAT DETECTOR, 135°C UON.
- AV — FIRE ALARM AUDIO/VISUAL DEVICE, INSTALL 80" AFF, UON.
- V — FIRE ALARM VISUAL DEVICE, INSTALL 80" AFF, UON.
- F/SD — COMBINATION FIRE AND SMOKE DAMPER BY DIVISION 15.
- FP — FIREFIGHTERS EMERGENCY PHONE JACK. INSTALL 44" AFF.
- K — KITCHEN HOOD EXTINGUISHING STATION.

SPECIFICATIONS

SECTION 16010 – ELECTRICAL GENERAL PROVISIONS

1. WORK MUST COMPLY WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRICAL CODE, AND ALL LOCAL, STATE, AND FEDERAL CODES, ORDINANCES AND REGULATIONS.
2. ALL MATERIALS SHALL BE UL LISTED AND/OR LABELED.
3. DURING CONSTRUCTION, PROTECT ALL EXISTING ELECTRICAL EQUIPMENT AND MATERIALS ITEMS FROM CONSTRUCTION DEBRIS, MOISTURE ABSORPTION, AND METALLIC CORROSION.
4. COOPERATE WITH ALL TRADES PERFORMING WORK.
5. MARK ALL MAJOR PIECES OF ELECTRICAL EQUIPMENT WITH ENGRAVED NAMEPLATES. FURNISH RED NAMEPLATES FOR EQUIPMENT CONNECTED TO EMERGENCY CIRCUITS.
6. SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR ALL MATERIALS AND EQUIPMENT TO THE ARCHITECT/ENGINEER.
7. SUBMIT OPERATION AND MAINTENANCE MANUALS TO THE ARCHITECT/ENGINEER.
8. SUBMIT PROJECT RECORD DOCUMENTS TO THE ARCHITECT/ENGINEER.

SECTION 16020 – ELECTRICAL UTILITIES

1. CONNECT ELECTRICAL SERVICE TO THE EXISTING POWER DISTRIBUTION SYSTEM.
2. FURNISH AND INSTALL EMPTY RACEWAYS WITH PULLING LINES FOR THE OWNER'S TELEPHONE SYSTEM.

SECTION 16030 – GROUNDING

1. FURNISH AND INSTALL A SYSTEM GROUND AS REQUIRED BY NEC ARTICLE 250.
2. FURNISH AND INSTALL AN EQUIPMENT GROUND AS REQUIRED BY NEC ARTICLE 250.
3. SIZE GROUNDING AND BONDING CONDUCTORS PER NEC TABLES 250–94 AND 250–95.
4. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDERS AND BRANCH CIRCUITS.

SECTION 16110 – RACEWAYS

1. FURNISH AND INSTALL ELECTRICAL METALLIC TUBING (EMT) WITH STEEL COMPRESSION FITTINGS IN INTERIOR LOCATIONS.
2. FURNISH AND INSTALL RIGID NON–METALLIC CONDUIT ENCASED IN CONCRETE WHERE INSTALLED BELOW GRADE.
3. FURNISH AND INSTALL RIGID STEEL CONDUIT IN ALL OTHER APPLICATIONS.
4. FURNISH AND INSTALL WIREWAYS PER NEC ARTICLE 362.
5. FLEXIBLE METAL CONDUIT, IN LENGTHS NOT EXCEEDING 60", MAY BE USED TO CONNECT LIGHT FIXTURES TO BRANCH CIRCUIT WIRING.

SECTION 16120 – INSULATED CONDUCTORS

1. FURNISH AND INSTALL SOLID COPPER WIRE WITH THHN/THWN INSULATION FOR NO. 12 AND 10 AWG CONDUCTORS.
2. FURNISH AND INSTALL STRANDED COPPER WIRE WITH THHN/THWN INSULATION FOR NO. 8 AWG AND LARGER CONDUCTORS.
3. COLOR CODE ALL WIRING.

SECTION 16130 – BOXES

1. FURNISH AND INSTALL 4" SQUARE GALVANIZED STEEL DEVICE BOXES.
2. FURNISH AND INSTALL MASONRY BOXES IN MASONRY WALLS.
3. FURNISH AND INSTALL GALVANIZED STEEL JUNCTION, PULL AND SPLICE BOXES CONFORMING TO NEC ARTICLE 370.

SECTION 16140 – WIRING DEVICES

1. FURNISH AND INSTALL NEMA 5–20R BACK AND SIDE WIRED RECEPTACLES CONFORMING TO UL 498.
2. FURNISH AND INSTALL 20A–120/277V BACK AND SIDE WIRED WALL SWITCHES CONFORMING TO UL 20.
3. ALL WIRING DEVICES CONNECTED TO EMERGENCY CIRCUITS SHALL BE RED INCLUDING DEVICE PLATES.

SECTION 16160 – FUSES

1. FURNISH AND INSTALL UL CLASS RK–5 TIME DELAY CURRENT LIMITING FUSES.

SECTION 16438 – TRANSFORMERS

1. FURNISH AND INSTALL DRY TYPE TRANSFORMERS CONFORMING TO NEMA PUBLICATION ST–20.

SECTION 16445 – PANELBOARDS

1. FURNISH AND INSTALL PANELBOARDS WITH 98 PERCENT IACS CONDUCTIVITY COPPER BUS.
2. FURNISH AND INSTALL BREAKERS WHICH ARE SOLIDLY BOLTED TO THE BUS AND RATED 120/240 VOLT AND 10,000 RMS SYMMETRICAL AMPERES OR 277/480 VOLT AND 14,000 RMS SYMMETRICAL AMPERES.
3. FURNISH AND INSTALL PANELBOARD CABINETS CONFORMING TO UL 50.

SECTION 16455 – MOTOR STARTERS

1. FURNISH AND INSTALL MAGNETIC, FULL VOLTAGE, NON–REVERSING, NEMA SIZE 1 MINIMUM, MOTOR STARTERS WITH CONTROL TRANSFORMER, HAND–OFF–AUTO SELECTOR SWITCH AND RED "ON" INDICATING LIGHT, UNLESS OTHERWISE INDICATED.
2. FURNISH AND INSTALL COMBINATION DISCONNECT SWITCH AND MOTOR STARTER WHERE INDICATED.
3. FURNISH AND INSTALL MANUAL MOTOR STARTERS FOR SINGLE–PHASE MOTORS WHERE INDICATED.

SECTION 16470 – ENCLOSED SAFETY SWITCHES

1. FURNISH AND INSTALL HEAVY DUTY, QUICK–MAKE, QUICK–BREAK SAFETY SWITCHES.

SECTION 16510 – LIGHTING FIXTURES AND LAMPS

1. LIGHTING FIXTURES ARE SPECIFIED BY TYPE AND MANUFACTURER ON THE DRAWINGS.
2. FURNISH AND INSTALL FLUORESCENT FIXTURES WITH ENERGY–SAVINGS LAMPS AND LOW THD ELECTRONIC BALLASTS WHICH ARE HIGH POWER FACTOR, CLASS P, AND CLASS A SOUND RATED.

GENERAL ELECTRICAL NOTES

1. EACH RECEPTACLE ON THE EXTERIOR OF THE BUILDING SHALL BE PROVIDED WITH ITS OWN GROUND FAULT TRIP DEVICE.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE TO THE PROPER SIDE OF THE DOOR ANY SWITCH, RECEPTACLE OR DEVICE BEING AFFECTED BY ANY CHANGE IN DIRECTION OF DOOR SWINGS AS SHOWN ON THE ARCHITECTURAL FLOOR PLAN.
3. LIGHTING IN MECHANICAL AND ELECTRICAL ROOMS SHALL BE ADJUSTED IN THE FIELD FOLLOWING INSTALLATION OF MECHANICAL AND ELECTRICAL EQUIPMENT TO PROVIDE RELATIVELY UNIFORM LIGHTING AS GENERALLY OUTLINED ON THE DRAWINGS. RECEPTACLES IN MECHANICAL & ELECTRICAL ROOMS, SHALL BE INSTALLED AT 44" AFF, UON.
4. MECHANICAL EQUIPMENT SIZES ARE AS DESIGNED, BREAKERS, CONDUIT, STARTERS, CONDUCTORS, ETC., SHALL BE ADJUSTED TO THE EQUIPMENT SUBMITTED AND APPROVED FOR INSTALLATION ON THIS PROJECT.
5. REMOTE MOUNTED MOTORS SHALL BE PROVIDED WITH RECEPTACLES AND PLUGS OR DISCONNECT SWITCHES TO BE COMPATIBLE WITH THE CONSTRUCTION TYPE AND THE NEC.
6. EACH MOTOR BEING INSTALLED ON THIS CONTRACT SHALL BE PROVIDED WITH THERMAL PROTECTION IN EITHER A MANUAL OR MAGNETIC STARTER. THERMAL ELEMENTS SHALL BE SIZED AND INSTALLED ACCORDING TO THE NAMEPLATE FULL LOAD AMP RATING OF THE MOTOR.
7. KILOWATT (KW) RATINGS FOR EQUIPMENT MOTOR LOADS ARE AS DESIGNED WITH 90% POWER FACTOR RATING ASSUMED (EXCEPT ON THE CHILLER). THE CONTRACTOR SHALL BE RESPONSIBLE FOR INCREASING THE SIZE, AS REQUIRED, OF ALL FEEDERS AND PROTECTIVE DEVICES SERVING ANY ITEMS OF EQUIPMENT SUPPLIED WITH POWER FACTOR RATINGS LESS THAN 90% EFFICIENCY.
8. IN ALL AREAS THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN THE ELECTRICAL AND MECHANICAL TRADES TO PROVIDE CLEARANCE ABOVE CEILING BETWEEN RECESSED LIGHTING FIXTURES AND THERMAL INSULATION OR DUCTWORK IN ACCORDANCE WITH THE NEC, PARAGRAPH 410–66.
9. ALL COUNTERTOP RECEPTACLES WITHIN SIX FEET OF A SINK, SHALL BE GFI TYPE, UON.

ABBREVIATIONS

A	A	AMPERE
	AF	AMP FRAME/AMP FUSE
	AFF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	AHU	AIR HANDLING UNIT
	AIC	AMPERE INTERRUPTING CAPACITY
	ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
B	BFG	BELOW FINISHED GRADE
	BPS	BOLTED PRESSURE SWITCH
C	CKT	CIRCUIT
	CLG	CEILING
	CLK	CLOCK
	CT'S	CURRENT TRANSFORMERS
	CU	CONDENSING UNIT OR COPPER
D	DISC SW	DISCONNECT SWITCH
E	EA	EACH
	EC	EMPTY CONDUIT
	EDF	ELECTRIC DRINKING FOUNTAIN
	EWC	ELECTRIC WATER COOLER
	EF	EXHAUST FAN
	ELEC	ELECTRICAL
	EMT	ELECTRICAL METALLIC TUBING
	EPO	EMERGENCY POWER OFF
	EQUIP	EQUIPMENT
	EWH	ELECTRIC WATER HEATER
	EXIST	EXISTING
	EXP	EXPLOSION PROOF
F	FACP	FIRE ALARM CONTROL PANEL
	FCU	FAN COIL UNIT
	FLA	FULL LOAD AMPS
	FLUOR	FLUORESCENT
G	GEC	GROUNDING ELECTRODE CONDUCTOR
	GEN	GENERATOR OR GENERAL
	GFI/GFCI	GROUND FAULT CIRCUIT INTERRUPTER
	GND	GROUND
	GRS	GALVANIZED RIGID STEEL
I	IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
	IMC	INTERMEDIATE METAL CONDUIT
	INC	INCANDESCENT
	IPS	INTERRUPTIBLE POWER SUPPLY
K	KAIC	THOUSAND AMP INTERRUPTING CAPACITY RMS SYMMETRICAL
	MCM/KCMIL	THOUSAND CIRCULAR MILS
	KVA	THOUSAND VOLT AMPERE
	KW	KILOWATT
L	LRA	LOCKED ROTOR AMPS
	LSI	LONG TIME/SHORT TIME/INSTANTANEOUS TRIP SETTINGS INCLUDED WITH CIRCUIT BREAKER
M	MCA	MINIMUM CIRCUIT AMPERES
	MCB	MAIN CIRCUIT BREAKER
	MFR	MANUFACTURER
	MH	METAL HALIDE
	MLO	MAIN LUGS ONLY
	MOCP	MAXIMUM OVERCURRENT PROTECTION
	MTD	MOUNTED
	MTG HT	MOUNTING HEIGHT
	MV	MERCURY VAPOR
N	NC	NORMALLY CLOSED
	NEC	NATIONAL ELECTRICAL CODE
	NECA	NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION
	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
	NIC	NOT IN CONTRACT
	NL	NIGHT LIGHT
	NO	NUMBER OR NORMALLY OPEN
	NTS	NOT TO SCALE
O	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
	OFOI	OWNER FURNISHED, OWNER INSTALLED
P	PH	PHASE
	PNL	PANELBOARD
R	RCPT	RECEPTACLE
	REP	REPRESENTATIVE
	REQ'D	REQUIRED
	RLA	RUNNING LOAD AMPERES
	RTU	ROOF TOP UNIT
S	SC	SPLIT BRANCH CIRCUIT INDICATES REFERENCED BRANCH CIRCUIT HAS MORE THAN ONE HOMERUN DESIGNATION SHOWN
	SWBTCO	SOUTHWESTERN BELL TELEPHONE COMPANY (WHERE APPLICABLE)
	SQ FT	SQUARE FEET
T	TEL	TELEPHONE
	TV	TELEVISION
	TYP	TYPICAL
U	UH	UNIT HEATER
	UON	UNLESS OTHERWISE NOTED
	UPS	UNINTERRUPTIBLE POWER SUPPLY
V	V	VOLT
	VA	VOLT AMPERE
	VFD/VSD	VARIABLE FREQUENCY/SPEED DRIVE
W	W	WIRE
	W/	WITH
	W/O	WITHOUT
	WP	WEATHERPROOF

ELECTRICAL MECHANICAL ARIES ENGINEERED SOLUTIONS INC. SOLAR SYSTEM ENGINEERS
FIRM REG. # 10927
ARIES ENGINEERED SOLUTIONS, INC.
10900 RANCH RD 2341
BURNET, TX 78611
OFFICE: (512) 484-5018

The Texas Board of Professional Engineers has jurisdiction regarding the professional practice of persons registered as Professional Engineers in the State of Texas.
TEXAS BOARD OF PROFESSIONAL ENGINEERS
1917 IH 35 SOUTH AUSTIN, TX 78741–3702

STATE OF TEXAS
HENRY ROMO, JR.
91435
REGISTERED
PROFESSIONAL ENGINEER
SIGNED:
DATE: JUN. 26, 2023

Delineations incorporated
Designs & Reprographics
518 Main Street,
Marble Falls, TX 78654
(830) 693-9408
www.delineations.com

Project Name
YMCA RENOVATION

Client Name
RICH CARLTON

Project Address
1601 South Water St.
Burnet, Texas
78611

Status
CONSTRUCTION DOCUMENTS

Log

Project Number
211035

Drawn By
Author

Checked By
Checker

Scale
As Indicated

Print Date
4/26/2022 2:09:12 PM

Sheet Name
ELECTRICAL SYMBOLS ABBREVIATIONS & SPECIFICATIONS

Sheet Number
MEP-2.0

MECHANICAL AND PLUMBING SYMBOLS AND ABBREVIATIONS

(NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED ON THIS PROJECT)

MECHANICAL/PLUMBING ABBREVIATIONS

A.I.C.	AMPERE INTERRUPTING CAPACITY
GYP. BD.	GYPSUM BOARD
MTL./MET.	METAL
C.P.	CONTROL PANEL
CONT.	CONTINUOUS
NTS	NOT TO SCALE
W/	WITH
EWC	ELECTRIC WATER COOLER
RM	ROOM
H.C.	HANDICAP
FLR.	FLOOR
SHT	SHEET
U.B.C.	UNIFORM BUILDING CODE
O.C.	ON CENTER
CTR.	CENTER
PT	PAINTED
CONC.	CONCRETE
A.F.F.	ABOVE FINISHED FLOOR
OBVD	OPPOSED BLADE VOLUME DAMPER
W.P.	WEATHER PROOF
DIA.	DIAMETER
ELEC.	ELECTRICAL
PLY.WD.	PLYWOOD
ELEV.	ELEVATION
FS	FLOOR SINK
FD	FLOOR DRAIN
HD	HUB DRAIN
UF	UNDERFLOOR
UG	UNDERGROUND
VTR	VENT THRU ROOF
O.H.	OVERHEAD
B.F.	BELOW FLOOR
AD	ACCESS DOOR
AC	ABOVE CEILING
O.A.	OUTSIDE AIR
U.S.	UNDERGROUND SECONDARY
E.G.C.	EQUIPMENT GROUNDING CONDUCTOR
G.E.C.	GROUNDING EQUIPMENT CONDUCTOR
F.D.	FIRE DAMPER
S/FD	COMBINATION SMOKE/FIRE DAMPER
H.I.D.	HIGH INTENSITY DISCHARGE
HZ	HERTZ
CU	COPPER
A	AMPERES
P	POLE
BTU	BRITISH TERMINAL UNITS
CFH	CUBIC FEET PER HOUR
GALV.	GALVANIZED
ACCU-1	AIR COOLED CONDENSING UNIT MARK NUMBER
CLG.	CEILING
AL	ALUMINUM
U.O.N.	UNLESS OTHERWISE NOTED

AP	ACCESS PANEL
C.I.	CAST IRON
D.C.	DURA COATED
GA.	GAUGE
W.P.	WEATHERPROOF
A.V.	AIR VENT
W	WASTE
V	VENT
C.W	COLD WATER
HW	HOT WATER
F.C.	FLEXIBLE CONNECTION
S.P.	STATIC PRESSURE
CFH	CUBIC FEET PER HOUR
VP	VANDAL PROOF
HWC	HOT WATER CIRCULATOR
GV	GATE VALVE
FACP	FIRE ALARM CONTROL PANEL
TAC	TO ABOVE CEILING
TP	TRAP PRIMER UNIT
N.B.	NICKEL BRONZE
F.V.	FLUSH VALVE
V.C.	VITREOUS CHINA
S.S.	STAINLESS STEEL
C.P.	CHROMIUM PLATED
ELEV.	ELEVATION
AF	ABOVE FLOOR
GPM	GALLONS PER MINUTE
G.P.H.	GALLONS PER HOUR
BFP	BACKFLOW PREVENTER
BTC	BRANCH TO CONNECTION
E.S.P.	EXTERNAL STATIC PRESSURE
R.P.M.	REVOLUTIONS PER MINUTE
EWH	ELECTRIC WATER HEATER
GWH	GAS WATER HEATER
H.V.A.C.	HEATING, VENTILATION, & AIR CONDITIONING
E.A.T.	ENTERING AIR TEMPERATURE
L.A.T.	LEAVING AIR TEMPERATURE
E.W.T.	ENTERING WATER TEMPERATURE
L.W.T.	LEAVING WATER TEMPERATURE
⌀	ROUND
□	SQUARE
(Z)	KEYED NOTE
	POINT OF CONNECTION, NEW AND EXISTING.

MECHANICAL SYMBOLS

- RETURN GRILLE WITH SQUARE DUCT NECK CONNECTION.
- EXHAUST GRILLE TO EXHAUST FAN
- SUPPLY DIFFUSER WITH OPPOSED BLADE DAMPER AND FLEXIBLE DUCT TO SPIN TAP WITH AIR SCOOP.
- SUPPLY DIFFUSER- 3 WAY OPPOSED BLADE DAMPER AND FLEXIBLE DUCT TO SPIN TAP WITH AIR SCOOP.
- SUPPLY DUCT
- RETURN DUCT
- CEILING-MOUNTED EXHAUST FAN.
- NECK/TYPE CFM — DIFFUSER KEY
- T — THERMOSTAT
- F.D. — FIRE DAMPER.
- POINT OF CONNECTION, NEW AND EXISTING.
- EXISTING DUCTWORK TO REMAIN.
- EXISTING DUCTWORK TO REMAIN.
- EXISTING DUCTWORK TO BE REMOVED.
- 12/10 — NEW DUCTWORK. WIDTH/HEIGHT
- ELBOW WITH TURNING VANES.
- TRANSITIONS.
- FLEXIBLE CONNECTION.
- FLEXIBLE DUCT SPIN TAP WITH AIR SCOOP AND ADJUSTABLE DAMPER
- FLEXIBLE DUCT
- SQUARE TO ROUND DUCT TRANSITION
- RECTANGULAR DUCT WITH EXTERNAL INSULATION
- ROUND DUCT-WITH EXTERNAL INSULATION
- INSULATION
- INSULATION AS REQUIRED
- BALANCING DAMPER
- BRANCH TAP WITH DAMPER
- SD D — DUCT MOUNTED SMOKE DETECTOR
- C — CONDENSATE DRAIN PIPING
- SHUTOFF OR DRAIN VALVE
- SUPPLY DUCT UP
- SUPPLY DUCT DOWN
- RETURN EXHAUST OR O.A. DUCT UP
- RETURN EXHAUST OR O.A. DUCT DOWN
- ELBOW LOOKING UP
- ELBOW LOOKING DOWN
- TEE
- TEE LOOKING UP
- TEE LOOKING DOWN
- EXHAUST AIR DIRECTION

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
	DOMESTIC COLD WATER.
	DOMESTIC HOT WATER.
	SEWER, SOIL & WASTE PIPE.
	PIPING IN FLOOR SLAB
	PLUMBING VENT.
RL	REFRIGERANT LIQUID LINE
RS	REFRIGERANT SUCTION LINE
RD	ROOF DRAIN PIPING.
EOD	EMERGENCY OVERFLOW DRAIN.
CD	CONDENSATE DRAIN.
AD	AUXILIARY DRAIN PIPING
F	FILTERED WATER
GW	GREASE WASTE PIPING
	EXISTING DOMESTIC COLD WATER.
	EXISTING DOMESTIC HOT WATER.
	EXISTING SEWER, SOIL & WASTE PIPE.
	RISE OR DROP.
	BRANCH CONNECTION OUT OF TOP.
	BRANCH CONNECTION OUT OF BOTTOM.
	BRANCH CONNECTION OUT OF SIDE.
	CAP ON END OF PIPE.
	PLUGGED TEE.
	RISER DOWN (ELBOW).
	RISER UP (ELBOW).
	UNION.
H.B.	HOSE BIBB.
	GATE VALVE.
	CHECK VALVE.
	BALL VALVE.
	BALANCING VALVE.
	GAS COCK OR VALVE.
	BACKFLOW PREVENTOR.
FD	FLOOR DRAIN.
HD	HUB DRAIN.
OSD	OPEN SITE DRAIN.
WCO	WALL CLEANOUT.
R.D.	ROOF DRAIN.
FS	FLOOR SINK.
	DOUBLE YARD CLEANOUT
YCO	YARD CLEANOUT

- VENT THRU ROOF
- BALL VALVE
- WATER HAMMER ARRESTOR
- VACUUM BREAKER
- TEST COCK
- PETE'S PLUG
- MIXING VALVE

INDEX OF MEP DRAWINGS

#	SHEET NO.	SHEET TITLE & DESCRIPTION
1	MEP-1.0	MECH. SYMBOLS, ABBREVIATIONS & INDEX OF DWGS.
2	MEP-2.0	ELECTRICAL SYMBOLS, ABBREVIATIONS, & SPECIFICATIONS
3	MEP-3.0	MECHANICAL SPECIFICAITONS -DIVISION 15
4	MEP-4.0	2018 IECC - INSPECTION CHECKLIST
5	M-1.0	FLOOR PLAN - MECHANICAL
6	E-1.0	FLOOR PLAN - LIGHTING
7	E-2.0	FLOOR PLAN - POWER
8	E-3.0	ELECTRICAL - RISER DIAGRAM
9	E-4.0	ELECTRICAL - LOAD ANALYSIS
10	P-1.0	FLOOR PLAN - PLUMBING
11	P-2.0	FLOOR PLAN - PLUMBING -ENLARGED
12	P-3.0	PLUMBING - GAS RISERS

ARIES ENGINEERED SOLUTIONS, INC.
FIRM REG. # 10927
ELECTRICAL MECHANICAL PLUMBING
ARIES ENGINEERED SOLUTIONS INC
SOLAR SYSTEM ENGINEERS
ARIES ENGINEERED SOLUTIONS, INC.
10900 RANCH RD 2341
BURNET, TX 78611
OFFICE: (512) 484-5018

The Texas Board of Professional Engineers has jurisdiction regarding the professional practice of persons registered as Professional Engineers in in the State of Texas.

TEXAS BOARD OF PROFESSIONAL ENGINEERS
1917 IH 35 SOUTH AUSTIN, TX 78741-3702

STATE OF TEXAS
HENRY ROMO, JR.
91435
REGISTERED
PROFESSIONAL ENGINEER

SIGNED:

DATE: JUN. 26, 2023

Delineations incorporated
Designs & Reprographics
518 Main Street,
Marble Falls, TX 78654
(830) 693-9408
www.delineations.com

Project Name
YMCA RENOVATION

Client Name
RICH CARLTON

Project Address
1601 South Water St.
Burnet, Texas
78611

Status
CONSTRUCTION DOCUMENTS

Log

Project Number
211035

Drawn By
Author

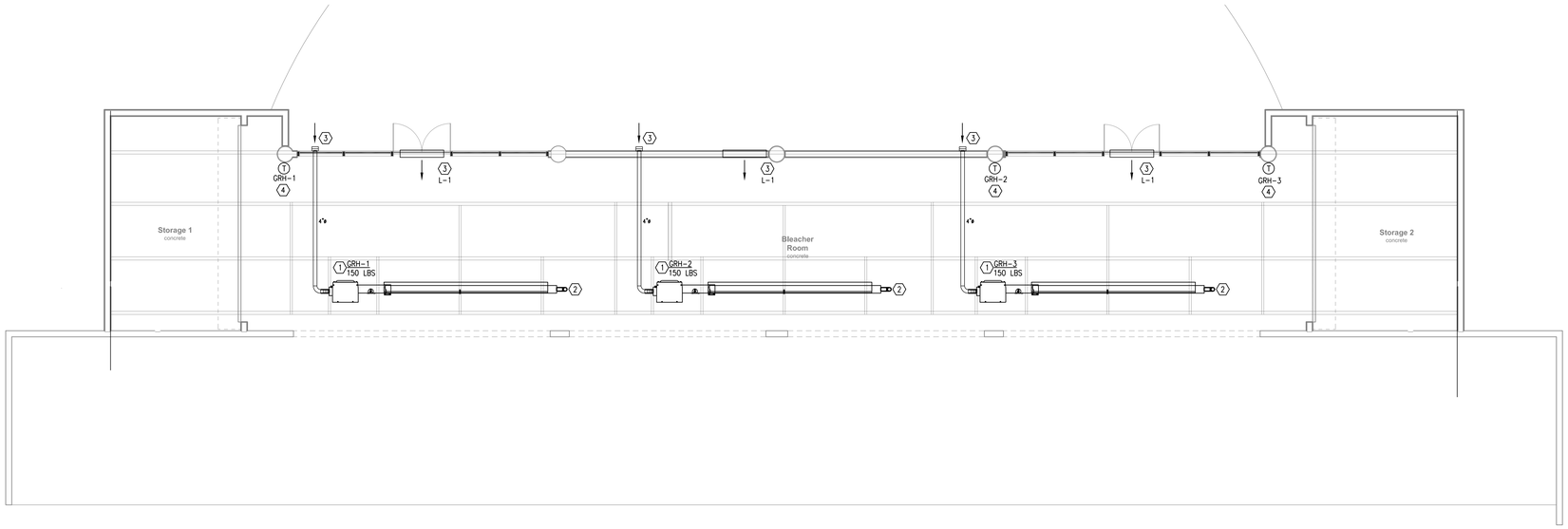
Checked By
Checker

Scale
As indicated

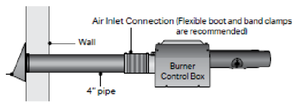
Print Date
4/26/2022 2:09:12 PM

Sheet Name
MECHANICAL & PLUMBIING SYMBOLS & ABBREVIATIONS

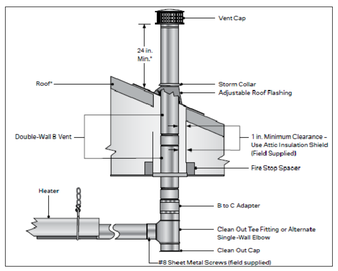
Sheet Number
MEP-1.0



1 MECHANICAL FLOOR PLAN
SCALE: 3/16"=1'-0"



2 TYPICAL COMBUSTION INTAKE DETAIL
SCALE: NOT TO SCALE



3 TYPICAL COMBUSTION EXHAUST DETAIL
SCALE: NOT TO SCALE

MECHANICAL KEYED NOTES:

1. GAS INFRARED RADIANT HEATER. PROVIDE 4" VENT AND MANIFOLD WITH ADJACENT HEATER AS SHOWN. MOUNT HEATER AS HIGH AS POSSIBLE TIGHT TO STRUCTURE ABOVE. MAINTAIN FACTORY CLEARANCES FROM COMBUSTIBLES AS RECOMMENDED BY MANUFACTURER. ADJUST ANGLE SUCH THAT HEATER IS DIRECTED TOWARDS THE FLOOR. COORDINATE EXACT LOCATION OF HEATER WITH ARCHITECT, ENGINEER AND OTHER TRADES PRIOR TO INSTALLATION. REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR PROPER INSTALLATION INSTRUCTIONS.
2. PROVIDE AND ROUTE 4" SINGLE FLUE VENT FROM BURNER CONNECTION UP TO FLUE VENT CAP ON ROOF. ROUTE SINGLE FLUE VENT AND TRANSITION TO DOUBLE FLUE VENT AT ROOF PENETRATION. PROVIDE MINIMUM 1" CLEARANCE AROUND VENT AWAY FROM COMBUSTIBLE MATERIALS AT ROOF PENETRATION. PROVIDE MINIMUM 24" FORM FINISH ROOF RISER UP TO VENT CAP CONNECTION.
3. PROVIDE 4" INTAKE VENT. ROUTE TO EXTERIOR WALL MOUNTED VENT CAP.
3. 48"x16" (L-1), RUSKIN MODEL ELF6375DX-420 FPM MINIMUM VELOCITY, (OR APPROVED EQUAL) ALUMINUM OUTSIDE AIR LOUVER. PROVIDE WITH ANTI-CORROSIVE ALUMINUM BACKDRAFT DAMPER AND BIRDSCREEN. LOUVER SHALL BE FACTORY COATED WITH ANTI-CORROSIVE KYNAR PAINT. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND PAINT COLOR. TOP OF LOUVER TO BE MOUNTED 6" BELOW ROOF DECK. VERIFY EXACT LOCATION IN FILED PRIOR TO INSTALLATION.
4. FACTORY WALL MOUNTED THERMOSTAT. MOUNT AT 48" A.F.F. PROVIDE WITH RESISTANT LOCKABLE BOX.

GAS INFRARED RADIANT HEATER SCHEDULE

MARK	GRH-1	GRH-2	GRH-3
SERVES	POOL BLEACHERS	POOL BLEACHERS	POOL BLEACHERS
FUEL TYPE	NAT. GAS	NAT. GAS	NAT. GAS
GAS HEAT INPUT (MBH)	80	80	80
VENT SIZE (IN)	4	4	4
VOLTS/PHASE/HERTZ	120/1/60	120/1/60	120/1/60
IGNITION CURRENT AMPS	4.8	4.8	4.8
RUNNING CURRNT AMPS	1.1	1.1	1.1
MANUFACTURER	RE-VERBER-RAY	RE-VERBER-RAY	RE-VERBER-RAY
MODEL NO.	HL2-20-80-SS	HL2-20-80-SS	HL2-20-80-SS
LENGTH (FT)	21'-7"	21'-7"	21'-7"
WEIGHT (LBS)	150	150	150
NOTES	1 THRU 9	1 THRU 9	1 THRU 9

NOTES:

1. PROVIDE STAINLESS STEEL CONTROL BOX REFLECTORS AND HEAT EXCHANGERS. PROVIDE CORROSIVE RESISTANCE COATING WITH 0.95 EMISSEVITY RATE..
2. MOUNT TIGHT TO STRUCTURE ABOVE. RETAIN FACTORY CLEARANCES FROM COMBUSTIBLES.
3. PROVIDE WITH 4" RTVP-4 ROOFTOP VENT PACKAGE.
4. PROVIDE WITH WALL MOUNTED WIV-4 FRESH AIR INTAKE VENT KIT AND FLEXIBLE CONNECTION AT BURNER HEAD.
4. PROVIDE "SILSEAL"- TYPE SEAL TO PROTECT INTERNAL BURNER BOX.
5. PROVIDE SSB-TYPE STAINLESS STEEL CHAIN FROM MANUFACTURER.
6. PROVIDE GAS PRESSURE REGULATOR.
7. HEAT EXCHANGER SHALL BE PROVIDED WITH 0.95 EMMISIVITY CORROSIVE RESISTANT COATING.
8. PROVIDE STAINLESS STEEL UNIT STROUT AND MOUNTING METHOD.
9. PROVIDE FACTORY THERMOSTAT MODEL TH-200 NEMA 4X. PROVIDE WITH CORROSION RESITANT LOCKABLE BOX.

FIRM REG. # 10627
ARIES ENGINEERED SOLUTIONS, INC.
16000 TUDOR LANE
BURNET, TX 78611
OFFICE: (512) 484-5018

The Texas Board of Professional Engineers has jurisdiction regarding the professional practice of persons registered as Professional Engineers in the State of Texas.

TEXAS BOARD OF PROFESSIONAL ENGINEERS
1917 IH 35 SOUTH AUSTIN, TX 78741-3702

STATE OF TEXAS
HENRY ROMO, JR.
91435
REGISTERED PROFESSIONAL ENGINEER

SIGNED:
DATE: JUN. 26, 2023

Delineations incorporated
Designs & Reprographics
518 Main Street,
Marble Falls, TX 78654
(830) 693-9408
www.delineations.com

Project Name
YMCA RENOVATION

Client Name
RICH CARLTON

Project Address
1601 South Water St.
Burnet, Texas
78611

Status
CONSTRUCTION DOCUMENTS

Log

Project Number
211035

Drawn By
Author

Checked By
Checker

Scale
As Indicated

Print Date
4/26/2022 2:09:12 PM

Sheet Name
FLOOR PLAN - MECHANICAL

Sheet Number
M-1.0

ELECTRICAL LOAD ANALYSIS

(PEAK DEMAND SUMMARY FOR YMCA, POOL EQUIPMENT, BLEACHER AREA)

PROJECT:	YMCA
BUILDING:	MAIN-POOL AREA
ADDRESS:	1601 S. WATER ST.
CITY/STATE:	BURNET, TX
VOLTAGE:	208
VOLTAGE TO GND	123
PHASE	3
WIRE	4

PEAK DEMAND FOR EXISTING SERVICE - CALCULATION PER NEC 220.87

PEAK DEMAND MEASURED AT EXISTING PANEL ON 16 JUNE 2023
1601 S. WATER ST.
BURNET, TX

PEAK DEMAND LOAD X 1.25 PER NEC 220.87

ALL BLDGS.	POOL EQUIP.						
METER NO.							
DATE OCCURED:	06/16/23						
DEMAND KW	8.47						
POWER FACTOR	0.98						
KVA:	8.65						
KVA X 1.25	10.8						TOTALS

COMPUTE TOTAL DEMAND LOAD FOR EXISTING SERVICE + NEW LOADS

		KVA	AMPS
ESTIMATED PEAK DEMAND COMPUTATION FOR EXISTING POOL EQUIPMENT		10.8	30.0
B. ADD NEW DEMAND LOAD FOR NEW BLEACHER ADDITION		4.5	12.4
	DEMAND LOAD	15.3	42.3
	LARGEST MTR	0.0	0.0
INSTALL NEW 100 AMP PANEL WITH 100 AMP MAIN BREAKER	ADD -LTG. VA/SF (SEE NOTE 10)	0.0	0.0
	SUB-TOTAL	15.3	42.3
	ADD FUTURE CAPACITY (10%)	0.0	0.0
LOAD ANALYSIS COMPUTATIONS PER NEC 2017.	TOTAL DEMAND	15.3	42.3

ELECTRICAL LOAD ANALYSIS
YMCA

PROJECT:	YMCA
BUILDING:	MAIN
ADDRESS:	1601 S. WATER ST.
CITY/STATE:	BURNET, TEXAS
VOLTAGE:	480
VOLTAGE TO GND	277
PHASE	3
WIRE	4
SQ. FOOTAGE:	10666 x 2.0 NEC VA/SF: 21332 PER NEC TABLE 220-3 (a)

DESCRIPTION TYPE OF LOAD	REF. NO. TYPE LOAD	CONN. LOAD (KVA)		NEC DEMAND FACTOR	NEC DEMAND (KVA)	DEMAND LOAD (AMPS)	KEYED NOTES
1. RECEPTACLES	1	1.8	x	SEE NOTE	1.8	2.1	1
2. LIGHTING	2	0.5	x	125%	0.6	0.7	2
3. AIR CONDITIONING	3	0.0	x	100%	0.0	0.0	3
4. ELECTRIC HEATING	4	0.0	x	100%	0.0	0.0	4
5. MOTORS	5	0.0	x	100%	0.0	0.0	5
6. WATER HEATING	6	0.0	x	100%	0.0	0.0	6
7. ELEVATORS	7	0.0	x	100%	0.0	0.0	7
8. KITCHEN EQUIPMENT	8	0.0	x	65%	0.0	0.0	8
9. MISCELLANEOUS	9	1.7	x	100%	1.7	2.1	9
10. EXTERIOR LTG.	10	0.0	x	125%	0.0	0.0	10
TOTALS		3.9			4.1	4.9	

LOAD ANALYSIS NOTES	NEC REFERENCE
NOTE 1	PER NEC TABLE 210.21(b) & 220.44
NOTE 2	PER NEC TABLE 220.12 & 220.42
NOTE 3	PER NEC ARTICLE 440, 440.22
NOTE 4	PER NEC ARTICLE 422 & 424
NOTE 5	PER NEC ARTICLE 430, Table 430.72(b)
NOTE 6	PER NEC ARTICLE 422, 422.13
NOTE 7	PER NEC ARTICLE 620, TABLE 620.14
NOTE 8	PER NEC 220.55 & Tables 220.55,56
NOTE 9	PER NEC 220.4, TABLE 430.72(b)
NOTE 10	PER NEC 408.3 & 220.5
LOAD ANALYSIS COMPUTATIONS PER NEC 2017	

DEMAND LOAD SUMMARY		AMPS
DEMAND LOAD	4.05	4.9
LARGEST MOTOR	0.00	0.0
ADD -LTG. VA/SF (SEE NOTE 10)	0.00	0.0
SUB-TOTAL	4.05	4.9
ADD FUTURE CAPACITY 10%	0.41	0.5
TOTAL LOAD	4.46	5.4

PANELBOARD SCHEDULE

PANEL:	"LA" (NEW)		MOUNTING:	SURFACE, NEMA 3R	
PROJECT:	YMCA		TYPE:	LIGHTING AND APPLIANCE	
FED FROM	VIA 30 KVA XFMR		BUSSING:	100A	
VOLTAGE:	208	120	MLO:	CU	
PHASE/WIRE:	3	4	MAIN C.B.:	100A	
SUB-FEED LUGS:	NO		A.I.C. RATING:	13k	
CONDUIT/CONDUCTORS:	SEE ONE LINE DIAGRAM DETAIL		KEY NOTES:	2,3,4,5,6,9 & 13	

CIRCUIT DESCRIPTION	TYPE LOAD	LOAD VA	CKT BKR	CKT #	CKT #	CKT BKR	LOAD VA	TYPE LOAD	CIRCUIT DESCRIPTION
INFRA-RED HEATERS (NEW)	9	1728	70/3	1	2	20/1	450	2	BLEACHER LIGHTING (NEW)
RECEPTACLES	1	1400	20/1	3	4	20/1	360	1	CEILING FANS (NEW)
EXISTING LOAD			20/1	5	6	30/1			EXISTING LOAD
EXISTING LOAD			20/1	7	8	20/1			EXISTING LOAD
EXISTING LOAD			20/1	9	10	20/1			EXISTING LOAD
EXISTING LOAD			20/1	11	12	20/1			EXISTING LOAD
EXISTING LOAD			20/1	13	14	20/1			EXISTING LOAD
EXISTING LOAD			20/1	15	16	20/1			EXISTING LOAD
SPARE			20/1	17	18	20/1			SPARE
SPARE			20/1	19	20	20/1			SPARE
SPARE			20/1	21	22	20/1			SPARE
SPARE			20/1	23	24	20/1			SPARE
BUSSED SPACE ONLY			-	25	26	-			BUSSED SPACE ONLY
BUSSED SPACE ONLY			-	27	28	-			BUSSED SPACE ONLY
BUSSED SPACE ONLY			-	29	30	-			BUSSED SPACE ONLY
			-			-			
			-			-			
			-			-			
			-			-			
			-			-			
			-			-			

CONNECTED LOADS		AMPS/PH	NEC PANELBOARD COMPUTATION -LOAD ANALYSIS			
PHASE 'A'	2178	18	TYPE	LOAD DESCRIPTION	KVA	D.F.	DEMAND LOAD (KVA)
PHASE 'B'	1760	15	1	RECEPTACLES	1.76	NOTE 1	1.8
PHASE 'C'	0	0	2	LIGHTING	0.45	125%	0.6
TOTALS	3938	11	3	AIR CONDITIONING	0.00	100%	0.0
PANELBOARD LOAD ANALYSIS	KVA	AMPS	4	ELECTRIC HEATING	0.00	0%	0.0
1. TOTAL NEC DEMAND LOAD	4.05	11.2	5	MOTORS	0.00	100%	0.0
2. ADD LARGEST MOTOR	0.00	0.0	6	WATER HEATING	0.00	100%	0.0
3. ADD LTG PER VA/SF (SEE NOTE)	0.00	0.0	7	ELEVATOR	0.00	100%	0.0
3. SUB-TOTAL LOAD	4.05	11.2	8	KIT.EQUIPMENT	0.00	65%	0.0
4. ADD x (10%) FUTURE CAPACITY	0.4	1.1	9	MISC	1.73	100%	1.7
5. TOTAL NEC LOAD W/FUTURE	4.46	12.4	10	EXTERIOR LTG.	0.00	125%	0.0
LOAD ANALYSIS NOTES:				TOTAL KVA	3.94		4.05
FOR LOAD ANALYSIS NOTES REFER TO NOTES ON THIS SHEET.				TOTAL AMPS	10.9		11.2
			REFER TO THE PANELBOARD KEYED NOTES ON THIS SHEET				

TYPICAL PANELBOARD SCHEDULE KEYED NOTES:

(NOTE: NOT ALL NOTES MAY BE APPLICABLE)

NOTE #	KEYED PANELBOARD NOTES
NOTE 1	PROVIDE WITH ISOL GND. BUSSING
NOTE 2	PROVIDE WITH GROUND BUSSING
NOTE 3	PROVIDE WITH NEUTRAL BUSSING
NOTE 4	PROVIDE WITH TYPEWRITTEN DIRECTORY
NOTE 5	PROVIDE WITH PANELBOARD NAMEPLATE
NOTE 6	PROVIDE WITH PLUG ON CIRCUIT BREAKERS
NOTE 7	PROVIDE WITH BOLT ON CIRCUIT BREAKERS
NOTE 8	PROVIDE WITH SHUNT TRIP CIRCUIT BREAKER
NOTE 9	PROVIDE WITH NEMA 3R ENCLOSURE
NOTE 10	PROVIDE SWITCH DUTY RATED CIRCUIT BREAKERS AS NOTED.
NOTE 11	PROVIDE ARC FAULT CIRCUIT INTERRUPTER CIRCUIT BREAKERS IN THE RESIDENCE IN THE FOLLOWING SPACES: BEDROOMS, LIVING ROOMS, DENS, PARLORS, DINING ROOM, FAMILY ROOMS, SUN ROOMS, RECEREATION ROOM, LIBRARIES CLOSETS, HALLWAYS AND SIMILAR ROOMS.
NOTE 12	PROVIDE WITH GFCI C.B. AS INDICATED BY ** (Double Asterisk)
NOTE 13	PROVIDE WITH HANDLE LOCK GUARD KIT TO LOCK C.B. IN OFF POSITION FOR THE FOLLOWING TYPE CIRCUITS: A) FIRE ALARM COMMAND CENTER OR FIRE ALARM PANEL. B) SECURITY ALARM CONTROL PANEL. C) TELEPHONE SYSTEM D) LIFE SAFETY CODE, AREA OF REFUGE COMMUNICATION SYSTEM AND ALARMS. E) ANSUL FIRE SUPPRESSION SYSTEM PANEL. F) COMPUTER SERVER BRANCH CIRCUITS. G) CENTRAL EMERGENCY BATTERY INVERTER SYSTEM. H) KITCHEN HOOD CONTROL PANEL. I) CARD ACCESS CONTROL SYSTEM. J) CCTV AMPLIFIER OR OTHER SIMILAR CIRCUITS. K) EMERGENCY LIGHTING CIRCUITS.
NOTE 14	PROVIDE AN HACR CIRCUIT BREAKER FOR HVAC OR REFRIGERATION EQUIPMENT.
NOTE 15	CIRCUIT ROUTED THROUGH TIME SWITCH.
NOTE 16	CIRCUIT ROUTED VIA LIGHTING CONTACTOR
NOTE 17	CIRCUIT ROUTED VIA LIGHTING RELAY CONTROL PANEL
NOTE 18	PROVIDE A UL SERVICE ENTRANCE LABEL FOR PANELBOARD.

LOAD TYPE	NEC CODE REFERENCES (APPLIES TO DEMAND FACTORS IN LOAD SUMMARY AND PANELBOARD SCHEDULES)
TYPE 1	TABLE 220.44 DEMAND FACTORS FOR NON-DWELLING RECEPTACLES
TYPE 2	TABLE 220.3(A) GENERAL LIGHTING LOADS BY OCCUPANCY TABLE 220.42 LIGHTING LOAD DEMAND FACTORS
TYPE 3	ARTICLE 440 AIR-CONDITIONING AND REFRIGERATION EQUIPMENT
TYPE 4	ARTICLE 424 FIXED ELECTRIC SPACE HEATING EQUIPMENT.
TYPE 5	Article 430 - MOTORS, MOTOR CIRCUITS, AND CONTROLLERS
TYPE 6	422.13 STORAGE TYPE WATER HEATERS
TYPE 7	Table 620.14 FEEDER DEMAND FACTORS FOR ELEVATORS
TYPE 8	Table 220.55 DEMAND FACTORS FOR HOUSEHOLD ELECTRIC RANGES, OVENS, ETC Table 220.56 DEMAND FACTORS FOR KITCHEN EQUIPMENT - OTHER THAN DWELLING UNIT(S)
TYPE 9	NO NOTES - DEMAND FACTOR AT 100%
TYPE 10	NO NOTES - DEMAND FACTOR AT 100%

YMCA - LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER AND CATALOG NUMBER	MOUNTING	LAMPS NO.	LAMPS TYPE	INPUT VA	VOLTS	REMARKS
A	ENVIROSEAL	SURFACE	1	LED	45	120	3" X 4' LINEAR SURFACE MOUNT LED FIXTURE
	ES3 48-1-45L40K -DCC-1-DV-2H-PP-FS	CEILING		4000K			NATATORIUM COMPLIANT
EM	PHILLIPS	WALL MTD.		6W			THERMOPLASTIC EMERGENCY UNIT
	CAXBN	AT S A F. F					
F	MINKA-AIRE	CEILING	0		58	120	XTREME H20 65" OUTDOOR FAN WITH SILVER BRUSHED NICKEL WET FINISH
	F896-65-BNW	MOUNTED					

ELECTRICAL
ARIES ENGINEERED SOLUTIONS
AES
INC
SOLAR SYSTEM ENGINEERS
MECHANICAL
PLUMBING
FIRM REG. # 10927

ARIES ENGINEERED SOLUTIONS, INC.
10900 RANCH RD 2341
BURNET, TX 78611
OFFICE: (512) 484-5018

The Texas Board of Professional Engineers has jurisdiction regarding the professional practice of persons registered as Professional Engineers in in the State of Texas.
TEXAS BOARD OF PROFESSIONAL ENGINEERS
1917 IH 35 SOUTH AUSTIN, TX 78741-3702

STATE OF TEXAS
HENRY ROMO, JR
91435
REGISTERED
PROFESSIONAL ENGINEER

SIGNED:
DATE: JUN. 26 , 2023

Delineations incorporated
Designs & Reprographics
518 Main Street,
Marble Falls, TX 78654
(830) 693-9408
www.delineations.com

Project Name
YMCA RENOVATION

Client Name
RICH CARLTON

Project Address
1601 South Water St.
Burnet, Texas
78611

Status
CONSTRUCTION DOCUMENTS

Log

Project Number
211035

Drawn By
Author

Checked By
Checker

Scale
As indicated

Print Date
4/26/2022 2:09:12 PM

Sheet Name
ELECTRICAL SCHEDULES

Sheet Number
E-4.0

GENERAL NOTES-ONE LINE DIAGRAM- DTL. 1,

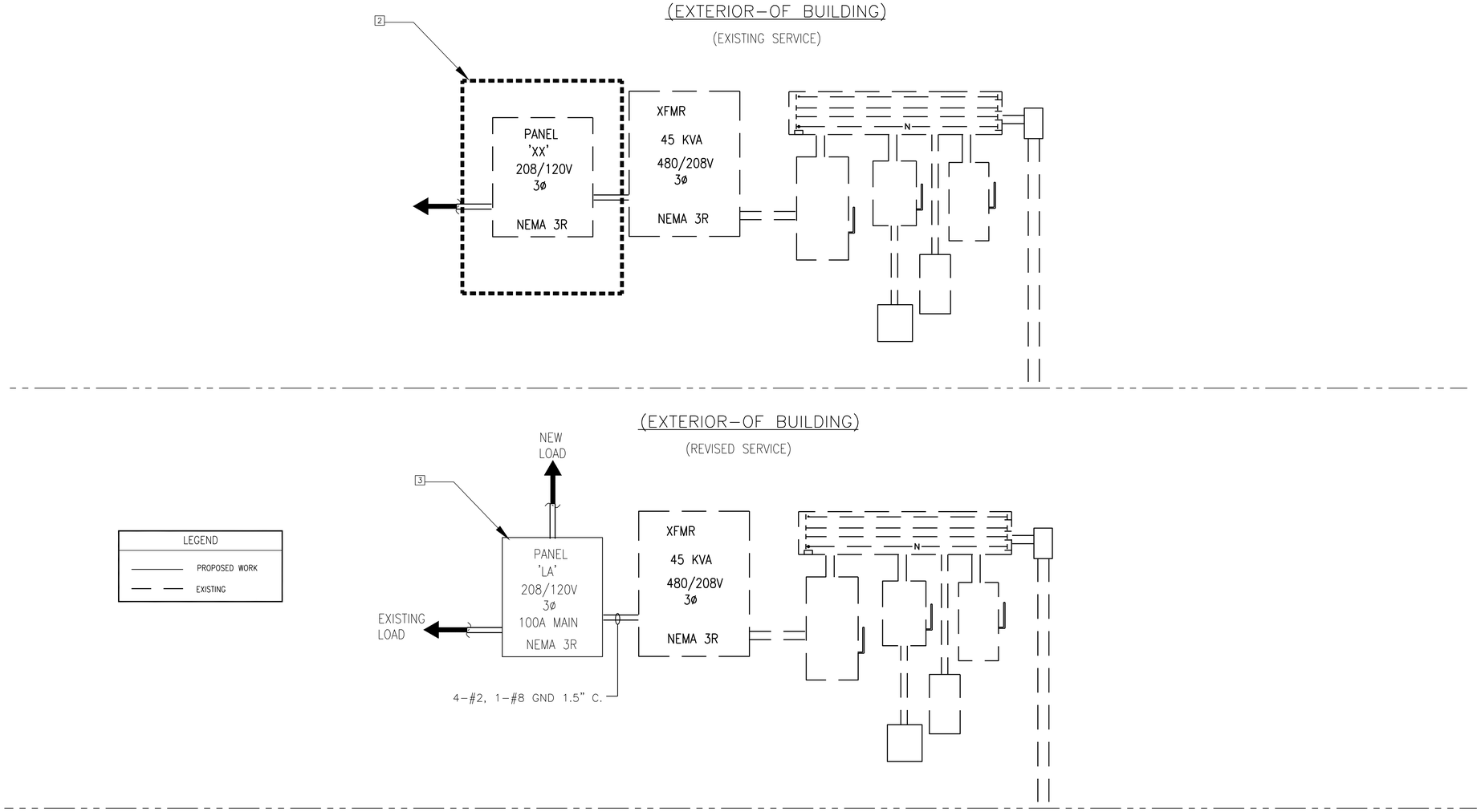
1. ALL ELECTRICAL INSTALLATIONS SHALL MEET 2017 NEC, LOCAL CODES AND REQUIREMENTS.
2. COORDINATE ALL WORK WITH THE BURNET ELECTRIC UTILITY.
3. REFER TO SHEET E-4.0 FOR THE PANELBOARD SCHEDULES.

KEYED ELECTRICAL NOTES: (ONE LINE DIGRAM ONLY)

[1] EXISTING TRANSFORMER

[2] EXISTING ELECTRICAL PANEL. TO BE REPLACED.

[3] NEW 100 AMP, 120 /208 VOLT THREE PHASE PANEL WITH 100 AMP MAIN
VERIFY THAT EXISTING CONDUCTORS MEET NEC REQUIREMENTS



1 SERVICE ENTRANCE ELECTRICAL - RISER DIAGRAM
SCALE: NONE

FIRM REG. # 10627
ARIES ENGINEERED SOLUTIONS, INC.
16000 RANCH ROAD 2341
BURNET, TX 78611
OFFICE: (315) 484-5018

The Texas Board of Professional Engineers has jurisdiction regarding the professional practice of persons registered as Professional Engineers in in the State of Texas.
TEXAS BOARD OF PROFESSIONAL ENGINEERS
1917 IH 35 SOUTH AUSTIN, TX 78741-3702

STATE OF TEXAS
HENRY ROMO, JR
91435
REGISTERED PROFESSIONAL ENGINEER
SIGNED:
DATE: JUN. 26 , 2023

Delineations incorporated
Designs & Reprographics
518 Main Street,
Marble Falls, TX 78654
(830) 693-9408
www.delineations.com

Project Name
YMCA RENOVATION

Client Name
RICH CARLTON

Project Address
1601 South Water St.
Burnet, Texas
78611

Status
CONSTRUCTION DOCUMENTS

Log

Project Number
211035

Drawn By
Author

Checked By
Checker

Scale
As Indicated

Print Date
4/26/2022 2:09:12 PM

Sheet Name
ELECTRICAL
RISER DIAGRAM

Sheet Number
E-3.0

Delineations
incorporated
Designs & Reprographics

518 Main Street
Marble Falls, TX 78654

Tel. (830) 693-9408
www.delineations.com

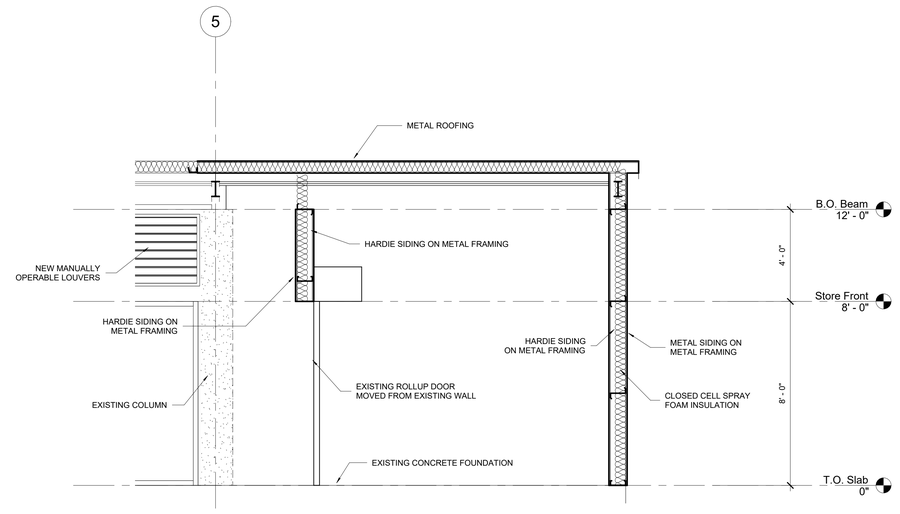
CERTIFIED PROFESSIONAL BUILDING DESIGNER
NATIONAL COUNCIL OF
JEROME A. ZUGEN
CPBD

YMCA Renovation

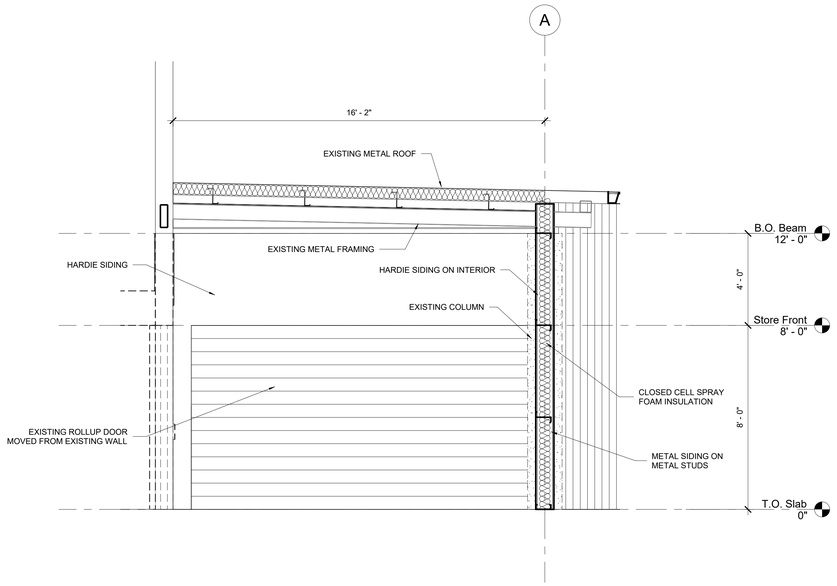
Rich Carlton

1601 South Water Street
Burnet, Texas 78611

No.	Description	Date
	REVISIONS	6-30-2023



2 Section 2
3/8" = 1'-0"



1 Section 1
3/8" = 1'-0"

Construction R2

6.30.2023

Sections

Project number	**231019**
Drawn by	**jr**
Checked by	**Jerome**

A2.03

Scale 3/8" = 1'-0"

6/30/2023 3:35:08 PM