REQUEST FOR BIDS

Bastrop County Precinct 2 Road and Bridge Facility Construction

RFB 25BCP04J

May 15, 2025

ADDENDUM #2

Notice to Respondents:

This addendum will be considered a part of Bastrop County's Request for Bids for Bastrop County Precinct 2 Road and Bridge Facility Construction. Where provisions of this addendum differ from those of the original Request for Bids, this addendum will govern.

ACKNOWLEDGED

_____	_____	_____
Printed Name of Respondent	Authorized Signature	Date

RETURN ONE COPY SIGNED COPY OF THIS ADDENDUM TO THE PURCHASING OFFICE WITH YOUR SEALED BID. FAILURE TO DO SO, MAY AUTOMATICALLY DISQUALIFY YOUR RESPONSE FROM CONSIDERATION FOR AWARD.

ITEMS FOR ADDENDUM #2:

Addendum #2 provides clarification and answers from questions submitted by contractors and has an updated drawing and specification package as some aspects of the project have changed. Bastrop County is extending the due date for submissions until June 4, 2025, at 2:00PM. The new deadline for questions concerning the scope of work is May 27, 2025, at 5:00PM. Below is a list of documents that are included in Addendum #2:

- **Revised Scope of Work (2 Pages)**
- **Contractor Questions (10 Pages)**
- **Answers to Contractor Questions (2 Pages)**
- **City of Smithville/Safe Built Review Comments and Responses (9 Pages)**
- **Geotech Report (34 Pages)**
- **Rev 1 – Updated Drawings and Specifications (88 Pages)**

All bids must be received (either by mail or hand delivered) at 1501 Business Park Drive, Bastrop, Texas 78602.

- **Bid Due Date: June 4, 2025**
- **Bid Deadline: 2:00PM**
- **Submission Location: 1501 Business Park Drive, Bastrop, Texas, 78602**
- **The deadline for written questions is 5:00PM on May 27, 2025**

Bastrop County Precinct 2 Road and Bridge Facility

Scope of Work – Revised as part of Addendum #2

- **FOUNDATION AND CONCRETE FLATWORK:**

Contractor to excavate for grade beams, piers and other fine grading associated with the foundation and concrete flatwork. **Contractor** to provide and install building foundation and site concrete flatwork (concrete sidewalks and concrete paving) per the civil and structural foundation design drawings. **Contractor** to provide rebar shop drawings and placing drawings for review and approval by Bastrop County in accordance with ACI 315 specifications. **Contractor** to provide and install Bollards as shown. Revised Site plan shows removing the old fence and building new wood privacy fence – This is **not** in the scope of work

Bastrop County is responsible for parking areas, site drainage and drainage facilities, (storm sewer, culverts, etc..) site grading and asphalt paving.

Bastrop County is responsible for providing and installing compacted base material and grade building site to bottom of building slab elevation. The county will haul-off and remove any excess excavated material associated with the excavation of the piers, grade beams and fine grading of the site.

- **PREFABRICATED METAL BUILDING:**

Contractor to provide all labor and equipment to erect the PEMB per the PEMB Structural Construction Documents. **The building has been purchased by Bastrop County and is on site, including exterior doors, gutters and downspouts and fiberglass insulation for the PEMB roof and walls**. **Contractor** to provide and install all Exterior windows and associated framing and Electric Insulated Overhead Doors. Overhead Doors to be Cornel Thermizer, R8, Powder Coated with Constant Contact Close or equivalent. ~~**Contractor** to provide and install one additional exterior Man door and framing. (one exterior door was added after the building was fabricated)~~ Power wash any dirt/trash from the structural framing.

- **MECHANICAL, ELECTRICAL AND PLUMBING**:

Contractor to provide all labor equipment and materials for all elements of the Mechanical, Electrical and Plumbing Construction Documents. Fire Suppression System/Sprinkler System has been deleted from the scope of work.

Add: specification for water heater below

PLUMBING NEW WORK KEYED NOTES

P01 EWH-1 A.O. SMITH SIGNATURE 100 LOWBOY 28 GAL. ELECTRIC WATER HEATER WITH 2-ELEMENT SIMULTANEOUS OPERATION, 3.5KW EA (7KW TOTAL) @ 240V/1PH. FLA = 29.2A (TERM L1 AND L2), RECOVERY 17.5 GAL @ 90 F. REF P9 SERIES SHEETS FOR ADDITIONAL INFO.

Add: 240V Outlet for Compressor on exterior wall of exterior shed (Room 111)

- **ARCHITECTURAL/FINISH-OUT**:

Contractor to provide all labor, equipment and materials to complete all elements of the Architectural Construction Documents.

Bastrop County will be responsible for obtaining all building permits

CONTRACTOR QUESTIONS

TRIMBUILT
CONSTRUCTION, INC.

April 25, 2025

Bastrop County Purchasing
1501 Business Park Drive
Bastrop County, TX 78602

ATTN: Leon Scaife

RE: PCT 2 R & B Facility, RFB 25BCP04J

Mr. Scaife,

Below, please find a few questions regarding the Pct. 2 R & B Facility bid...

1. Is the site going to be occupied during construction?
2. Has the electrical service revision already been addressed with the utility provider?
3. Does plywood wall liner material need to be non-combustible?
4. Does the plywood wall liner truly need to be ACX grade?
5. Cage partition occurs in a brace bay- mesh will be slotted to accommodate.
6. The Mueller drawings do not indicate framed openings for windows or louvers
7. The intake / exhaust louvers shown on A200 and A201 do not have a corresponding mechanical component (exhaust fan or electrical accommodation); are the louvers needed? There are other exhaust systems designed into the project...
8. Please confirm the Mueller drawings have accounted for the fire sprinkler system collateral load.
9. Is there a Geotech investigation report for this project?
10. Please provide the description of thermal insulation that is included with the building package i.e.: thickness, backing type, thermal block needed?, drape or basket install, etc.

Adrian Allen, Senior Project Manager
Trimbuilt Construction, Inc.
12800 North Lamar Blvd. Austin, TX 78753
aallen@trimbuilt.com
512-832-1979 x417

From: Leon Scaife <leon.scaife@co.bastrop.tx.us>
Sent: Thursday, May 1, 2025 11:06 AM
To: Clara Beckett <clara.beckett@co.bastrop.tx.us>; Daña Tovar <dana.tovar@co.bastrop.tx.us>
Subject: Fwd: New Construction - Bastrop County Precinct 2 Road and Bridge Facility

Good morning,

The below email is another request for clarification on the specifications outlined for the overhead doors. Can you please provide an answer for this to be included on the addendum? Thank you.

Leon Scaife

Begin forwarded message:

From: Warren Mays <wmays@alamodoorsystems.com>
Date: May 1, 2025 at 10:44:52 AM CDT
To: Leon Scaife <leon.scaife@co.bastrop.tx.us>
Subject: New Construction - Bastrop County Precinct 2 Road and Bridge Facility

Your specification call for Cornell Iron works ESD20CR for the overhead insulated coiling doors.

This is a very expensive, corrosion resistant door that comes in either aluminum or stainless steel.

Your specification calls for a galvanized slat to match a charcoal panel finish.

These doors are not available in this configuration.

Are you sure this is what is wanted?

You can get a standard coiling door in a Galvanex, powder-coat color finish that will approximate a charcoal color finish.

It can also come equipped with an Ultra, clear powder-coat finish along with hot-dipped galvanized guides, bottom bar, brackets and a ZRG shaft.

Will this suffice?

W

4 OF 10

Clara Beckett

From: Leon Scaife
Sent: Monday, May 5, 2025 7:57 AM
To: Clara Beckett
Subject: FW: Precinct 2 Road and Bridge Facility Construction Questions
Attachments: Mueller steel paint.jpg; Mueller steel rust.jpg

I got the email below on Friday.

Leon Scaife
Purchasing Agent | Bastrop County
804 Pecan St | Bastrop, TX 78602
(512) 581-7110 | leon.scaife@co.bastrop.tx.us | http://www.co.bastrop.tx.us

From: Mike Halloran <halloran@southwestcorporation.com>
Sent: Friday, May 2, 2025 2:34 PM
To: Leon Scaife <leon.scaife@co.bastrop.tx.us>
Subject: Precinct 2 Road and Bridge Facility Construction Questions

Who will be responsible for the failing primer coat and the rust on the steel?

Mike Halloran
512.836.1552 | 512.917.9513 cell
Southwest Corporation
Construction Services

Clara Beckett

From: Leon Scaife
Sent: Wednesday, May 7, 2025 10:32 AM
To: Clara Beckett; Daña Tovar
Subject: FW: Bastrop County Precinct 2 Road and Bridge Facility Construction Question

Below is another question. Thank you.

Leon Scaife
Purchasing Agent | Bastrop County
804 Pecan St | Bastrop, TX 78602
(512) 581-7110 | leon.scaife@co.bastrop.tx.us | http://www.co.bastrop.tx.us

From: Josh Mott <jmott@aiconstructionllc.com>
Sent: Wednesday, May 7, 2025 10:17 AM
To: Leon Scaife <leon.scaife@co.bastrop.tx.us>
Subject: Bastrop County Precinct 2 Road and Bridge Facility Construction Question

Sheet 5 mentions asphalt pavement work shall be performed by others. Does that include the limestone rock and subgrade stabilization or HMAC only?

Josh Mott
AIC Construction, LLC
979-716-1838

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Clara Beckett

From: Leon Scaife
Sent: Wednesday, May 7, 2025 2:45 PM
To: Clara Beckett
Subject: FW: Questions for RFB 25BCP04J Bastrop County Precinct 2 Road and Bridge Facility Construction

Please find the attached questions on the email below. Thank you.

Leon Scaife
Purchasing Agent | Bastrop County
804 Pecan St | Bastrop, TX 78602
(512) 581-7110 | leon.scaife@co.bastrop.tx.us | http://www.co.bastrop.tx.us

From: Estimating K-W Construction, Inc. <Estimating@k-wconst.com>
Sent: Wednesday, May 7, 2025 2:26 PM
To: Leon Scaife <leon.scaife@co.bastrop.tx.us>
Cc: Bobby Bischak <Bobby@k-wconst.com>; Mat Pedersen <matpedersen@k-wconst.com>
Subject: Questions for RFB 25BCP04J Bastrop County Precinct 2 Road and Bridge Facility Construction

1. Data Outlets are shown on the electrical drawings are we to provide stub ups only or complete communication systems?
2. Fire Alarm box by others is shown on E4.2 Key Note E16. IS that supplied/installed by owner or contractor?
3. Please provide additional specifications for the Concrete, possibly the GeoTech report.

Thank you

7 OF 10

Clara Beckett

From: Leon Scaife
Sent: Wednesday, May 7, 2025 3:49 PM
To: Clara Beckett
Subject: FW: Questions for RFB 25BCP04J Bastrop County Precinct 2 Road and Bridge Facility Construction

Below are more questions for your project.

Leon Scaife
Purchasing Agent | Bastrop County
804 Pecan St | Bastrop, TX 78602
(512) 581-7110 | leon.scaife@co.bastrop.tx.us | http://www.co.bastrop.tx.us

From: Estimating K-W Construction, Inc. <Estimating@k-wconst.com>
Sent: Wednesday, May 7, 2025 3:23 PM
To: Leon Scaife <leon.scaife@co.bastrop.tx.us>
Cc: Bobby Bischak <Bobby@k-wconst.com>; Mat Pedersen <matpedersen@k-wconst.com>
Subject: Questions for RFB 25BCP04J Bastrop County Precinct 2 Road and Bridge Facility Construction

4. On drawing 2 of 8 (Water & Sanitary Sewer Layout & Details) it says to connect to the existing 6" waterline for fire line and references the architectural plans for additional information, but no information is given in the Architectural Plans. (Additional information needed such as road bore or street crossing.)
5. On the drawings where a manufacturer is called out is that the required supplier or can an equal-to alternate be used instead.

Clara Beckett

From: Leon Scaife
Sent: Tuesday, May 13, 2025 11:48 AM
To: Clara Beckett
Subject: FW: Bastrop County Precinct 2 Road and Bridge Facility Construction

Good Afternoon,
Below is another question for your project from a potential bidder. Thank you.

Leon Scaife
Purchasing Agent | Bastrop County
804 Pecan St | Bastrop, TX 78602
(512) 581-7110 | leon.scaife@co.bastrop.tx.us | http://www.co.bastrop.tx.us

From: Adrian Berain <adrian@fcdelrio.com>
Sent: Tuesday, May 13, 2025 11:44 AM
To: Leon Scaife <leon.scaife@co.bastrop.tx.us>
Subject: Re: Bastrop County Precinct 2 Road and Bridge Facility Construction

- RFI

- I'm Working on the Bastrop County precinct 2 project, I'm trying to find specs on the ceilings, but the current specs only have MEP Specs. Do you know what ceiling type will be used?
- Building demo? Done by the owner or do we need to price it?

- VE: 800 yard of gravel haul off. The county could save 8,300 of export if they would want to move it and stockpile for later road use.

Thanks

Adrian Berain

Assistant Project Manager

FRONTERA CONSTRUCTION

710 E. Gibbs St.

Del Rio, TX 78840

Cell: 830-273-9399

Office: 830-778-9418

From: Leon Scaife <leon.scaife@co.bastrop.tx.us>
Sent: Tuesday, May 13, 2025 11:28 AM
To: Adrian Berain <adrian@fcdelrio.com>
Subject: RE: Bastrop County Precinct 2 Road and Bridge Facility Construction

Good Morning,
As I am still waiting for the clarification to questions submitted to the MEP, please send any additional questions that you may have, and I will try to get them included. Thank you.

Leon Scaife
Purchasing Agent | Bastrop County
804 Pecan St | Bastrop, TX 78602
(512) 581-7110 | leon.scaife@co.bastrop.tx.us | http://www.co.bastrop.tx.us

1D OF 1D

Clara Beckett

From: Leon Scaife
Sent: Tuesday, May 13, 2025 2:43 PM
To: Clara Beckett
Subject: FW: Questions for RFB 25BCP04J Bastrop County Precinct 2 Road and Bridge Facility Construction

Below are additional questions for your project. Thank you.

Leon Scaife
Purchasing Agent | Bastrop County
804 Pecan St | Bastrop, TX 78602
(512) 581-7110 | leon.scaife@co.bastrop.tx.us | http://www.co.bastrop.tx.us

From: Estimating K-W Construction, Inc. <Estimating@k-wconst.com>
Sent: Tuesday, May 13, 2025 2:31 PM
To: Leon Scaife <leon.scaife@co.bastrop.tx.us>
Cc: Bobby Bischak <Bobby@k-wconst.com>; Mat Pedersen <matpedersen@k-wconst.com>
Subject: Questions for RFB 25BCP04J Bastrop County Precinct 2 Road and Bridge Facility Construction

→ 220V

6. Drawing MEP 01 shows the Air Compressor along with Air Reel locations, is this work included in this project, if so need piping sizes?
7. Will the water heater be supplied by owner, it is not listed on the plumbing equipment?

Thank you

ADDENDUM #2 RFB 25BCP04J – PRECINCT 2 ROAD & BRIDGE FACILITY – CLARIFICATIONS AND ANSWERS TO CONTRACTOR QUESTIONS

1. The fire sprinkler system has been deleted. Please see revised construction drawings attached.
2. The exterior door for the riser room (deleted) is also not required. There will be no additional exterior door to be provided – see revised scope of work attached.
3. Site plans now show removing the old chain-link fence and building a new wood privacy fence. This is not in the scope of work in this contract.
4. Electric, Insulated Overhead Doors to be Cornel Thermizer, R8, Powder Coated with Constant Contact Close or equivalent – Not Aluminum or Stainless as specified.
5. R-Panel exterior sheeting above the 2 - 13'-6 Overhead Doors will need to be provided by the contractor. The material provided by Mueller is 6" too short
6. One office and restrooms will be available to the contractor in the temporary office building. There is ample space for workers to eat lunch or take breaks. All trash is to be removed daily.
7. Density testing of the base material will be done prior to a notice to proceed provided and paid by Bastrop County.
8. Concrete testing will be performed and provided/paid by Bastrop County.

- Questions submitted by Trimbuilt – see attached letter dated April 25th, 2025:

1. Yes, the site will be occupied as discussed at the pre-bid meeting. Monday-Thursday. POV's can be parked in the neighboring yard.
2. See attached communication – email between Precinct 2 commissioner and City of Smithville
3. No
4. ACX plywood is specified and required
5. Concur
6. A) Contractor to provide & install framing for windows. See revised scope of work.

B) Louver intake/exhaust shall be per the HVAC system/MEP drawings.

7. N/A Sprinkler system deleted
8. Geotech Report Attached
9. Insulation is fiberglass insulation provided by Mueller. Please see Mueller standard drawings for installation instructions.

- Question submitted via email by Alamo Door Systems dated May 1, 2025:

1. Electric, Insulated Overhead Doors to be Cornel Thermizer, R8, Powder Coated with Constant Contact Close or equivalent – Not Aluminum or Stainless as specified.

- Questions submitted via email by Southwest Corporation – see attached email dated May 2, 2025:

1. Contractor is not responsible for the failing primer coat and the rust on the steel. It is not structural in nature. Power Wash any dirt/trash off of the structural elements either before or after erection.

- Question submitted via email by AIC Construction – see attached email dated May 7, 2025:

1. Contractor is not responsible for any site paving, limestone rock or subgrade stabilization.

- Questions submitted via email by K-W Construction, Inc. – see attached email dated May 7, 2025, at 2:45pm:
  1. The communication system is provided by Bastrop County IT and is not included in this scope of work.
  2. Fire Alam Box to be provided and Installed by Contractor
  3. GoeTech Report attached. Contractor to submit mix design for approval. 4000psi as specified on sheet S1.

- Questions submitted via email by K-W Construction, Inc. – see attached email dated May 7, 2025, at 3:49pm:
  1. Fire Line is deleted
  2. Equal-to-alternate may be used but is subject to review by the County and concurrence of equal.

- Questions submitted by Frontera Construction via email – see attached email dated May 13, 2025:
  1. See sheet A103 for Reflected Ceiling Plan and Legend
  2. The building has been demolished and removed. The subgrade and base material have been placed and compacted to grade by Bastrop County.
  3. The County will remove the excavated material (grade beams and piers) – see Scope of Work. Contractor to excavate the grade beams and piers – See Scope of Work.

- Questions submitted via email by K-W Construction, Inc. – see attached email dated May 13, 2025:
  1. County will provide and install Compressor along with reels. Contractor Shall provide 240V service on the exterior wall at the Exterior Storage (room 111) for Compressor – This has also been added to the scope of work.
  2. Contractor to provide and install Water Heater per the below spec.
     EWH-1 A.O. Smith Signature 100 Lowboy 28 Gal. Electric with 2-Element Simultaneous Operation, 3.5KW EA (7KW Total) @ 240V/1PH. FLA = 29.2A (Term L1 & L2 Recovery 17.5 Gal @ 90 F. Ref P9 series sheets for additional Info.

Revised Comment Letter

Project Address	911 SE Martin Luther King Blvd.
Date	4/25/2025
Proposed Use	Precinct 2 Road and Bridge Facility
Zoning	**District CF (Community Facilities)**

Plans are disapproved with the following comments. Please reach out with any questions or if you would like to schedule a meeting to discuss these comments.

Heather Cherry
txplanning@safebuilt.com
346-573-4881
SAFEbuilt

Plan Review Comments

Zoning Review:

1. Revise site plan and call out all existing and proposed fences. Include fence height and building material.
   a. Included proposed wood fences. Ref. Civil Dwgs- 1
2. Revise the architectural site plan and show the temporary building located in the SE corner of the property as 'to be removed'. Ref. Arch Dwgs- A007

Building, Electrical, Mechanical, Plumbing Review:

Architectural Plans: Ref. revised Arch Dwgs Set 5/12/25

1. General - Revise plans to indicate the 2020 NEC as adopted be the State of Texas shall be the governing electrical code.
2. Sheet A006 - The occupancy load table is not completed and currently shows the occupancy load as zero.
3. Sheet A006 - Though the occupant load has not been provided on the plans, it's clear based on the uses provided for the spaces the occupancy load exceeds 15. Provide reasoning why compliance with Section 2902.2 is not provided.
4. Sheets A400, A401 - Details on these pages show 5/8 plywood as being installed on the walls. As this building is classified as a IIB building per the information provided on sheet A006. Provide documentation to show the use of 5/8 plywood exposed on the wall surfaces complies with Section 603.1

Structural Plans:

1. General - General - Provide a Statement of Special Inspections complying with the requirements of Chapter 17. Provide the element to be inspected, the time frame of inspections- continuous or periodic, the governing standard. Provide the name and contact information of the party who will be responsible for conducting the required special inspections. Bastrop County Commissioner and County Engineer will provide the inspections during construction

Mechanical Plans:

1. Sheet M4.1 - Provide "source capture system" in compliance with Section 502.14 in the mechanics shop, room 102. Ref. Mech Dwgs- M4.1 5/12/25
2. Sheet M4.1 - Provide a written statement/documentation indicating the area of building labeled, Shop Area 101, will only have vehicles running in it to move them in and out of the space. Ref. Mech Dwgs- M4.1 5/12/25

Plumbing Plans:

1. See comment 4 under the Architectural plan's comments above.

Ref. Letter from Owner, last page of this document

Fire Safety Review:

1. Provide exterior emergency lighting above each exit landing.
    a. Emergency lighting with 90-minute battery backup. Ref. Elec Dwgs- E5.2 5/12/25

Additional Comments:

1. Deferred submittal required for aboveground and underground fire sprinkler plans signed by an RME-G certified by the Texas State Fire Marchal's Office. Removed fire sprinklers from scope
2. Deferred submittal required for fire alarm plans signed by an APS certified by the Texas Fire Marshal's Office. Removed fire sprinklers from scope
3. Fire Department access required for all gates across fire lanes. Ref. Civil Dwgs- 1
4. Fire Department access required for all fire riser rooms. Removed fire sprinklers from scope
5. Contact Local Fire Department or Authority Having Jurisdiction (AHJ) for Knox Box location. Ref. Arch revised dwgs & response Letter
6. Pull stations, horns, and strobes should also be referenced if signaling, detection, and monitoring systems are used. Removed fire sprinklers from scope
7. The location of emergency exit signage and portable fire extinguishers should be indicated on the drawings as well for NFPA-101. Ref. Arch dwgs- 1/ A006
8. Authority Having Jurisdiction (AHJ) and/or SAFEbuilt Fire Marshal Personnel reserves the right to require changes to plans during the review process and/or during construction at any time. Understood

SAFEbuilt®

Engineering Review:

Ref. revised CIVIL dwgs & response Letter

Document	Comment No.	Page No. / Drawing No.	Reviewer	Comment Type	Comments
Construction Plans					
	1	[1] 1 Sheet 1	LPrince	Plans	provide top and FL elev here
	2	[1] 1 Sheet 1	LPrince		provide pipe slope
	3	[1] 1 Sheet 1	LPrince		provide pipe slope
	4	[1] 1 Sheet 1	LPrince		provide pipe slope
	5	[1] 1 Sheet 1	LPrince		provide pipe slope
	6	[1] 1 Sheet 1	LPrince		provide top and FL elev here
	7	[2] 2 Sheet 2	LPrince		eliminate bend and connect directly from CO to MH
	8	[2] 2 Sheet 2	LPrince		do we know anything about this MH? age? condition of interior walls? is any rehab needed? will it hold up to a new penetration?
	9	[2] 2 Sheet 2	LPrince		20'-0"
	10	[2] 2 Sheet 2	LPrince		5'-0"
	11	[6] 6 Sheet 6	LPrince		add legend on this sheet
	12	[7] 7 Sheet 7	LPrince		add legend on this sheet
	13	[7] 7 Sheet 7	LPrince		The bulk of the site is now being captured and routed through prop storm to the existing culvert so the timing is changing. Also, 2C is now asphalt vs the existing gravel condition so that portion of the runoff will get there quicker than it does today. Can you show that routing the rest of the site through your new storm pipes actually results in a decrease in CFS at the point of discharge into the existing culvert?
	14	[7] 7 Sheet 7	LPrince		Please provide HMS model for review

BEFCO ENGINEERING, INC.
Consulting Engineering/Land Surveying
P.O. BOX 615 485 NORTH JEFFERSON
LA GRANGE, TEXAS 78945-0615
979 / 968-6474 FAX 979 / 968-3056
www.befcoengineering.com E-mail: office@befcoengineering.com
Texas Registered Engineering Firm F-2011 Texas Licensed Surveying Firm #10001700

April 30, 2025

Mr. Robert Tamble
City of Smithville
317 Main Street
Smithville, Texas 78957

RE: Bastrop County Precinct No. 2
Maintenance Facility Improvements
Response To Engineering Review Comments
BEFCO Job No. 24-9108

Mr. Tamble:

In response to comments received from BBG Consulting, Inc. on April 25, 2025, attached are revised plans for the referenced development. In conjunction with this submittal, the following is a response to engineering review comments:

Comments 1 – 6 (Sheet 1): Provide top, flowline, and pipe slope information on Sheet 1.

Response: Storm inlet and storm sewer top, flowline, and slope information has been added to Sheet 1.

Comment 7 (Sheet 2): Eliminate bend in sanitary sewer service and connect directly from cleanout to manhole.

Response: Sanitary sewer service has been modified accordingly.

Comment 8 (Sheet 2): Do we know anything about this existing sanitary sewer manhole in which the proposed service will be tying into (i.e. age, condition, rehab necessary?, new penetration?, etc.)

Response: I spoke with Edward Balusek, City of Smithville Public Works Director; and he indicated no issues with tying directly into this sanitary manhole.

Comment 9 (Sheet 2): 20' – 0" on graphical scale.

Response: An additional dimension of 20 feet has been added to graphical scale.

Comment 10 (Sheet 2): Provide 9 feet separation between water and sanitary sewer service.

Response: Water and sanitary sewer services have been revised to achieve minimum nine feet (9') separation from tie-in points located within MLK right-of-way to where water and sanitary sewer services exit the proposed building. Further, sanitary sewer service is proposed to be SDR-26 (ASTM D-2241) pressure pipe.

Comment 11 (Sheet 6): Add legend to sheet.

Response: Sheet 6 has been modified accordingly.

Comment 12 (Sheet 7): Add legend to sheet.

Response: Sheet 7 has been modified accordingly.

Comment 13 (Sheet 7): The bulk of the site is now being captured and routed through prop storm to the existing culvert so the timing is changing. Also, 2C is now asphalt vs the existing gravel condition so that portion of the runoff will get there quicker than it does today. Can you show that routing the rest of the site through your new storm pipes actually results in a decrease in CFS at the point of discharge into the existing culvert?

Response: The calculated time of concentration under both pre- and post-development conditions is less than 10 minutes. As such, a minimum time of concentration of 10 minutes was assumed for both pre- and post-development conditions.

Most of the site under pre- and post-development conditions drains directly to the existing 36" x 24" culvert located under SE 2nd Street just to the west of the site's north driveway (see Sheets 6-7). The flowline of this culvert is 316.99'. The portions of the site that do not drain directly to this culvert under pre- and post-development conditions drain to an existing storm inlet located at the southwest corner of SE 2nd Street and Eagleston Street (see Sheets 6-7). The throat of this storm inlet has a flowline elevation of 318.13'. The existing culvert and the storm inlet are connected by an existing road ditch that runs along the south side of SE 2nd Street. There is a high point in this road ditch located almost midway between the culvert and the storm inlet (see Sheets 6-7). The elevation of this high point is 318.63'. Based on our culvert calculations on Sheet 8, this high point is overtopped under the 2-year storm event resulting in the flows to the culvert and storm inlet merging. Because the flows merge, runoff from the entire site was compared under pre- and post-development conditions (see table on Sheet 7). As shown in the table, the total peak flow from the site under post-development conditions is slightly higher than that under pre-development conditions; however, the difference is negligible (0.07 cfs or less) and should have no adverse impact on the surrounding properties.

Comment 14 (Sheet 7): Please provide HMS model for review.

Response: See attached HEC-HMS file.

Should you have any questions or require any additional information, please do not hesitate to contact us.

Sincerely,

Timothy L. Sanders, P.E.

Attachments: Revised Plan Set
HEC-HMS model

05/02/2025

Heather Cherry
txplanning@sfaebuilt.com
346-573-4881

Clara Beckett
County Commissioner Precinct 2 Bastrop County
804 Pecan St, Bastrop, TX 78602
(512) 581-4002 | clara.beckett@co.bastrop.tx.us

Subject: Revised Comment Letter- for new build project - 911 SE Martin Luther King Blvd.
Project Name: Bastrop County Precinct 2 Road & Bridge Facility

Architectural Responses to Plan Review Comments:

Zoning Review:

2. Revise the architectural site plan and show the temporary building located in the SE corner of the property as 'to be removed'.

CasaBella Architects Response: Refer to revised sheet 1/A007, Added revision Cloud to existing building to be demolished

Building, Electrical, Mechanical, Plumbing Review:

Architectural Plans:

1. General - Revise plans to indicate the 2020 NEC as adopted be the State of Texas shall be the governing electrical code.

CasaBella Architects Response: Refer to revised sheet A006 Code Study

2. Sheet A006 - The occupancy load table is not completed and currently shows the occupancy load as zero.

CasaBella Architects Response: Refer to revised sheet A006 Code Study

3. Sheet A006 - Though the occupant load has not been provided on the plans, it's clear based on the uses provided for the spaces the occupancy load exceeds 15.
Provide reasoning why compliance with Section 2902.2 is not provided.

CasaBella Architects Response: Refer to revised sheet A006 and attached written letter from Owner no more than 15 occupants will occupy the building.

4. Sheets A400, A401 - Details on these pages show 5/8 plywood as being installed on the walls. As this building is classified as a IIB building per the information provided on sheet A006. Provide documentation to show the use of 5/8 plywood exposed on the wall surfaces complies with Section 603.1

CasaBella Architects Response: Refer to revised sheet A005, A400, 401, call out for fire-retardant plywood at exterior walls.

Additional Comments:

4. Fire Department access required for all fire riser rooms.
CasaBella Architects Response: Fire Sprinkler System removed from scope. Per Building Code and Owner Revision, fire sprinkler system not required. Refer to revised sheets A004, A005, A006, A007, A101, A103, A200, A301, A604

5. Contact Local Fire Department or Authority Having Jurisdiction (AHJ) for Knox Box location.
CasaBella Architects Response: Refer to revised sheet A005, A101, A200 for knox box

If you have any questions please contact me.

Thank You,

Sara Marsman | *Vice President of Interiors*
sdunaway@casabella-architects.com
CasaBella Architects

CLARA BECKETT
BASTROP COUNTY COMMISSIONER, PRECINCT 2
804 PECAN ST. • BASTROP, TX 78602
(512) 360-2764

To Whom it may concern:

The Precinct 2 Road and Bridge facility houses 12 employees and is not open to the public. There will not be an occasion that 15 or more people will occupy this facility at any given time.

Clara Beckett

Bastrop County Commissioner, Precinct 2

TSI LABORATORIES, INC.

GEOTECHNICAL ENGINEERING STUDY

Bastrop County Precinct No. 2 Facility
911 SE Martin Luther King Dr.
Smithville, TX 78957

1810 S. Laurent St. * Victoria, TX 77901 * 361-578-6933

TSI LABORATORIES, INC.

TBPE FIRM REGISTRATION NO: F-9236

1810 SOUTH LAURENT
VICTORIA, TEXAS 77901

Telephone 361-578-6933
Fax 361-578-2601
Email: tsilabvictoria@gmail.com

December 18, 2024

BEFCO Engineering, Inc.
Tim Sanders, P.E.
485 N Jefferson
La Grange, TX 78945

Subject: Bastrop County Precinct No. 2 Facility
911 SE Martin Luther King Dr.
Smithville, TX 78957

TSI File No.: G-241435

Dear Mr. Sanders,

We are pleased to submit this report on our geotechnical engineering study for the Bastrop County Precinct No. 2 Facility located at 911 SE Martin Luther King Dr. in Smithville, TX. The findings and a description of the exploration and testing procedures are presented in the report along with our site preparation recommendations.

We appreciate the opportunity to assist in this phase of the project. Please feel free to contact us if you have any questions regarding this report or if we may be of further service.

Respectfully submitted,

TSI Laboratories, Inc.

STATE OF TEXAS
DANIEL TESFAI
93944
LICENSED
PROFESSIONAL ENGINEER

Michael Tater, President.

Daniel Tesfai, P.E.

GEOTECHNICAL ENGINEERING STUDY

Bastrop County Precinct No. 2 Facility
911 SE Martin Luther King Dr.
Smithville, TX 78957

Prepared For:

Tim Sanders
BEFCO Engineering, Inc.

Prepared By:

TSI LABORATORIES, INC.
TBPE Firm Registration No.: F-9236

Victoria, Texas

December 18, 2024

TSI Project Number: G-241435

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GEOTECHNICAL ENGINEERING STUDY

Bastrop County Precinct No. 2 Facility
911 SE Martin Luther King Dr.
Smithville, TX 78957

INTRODUCTION

Authorization and Scope

TSI Laboratories, Inc. (TSI) was retained to provide geotechnical study services by Tim Sanders with BEFCO Engineering, Inc. on October 11, 2024. The purpose of this study was to determine and evaluate the stratification and engineering properties of the site subsurface soils. TSI will provide geotechnical engineering recommendations and guidelines for use in site preparation, foundation design, building pad, and related site improvements for the Bastrop County Precinct No. 2 Facility located at 911 SE Martin Luther King Dr. in Smithville, Texas.

Project Description

The proposed project involves the construction of a new 6,000 square foot, 1-story, pre-engineered metal frame building with the associated paving. Based on the results of this study the structure could be supported by any of the following foundation systems; slab-on-grade, spread footings or straight shaft foundation.

FIELD AND LABORATORY TESTING

Field Testing

The site soils were explored by drilling two (2) 20-foot-deep borings for the building and four (4) 6-foot borings for the associated paving area. The boring locations were determined in the field. Soil was sampled continuously at 2-foot intervals to 10-foot depth with an additional sample taken at 5-foot depth intervals. The sampling method is determined based on the encountered soils.

Cohesive soils were sampled by hydraulically pushing a 3-inch diameter, thin-walled steel tube a distance of about 24-inches. Our field sampling procedures were in general accordance with ASTM D1587. For each recovered sample, our representative extruded the sample in the field, visually classified the soil, and measured the penetration resistance using a pocket penetrometer.

Granular soils were sampled as part of the Standard Penetration Test (SPT) by driving a 2-inch diameter split-barrel sampler. The sampler was driven 18-inches by a 140-pound hammer falling 30-inches in general accordance with the ASTM D1586. Our representative recorded the number of blows required to drive the sampler through three (3) consecutive 6-inch intervals. As permitted by ASTM D1586, sampling was terminated if fifty (50) blows were recorded within

any single 6-inch interval. The sum of blows required to penetrate the final 12-inches is known as the SPT "N" value. A portion of the recovered sample was placed into a sample container and transported to our laboratory for testing.

Laboratory Testing

The soil samples selected for laboratory testing were examined and visually classified by the sample's representative of the various soil strata encountered. Atterberg limits, moisture contents and percent fines tests were performed to assist in classifying the soils according to Unified Soil Classification System (ASTM D2487). Unconfined compressive strength tests were also performed to provide indicators of soil strength. The classification test results are presented on the boring logs. The test procedures are described in the Appendix.

SUBSURFACE CONDITIONS

The test borings encountered predominantly lean clay (CL) and clayey and silty sand (SC/SM) soils to the boring termination depths. The site soil has been evaluated by performing various field and laboratory tests on the subsurface samples recovered during the drilling operations. Soil classifications are described in detail in the Boring Logs provided.

The corresponding boring logs, depicting the stratum soil descriptions, type of sampling used during sample retrieval, laboratory test data, and other field data, are presented in the Appendix at the end of this report. The key to the boring log symbols and soil classifications Sheet, which defines the terms and descriptive symbols used on each boring log, is also presented in the Appendix.

Groundwater

Groundwater was not encountered in the borings during our drilling operations. It is noted that groundwater levels fluctuate with seasonal climatic variations, such as rainfall, runoff, and other factors. The possibility of groundwater level fluctuations should be considered when developing the design and construction of the project.

EVALUATION

General

Based on the laboratory tests performed, the soils encountered at this site generally exhibit a low potential for expansion. These soils will not undergo volumetric changes as the moisture content increases or decreases. Based on the results of our field and laboratory testing, the soils underlying this site consist of medium dense and hard materials.

Potential Vertical Rise (PVR)

Potential vertical soil movements were estimated using the Texas Department of Transportation method TEX-124-E, Potential Vertical Rise. This method utilizes the soil's in-situ moisture conditions and plasticity characteristics within the active zone. It is estimated that the depth of the active zone at this site is approximately 10 feet. The estimated Potential Vertical Rise (PVR) values for the dry moisture condition of subgrade soils were **less than 1-inch**. A sustained surcharge load of one (1) pound per square inch is assumed to be imposed by the floor and sustained live load in the PVR calculations. It is noted that the PVR estimates are provided as an indicator of the severity of potential soil movements at this site and are not intended as a prediction of actual foundation movements.

RECOMMENDATIONS

Our recommendations are based on knowledge of the area; however, the project design team should specify actual construction requirements. The final selection of foundation for the building should be based on considerations of several factors, such as: 1) function of the structure, 2) soil strength properties, expansive soil properties, and settlement characteristics of subsurface materials; 3) the magnitude of applied structural loads; and 4) construction costs.

Site Preparation

Site preparation should consist initially of, (a) clearing and the stripping of any vegetation and roots, and (b) removing any materials containing significant organic material from the foundation footprints. The exposed subgrade surfaces (c) should then be proof rolled with a loaded heavy earthwork piece of machinery such as a motorized articulated scraper, maintainer, or dump truck to detect soft or loose zones, followed by proper soil replacement if necessary and then (d) scarified to at least 9-inches; moisture conditioned within 2% wet of optimum moisture and compacted to a minimum of 95% of maximum dry density determined by ASTM D698 (Standard Proctor).

Selection and Placement of Fill

Structural fill should be low plasticity sandy clays or imported caliche sand and gravel. Recommended fill specifications are included in the appendix and may be used as a guide for the placement of fill. Particular attention should be given to maintaining the proper moisture content during compaction to prevent the fill from drying before subsequent lifts are placed.

Construction areas should be stripped of vegetation and root structure, and the exposed subgrade should be proof rolled with appropriate construction equipment weighing at least 20 tons. The purpose of this recommendation is to check the subgrade for weak or soft areas prior to fill placement and compaction. This operation should be observed and evaluated by qualified TSI personnel experienced in earthwork operations. If weak or soft areas are observed during proof rolling operations, the soil in the subject area should be removed to expose competent subgrade soils in both horizontal and vertical limits. The excavated soils provided they are not

contaminated with deleterious materials, or clean imported fill soils can be used to restore grade at these isolated areas; any imported fill should meet the requirements for select fill. Placement and compaction of the soils are discussed below.

The select fill should consist of lean clay or sandy lean clay, free of roots, organics, and deleterious materials. The select fill should have at least 50% passing the No. 200 sieve and have a PI between 8 and 18%. Representative samples of the fill materials should be tested to confirm their material characteristics prior to the filling operations.

Subgrade areas should be scarified to a depth of about 9-inches and moisture adjusted within 2% of the optimum moisture content. The moisture-conditioned subgrade should then be compacted to at least 95% of maximum dry density determined in accordance with ASTM D698. The subgrade should be moisture conditioned just prior to fill placement in order that the subgrade maintains its compaction moisture levels and does not dry out.

Structural fill (fill that provides load-bearing support) should consist of select fill placed on prepared surfaces in lifts not to exceed 8-inches loose measure, with compacted thickness not to exceed 6-inches. All structural fill material should be moisture conditioned to within 2% of optimum moisture content, and then compacted to at least 95% of maximum dry density as evaluated by ASTM D698. A testing frequency of one (1) in-place density and moisture test for each 2,500 sf or less should be considered, with a minimum of three (3) tests.

Foundation Systems

Slab-on-Grade

The lightweight structure at this site may be supported on conventionally reinforced slab-on-grade foundation systems provided the subgrade and pad are prepared in accordance with the recommendations contained herein.

To provide a uniform support under the slab, we recommend the slab-on-grade for the structure be supported on a **minimum of 6-inches thick** pad of properly placed and compacted select fill soils. The select fill pad should also extend horizontally a minimum distance of 2 feet beyond the edge of the slab area.

Select fill should be utilized for all grade adjustments within the proposed slab area. Furthermore, we recommend that the finished floor elevation of the structure be above the final exterior grade and adjacent grades be sloped to produce positive drainage away from the building and pad.

The floor slab may be supported by a slab-on-grade foundation system with exterior grade beams founded at a minimum of **24-inches below final grade** and provided the building pad subgrade is properly prepared, compacted, and moisture conditioned. Slab-on-grade floor slabs may be designed for a net allowable bearing pressure of **1,600 psf** based on total loads, with included safety factor of two (2). A subgrade modulus of 95 pci may be used in the design.

Spread Footings

For the concentrated column loads, the design structural loads can be transferred to spread footings. The spread footings should be founded below the select structural layer and be founded at a **4-foot depth**. The footings, if founded at or below the 4-foot depth, may be designed for a net total load bearing pressure of **2,800 psf** with included factors of safety against bearing capacity failure of approximately two (2).

These recommendations are for proper development of bearing capacity for the continuous beam sections of the foundation system, to assure that proper concrete cover is achieved between reinforcing steel and soil, and to reduce the potential for water to migrate beneath the slab foundation.

These recommendations are not based on structural considerations. Grade beam widths and depths for both the exterior and interior grade beams may need to be greater than recommended herein based on actual structural design considerations and should be properly evaluated and designed by the structural engineer. Alternatively, cast-in-place concrete drilled straight shaft piers with grade beams and a slab-on-grade on select fill pad can be constructed to support column loads.

Drilled Straight-Shafts

Drilled straight-shafts may be utilized to support the proposed structure. The drilled shafts should be extended to a depth of **10 feet below existing grade**. The drilled shafts should be sized for a a net total load bearing pressure of **3,100 psf** with included factors of safety against bearing capacity failure of approximately two (2).

The shafts should contain sufficient vertical reinforcing steel throughout the entire shaft length to resist uplift (tensile) forces. The magnitude of uplift is difficult to predict and will vary with in-situ moisture contents. For purposes of establishing sufficient reinforcing to resist uplift, the uplift pressures can be approximated by using a uniform uplift pressure of 400 psf over the entire perimeter of the shaft. The amount of reinforcing steel required can be computed by assuming the dead load of the structure surcharges the shaft, that the above estimated tensile force acts vertically on the shaft, and that the shaft embedment acts as a rigid anchor. However, in no case should the percentage of steel be less than 0.5% (based on 40 ksi steel).

Drilled shaft edge-to-edge spacing of less than two (2) shaft diameters will require axial capacity reduction. TSI should be contacted for additional recommendations if the clear spacing between drilled shafts is less than two (2) shaft diameters.

An allowable side shear value of 850 psf with an assumed factor of safety of at least two (2) may be used to aid in resisting axial compressive loads on the piers. The side shear should not be used for fill material, the upper 5-feet of soil in contact with the pier shaft, and within one (1) pier diameter of the bottom of the shaft.

Settlement Considerations

Total settlements, based on the indicated bearing pressures, should be about 1-inch or less for properly designed and constructed drilled piers. Settlement beneath individual piers will be primarily elastic with most of the settlement occurring during construction. Differential settlement may also occur between adjacent piers. The amount of differential settlement could approach 50 to 75% of the total pier settlement. For properly designed and constructed piers, differential settlement between adjacent piers is estimated to be less than ¾-inch. Settlement response of drilled piers is impacted more by the quality of construction than by soil structure interaction.

Improper pier installation could result in differential settlements significantly greater than we have estimated. In addition, larger magnitudes of settlement should be expected if the soil is subjected to bearing pressures higher than the allowable values presented in this report.

Foundation Construction

After initial site stripping, we recommend the exposed soils to be thoroughly proof rolled with a 20-ton pneumatic roller or loaded dump truck. Soft/weak areas detected during the proof rolling activities should be removed and replaced with properly compacted select fill soils. The select fill beneath the floor slab should be prepared as outlined in the previous section of this report. This over-excavation, proof rolling, and additional fill placement should be observed by TSI to evaluate the integrity of the fill soils for proper support of the at-grade floor slab of the building.

Shallow Footings

The excavations for the shallow footing foundation system should be performed with equipment capable of providing a relatively clean bearing area. The bottom 6-inches on the planned foundation excavations should be completed with a smooth-mouthed bucket or by hand labor. The excavations should be neatly excavated and properly formed. The soil subgrade at the base of each footing should be evaluated following completion of the excavation and immediately prior to placing the concrete. Debris in the bottom of the excavation should be removed prior to steel placement. Water should not be allowed to accumulate at the bottom of the foundation excavation. To reduce the potential for water infiltration into the excavations and to minimize disturbance to the bearing area, we recommend that steel and concrete be placed as soon as possible after the excavations are completed and properly cleaned. A seal slab (2 to 4-inches) should be placed within the footing bearing area for footings that will not be backfilled with concrete within forty-eight (48) hours of the footing excavation.

Drilled Straight-Shafts

The drilling contractor should be experienced in the subsurface conditions observed at the site, and the excavations should be performed with equipment capable of providing clean bearing area, free of water. Drilled straight-shaft foundations should be installed in general accordance with the procedures presented in "Drilled Shafts: Construction Procedures and Design Methods," by Reese, L. C. and O'Neill, M. W., FHA Publication No. FHWA-IF-99-025, 1999 and

"Standard Specification for the Construction of Drilled Piers", ACI Publication No. 336.1-01, 2001.

Foundation installation should be closely monitored by a qualified technician experienced in drilled straight-shaft installation techniques. At a minimum, the technician should monitor shaft excavation, note any unusual installation occurrences, monitor concrete placement, and generally evaluate if foundation installation is being performed in accordance with the project specifications.

As stated previously, groundwater was not observed in both borings during drilling. Based on the subsurface and groundwater conditions observed at the borings, the installation of drilled straight-shafts may not require the use of temporary steel casing. However, if needed we recommend that provisions be incorporated into the plans and specifications to utilize casing to control sloughing and/or groundwater seepage during shaft construction. To evaluate the constructability of drilled straight-shafts and the potential variability of groundwater conditions, we recommend at least two (2) test shafts prior to the installation of production shafts. The installation of test shafts should be observed by TSI.

If casing is used and seepage persists, the water accumulating in the foundation excavation should be pumped out. The condition of the bearing surface should be evaluated immediately prior to placing concrete. Where casing is used, removal of the casing should be performed with extreme care and under proper supervision to minimize mixing of the surrounding soil and water with the fresh concrete.

Rapid withdrawal of the casing may develop suction that could cause the soil and water to flow into the excavation. An insufficient head of concrete in the casing during withdrawal could also allow the water to intrude into the wet concrete. The casing must be removed in order to utilize the skin friction values previously provided. Under no circumstances should loose soil be placed in the annulus between the casing and the drilled shaft sidewalls.

Foundation Construction Monitoring

The performance of the recommended foundation systems for the proposed structure will be highly dependent upon the quality of construction. Thus, we recommend that buildings pad compaction and foundation installation be monitored full time by an experienced TSI soil technician under the direction of our geotechnical engineer. During foundation installation, the base should be monitored to evaluate the condition of the subgrade.

Pavement Design

We anticipate that the pavement subgrade will consist of low plasticity, surficial soils. We recommend that the top 6-inches of the finished subgrade soils directly beneath the pavement be chemically treated. Chemical treatment will increase the supporting value of the subgrade and decrease the effect of moisture on subgrade soils. These 6-inches of treatment are a required part of the pavement design and is not a part of site and subgrade preparation for wet/soft subgrade conditions.

Once the subgrade is properly prepared both flexible pavement systems (consisting of asphalt and base material) and reinforced concrete pavement systems may be considered for this project. Detailed traffic loads and frequencies were not available. However, we anticipate that traffic will consist primarily of passenger vehicles in the parking areas and large multi-axle delivery trucks in the driveways.

Tabulated in the following table are the assumed traffic frequencies and loads used to design pavement sections for this project.

PAVEMENT AREA	TRAFFIC DESIGN INDEX	DESCRIPTION
Automobile Parking Areas	DI-1	Light traffic (Few vehicles heavier than passenger cars, no regular use by heavily loaded two axle trucks/buses). (ESAL [(1)] < 6)
Driveways (Light Duty)	DI-2	Medium to light traffic (Similar to DI-1 including not over 50 loaded two axle trucks/buses or lightly loaded larger vehicles per day. No regular use by heavily loaded trucks/buses with three or more axles). (ESAL = 6-20)
Driveways and Light Truck Traffic Areas	DI-3	Medium traffic (Including not over 300 heavily loaded two axle trucks plus lightly loaded trucks with three or more axles and no more than 30 heavily loaded trucks or buses with more than three axles per day). (ESAL = 21-75)
(1) Equivalent daily 18-kip single-axle load applications.		

Listed below are pavement component thicknesses, which may be used as a guide for pavement systems at the site for the traffic classifications stated herein. These systems were derived based on general characterization of the subgrade. Specific testing (such as CBR tests, resilient modulus tests, etc.) was not performed for this project to evaluate the support characteristics of the subgrade.

RIGID PAVEMENT SYSTEM			
COMPONENT	Material Thickness, Inches		
	DI-1	DI-2	DI-3
Reinforced Concrete	5.0	6.0	8.0
Treated Subgrade	6.0	6.0	8.0

FLEXIBLE PAVEMENT SYSTEM			
COMPONENT	Material Thickness, Inches		
	DI-1	DI-2	DI-3
Asphaltic Concrete	2.0	2.5	2.5
Base Material	8.0	10.0	12.0
Treated Subgrade	6.0	6.0	8.0

Presented below are our recommended material requirements for the various pavement sections.

Reinforced Concrete Pavement – The materials and properties of reinforced concrete pavement shall meet applicable requirements in the ACI Manual of Concrete Practice. The Portland cement concrete mix should have a minimum 28-day compressive strength of 3,500 psi.

Reinforcing Steel – Reinforcing steel should consist of the following:

DI-1: 3 bars spaced at 18-inches, or #4 bars spaced at 24-inches on centers in both directions.
DI-2: 3 bars spaced at 12-inches, or #4 bars spaced at 18-inches on centers in both directions.
DI-3: 4 bars spaced at 18-inches on centers in both directions.

Control Joint Spacing – ACI recommendations indicate that control joints should be spaced at about 30 times the thickness of the concrete pavement. Furthermore, ACI recommends a maximum control joint spacing of 12.5 feet for 5-inch-thick pavements and a maximum control joint spacing of 15-feet for 6-inch or thicker pavements. Sawcut control joints should be cut within 6 to 12 hours of concrete placement.

Expansion Joint Spacing – ACI recommendations indicate that regularly spaced expansion joints may be deleted from concrete pavements. Therefore, the installation of expansion joints is optional and should be evaluated by the design team.

Dowels at Expansion Joints – The dowels at expansion joints, if the joints are provided, should be spaced at 12-inch centers, and consist of the following:

DI-1: 5/8-inch diameter, 12-inch long with 5-inch embedment
DI-2: ¾-inch diameter, 14-inch long with 6-inch embedment
DI-3: 7/8- inch diameter, 14-inch long with 6-inch embedment

Hot Mix Asphaltic Concrete Surface Course – The asphaltic concrete surface course should be plant mixed, hot laid Type D (Fine Graded Surface Course) meeting the specifications requirements in TxDOT 2014 Standard Specifications Item 340. Specific criteria for the job specifications should include compaction to within an air void range of 5 to 9% calculated using the maximum theoretical gravity mix measured by TxDOT Tex-227-F. The asphalt cement content by percent of total mixture weight should be within ± 0.5% asphalt cement from the job mix design.

Base Material – Base material should be composed of crushed limestone or crushed concrete meeting the requirements of TxDOT 2014 Standard Specifications Item 247, Type A or D, Grade 1. The base material should be compacted to at least 95% of the Modified Effort (ASTM D1557) maximum dry density at a moisture content within 2% of the optimum moisture content.

Treated Subgrade –The on-site surficial subgrade soils should be treated with cement or fly-ash in accordance with TxDOT 2014 Standard Specifications Item 265. The amount of cement or fly-ash should be determined for the subgrade soils by conducting laboratory tests on the subgrade once final subgrade elevation has been established at the time of construction. Based on the classification test results, we recommend that about 6% cement or fly-ash by dry weight be used for estimating and planning. The quantity of cement/fly-ash required is computed as a percent of dry weight.

The subgrade should be compacted to a minimum of 95% of the Standard Effort (ASTM D698) maximum dry density at a moisture content within 2% of optimum. Traffic should be kept off the treated subgrade for about 7 days to facilitate curing of soil - chemical mixture. In addition, the subgrade is not suitable for heavy construction traffic prior to paving.

Prior to compaction the following gradation requirement must be met:

Minimum passing percentage		
Sieve	**Base**	**Subgrade**
1¾	100 %	100 %
¾	85 %	85 %
#4	-	60 %

The pavement design methods described above are intended to provide structural sections with adequate thickness over a particular subgrade such that wheel loads are reduced to a level the subgrade can support. The support characteristics of the subgrade for pavement design do not account for shrink/swell movements of an expansive clay subgrade. Thus, the pavement may be adequate from a structural standpoint, yet still experience cracking and deformation due to shrink/swell related movement of the subgrade. Post-construction subgrade movements and some cracking of pavements are not uncommon for clayey subgrade conditions such as those observed at this site. Minimizing moisture changes in the subgrade is important to reduce shrink/swell movements. Although lime treatment will help to reduce such movement/cracking this movement/cracking cannot be economically eliminated.

Related civil design factors such as subgrade drainage, shoulder support, cross-sectional configurations, surface elevations and environmental factors which will significantly affect the service life must be included in the preparation of the construction drawings and specifications. Normal periodic maintenance will be required.

Long-term pavement performance will be dependent upon several factors, including maintaining subgrade moisture levels and providing for preventive maintenance. The following recommendations should be implemented to help promote long-term pavement performance.

- Site grading should be designed to drain away from the pavements, preferably at a minimum grade of 2%.
- The subgrade and the pavement surface should be designed to promote proper surface drainage, preferably at a minimum grade of 2%.
- Joint sealant should be installed, and cracks should be sealed immediately.
- Curbs should be extended into the treated subgrade for a depth of at least 4-inches to help prevent moisture migration into the subgrade soils beneath the pavement section; and
- Compacted, low permeability clayey backfill should be placed against the exterior side of the curb and gutter.

Preventive maintenance should be planned and provided for the pavements at this site. Preventive maintenance activities are intended to slow the rate of pavement deterioration and consist of both localized maintenance (e.g., crack, and joint sealing and patching) and global maintenance (e.g., surface sealing). Prior to implementing any maintenance, additional engineering observations are recommended to evaluate the type and extent of preventive maintenance needed.

Rolling Pattern

A minimum compaction temperature of 175°F (80°C) is the cutoff point, because after this point, the mat temperature is so low that compaction possibilities decrease rapidly. In some cases, the material is too hot to be properly compacted. This is noticeable from the instability of the material under the roller. It is essential that the first pass be made as soon as possible so that the temperature relationships mentioned above will be maintained. The greatest part of compaction is attained with the first breakdown pass. To eliminate or minimize compactor marks the final finishing passes may have to be delayed until the mat cools to the proper temperature.

Weather Limitations

Adverse weather conditions would affect the quality of the asphaltic concrete pavement. These include, but are not limited to the following:

1. Frozen subgrade as evident by the fact that a shaded surface thermometer reads 32°F or less, or the subgrade is excessively hard- the entrapped water has turned to ice.
2. For thin lifts temperature requirements such as 80°F.
3. Muddy subgrade due to the material being too wet.
4. Standing water on the subgrade (this can usually be remedied by using pumps and/or an air hose).
5. A light rain is sometimes OK as long the mat does not cool down too quickly.

Earthwork

Construction areas should be stripped of all vegetation including roots, loose/soft topsoil, and other unsuitable surface materials. Following stripping and prior to placement of additional fill, the exposed soil subgrade areas should be proof rolled with a 20-ton pneumatic roller or a loaded dump truck to detect weak areas. Weak areas detected during proof rolling should be removed and replaced with select fill. Proper site drainage should be maintained during construction, so that ponding of surface runoff does not occur and cause construction delays and/or inhibits site access.

Subsequent to proof rolling, and just prior to placement of fill, the exposed subgrade should be evaluated for moisture and density. The subgrade should be within 2% of the optimum moisture content and have an in-place dry density of at least 95% of the Standard Effort (ASTM D698) maximum dry density of the in-situ soils. If the moisture or density does not meet the above criteria, the subgrade should be scarified to a minimum depth of 8-inches, moisture adjusted to within 2% of the optimum moisture content and compacted to at least 95% of the Standard Effort (ASTM D698) maximum dry density.

Grade adjustments within the building pad area should be accomplished with select fill composed of clean lean clay, sandy lean clay, or clayey sand soils with a plasticity index ranging between 8 and 18. Select fill should be placed on prepared surfaces in lifts not to exceed 8-inches loose measure, with compacted thickness not to exceed 6-inches. The select fill should be compacted to at least 95% of the Standard Effort (ASTM D698) maximum dry density within 2% of the optimum moisture content.

If imported blended or mixed soils are intended for use to construct the building pad, TSI should be contacted to provide additional recommendations accordingly. Blended or mixed soils do not occur naturally. These soils are a blend of sand and clay and will require mechanical mixing at the site. If these soils are not mixed thoroughly to break down the clay clods and blend-in the sand to produce a uniform soil matrix, the fill material may be detrimental to the slab performance.

If blended soils are used, we recommend that additional samples of the blended soils, as well as the clay clods, be obtained prior to and during earthwork operations to determine if the blended soils can be used in lieu of select fill.

Prior to any filling operations, samples of the proposed borrow materials should be obtained for laboratory moisture-density testing. The tests will provide a basis for evaluation of fill compaction by in-place density testing. A qualified soil technician should perform sufficient in-place density tests during the filling operations to evaluate whether the proper levels of compaction, including dry unit weight and moisture content, are being attained.

Wet Weather/Soft Subgrade Considerations

Construction during and soon after wet weather periods may encounter difficulties due to wet surficial soils becoming a general hindrance to equipment due to rutting and/or pumping of the

surface. If the subgrade cannot be adequately compacted to the minimum densities, one of the following methods should be used to improve the soils: 1) removal and replacement with select fill, 2) chemical treatment of the soil to dry the subgrade, or 3) drying by natural means if the schedule allows. In our experience with similar soils in this area, chemical treatment is the most efficient and effective method to increase the supporting value of wet and soft subgrade such as that observed at this site. TSI should be contacted for additional recommendations if chemical treatment of the soil is needed due to the presence of wet and soft subgrade.

Drainage

All grades must provide effective drainage away from the buildings during and after construction. Water permitted to pond next to the building can result in greater soil movements than discussed in the report, and can result in unacceptable differential floor slab movement, cracked slab and walls, and roof leaks. Estimated movements and settlements described in this report are based on effective drainage for the life of the buildings and cannot be relied upon if effective drainage is not maintained.

Exposed ground should be sloped away from the building for at least 10-foot beyond the perimeter of the buildings. After construction and landscaping, we recommend verifying final grades to document that effective drainage has been achieved. Grades around the buildings should also be periodically inspected and adjusted, as necessary.

Flatwork will be subject to post construction movement. Maximum grades practical should be used for flatwork to prevent water from ponding. Allowance in final grades should also consider post-construction movement of flatwork, particularly if such movement would be critical. Where flatwork abuts the buildings, effectively seal, and maintain joints to prevent surface water infiltration.

Utility trenches are a common source of water infiltration and migration. All utility trenches that penetrate beneath the buildings should be effectively sealed to restrict water intrusion and flow through the trenches that could migrate below the buildings. We recommend constructing an effective clay “trench plug” that extends at least 5-foot out from the face of the building exterior. The plug material should consist of clay (PI > 20) compacted at a water content at or above the soil’s optimum water content. The clay fill should be placed completely surrounding the utility line and be compacted in accordance with recommendations in this report.

GENERAL COMMENTS

TSI should be retained to review the final design plans and specifications, so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. TSI also should be retained to provide testing and observation during excavation, grading, foundation, and construction phases of the project.

The analysis and recommendations presented in this report are based upon the data obtained from the borings performed and from other information discussed in this report. This report does not reflect variations that may occur between borings, across the site, or due to the modifying effects of weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

The scope of services for this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, and bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials, or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

For any excavation construction activities at this site, all Occupational Safety and Health Administration (OSHA) guidelines and directives should be followed by the Contractor during construction to ensure a safe working environment. Regarding worker safety, OSHA Safety and Health Standards require the protection of workers from excavation instability in trench situations.

This report has been prepared for the exclusive use of our client for the specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either expressed or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. If changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless TSI reviews the changes and either verifies or modifies the conclusions of this report in writing.

APPENDIX

Boring Locations Map

Log of Boring

Symbols and Terms Used on Boring Log

Field and Laboratory Testing Procedures

Recommended Specifications for
Placement of Select Fill

Important Information About Your
Geotechnical Engineering Report

The map is not too scale, boring locations are approximate.

Legend

● Geotechnical Borings

TSI LABORATORIES, INC.		
Bastrop County Precinct No. 2 Facility 911 SE Martin Luther King Drive Smithville, TX 78957		
Drawn by: BT	Date: 11/27/24	Figure 1
Checked by: AN	Date: 11/30/24	
TSI Project No. G-241435		
Boring Location Map		

Log of Boring

PROJECT: Bastrop County Precinct No. 2 Facility
911 SE Martin Luther King Drive
Smithville, TX 78957

CLIENT: BEFCO Engineering, Inc.

BORING NO.: B-1
LAB NO.: G-241435
DATE: 11/25/24
SURFACE ELEV.: N/A

FIELD DATA | LABORATORY DATA

DRILLING METHOD(S) : Dry Auger 0-20.0'

GROUNDWATER INFORMATION:
Groundwater was not encountered.

DEPTH (FEET)	SAMPLE	SOIL TYPE	N : BLOWS/FT T : INCH/100 BLOWS P : TONS/SQ. FT. R : PERCENT RQD : RATIO	MOISTURE CONT. %	DRY DENSITY pounds/ft. 3	Atterberg Limits % Liquid Limit	Plastic Limit	Plasticity Index	MINUS No. 200 SIEVE (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN %	DESCRIPTION OF STRATUM
0			N=18	11		23	13	10	55			SANDY LEAN CLAY - with gravel, brown (CL)
			P=4.5	14	119	29	12	17	77	3.3	9.1	LEAN CLAY - with sand, brown (CL)
5			P=4.5+									
			P=4.5+									
			P=4.5+	12	110	19	13	6	48	2.8	6.1	SILTY CLAYEY SAND - reddish brown (SC-SM)
10												
			P=2.0	17	115	27	12	15	61	0.5	5.6	SANDY LEAN CLAY - reddish brown (CL)
15												
			N=20									
20												Boring terminated at 20.0'
25												
30												
35												

Steel Tube Sample
Split Spoon Sample
Disturbed Sample

REMARKS:

TSI Laboratories, Inc.

Log of Boring

PROJECT: Bastrop County Precinct No. 2 Facility
911 SE Martin Luther King Drive
Smithville, TX 78957

CLIENT: BEFCO Engineering, Inc.

BORING NO.: B-2
LAB NO.: G-241435
DATE: 11/25/24
SURFACE ELEV.: N/A

FIELD DATA | LABORATORY DATA

DRILLING METHOD(S) : Dry Auger 0-20.0'

GROUNDWATER INFORMATION:
Groundwater was not encountered.

DEPTH (FEET)	SAMPLE	SOIL TYPE	N : BLOWS/FT T : INCH/100 BLOWS P : TONS/SQ. FT. R : PERCENT RQD : RATIO	MOISTURE CONT. %	DRY DENSITY pounds/ft. 3	Atterberg Limits % Liquid Limit	Plastic Limit	Plasticity Index	MINUS No. 200 SIEVE (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN %	DESCRIPTION OF STRATUM
0			N=21									SANDY LEAN CLAY - with gravel, brown (CL)
			P=4.5+									LEAN CLAY - with sand, brown (CL)
5			P=4.5+	7	120	18	18	0	26			SILTY SAND - with gravel, dark brown (SM)
			P=4.5+	12	113	22	15	7	57	1.6	6.1	SANDY SILTY CLAY - brown (CL-ML)
10			P=4.5+									CLAYEY SAND - with gravel, reddish brown (SC)
15			P=1.5	10	115	32	13	19	28	0.7	13.0	
			N=11	23		23	13	10	81			LEAN CLAY - with sand, reddish brown (CL)
20												Boring terminated at 20.0'
25												
30												
35												

Steel Tube Sample
Split Spoon Sample
Disturbed Sample

REMARKS:

TSI Laboratories, Inc.

Log of Boring

PROJECT: Bastrop County Precinct No. 2 Facility
911 SE Martin Luther King Drive
Smithville, TX 78957

CLIENT: BEFCO Engineering, Inc.

BORING NO.: B-3
LAB NO.: G-241435
DATE: 11/25/24
SURFACE ELEV.: N/A

FIELD DATA | LABORATORY DATA

DRILLING METHOD(S) : Dry Auger 0-6.0'

GROUNDWATER INFORMATION:
Groundwater was not encountered.

DEPTH (FEET)	SAMPLE	SOIL TYPE	N : BLOWS/FT T : INCH/100 BLOWS P : TONS/SQ. FT. R : PERCENT RQD : RATIO	MOISTURE CONT. %	DRY DENSITY pounds/ft. 3	Atterberg Limits % Liquid Limit	Plastic Limit	Plasticity Index	MINUS No. 200 SIEVE (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN %	DESCRIPTION OF STRATUM
0			N=20	5		18	12	6	30			SILTY CLAYEY SAND - with gravel, light brown (SC-SM)
			N=20									SANDY LEAN CLAY - with gravel, reddish brown (CL)
5			N=23									
												Boring terminated at 6.0'
10												
15												
20												
25												
30												
35												

Steel Tube Sample
Split Spoon Sample
Disturbed Sample

REMARKS:

TSI Laboratories, Inc.

Log of Boring

PROJECT: Bastrop County Precinct No. 2 Facility
911 SE Martin Luther King Drive
Smithville, TX 78957

CLIENT: BEFCO Engineering, Inc.

BORING NO.: B-4
LAB NO.: G-241435
DATE: 11/25/24
SURFACE ELEV.: N/A

FIELD DATA | LABORATORY DATA

DRILLING METHOD(S) : Dry Auger 0-6.0'

GROUNDWATER INFORMATION:
Groundwater was not encountered.

DEPTH (FEET)	SAMPLE	SOIL TYPE	N : BLOWS/FT T : INCH/100 BLOWS P : TONS/SQ. FT. R : PERCENT RQD : RATIO	MOISTURE CONT. %	DRY DENSITY pounds/ft. 3	Atterberg Limits % Liquid Limit	Plastic Limit	Plasticity Index	MINUS No. 200 SIEVE (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN %	DESCRIPTION OF STRATUM
0			N=16									SILTY CLAYEY SAND - with gravel, brown (SC-SM)
			P=3.0	14	104	33	14	19	72	1.3	2.1	LEAN CLAY - with sand, reddish brown (CL)
5			P=4.5+									
												Boring terminated at 6.0'
10												
15												
20												
25												
30												
35												

Steel Tube Sample
Split Spoon Sample
Disturbed Sample

REMARKS:

TSI Laboratories, Inc.

Log of Boring

PROJECT: Bastrop County Precinct No. 2 Facility
911 SE Martin Luther King Drive
Smithville, TX 78957

CLIENT: BEFCO Engineering, Inc.

BORING NO.: B-5
LAB NO.: G-241435
DATE: 11/25/24
SURFACE ELEV.: N/A

FIELD DATA | LABORATORY DATA

DRILLING METHOD(S) : Dry Auger 0-6.0'

GROUNDWATER INFORMATION:
Groundwater was not encountered.

DEPTH (FEET)	SAMPLE	SOIL TYPE	N : BLOWS/FT T : INCH/100 BLOWS P : TONS/SQ. FT. R : PERCENT RQD : RATIO	MOISTURE CONT. %	DRY DENSITY pounds/ft. 3	Atterberg Limits % Liquid Limit	Plastic Limit	Plasticity Index	MINUS No. 200 SIEVE (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN %	DESCRIPTION OF STRATUM
0			N=11									SILTY CLAYEY SAND - with gravel, dark brown (SC-SM)
			N=14									SANDY LEAN CLAY - with gravel, reddish brown (CL)
5			P=4.5	13	112	27	14	13	61	2.8	5.3	SANDY LEAN CLAY - reddish brown (CL)
												Boring terminated at 6.0'
10												
15												
20												
25												
30												
35												

Steel Tube Sample
Split Spoon Sample
Disturbed Sample

REMARKS:

TSI Laboratories, Inc.

Log of Boring

PROJECT: Bastrop County Precinct No. 2 Facility
911 SE Martin Luther King Drive
Smithville, TX 78957

CLIENT: BEFCO Engineering, Inc.

BORING NO.: B-6
LAB NO.: G-241435
DATE: 11/25/24
SURFACE ELEV.: N/A

FIELD DATA | LABORATORY DATA

DRILLING METHOD(S) : Dry Auger 0-6.0'

GROUNDWATER INFORMATION:
Groundwater was not encountered.

DEPTH (FEET)	SAMPLE	SOIL TYPE	N : BLOWS/FT T : INCH/100 BLOWS P : TONS/SQ. FT. R : PERCENT RQD : RATIO	MOISTURE CONT. %	DRY DENSITY pounds/ft. 3	Atterberg Limits % Liquid Limit	Plastic Limit	Plasticity Index	MINUS No. 200 SIEVE (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN %	DESCRIPTION OF STRATUM
0			N=20									SILTY CLAYEY SAND - with gravel, brown (SC-SM)
			P=4.5									SANDY LEAN CLAY - brown (CL)
5			P=3.5	8	106	25	14	11	56	1.0	3.1	
												Boring terminated at 6.0'
10												
15												
20												
25												
30												
35												

Steel Tube Sample
Split Spoon Sample
Disturbed Sample

REMARKS:

TSI Laboratories, Inc.

KEY TO SYMBOLS

Symbol Description

Strata symbols

Low plasticity clay

High plasticity clay

Poorly graded clayey silty sand

Clayey sand

Soil Samplers

Steel Tube Sample

Split Spoon Sample

Disturbed Sample

Consistency of Sands & Gravels	
Consistency	**Penetration Resistance (N)* Blows Per Foot**
Very Loose	0 – 4
Loose	4 – 10
Medium Dense	10 – 30
Dense	30 – 50
Very Dense	Over 50

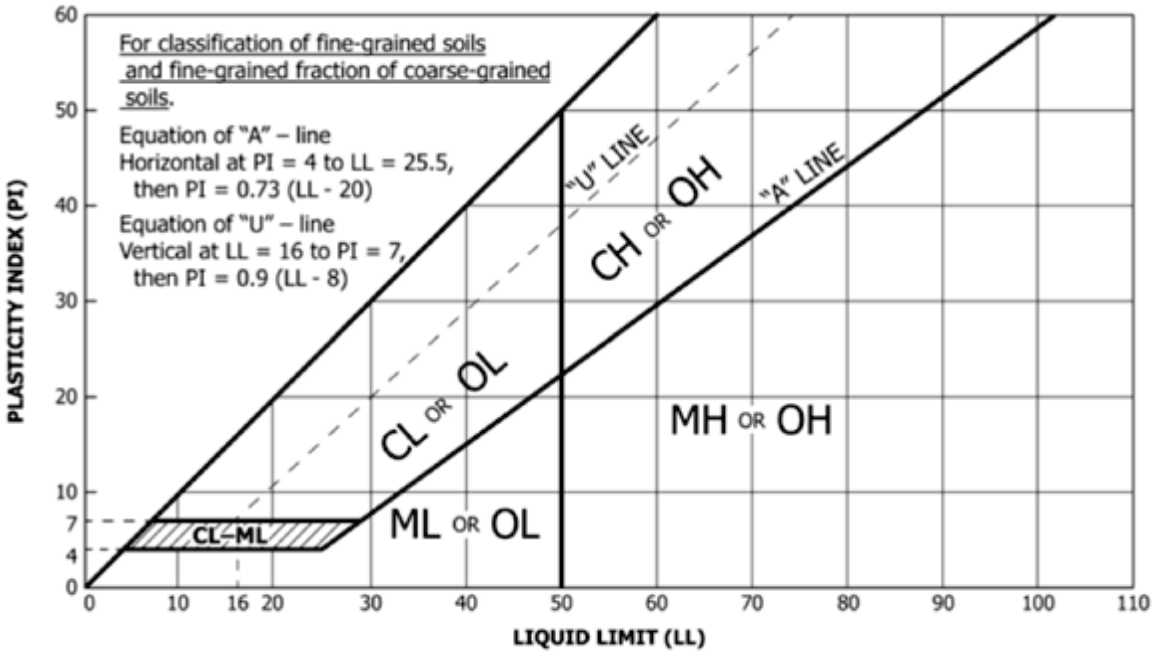
Consistency/Strength of Clays & Silty Clays		
Consistency	**Undrained Shear Strength, tsf**	**Pocket Penetrometer (p)**
Very Soft	Less than 0.125	0 – 0.5
Soft	0.125 – 0.25	0.5 – 1.0
Firm	0.25 – 0.50	1.0 – 1.75
Stiff	0.50 – 1.0	1.75 – 3.5
Very Stiff	1.0 – 2.0	3.5 – 4.5
Hard	Over 2.0	Over 4.5

*N=Number of Blows from 140 lb. hammer falling 30”to drive a 1-3/8” ld. split barrel sample (ASTM D-1586)

Soil Grain Analysis
US Standard Sieves

6”	3”	¾”	#4	#10	#40	#200		
Boulders	Cobbles	Gravel		Sand			Silt	Clay
		Coarse	Fine	Coarse	Medium	Fine		
152	76.2	19.1	4.76	2.0	0.420	0.074	0.002	

Soil Grain Size in Millimeters
ASTM D-2488



FIELD AND LABORATORY TESTING PROCEDURES
(TEST PROCEDURES ARE PRESENTED FOR INFORMATIONAL PURPOSES)

FIELD TESTING

A. Boring Procedure Between Samples

The borehole is extended downward, between samples, by continuous flight, hollow or solid stem augers or by rotary drilling techniques using bentonite drilling fluid or water.

B. Penetration Test and Split-Barrel Sampling of Soils
ASTM D-1586

This sampling method consists of driving a 2-inch outside diameter split barrel sampler using a 140 pound hammer freely falling through a distance of 30 inches. The sampler is first seated 6 inches into the material to be sampled and then driven an additional 12 inches. The number of blows required to drive the sampler the final 12 inches is known as the Standard Penetration Resistance. Recovered samples are first classified as to color and texture by the driller. Later, in the laboratory, the driller's field classification is reviewed by the soils engineer who examines each sample.

C. Thin-Walled Tube Geotechnical Sampling
ASTM D-1587

This method consists of pushing thin walled steel tubes, usually 3 inches in diameter, into the soils to be sampled using hydraulic or other means. Cohesive soils are usually to be sampled in this manner and relatively undisturbed samples are recovered.

D. Soil Investigation and Sampling by Auger Borings
ASTM D-1452

This method consists of augering a hole and removing representative soil samples from the auger flight or bit at 5 foot depth intervals or with each change in substrata. Disturbed sampled are obtained and this method is, therefore, limited to situations where it is satisfactory to determine the approximate subsurface profile.

E. Diamond Core Drilling for Site Investigation
ASTM D-2113

This method consists of advancing a hole into hard strata by rotating a single or double tube core barrel equipped with a cutting bit. Diamond, tungsten carbide, or other cutting agents may be used for the bit. Wash water is used to remove the cuttings and cool the bit. Normally, a 2 inch outside diameter by 1-3/8 inch inside diameter (NX) coring bit is used unless otherwise noted. The rock or hard material recovered within the core barrel is examined in the field and in the laboratory and the cores are stored in partitioned boxes. The core recovery is the length of the material recovered and is expressed as a percentage of the total distance penetrated.

F. Visual – Manual Soil Classification Procedure
ASTM D-2488

This procedure is a visual – manual soil classification methodology for the description of soil for engineering purposed when precise soils classification is not required.

LABORATORY TESTING

A. Atterberg Limits: Liquid Limit, Plastic Limit and Plasticity Index of Soils
ASTM D-4318, TEX 104-E, 105-E and 106-E

Atterberg Limits determine the soil's plasticity characteristics. The soil's Plasticity Index (PI) is representative of this characteristic and is the difference between the Liquid Limit (LL) and the Plastic Limit (PL). The LL is the moisture content at which the soil will flow as a heavy viscous fluid. The PL is the moisture content at which the soil begins to lose its plasticity. The test results are presented on the boring logs adjacent to the appropriate sampling information.

B. Particle Size Analysis of Soils
ASTM D-422 and TEX 110-E

Grain size analysis tests are performed to determine the particle size and distribution of the samples tested. The grain size distribution of the soils coarser than the Standard Number 200 sieve is determined by passing the sampled through a standard set of nested sieves.

C. Laboratory Determination of Water (Moisture) Content of Soil and Rock
ASTM D-2216 and TEX 103-E

The moisture content of soil is defined as the ratio, expressed as a percentage, of the weight of water in a given soil mass to the weight of solid particles. It is determined by measuring the wet and oven dry weights of a soil sample. The test results are presented on the boring logs.

D. Unconfined Compressive Strength of Cohesive Soil
ASTM D-2166

The unconfined compressive strength of soil is determined by placing a section of an undisturbed sample into a loading frame and applying an axial load until the sample fails in shear. The test results are presented on the boring logs adjacent to the appropriate sampling information.

E. California Bearing Ratio (CBR) of Lab Compacted Soils
ASTM D-1883

The CBR test is performed by compacting soil in a 6 inch diameter mold at the desired density, soaking the sample for four days under a surcharge load approximating the pavement weight and then testing the soils in punching shear. A 2 inch diameter piston is forced into the soil to determine the resistance to penetration. The CBR is the ratio of the actual load required to produce 0.1 inches of penetration to that producing the same penetration in a standard crushed stone.

F. Swell Test
ASTM D-4546

The swell test is performed by confining a 1 inch thick specimen in a 2-1/2 inch diameter stainless steel ring and loading the specimen to the approximate overburden pressure. The test specimen is then inundated with distilled water and allowed to swell for 48 hours. The volumetric swell is measured as a percentage of the total volume and is converted mathematically to linear swell.

G. Compaction Tests
ASTM D-698, D-1557, TEX 113-E or 114-E

The compaction test is performed by compacting soil in a steel mold at varying moisture contents. Layers are compacted using a hammer weight and number of blows per layer which vary with the different test procedures. ASTM D-698, D-1557, TEC 113-E and 114-E. The data is plotted and the maximum weight and optimum moisture content is determined.

H. Classification of Soils for Engineering Purposes
Unified Soil Classification System, D-2487

This standard describes a system for classifying mineral and organo-mineral soils for engineering purposes based on laboratory determination of particle-size characteristics, liquid limit, and plasticity index and shall be used when precise classification is required.

RECOMMENDED SPECIFICATIONS FOR PLACEMENT OF SELECT FILL

1. General

The soils engineer shall be the owners representative to control the placement of compacted fill. The soils engineer shall approve the subgrade preparation, the fill materials, the method of placement and compaction, and shall give written approval of the completed fill.

2. Preparation of Existing Ground

All topsoil, plants and other organic material shall be removed. The exposed surface shall be scarified, moistened if necessary, and compacted in the manner specified for subsequent layers of fill.

3. Select Fill Material

Fill shall have a liquid limit of less than 35 and a Plasticity Index between 8 and 18. The fill shall contain no organic material or other perishable material, and no stones larger than 6 inches. Fill material shall be approved by the soils engineer.

4. Placing Select Fill

Fill materials shall be placed in horizontal layers not exceeding 8 inches thickness after compaction. Successive loads of material shall be dumped so as to secure even distribution, avoiding the formation of layers of lenses of dissimilar materials. The contractor shall route hill hauling equipment to distribute travel evenly over the fill area.

5. Compaction of Select Fill

a. Moisture Control: The moisture content of the fill material shall be distributed uniformly throughout each layer of the material. The allowable range of moisture content during compaction shall be within plus two (+2) and minus two (-2) percentage points of the optimum moisture content. The contractor may be directed to add necessary moisture to the material either in the borrow area or upon the fill surface or to dry the material, as directed by the soils engineer. The drying of cohesive soils between lifts to moisture contents less than 70% of optimum before the placement of subsequent lifts shall be avoided or the fill reworked at the proper moisture content.

b. Compaction: The material in each layer shall be compacted to obtain proper densities. Compaction by the hauling equipment alone will not be considered sufficient. Structural fills, including pavement subgrade, subbase, and base, shall be compacted to densities equivalent to the percentages of the Standard Proctor (ASTM D-698) or Modified Proctor (ASTM D-1557) maximum dry density listed in the table below. The Texas Department of Highways and Public Transportation Method TEX 113-E or TEX 114-E compaction test, which varies the compactive effort with soil type, may be substituted for the Standard or Modified Proctor methods and percentages listed in the table below.

	PERCENT COMPACTION	
Area	Fine Grained Soils ASTM D-698 (Standard) or TEX 114-E	Coarse Grained Soils ASTM D-1557 (Modified) or TEX 113-E
Within five (5) feet of building lines, under footings, floor slabs, slab-on-grade foundation and structures attached to the building (i.e. walls, patios, steps)	95	95+
More than five (5) feet beyond building lines, under walks, and fill area to be landscaped	90	90
Pavement subgrade and subbase, including lime treated soils	95	95+

Soils classified as coarse grained soils are those with more than 50%, by weight, retained on the No. 200 Standard Sieve.

6. Comparison Testing

Field density tests for the determination of the compaction of the fill shall be performed by TSI Laboratories, Inc. in accordance with recognized procedures for making such tests. A representative number of tests shall be made in each compacted lift at locations selected by the soils engineer or his/her representative. For general structural and paving fills, we suggest one test per 3,000 square feet per lift with a minimum of three tests per lift.

IMPORTANT INFORMATION
ABOUT YOUR
GEOTECHNICAL ENGINEERING REPORT

The following observations and suggestions are provided to help you better utilize your geotechnical engineering report and to reduce construction problems and delays related to the soil and groundwater conditions.

REPORT IS BASED UPON SPECIFIC SITE AND PROJECT

A geotechnical report is based on a subsurface exploration conducted on a specific site and planned using specific project information. The project information typically includes structure size and configuration, type of construction, and general location on the site. Limitations, such as existing buildings or utilities, specific foundation requirements for structures, budget limitations, and the level of risk assumed by the client may affect the scope of the exploration.

Since the report applies to a specific structure and site, the geotechnical report should not be used in the following circumstances unless the geotechnical engineer has reviewed the changes and concurs in the use of the report.

- When the nature of the proposed structure is changed, such as an office building instead of a warehouse or parking garage, or a refrigerated warehouse instead of one which is not refrigerated
- When the size, configuration, or floor elevations is changed
- When the location of the structure on the site is changed
- When there is a change of ownership

FINDINGS ARE PROFESSIONAL ESTIMATES

The actual subsurface conditions are determined only at the boring locations and only at the time the samples are taken. The information is extrapolated by the geotechnical engineer who then renders professional opinions regarding the characteristics of the subsurface materials, the behavior of the soils during construction, and appropriate foundation designs. No exploration, however complete, can be assured of sampling the entire range of soil conditions. The soils may vary between or beyond the borings and stratum transitions may be more gradual or more abrupt, and all types of oils and rock existing on the site may not be found in the borings. The geotechnical engineer is often retained during construction to evaluate variances and recommend solutions to problems encountered on the site.

SUBSURFACE CONDITIONS CAN CHANGE

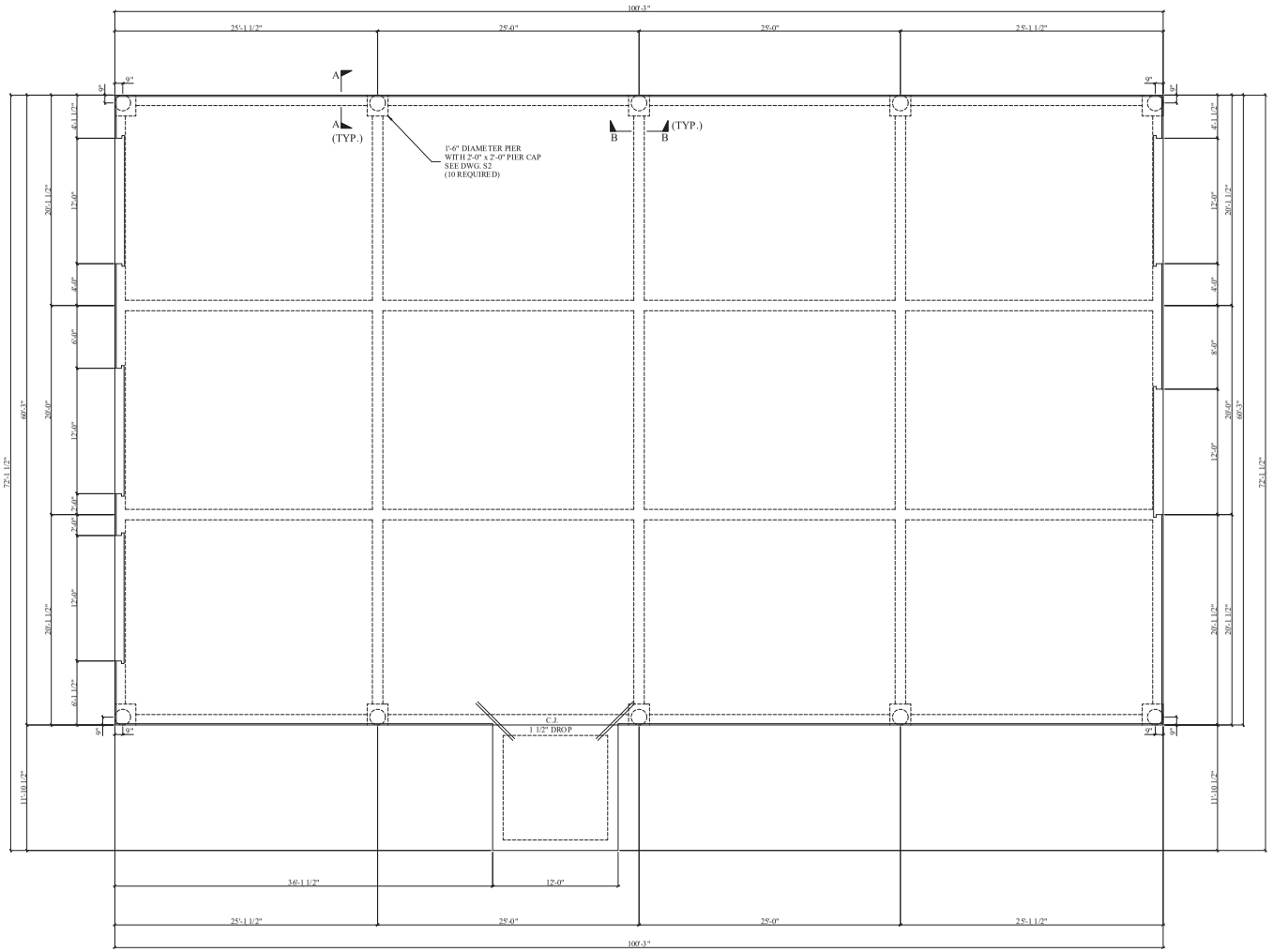
Grading operations on or close to the site, floods, groundwater fluctuations, utility construction, and utility leaks are among the events that can change the subsurface conditions. The geotechnical engineer should e kept apprised of such events.

GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND PERSONS

A geotechnical report may have been made to evaluate foundation alternatives only, for preliminary site evaluation, or for other limited purposes. The exploration may also have been limited by the direction of the client, budget limitations, or the level of risk assumed by the client. Therefore, no one other than the original client should use the report for its intended purpose or other purposes without conferring with the geotechnical engineer.

GEOTECHNICAL REPORTS ARE SUBJECT TO MISINTERPRETATION

Geotechnical reports are based on the project information available at the time the report was made and the judgment and opinions of the geotechnical engineer. This specialized information is subject to misinterpretation by other design professionals, contractors and owners. The geotechnical engineer should be retained during the design process to interpret the recommendations and review the adequacy of the plans and specifications relative to geotechnical issues. The boring logs should no be separated from the geotechnical report, but, rather the entire report should be made available to the contractors and others needing this information.



FOUNDATION PLAN

NOT TO SCALE

NOTE: ALL GRADE BEAMS ARE 1'-0" WIDE UNLESS OTHERWISE NOTED. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL PLANS AND METAL BUILDING DRAWINGS. IF A DISCREPANCY IS FOUND, NOTIFY ENGINEER IMMEDIATELY.

GEOTECHNICAL NOTES:

1. GEOTECHNICAL STUDY PREPARED BY TSI LABORATORIES, INC, (G-241435), DATED DECEMBER 18, 2024, SHALL BE USED FOR SITE PREPARATION, PLACEMENT OF FILL, AND FOUNDATION CONSTRUCTION.
2. BUILDING PAD PREPARATION: MIMIMUM OF 1 FOOT OF SELECT STRUCTURAL FILL COMPACTED TO 95% OF STANDARD PROCTOR IN ACCORDANCE WITH D698. A MINIMUM OF 5 FEET BEYOND THE EDGE OF THE SLAB AREA. COMPACTION TESTING IS REQUIRED.
3. CONSTRUCTION AREAS SHALL BE STRIPPED OF VEGETATION AND ROOT STRUCTURES, AND THE EXPOSED SUBGRADE SHALL BE PROOF ROLLED WITH APPROPRIATE CONSTRUCTION EQUIPMENT WEIGHING AT LEAST 20 TONS. IF WEAK OR SOFT AREAS ARE OBSERVED DURING PROOF ROLLING OPERATIONS, THE SOIL IN THE SUBJECT AREA SHALL BE REMOVED TO EXPOSE COMPETENT SUBGRADE SOILS IN BOTH HORIZONTAL AND VERTICAL LIMITS. SUBGRADE AREAS SHALL BE MOISTURE ADJUSTED TO WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT. THE MOISTURE CONDITIONED SUBGRADE SHALL THEN BE COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D698.
4. SELECT FILL SHALL CONSIST OF LEAN CLAY OR SANDY LEAN CLAY, FREE OF ROOTS, ORGANICS, AND DELETERIOUS MATERIALS. SELECT FILL SHALL HAVE AT LEAST 50% PASSING THE NO. 200 SIEVE AND HAVE A PI BETWEEN 8 AND 15. REPRESENTATIVE SAMPLES OF THE FILL MATERIALS SHALL BE TESTED TO CONFIRM THEIR MATERIAL CHARACTERISTICS PRIOR TO FILLING OPERATIONS.
5. STRUCTURAL FILL SHOULD BE PLACED ON PREPARED SURFACES IN LIFTS NOT TO EXCEED 8 INCHES LOOSE MEASURE, WITH COMPACTED THICKNESS NOT TO EXCEED 6 INCHES. ALL STRUCTURAL FILL SHOULD BE MOISTURE CONDITIONED TO BETWEEN 1% AND 3% OF OPTIMUM MOISTURE CONTENT, AND THEN COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D698.
6. ELEVATION OF GROUND SURFACE ADJACENT TO THE FOUNDATION SHOULD BE A MINIMUM OF AT LEAST 6 INCHES BELOW FINISHED FLOOR.
7. COMPACTION TESTING IS REQUIRED.
8. THE SLOPE OF THE GROUND SURFACE AWAY FROM THE STRUCTURE SHOULD BE A MINIMUM OF 5% FOR A DISTANCE OF 10 FEET.
9. A GEOTECHNICAL FIRM SHALL BE RETAINED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT TO PROVIDE SOIL TESTING DURING GRADING AND CONSTRUCTION ACTIVITIES. THIS IS TO OBSERVE COMPLIANCE WITH THE PLAN SPECIFICATIONS, GEOTECHNICAL RECOMMENDATIONS, AND TO ALLOW DESIGN CHANGES IF SUBSURFACE CONDITIONS DIFFER FROM THOSE ANTICIPATED BEFORE CONSTRUCTION.

CONCRETE NOTES:

1. ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ACI STANDARD "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION.
2. A 10 MIL VAPOR BARRIER IS REQUIRED UNDER THE FOUNDATION IN ACCORDANCE WITH ACI SPECIFICATIONS.
3. REBAR CLEARANCE SHALL BE 3" CLEAR UNLESS OTHERWISE NOTED.
4. 5. ALL CONCRETE SHALL HAVE A 4000 PSI COMPRESSIVE STRENGTH IN 28 DAYS.
6. ALL REINFORCING STEEL SHALL BE LAPPED 50 BAR DIAMETERS UNLESS OTHERWISE NOTED.
7. ALL REINFORCING BARS SHALL BE ASTM A-615, GRADE 60.
8. ALL BENDING OF REINFORCING STEEL SHALL BE COLD BENT.
9. ALL EXPOSED EXTERIOR CONCRETE EDGES SHALL BE CHAMFERED 3/4 INCHES BY 45 DEGREES.
10. ALL EMBEDMENTS SHALL BE IN PLACE PRIOR TO PLACEMENT OF CONCRETE.
11. ALL STEEL CONCRETE EMBEDMENTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
12. CONCRETE SHALL BE CURED FOR A MINIMUM OF 7 DAYS IN ACCORDANCE WITH ACI 302.
13. ALL REINFORCING BARS SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS, CHAIRS, OR STIRRUPS SHALL BE PROVIDED TO SUPPORT ALL BARS.
14. ALL BENDS AND HOOKS SHALL BE AS DETAILED IN THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE, LATEST EDITION.
15. CONCRETE SHALL BE TESTED IN ACCORDANCE WITH ACI SPECIFICATIONS.
16. CONTRACTION JOINTS ARE RECOMMENDED TO REDUCE CRACKING IN ACCORDANCE WITH ACI SPECIFICATIONS.
17. PIPES THAT PENETRATE THE GRADE BEAMS SHALL BE LOCATED AT THE CENTER OF THE GRADE BEAM VERTICALLY AND SHALL BE SLEEVED.
18. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH THE BUILDING DRAWINGS . IF ANY DESCREPANCIES EXIST, CONTACT OWNER.
19. CONTRACTOR SHALL VERIFY ALL PLACEMENT, DIMENSIONS, AND LOCATION OF ALL EMBEDDED ITEMS AS REQUIRED BY ALL TRADES BEFORE CONCRETE IS PLACED.
20. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BY MEASUREMENTS AT THE JOB SITE AND SHALL TAKE ANY AND ALL MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND TO PERFORM HIS/HER WORK PROPERLY.
21. THE CONTRACTOR SHALL BEAR THE TOTAL RESPONSIBILITY FOR THE SAFETY OF THE EXISTING ADJOINING STRUCTURES AND FOR ANY METHODS REQUIRED TO ENSURE THAT SAFETY.

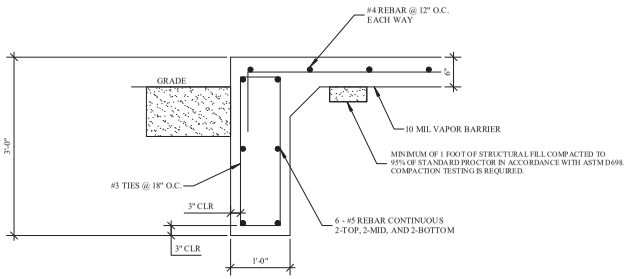
STATE OF TEXAS
CHRISTOPHER J. KORINEK
104683
REGISTERED
PROFESSIONAL ENGINEER

January 10, 2025

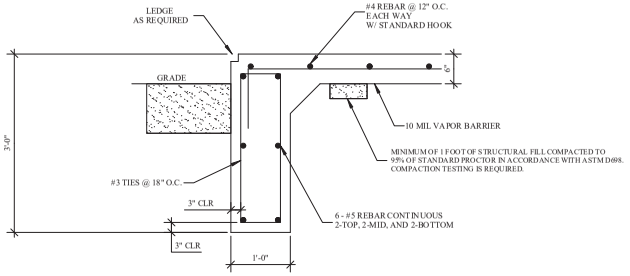
Structural Engineer:
T.S.I. Laboratories, Inc.
TBPE Firm Registration: F-9236
1801 N. Laurent
Victoria, TX 77901

Bastrop County
Smithville Annex
911 SE Martin Luther King Dr.
Smithville, Texas
Foundation Plan

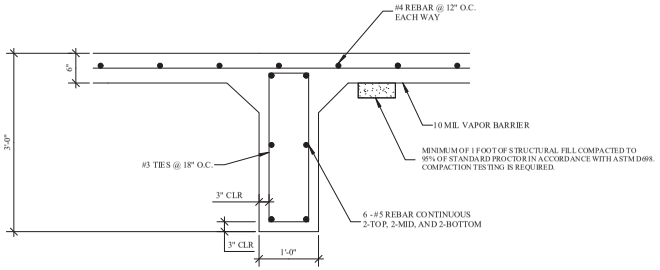
S1



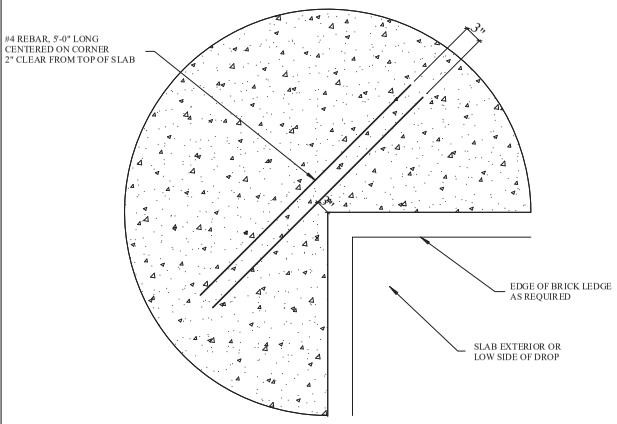
1'-0" WIDE EXTERIOR GRADE BEAM W/OUT LEDGE
NOT TO SCALE



1'-0" WIDE EXTERIOR GRADE BEAM WITH LEDGE
NOT TO SCALE



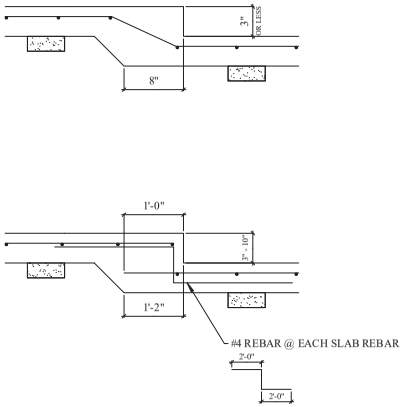
1'-0" WIDE INTERIOR GRADE BEAM
NOT TO SCALE



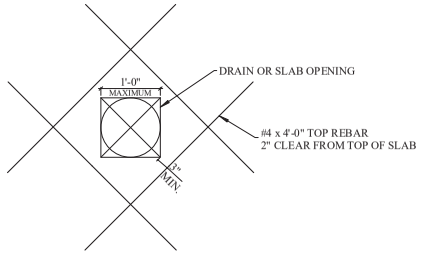
NOTE: RE-ENTRANT STEEL REQUIRED AT ALL DROP AND EDGE CORNERS
(NOT SHOWN ON PLAN)

NOTE: PROVIDE REBAR AT ALL RE-ENTRANT SLAB EDGES AND
DEPRESSION CORNERS

RE-ENTRANT CORNER REBAR
NOT TO SCALE



FLOOR DEPRESSION DETAILS
NOT TO SCALE



SLAB OPENING
REINFORCEMENT DETAILS
NOT TO SCALE

STATE OF TEXAS
CHRISTOPHER J. KORINEK
104683
REGISTERED
PROFESSIONAL ENGINEER

January 10, 2025

Structural Engineer:
T.S.I. Laboratories, Inc.
TBPE Firm Registration: F-9236
1801 N. Laurent
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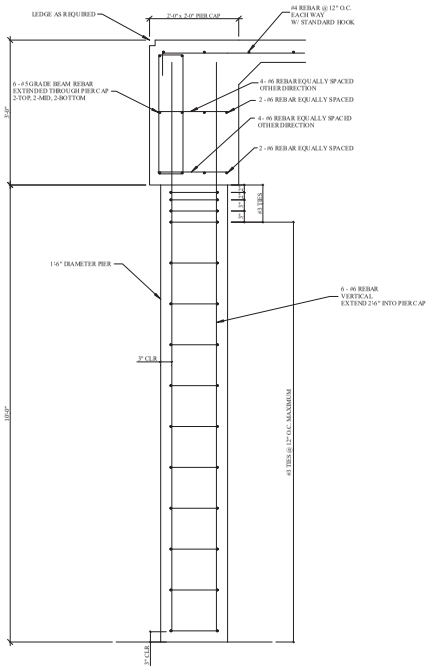
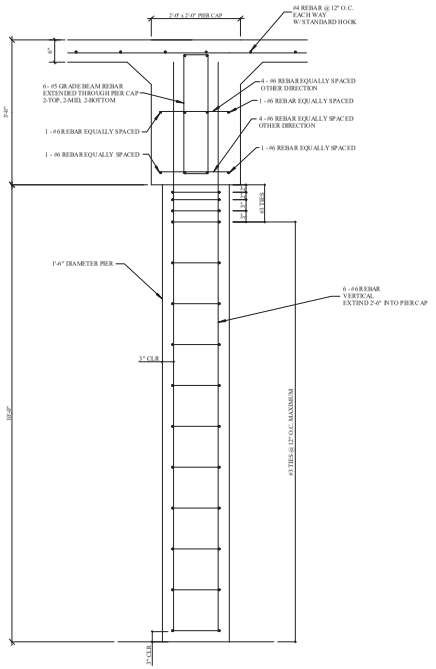
Bastrop County
Smithville Annex
911 SE Martin Luther King Dr.
Smithville, Texas
Foundation Details 1

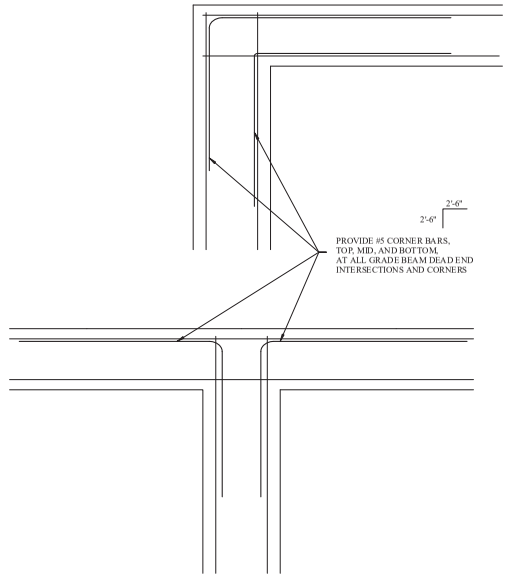
S2



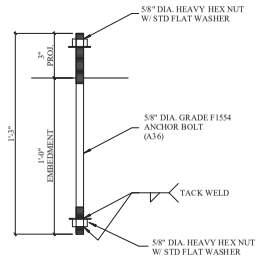
SECTION A-A
DRILLED PIER DETAIL
NOT TO SCALE



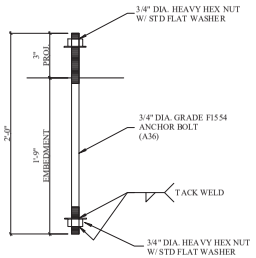
SECTION B-B
DRILLED PIER DETAIL
NOT TO SCALE



CORNER BAR DETAIL
NOT TO SCALE



5/8" DIA. ANCHOR BOLT DETAIL
NOT TO SCALE



3/4" DIA. ANCHOR BOLT DETAIL
NOT TO SCALE

January 10, 2025

Structural Engineer:
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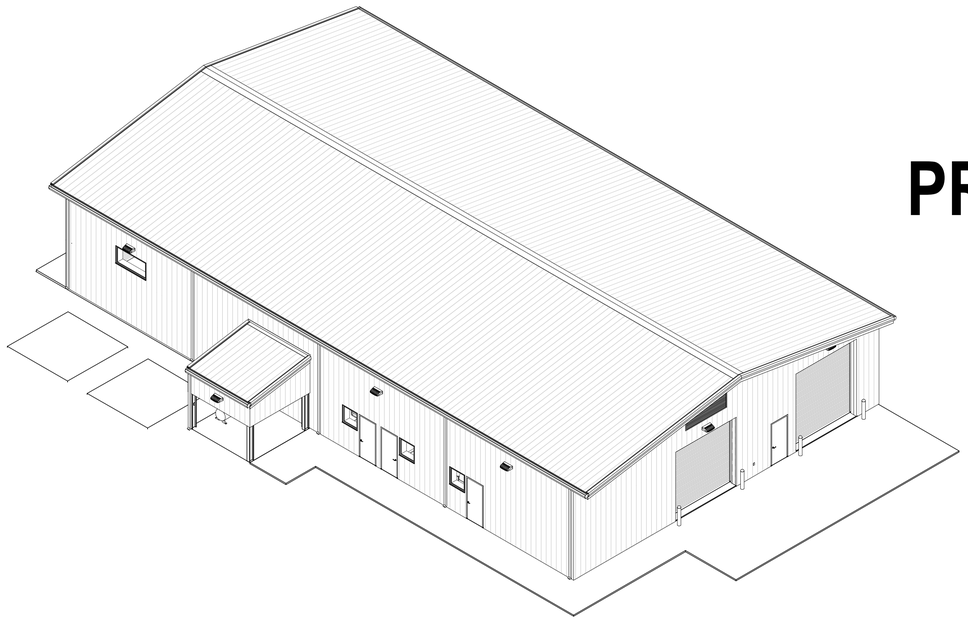
Victoria, TX 77901

Bastrop County
Smithville Annex
911 SE Martin Luther King Dr.
Smithville, Texas
Foundation Details 2

S3



BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY

911 SE Martin Luther King Blvd,
Smithville, TX 78957

CONSTRUCTION DOCUMENTS

05.12.2025

CLARA BECKETT
PRECINCT 2 COUNTY COMMISSIONER

DANA TOVAR
PRECINCT 2 ASSISTANT & SPECIAL PROJECTS COORDINATOR

TYRONE WASHINGTON
PRECINCT 2 R&B FOREMAN

KENNETH TRENCH
PRECINCT 2 R&B ASSISTANT FOREMAN

DARRELL WILLIAMSON
MECHANIC

PROJECT TEAM

ARCHITECT	**CASABELLA ARCHITECTS** 3821 JUNIPER TRACE, SUITE 104 AUSTIN, TEXAS 78738 JAIME BEAMAN, AIA	tel. 512.458.5700
CIVIL	**BEFCO** 485 N. JEFFERSON ST. LAGRANGE, TEXAS 78945	979.968.6474
MEP	**TEESI** 1301 S. CAPITAL OF TEXAS HWY SUITE B-325 AUSTIN, TEXAS 78746	512.328.2533
STRUCTURAL	**MUELLER, INC.** 1913 HUTCHENS AVE. BALLINGER, TEXAS 76821	800.527.1087

INDEX OF DRAWINGS

CasaBella ARCHITECTS
3821 JUNIPER TRACE | SUITE 104
AUSTIN TEXAS 78738
512.458.5700 | casabella-architects.com

REGISTERED ARCHITECT JAIME BEAMAN 8889 STATE OF TEXAS
05/12/2025

REVISIONS

NO.	DATE	DESCRIPTION	BY

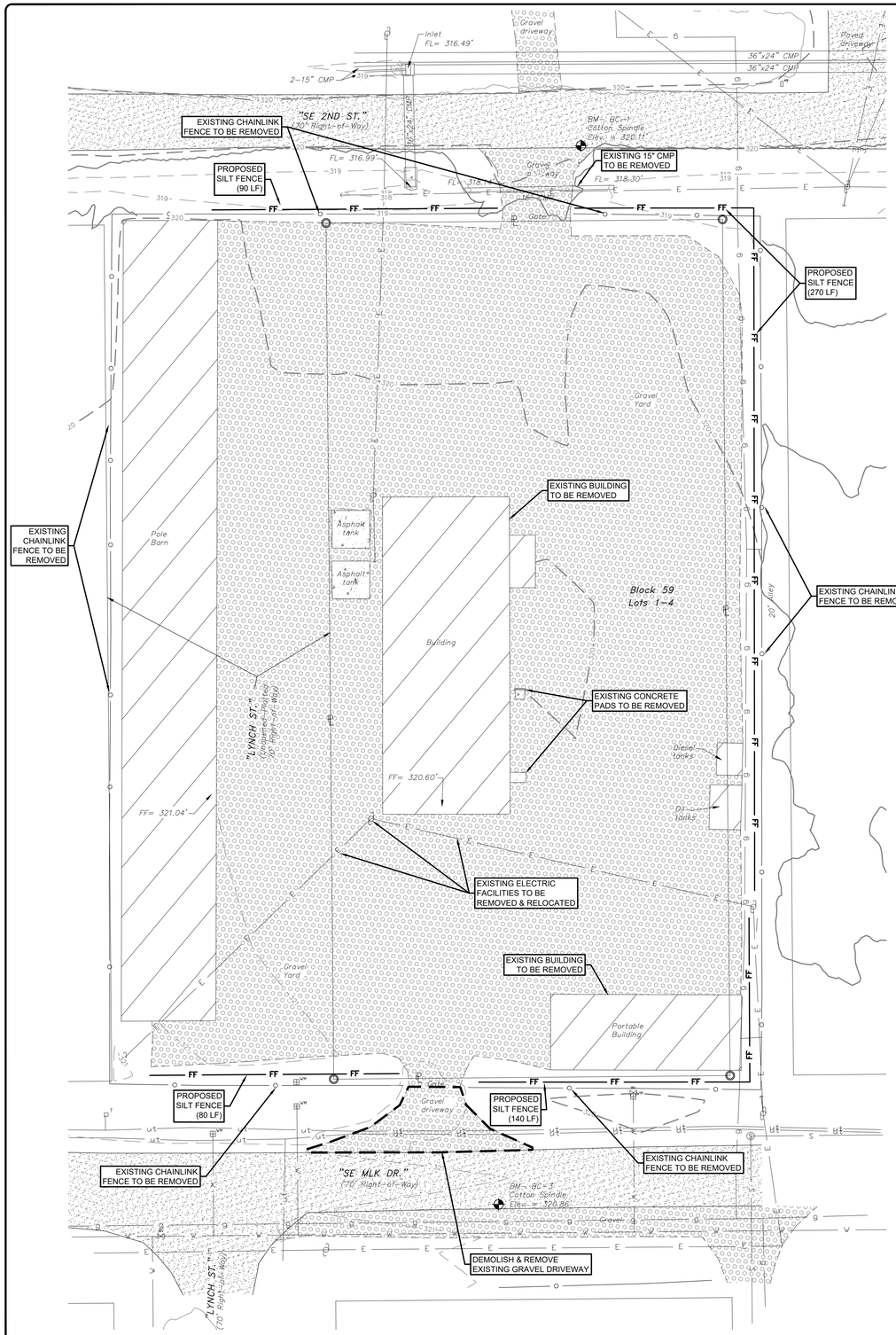
BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd, Smithville, TX 78957

PROJECT NUMBER:	202415
PROJECT PHASE:	CONSTRUCTION DOCUMENTS
DRAWN BY:	CBA
CHECKED BY:	CBA
ISSUE DATE:	05.12.2025

COVER SHEET

SHEET
A000

PLOTTED: 5/14/2025 2:57:50 PM



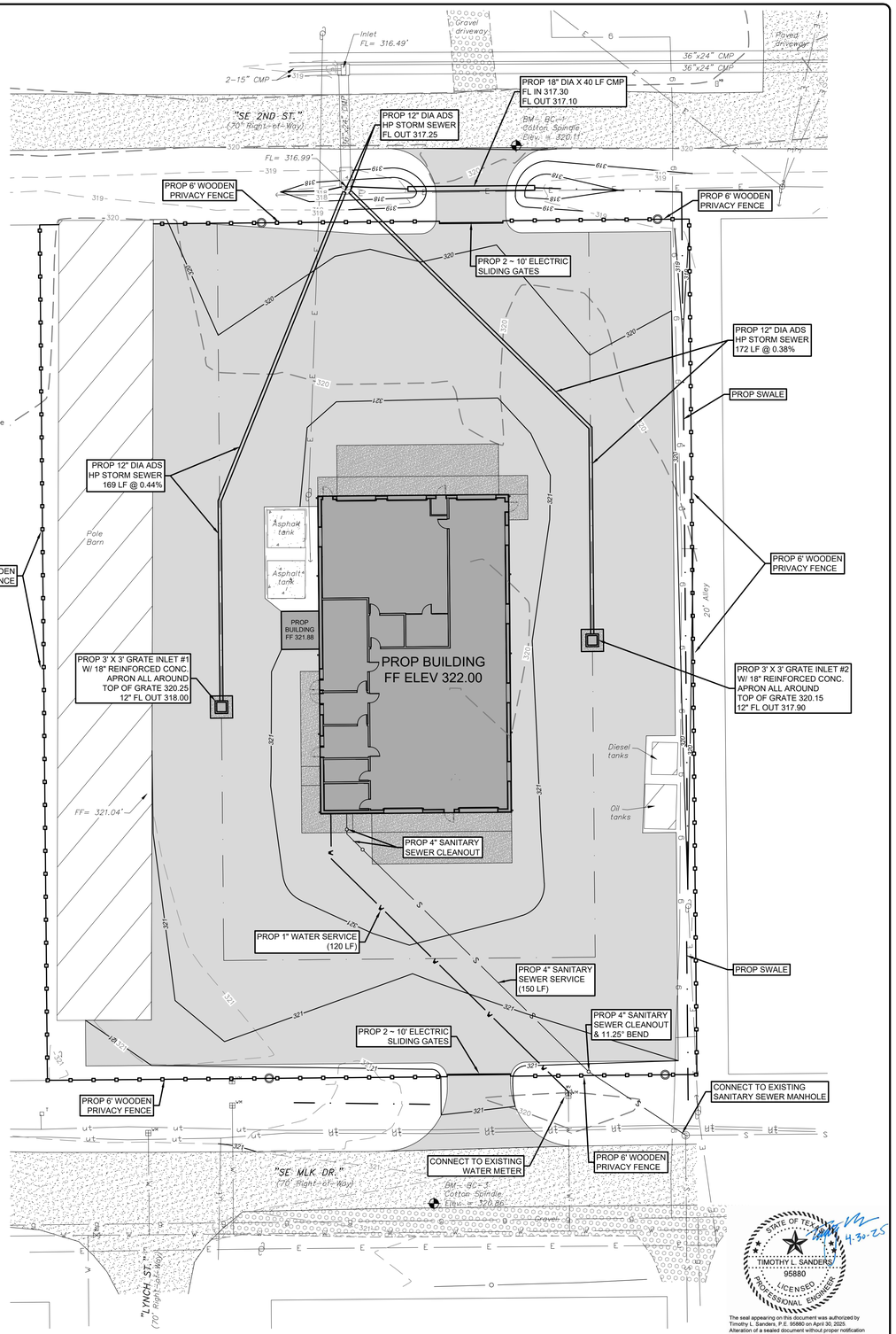
EXISTING LAYOUT

24" X 36"
GRAPHIC SCALE
0 20 40
10 30
SCALE: 1"=20'

LEGEND

- ◉ – 1/2" Iron rod found (or as noted)
- ◎ – 1/2" Iron rod set
- ⊡ – Concrete monument found
- ☼ – Cotton spindle set
- △ – Stone found
- – Benchmark
- E – Overhead electric line
- ue – Underground electric line
- T – Overhead telephone cable
- ut – Underground telephone cable
- TV – Overhead television cable
- U – Overhead utility line
- S – Sewer line
- FM – Sewer force main
- W – Water line
- g – Natural gas line
- WM – Water meter
- CV – Water valve
- IC – Irrigation control valve
- – Sprinkler head
- – Hose bib
- – Sign
- G – Gas meter
- – Propane tank
- – Utility Pole
- – Light pole
- – Guy wire
- – Transformer
- T – Telephone pedestal
- TV – Television pedestal
- – Storm sewer manhole
- – Storm sewer inlet
- – Fire hydrant
- W – Water well
- S – Sanitary sewer manhole
- – Sewer clean-out
- – Ground light
- MB – Mail box
- – Railroad crossing arm
- X – Wire fenceline
- – Chain link fence
- – Wood fence

- Proposed Building
- Proposed Asphalt Pavement
- Proposed Concrete Pavement
- Existing Gravel Pavement
- Existing Asphalt Pavement
- 320 – Proposed 1' Contour



PROPOSED LAYOUT

STATE OF TEXAS
TIMOTHY L. SANDERS
95880
LICENSED
PROFESSIONAL ENGINEER
4-30-25

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Texas Registered Engineering Firm F-2011

FIELD BOOK NO.----
S:_Projects\BASTROP COUNTY\24-9106 Smithville Precinct 2 Facility\Dwg\TLS 24-9106A SHEETS

BEFCO ENGINEERING, INC.
P. O. Box 615
LaGrange, Texas 78945
(979) 968-6474 TBPE F-2011

BASTROP COUNTY PRECINCT NO. 2 MAINTENANCE FACILITY IMPROVEMENTS

SMITHVILLE, TEXAS

REVISION:
1.
2.
3.

DRAWN BY: TLS
CHECKED BY: TLS

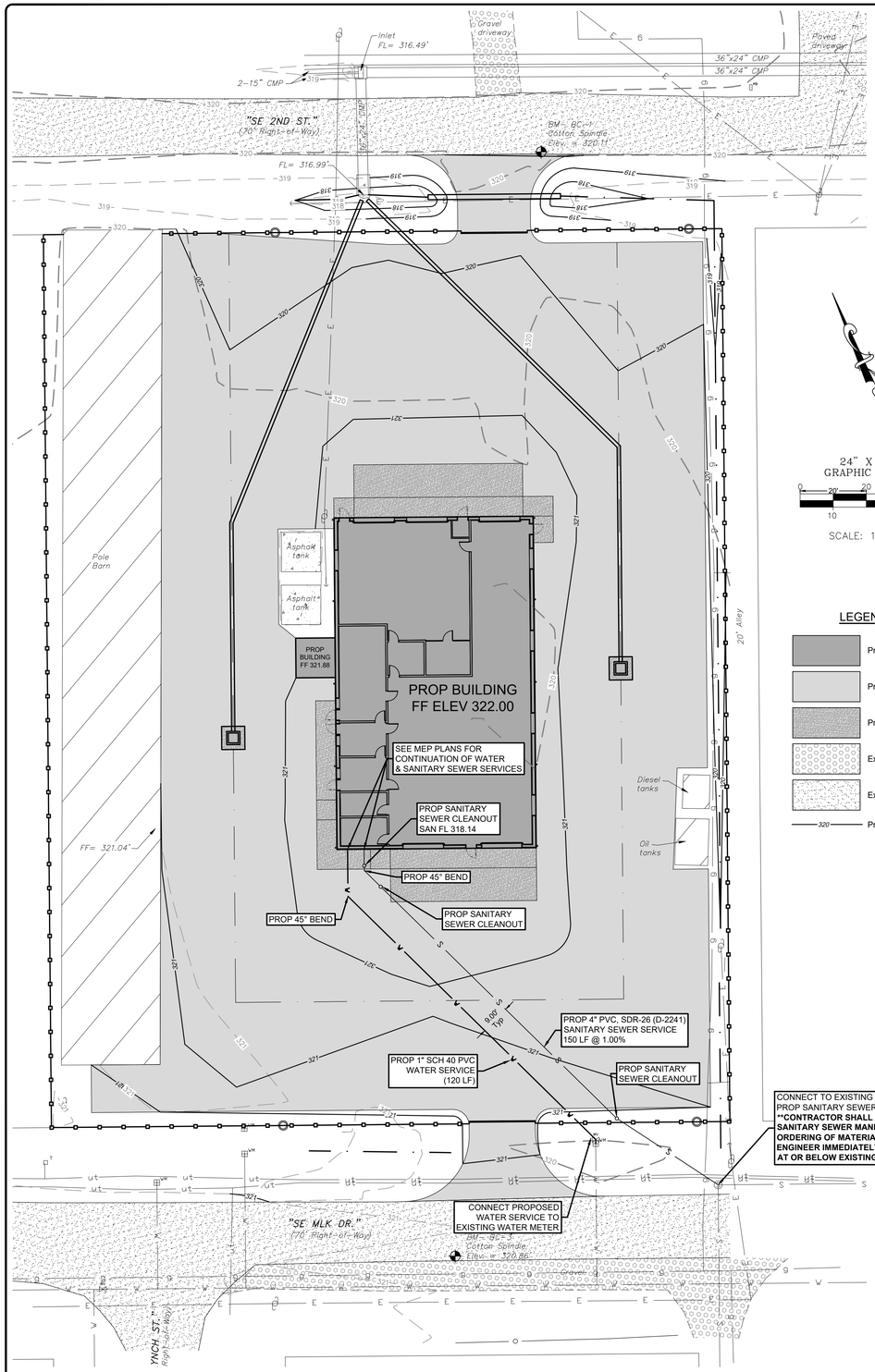
BEFCO JOB NO: 24-9106

PLOT SCALE 1" = 20'

SHEET TITLE
EXISTING & PROPOSED SITE LAYOUTS

DATE ISSUED: 04/30/25

SHEET
1
OF 8

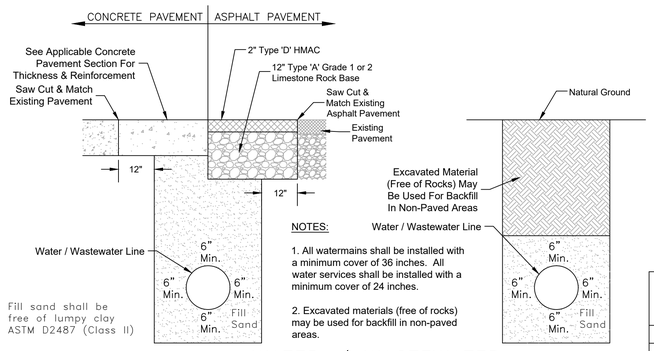


PROPOSED LAYOUT

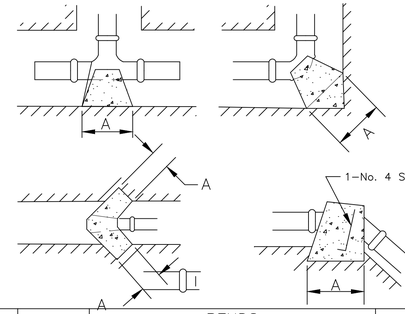
24" X 36"
GRAPHIC SCALE
0 20' 20 40
10 30
SCALE: 1"=20'

LEGEND

- Proposed Building
- Proposed Asphalt Pavement
- Proposed Concrete Pavement
- Existing Gravel Pavement
- Existing Asphalt Pavement
- 320 Proposed 1' Contour

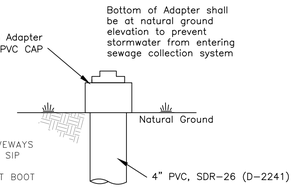


WATER / WASTEWATER
BEDDING & BACKFILL DETAIL
FOR PAVED & NON-PAVED AREAS
N.T.S.



PIPE SIZE	TEES		BENDS								PIPE SIZE	REDUCER	
			90°		45°		22 1/2°		VERTICAL				
	A	B	A	B	A	B	A	B	A	B		A	B
4"	21"	12"	24"	15"	18"	12"	12"	9"	12"	18"	2"-4"	12"	12"
6"	24"	21"	30"	24"	24"	18"	18"	12"	18"	18"	4"-6"	15"	12"
8"	39"	24"	42"	30"	30"	24"	24"	15"	24"	24"	6"-8"	18"	18"
10"	48"	30"	54"	36"	45"	24"	24"	21"	30"	24"	8"-10"	24"	18"

THRUST BLOCKS



NOTE:
CLEANOUTS THAT FALL IN DRIVEWAYS SHALL BE INSTALLED INSIDE A SIP INDUSTRIES NO. 6502 CAST IRON-TRAFFIC RATED CLEANOUT BOOT

SERVICE CLEAN-OUT DETAIL
N.T.S.

STATE OF TEXAS
TIMOTHY L. SANDERS
95880
LICENSED
PROFESSIONAL ENGINEER
4-30-25

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Texas Registered Engineering Firm F-2011

BEFCO ENGINEERING, INC.
P. O. Box 615
LaGrange, Texas 78945
(979) 968-6474 TBPE F-2011

BASTROP COUNTY PRECINCT NO. 2
MAINTENANCE FACILITY IMPROVEMENTS
SMITHVILLE, TEXAS

REVISION:
1.
2.
3.

DRAWN BY: TLS
CHECKED BY: TLS

BEFCO JOB NO:
24-9106

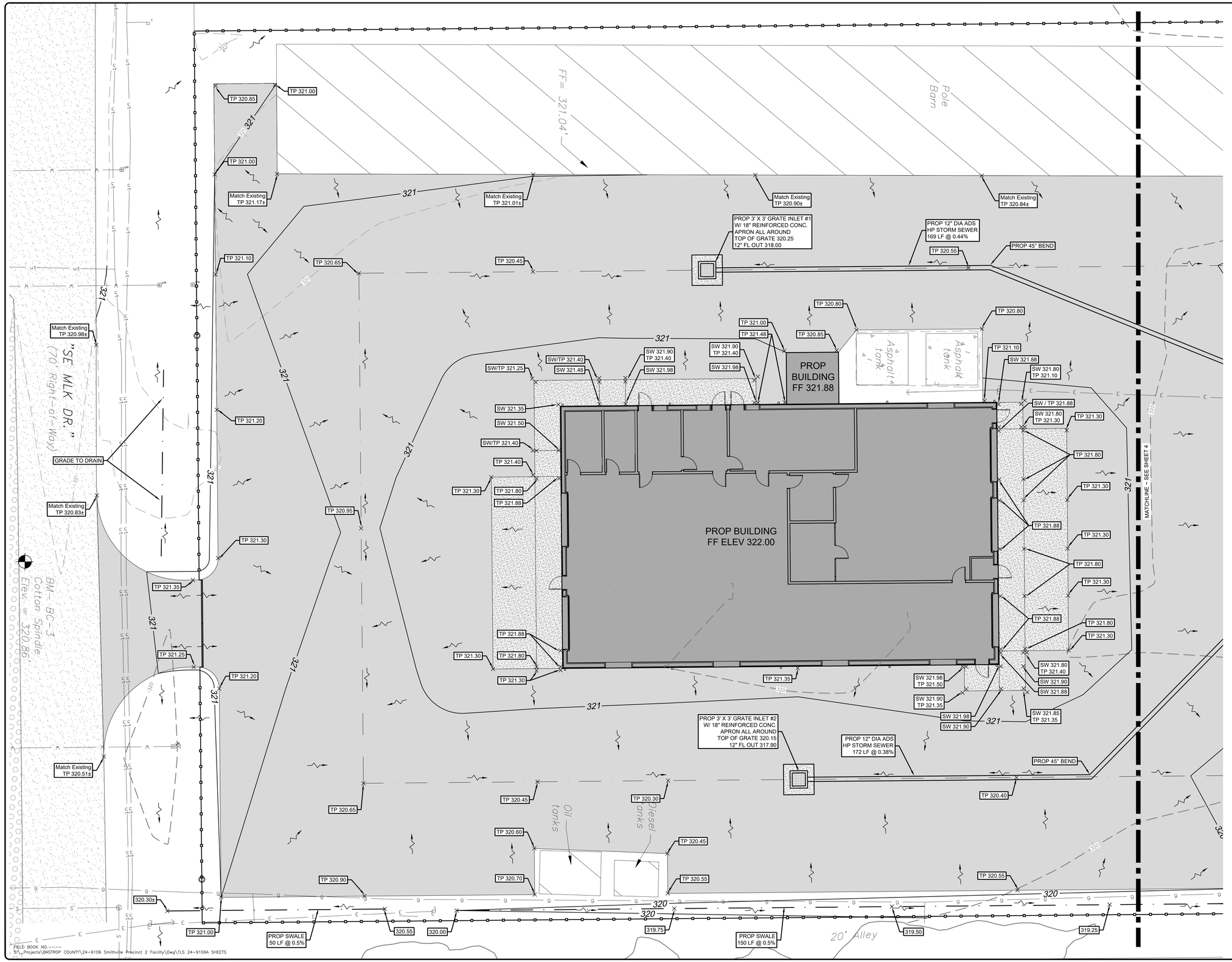
PLOT SCALE
1" = 20'

SHEET TITLE
WATER & SANITARY SEWER LAYOUT & DETAILS

DATE ISSUED: 04/30/25

SHEET
2
OF 8

FIELD BOOK NO.----
S:_Projects\BASTROP COUNTY\24-9106 Smithville Precinct 2 Facility\Dwg\TLS 24-9106A SHEETS



LEGEND

- Proposed Building
- Proposed Asphalt Pavement
- Proposed Concrete Pavement
- Existing Gravel Pavement
- Existing Asphalt Pavement
- 320 — Proposed 1' Contour
- Direction of Storm Water Runoff
- SW 329.10 — Proposed Top of Sidewalk
- TP 329.10 — Proposed Top of Pavement
- 329.10 — Proposed Top of Ground
- TC 329.10 — Proposed Top of Curb

24" X 36" GRAPHIC SCALE

0 5 10 15 20

SCALE: 1"=10'

BEFCO ENGINEERING, INC.
P. O. Box 615
LaGrange, Texas 78945
(979) 968-6474 TBPE F-2011

BASTROP COUNTY PRECINCT NO. 2 MAINTENANCE FACILITY IMPROVEMENTS

SMITHVILLE, TEXAS

REVISION:
1.
2.
3.

DRAWN BY: TLS
CHECKED BY: TLS

BEFCO JOB NO: 24-9106

PLOT SCALE 1" = 10'

SHEET TITLE
GRADING PLAN

DATE ISSUED: 04/30/25

SHEET
3
OF 8

STATE OF TEXAS
TIMOTHY L. SANDERS
95880
LICENSED PROFESSIONAL ENGINEER
4-30-25

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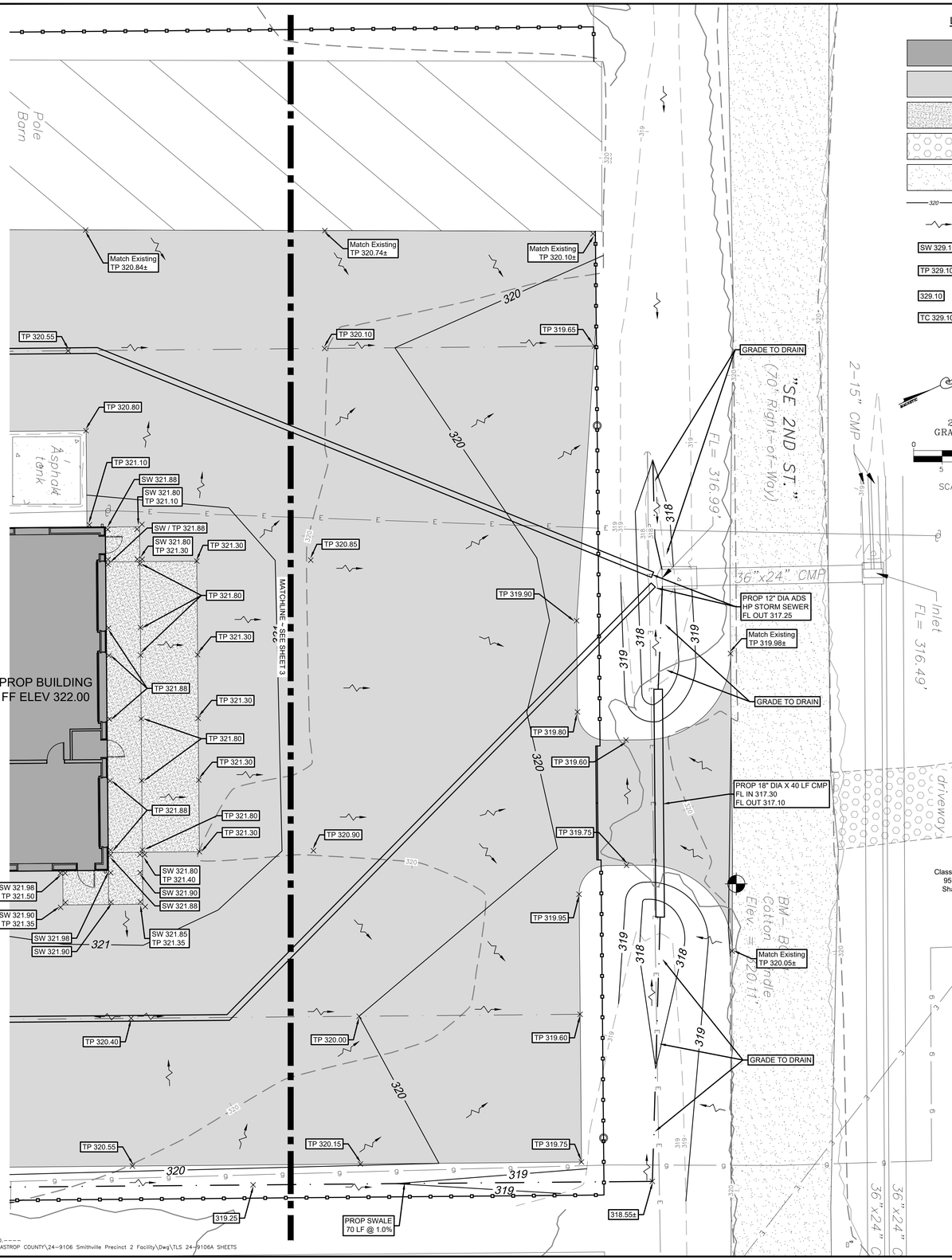
Texas Registered Engineering Firm F-2011



FIELD BOOK NO.----
S:_Projects\BASTROP COUNTY\24-9106 Smithville Precinct 2 Facility\Dwg\TLS 24-9106A SHEETS

LEGEND

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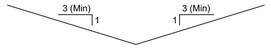
- TC 329.10 — Proposed Top of Curb

24" X 36" GRAPHIC SCALE

0 5 10 15 20

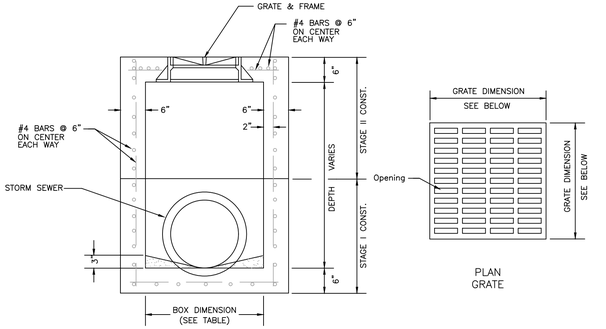
SCALE: 1"=10'

Side slopes may vary, but under no circumstances shall they be less than 3H:1V. All swales shall be lined with grass.



PROPOSED SWALE DETAIL

N.T.S.



PLAN
GRATE

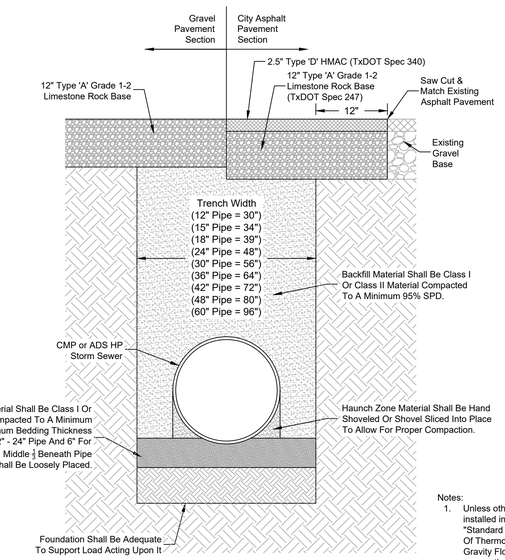
INLET NO.	GRATE TYPE**	GRATE DIMENSION	OPENING	BOX DIMENSION
1	V5934-1	34" X 34"	7/8" X 8"	36" X 36"
2	V5934-1	34" X 34"	7/8" X 8"	36" X 36"

**ALL GRATES AND FRAMES SHALL BE EAST JORDAN IRON WORKS HEAVY DUTY SQUARE DRAINAGE GRATES OR APPROVED EQUIVALENT (TRAFFIC LOADING)

Note: All grate inlets shall have an 18" wide concrete apron all around reinforced with #4 Bars Spaced 12" O.C.E.W.

BOX INLET WITH GRATE

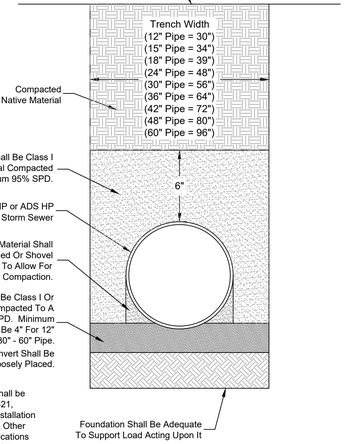
N.T.S.



CMP / ADS HP STORM SEWER DETAIL

UNDER PAVEMENT

N.T.S.



CMP / ADS HP STORM SEWER DETAIL

UNDER NATURAL GROUND

N.T.S.

Notes:
1. Unless otherwise noted, storm sewer shall be installed in accordance with ASTM D2321, "Standard Practice For Underground Installation Of Thermoplastic Pipe For Sewers And Other Gravity Flow Applications." Soil classifications are per the latest version of ASTM D2321.
2. If necessary, measures should be taken to prevent migration of native fines into backfill material.
3. Contractor shall provide documentation for material specification to Owner and Engineer.
4. All backfill to be compacted in 6" lifts.

STATE OF TEXAS
TIMOTHY L. SANDERS
95880
LICENSED
PROFESSIONAL ENGINEER
4-30-25

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Texas Registered Engineering Firm F-2011

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P. O. Box 615
LaGrange, Texas 78945
(979) 968-6474 TBPE F-2011

BASTROP COUNTY PRECINCT NO. 2 MAINTENANCE FACILITY IMPROVEMENTS

SMITHVILLE, TEXAS

REVISION:
1.
2.
3.

DRAWN BY: TLS
CHECKED BY: TLS

BEFCO JOB NO: 24-9106

PLOT SCALE 1" = 20'

SHEET TITLE
GRADING PLAN, PAVING & DRAINAGE DETAILS

DATE ISSUED: 04/30/25

SHEET
4
OF 8

GENERAL SITE PLAN NOTES

1. Location of underground utilities is approximate and are based on visible evidence, Texas 811 locates (if marked), and utility record drawings. Other underground service lines may exist on site, with no record of their location.

2. Contractor shall verify depth and location of water, sewer, gas, and other buried utilities by notifying proper utility entity and Texas 811 a minimum of 48 hours prior to needing locator service. The contractor agrees to be fully responsible for any and all damages which may occur as a result of his failure to exactly locate underground utilities.

3. The contractor shall be responsible for furnishing all material and labor to construct the project as shown and described in the construction documents in accordance with the appropriate approving authorities, specifications and requirements. All material and construction to conform to City of Smithville construction standards, specifications, and approved products list including private improvements unless otherwise noted.

4. Contractor shall contact all franchise utility companies to have them locate existing utilities prior to construction. The contractor shall coordinate the exact location and depth of all franchise utility services and any required relocation and/or extensions. Proposed services shown on the plans, if shown, are conceptual.

5. The Contractor shall be responsible for verifying locations, elevations, and dimensions of adjacent and/or conflicting utilities sufficiently in advance of construction in order that adjustments can be made to provide adequate clearances. The contractor shall preserve and protect public and private utilities at all times during construction. Any damage to utilities resulting from contractor's operations shall be restored at their expense. The engineer shall be notified when proposed facility grades conflict with existing utility grades.

6. The contractor shall immediately repair or replace any physical damage to private property, including, but not limited to fences, walls, pavement, grass, trees, lawn sprinkler and irrigation systems at no cost to the owner. This work shall be subsidiary to the contract (unless otherwise noted) and is not a separate pay item.

7. The contractor shall remove surplus material from the project area. This work shall be subsidiary to the contract and is not a separate pay item.

8. Any discrepancies on the drawings shall be immediately brought to the attention of the architect and engineer before commencing work. No field changes or deviations from design are to be made without prior approval of the owner and notification to the engineer. No consideration will be given to change orders for which the owner and engineer were not contacted prior to construction of the affected item.

9. All copies of compaction, concrete and other required test results are to be sent to the owner and design engineer of record directly from the testing agency. Contractor shall coordinate directly with the testing agency for testing schedule.

10. Contractor shall verify benchmarks and datum prior to commencing construction or staking of improvements.

11. The contractor is responsible for coordinating relocation and installation of franchise utilities and other site private utilities necessary for on and off site construction.

12. THE CONTRACTOR SHALL TOPSOIL, SOD AND FERTILIZE ALL AREAS DISTURBED BY CONSTRUCTION. The contractor shall provide whatever measures are needed including temporary irrigation to ensure full coverage of grassing. Unless otherwise noted, private lawn areas and parkways in front of private lawn areas disturbed by construction shall be replaced with block sod of a similar grass to that existing. All sodded areas shall receive six (6) inches of topsoil. Any areas disturbed for any reason prior to final acceptance of the job shall be corrected by the contractor at no additional cost to the owner.

13. The contractor shall be responsible for the control of dust and dirt rising and scattering in the air during construction and shall provide water sprinkling or other suitable methods of control. The contractor shall comply with all governing regulations pertaining to environmental protection.

14. The contractor must provide and maintain a copy of a storm water pollution prevention plan with all conditions, attachments, exhibits, and permit modifications in good condition at the construction site. The complete SWPPP must be made readily available at the time of an on-site inspection to the executive director; a federal, state, or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; and the operator of a municipal separate storm sewer (ms4) receiving discharges from the site.

15. Any entity that meets the definition of a "primary operator" for a large construction activity (five or more acres) shall be responsible for completing and submitting a Notice Of Intent (NOI) and a Notice Of Termination (NOT) with the Texas Commission on Environmental Quality (TCEQ).

16. All contractors and subcontractors providing services related to the SWPPP shall sign a contractor certification statement acknowledging their responsibilities as specified in the SWPPP.

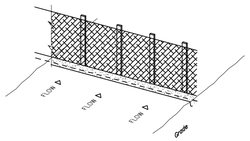
17. A copy of the SWPPP, including contractor certifications and any revisions, shall be submitted to the city, owner and engineer by the contractor and filed with the construction plans, and shall be retained on-site during construction.

18. If applicable, a Notice Of Termination (NOT) shall be submitted to TCEQ by any primary operator within 30 days after all soil disturbing activities at the site have been completed and a uniform vegetative cover of the density of 70% has been established on all unpaved areas and areas not covered by structures, a transfer of operational control has occurred, or the operator has obtained alternative authorization under a different permit. A copy of the NOT shall be provided to the operator of any MS4 receiving discharge from the site.

19. Upon completion of construction, contractor shall provide as-built plans identifying all deviations or variations of original plans. As-built plans are subsidiary to all other bid items and shall not be paid for as a separate line item.

20. Contractor shall be responsible for all construction staking. Construction staking shall be performed by a Registered Professional Land Surveyor in the State of Texas. Cad files can be made available, however, sealed hard copies prevail.

21. All paving, grading, and earthwork to be constructed according to recommendations provided in geotechnical report and all addenda and are to be incorporated into these construction drawings by reference.



FABRIC FENCE DETAIL

GRADING & DRAINAGE NOTES

1. All excavation is unclassified and shall include all materials encountered. Unless otherwise shown, unusable excavated material and all waste resulting from site clearing and grubbing shall be disposed of off site by the grading contractor at his expense.

2. The contractor shall clear and grub the site, proof roll, and place, compact, and moisture condition all fill per the project geotechnical engineer's specifications. The fill material to be used shall be approved by the geotechnical engineer prior to placement.

3. Trees shall be removed as required for construction of the project. No additional trees shall be removed or damaged without prior authorization of the owner or owner's representative. Existing trees shall be preserved whenever possible.

4. After placement of subgrade and prior to placement of pavement, contractor shall test and observe pavement areas for evidence of ponding. All areas shall adequately drain towards the intended structure to convey storm runoff. Contractor shall immediately notify owner and engineer if any discrepancies are discovered.

5. Slopes on accessible routes may not exceed 1:20 unless designed as a ramp with maximum cross slope of 2%.

6. The maximum slope of a ramp in new construction is 1:12. The maximum rise for any ramp run is 30 inches with handrails. Typical is 6 inches without handrails.

7. Ground surfaces along accessible routes shall be stable, firm, and slip resistant.

8. Contractor to match existing grade, gutter, and pavement when tying into existing roadways or pavement.

9. Contractor to coordinate final perimeter building grades with final architectural plans and owner requirements.

10. Contractor to ensure positive drainage away from the building foundation.

11. Elevations shown are finished grades including any gravel, topsoil, grass, etc.

12. All slopes within accessible parking areas shall not exceed 2.0% in all directions. All slopes along accessible routes shall not exceed 5.0% longitudinally and 2.0% in cross-slope.

13. Reference geotechnical report and all addenda for all building pad, earthwork, subgrade, and pavement recommendations.

14. Roof drainage to discharge at grade by downspout where indicated. Reference architectural plans for details.

15. Slopes shown are approximate.

16. All disturbed areas to be revegetated that are not covered by pavement, buildings, or gravel.

17. A minimum 5'x5' landing with maximum slopes of 2% in all directions to be provided at all door locations.

18. Reference structural plans and geotechnical engineering report for select fill required under the building pads.

19. Fill placed on existing slopes steeper than 6:1 shall be benched into the existing slopes in such a manner as to provide a minimum bench width of 5 feet. This should provide good contact between existing soils and new fill materials and reduce potential sliding planes.

20. The contractor shall be responsible for preparing and implementing a trench protection plan for all open trench excavation.

21. All signs, pavement markings, and other traffic control devices shall conform to the "Texas Manual on Uniform Traffic Control Devices".

22. Contractor shall coordinate with the utility companies for any required utility adjustments prior to paving. Existing private utilities requiring adjustment to be made by contractor prior to paving.

23. Contractor to install construction joints in concrete pavement at all pc's and as convenient to phasing of pours, with expansion joints a maximum of every 60 feet in both directions and sawed dummy joints a maximum of every 15 feet in both directions. Reference structural plans for joint requirements at building.

24. Contractor to submit a jointing plan to the engineer and owner prior to the beginning of any concrete paving work.

25. Traffic control devices shall be installed according to the current approved TXDOT requirements.

26. All pavement striping color to be approved by owner.

27. All dimensions are to face of curb / edge of pavement unless noted otherwise.

28. Any firelane markings required shall be coordinated with City of Smithville Fire Marshal.

29. Where new pavement and sidewalk ties to existing pavement, connection shall be doweled into existing.

EROSION CONTROL NOTES:

1. The contractor shall maintain adequate site drainage during all phases of construction. The contractor shall use silt fences (or other methods approved by the engineer and city) as required to prevent silt and construction debris from flowing onto adjacent properties. Contractor shall comply with all applicable federal, state, or local erosion, conservation, and siltation requirements. Contractor shall remove all temporary erosion control devices upon completion of permanent drainage facilities and the establishment of a stand of grass or other growth to prevent erosion. Contractor is responsible for filing an NOI and a NOT with the TCEQ, if applicable. Contractor is solely responsible for all mandated SWPPP record keeping and reporting.

2. Erosion control devices shown on the plan are recommended to be installed prior to commencing construction. Best management practices (BMP's) shown are suggestions only. Contractor is solely responsible for BMP selection, implementation, and maintenance.

3. Contractor shall provide adequate temporary erosion control devices to prevent erosion on the project site or migration of silt from the site until permanent stabilization is achieved. Install devices to minimize runoff water from circumventing the controls.

4. Contractor shall inspect erosion control devices after each rain. When silt reaches a depth of 1', remove and dispose of in such a manner as to not create a siltation problem.

5. Alternate methods of erosion control such as interceptor or diversion dikes or swales, sedimentation basins, etc.,may be allowed with prior approval of Engineer. Submit details for review.

6. When site is completely stabilized, erosion control structures shall be removed and disposed of in an approved manner.

7. Posts which support the silt fence shall be installed on a slight angle toward the anticipated runoff source.

8. The toe of the silt fence shall be trenched in with a spade or mechanical trencher, so that the downslope face of the trench is flat and perpendicular to the line of flow.

9. The trench should be a min. of 6" deep and 6" wide to allow for the silt fence to be laid in the ground and backfilled.

10. Silt fence should be securely fastened to each steel support post or to woven wire, which is in turn attached to the steel fence posts.

WATER AND SANITARY SEWER NOTES

1. Contractor shall coordinate water and sanitary sewer tie-in's with City of Smithville Water / Sewer Department. Contractor shall verify location, depth and size of existing tie-in's prior to construction.

2. The contractor shall verify all dimensions shown, coordinating the horizontal and vertical location of all utility services entering the building and/or crossing other utilities.

3. All water taps, meter setups, and wastewater taps shall be coordinated by contractor with City of Smithville Water / Sewer Department. Contractor will make all installations.

4. All main water line shall maintain a minimum cover of 36 inches. Service lines shall maintain a minimum of 24 inches of cover. Wastewater service cover will be as shown on the plans. Tracer wire, twelve (12) gauge (minimum), or approved equivalent shall be provided for both water and wastewater lines and shall be brought up in meter box and valve boxes.

5. Contractor to sequence construction as to avoid interruption of water or wastewater service to surrounding areas.

6. Contractor to replace grass and restore property to original condition in all disturbed areas.

7. Existing manhole tops, cleanouts, valve boxes, etc. are to be adjusted as required to match proposed grades.

8. Contractor shall contact necessary franchise utility companies prior to construction, in order to locate and/or disconnect services.

9. The contractor shall be responsible for preparing and implementing a trench protection plan for all open trench excavation over 5 feet.

10. All plumbing construction shall be per city building code.

11. All gravity utilities to be constructed downstream to upstream. Tie in elevations shall be verified with the plans.

12. Cleanouts for services are required at all wyes, bends, and no greater than 100 feet. Double cleanouts to be provided at building sewer connection.

13. Services to be extended to and plugged 5' from the building.

14. Reference geotechnical report for utility trench / building foundation interface.

15. Contractor to verify all line sizes and depths prior to construction and ordering materials. Sizes of existing lines have not been verified below existing grade.

16. Reference architectural plans for final coordination on utility connections.

MISCELLANEOUS NOTES:

1. Proposed improvement are located in designated Zone "X" per FEMA Flood Insurance Rate Map No.'s 48021C0395F dated May 9, 2023.

2. BEFCO Engineering, Inc. is not responsible for the means and methods employed by the contractor to implement demolition of this site. These plans indicate the known objects on the site that are to be demolished and removed from the site. BEFCO Engineering, Inc. does not warrant or represent that the plans show all improvements and utilities, that the improvements and utilities are shown accurately, or that the utilities shown can be removed. The contractor is responsible for performing his own site investigation to scope his work and to confirm with the owners of improvements and utilities the ability and process for the removal of their facilities. The plans are intended to give a general guide to the contractor. The goal of the demolition is to leave the site in a state suitable for the construction of the proposed project. Removal or preservation of improvements, utilities, etc. to accomplish this goal are the responsibility of the contractor. Contractor shall comply with all local and state regulations regarding demolition and disposal of the materials off-site and obtain required permits.

3. All existing utilities shall remain unless otherwise noted. Existing location of irrigation lines, if any, are unknown and may require relocation.

4. Contractor to verify location and elevation of existing utilities prior to demolition.

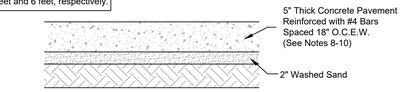
5. Contractor is responsible for damage to existing utilities, irrigation lines, pavement, etc. to remain resulting from demolition activities and repair at his own expense.

6. Contractor is responsible for obtaining all permits required for demolition and disposal.

7. Perimeter erosion control devices shall be in place prior to demolition.

8. Unless otherwise noted, Contractor shall be responsible for the disposal of all removed material.

Spacing of expansion and control joints for sidewalk shall be 30 feet and 6 feet, respectively.



SIDEWALK PAVEMENT DETAIL

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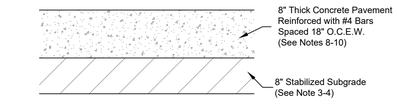

CONCRETE PAVEMENT DETAIL

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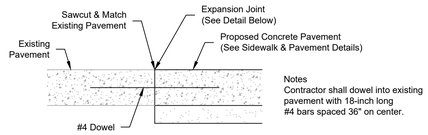

TYPICAL CONCRETE PAVEMENT TIE–IN DETAIL

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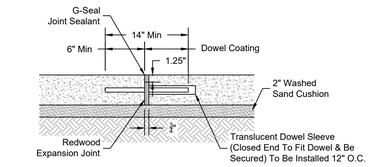


EXPANSION JOINT DETAIL

N.T.S.

PAVING NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH 2014 TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES AND **DESIGN RECOMMENDATIONS IN DECEMBER 18, 2024 GEOTECHNICAL INVESTIGATION REPORT PREPARED BY TSI LABORATORIES, INC.**

2. ALL OF THE TOPSOIL (SOIL WITH HIGH ORGANIC CONTENT, E.G. >4%), TREE ROOTS, VEGETATION, WET SOILS, AND ANY SOFT OR LOOSE SOILS MUST BE REMOVED FROM THE PROPOSED PAVEMENT AREAS. EXISTING SOILS SHALL BE UNDERCUT A MINIMUM OF 6 INCHES OR AS REQUIRED. UNDERCUT SHALL EXTEND A MINIMUM OF 1 FOOT BEYOND PROPOSED EDGE OF LIMESTONE ROCK BASE. STRIPPED MATERIALS MAY EITHER BE WASTED OR STOCKPILED FOR LATER USE. ANY RE-USED EXCAVATED SOILS MUST BE FREE OF ROOTS AND DEBRIS AND MEET MATERIAL REQUIREMENTS OF THE INTENDED USE. ANY EXCESS MATERIAL SHALL BE DISPOSED OF OFFSITE.

3. PRIOR TO THE ADDITION OF FILL OR STABILIZATION OF SUBGRADE IN PARKING AREAS, EXPOSED SUBGRADE SHALL BE PROOF-ROLLED WITH EQUIPMENT CAPABLE OF PROVIDING A MINIMUM 20-TON WHEEL LOAD, TYPICALLY, A FULLY LOADED 12-YARD TANDEM AXLE DUMP TRUCK OR A FULLY LOADED 2,000 GALLON WATER TRUCK. ENTIRE AREA SHALL BE ROLLED TO CHECK SOFT AND/OR PUMPING SOILS. IF SOFT OR PUMPING AREAS ARE OBSERVED, THESE AREAS SHALL BE EXCAVATED TO FIRM SUBGRADE AND REPLACED WITH COMPACTED AND TESTED DRY SOIL. ***A GEOTECHNICAL REPRESENTATIVE SHALL BE PRESENT DURING PROOF-ROLL. IT SHALL BE IMPERATIVE TO DETERMINE THE IN-PLACE CONDITION OF THE PARKING LOT PRIOR TO SUBGRADE STABILIZATION AND PLACEMENT OF BASE MATERIALS.***

SELECT FILL, NATIVE SOILS, AND BACKFILL SHALL BE PLACED IN HORIZONTAL LOOSE LIFTS OF NOT MORE THAN 8 INCHES IN THICKNESS. RE-USE OF EXISTING MATERIAL MAY REQUIRE SOME WETTING OR DRYING TO PRODUCE THE NECESSARY MOISTURE CONTENT AT THE TIME OF COMPACTION. APPROPRIATE LABORATORY TESTS SUCH AS PROCTOR MOISTURE-DENSITY TESTS SHOULD BE PERFORMED ON SAMPLES OF FILL MATERIAL. FIELD MOISTURE-DENSITY TESTS AND VISUAL OBSERVATION OF LIFT THICKNESS AND MATERIAL TYPES SHOULD BE PERFORMED DURING COMPACTION OPERATIONS TO VERIFY THE CONSTRUCTION SATISFIES MATERIAL AND COMPACTION REQUIREMENTS AS PRESENTED IN THE GEOTECHNICAL REPORT.

FILL MATERIALS SHOULD NOT BE PLACED ON SOILS RECENTLY SUBJECTED TO PRECIPITATION OR SATURATION. ALL WET SOILS SHOULD BE REMOVED OR ALLOWED TO DRY PRIOR TO CONTINUATION OF FILL PLACEMENT OPERATIONS. IMPORTED FILL MATERIALS SHOULD NOT CONTAIN WET MATERIALS AT THE TIME OF PLACEMENT. IF ANY PROBLEMS ARE ENCOUNTERED DURING EARTHWORK OPERATIONS OR IF SITE CONDITIONS DIFFER FROM THOSE ENCOUNTERED DURING THE SUBSURFACE EXPLORATION, THE GEOTECHNICAL ENGINEER SHOULD BE NOTIFIED IMMEDIATELY TO DETERMINE THE EFFECT ON RECOMMENDATIONS EXPRESSED IN THE REPORT.

SELECT FILL AND BACKFILL IMPORTED TO THE SITE SHOULD BE CLASSIFIED ACCORDING TO THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) AS SM, SC, GM, OR GC, AND SHOULD MEET THE FOLLOWING CRITERIA:

PERCENT PASSING THE NO. 4 SIEVE:	50% TO 80% (20% TO 50% GRAVEL)
PERCENT PASSING THE NO. 200 SIEVE:	20% TO 50%
PI OF SOIL PASSING THE NO. 40 SIEVE:	4 TO 20
MAXIMUM SIZE OF GRAVEL OR ROCK FRAGMENTS:	3 INCHES IN ANY DIMENSION

ALL GENERAL / UTILITY FILL SHALL BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 95% BASED ON THE MAXIMUM DRY UNIT WEIGHT AS DETERMINED BY THE STANDARD PROCTOR METHOD (ASTM D 698). MOISTURE CONTENT SHALL BE MINIMUM OPTIMUM MOISTURE CONTENT AT THE TIME OF COMPACTION.

4. THE SUBGRADE SHALL BE TREATED WITH CEMENT OR FLY ASH IN ACCORDANCE WITH TXDOT 2014 STANDARD SPECIFICATIONS ITEM 265 A MINIMUM OF 18 INCHES BEYOND THE EDGE OF ASPHALT PAVEMENT. THE AMOUNT OF CEMENT OR FLYASH SHOULD BE DETERMINED FOR THE SUBGRADE SOILS BY CONDUCTING LABORARTORY TESTS ON THE SUBGRADE ONCE FINAL SUBGRADE ELEVATION HAS BEEN ESTABLISHED AT THE TIME OF CONSTRUCTION. FOR PLANNING AND ESTIMATING PURPOSES, SIX PERCENT (6%) CEMENT OR FLY ASH BY DRY WEIGHT IS RECOMMENDED. SUBGRADE SHOULD BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY OF AN ASTM D-698 STANDARD PROCTOR AT A MOISTURE CONTENT WITHIN TWO PERCENT OF OPTIMUM (-2 TO +2). TRAFFIC SHOULD BE KEPT OFF THE TREATED SUBGRADE FOR ABOUT 7 DAYS TO FACILITATE CURING OF SOIL-CHEMICAL MIXTURE. IN ADDITION, THE SUBGRADE IS NOT SUITABLE FOR HEAVY CONSTRUCTION TRAFFIC PRIOR TO PAVING.

5. LIMESTONE ROCK BASE SHALL MEET THE REQUIREMENTS OF TXDOT 2014 STANDARD SPECIFICATIONS ITEM 247, TYPE A, GRADE 1-2. MAXIMUM FLEXIBLE BASE LOOSE LIFT THICKNESS SHALL BE 9 INCHES. THE BASE MATERIAL SHOULD BE COMPACTED TO A MINIMUM OF 100 PERCENT OF THE MAXIMUM DRY DENSITY AS PER THE TEX 113E PROCTOR METHOD OR 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DEFINED BY AN ASTM D-1557 MODIFIED PROCTOR TO WITHIN TWO (2) PERCENTAGE POINTS OF OPTIMUM AS DEFINED BY THE SELECTED PROCTOR METHOD.

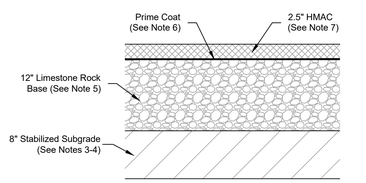
6. APPLICATION OF PRIME COAT SHALL BE IN ACCORDANCE WITH TXDOT SPECIFICATION ITEMS 310. PRIME COAT SHALL BE MC-30 WITH AN APPLICATION RATE OF 0.20 GAL / SY.

7. ASPHALTIC CONCRETE SURFACE COURSE SHALL BE PLANT MIXED, HOT LAID TYPE D (FINE GRADED SURFACE COURSE) MEETING TXDOT 2014 STANDARD SPECIFICATIONS ITEM 340. HMAC SHALL BE COMPACTED TO WITHIN AN AIR VOID RANGE OF 5 TO 9 PERCENT CALCULATED USING THE MAXIMUM THEORETICAL SPECIFIC GRAVITY MIX MEASURED BY TXDOT TEX-227-F. THE ASPHALT CEMENT CONTENT BY PERCENT OF TOTAL MIXTURE WEIGHT SHALL BE WITHIN ± 0.5 PERCENT ASPHALT CEMENT FROM THE JOB MIX DESIGN.

8. PORTLAND CEMENT CONCRETE MIX SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI FOR ALL APPLICATIONS. THE MATERIALS AND PROPERTIES OF REINFORCED CONCRETE PAVEMENT SHALL MEET APPLICABLE REQUIREMENTS IN THE ACI MANUAL OF CONCRETE PRACTICE.

9. REINFORCING STEEL SHALL CONSIST OF #4 BARS SPACED 18 INCHES ON CENTER EACH WAY AND LOCATED IN TOP HALF OF CONCRETE SECTION WITH A MINIMUM OF 2 INCHES OF COVER. AT CONSTRUCTION JOINTS, 14-INCH LONG DOWELS SHALL BE SPACED AT 12 INCHES ON CENTER.

10. IF SAW CUT, CONTROL JOINTS SHOULD BE CUT WITHIN 6-12 HOURS OF CONCRETE PLACEMENT. SAW CUT JOINTS SHOULD BE AT LEAST 1/4 OF SLAB THICKNESS. CONTROL JOINTS SHOULD BE SPACED AT ABOUT THIRTY (30) TIMES THE THICKNESS OF THE CONCRETE PAVEMENT. FURTHER, ACI RECOMMENDS A MAXIMUM CONTROL JOINT SPACING OF 12.5-FOOT FOR 5-INCH THINK PAVEMENTS AND MAXIMUM CONTROL JOINT SPACING OF 15-FOOT FOR 6-INCH OR THICKER PAVEMENTS. DOWELS AT EXPANSION JOINTS SHALL BE 3/4" SMOOTH BARS, 14 INCHES IN LENGTH WITH 6-INCH EMBEDMENT, WITH ONE END TREATED TO SLIP, AND SPACED 12" O.C.



ASPHALT PAVEMENT DETAIL

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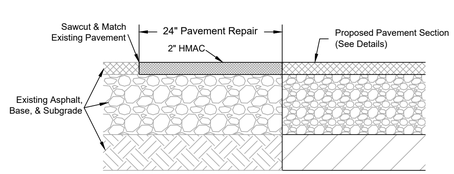

ASPHALT PAVEMENT TIE–IN DETAIL

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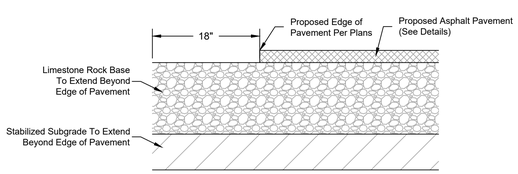


ASPHALT EDGE OF PAVEMENT DETAIL

N.T.S.

ASPHALT PAVEMENT WORK SHALL BE PERFORMED BY OTHERS.

STATE OF TEXAS
TIMOTHY L. SANDERS
95880
LICENSED
PROFESSIONAL ENGINEER
4.30.25

The seal appearing on this document was authorized by Timothy L. Sanders, P.E. 95880 on April 30, 2025. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.

Texas Registered Engineering Firm F-2011

BEFCO ENGINEERING, INC.
P. O. Box 615
LaGrange, Texas 78945
(979) 968-6474 TBPE F-2011

BASTROP COUNTY PRECINCT NO. 2 MAINTENANCE FACILITY IMPROVEMENTS

SMITHVILLE, TEXAS

REVISION:
1.
2.
3.

DRAWN BY: TLS
CHECKED BY: TLS

BEFCO JOB NO: 24-9106

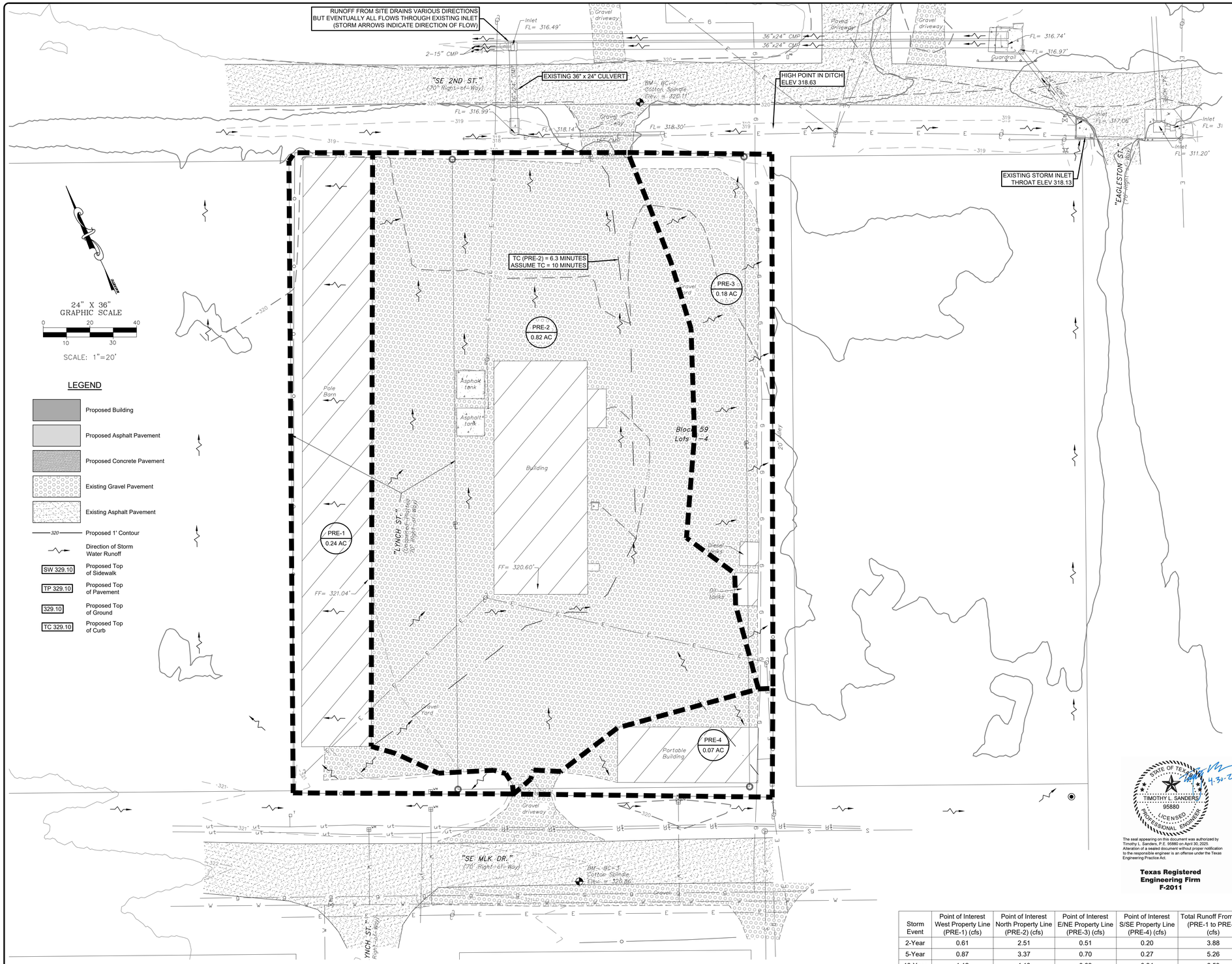
PLOT SCALE 1" = 20'

SHEET TITLE
GENERAL CONSTRUCTION NOTES & MISCELLANEOUS DETAILS

DATE ISSUED: 04/30/25

SHEET
5
OF 8

FIELD BOOK NO.----
S:_Projects\BASTROP COUNTY\24-9106 Smithville Precinct 2 Facility\Dwg\TLS 24-9106A SHEETS



EXISTING LAYOUT

Storm Event	Point of Interest West Property Line (PRE-1) (cfs)	Point of Interest North Property Line (PRE-2) (cfs)	Point of Interest E/NE Property Line (PRE-3) (cfs)	Point of Interest S/SE Property Line (PRE-4) (cfs)	Total Runoff From Site (PRE-1 to PRE-4) (cfs)
2-Year	0.61	2.51	0.51	0.20	3.88
5-Year	0.87	3.37	0.70	0.27	5.26
10-Year	1.12	4.19	0.89	0.34	6.59
25-Year	1.50	5.45	1.17	0.45	8.62
50-Year	1.83	6.53	1.41	0.55	10.36
100-Year	2.22	7.83	1.70	0.66	12.44

PRE-DEVELOPMENT PEAK FLOWS

Bastrop County Precinct No. 2 Maintenance Facility Improvements
Pre-Development Drainage Calculations

1 = Sheet Flow
2 = Unpaved Shallow Concentrated Flow
3 = Paved Shallow Concentrated Flow
4 = Channel Flow

County: Bastrop 2 Yr - 24 Hr Rainfall: 4.23 in
Assume a Manning's Roughness Coefficient of 0.24 for overland sheet flow.

Determine the time of concentration and weighted curve number for the onsite area draining west from the site. Per NRCS Web Soil Survey, soil is primarily from Hydrologic Soil Group 'A'. Based on aerial photography and personal observation, existing land is mostly covered with an open shed and a compacted gravel base parking lot.

Drainage Area	Type of Flow	Flow Length (ft)	Land Slope (ft/ft)	Manning's Coefficient	Hydraulic Radius (ft)	Flow Velocity (ft/s)	Travel Time (min)
PRE-1	Assume a minimum time of concentration of 10 minutes.						

Drainage Area: 0.24 acres Time of Concentration: 10.0

Drainage Area	Hydrologic Soil Group	Existing Land Use	Curve Number	Drainage Area
PRE-1	A	Shed Roof	98	0.17
	A	Gravel Base	96	0.02
	A	Grass	49	0.05

Total Drainage Area = 0.24 acres
Cumulative Curve Number = 88

$I_a = 0.2 \times S$

$S = \frac{1000}{CN} - 10$

I_a = Initial Abstraction Including Surface Storage, Interception, and Infiltration Prior To Runoff (in)
S = Potential Maximum Retention (in)
CN = Curve Number

S = 1.41
I_a = 0.28

Determine the time of concentration and weighted curve number for the onsite area draining north from the site. Per NRCS Web Soil Survey, soil is primarily from Hydrologic Soil Group 'C'. Based on aerial photography and personal observation, existing land is covered with an existing building and a compacted gravel base parking lot.

Drainage Area	Type of Flow	Flow Length (ft)	Land Slope (ft/ft)	Manning's Coefficient	Hydraulic Radius (ft)	Flow Velocity (ft/s)	Travel Time (min)
PRE-2	1	100	0.0060	0.025	N/A	N/A	3.3
	2	220	0.0060	N/A	N/A	1.2	2.9
	2	30	0.0760	N/A	N/A	4.4	0.1
						Total:	6.3

Calculated time of concentration (TC) is less than 10 minutes. Assume minimum TC of 10 minutes.

Drainage Area: 0.82 acres Time of Concentration: 10.0

Drainage Area	Hydrologic Soil Group	Existing Land Use	Curve Number	Drainage Area
PRE-2	C	Building	98	0.10
	C	Gravel Base	96	0.72

Total Drainage Area = 0.82 acres
Cumulative Curve Number = 96

S = 0.39
I_a = 0.08

Determine the time of concentration and weighted curve number for the onsite area draining east / northeast from the site. Per NRCS Web Soil Survey, soil is primarily from Hydrologic Soil Group 'C'. Based on aerial photography and personal observation, existing land is mostly covered with a compacted gravel base parking lot, two small sheds and grass.

Drainage Area	Type of Flow	Flow Length (ft)	Land Slope (ft/ft)	Manning's Coefficient	Hydraulic Radius (ft)	Flow Velocity (ft/s)	Travel Time (min)
PRE-3	Assume a minimum time of concentration of 10 minutes.						

Drainage Area: 0.18 acres Time of Concentration: 10.0

Drainage Area	Hydrologic Soil Group	Existing Land Use	Curve Number	Drainage Area
PRE-3	C	Sheds	98	0.01
	C	Gravel Base	96	0.13
	C	Grass	79	0.04

Total Drainage Area = 0.18 acres
Cumulative Curve Number = 92

S = 0.83
I_a = 0.17

Determine the time of concentration and weighted curve number for the onsite area draining south / southeast from the site. Per NRCS Web Soil Survey, soil is primarily from Hydrologic Soil Group 'C'. Based on aerial photography and personal observation, existing land is covered with a portable building, a compacted gravel base parking lot, and grass.

Drainage Area	Type of Flow	Flow Length (ft)	Land Slope (ft/ft)	Manning's Coefficient	Hydraulic Radius (ft)	Flow Velocity (ft/s)	Travel Time (min)
PRE-4	Assume a minimum time of concentration of 10 minutes.						

Drainage Area: 0.07 acres Time of Concentration: 10.0

Drainage Area	Hydrologic Soil Group	Existing Land Use	Curve Number	Drainage Area
PRE-4	C	Building	98	0.03
	C	Gravel Base	96	0.02
	C	Grass	79	0.02

Total Drainage Area = 0.07 acres
Cumulative Curve Number = 92

S = 0.87
I_a = 0.17

Determine the time of concentration and weighted curve number for the entire site. Per NRCS Web Soil Survey, soil is primarily from Hydrologic Soil Groups 'A' and 'C'. Based on aerial photography and personal observation, existing land is covered with various buildings / sheds, a compacted gravel base parking lot, and grass.

Drainage Area	Type of Flow	Flow Length (ft)	Land Slope (ft/ft)	Manning's Coefficient	Hydraulic Radius (ft)	Flow Velocity (ft/s)	Travel Time (min)
PRE-1 TO PRE-4	Assume a minimum time of concentration of 10 minutes.						

Drainage Area: 1.31 acres Time of Concentration: 10.0

Drainage Area	Hydrologic Soil Group	Existing Land Use	Curve Number	Drainage Area
PRE-1	A	Shed Roof	98	0.17
TO PRE-4	A	Gravel Base	96	0.02
	A	Grass	49	0.05
	C	Building	98	0.14
	C	Gravel Base	96	0.87
	C	Grass	79	0.06

Total Drainage Area = 1.31 acres
Cumulative Curve Number = 94

S = 0.65
I_a = 0.13

HEC-HMS PEAK FLOW SUMMARY

Storm Event:	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
Atlas 14, 24-Hour Rainfall Depth (in):	4.23	5.59	6.92	8.95	10.70	12.80
PRE-1 Peak Flow (cfs):	0.61	0.87	1.12	1.50	1.83	2.22
PRE-2 Peak Flow (cfs):	2.51	3.37	4.19	5.45	6.53	7.83
PRE-3 Peak Flow (cfs):	0.51	0.70	0.89	1.17	1.41	1.70
PRE-4 Peak Flow (cfs):	0.20	0.27	0.34	0.45	0.55	0.66
Overall Peak Flow (cfs):	3.88	5.26	6.59	8.62	10.36	12.44

STATE OF TEXAS
TIMOTHY L. SANDERS
95880
LICENSED
PROFESSIONAL ENGINEER
4-30-25

The seal appearing on this document was authorized by Timothy L. Sanders, P.E. 95880 on April 30, 2025. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.

Texas Registered Engineering Firm F-2011

BEFCO ENGINEERING, INC.
P. O. Box 615
LaGrange, Texas 78945
(979) 968-6474 TBPE F-2011

BASTROP COUNTY PRECINCT NO. 2 MAINTENANCE FACILITY IMPROVEMENTS

SMITHVILLE, TEXAS

REVISION:
1.
2.
3.

DRAWN BY: TLS
CHECKED BY: TLS

BEFCO JOB NO: 24-9106

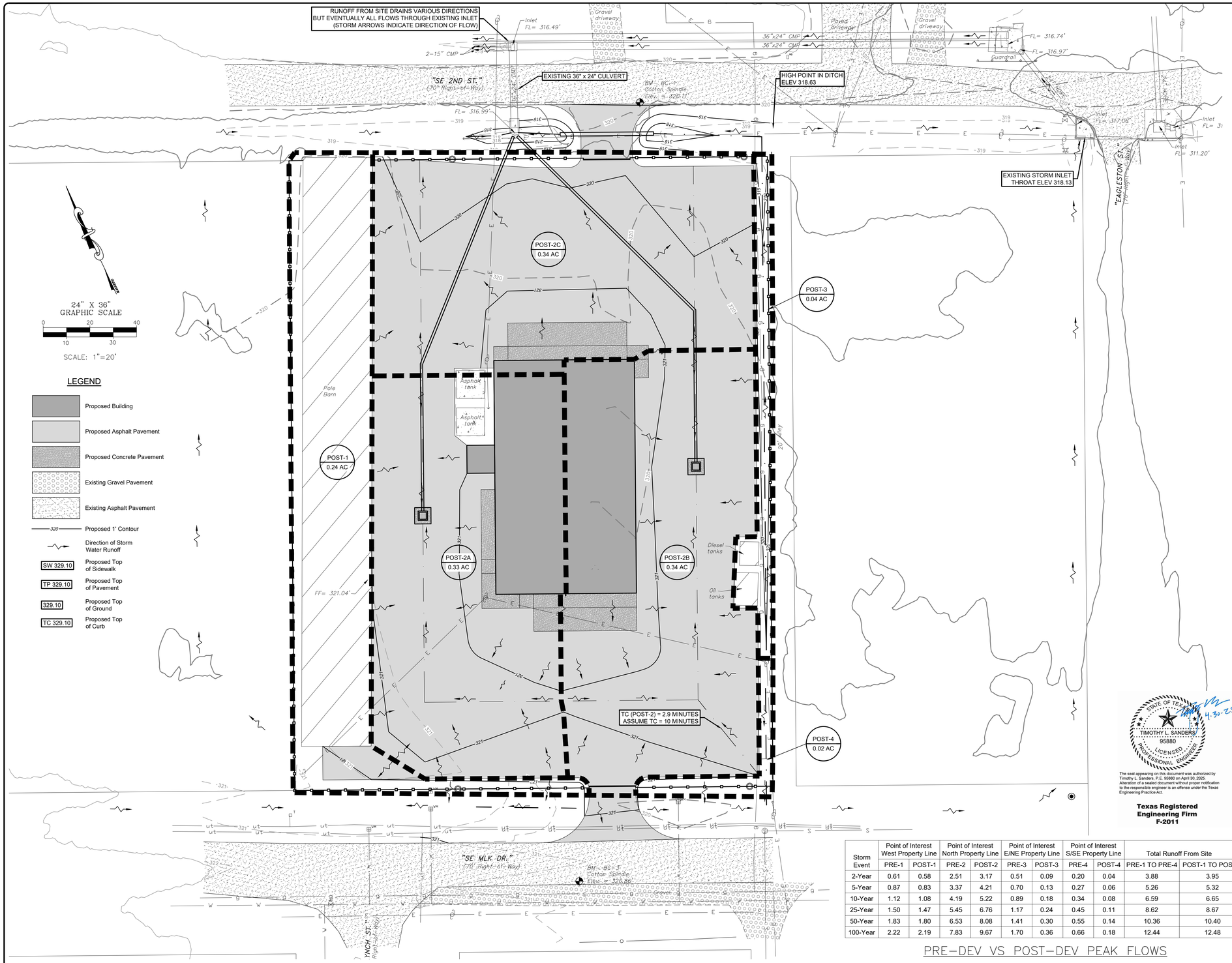
PLOT SCALE 1" = 20'

SHEET TITLE
PRE-DEV DRAINAGE MAP & CALCULATIONS

DATE ISSUED: 04/30/25

SHEET 6 OF 8

FIELD BOOK NO.----
S:_Projects\BASTROP COUNTY\24-9106 Smithville Precinct 2 Facility\Dwg\TLS 24-9106A SHEETS



FIELD BOOK NO.----
S:_Projects\BASTROP COUNTY\24-9106 Smithville Precinct 2 Facility\Dwg\TLS 24-9106A SHEETS

Storm Event	Point of Interest West Property Line		Point of Interest North Property Line		Point of Interest E/NE Property Line		Point of Interest S/SE Property Line		Total Runoff From Site	
	PRE-1	POST-1	PRE-2	POST-2	PRE-3	POST-3	PRE-4	POST-4	PRE-1 TO PRE-4	POST-1 TO POST-4
2-Year	0.61	0.58	2.51	3.17	0.51	0.09	0.20	0.04	3.88	3.95
5-Year	0.87	0.83	3.37	4.21	0.70	0.13	0.27	0.06	5.26	5.32
10-Year	1.12	1.08	4.19	5.22	0.89	0.18	0.34	0.08	6.59	6.65
25-Year	1.50	1.47	5.45	6.76	1.17	0.24	0.45	0.11	8.62	8.67
50-Year	1.83	1.80	6.53	8.08	1.41	0.30	0.55	0.14	10.36	10.40
100-Year	2.22	2.19	7.83	9.67	1.70	0.36	0.66	0.18	12.44	12.48

PRE-DEV VS POST-DEV PEAK FLOWS

SUMMARY
Stormwater from the site flows in various directions; however, all runoff eventually drains through the existing inlet and storm pipes located on the north side of SE 2nd Street directly across from our site. The total peak flow from the site under post-development conditions is slightly higher than that under pre-development conditons; however, the difference is negligible (0.07 cfs or less) and should have no adverse impact on the surrounding properties.

Bastrop County Precinct No. 2 Maintenance Facility Improvements
Post-Development Drainage Calculations

1 = Sheet Flow
2 = Unpaved Shallow Concentrated Flow
3 = Paved Shallow Concentrated Flow
4 = Channel Flow

County: Bastrop 2 Yr - 24 Hr Rainfall: 4.23 in
Assume a Manning's Roughness Coefficient of 0.24 for overland sheet flow.

Determine the time of concentration and weighted curve number for the onsite area draining west from the site. Per NRCS Web Soil Survey, soil is primarily from Hydrologic Soil Group 'A'. Proposed land use is primarily an existing open shed, grass, and an asphalt parking lot.

Drainage Area	Type of Flow	Flow Length (ft)	Land Slope (ft/ft)	Manning's Coefficient	Hydraulic Radius (ft)	Flow Velocity (ft/s)	Travel Time (min)
POST-1		Assume a minimum time of concentration of 10 minutes.					
Drainage Area:	0.24 acres					Time of Concentration:	10.0

Drainage Area	Hydrologic Soil Group	Existing Land Use	Curve Number	Drainage Area
POST-1	A	Shed Roof	98	0.17
	A	Asph Pvmt	98	0.01
	A	Grass	49	0.06

Total Drainage Area = 0.24 acres
Cumulative Curve Number = 86

$I_a = 0.2 \times S$

$S = \frac{1000}{CN} - 10$

I_a = Initial Abstraction Including Surface Storage, Interception, and Infiltration Prior To Runoff (in)
S = Potential Maximum Retention (in)
CN = Curve Number

S = 1.66
I_a = 0.33

Determine the time of concentration and weighted curve number for the onsite area draining north from the site. Per NRCS Web Soil Survey, soil is primarily from Hydrologic Soil Group 'C'. Proposed land use is primarily a new building and a new asphalt parking lot.

Drainage Area	Type of Flow	Flow Length (ft)	Land Slope (ft/ft)	Manning's Coefficient	Hydraulic Radius (ft)	Flow Velocity (ft/s)	Travel Time (min)
POST-2	1	40	0.0090	0.011	N/A	N/A	0.7
	2	100	0.0050	N/A	N/A	1.1	1.5
		172	Storm sewer flow ~ Assume velocity = 4 ft/s				0.7
						Total:	2.9

Calculated time of concentration (TC) is less than 10 minutes. Assume minimum TC of 10 minutes.

Drainage Area: 1.01 acres Time of Concentration: 10.0

Drainage Area	Hydrologic Soil Group	Existing Land Use	Curve Number	Drainage Area
POST-2	C	Bldg/Pvmt	98	0.99
	C	Grass	79	0.02

Total Drainage Area = 1.01 acres
Cumulative Curve Number = 98

S = 0.24
I_a = 0.05

Determine the time of concentration and weighted curve number for the onsite area draining northeast from the site. Per NRCS Web Soil Survey, soil is primarily from Hydrologic Soil Group 'C'. Proposed land use is primarily grass and two small sheds.

Drainage Area	Type of Flow	Flow Length (ft)	Land Slope (ft/ft)	Manning's Coefficient	Hydraulic Radius (ft)	Flow Velocity (ft/s)	Travel Time (min)
POST-3		Assume a minimum time of concentration of 10 minutes.					
Drainage Area:	0.04 acres					Time of Concentration:	10.0

Drainage Area	Hydrologic Soil Group	Existing Land Use	Curve Number	Drainage Area
POST-3	C	Sheds	98	0.01
	C	Grass	79	0.03

Total Drainage Area = 0.04 acres
Cumulative Curve Number = 84

S = 1.94
I_a = 0.39

Determine the time of concentration and weighted curve number for the onsite area draining south / southeast from the site. Per NRCS Web Soil Survey, soil is primarily from Hydrologic Soil Group 'C'. Proposed land use is primarily grass.

Drainage Area	Type of Flow	Flow Length (ft)	Land Slope (ft/ft)	Manning's Coefficient	Hydraulic Radius (ft)	Flow Velocity (ft/s)	Travel Time (min)
POST-4		Assume a minimum time of concentration of 10 minutes.					
Drainage Area:	0.02 acres					Time of Concentration:	10.0

Drainage Area	Hydrologic Soil Group	Existing Land Use	Curve Number	Drainage Area
POST-4	C	Grass	79	0.02

Total Drainage Area = 0.02 acres
Cumulative Curve Number = 79

S = 2.66
I_a = 0.53

Determine the time of concentration and weighted curve number for the entire site. Per NRCS Web Soil Survey, soil is primarily from Hydrologic Soil Groups 'A' and 'C'. Proposed land use is a combination of various buildings / shed, asphalt pavement, and grass.

Drainage Area	Type of Flow	Flow Length (ft)	Land Slope (ft/ft)	Manning's Coefficient	Hydraulic Radius (ft)	Flow Velocity (ft/s)	Travel Time (min)
POST-1 TO POST-4		Assume a minimum time of concentration of 10 minutes.					
Drainage Area:	1.31 acres					Time of Concentration:	10.0

Drainage Area	Hydrologic Soil Group	Existing Land Use	Curve Number	Drainage Area
POST-1 TO POST-4	A	Shed Roof	98	0.17
	A	Asph Pvmt	98	0.01
	A	Grass	49	0.05
	C	Bldg/Pvmt	98	1.00
	C	Grass	79	0.08

Total Drainage Area = 1.31 acres
Cumulative Curve Number = 95

S = 0.53
I_a = 0.11

HEC-HMS PEAK FLOW SUMMARY

Storm Event:	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year
Atlas 14, 24-Hour Rainfall Depth (in):	4.23	5.59	6.92	8.95	10.70	12.80
POST-1 Peak Flow (cfs):	0.58	0.83	1.08	1.47	1.80	2.19
POST-2 Peak Flow (cfs):	3.17	4.21	5.22	6.76	8.08	9.67
POST-3 Peak Flow (cfs):	0.09	0.13	0.18	0.24	0.30	0.36
POST-4 Peak Flow (cfs):	0.04	0.06	0.08	0.11	0.14	0.18
Overall Peak Flow (cfs):	3.95	5.32	6.65	8.67	10.40	12.48

STATE OF TEXAS
TIMOTHY L. SANDERS
95880
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PROFESSIONAL ENGINEER
4.30.25

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Texas Registered Engineering Firm F-2011

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BASTROP COUNTY PRECINCT NO. 2 MAINTENANCE FACILITY IMPROVEMENTS

SMITHVILLE, TEXAS

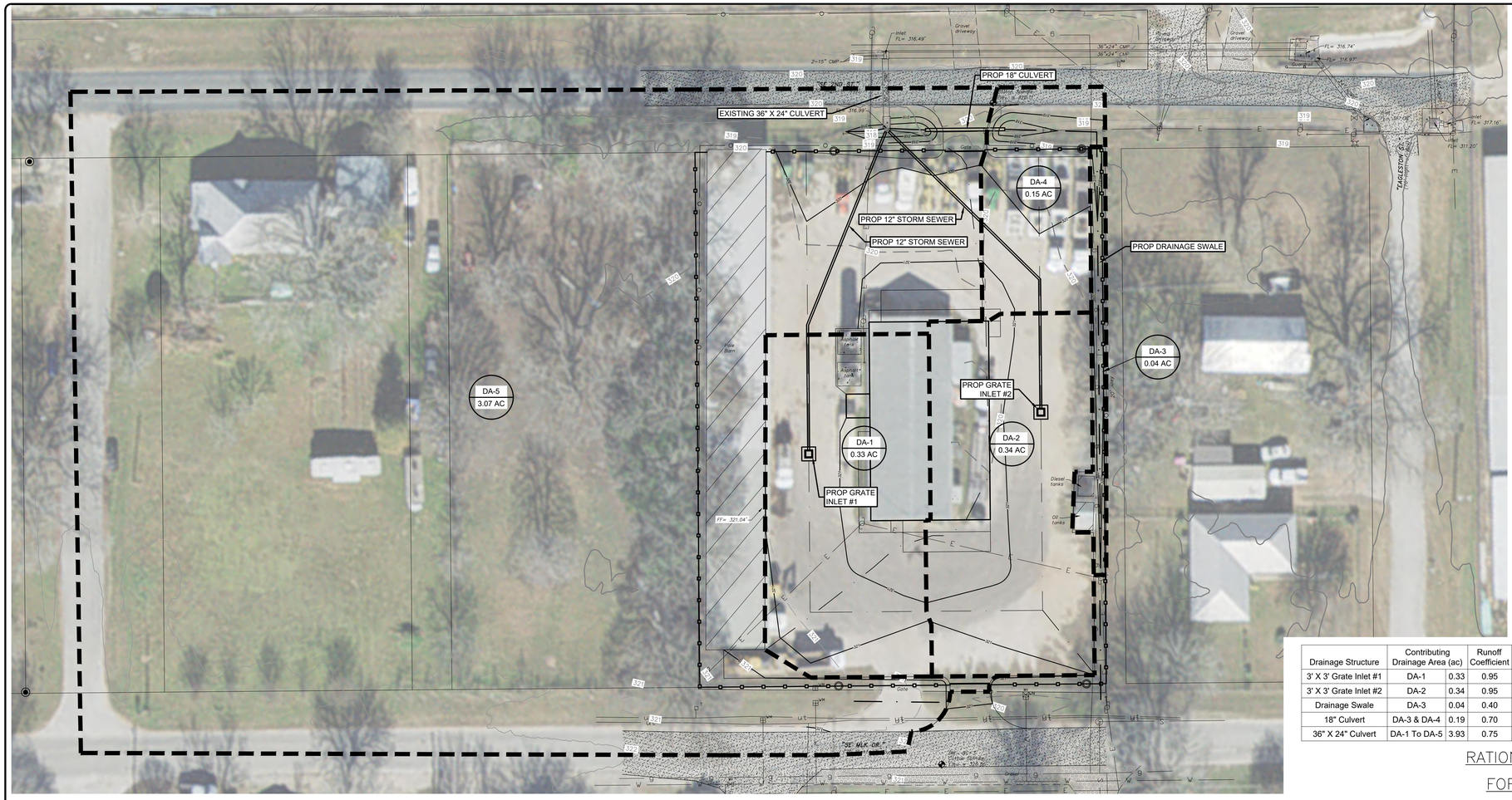
REVISION:
1.
2.
3.

DRAWN BY: TLS
CHECKED BY: TLS
BEFCO JOB NO: 24-9106
PLOT SCALE 1" = 20'

SHEET TITLE
POST-DEV DRAINAGE MAP & CALCULATIONS

DATE ISSUED: 04/30/25

SHEET 7 OF 8



24" X 36"
GRAPHIC SCALE
0 30 60
15 45
SCALE: 1"=30'

Drainage Structure	Contributing Drainage Area (ac)		Runoff Coefficient	Time of Conc (min)	2-Yr Rainfall Intensity	2-Yr Peak Flow (cfs)	25-Yr Rainfall Intensity	25-Yr Peak Flow (cfs)	100-Yr Rainfall Intensity	100-Yr Peak Flow (cfs)
3' X 3' Grate Inlet #1	DA-1	0.33	0.95	10.0	4.77	1.54	8.79	2.76	10.96	3.44
3' X 3' Grate Inlet #2	DA-2	0.34	0.95	10.0	4.77	1.50	8.79	2.84	10.96	3.54
Drainage Swale	DA-3	0.04	0.40	10.0	4.77	0.08	8.79	0.14	10.96	0.18
18" Culvert	DA-3 & DA-4	0.19	0.70	10.0	4.77	0.63	8.79	1.17	10.96	1.46
36" X 24" Culvert	DA-1 To DA-5	3.93	0.75	10.0	4.77	14.06	8.79	25.91	10.96	32.30

RATIONAL METHOD CALCULATIONS FOR DRAINAGE STRUCTURES

OUTPUT FOR DESIGN FREQUENCY of: 25 Years

Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
DA-1	0.95	0.33	10.00	10.00	8.79	0.000	2.756

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Length/ Perim (ft)	Grate Area (sf)	Grate Left-Slope Longi (%)	Grate Left-Slope Transv (%)	Grate Right-Slope Longi (%)	Grate Right-Slope Transv (%)	Gutter n	Gutter DeprW (ft)	Head Allowed (ft)
DA-1	Grate	12.00	3.42	0.50	2.00	0.50	2.00	0.014	n/a	1.50

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Actual Head (ft)	Ponded Left (ft)	Ponded Right (ft)	Width (ft)
DA-1	Grate	n/a	12.00	3.42	2.756	22.512	0.177	8.80	8.80	

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
DA-1	Grate	0.950	0.33	10.00	8.79		0.00	2.756
OUT	Outlt	0.950	0.33	10.00	8.79		0.00	2.756

Conveyance Configuration Data

Run #	Node US	Node DS	I.D.	FlowLine Elev. US (ft)	FlowLine Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	DA-1	OUT		318.00	317.25	Cir 1	0.00	1.00	169.0	0.444	0.012

Conveyance Hydraulic Computations. Tailwater = 318.990 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	319.84	318.99	320.25	0.505	0.91	1.00	3.66	3.51	2.8	2.6	0.000

FIELD BOOK NO.-----
S:_Projects\BASTROP COUNTY\24-9106 Smithville Precinct 2 Facility\Dwg\TLS 24-9106A SHEETS

OUTPUT FOR DESIGN FREQUENCY of: 100 Years

Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
DA-1	0.95	0.33	10.00	10.00	10.96	0.000	3.436

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Length/ Perim (ft)	Grate Area (sf)	Grate Left-Slope Longi (%)	Grate Left-Slope Transv (%)	Grate Right-Slope Longi (%)	Grate Right-Slope Transv (%)	Gutter n	Gutter DeprW (ft)	Head Allowed (ft)
DA-1	Grate	12.00	3.42	0.50	2.00	0.50	2.00	0.014	n/a	1.50

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Actual Head (ft)	Ponded Left (ft)	Ponded Right (ft)	Width (ft)
DA-1	Grate	n/a	12.00	3.42	3.436	22.512	0.205	9.55	9.55	

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
DA-1	Grate	0.950	0.33	10.00	10.96		0.00	3.436
OUT	Outlt	0.950	0.33	10.00	10.96		0.00	3.436

Conveyance Configuration Data

Run #	Node US	Node DS	I.D.	FlowLine Elev. US (ft)	FlowLine Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	DA-1	OUT		318.00	317.25	Cir 1	0.00	1.00	169.0	0.444	0.012

Conveyance Hydraulic Computations. Tailwater = 318.990 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	320.32	318.99	320.25	0.786	1.00	1.00	4.37	4.37	3.4	2.6	0.000

OUTPUT FOR DESIGN FREQUENCY of: 25 Years

Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
DA-2	0.95	0.34	10.00	10.00	8.79	0.000	2.839

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Length/ Perim (ft)	Grate Area (sf)	Grate Left-Slope Longi (%)	Grate Left-Slope Transv (%)	Grate Right-Slope Longi (%)	Grate Right-Slope Transv (%)	Gutter n	Gutter DeprW (ft)	Head Allowed (ft)
DA-2	Grate	12.00	3.42	0.50	2.00	0.50	2.00	0.014	n/a	1.50

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Actual Head (ft)	Ponded Left (ft)	Ponded Right (ft)	Width (ft)
DA-2	Grate	n/a	12.00	3.42	2.839	22.512	0.180	8.90	8.90	

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
DA-2	Grate	0.950	0.34	10.00	8.79		0.00	2.839
OUT	Outlt	0.950	0.34	10.00	8.79		0.00	2.839

Conveyance Configuration Data

Run #	Node US	Node DS	I.D.	FlowLine Elev. US (ft)	FlowLine Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	DA-2	OUT		317.90	317.25	Cir 1	0.00	1.00	172.0	0.378	0.012

Conveyance Hydraulic Computations. Tailwater = 318.990 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	319.91	318.99	320.15	0.537	1.00	1.00	3.61	3.61	2.8	2.4	0.000

OUTPUT FOR DESIGN FREQUENCY of: 100 Years

Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
DA-2	0.95	0.34	10.00	10.00	10.96	0.000	3.540

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Length/ Perim (ft)	Grate Area (sf)	Grate Left-Slope Longi (%)	Grate Left-Slope Transv (%)	Grate Right-Slope Longi (%)	Grate Right-Slope Transv (%)	Gutter n	Gutter DeprW (ft)	Head Allowed (ft)
DA-2	Grate	12.00	3.42	0.50	2.00	0.50	2.00	0.014	n/a	1.50

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Actual Head (ft)	Ponded Left (ft)	Ponded Right (ft)	Width (ft)
DA-2	Grate	n/a	12.00	3.42	3.540	22.512	0.209	9.65	9.65	

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q (cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
DA-2	Grate	0.950	0.34	10.00	10.96		0.00	3.540
OUT	Outlt	0.950	0.34	10.00	10.96		0.00	3.540

Conveyance Configuration Data

Run #	Node US	Node DS	I.D.	FlowLine Elev. US (ft)	FlowLine Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	DA-2	OUT		317.90	317.25	Cir 1	0.00	1.00	172.0	0.378	0.012

Conveyance Hydraulic Computations. Tailwater = 318.990 (ft)

Run #	Hyd. US (ft)	Gr.line DS (ft)	Crit.Elev US (ft)	Fr.Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	320.42	318.99	320.15	0.834	1.00	1.00	4.51	4.51	3.5	2.4	0.000

Culvert Summary Table - 18in Culvert

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth(ft)	Outlet Control Depth(ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.50	0.50	317.73	0.38	0.43	3-M2t	0.36	0.26	0.27	0.27	2.33	0.93
0.65	0.65	317.79	0.44	0.49	3-M2t	0.41	0.30	0.32	0.32	2.37	1.02
0.80	0.80	317.84	0.49	0.54	3-M2t	0.45	0.33	0.37	0.37	2.39	1.09
0.95	0.95	317.90	0.53	0.60	3-M2t	0.50	0.36	0.41	0.41	2.42	1.15
1.17	1.17	317.97	0.60	0.67	3-M2t	0.55	0.40	0.47	0.47	2.44	1.23
1.25	1.25	317.99	0.62	0.69	3-M2t	0.57	0.42	0.50	0.50	2.45	1.26
1.40	1.40	318.03	0.66	0.73	3-M2t	0.61	0.44	0.54	0.54	2.46	1.30
1.55	1.55	318.08	0.69	0.78	3-M2t	0.65	0.47	0.58	0.58	2.48	1.34
1.70	1.70	318.12	0.73	0.82	3-M2t	0.68	0.49	0.62	0.62	2.49	1.38
1.85	1.85	318.16	0.76	0.86	3-M2t	0.71	0.51	0.65	0.65	2.50	1.42
2.00	2.00	318.19	0.80	0.89	3-M2t	0.75	0.53	0.69	0.69	2.51	1.45

Culvert Summary Table - 36x24 Culvert

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth(ft)	Outlet Control Depth(ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
14.00	14.00	319.03	1.67	2.06	3-M1f	1.03	0.99	2.00	2.00	3.01	0.00
16.10	16.10	319.21	1.84	2.22	3-M1f	1.14	1.08	2.00	2.00	3.46	0.00
18.20	18.20	319.41	2.02	2.42	3-M1f	1.26	1.15	2.00	2.00	3.91	0.00
20.30	20.30	319.63	2.22	2.44	4-FFf	1.38	1.23	2.00	2.00	4.37	0.00
22.40	22.40	319.86	2.43	2.65	4-FFf	1.52	1.30	2.00	2.00	4.82	0.00
24.50	24.50	319.86	2.66	2.87	4-FFf	1.72	1.37	2.00	2.00	5.27	0.00
25.91	25.91	320.03	2.83	3.04	4-FFf	2.00	1.41	2.00	2.00	5.57	0.00
28.70	28.24	320.32	3.13	3.33	4-FFf	2.00	1.48	2.00	2.00	6.07	0.00
30.80	28.49	320.35	3.17	3.36	4-FFf	2.00	1.48	2.00	2.00	6.13	0.00
32.90	28.64	320.37	3.19	3.38	4-FFf	2.00	1.49	2.00	2.00	6.16	0.00
35.00	28.78	320.39	3.21	3.40	4-FFf	2.00	1.49	2.00	2.00	6.19	0.00

STATE OF TEXAS
TIMOTHY L. SANDERS
95880
LICENSED
PROFESSIONAL ENGINEER
4-30-25

The seal appearing on this document was authorized by Timothy L. Sanders, P.E. 95880 on April 30, 2025
Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.

Texas Registered Engineering Firm F-2011

BEFCO ENGINEERING, INC.
P. O. Box 615
LaGrange, Texas 78945
(979) 968-6474 TBPE F-2011

BASTROP COUNTY PRECINCT NO. 2 MAINTENANCE FACILITY IMPROVEMENTS

SMITHVILLE, TEXAS

REVISION:
1.
2.
3.

DRAWN BY: TLS
CHECKED BY: TLS

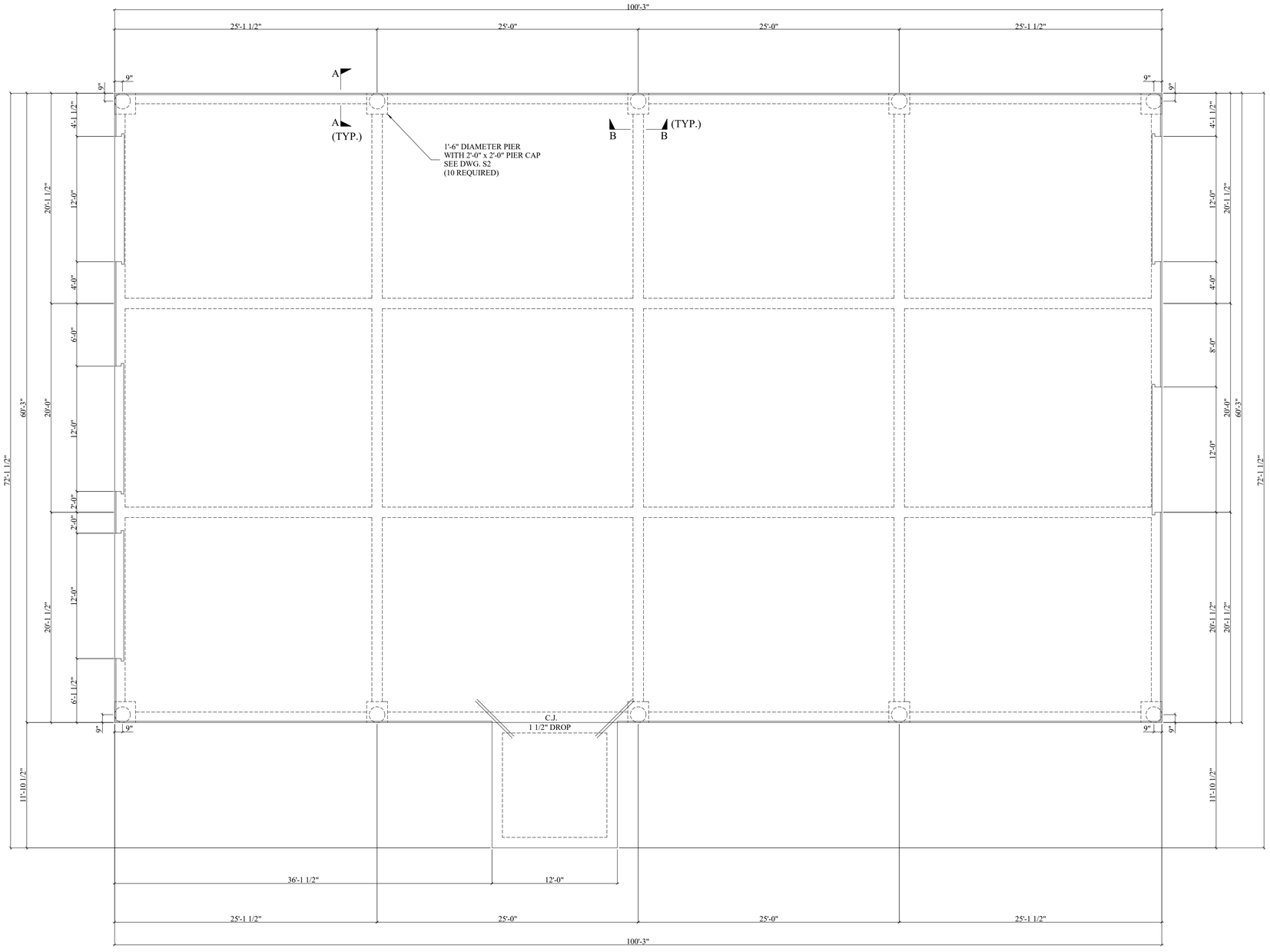
BEFCO JOB NO: 24-9106

PLOT SCALE 1" = 30'

SHEET TITLE
MISCELLANEOUS DRAINAGE CALCULATIONS

DATE ISSUED: 04/30/25

SHEET
8
OF 8



FOUNDATION PLAN

NOT TO SCALE

NOTE: ALL GRADE BEAMS ARE 1'-0" WIDE UNLESS OTHERWISE NOTED.
VERIFY ALL DIMENSIONS WITH ARCHITECTURAL PLANS AND
METAL BUILDING DRAWINGS. IF A DISCREPANCY IS FOUND,
NOTIFY ENGINEER IMMEDIATELY.

GEOTECHNICAL NOTES:

1. GEOTECHNICAL STUDY PREPARED BY TSI LABORATORIES, INC, (G-241435), DATED DECEMBER 18, 2024, SHALL BE USED FOR SITE PREPARATION, PLACEMENT OF FILL, AND FOUNDATION CONSTRUCTION.
2. BUILDING PAD PREPARATION: MIMIMUM OF 1 FOOT OF SELECT STRUCTURAL FILL COMPACTED TO 95% OF STANDARD PROCTOR IN ACCORDANCE WITH D698. A MINIMUM OF 5 FEET BEYOND THE EDGE OF THE SLAB AREA. COMPACTION TESTING IS REQUIRED.
3. CONSTRUCTION AREAS SHALL BE STRIPPED OF VEGETATION AND ROOT STRUCTURES, AND THE EXPOSED SUBGRADE SHALL BE PROOF ROLLED WITH APPROPRIATE CONSTRUCTION EQUIPMENT WEIGHING AT LEAST 20 TONS. IF WEAK OR SOFT AREAS ARE OBSERVED DURING PROOF ROLLING OPERATIONS, THE SOIL IN THE SUBJECT AREA SHALL BE REMOVED TO EXPOSE COMPETENT SUBGRADE SOILS IN BOTH HORIZONTAL AND VERTICAL LIMITS. SUBGRADE AREAS SHALL BE MOISTURE ADJUSTED TO WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT. THE MOISTURE CONDITIONED SUBGRADE SHALL THEN BE COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D698.
4. SELECT FILL SHALL CONSIST OF LEAN CLAY OR SANDY LEAN CLAY, FREE OF ROOTS, ORGANICS, AND DELETERIOUS MATERIALS. SELECT FILL SHALL HAVE AT LEAST 50% PASSING THE NO. 200 SIEVE AND HAVE A PI BETWEEN 8 AND 15. REPRESENTATIVE SAMPLES OF THE FILL MATERIALS SHALL BE TESTED TO CONFIRM THEIR MATERIAL CHARACTERISTICS PRIOR TO FILLING OPERATIONS.
5. STRUCTURAL FILL SHOULD BE PLACED ON PREPARED SURFACES IN LIFTS NOT TO EXCEED 8 INCHES LOOSE MEASURE, WITH COMPACTED THICKNESS NOT TO EXCEED 6 INCHES. ALL STRUCTURAL FILL SHOULD BE MOISTURE CONDITIONED TO BETWEEN 1% AND 3% OF OPTIMUM MOISTURE CONTENT, AND THEN COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D698.
6. ELEVATION OF GROUND SURFACE ADJACENT TO THE FOUNDATION SHOULD BE A MINIMUM OF AT LEAST 6 INCHES BELOW FINISHED FLOOR.
7. COMPACTION TESTING IS REQUIRED.
8. THE SLOPE OF THE GROUND SURFACE AWAY FROM THE STRUCTURE SHOULD BE A MINIMUM OF 5% FOR A DISTANCE OF 10 FEET.
9. A GEOTECHNICAL FIRM SHALL BE RETAINED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT TO PROVIDE SOIL TESTING DURING GRADING AND CONSTRUCTION ACTIVITIES. THIS IS TO OBSERVE COMPLIANCE WITH THE PLAN SPECIFICATIONS, GEOTECHNICAL RECOMMENDATIONS, AND TO ALLOW DESIGN CHANGES IF SUBSURFACE CONDITIONS DIFFER FROM THOSE ANTICIPATED BEFORE CONSTRUCTION.

CONCRETE NOTES:

1. ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ACI STANDARD "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION.
2. A 10 MIL VAPOR BARRIER IS REQUIRED UNDER THE FOUNDATION IN ACCORDANCE WITH ACI SPECIFICATIONS.
3. REBAR CLEARANCE SHALL BE 3" CLEAR UNLESS OTHERWISE NOTED.
4. 5. ALL CONCRETE SHALL HAVE A 4000 PSI COMPRESSIVE STRENGTH IN 28 DAYS.
6. ALL REINFORCING STEEL SHALL BE LAPPED 50 BAR DIAMETERS UNLESS OTHERWISE NOTED.
7. ALL REINFORCING BARS SHALL BE ASTM A-615, GRADE 60.
8. ALL BENDING OF REINFORCING STEEL SHALL BE COLD BENT.
9. ALL EXPOSED EXTERIOR CONCRETE EDGES SHALL BE CHAMFERED 3/4 INCHES BY 45 DEGREES.
10. ALL EMBEDMENTS SHALL BE IN PLACE PRIOR TO PLACEMENT OF CONCRETE.
11. ALL STEEL CONCRETE EMBEDMENTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
12. CONCRETE SHALL BE CURED FOR A MINIMUM OF 7 DAYS IN ACCORDANCE WITH ACI 302.
13. ALL REINFORCING BARS SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS, CHAIRS, OR STIRRUPS SHALL BE PROVIDED TO SUPPORT ALL BARS.
14. ALL BENDS AND HOOKS SHALL BE AS DETAILED IN THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE, LATEST EDITION.
15. CONCRETE SHALL BE TESTED IN ACCORDANCE WITH ACI SPECIFICATIONS.
16. CONTRACTION JOINTS ARE RECOMMENDED TO REDUCE CRACKING IN ACCORDANCE WITH ACI SPECIFICATIONS.
17. PIPES THAT PENETRATE THE GRADE BEAMS SHALL BE LOCATED AT THE CENTER OF THE GRADE BEAM VERTICALLY AND SHALL BE SLEEVED.
18. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH THE BUILDING DRAWINGS . IF ANY DESCREPANCIES EXIST, CONTACT OWNER.
19. CONTRACTOR SHALL VERIFY ALL PLACEMENT, DIMENSIONS, AND LOCATION OF ALL EMBEDDED ITEMS AS REQUIRED BY ALL TRADES BEFORE CONCRETE IS PLACED.
20. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BY MEASUREMENTS AT THE JOB SITE AND SHALL TAKE ANY AND ALL MEASUREMENTS NECESSARY TO VERIFY THE DRAWINGS AND TO PERFORM HIS/HER WORK PROPERLY.
21. THE CONTRACTOR SHALL BEAR THE TOTAL RESPONSIBILITY FOR THE SAFETY OF THE EXISTING ADJOINING STRUCTURES AND FOR ANY METHODS REQUIRED TO ENSURE THAT SAFETY.

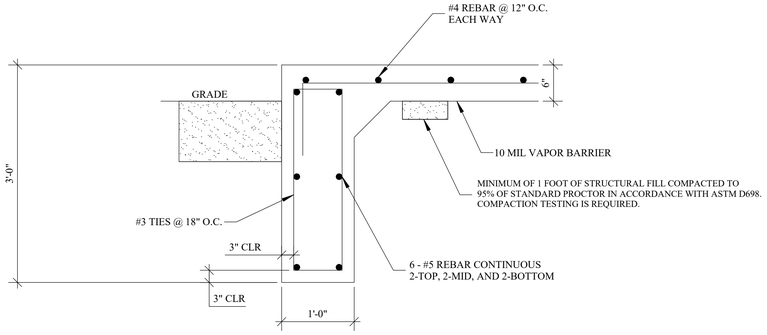
STATE OF TEXAS
CHRISTOPHER J. KORINEK
104683
REGISTERED
PROFESSIONAL ENGINEER

January 10, 2025

Structural Engineer:
T.S.I. Laboratories, Inc.
TBPE Firm Registration: F-9236
1801 N. Laurent
Victoria, TX 77901

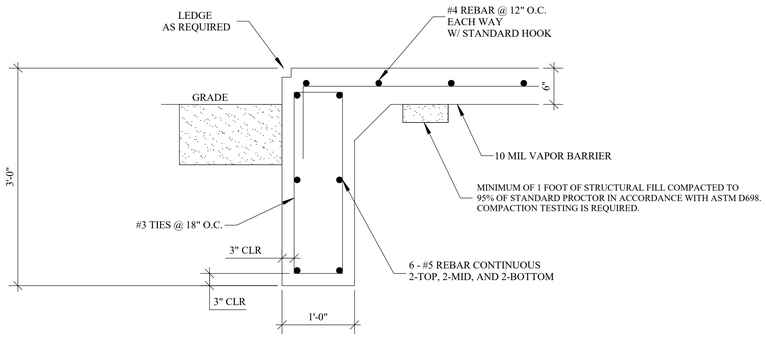
Bastrop County
Smithville Annex
911 SE Martin Luther King Dr.
Smithville, Texas
Foundation Plan

S1



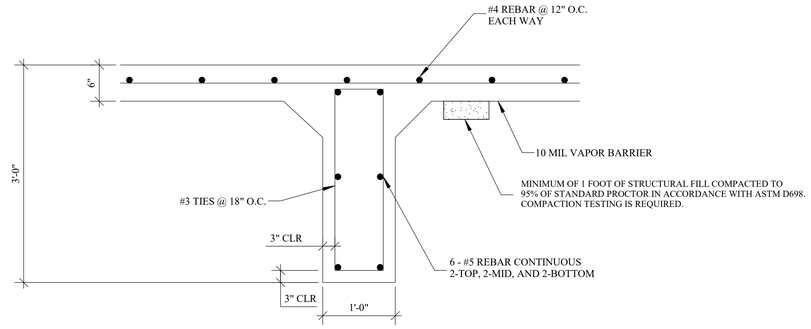
1'-0" WIDE EXTERIOR GRADE BEAM W/OUT LEDGE

NOT TO SCALE



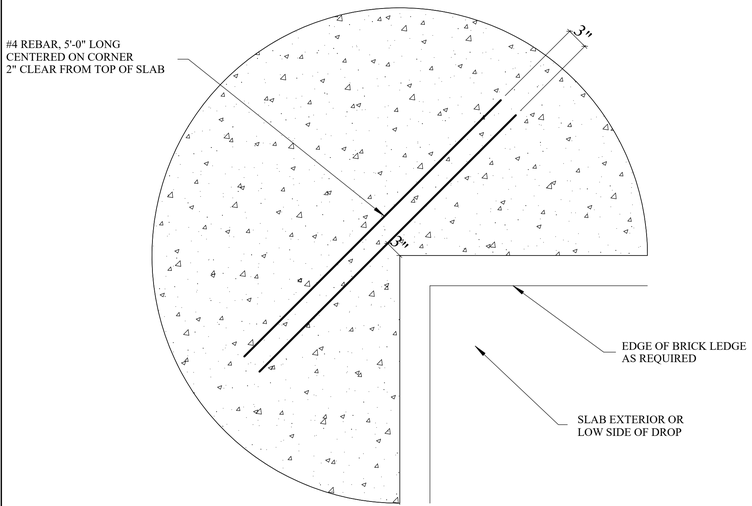
1'-0" WIDE EXTERIOR GRADE BEAM WITH LEDGE

NOT TO SCALE



1'-0" WIDE INTERIOR GRADE BEAM

NOT TO SCALE

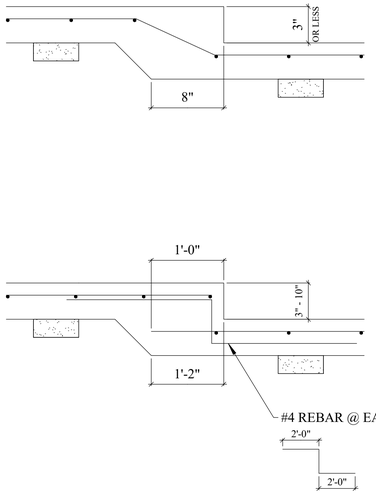


NOTE: RE-ENTRANT STEEL REQUIRED AT ALL DROP AND EDGE CORNERS (NOT SHOWN ON PLAN)

NOTE: PROVIDE REBAR AT ALL RE-ENTRANT SLAB EDGES AND DEPRESSION CORNERS

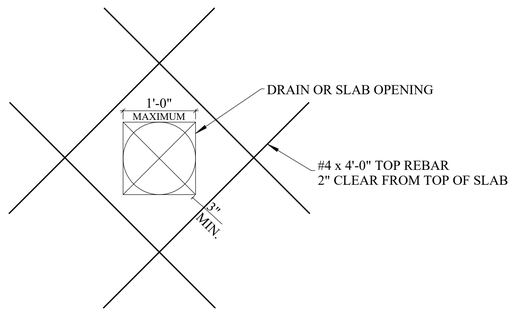
RE-ENTRANT CORNER REBAR

NOT TO SCALE



FLOOR DEPRESSION DETAILS

NOT TO SCALE



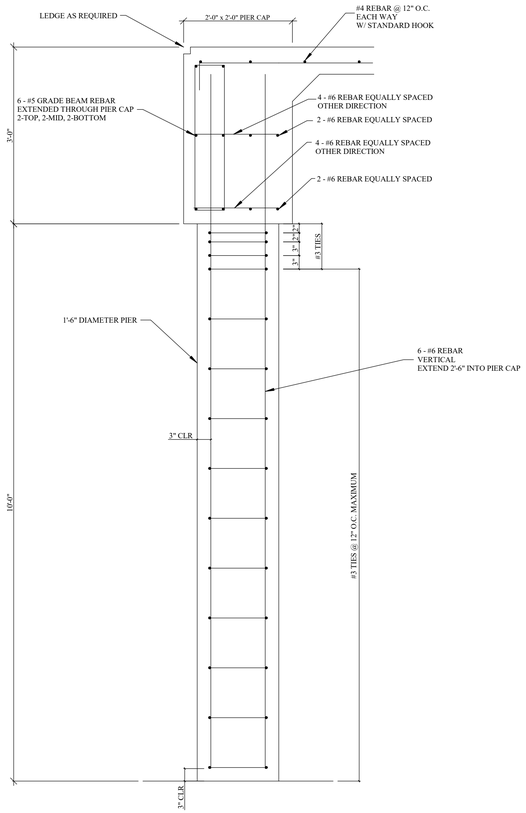
SLAB OPENING REINFORCEMENT DETAILS

NOT TO SCALE

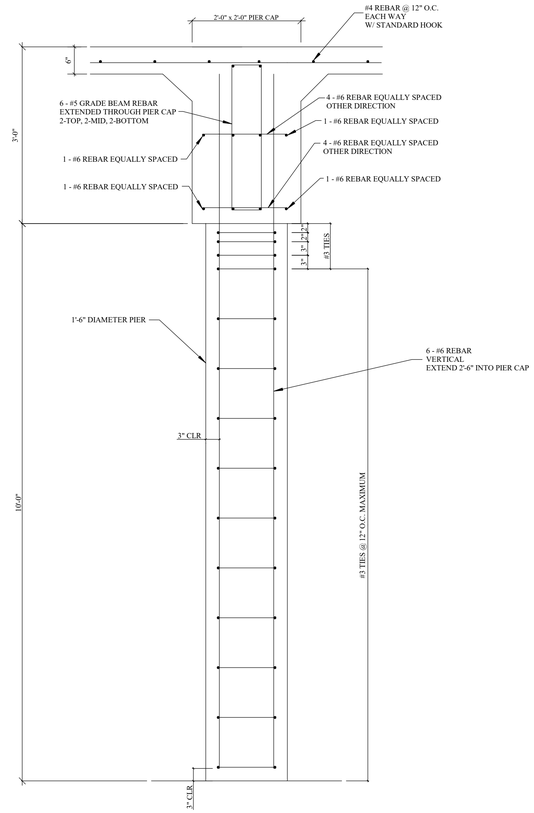
STATE OF TEXAS
CHRISTOPHER J. KORINEK
104683
REGISTERED
PROFESSIONAL ENGINEER

January 10, 2025

Structural Engineer: T.S.I. Laboratories, Inc. TBPE Firm Registration: F-9236 1801 N. Laurent Victoria, TX 77901	Bastrop County Smithville Annex 911 SE Martin Luther King Dr. Smithville, Texas Foundation Details 1



SECTION A-A
DRILLED PIER DETAIL
NOT TO SCALE



SECTION B-B
DRILLED PIER DETAIL
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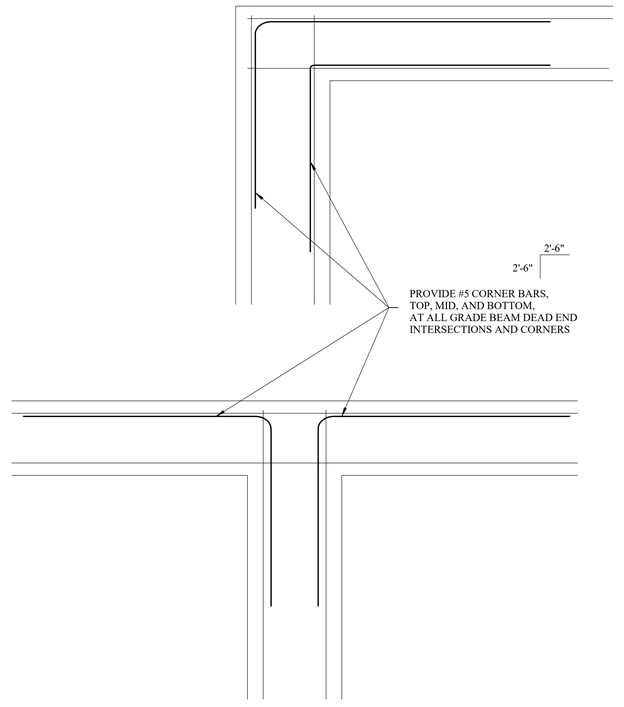
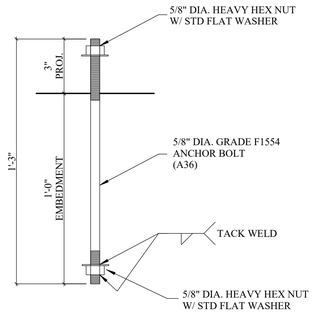
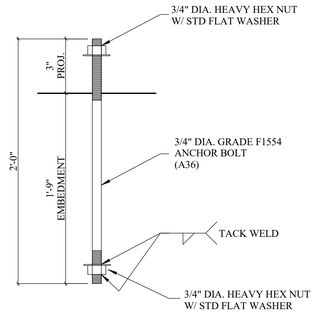


CORNER BAR DETAIL
NOT TO SCALE



5/8" DIA. ANCHOR BOLT DETAIL
NOT TO SCALE



3/4" DIA. ANCHOR BOLT DETAIL
NOT TO SCALE

January 10, 2025

Structural Engineer:
T.S.I. Laboratories, Inc.
TBPE Firm Registration: F-9236
1801 N. Laurent
Victoria, TX 77901

Bastrop County
Smithville Annex
911 SE Martin Luther King Dr.
Smithville, Texas
Foundation Details 2

S3

WARNING

Mueller strongly advises against attempting to assemble structure during high winds or other inclement weather. The building system will not support its engineered design loads until fully and properly assembled and sheeted. Until fully assembled, temporary bracing should always be used and all flange bracing should be installed as each individual frame is erected. Attempted assembly during unfavorable weather conditions may lead to damaged material, injury, or even the collapse of the partially assembled structure.

GENERAL NOTES

THE STRUCTURE UNDER THIS CONTRACT HAS BEEN DESIGNED AND DETAILED FOR THE LOADS AND CONDITIONS STIPULATED IN THE CONTRACT AND SHOWN ON THESE DRAWINGS. ANY ALTERATIONS TO THE STRUCTURAL SYSTEM, REMOVAL OF ANY COMPONENT PARTS, OR THE ADDITION OF OTHER CONSTRUCTION MATERIALS OR LOADS MUST BE DONE UNDER THE ADVICE AND DIRECTION OF A REGISTERED ARCHITECT, CIVIL OR STRUCTURAL ENGINEER. THE BUILDING MANUFACTURER WILL ASSUME NO RESPONSIBILITY FOR ANY LOADS NOT INDICATED.

THIS METAL BUILDING IS DESIGNED WITH THE BUILDING MANUFACTURER'S STANDARD PRACTICES WHICH ARE BASED ON PERTINENT PROCEDURES AND RECOMMENDATIONS OF THE FOLLOWING ORGANIZATIONS AND CODES AS APPLICABLE.

1. AMERICAN INSTITUTE OF STEEL CONSTRUCTION, SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS
2. AMERICAN IRON AND STEEL INSTITUTE, SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS.
3. AMERICAN WELDING SOCIETY, STRUCTURAL WELDING CODE' AWS D1.1
4. METAL BUILDING MANUFACTURER'S ASSOCIATION , LOW RISE BUILDING SYSTEMS MANUAL
5. INTERNATIONAL CODE COUNCIL: INTERNATIONAL BUILDING CODE

ALL WELDING ELECTRODES SHALL BE A233 CLASS E-70 SERIES. MINIMUM WELDS ON PRIMARY STRUCTURAL MEMBERS SHALL BE 3/16 FILLET WELDS UNLESS SHOWN OTHERWISE ON SHOP FABRICATION DRAWINGS.

ALL STRUCTURAL STEEL SHALL BE SHOP FABRICATED UNLESS NOTED.

MATERIAL PROPERTIES OF STEEL PLATE AND SHEET USED IN THE FABRICATION OF PRIMARY RIGID FRAMES AND ALL PRIMARY STRUCTURAL FRAMING MEMBERS (OTHER THAN COLD-FORMED SECTIONS) CONFORM TO THE CHEMISTRY REQUIREMENTS OF ASTM-A36 WITH MINIMUM YIELD POINT OF 50,000 P.S.I. OR 36,000 P.S.I. AS REQUIRED BY DESIGN.

MATERIAL PROPERTIES OF COLD FORMED LIGHT GAGE STEEL MEMBERS CONFORM TO THE REQUIREMENTS OF A.S.T.M. A-570, GRADE 55, WITH A MINIMUM YIELD POINT OF 57,000 P.S.I.

ALL PIPE SHALL BE MINIMUM SCHEDULE 40 AND 36,000 P.S.I. UNLESS OTHERWISE NOTED.

CABLE BRACING TO BE "BRACE GRIP" SYSTEM AS MANUFACTURED BY FLORIDA WIRE AND CABLE COMPANY, EHS CABLE OR EQUAL. BRACING IN FLUSH GIRT SIDEWALL / ENDWALL BAYS MAY REQUIRE THE FIELD CUTTING OF SLOTS SO THAT CABLE IS INSTALLED WITHIN GIRTS.

STRUCTURAL JOINTS WITH A.S.T.M. A-325 HIGH STRENGTH BOLTS, WHERE INDICATED ON THE DRAWINGS, SHALL BE ASSEMBLED AND THE FASTENERS TIGHTENED IN ACCORDANCE WITH 'SNUG-TIGHT' METHOD AS DESCRIBED IN THE SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM F-3125 GRADE A325 OR GRADE A490 BOLTS (2020 EDITION), UNLESS OTHERWISE NOTED. ALL JOINTS WILL BE ASSEMBLED WITHOUT WASHERS UNLESS OTHERWISE NOTED.

ALL STEEL MEMBERS EXCEPT BOLTS AND FASTENERS SHALL RECEIVE ONE SHOP COAT OF IRON OXIDE CORROSION INHIBITIVE PRIMER.

SHOP AND FIELD INSPECTIONS AND ASSOCIATED FEES ARE THE RESPONSIBILITY OF THE CONTRACTOR.

UNLESS OTHERWISE NOTED, ALL SCREWED-DOWN ROOF AND WALL PANELS ARE TO BE INSTALLED USING A MINIMUM OF ONE SCREW PER FOOT AT EACH PURLIN / GIRT AND ONE STITCH SCREW EVERY 20 INCHES ALONG THE PANEL LAPS AND ENDS AS DESCRIBED IN THE INSTALLATION MANUAL. SINCE BEARING FRAME ENDWALLS DEPEND ON DIAPHRAGM STRENGTH TO PROVIDE LATERAL SUPPORT, THE NUMBER AND SIZE OF FIELD INSTALLED OPENINGS IN THESE WALLS MAY BE LIMITED. SEE THE APPLICABLE WALL DRAWING OR CONTACT YOUR SALES REPRESENTATIVE FOR MORE INFORMATION.

APPROVAL NOTES

THE FOLLOWING CONDITIONS APPLY IN THE EVENT THAT THESE DRAWINGS ARE USED AS APPROVAL DRAWINGS:

A) IT IS IMPERATIVE THAT ANY CHANGES TO THESE DRAWINGS:
   1) BE MADE IN CONTRASTING INK.
   2) BE LEGIBLE AND UNAMBIGUOUS.
   3) HAVE ALL INSTANCES OF CHANGE CLEARLY INDICATED.

B) DATED SIGNATURE IS REQUIRED ON ALL PAGES.

C) MANUFACTURER RESERVES THE RIGHT TO RESUBMIT DRAWINGS WITH EXTENSIVE OR COMPLEX CHANGES REQUIRED TO AVOID MISFABRICATION, THIS MAY IMPACT THE DELIVERY SCHEDULE. APPROVAL OF THESE DRAWINGS INDICATES CONCLUSIVELY THAT THE MANUFACTURER HAS CORRECTLY INTERPRETED THE CONTRACT REQUIREMENTS, AND FURTHER CONSTITUTES AGREEMENT THAT THE BUILDING AS DRAWN, OR AS DRAWN WITH INDICATED CHANGES REPRESENTS THE TOTALITY OF THE MATERIALS TO BE SUPPLIED BY MANUFACTURER.

D) ANY CHANGES NOTED ON THE DRAWINGS NOT IN CONFORMANCE WITH THE TERMS AND REQUIREMENTS OF THE CONTRACT BETWEEN MANUFACTURER AND ITS CUSTOMER ARE NOT BINDING ON MANUFACTURER UNLESS SUBSEQUENTLY SPECIFICALLY ACKNOWLEDGED AND AGREED TO IN WRITING BY CHANGE ORDER OR SEPARATE DOCUMENTATION. MANUFACTURER RECOGNIZES THAT RUBBER STAMPS ARE ROUTINELY USED FOR INDICATING APPROVAL, DISAPPROVAL, REJECTION, OR MERE REVIEW OF THE DRAWINGS SUBMITTED, HOWEVER, MANUFACTURER DOES NOT ACCEPT CHANGES OR ADDITIONS TO CONTRACTUAL TERMS AND CONDITIONS THAT MAY APPEAR WITH USE OF A STAMP OR SIMILAR INDICATION OF APPROVAL, DISAPPROVAL, ETC. SUCH LANGUAGE APPLIED TO MANUFACTURER'S DRAWINGS BY THE CUSTOMER, ARCHITECT, ENGINEER, OR ANY OTHER PARTY WILL BE CONSIDERED AS UNACCEPTABLE ALTERATIONS TO THESE DRAWING NOTES, AND WILL NOT ALTER THE CONTRACTUAL RIGHTS AND OBLIGATIONS EXISTING BETWEEN MANUFACTURER AND ITS CUSTOMER.

E) ONLY DRAWINGS SPECIFICALLY MARKED "FOR CONSTRUCTION" ARE APPROVED FOR CONSTRUCTION. USING ANCHOR BOLT PLANS WITHOUT THIS NOTATION IS DONE AT THE CUSTOMER'S RISK.

WARRANTY NOTE

ENGINEERING CALCULATIONS AND DESIGN ARE BASED ON PRE-FABRICATED METAL BUILDING(S) AS SHOWN IN THESE DRAWINGS AND SUPPLIED BY MUELLER, INC. AND ANY FIELD FABRICATION AND/OR MODIFICATION OF SAID BUILDING(S) IS THE SOLE RESPONSIBILITY OF THE CUSTOMER AND MAY VOID ALL ENGINEERING AND WARRANTY.

NOTE:
THIS BUILDING IS DESIGNED AS AN ENCLOSED STRUCTURE. ANY ACCESSORIES USED WITH THIS BUILDING (DOORS, WINDOWS, VENTS, ETC.) MUST BE RATED TO MEET THE SAME WIND CRITERIA AS THIS BUILDING.

PRODUCT CERTIFICATIONS

THIS IS TO CERTIFY THE ABOVE REFERENCED BUILDING HAS BEEN DESIGNED IN ACCORDANCE WITH A.I.S.C. AND A.I.S.I. DESIGN PROCEDURES AND GOOD ENGINEERING PRACTICE AND FOR THE FOLLOWING LOADS. ALL WELDING IS PER THE A.W.S. D1.1 & D1.3 CODES. LOADS ARE APPLIED IN ACCORDANCE WITH THE M.B.M.A. LOW RISE BUILDING SYSTEMS MANUAL, AND THE DESIGN SATISFIES THE REQUIREMENTS OF IBC'21

DEAD LOAD: METAL BLDG STRUCTURE ONLY AS FURNISHED BY MUELLER, INC.

LIVE LOAD (ROOF): 20.0 (psf)

LIVE LOAD REDUCED PER CODE? YES

WIND EXPOSURE: C

RISK CATEGORY: II - Normal

GROUND SNOW LOAD: P_g = 5.0 (psf)

ROOF SNOW LOAD (Flat): P_f = 5.0 (psf)

C_e = 1.0 I_s = 1.0

WIND LOAD: V_{ULT} = 112.0 MPH

V_{ASD} = 86.8 MPH

SEISMIC LOADS

I_e = 1.0

S_s = 0.059 S_{DS} = 0.062

S_1 = 0.034 S_{D1} = 0.053

SEISMIC DESIGN CATEGORY: B

SITE CLASS: D

ANALYSIS PROCEDURE: Equivalent Lateral Force Method

BUILDING-SPECIFIC LOADING INFORMATION

BLDG	Collateral Load (psf)	C_t	SNOW C_s	Roof (Sloped) P_s (psf)	WIND Enclosure	GC_{Pi}	R	SEISMIC C_s	V(kips)
1	2.0	1.0	1.0	5.00	PartiallyEnclosed	± 0.55	3.00	0.021	0.97
2	2.0	1.0	1.0	5.00	PartiallyEnclosed	± 0.55	3.00	0.021	0.03

THIS LETTER OF CERTIFICATION APPLIES SOLELY TO THIS BUILDING AND ITS COMPONENT PARTS AS FURNISHED AND/OR FABRICATED BY MUELLER, INC. AND SPECIFICALLY EXCLUDES FOUNDATION, MASONRY OR GENERAL CONTRACT WORK INCLUDING ERECTION CERTIFICATION. THE DESIGN AND CERTIFICATION FOR THIS PROJECT IS IN ACCORDANCE WITH THE PROVISIONS AND LOADS SPECIFIED ON THE CONTRACT DOCUMENTS. THE CUSTOMER IS TO INSURE ALL LOADS ARE IN COMPLIANCE WITH LOCAL REGULATORY AUTHORITIES. ALL COMPONENTS AND PARTS MUST WITHSTAND THE WIND LOAD AND DESIGN SPECIFICATIONS MENTIONED ABOVE.

PANEL ACCESSORY INFORMATION

	PANEL TYPE	PANEL COLOR	TRIM COLOR
WALL SHEETS	126_PBR	LGR Lt Gray	DCH Dark Charcoal
ROOF SHEETS	MLK	SIL Silver	DCH Dark Charcoal

WARNING: IN NO CASE SHOULD GALVALUME STEEL PANELS BE USED IN CONJUNCTION WITH LEAD OR COPPER. BOTH LEAD AND COPPER HAVE HARMFUL CORROSION EFFECTS ON THE ALUMINUM ZINC ALLOY COATING WHEN THEY ARE USED IN CONTACT WITH GALVALUME STEEL PANELS. EVEN RUN-OFF FROM COPPER FLASHING, WIRING, OR TUBING ONTO GALVALUME SHOULD BE AVOIDED.

BUILDING DESCRIPTION

BLDG	WIDTH		LENGTH		HEIGHT BACK	HEIGHT FRONT	ROOF PITCH BACK	ROOF PITCH FRONT
1	60'-0"	X	100'-0"	X	16'-0"	16'-0"	2.00:12	2.00:12
2	12'-0"	X	12'-0"	X	10'-0"	12'-0"	2.00:12	

NOTE: SECONDARY ONLY TO BE GALVANIZED

DEFLECTION LIMIT TABLE	
EW Column	L / 110
EW Rafter (Live)	L / 180
EW Rafter (Wind)	L / 180
Wall Girt	L / 90
Roof Purlin (Live)	L / 150
Roof Purlin (Wind)	L / 150
Rigid Frame (Horiz)	H / 60
Rigid Frame (Vert)	L / 180
Wind Framing	H / 60

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return.

(✓) Approved with NO Changes:
Proceed with Fabrication

( ) Approved with Changes Noted:
Revise and Proceed with Fabrication

( ) Revise and Resubmit:
Revise and Send New Approval Drawings
** Delivery Date WILL BE DELAYED **

Drawings must be received by Mueller within 10 da
or this building will be placed on fabrication hold.

These drawings are NOT FOR CONSTRUCTION.
Construction drawings will be available after the building is released for fabrication.

DRAWING INDEX

3D Building Model

To access 3D model of your metal building, scan QR Code above.

Legend
PART MARK = Part001

NOTE: THE ENGINEER LISTED ON THESE DRAWINGS IS NOT THE "REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE" NOR "ENGINEER OF RECORD" FOR THE OVERALL PROJECT.

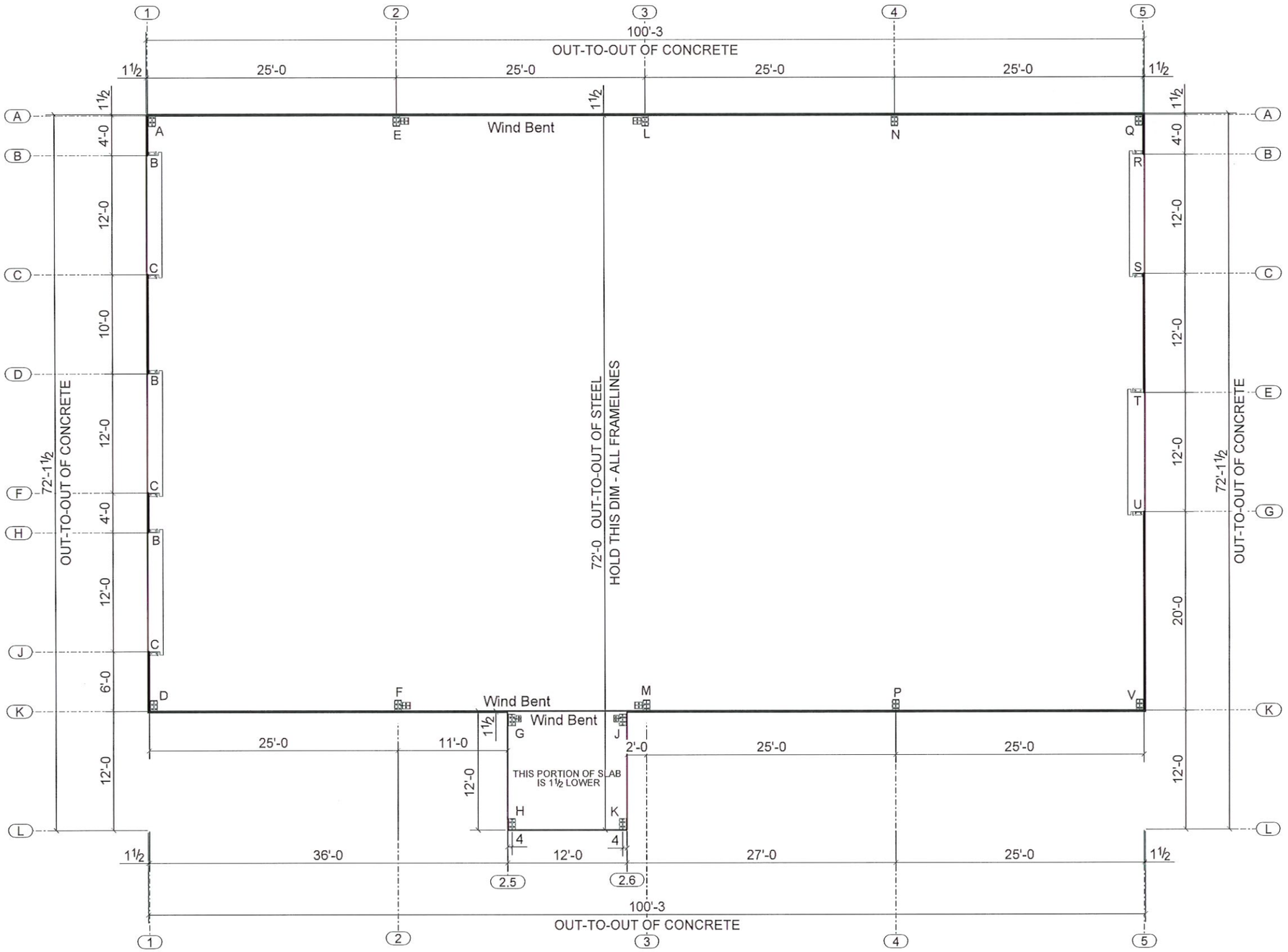
F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
121601
REGISTERED PROFESSIONAL ENGINEER
10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: COVERSHEET
CUSTOMER NAME: FUN ABOUNDS INC
END USER: BASTROP C0 PCT 2
SCALE: NON
SALESMAN: WESKEY CARTER
JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957
DETAILER: TRG
CHECKER:
DATE: 10/21/2024
JOB #: 6971245
DWG #: C1
REV: 0

Tekla Structures



ANCHOR BOLT PLAN

NOTE: Base Plates @ 100'-0"(U.N.)

ANCHOR BOLT SUMMARY			
	QTY	LOCATION	DIA
○	20	JAMB w/ MC5 Clip	5/8"
●	4	WIND COLUMN	3/4"
●	56	MAINFRAME	3/4"
●	8	WIND COLUMN	3/4"

For Visual Purposes, Base Plate Views may be Exaggerated Beyond Dwg Scale

Tekla Structures

FOR APPROVAL ONLY
NOT FOR CONSTRUCTION

If customer pours off this plan, customer is responsible for any possible changes

APPROVAL DRAWINGS FOR REVIEW

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F-2689

STATE OF TEXAS
MATTHEW S. MALLEY
121601
LICENSED PROFESSIONAL ENGINEER

10/21/2024

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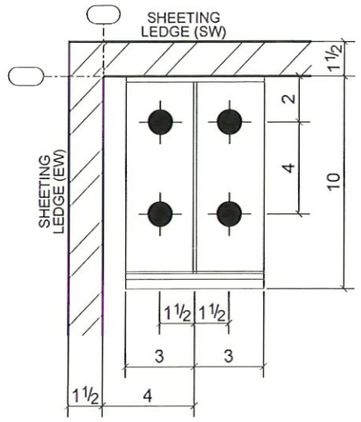
MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: ANCHOR BOLT PLAN

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP C0 PCT 2	1:60

SALESMAN	JOBSITE ADDRESS
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957

DETAILER	CHECKER	DATE	JOB #	DWG #	REV.
TRG		10/21/2024	6971245	AB1	0



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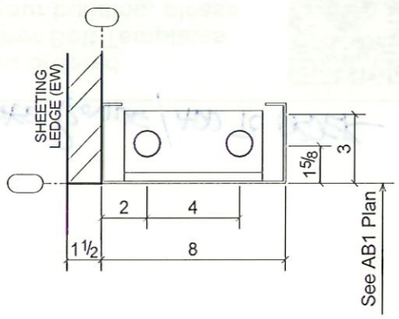

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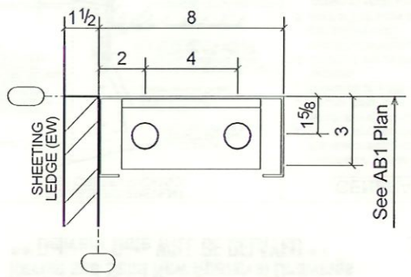

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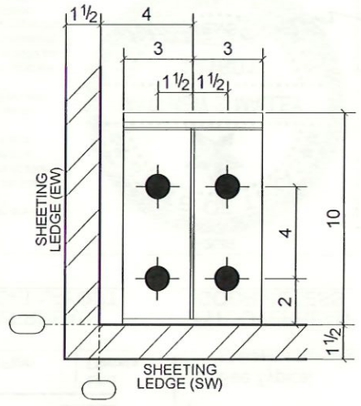

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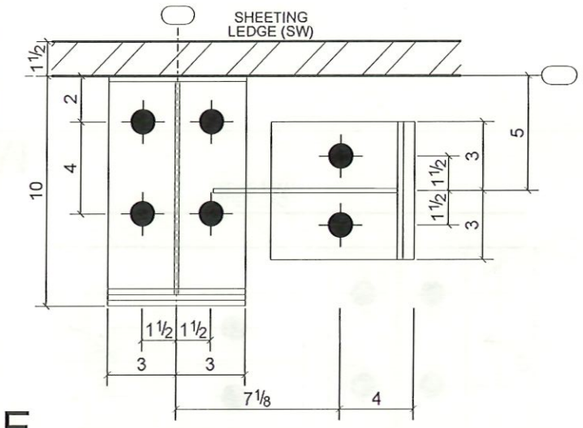

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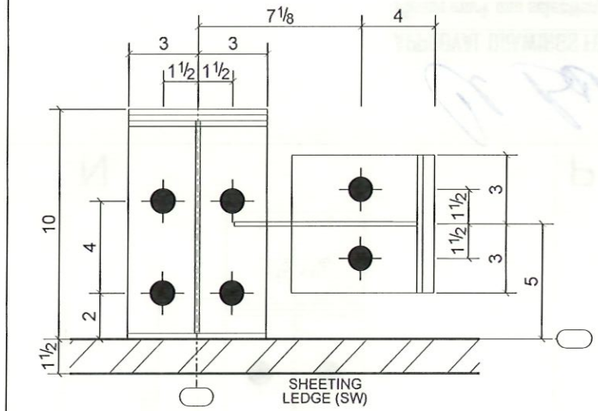

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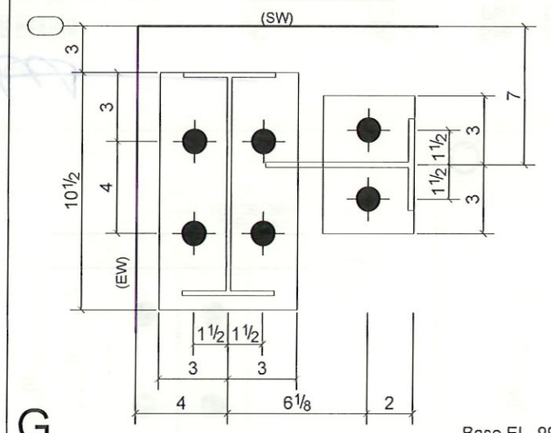

G

Base EL. 99'-10 ½"

○ DIA = 5/8"
⊕ DIA = 3/4"

PLEASE PROVIDE/ADD TO ORDER

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www.muellerinc.com/downloads/videos/anchor-bolt-template-videos

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SEE NOTE BELOW

( ) Revise and Resubmit:
Revise and Send New Approval Drawings
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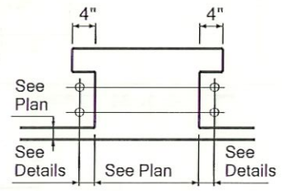
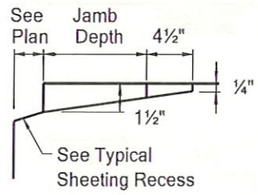
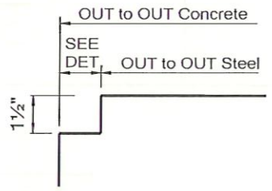


TYP. OVERHEAD DOOR BOLT LAYOUT

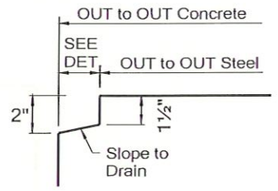


TYP. OVERHEAD DOOR RECESS



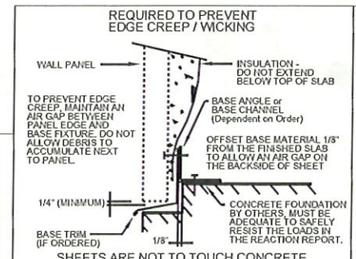
TYP. SHEETING RECESS WITH BASE DRIP EDGE TRIM

BASE DRIP EDGE TRIM MUST BE USED TO PREVENT EDGE CREEP.



TYP. SHEETING RECESS W/O BASE DRIP EDGE TRIM

BASE DRIP EDGE TRIM NOT REQUIRED TO BE USED TO PREVENT EDGE CREEP.



SHEETS ARE NOT TO TOUCH CONCRETE

TYPICAL SECTION THRU WALL PANEL & CONCRETE FOUNDATION

GENERAL NOTES

1. Foundation design and construction are not the responsibility of MUELLER, INC.
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3. Anchor Bolts shall be accurately set to a tolerance of ± 1/8" in both elevation and location.
4. Column base plates are designed not to exceed a bearing pressure of 1125 pounds per square inch.
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F-2689

STATE OF TEXAS
MATTHEW S. MALLEY
121601
PROFESSIONAL ENGINEER
10/21/2024

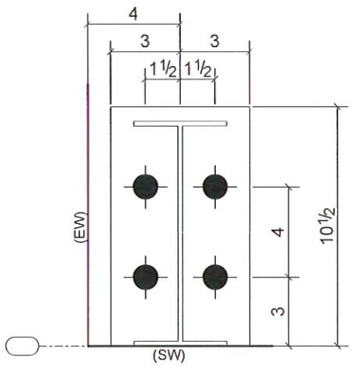
REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: ANCHOR BOLT DETAILS

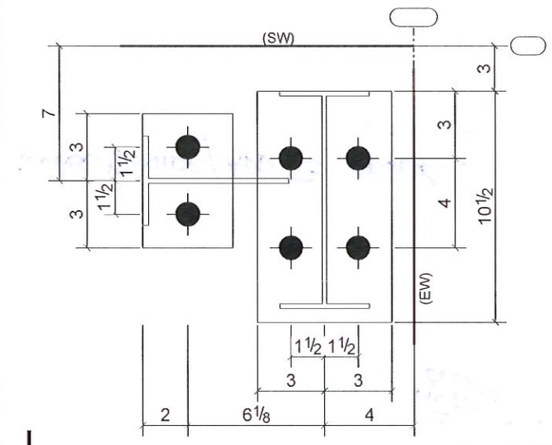
CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP CO PCT 2	NONE

SALESMAN	JOBSITE ADDRESS			
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957			
DETAILER / CHECKER	DATE	JOB #	DWG #	REV.
TRG	10/21/2024	6971245	AB2	0



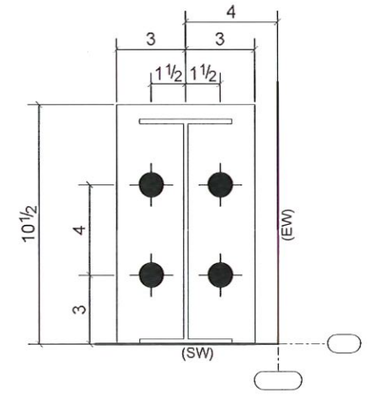
H

Base EL. 99'-10 ½"



J

Base EL. 99'-10 ½"



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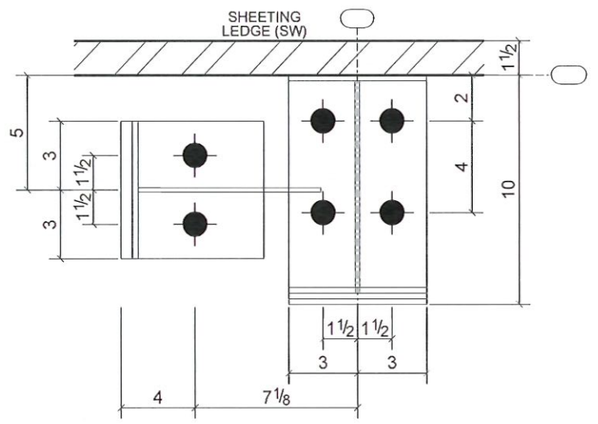
Base EL. 99'-10 ½"



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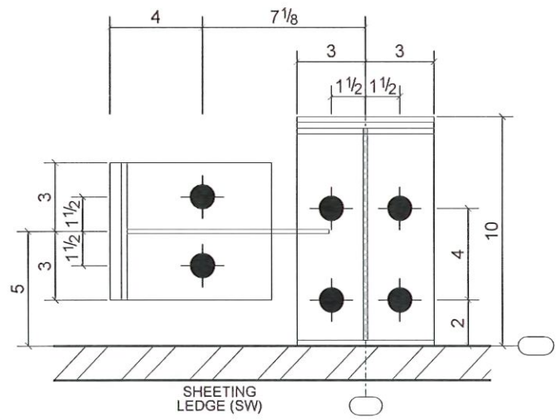

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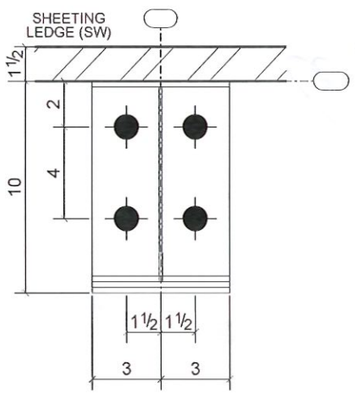

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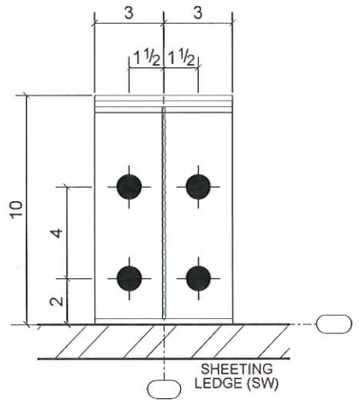

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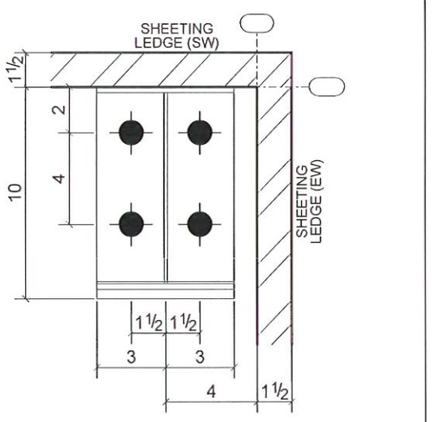

Q

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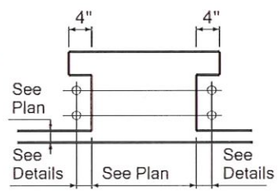
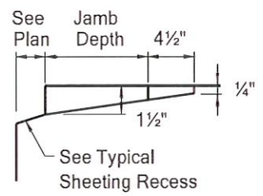
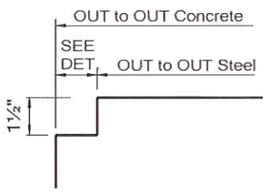


TYP. OVERHEAD
DOOR BOLT LAYOUT

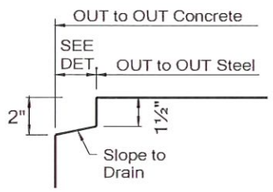


TYP. OVERHEAD
DOOR RECESS



TYP. SHEETING RECESS
WITH BASE DRIP EDGE TRIM

BASE DRIP EDGE TRIM MUST BE
USED TO PREVENT EDGE CREEP.



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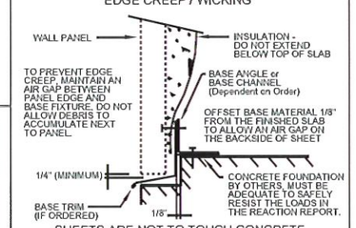
DIA = 3/4"



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F-2689

STATE OF TEXAS
MATTHEW S. MALLEY
121601
LICENSED
PROFESSIONAL ENGINEER

10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

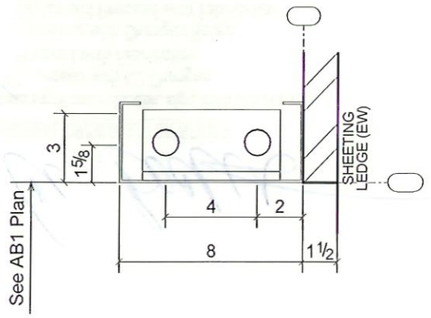
MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: ANCHOR BOLT DETAILS

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP C0 PCT 2	NONE

SALESMAN	JOBSITE ADDRESS				
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957				
DETAILER: TRG	CHECKER:	DATE: 10/21/2024	JOB # 6971245	DWG # AB3	REV. 0

Tekla Structures



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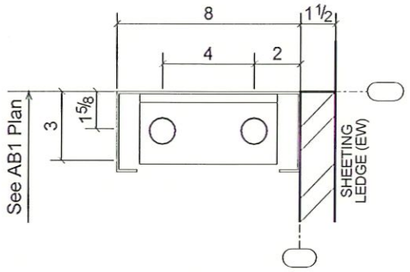

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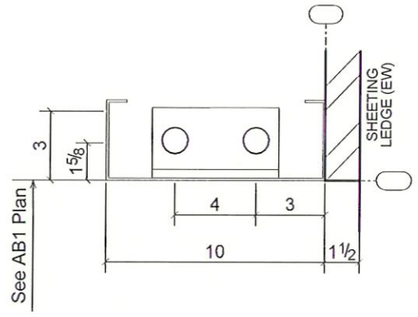

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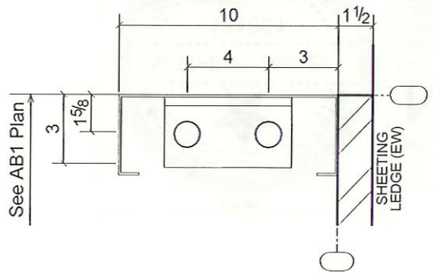

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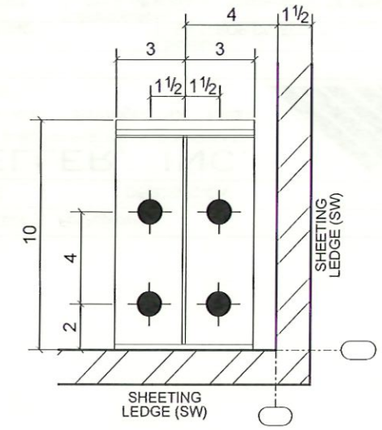

V

○ DIA = 5/8"

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Tekla Structures

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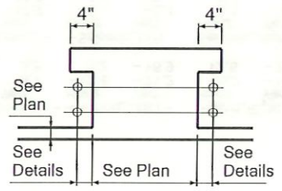
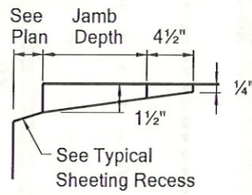
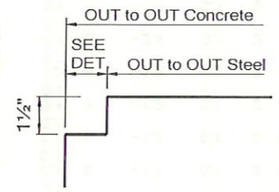


TYP. OVERHEAD DOOR BOLT LAYOUT



TYP. OVERHEAD DOOR RECESS



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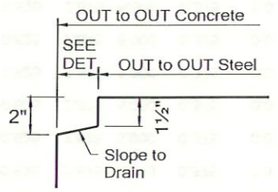
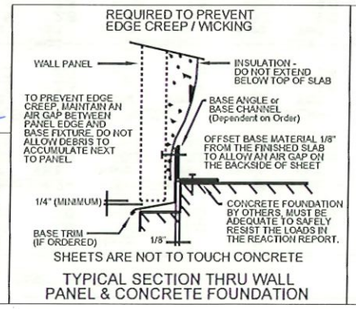


TYP. SHEETING RECESS W/O BASE DRIP EDGE TRIM

BASE DRIP EDGE TRIM NOT REQUIRED TO BE USED TO PREVENT EDGE CREEP.



TYPICAL SECTION THRU WALL PANEL & CONCRETE FOUNDATION

GENERAL NOTES

1. Foundation design and construction are not the responsibility of MUELLER, INC.
2. The building reaction data reports the loads which this building places on the foundation.
3. Anchor Bolts shall be accurately set to a tolerance of ± 1/8" in both elevation and location.
4. Column base plates are designed not to exceed a bearing pressure of 1125 pounds per square inch.
5. Anchor Bolt sizes are based on the concrete design strength being a minimum of 3000 psi. Anchorage of the anchor bolts and adequacy of any foundation anchorage (including anchor bolts, drive pins, or any other foundation anchorage provided by MUELLER, INC.) is solely the responsibility of the foundation designer and / or customer.

F-2689

STATE OF TEXAS
MATTHEW S. MALLEY
121601
REGISTERED PROFESSIONAL ENGINEER

10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

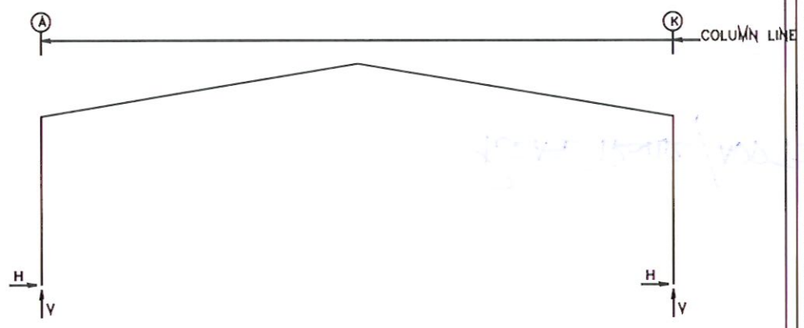
DRAWING DESCRIPTION: ANCHOR BOLT DETAILS

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP C0 PCT 2	NONE

SALESMAN	JOBSITE ADDRESS
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957

DETAILER	CHECKER	DATE	JOB #	DWG #	REV.
TRG		10/21/2024	6971245	AB4	0

FRAME LINES: 1 2 3 4 5



RIGID FRAME: MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES

Frm Line	Col Line	Column_Reactions(k) Load Id	Hmax H	V Vmax	Load Id	Hmin H	V Vmin	Bolt(in) Qty	Dia	Base_Plate(in) Width	Length	Thick	Grout (in)
1	A	1	4.2	8.6	2	-4.5	-8.5	4	0.750	6.000	10.00	0.500	0.0
1	K	3	4.5	-8.5	1	-4.2	8.6	4	0.750	6.000	10.00	0.500	0.0
		1	-4.2	8.6	3	4.5	-8.5						

RIGID FRAME: MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES

Frm Line	Col Line	Column_Reactions(k) Load Id	Hmax H	V Vmax	Load Id	Hmin H	V Vmin	Bolt(in) Qty	Dia	Base_Plate(in) Width	Length	Thick	Grout (in)
2*	A	1	8.3	13.3	2	-6.7	-11.0	4	0.750	6.000	10.00	0.500	0.0
2*	K	3	6.7	-11.0	1	-8.3	13.3	4	0.750	6.000	10.00	0.500	0.0
		1	-8.3	13.3	3	6.7	-11.0						

2* Frame lines: 2 3

RIGID FRAME: MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES

Frm Line	Col Line	Column_Reactions(k) Load Id	Hmax H	V Vmax	Load Id	Hmin H	V Vmin	Bolt(in) Qty	Dia	Base_Plate(in) Width	Length	Thick	Grout (in)
4	A	1	8.2	13.2	2	-6.6	-11.1	4	0.750	6.000	10.00	0.500	0.0
4	K	3	6.6	-11.1	1	-8.2	13.2	4	0.750	6.000	10.00	0.500	0.0
		1	-8.2	13.2	3	6.6	-11.1						

RIGID FRAME: MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES

Frm Line	Col Line	Column_Reactions(k) Load Id	Hmax H	V Vmax	Load Id	Hmin H	V Vmin	Bolt(in) Qty	Dia	Base_Plate(in) Width	Length	Thick	Grout (in)
5	A	1	4.2	8.6	2	-4.5	-8.5	4	0.750	6.000	10.00	0.500	0.0
5	K	3	4.5	-8.5	1	-4.2	8.6	4	0.750	6.000	10.00	0.500	0.0
		1	-4.2	8.6	3	4.5	-8.5						

RIGID FRAME: BASIC COLUMN REACTIONS (k)

Frame Line	Column Line	Dead Horiz	Dead Vert	Collateral Horiz	Collateral Vert	Live Horiz	Live Vert	Snow Horiz	Snow Vert	Wind_Left1 Horiz	Wind_Left1 Vert	Wind_Right1 Horiz	Wind_Right1 Vert
1	A	0.9	2.0	0.5	1.0	2.8	5.6	1.2	2.4	-8.3	-16.1	-3.0	-12.5
1	K	-0.9	2.0	-0.5	1.0	-2.8	5.6	-1.2	2.4	3.0	-12.5	8.3	-16.1

Frame Line	Column Line	Wind_Left2 Horiz	Wind_Left2 Vert	Wind_Right2 Horiz	Wind_Right2 Vert	Wind_Long1 Horiz	Wind_Long1 Vert	Wind_Long2 Horiz	Wind_Long2 Vert	Seismic_Left Horiz	Seismic_Left Vert	Seismic_Right Horiz	Seismic_Right Vert
1	A	-5.6	-4.1	-0.3	-0.5	-2.6	-12.5	-3.2	-11.1	-0.1	0.0	0.1	0.0
1	K	0.3	-0.5	5.6	-4.1	3.2	-11.1	2.6	-12.5	-0.1	0.0	0.1	0.0

Frame Line	Column Line	MIN_SNOW Horiz	MIN_SNOW Vert	F1UNB_SL_L Horiz	F1UNB_SL_L Vert	F1UNB_SL_R Horiz	F1UNB_SL_R Vert
1	A	1.2	2.3	1.1	2.4	1.1	1.5
1	K	-1.2	2.3	-1.1	1.5	-1.1	2.4

Frame Line	Column Line	Dead Horiz	Dead Vert	Collateral Horiz	Collateral Vert	Live Horiz	Live Vert	Snow Horiz	Snow Vert	Wind_Left1 Horiz	Wind_Left1 Vert	Wind_Right1 Horiz	Wind_Right1 Vert
2*	A	1.6	2.8	1.0	1.5	5.7	9.0	2.4	3.7	-12.7	-21.2	-5.3	-16.9
2*	K	-1.6	2.8	-1.0	1.5	-5.7	9.0	-2.4	3.8	5.3	-16.9	12.7	-21.2

Frame Line	Column Line	Wind_Left2 Horiz	Wind_Left2 Vert	Wind_Right2 Horiz	Wind_Right2 Vert	Wind_Long1 Horiz	Wind_Long1 Vert	Wind_Long2 Horiz	Wind_Long2 Vert	Seismic_Left Horiz	Seismic_Left Vert	Seismic_Right Horiz	Seismic_Right Vert
2*	A	-7.1	-2.0	0.3	2.3	-6.3	-19.9	-7.2	-17.7	-0.1	-0.1	0.1	0.1
2*	K	-0.3	2.3	7.1	-2.0	7.2	-17.7	6.3	-19.9	-0.1	0.1	0.1	-0.1

Frame Line	Column Line	MIN_SNOW Horiz	MIN_SNOW Vert	F2UNB_SL_L Horiz	F2UNB_SL_L Vert	F2UNB_SL_R Horiz	F2UNB_SL_R Vert
2*	A	2.4	3.8	2.2	3.8	2.2	2.3
2*	K	-2.4	3.8	-2.2	2.3	-2.2	3.8

Frame Line	Column Line	Dead Horiz	Dead Vert	Collateral Horiz	Collateral Vert	Live Horiz	Live Vert	Snow Horiz	Snow Vert	Wind_Left1 Horiz	Wind_Left1 Vert	Wind_Right1 Horiz	Wind_Right1 Vert
4	A	1.6	2.7	1.0	1.5	5.7	9.0	2.4	3.7	-12.6	-21.2	-5.2	-16.9
4	K	-1.6	2.7	-1.0	1.5	-5.7	9.0	-2.4	3.8	5.2	-16.9	12.6	-21.2

Frame Line	Column Line	Wind_Left2 Horiz	Wind_Left2 Vert	Wind_Right2 Horiz	Wind_Right2 Vert	Wind_Long1 Horiz	Wind_Long1 Vert	Wind_Long2 Horiz	Wind_Long2 Vert	Seismic_Left Horiz	Seismic_Left Vert	Seismic_Right Horiz	Seismic_Right Vert
4	A	-7.1	-2.0	0.3	2.3	-6.2	-19.9	-7.1	-17.7	-0.1	-0.1	0.1	0.1
4	K	-0.3	2.3	7.1	-2.0	7.1	-17.7	6.2	-19.9	-0.1	0.1	0.1	-0.1

Frame Line	Column Line	MIN_SNOW Horiz	MIN_SNOW Vert	F3UNB_SL_L Horiz	F3UNB_SL_L Vert	F3UNB_SL_R Horiz	F3UNB_SL_R Vert
4	A	2.4	3.8	2.2	3.8	2.2	2.3
4	K	-2.4	3.8	-2.2	2.3	-2.2	3.8

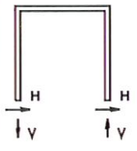
Frame Line	Column Line	Dead Horiz	Dead Vert	Collateral Horiz	Collateral Vert	Live Horiz	Live Vert	Snow Horiz	Snow Vert	Wind_Left1 Horiz	Wind_Left1 Vert	Wind_Right1 Horiz	Wind_Right1 Vert
5	A	0.9	2.0	0.5	1.0	2.8	5.6	1.2	2.4	-8.3	-16.1	-3.0	-12.5
5	K	-0.9	2.0	-0.5	1.0	-2.8	5.6	-1.2	2.4	3.0	-12.5	8.3	-16.1

Frame Line	Column Line	Wind_Left2 Horiz	Wind_Left2 Vert	Wind_Right2 Horiz	Wind_Right2 Vert	Wind_Long1 Horiz	Wind_Long1 Vert	Wind_Long2 Horiz	Wind_Long2 Vert	Seismic_Left Horiz	Seismic_Left Vert	Seismic_Right Horiz	Seismic_Right Vert
5	A	-5.6	-4.1	-0.3	-0.5	-2.6	-12.5	-3.2	-11.1	-0.1	0.0	0.1	0.0
5	K	0.3	-0.5	5.6	-4.1	3.2	-11.1	2.6	-12.5	-0.1	0.0	0.1	0.0

Frame Line	Column Line	MIN_SNOW Horiz	MIN_SNOW Vert	F4UNB_SL_L Horiz	F4UNB_SL_L Vert	F4UNB_SL_R Horiz	F4UNB_SL_R Vert
5	A	1.2	2.3	1.1	2.4	1.1	1.5
5	K	-1.2	2.3	-1.1	1.5	-1.1	2.4

2* Frame lines: 2 3

WIND BENT REACTIONS



Wall Loc	Wall Line	Col Line	± Reactions Wind(k) Horz	Wind(k) Vert	Seismic(k) Horz	Seismic(k) Vert	Bolt(in) Qty	Dia	Base_Plate(in) Width	Length	Thick
F_SW	K	2	2.4	2.8	0.2	0.3	2	0.750	6.000	10.500	0.500
F_SW	K	3	2.4	2.8	0.2	0.3	2	0.750	6.000	10.500	0.500
B_SW	A	3	2.4	2.8	0.2	0.3	2	0.750	6.000	10.500	0.500
B_SW	A	2	2.4	2.8	0.2	0.3	2	0.750	6.000	10.500	0.500

ENDWALL COLUMN: BASIC COLUMN REACTIONS (k)

Frm Line	Col Line	Dead Vert	Wind Press Horz	Wind Suct Horz	Seis Long Vert
1	B	0.1	-1.7	1.8	0.0
1	C	0.1	-2.6	2.8	0.0
1	D	0.1	-2.9	3.1	0.0
1	F	0.1	-2.0	2.2	0.0
1	H	0.1	-1.9	2.1	0.0
1	J	0.1	-1.9	2.1	0.0
5	G	0.1	-4.0	4.2	0.0
5	E	0.1	-3.2	3.4	0.0
5	C	0.1	-2.8	3.1	0.0
5	B	0.1	-1.7	1.8	0.0

ENDWALL COLUMN: MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES

Frm Line	Col Line	Column_Reactions(k) Load Id	Hmax H	V Vmax	Load Id	Hmin H	V Vmin	Bolt(in) Qty	Dia	Base_Plate(in) Width	Length	Thick	Grout (in)
1	B	4	1.1	0.0	5	-1.0	0.0	2	0.625	2.875	6.000	0.375	0.0
		6	1.1	0.1									
1	C	4	1.7	0.1	5	-1.6	0.1	2	0.625	2.875	6.000	0.375	0.0
		6	1.7	0.1									
1	D	4	1.8	0.1	5	-1.7	0.1	2	0.625	2.875	6.000	0.375	0.0
		6	1.8	0.1									
1	F	4	1.3	0.1	5	-1.2	0.1	2	0.625	2.875	6.000	0.375	0.0
		6	1.3	0.1									
1	H	4	1.2	0.1	5	-1.2	0.1	2	0.625	2.875	6.000	0.375	0.0
		6	1.2	0.1									
1	J	4	1.3	0.0	5	-1.2	0.0	2	0.625	2.875	6.000	0.375	0.0
		6	1.3	0.1									
5	G	4	2.5	0.1	5	-2.4	0.1	2	0.625	2.875	6.000	0.375	0.0
		6	2.5	0.1									
5	E	4	2.1	0.1	5	-1.9	0.1	2	0.625	2.875	6.000	0.375	0.0
		6	2.1	0.1									
5	C	4	1.8	0.1	5	-1.7	0.1	2	0.625	2.875	6.000	0.375	0.0
		6	1.8	0.1									
5	B	4	1.1	0.0	5	-1.0	0.0	2	0.625	2.875	6.000	0.375	0.0
		6	1.1	0.1									

BUILDING BRACING REACTIONS

Wall Loc	Wall Line	Col Line	± Reactions(k) Wind Horz	Wind Vert	Seismic Horz	Seismic Vert	Panel_Shear (lb/ft) Wind	Seis	Note
L_EW	1								(h)
F_SW	K	2,3							(a)
R_EW	5								(h)
B_SW	A	2,3							(a)

(a) Wind bent in bay
(h) Rigid frame at endwall

Reactions for seismic represent shear force, E

LOAD COMBINATIONS

ID	Description
1	Dead+Collateral+Live
2	0.6Dead+0.6Wind_Left1
3	0.6Dead+0.6Wind_Right1
4	0.6Dead+0.6Wind_Right2+0.6Wind_Suction
5	0.6Dead+0.6Wind_Pressure+0.6Wind_Long2L
6	Dead+0.6Wind_Right2+0.6Wind_Suction

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return.

(✓) Approved with NO Changes:
Proceed with Fabrication

( ) Approved with Changes Noted:
Revise and Proceed with Fabrication

( ) Revise and Resubmit:
Revise and Send New Approval Drawings
** Delivery Date WILL BE DELAYED **

F-2689

STATE OF TEXAS
MATTHEW S. MALLEY
121601
PROFESSIONAL ENGINEER
10/21/2024

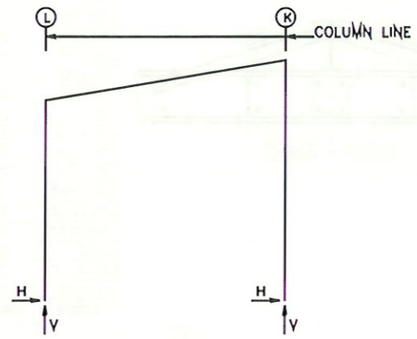
REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: REACTIONS
CUSTOMER NAME: FUN ABOUNDS INC
END USER: BASTROP C0 PCT 2
SCALE: NON
SALESMAN: WESKEY CARTER
JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957
DETAILER: TRG
CHECKER:
DATE: 10/21/2024
JOB #: 6971245
DWG #: AB5
REV.: 0

Tekla Structures

FRAME LINES: 2.6 2.5



RIGID FRAME: MAXIMUM REACTIONS, ANCHOR BOLTS, & BASE PLATES

Frm Line	Col Line	Column_Reactions(k) Load Id	Hmax H	V Vmax	Load Id	Hmin H	V Vmin	Bolt(in) Qty	Bolt(in) Dia	Base_Plate(in) Width	Base_Plate(in) Length	Base_Plate(in) Thick	Grout (in)
2.6*	L	3	0.7	0.3	7	-0.7	-0.4	4	0.750	6.000	10.50	0.500	-1.5
		4	0.3	1.3	5	-0.3	-0.9						
2.6*	K	8	0.7	-0.4	2	-0.5	-0.2	4	0.750	6.000	10.50	0.500	-1.5
		1	-0.1	1.1	6	0.4	-1.0						

2.6* Frame lines: 2.6 2.5

RIGID FRAME: BASIC COLUMN REACTIONS (k)

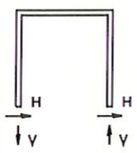
Frame Line	Column Line	Dead Horiz	Dead Vert	Collateral Horiz	Collateral Vert	Live Horiz	Live Vert	Snow Horiz	Snow Vert	Snow_Drift Horiz	Snow_Drift Vert	Slide_Snow Horiz	Slide_Snow Vert
2.6*	L	0.0	0.3	0.0	0.1	0.1	0.7	0.0	0.2	0.0	0.0	0.0	0.2
2.6*	K	0.0	0.3	0.0	0.1	-0.1	0.8	0.0	0.2	0.0	0.2	0.0	0.2

Frame Line	Column Line	Wind_Left1 Horiz	Wind_Left1 Vert	Wind_Right1 Horiz	Wind_Right1 Vert	Wind_Left2 Horiz	Wind_Left2 Vert	Wind_Right2 Horiz	Wind_Right2 Vert	Wind_Long1 Horiz	Wind_Long1 Vert	Wind_Long2 Horiz	Wind_Long2 Vert
2.6*	L	-0.5	-1.8	1.2	0.1	-1.1	-0.9	0.6	1.0	0.6	-0.9	0.5	-0.8
2.6*	K	-0.8	-0.7	0.6	-1.9	-0.2	0.2	1.2	-1.0	-0.5	-1.1	-0.6	-0.8

Frame Line	Column Line	MIN_SNOW Horiz	MIN_SNOW Vert
2.6*	L	0.0	0.2
2.6*	K	0.0	0.2

2.6* Frome lines: 2.6 2.5

WIND BENT REACTIONS



Loc	Wall Line	Col Line	± Reactions Wind(k) Horz	Wind(k) Vert	Seismic(k) Horz	Seismic(k) Vert	Bolt(in) Qty	Bolt(in) Dia	Base_Plate(in) Width	Base_Plate(in) Length	Base_Plate(in) Thick
F_SW	K	2.6	0.3	0.6	0.0	0.0	2	0.750	6.000	8.000	0.500
F_SW	K	2.5	0.3	0.6	0.0	0.0	2	0.750	6.000	8.000	0.500

BUILDING BRACING REACTIONS

Loc	Wall Line	Col Line	± Reactions(k) Wind Horz	Wind Vert	Seismic Horz	Seismic Vert	Panel_Shear (lb/ft) Wind	Panel_Shear (lb/ft) Seis	Note
L_EW	2.6								(h)
F_SW	K	2.6,2.5							(a)
R_EW	2.5								(h)
B_SW	L						1250	357	

(a)Wind bent in bay
(h)Rigid frame at endwall

Reactions for seismic represent shear force, E

LOAD COMBINATIONS

ID	Description
1	Dead+Collateral+Live
2	Dead+0.6Wind_Left1
3	Dead+0.6Wind_Right1
4	Dead+Collateral+0.75Live+0.45Wind_Right2
5	0.6Dead+0.6Wind_Left1
6	0.6Dead+0.6Wind_Right1
7	0.6Dead+0.6Wind_Left2
8	0.6Dead+0.6Wind_Right2

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return.

(✓) Approved with NO Changes:
Proceed with Fabrication

( ) Approved with Changes Noted:
Revise and Proceed with Fabrication

( ) Revise and Resubmit:
Revise and Send New Approval Drawings
** Delivery Date WILL BE DELAYED **

F-2689

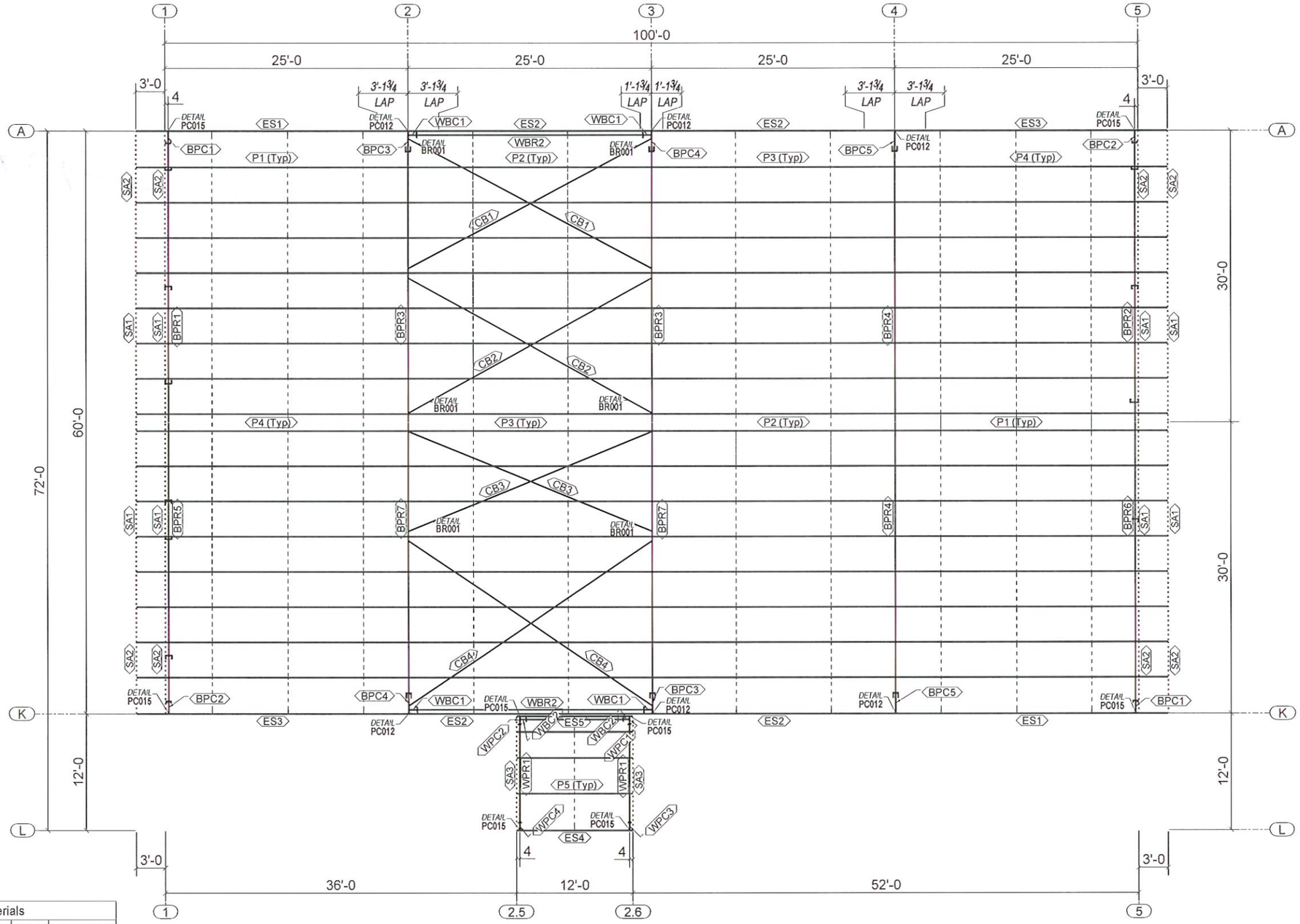
STATE OF TEXAS
MATTHEW S. MALLEY
121601
REGISTERED PROFESSIONAL ENGINEER
10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

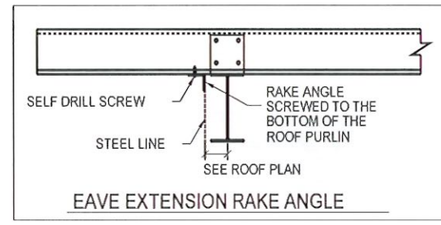
MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: REACTIONS
CUSTOMER NAME: FUN ABOUNDS INC
END USER: BASTROP CO PCT 2
SCALE: NONE
SALESMAN: WESKEY CARTER
JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957
DETAILER: TRG
CHECKER:
DATE: 10/21/2024
JOB #: 6971245
DWG #: AB6
REV: 0

Tekla Structures

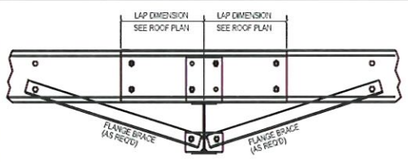


ROOF PLAN

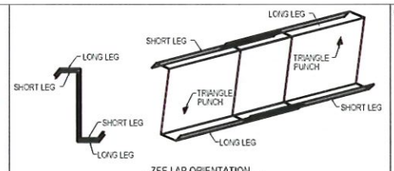


EAVE EXTENSION RAKE ANGLE

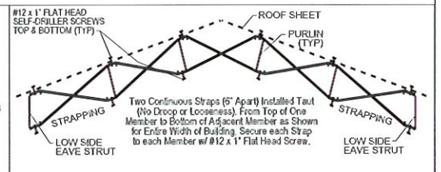
Bill of Materials				
Qty	Mark	Profile	Finish	Length
2	CB1	CB5/16D	GZ	26'-7 1/4"
2	CB2	CB1/4D	GZ	26'-10 3/8"
2	CB3	CB1/4D	GZ	25'-3"
2	CB4	CB5/16D	GZ	28'-6 5/16"
2	ES1	82E14DU-2	GZ	27'-11 1/2"
4	ES2	82E14DU-2	GZ	24'-11 1/2"
2	ES3	82E14DU-2	GZ	27'-11 1/2"
1	ES4	82E14DU-2	GZ	11'-11 1/2"
1	ES5	82E14DD-2	GZ	11'-11 1/2"
16	P1	8X25Z14	GZ	31'-1 1/2"
16	P2	8X25Z16	GZ	29'-3 1/2"
16	P3	8X25Z16	GZ	29'-3 1/2"
16	P4	8X25Z14	GZ	31'-1 1/2"
3	P5	8X25Z16	GZ	11'-11 1/2"
12	SA1	L4X2x14GA	GZ	23'-1 5/8"
12	SA2	L4X2x14GA	GZ	7'-7 13/16"
2	SA3	L4X2x14GA	GZ	11'-9 3/4"



ROOF PURLIN LAP DETAIL
@ DETAIL PC003 ONLY



ZEE LAP ORIENTATION
TRIANGLE PUNCHES AT ENDS OF ZEE MEMBERS ALWAYS POINT TO LONG LEG



GABLE ROOF STRAPPING
INSTALLATION DETAIL

F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
121601
LICENSED PROFESSIONAL ENGINEER
10/21/2024

APPROVAL DRAWINGS FOR REVIEW

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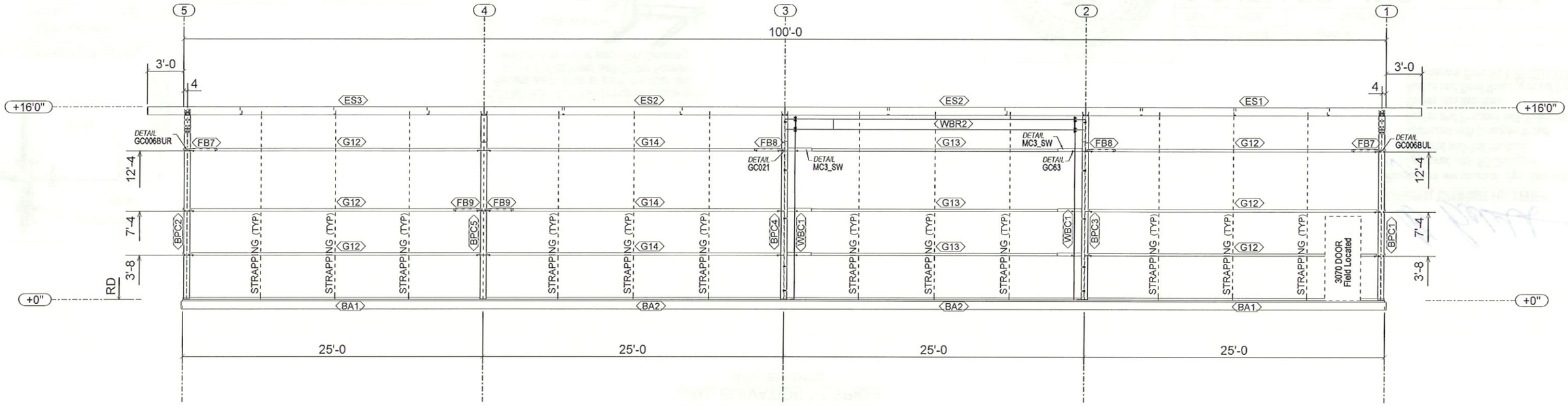
Revise and Send New Approval Drawing
** Delivery Date WILL BE DELAYED **

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: ROOF PLAN			
CUSTOMER NAME: FUN ABOUNDS INC	END USER: BASTROP C0 PCT 2		SCALE: 1:62
SALESMAN: WESKEY CARTER	JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957		
DETAILER: TRG / CHECKER	DATE: 10/21/2024	JOB #: 6971245	DWG #: E1 / REV.: 0

Tekla Structures



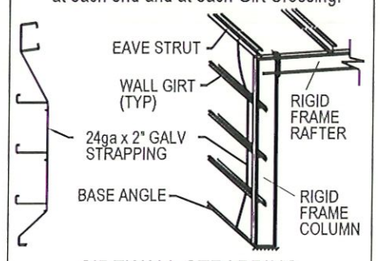
WALL ELEVATION AT GRID A

Bill of Materials				
Qty	Mark	Profile	Finish	Length
2	WBC1	PL3/16"X10"	RO	
1	WBR2	PL1/8"X10"	RO	
2	BA1	L4X2x14GA	GZ	24'-8 1/2"
2	BA2	L4X2x14GA	GZ	24'-5 1/2"
2	FB7	2X2L12	GZ	2'-5 1/2"
2	FB8	2X2L12	GZ	2'-9 1/16"
2	FB9	2X2L12	GZ	2'-6 1/2"
6	G12	10X25C14	GZ	23'-11 3/8"
3	G13	10X25C14	GZ	23'-2 5/16"
3	G14	10X25C14	GZ	24'-3 5/16"

WINDBENT BUILT UP MEMBER TABLE			
Mark	Type	Thick x Max Width	x Length
WBC1	WB	PL3/16"X10"	x 179 1/4"
WBR2	WB	PL1/8"X10"	x 37 5/16"

Wind Bent Connection Bolt Table			
Connected Assemblies			Bolt Description
WBC1	------>	BPC4	10 ~ 3/4" x 2 1/2" A325N
WBC1	------>	BPC3	10 ~ 3/4" x 2 1/2" A325N
WBC1	------>	WBR2	8 ~ 3/4" x 2 1/2" A325N

INSTALLED TAUT (No Droop or Looseness)
Secure each Strap to each member with #12 x 1" Flat Head Self-Driller Screws at each end and at each Girt Crossing.



SIDEWALL STRAPPING

APPROVAL DRAWINGS FOR REVIEW

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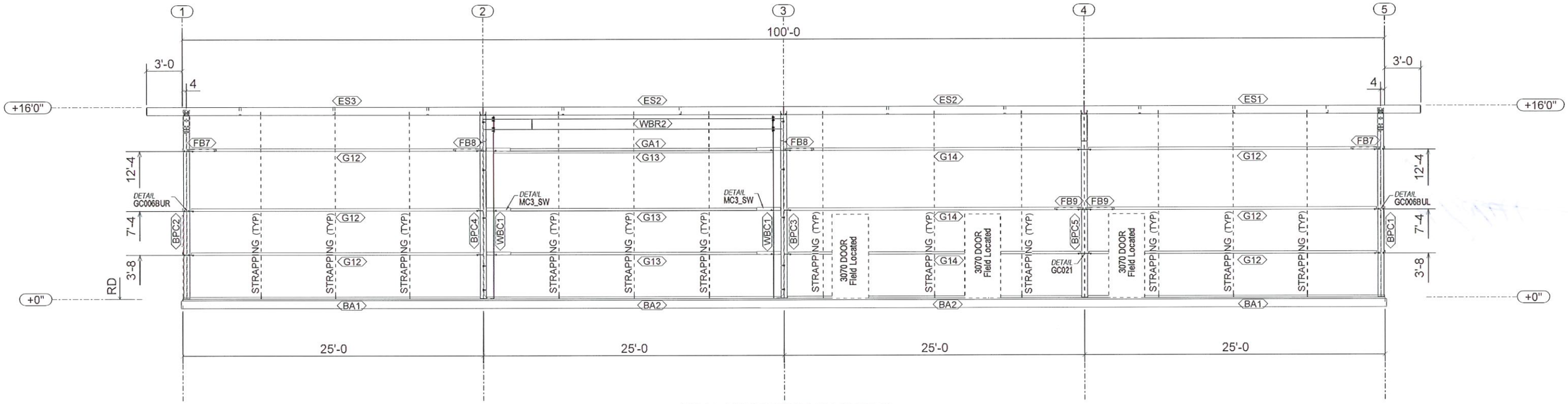
Revise and Send New Approval Drawing
** Delivery Date WILL BE DELAYED **

F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
121601
LICENSED PROFESSIONAL ENGINEER
10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

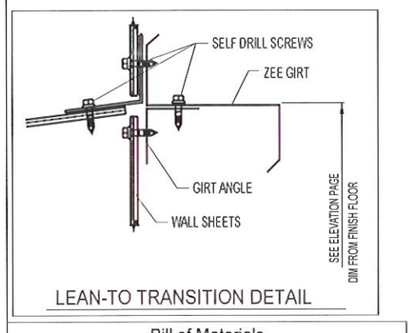
MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: WALL ELEVATION AT GRID A
CUSTOMER NAME: FUN ABOUNDS INC
END USER: BASTROP C0 PCT 2
SCALE: 1:45
SALESMAN: WESKEY CARTER
JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957
DETAILER: TRG
CHECKER:
DATE: 10/21/2024
JOB #: 6971245
DWG #: E2
REV.: 0



WALL ELEVATION AT GRID K

(MAIN BUILDING)



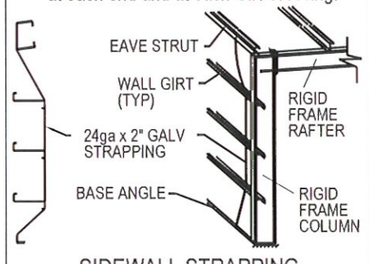
LEAN-TO TRANSITION DETAIL

Bill of Materials				
Qty	Mark	Profile	Finish	Length
2	WBC1	PL3/16"X10"	RO	
1	WBR2	PL1/8"X10"	RO	
2	BA1	L4X2x14GA	GZ	24'-8 1/2"
2	BA2	L4X2x14GA	GZ	24'-5 1/2"
2	FB7	2X2L12	GZ	2'-5 1/2"
2	FB8	2X2L12	GZ	2'-9 1/16"
2	FB9	2X2L12	GZ	2'-6 1/2"
6	G12	10X25C14	GZ	23'-11 5/16"
3	G13	10X25C14	GZ	23'-2 5/16"
3	G14	10X25C14	GZ	24'-3 5/16"
1	GA1	L4X2x14GA	GZ	23'-2 5/16"

WINDBENT BUILT UP MEMBER TABLE			
Mark	Type	Thick x Max Width x Length	
WBC1	WB	PL3/16"X10"	x 179 1/4"
WBR2	WB	PL1/8"X10"	x 37 5/16"

Wind Bent Connection Bolt Table			
Connected Assemblies			Bolt Description
WBC1	------>	BPC4	10 ~ 3/4" x 2 1/2" A325N
WBC1	------>	BPC3	10 ~ 3/4" x 2 1/2" A325N
WBC1	------>	WBR2	8 ~ 3/4" x 2 1/2" A325N

INSTALLED TAUT (No Droop or Looseness)
Secure each Strap to each member with #12 x 1" Flat Head Self-Driller Screws at each end and at each Girt Crossing.



SIDEWALL STRAPPING

APPROVAL DRAWINGS FOR REVIEW

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F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
121601
REGISTERED PROFESSIONAL ENGINEER
10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

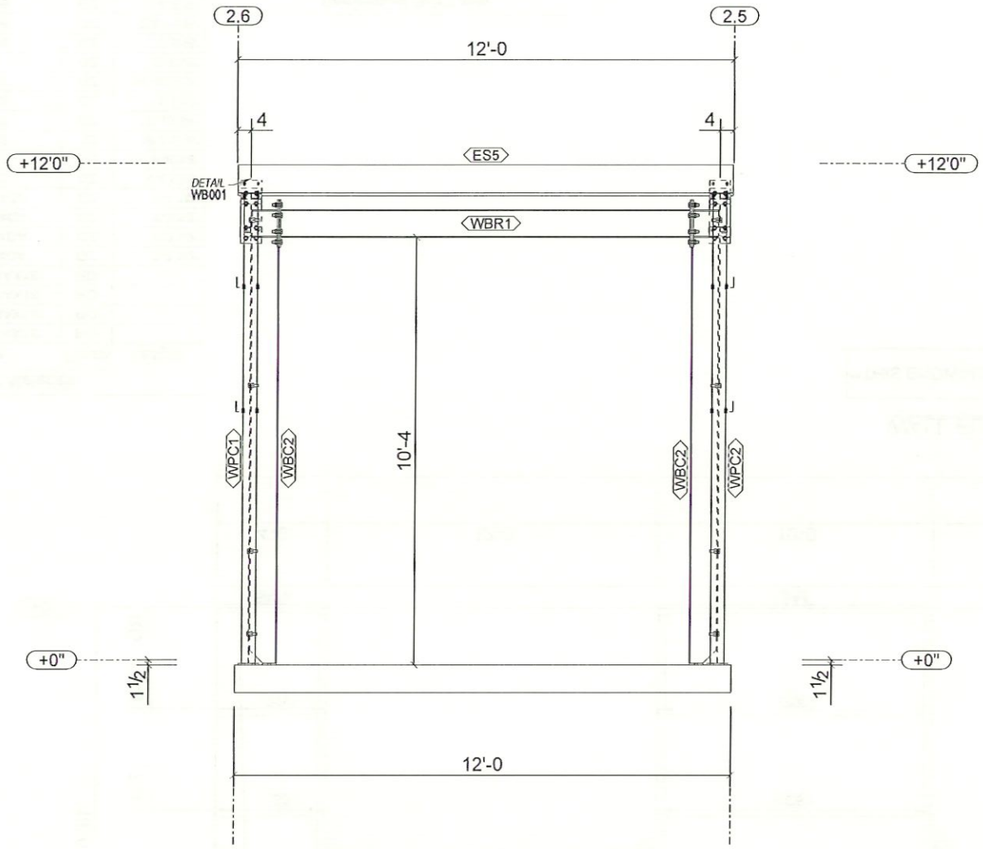
DRAWING DESCRIPTION: WALL ELEVATION AT GRID K

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP CO PCT 2	1:45

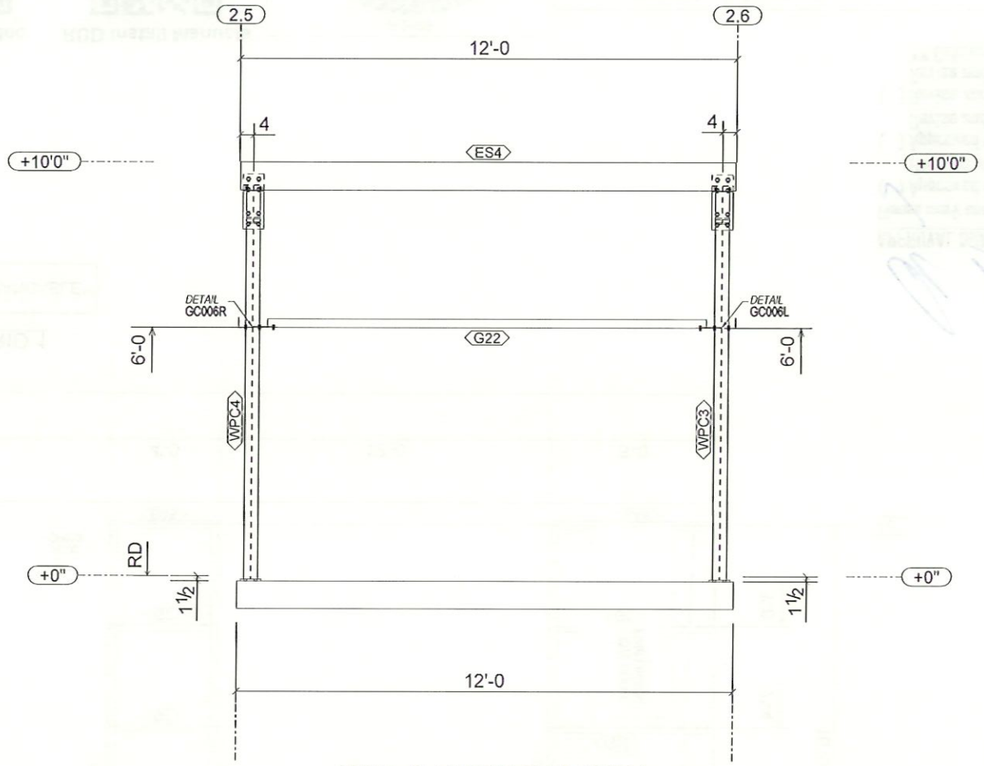
SALESMAN	JOBSITE ADDRESS
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957

DETAILER	CHECKER	DATE	JOB #	DWG #	REV.
TRG		10/21/2024	6971245	E3	0

Tekla Structures



WALL ELEVATION AT GRID K



WALL ELEVATION AT GRID L

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return

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Revise and Send New Approval Drawing
** Delivery Date WILL BE DELAYED **

Bill of Materials				
Qty	Mark	Profile	Finish	Length
2	WBC2	W8X13	RO	
1	WBR1	W8X13	RO	
1	G22	8X25C16	GZ	10'-7 5/16"

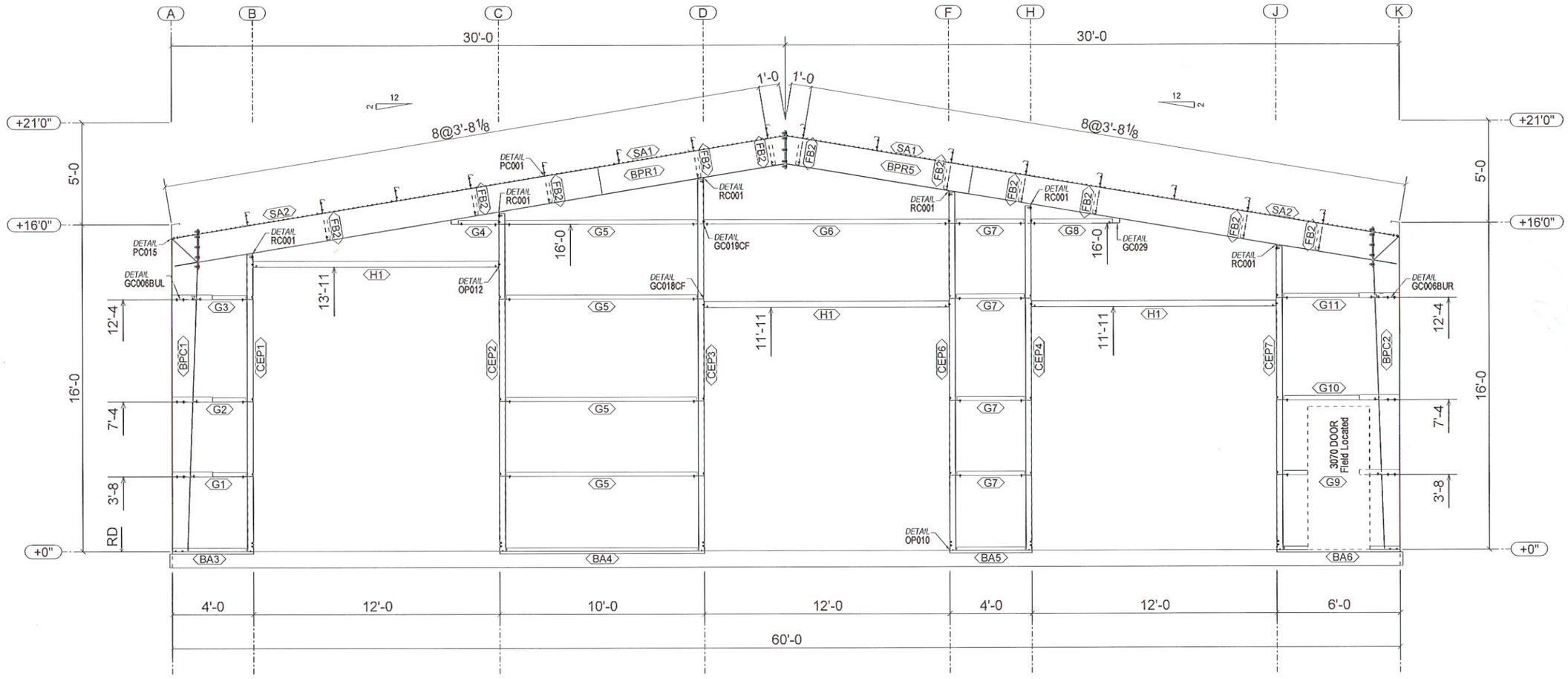
Wind Bent Connection Bolt Table		
Connected Assemblies		Bolt Description
WBC2 ------>	WPC1	8 ~ 3/4" x 2 1/2" A325N
WBC2 ------>	WPC2	8 ~ 3/4" x 2 1/2" A325N
WBC2 ------>	WBR1	8 ~ 3/4" x 2 1/2" A325N

F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
121601
REGISTERED PROFESSIONAL ENGINEER
10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: WALL ELEVATION AT GRID K, L
CUSTOMER NAME: FUN ABOUNDS INC
END USER: BASTROP C0 PCT 2
SCALE: 1:20
SALESMAN: WESKEY CARTER
JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957
DETAILER: TRG
CHECKER:
DATE: 10/21/2024
JOB #: 6971245
DWG #: E4
REV.: 0



WALL ELEVATION AT GRID 1

THIS ENDWALL FRAME IS NOT EXPANDABLE

Bill of Materials				
Qty	Mark	Profile	Finish	Length
1	BPC1	SHT10GAX15"	RO	
1	BPC2	SHT10GAX15"	RO	
1	BPR1	SHT10GAX16"	RO	
1	BPR5	SHT10GAX16"	RO	
1	BA3	L4X2X14GA	GZ	3'-7 1/2"
1	BA4	L4X2X14GA	GZ	9'-3 1/2"
1	BA5	L4X2X14GA	GZ	3'-3 1/2"
1	BA6	L4X2X14GA	GZ	5'-7 1/2"
1	CEP1	8X35C12	GZ	14'-6 5/16"
1	CEP2	8X35C12	GZ	16'-6 3/8"
1	CEP3	8X35C12	GZ	18'-2 5/16"
1	CEP4	8X35C12	GZ	16'-10 3/8"
1	CEP6	8X35C12	GZ	17'-6 5/16"
1	CEP7	8X35C12	GZ	14'-10 5/16"
11	FB2	2X2L12	GZ	2'-9 5/8"
1	G1	8X25C16	GZ	2'-8 5/16"
1	G2	8X25C16	GZ	2'-6 11/16"
1	G3	8X25C16	GZ	2'-4 9/16"
1	G4	8X25C16	GZ	1'-11 1/2"
4	G5	8X25C16	GZ	9'-3 5/16"
1	G6	8X25C16	GZ	11'-11 1/2"
4	G7	8X25C16	GZ	3'-3 5/16"
1	G8	8X25C16	GZ	3'-11 1/2"
1	G9	8X25C16	GZ	4'-8 5/16"
1	G10	8X25C16	GZ	4'-6 11/16"
1	G11	8X25C16	GZ	4'-4 9/16"
3	H1	8X35C14	GZ	11'-11 1/2"

Component Bolt Table			
Detail ID	Connected Assemblies ↓	Conn. Clip ↓	Bolt Description
RC001			
	BPR1→ CEP1	2 ~ 5/8"x 2"	A325N
	BPR1→ CEP2	2 ~ 5/8"x 2"	A325N
	BPR1→ CEP3	2 ~ 5/8"x 2"	A325N
	BPR5→ CEP4	2 ~ 5/8"x 2"	A325N
	BPR5→ CEP6	2 ~ 5/8"x 2"	A325N
	BPR5→ CEP7	2 ~ 5/8"x 2"	A325N

RUD Install Video

RUD Install Manuals

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www.muellerinc.com/downloads/download-manuals

ALL ENDWALL COLUMNS AND JAMBS ARE DESIGNED AS "POSTS" AS DEFINED BY OSHA AND ARE NOT INTENDED TO BE CLIMBED ON UNTIL FULLY BRACED.

F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
121601
PROFESSIONAL ENGINEER
10/21/2024

APPROVAL DRAWINGS FOR REVIEW

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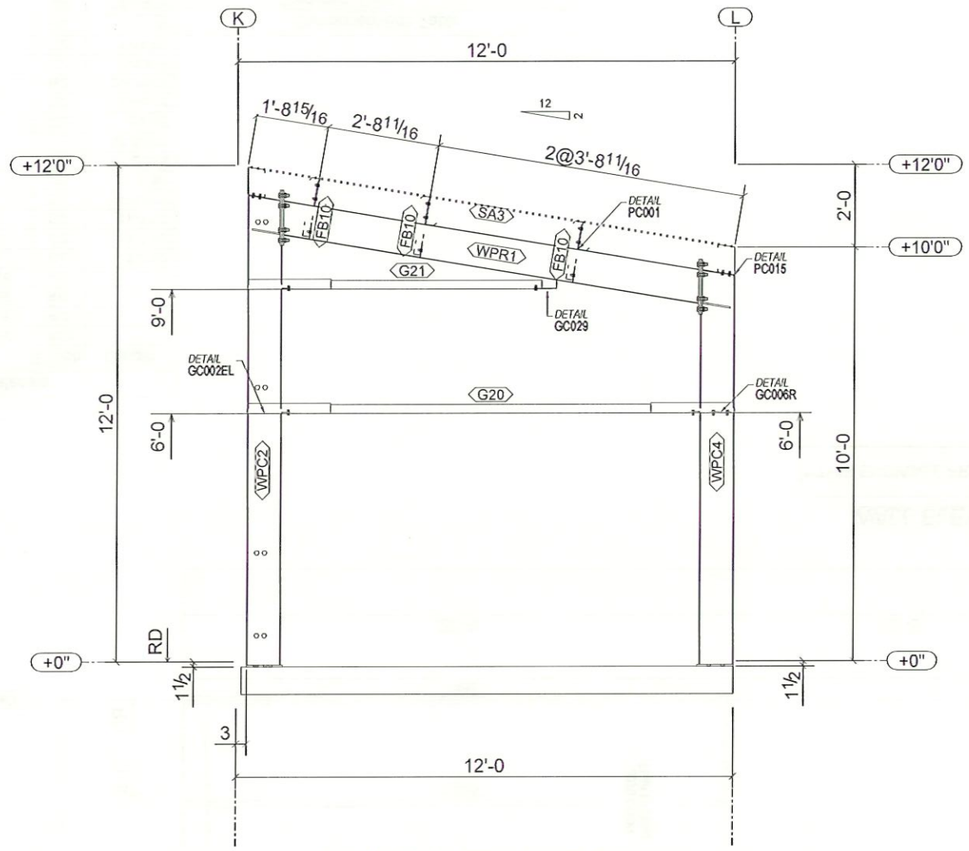
** Delivery Date WILL BE DELAYED **

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

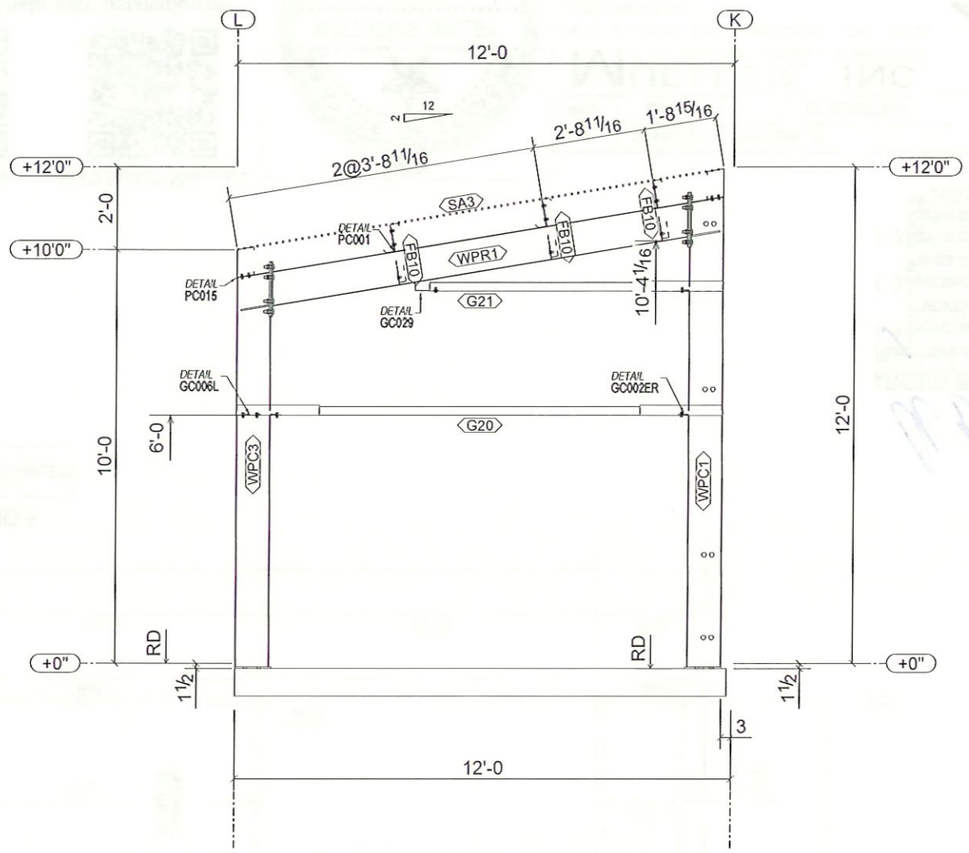
MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: WALL ELEVATION AT GRID 1
CUSTOMER NAME: FUN ABOUNDS INC
END USER: BASTROP CO PCT 2
SCALE: 1:30
SALESMAN: WESKEY CARTER
JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957
DETAILER: TRG
CHECKER:
DATE: 10/21/2024
JOB #: 6971245
DWG #: E5
REV.: 0

Tekla Structures



WALL ELEVATION AT GRID 2.5



WALL ELEVATION AT GRID 2.6

APPROVAL DRAWINGS FOR REVIEW

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( ) Revise and Resubmit:
Revise and Send New Approval Drawing
** Delivery Date WILL BE DELAYED **

Bill of Materials				
Qty	Mark	Profile	Finish	Length
1	WPC1	W10X12	RO	
1	WPC2	W10X12	RO	
1	WPC3	W10X12	RO	
1	WPC4	W10X12	RO	
2	WPR1	W10X12	RO	
6	FB10	2X2L12	GZ	2'-6 5/8"
2	G20	8X25C16	GZ	10'-0 3/4"
2	G21	8X25C16	GZ	6'-3 1/8"

Tekla Structures

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F-2689

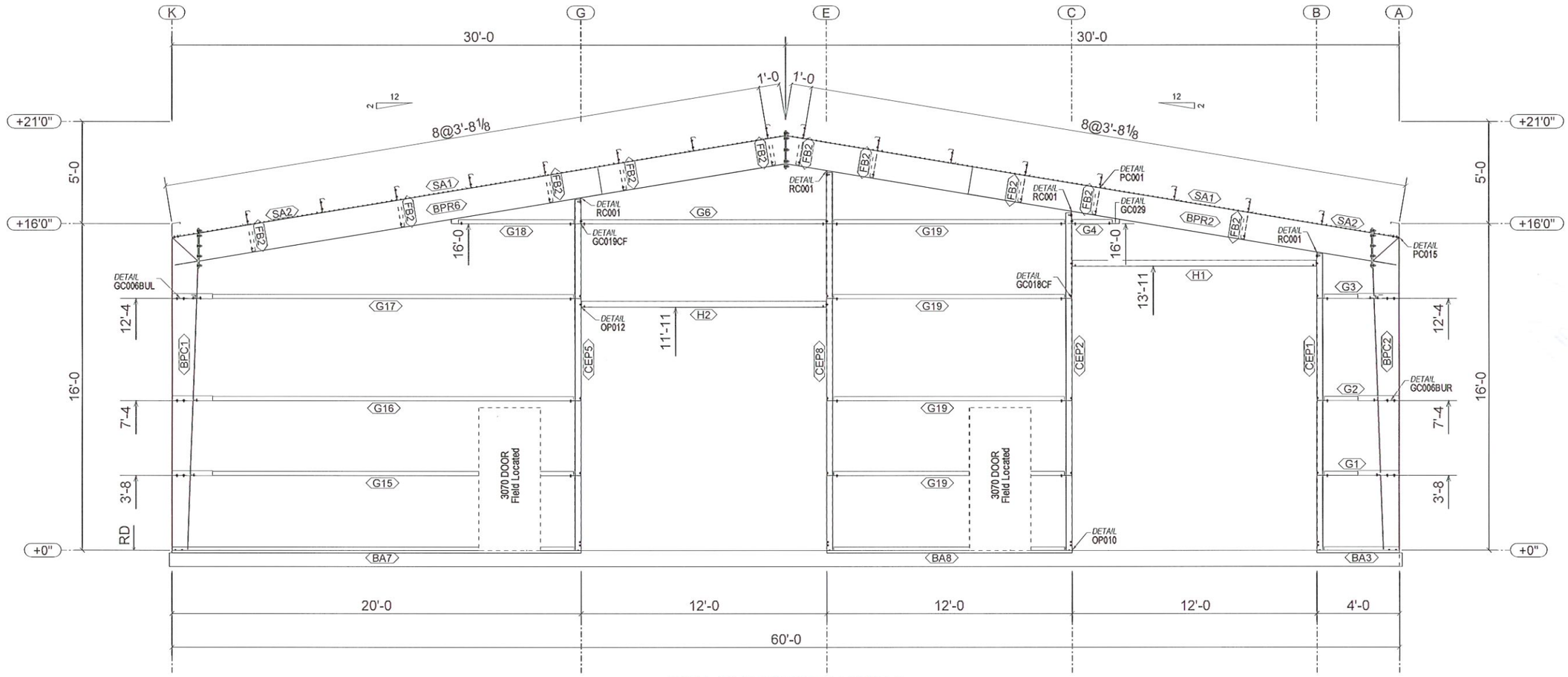
STATE OF TEXAS
MATTHEW S. MALLEY
121601
REGISTERED
PROFESSIONAL ENGINEER

10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: WALL ELEVATION AT GRID 2.5, 2.6
CUSTOMER NAME: FUN ABOUNDS INC
END USER: BASTROP C0 PCT 2
SCALE: 1:20
SALESMAN: WESKEY CARTER
JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957
DETAILER: TRG
CHECKER:
DATE: 10/21/2024
JOB #: 6971245
DWG #: E6
REV.: 0



WALL ELEVATION AT GRID 5

THIS ENDWALL FRAME IS NOT EXPANDABLE

Bill of Materials				
Qty	Mark	Profile	Finish	Length
1	BPC1	SHT10GAX15"	RO	
1	BPC2	SHT10GAX15"	RO	
1	BPR2	SHT10GAX16"	RO	
1	BPR6	SHT10GAX16"	RO	
1	BA3	L4X2X14GA	GZ	3'-7 1/2"
1	BA7	L4X2X14GA	GZ	19'-7 1/2"
1	BA8	L4X2X14GA	GZ	11'-3 1/2"
1	CEP1	8X35C12	GZ	14'-6 5/16"
1	CEP2	8X35C12	GZ	16'-6 3/8"
1	CEP5	10X35C12	GZ	17'-2 5/16"
1	CEP8	10X35C12	GZ	18'-6 5/16"
10	FB2	2X2L12	GZ	2'-9 5/8"
1	G1	8X25C16	GZ	2'-8 5/16"
1	G2	8X25C16	GZ	2'-6 11/16"
1	G3	8X25C16	GZ	2'-4 9/16"
1	G4	8X25C16	GZ	1'-11 1/2"
1	G6	8X25C16	GZ	11'-11 1/2"
1	G15	8X25C14	GZ	18'-8 5/16"
1	G16	8X25C12	GZ	18'-6 11/16"
1	G17	8X25C12	GZ	18'-4 9/16"
1	G18	8X25C16	GZ	5'-7 7/16"
4	G19	8X25C16	GZ	11'-3 5/16"
1	H1	8X35C14	GZ	11'-11 1/2"
1	H2	10X35C14	GZ	11'-11 1/2"

Component Bolt Table			
Detail ID	Connected Assemblies ↓	Conn. Clip ↓	Bolt Description
RC001			
	BPR2→ CEP1	2 ~ 5/8"x 2"	A325N
	BPR2→ CEP2	2 ~ 5/8"x 2"	A325N
	BPR2→ CEP8	2 ~ 5/8"x 2"	A325N
	BPR6→ CEP5	2 ~ 5/8"x 2"	A325N

RUD Install Video

RUD Install Manuals

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F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
121601
PROFESSIONAL ENGINEER
10/21/2024

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return

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( ) Approved with Changes Noted:
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Revise and Send New Approval Drawings
** Delivery Date WILL BE DELAYED **

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

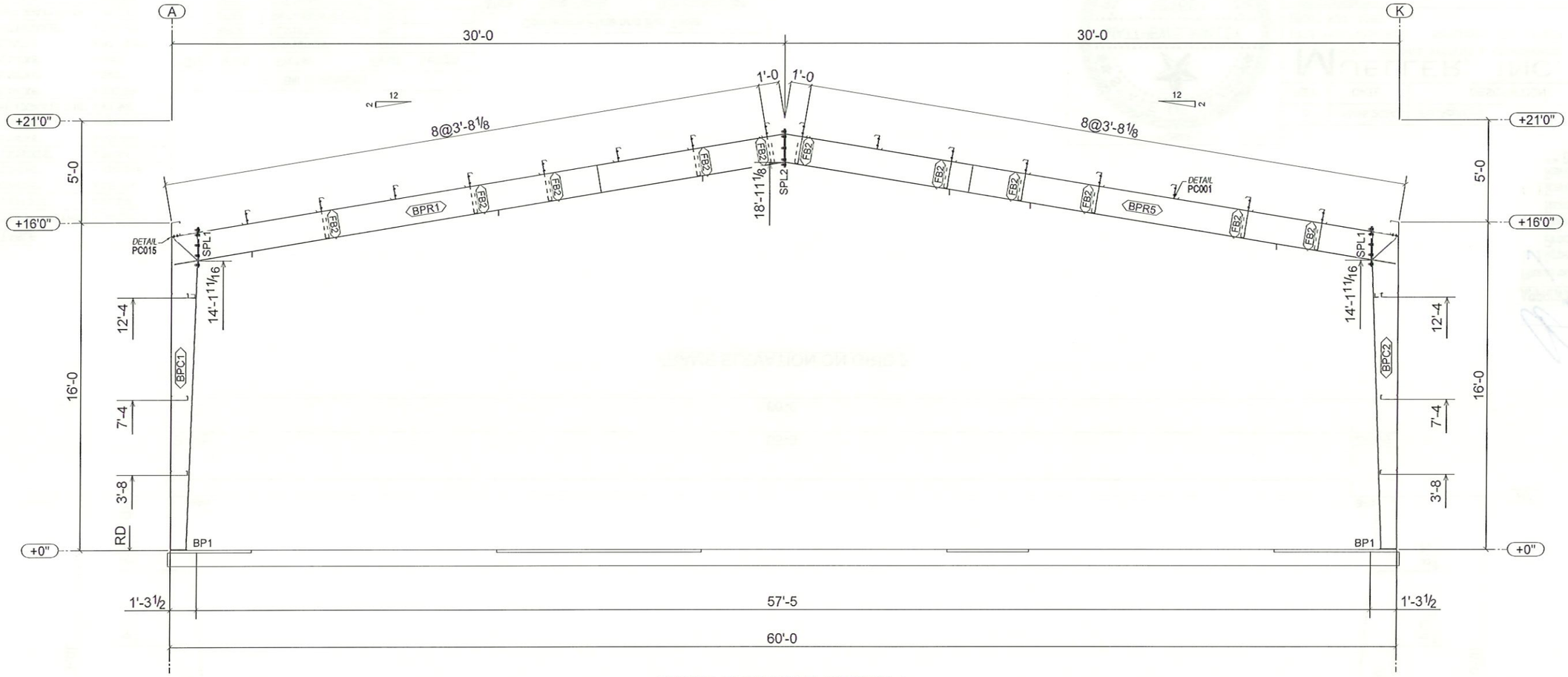
DRAWING DESCRIPTION: WALL ELEVATION AT GRID 5

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP C0 PCT 2	1:30

SALESMAN	JOBSITE ADDRESS
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957

DETAILER	CHECKER	DATE	JOB #	DWG #	REV.
TRG		10/21/2024	6971245	E7	0

Tekla Structures



FRAME ELEVATION ON GRID 1

THIS ENDWALL FRAME IS NOT EXPANDABLE

BUILT UP MEMBER TABLE			
Mark	Type	Thick x Max Width	x Length
BPC1		SHT10GAX15"	x 17 7/8"
	IF	PL1/4"X6"	x 165 1/2"
	OF	PL1/4"X6"	x 183 3/16"
BPC2		SHT10GAX15"	x 17 7/8"
	IF	PL1/4"X6"	x 165 1/2"
	OF	PL1/4"X6"	x 183 3/16"
BPR1		SHT10GAX16"	x 83 3/16"
	IF	PL5/16"X6"	x 107 15/16"
	IF	PL5/16"X6"	x 240"
	OF	PL1/4"X6"	x 107 15/16"
	OF	PL1/4"X6"	x 240"
	WB	SHT10GAX16"	x 239 1/2"
BPR5		SHT10GAX16"	x 83 3/16"
	IF	PL5/16"X6"	x 107 15/16"
	IF	PL5/16"X6"	x 240"
	OF	PL1/4"X6"	x 107 15/16"
	OF	PL1/4"X6"	x 240"
	WB	SHT10GAX16"	x 239 1/2"

Bill of Materials				
Qty	Mark	Profile	Finish	Length
1	BPC1	SHT10GAX15"	RO	
1	BPC2	SHT10GAX15"	RO	
1	BPR1	SHT10GAX16"	RO	
1	BPR5	SHT10GAX16"	RO	
11	FB2	2X2L12	GZ	2'-9 5/8"

Connection Plate and Bolt Table		
Mark	Plate Profile	Bolt Description
BP1	PL1/2"X6" x 10"	REF. AB PLAN
SPL1	PL1/2"X6" x 23 1/2"	10 ~ 3/4" x 2 1/2" A325N
SPL2	PL1/2"X6" x 22 1/2"	10 ~ 3/4" x 2 1/2" A325N

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return

( ) Approved with NO Changes:
Proceed with Fabrication

( ) Approved with Changes Noted:
Revise and Proceed with Fabrication

( ) Revise and Resubmit:
Revise and Send New Approval Drawing
** Delivery Date WILL BE DELAYED **

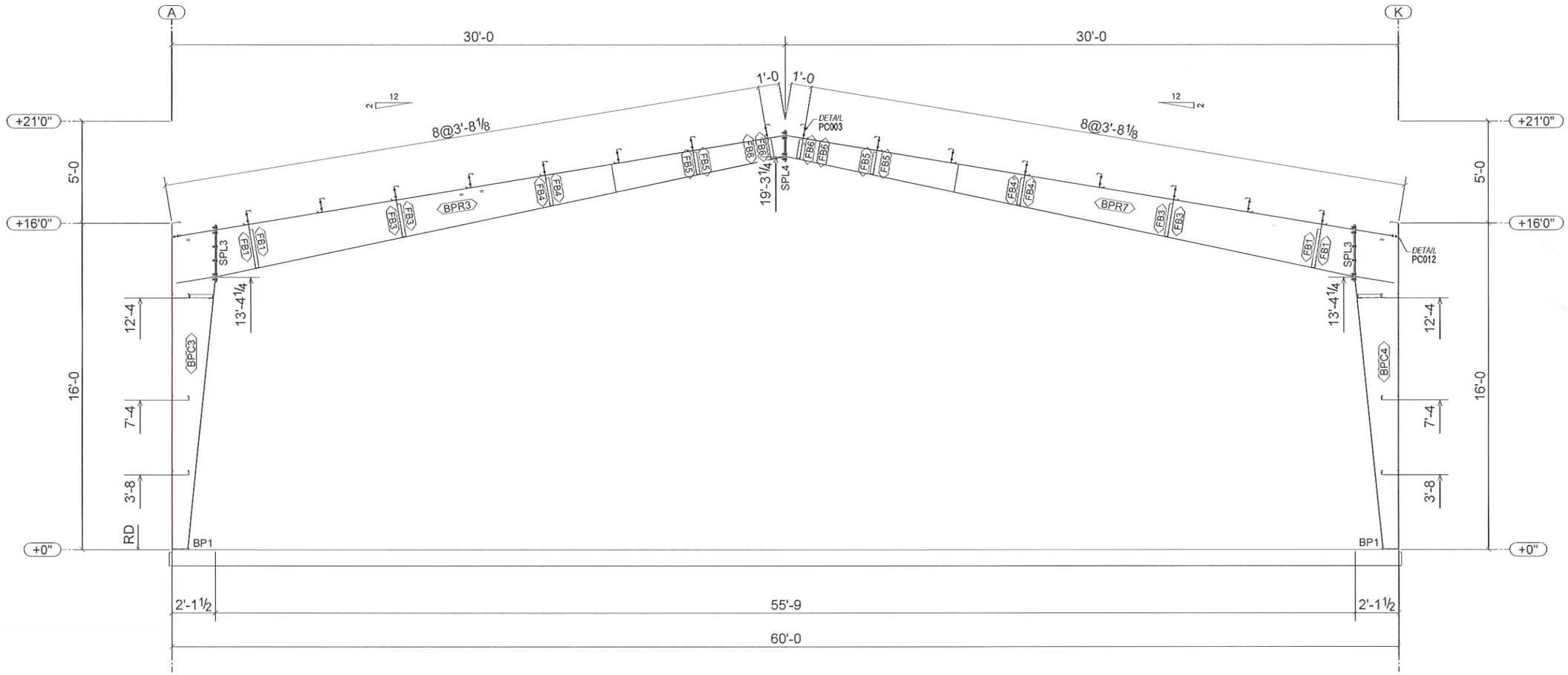
F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
121601
PROFESSIONAL ENGINEER
10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: FRAME ELEVATION ON GRID 1
CUSTOMER NAME: FUN ABOUNDS INC
END USER: BASTROP C0 PCT 2
SCALE: 1:30
SALESMAN: WESKEY CARTER
JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957
DETAILER: TRG
CHECKER:
DATE: 10/21/2024
JOB #: 6971245
DWG #: E8
REV.: 0

Tekla Structures



FRAME ELEVATION ON GRID 2

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return

(✓) Approved with NO Changes:
Proceed with Fabrication

( ) Approved with Changes Noted:
Revise and Proceed with Fabrication

( ) Revise and Resubmit:
Revise and Send New Approval Drawings
** Delivery Date WILL BE DELAYED **

BUILT UP MEMBER TABLE

Mark	Type	Thick x Max Width	x Length
BPC3		PL3/16"X25"	x 25 3/4"
	IF	PL1/4"X6"	x 157 3/4"
	OF	PL1/4"X6"	x 183 3/16"
BPC4		PL3/16"X25"	x 25 3/4"
	IF	PL1/4"X6"	x 157 3/4"
	OF	PL1/4"X6"	x 183 3/16"
BPR3		SHT10GAX16 7/16"	x 91 5/8"
	IF	PL1/4"X6"	x 100 5/8"
	IF	PL1/4"X6"	x 240"
	OF	PL1/4"X6"	x 240"
	OF	PL1/4"X6"	x 97 13/16"
	WB	SHT10GAX27"	x 239 1/2"
BPR7		SHT10GAX16 7/16"	x 91 5/8"
	IF	PL1/4"X6"	x 100 5/8"
	IF	PL1/4"X6"	x 240"
	OF	PL1/4"X6"	x 240"
	OF	PL1/4"X6"	x 97 13/16"
	WB	SHT10GAX27"	x 239 1/2"

Bill of Materials

Qty	Mark	Profile	Finish	Length
1	BPC3	PL3/16"X25"	RO	
1	BPC4	PL3/16"X25"	RO	
1	BPR3	SHT10GAX16 7/16"	RO	
1	BPR7	SHT10GAX16 7/16"	RO	
4	FB1	2X2L12	GZ	3'-3 15/16"
4	FB3	2X2L12	GZ	3'-1 1/4"
4	FB4	2X2L12	GZ	2'-10 7/8"
4	FB5	2X2L12	GZ	2'-8 3/4"
4	FB6	2X2L12	GZ	2'-7 7/8"

Connection Plate and Bolt Table

Mark	Plate Profile	Bolt Description
BP1	PL1/2"X6" x 10"	REF. AB PLAN
BP2	PL1/2"X6" x 7"	REF. AB PLAN
SPL3	PL1/2"X6" x 33 1/2"	12 ~ 3/4" x 2 1/2" A325N
SPL4	PL1/2"X6" x 18 1/2"	8 ~ 3/4" x 2 1/2" A325N
SPL6	PL1/2"X6" x 16 1/4"	8 ~ 3/4" x 2 1/2" A325N

F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
121601
PROFESSIONAL ENGINEER
10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

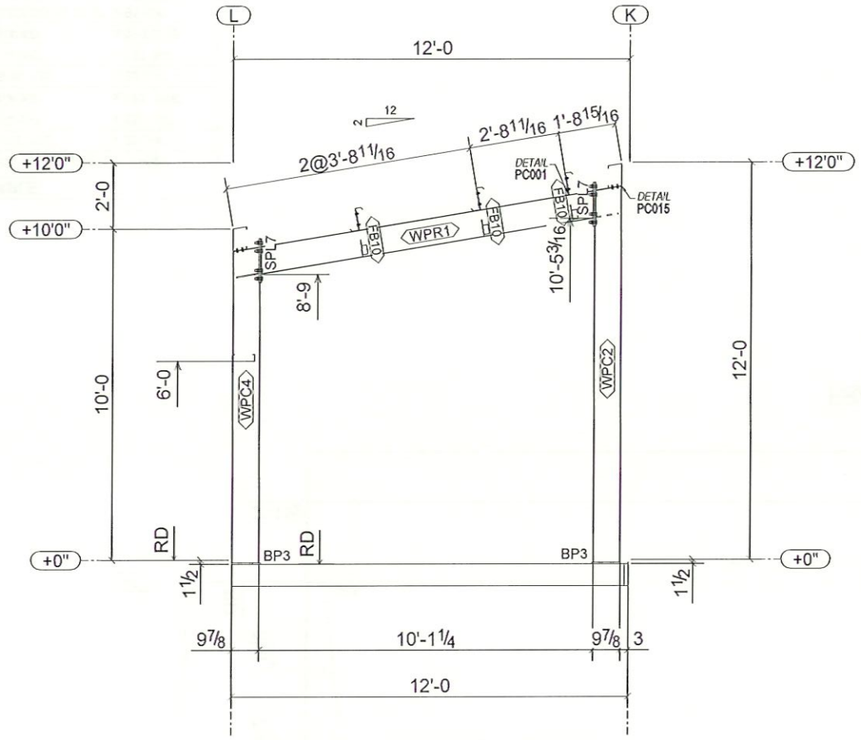
DRAWING DESCRIPTION: FRAME ELEVATION ON GRID 2

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP CO PCT 2	1:30

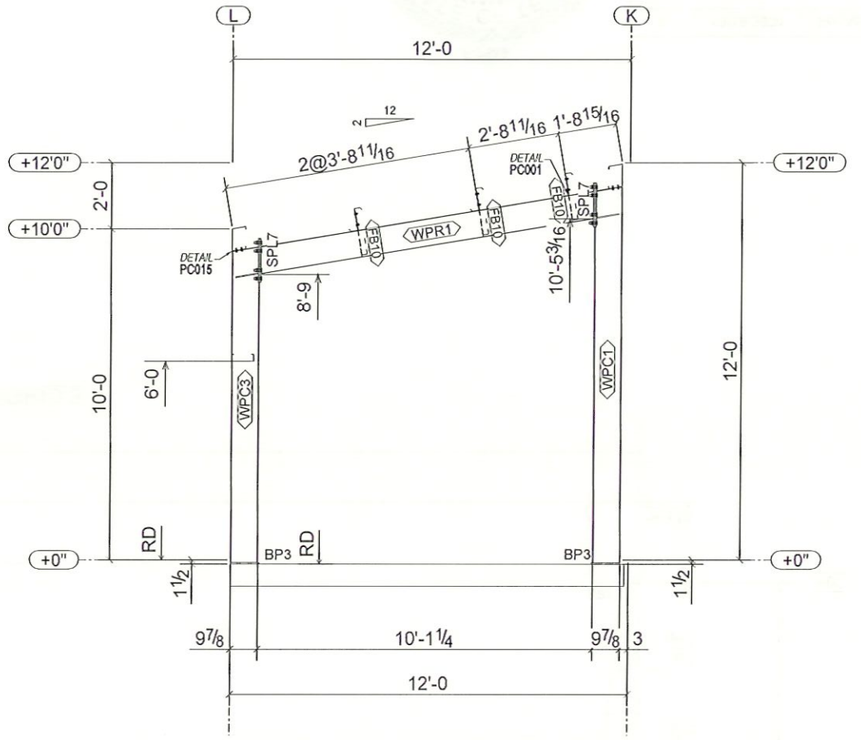
SALESMAN	JOBSITE ADDRESS
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957

DETAILER	CHECKER	DATE	JOB #	DWG #	REV.
TRG		10/21/2024	6971245	E9	0

Tekla Structures



FRAME ELEVATION ON GRID 2.5



FRAME ELEVATION ON GRID 2.6

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return

(✓) Approved with NO Changes:
Proceed with Fabrication

( ) Approved with Changes Noted:
Revise and Proceed with Fabrication

( ) Revise and Resubmit:
Revise and Send New Approval Drawing
** Delivery Date WILL BE DELAYED **

Bill of Materials				
Qty	Mark	Profile	Finish	Length
1	WPC1	W10X12	RO	
1	WPC2	W10X12	RO	
1	WPC3	W10X12	RO	
1	WPC4	W10X12	RO	
2	WPR1	W10X12	RO	
6	FB10	2X2L12	GZ	2'-6 5/8"

Connection Plate and Bolt Table		
Mark	Plate Profile	Bolt Description
BP3	PL1/2"X6" x 10 1/2"	REF. AB PLAN
SPL7	PL1/2"X6" x 16"	8 ~ 3/4" x 2 1/2" A325N
SPL7	PL1/2"X6" x 16"	8 ~ 3/4" x 2 1/2" A325N

F-2689

STATE OF TEXAS
MATTHEW S. MALLEY
121601
PROFESSIONAL ENGINEER
10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

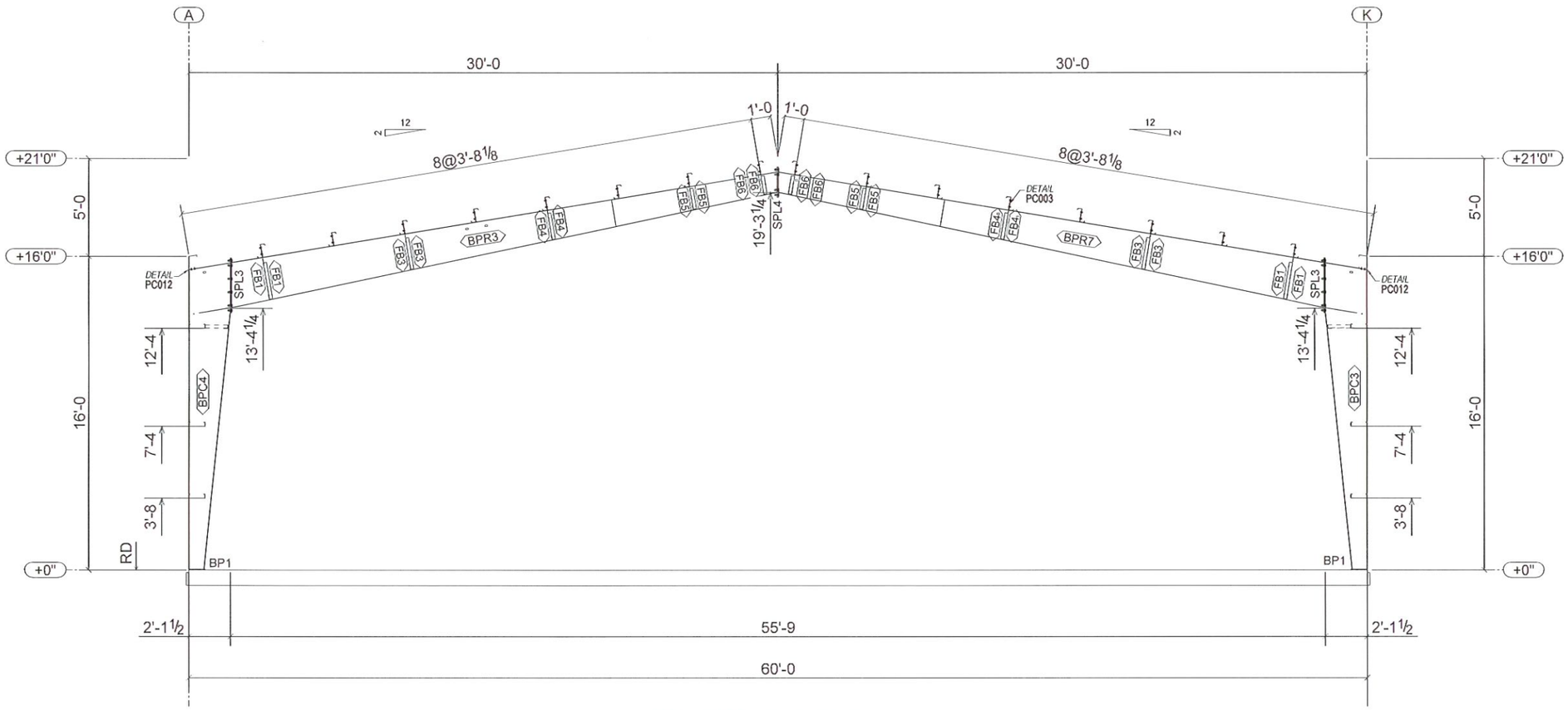
MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: FRAME ELEVATION ON GRID 2.5, 2.6

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP C0 PCT 2	1:25

SALESMAN	JOBSITE ADDRESS			
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957			
DETAILER: TRG	CHECKER:	DATE: 10/21/2024	JOB # 6971245	DWG # E10	REV. 0

Tekla Structures



FRAME ELEVATION ON GRID 3

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return

(✓) Approved with NO Changes:
Proceed with Fabrication

( ) Approved with Changes Noted:
Revise and Proceed with Fabrication

( ) Revise and Resubmit:
Revise and Send New Approval Drawings
** Delivery Date WILL BE DELAYED **

BUILT UP MEMBER TABLE

Mark	Type	Thick x Max Width	x Length
BPC3		PL3/16"X25"	x 25 3/4"
	IF	PL1/4"X6"	x 157 3/4"
	OF	PL1/4"X6"	x 183 3/16"
BPC4		PL3/16"X25"	x 25 3/4"
	IF	PL1/4"X6"	x 157 3/4"
	OF	PL1/4"X6"	x 183 3/16"
BPR3		SHT10GAX16 7/16"	x 91 5/8"
	IF	PL1/4"X6"	x 100 5/8"
	IF	PL1/4"X6"	x 240"
	OF	PL1/4"X6"	x 240"
	OF	PL1/4"X6"	x 97 13/16"
	WB	SHT10GAX27"	x 239 1/2"
BPR7		SHT10GAX16 7/16"	x 91 5/8"
	IF	PL1/4"X6"	x 100 5/8"
	IF	PL1/4"X6"	x 240"
	OF	PL1/4"X6"	x 240"
	OF	PL1/4"X6"	x 97 13/16"
	WB	SHT10GAX27"	x 239 1/2"

Bill of Materials

Qty	Mark	Profile	Finish	Length
1	BPC3	PL3/16"X25"	RO	
1	BPC4	PL3/16"X25"	RO	
1	BPR3	SHT10GAX16 7/16"	RO	
1	BPR7	SHT10GAX16 7/16"	RO	
4	FB1	2X2L12	GZ	3'-3 7/8"
4	FB3	2X2L12	GZ	3'-1 1/4"
4	FB4	2X2L12	GZ	2'-10 13/16"
4	FB5	2X2L12	GZ	2'-8 3/4"
4	FB6	2X2L12	GZ	2'-7 13/16"

Connection Plate and Bolt Table

Mark	Plate Profile	Bolt Description
BP1	PL1/2"X6" x 10"	REF. AB PLAN
BP2	PL1/2"X6" x 7"	REF. AB PLAN
SPL3	PL1/2"X6" x 33 1/2"	12 ~ 3/4" x 2 1/2" A325N
SPL4	PL1/2"X6" x 18 1/2"	8 ~ 3/4" x 2 1/2" A325N
SPL6	PL1/2"X6" x 16 1/4"	8 ~ 3/4" x 2 1/2" A325N

F-2689

STATE OF TEXAS
MATTHEW S. MALLEY
121601
REGISTERED
PROFESSIONAL ENGINEER

10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

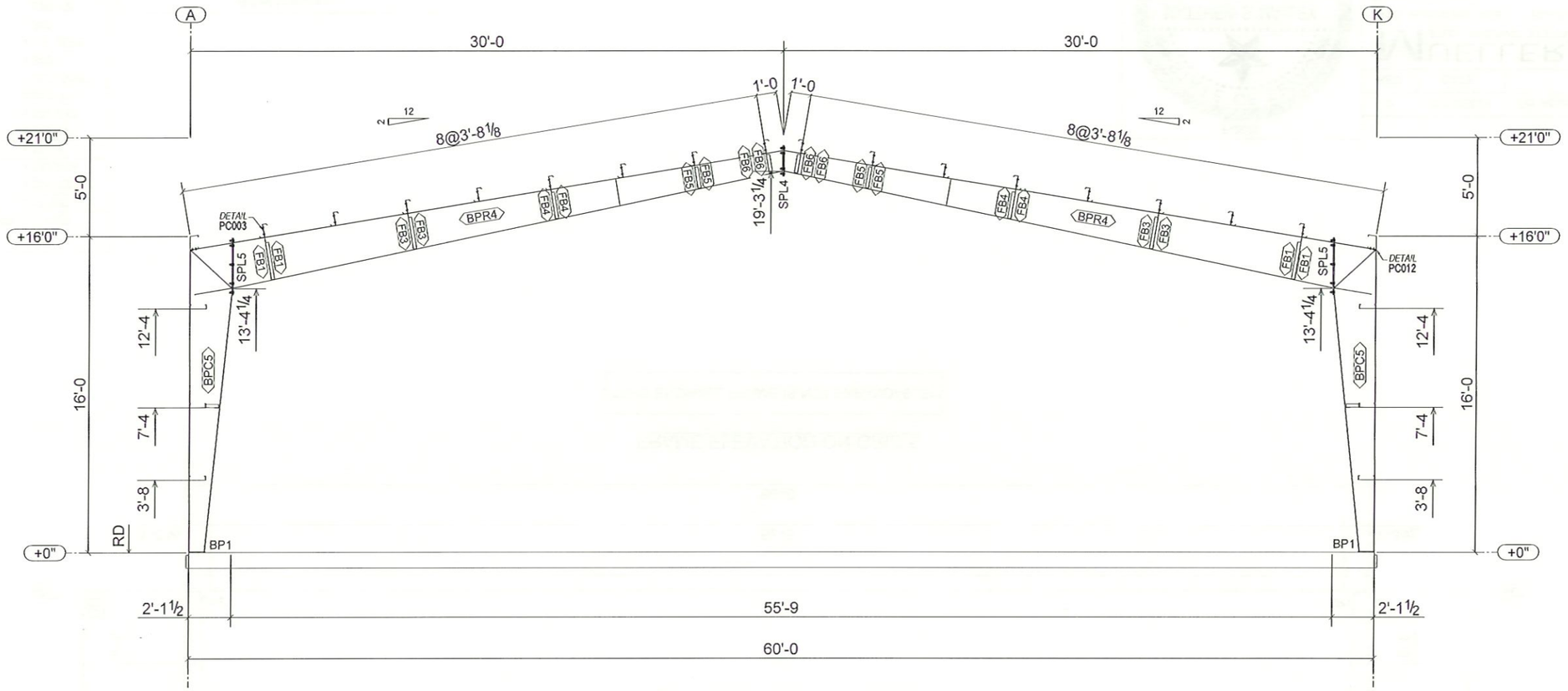
DRAWING DESCRIPTION: FRAME ELEVATION ON GRID 3

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP CO PCT 2	1:35

SALESMAN	JOBSITE ADDRESS
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957

DETAILER	CHECKER	DATE	JOB #	DWG #	REV.
TRG		10/21/2024	6971245	E11	0

Tedds Structures



FRAME ELEVATION ON GRID 4

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and retur

(✓) Approved with NO Changes:
Proceed with Fabrication

( ) Approved with Changes Noted:
Revise and Proceed with Fabrication

( ) Revise and Resubmit:
Revise and Send New Approval Drawing
** Delivery Date WILL BE DELAYED **

BUILT UP MEMBER TABLE

Mark	Type	Thick x Max Width x Length	
BPC5		SHT10GAX25"	x 25 3/4"
	IF	PL1/4"X6"	x 156 3/4"
	OF	PL1/4"X6"	x 183 3/16"
BPR4		SHT10GAX16 7/16"	x 92 5/8"
	IF	PL1/4"X6"	x 100 5/8"
	IF	PL1/4"X6"	x 240"
	OF	PL1/4"X6"	x 240"
	OF	PL1/4"X6"	x 97 13/16"
	WB	SHT10GAX27"	x 239 1/2"

Bill of Materials

Qty	Mark	Profile	Finish	Length
2	BPC5	SHT10GAX25"	RO	
2	BPR4	SHT10GAX16 7/16"	RO	
4	FB1	2X2L12	GZ	3'-3 15/16"
4	FB3	2X2L12	GZ	3'-1 1/4"
4	FB4	2X2L12	GZ	2'-10 7/8"
4	FB5	2X2L12	GZ	2'-8 3/4"
4	FB6	2X2L12	GZ	2'-7 7/8"

Connection Plate and Bolt Table

Mark	Plate Profile	Bolt Description
BP1	PL1/2"X6" x 10"	REF. AB PLAN
SPL4	PL1/2"X6" x 18 1/2"	8 ~ 3/4" x 2 1/2" A325N
SPL5	PL1/2"X6" x 34 1/2"	10 ~ 3/4" x 2 1/2" A325N

F-2689

STATE OF TEXAS
MATTHEW S. MALLEY
121601
LICENSED
PROFESSIONAL ENGINEER

10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

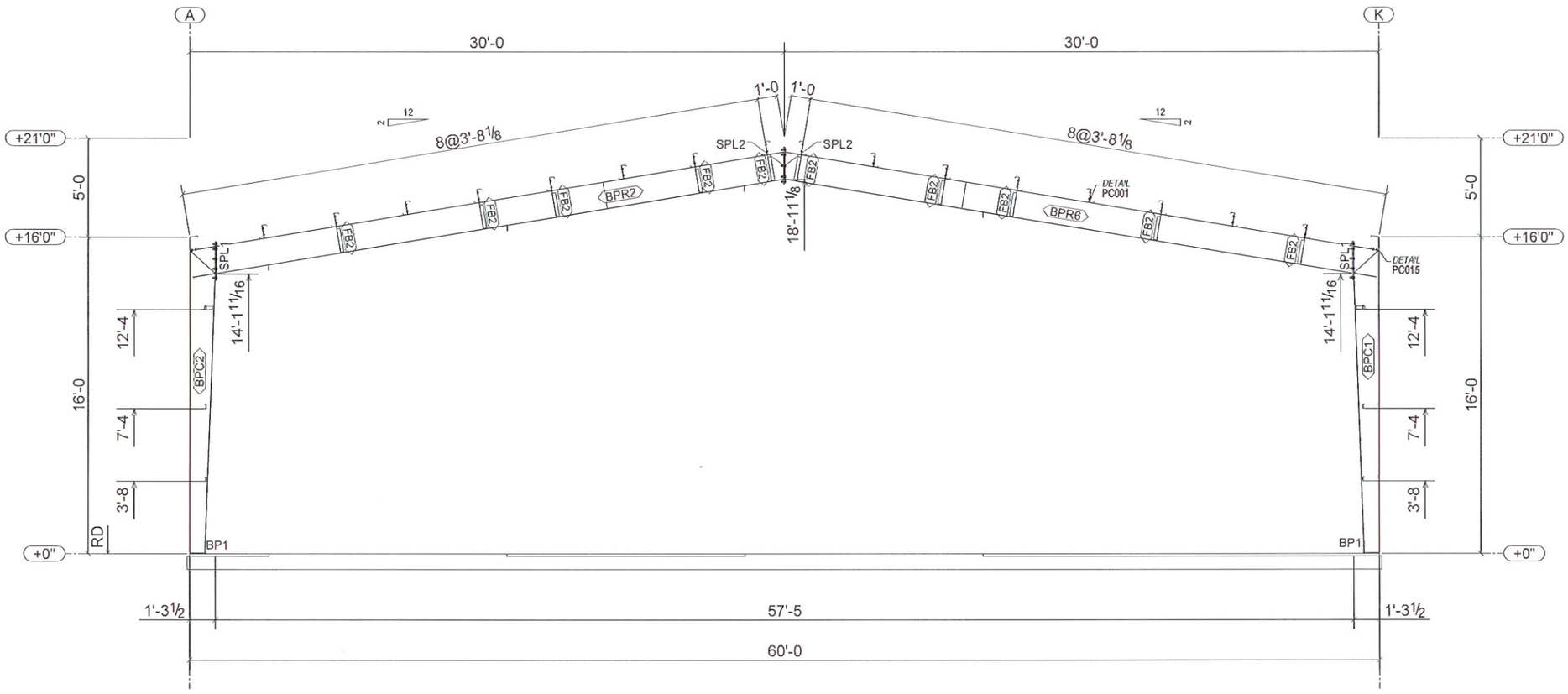
MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: FRAME ELEVATION ON GRID 4

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP C0 PCT 2	1:35

SALESMAN	JOBSITE ADDRESS			
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957			
DETAILER: TRG	CHECKER:	DATE: 10/21/2024	JOB # 6971245	DWG # E12	REV. 0

Tekla Structures



FRAME ELEVATION ON GRID 5

THIS ENDWALL FRAME IS NOT EXPANDABLE

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return

(✓) Approved with NO Changes:
Proceed with Fabrication

( ) Approved with Changes Noted:
Revise and Proceed with Fabrication

( ) Revise and Resubmit:
Revise and Send New Approval Drawings
** Delivery Date WILL BE DELAYED **

BUILT UP MEMBER TABLE

Mark	Type	Thick x Max Width	x Length
BPC1		SHT10GAX15"	x 17 7/8"
	IF	PL1/4"X6"	x 165 1/2"
	OF	PL1/4"X6"	x 183 3/16"
BPC2		SHT10GAX15"	x 17 7/8"
	IF	PL1/4"X6"	x 165 1/2"
	OF	PL1/4"X6"	x 183 3/16"
BPR2		SHT10GAX16"	x 83 3/16"
	IF	PL5/16"X6"	x 107 15/16"
	IF	PL5/16"X6"	x 240"
	OF	PL1/4"X6"	x 107 15/16"
	OF	PL1/4"X6"	x 240"
	WB	SHT10GAX16"	x 239 1/2"
BPR6		SHT10GAX16"	x 83 3/16"
	IF	PL5/16"X6"	x 107 15/16"
	IF	PL5/16"X6"	x 240"
	OF	PL1/4"X6"	x 107 15/16"
	OF	PL1/4"X6"	x 240"
	WB	SHT10GAX16"	x 239 1/2"

Bill of Materials

Qty	Mark	Profile	Finish	Length
1	BPC1	SHT10GAX15"	RO	
1	BPC2	SHT10GAX15"	RO	
1	BPR2	SHT10GAX16"	RO	
1	BPR6	SHT10GAX16"	RO	
10	FB2	2X2L12	GZ	2'-9 5/8"

Connection Plate and Bolt Table

Mark	Plate Profile	Bolt Description
BP1	PL1/2"X6" x 10"	REF. AB PLAN
SPL1	PL1/2"X6" x 23 1/2"	10 ~ 3/4" x 2 1/2" A325N
SPL2	PL1/2"X6" x 22 1/2"	10 ~ 3/4" x 2 1/2" A325N

F-2689

STATE OF TEXAS
MATTHEW S. MALLEY
121601
LICENSED
PROFESSIONAL ENGINEER

10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

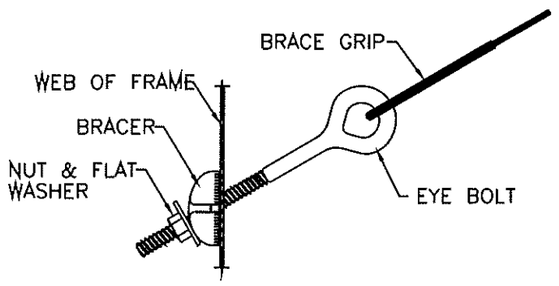
DRAWING DESCRIPTION: FRAME ELEVATION ON GRID 5

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP C0 PCT 2	1:35

SALESMAN	JOBSITE ADDRESS
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957

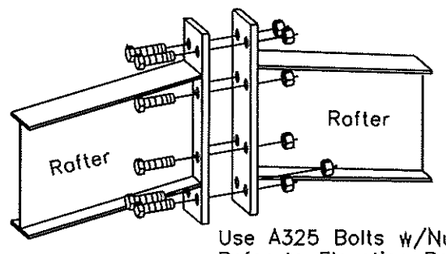
DETAILER	CHECKER	DATE	JOB #	DWG #	REV.
TRG		10/21/2024	6971245	E13	0

Tekla Structures

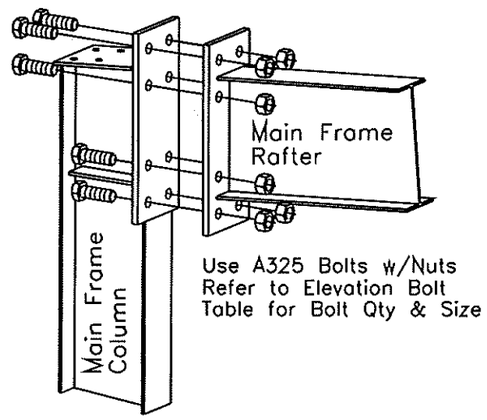


Cable to be installed as shown and tensioned so that building will not sway or rock when wind blows. Care should be taken: however, to not over-tighten and bend structural members.

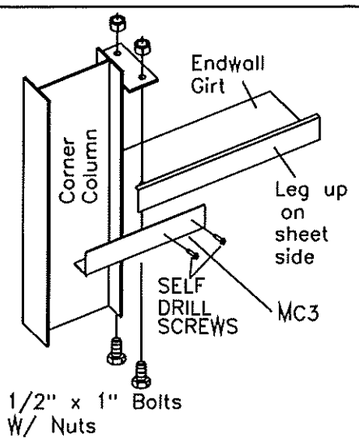
BR001 CABLE TO COLUMN OR RAFTER WEB WITH EYEBOLT ATTACHMENT



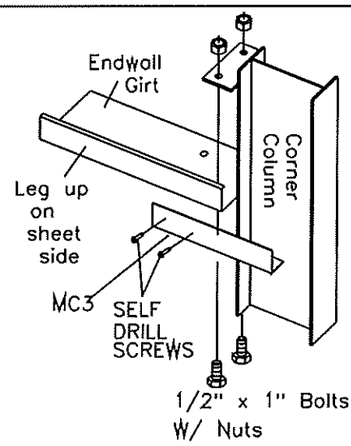
TYPICAL RAFTER SPLICE CONNECTION AT PEAK



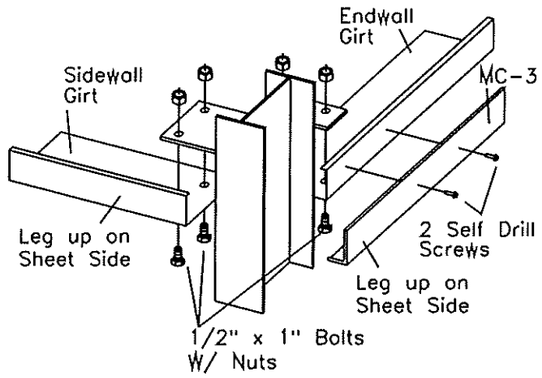
TYPICAL FLUSH COLUMN TO MAINFRAME RAFTER



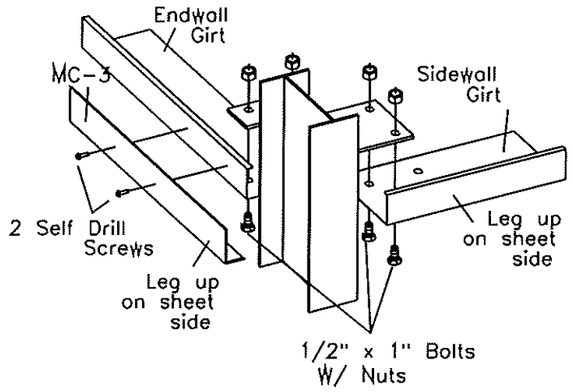
GC002EL CORNER COLUMN TO ENDWALL GIRT



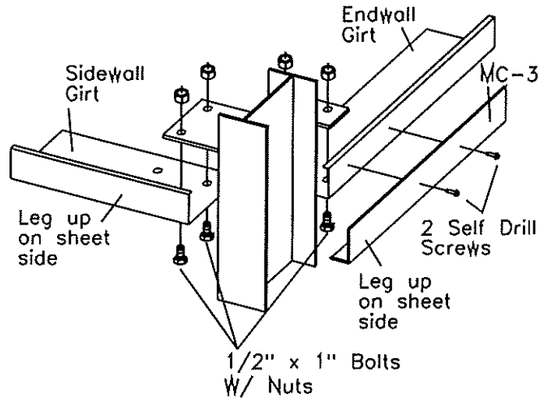
GC002ER CORNER COLUMN TO ENDWALL GIRT



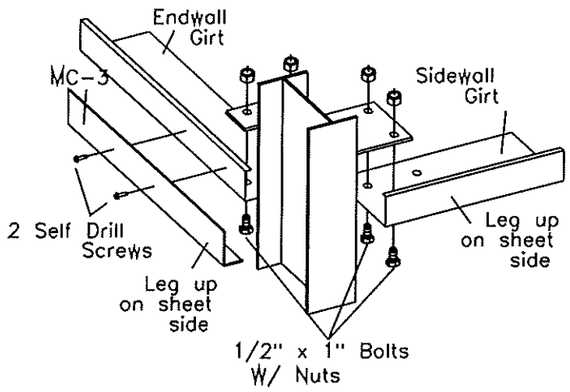
GC006BUL CORNER COLUMN TO WALL GIRTS



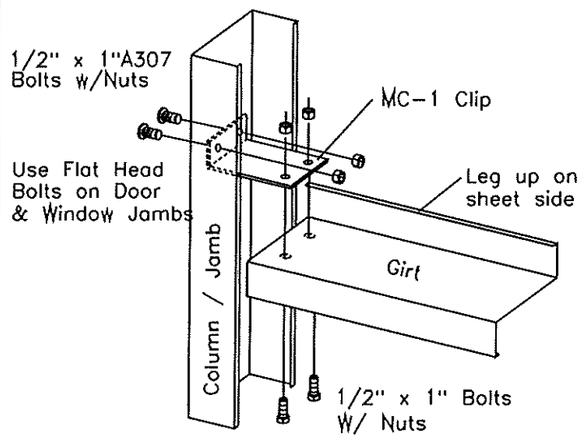
GC006BUR CORNER COLUMN TO WALL GIRTS



GC006L CORNER COLUMN TO WALL GIRTS



GC006R CORNER COLUMN TO WALL GIRTS



GC018CF JAMB / COLUMN TO WALL GIRT

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return.

( ) Approved with NO Changes:
Proceed with Fabrication

( ) Approved with Changes Noted:
Revise and Proceed with Fabrication

( ) Revise and Resubmit:
Revise and Send New Approval Drawings
** Delivery Date WILL BE DELAYED **

Prefab Install Manual

Prefab Install Video

For additional help with installation of your building, please visit our website:
www.muellerinc.com/downloads/download-manuals

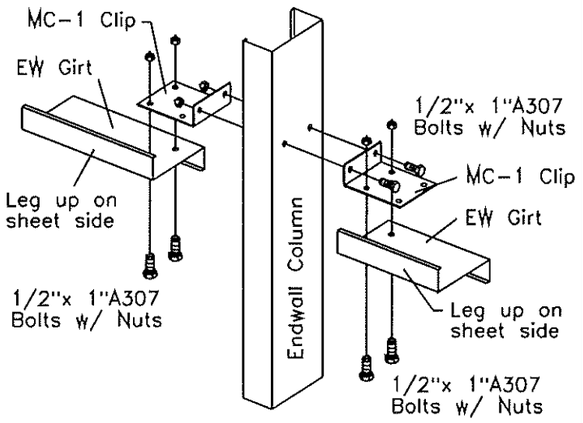
ALL A325 STRUCTURAL BOLT CONNECTIONS SHOWN IN THESE DETAILS HAVE STANDARD MINIMUM BOLT INFORMATION. FOR SPECIFIC BOLT QUANTITIES AND SIZES, REFER TO COMPONENT BOLT TABLES LOCATED ON FRAME AND WALL ELEVATION DWGS.

F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
121601
LICENSED PROFESSIONAL ENGINEER
10/21/2024

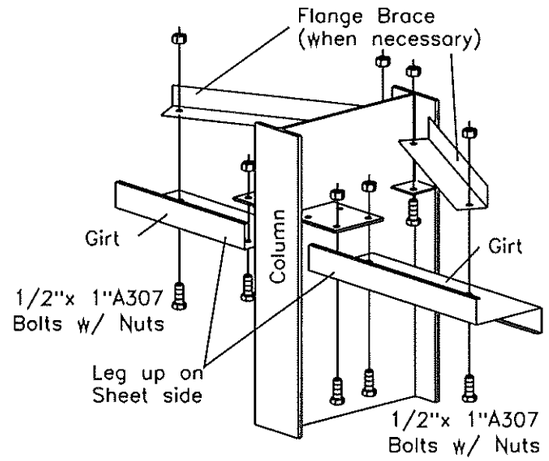
REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

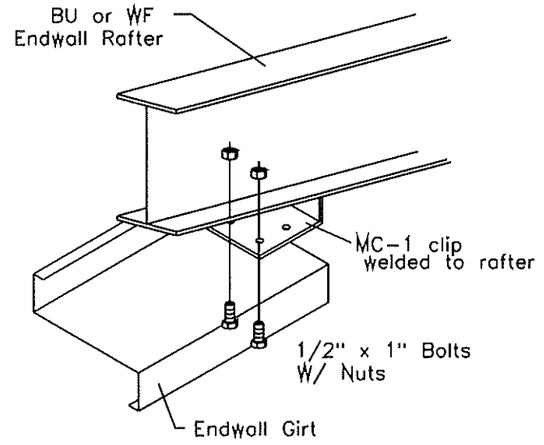
DRAWING DESCRIPTION: ERECTION DETAILS
CUSTOMER NAME: FUN ABOUNDS INC
END USER: BASTROP CO PCT 2
SCALE: NONE
SALESMAN: WESKEY CARTER
JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957
DETAILER: TRG
CHECKER:
DATE: 10/21/2024
JOB #: 6971245
DWG #: E101
REV: 0



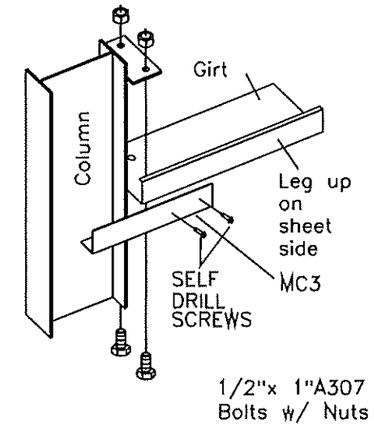
GC019CF INTERIOR ENDWALL COLUMN TO WALL GIRTS



GC021 INTERIOR COLUMN TO WALL GIRT

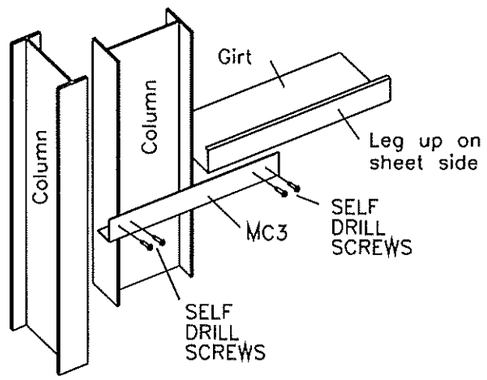


GC029 ENDWALL GIRT TO RAFTER

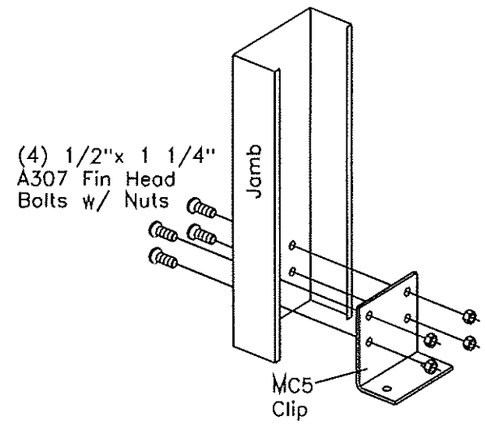


GC63 COLUMN TO WALL GIRT

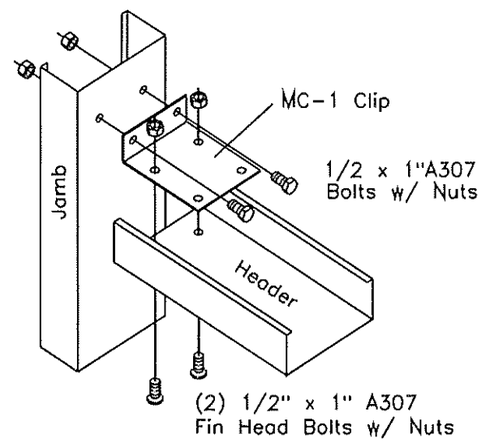
ATTACH PROVIDED MC3 ANGLE AS NEEDED TO FILL GAPS WHERE SHEETS NEED SCREW SUPPORT



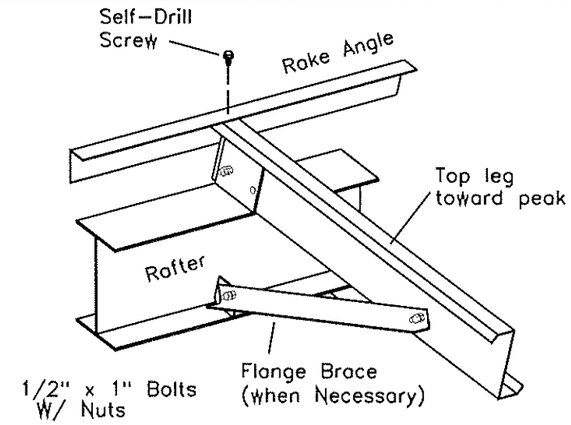
MC3_SW ADDING MC3 FILLER ANGLE



OP010 BASE TO JAMB



OP012 HEADER TO JAMB



PC001 ENDWALL RAFTER TO ROOF PURLIN

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return.

( ) Approved with NO Changes:
Proceed with Fabrication

( ) Approved with Changes Noted:
Revise and Proceed with Fabrication

( ) Revise and Resubmit:
Revise and Send New Approval Drawings
** Delivery Date WILL BE DELAYED **

ALL A325 STRUCTURAL BOLT CONNECTIONS SHOWN IN THESE DETAILS HAVE STANDARD MINIMUM BOLT INFORMATION. FOR SPECIFIC BOLT QUANTITIES AND SIZES, REFER TO COMPONENT BOLT TABLES LOCATED ON FRAME AND WALL ELEVATION DWGS.

Prefab Install Manual

Prefab Install Video

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www.muellerinc.com/downloads/download-manuals

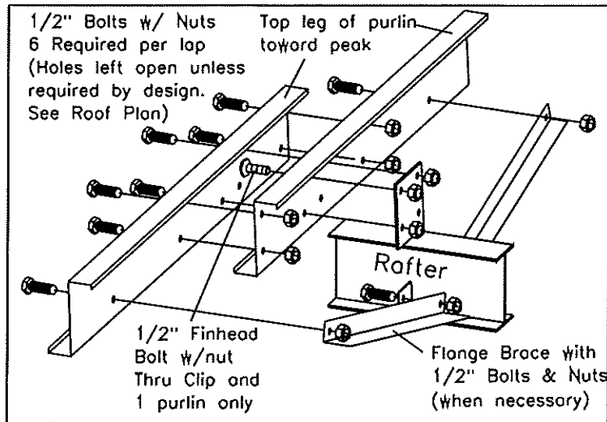
F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
121601
LICENSED PROFESSIONAL ENGINEER
10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

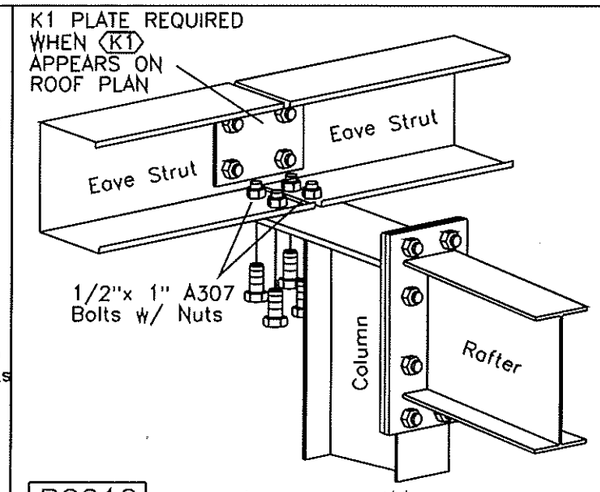
DRAWING DESCRIPTION: ERECTION DETAILS
CUSTOMER NAME: FUN ABOUNDS INC
END USER: BASTROP CO PCT 2
SCALE: NONE
SALESMAN: WESKEY CARTER
JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957
DETAILER: TRG
CHECKER:
DATE: 10/21/2024
JOB #: 6971245
DWG #: E102
REV: 0

Tools Clipboard

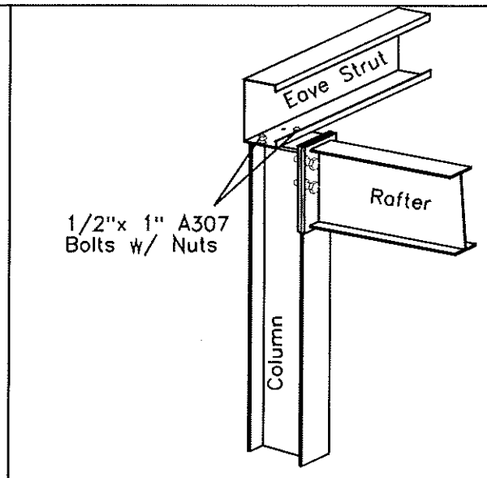


FOR SPECIFIC FLANGE BRACE ATTACHMENT TO PURLIN
** SEE PURLIN LAP DETAIL ON ROOF PLAN **

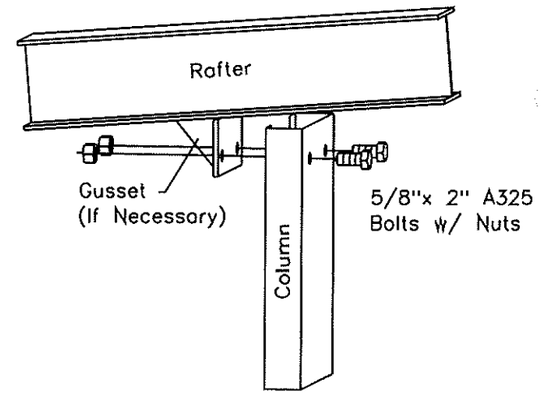
PC003 INTERIOR RAFTER TO ROOF PURLIN



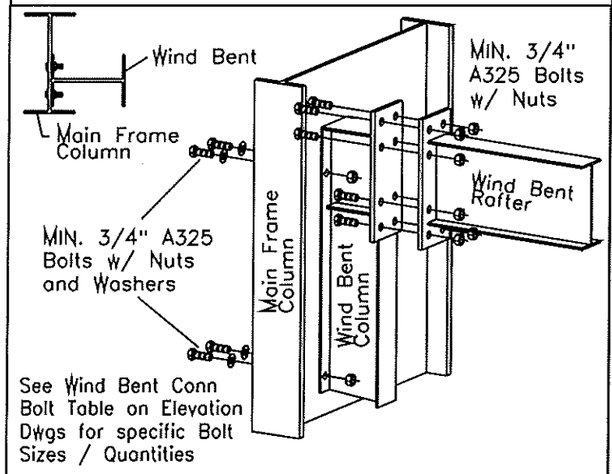
PC012 INTERIOR FRAME COLUMN TO EAVE STRUTS



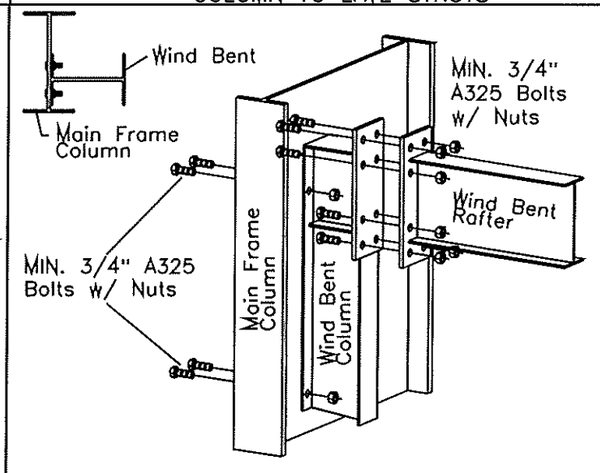
PC015 ENDWALL CORNER COLUMN TO EAVE STRUT



RC001 ENDWALL RAFTER TO COLUMN



TYPICAL MAINFRAME COLUMN TO WIND BENT FRAME



WB001 MAINFRAME COLUMN TO WIND BENT FRAME

APPROVAL DRAWINGS FOR REVIEW

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( ) Approved with NO Changes:
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F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
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LICENSED PROFESSIONAL ENGINEER
10/21/2024

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0	10/16/2024	For Approval

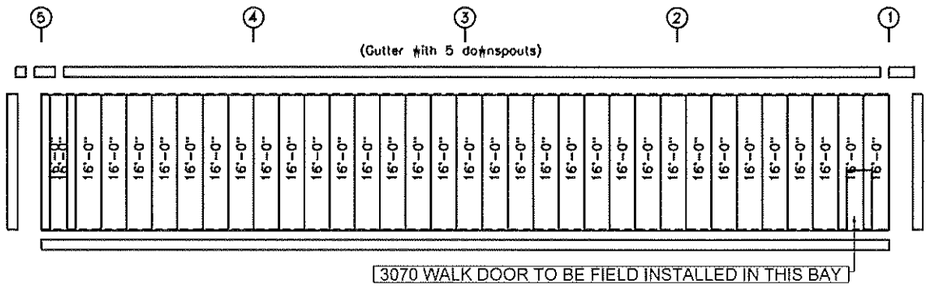
MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: ERECTION DETAILS

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP CO PCT 2	NONE

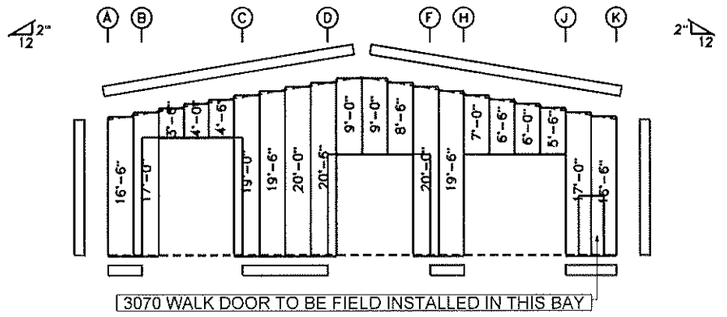
SALESMAN	JOBSITE ADDRESS
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957

DETAILER	CHECKER	DATE	JOB #	DWG #	REV.
TRG		10/21/2024	6971245	E103	0



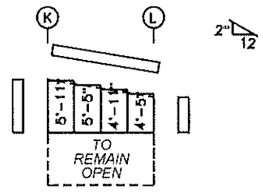
SIDEWALL SHEETING & TRIM: FRAME LINE A

PANELS: 26 Ga. PR - LGR Lt Gray



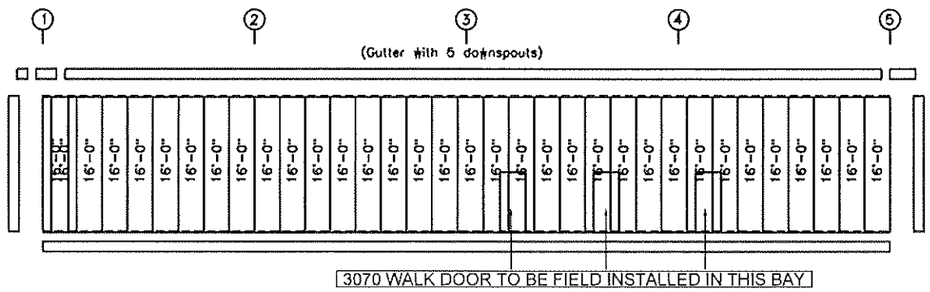
ENDWALL SHEETING & TRIM: FRAME LINE 1

PANELS: 26 Ga. PR - LGR Lt Gray



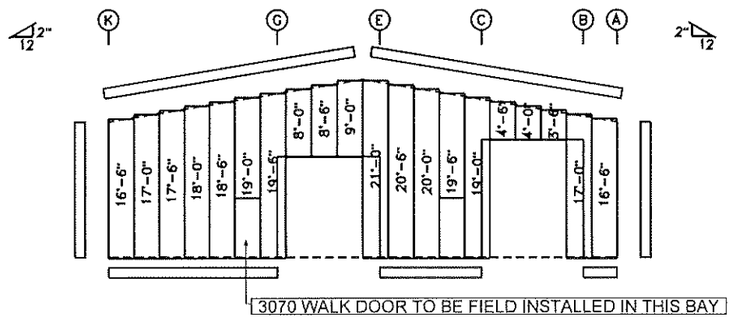
ENDWALL SHEETING & TRIM: FRAME LINE 2.5

PANELS: 26 Ga. PR - LGR Lt Gray



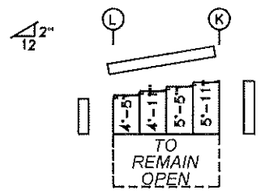
SIDEWALL SHEETING & TRIM: FRAME LINE K

PANELS: 26 Ga. PR - LGR Lt Gray



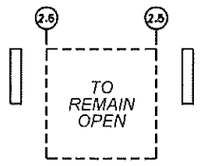
ENDWALL SHEETING & TRIM: FRAME LINE 5

PANELS: 26 Ga. PR - LGR Lt Gray

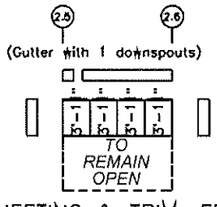


ENDWALL SHEETING & TRIM: FRAME LINE 2.6

PANELS: 26 Ga. PR - LGR Lt Gray



SIDEWALL SHEETING & TRIM: FRAME LINE K



SIDEWALL SHEETING & TRIM: FRAME LINE L

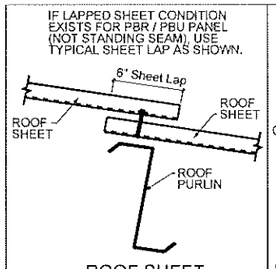
PANELS: 26 Ga. PR - LGR Lt Gray

GENERAL NOTES:

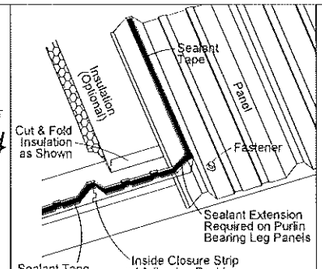
CAUTION
THE FOLLOWING MAXIMUM ADDITIONAL LINEAR FOOTAGE MEASURED (HORIZONTIALLY) OF PANELS MAY BE REMOVED FOR FIELD LOCATED FRAMED OPENINGS WITHOUT AFFECTING THE DIAPHRAGM STRENGTH OF THE PANELS.

LEFT ENDWALL: N/A
RIGHT ENDWALL: N/A

ROOF SLOPES GREATER THAN 1:12 REQUIRE ENDWALL PANELS BE FIELD CUT TO MATCH ROOF SLOPE.



ROOF SHEET LAP DETAIL



F-2689

STATE OF TEXAS
MATTHEW S. MALLEY
121601
LICENSED PROFESSIONAL ENGINEER

10/21/2024

APPROVAL DRAWINGS FOR REVIEW

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REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

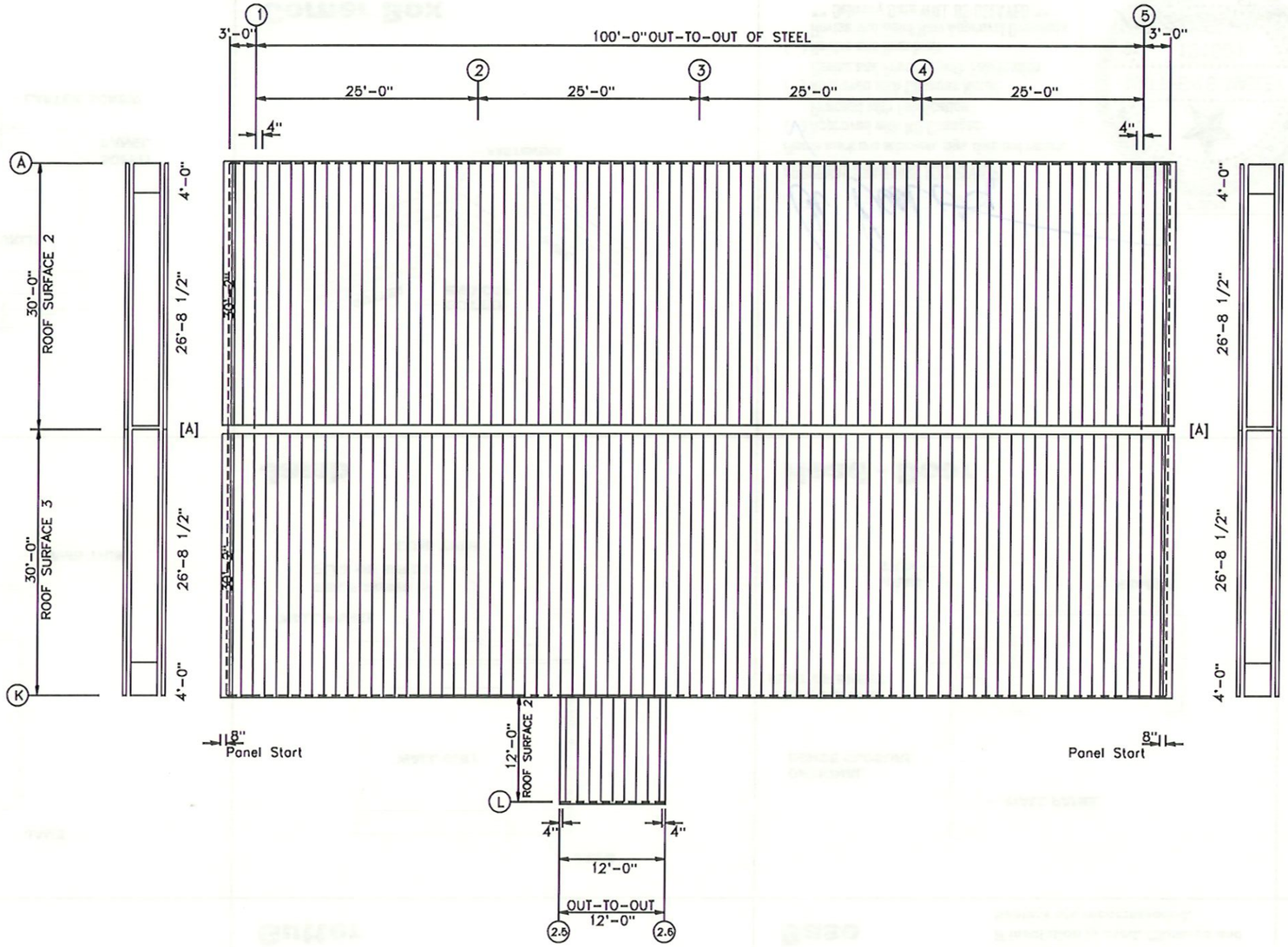
MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: SHEETING DETAILS

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP CO PCT 2	NONE

SALESMAN	JOBSITE ADDRESS
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957

DETAILER	CHECKER	DATE	JOB #	DWG #	REV.
TRG		10/21/2024	6971245	S101	0

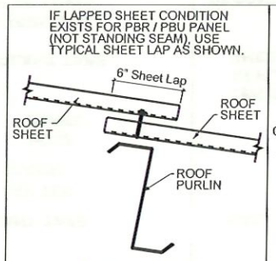


ROOF SHEETING PLAN

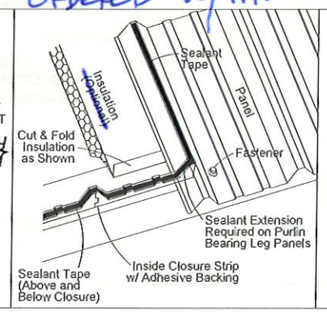
PANELS: 24 Ga. MLK - SIL Silver
[A] SOFFIT PANELS: 26 Ga. PU - LGR Lt Gray

ORDERED W/INSULATION

IF LAPPED SHEET CONDITION EXISTS FOR PBR / PBU PANEL (NOT STANDING SEAM), USE TYPICAL SHEET LAP AS SHOWN.



ROOF SHEET LAP DETAIL



F-2689

STATE OF TEXAS
MATTHEW S. MALLEY
121601
PROFESSIONAL ENGINEER
10/21/2024

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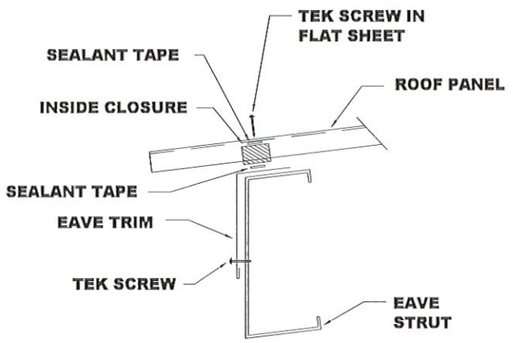
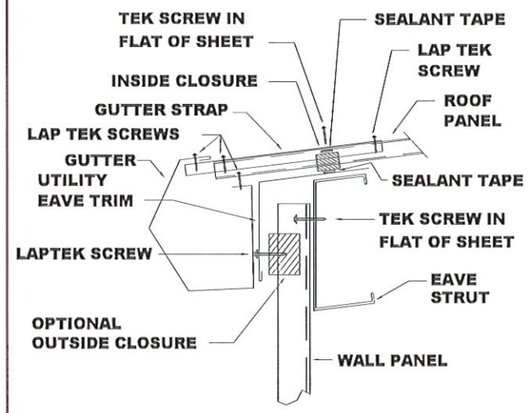
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: SHEETING DETAILS
CUSTOMER NAME: FUN ABOUNDS INC
END USER: BASTROP CO PCT 2
SCALE: NONE
SALESMAN: WESKEY CARTER
JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957
DETAILER: TRG
CHECKER:
DATE: 10/21/2024
JOB #: 6971245
DWG #: S102
REV: 0

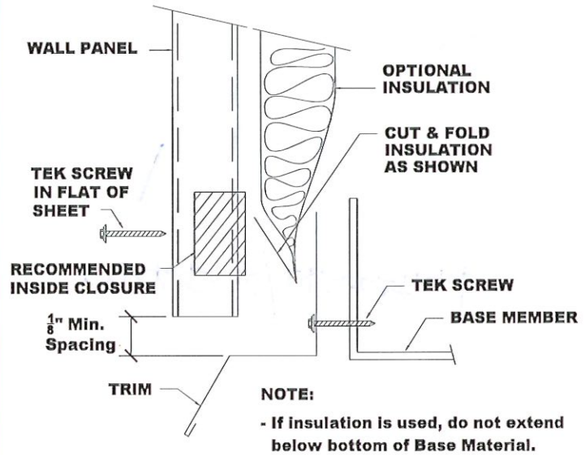
Tekla Structures



Eave



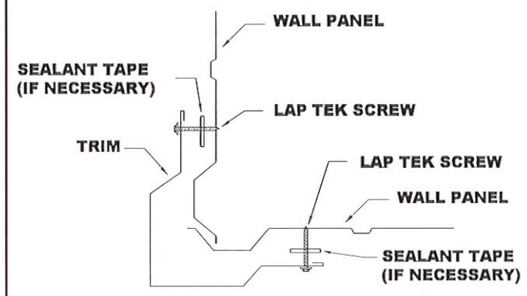
Gutter



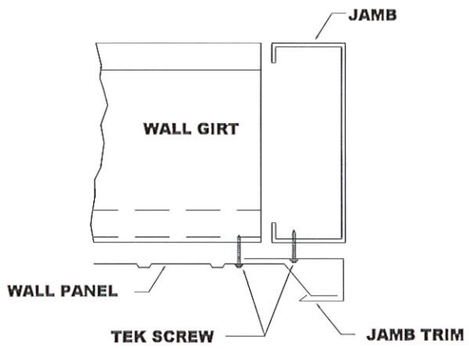
NOTE:

- If insulation is used, do not extend below bottom of Base Material.
- If insulation is used, Closures and Sealant are recommended.

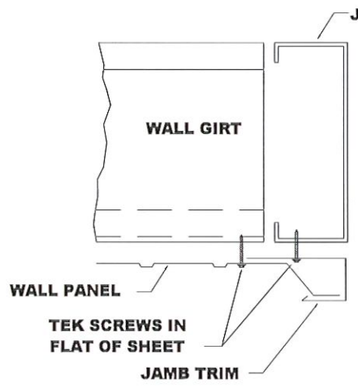
Base



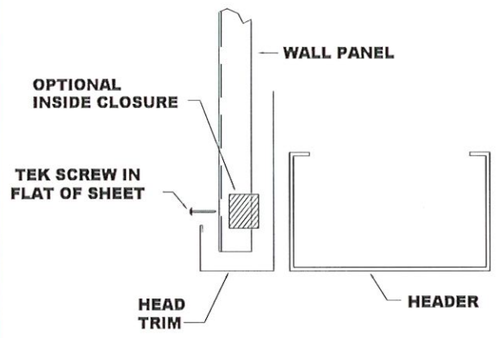
Outside Corner



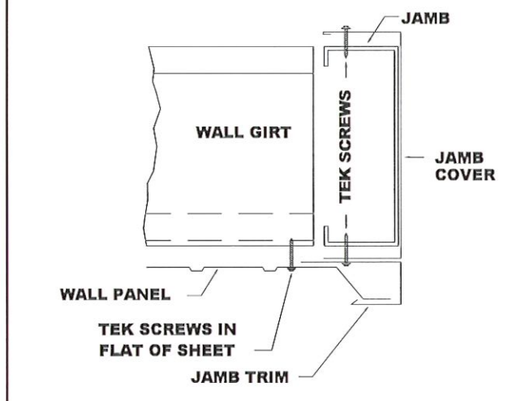
Open End



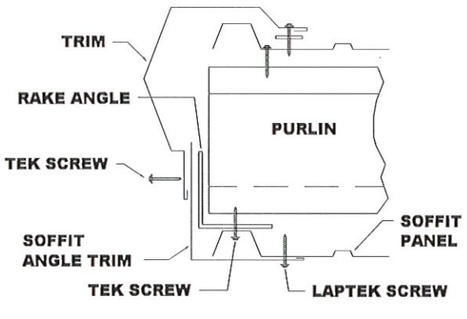
Jamb



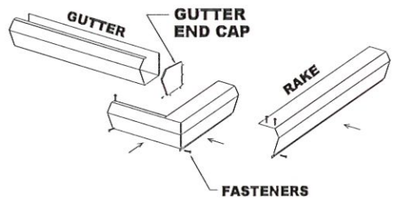
Head - Door



Jamb



Soffit to Rake



Corner Box

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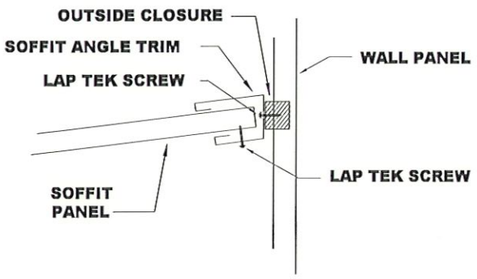
F-2689
STATE OF TEXAS
MATTHEW S. MALLEY
121601
LICENSED PROFESSIONAL ENGINEER
10/21/2024

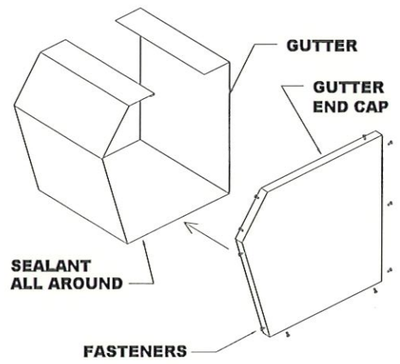
REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

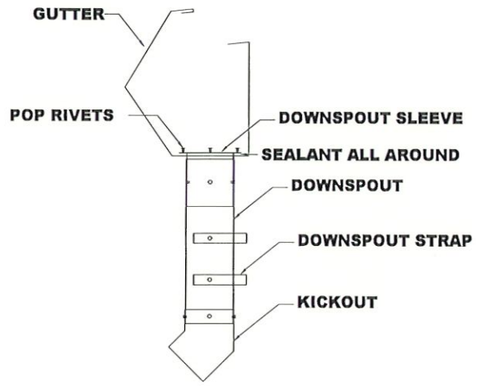
DRAWING DESCRIPTION: TRIM DETAILS
CUSTOMER NAME: FUN ABOUNDS INC
END USER: BASTROP CO PCT 2
SCALE: NON
SALESMAN: WESKEY CARTER
JOBSITE ADDRESS: 911 E. MLK BLVD SMITHVILLE, TX 78957
DETAILER: TRG
CHECKER:
DATE: 10/21/2024
JOB #: 6971245
DWG #: T101
REV.: 0



Sidewall Soffit to Wall Panel

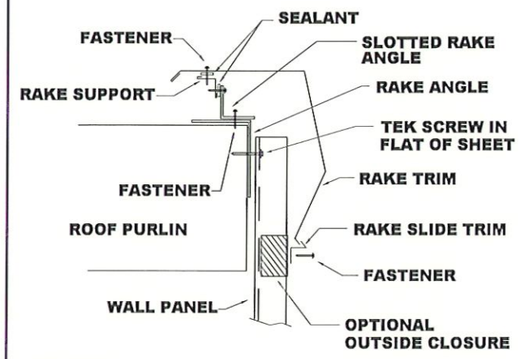


Gutter End Cap

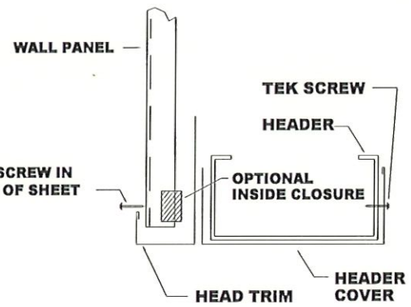


Downspout

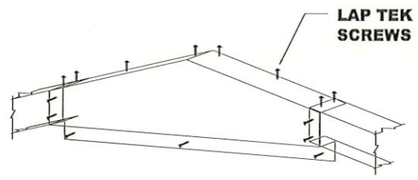
NOTE:
SEE STANDING SEAM ROOF INSTRUCTION MANUAL



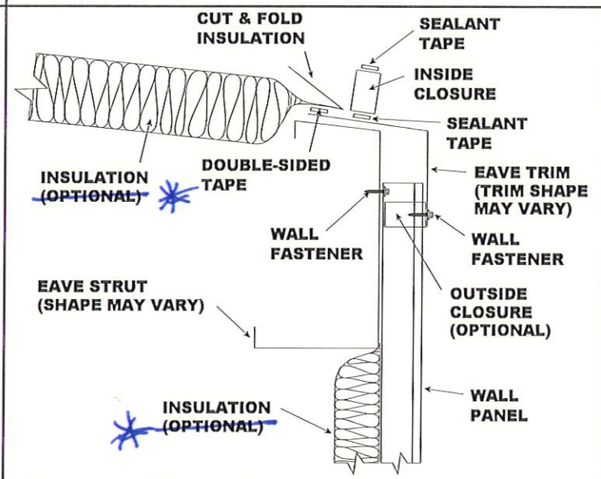
Rake



Head Cover - Door



Peak Box



Insulation @ Eave

APPROVAL DRAWINGS FOR REVIEW

Please mark one selection, sign, date and return.

( ) Approved with NO Changes:
Proceed with Fabrication

(✓) Approved with Changes Noted:
Revise and Proceed with Fabrication

( ) Revise and Resubmit:
Revise and Send New Approval Drawings
** Delivery Date WILL BE DELAYED **

F-2689

STATE OF TEXAS
MATTHEW S. MALLEY
121601
LICENSED PROFESSIONAL ENGINEER

10/21/2024

REV	DATE	DESCRIPTION
0	10/16/2024	For Approval

MUELLER, INC.
STEEL BUILDING SYSTEMS & COMPONENTS
1913 Hutchins Ave. Ballinger, TX 76821
(800) 527-1087

DRAWING DESCRIPTION: TRIM DETAILS

CUSTOMER NAME	END USER	SCALE
FUN ABOUNDS INC	BASTROP C0 PCT 2	NONE

SALESMAN	JOBSITE ADDRESS
WESKEY CARTER	911 E. MLK BLVD SMITHVILLE, TX 78957

DETAILER	CHECKER	DATE	JOB #	DWG #	REV.
TRG		10/21/2024	6971245	T102	0

Tekla Structures

CURB RAMPS AND SIDEWALKS

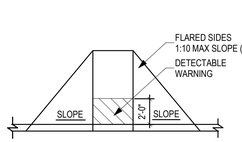


FIG. 406.3 SIDES OF CURB RAMPS

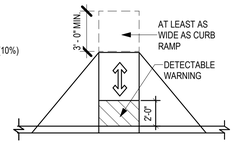


FIG. 406.4 LANDINGS AT THE TOP OF CURB RAMPS

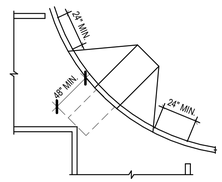


FIG. 406.6 DIAGONAL OR CORNER TYPE CURB RAMPS

TABLE 405.2 MAXIMUM RAMP SLOPE AND RISE FOR EXISTING SITES, BUILDINGS, AND FACILITIES

SLOPE*	MAX. RISE
STEEPER THAN 1:10 BUT NOT STEEPER THAN 1:8	3 INCHES
STEEPER THAN 1:12 BUT NOT STEEPER THAN 1:10	6 INCHES

* A SLOPE STEPPER THAN 1:8 IS PROHIBITED

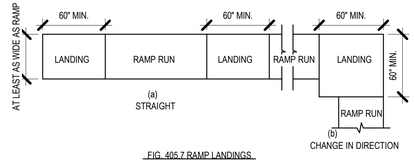


FIG. 405.7 RAMP LANDINGS

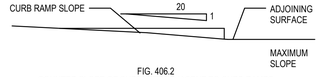


FIG. 406.2
COUNTER SLOPE OF SURFACES ADJACENT TO CURB RAMPS

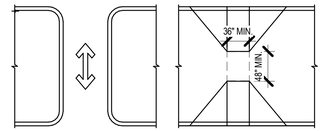


FIG. 406.7 ISLANDS IN CROSSINGS

SIGNAGE

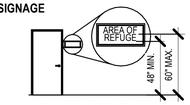


FIG. 703.4.1 HEIGHT OF TACTILE CHARACTERS ABOVE FINISH FLOOR OR GROUND

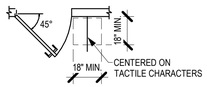


FIG. 703.4.2 LOCATION OF TACTILE SIGNS AT DOORS

FIG. 704.1.1 PARALLEL APPROACH TO TELEPHONE

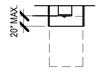


FIG. 704.2.1.2 FRONT APPROACH TO TELEPHONE

FIG. 703.7.2.1 INTERNATIONAL SYMBOL OF ACCESSIBLITY

FIG. 703.7.2.4 INTERNATIONAL SYMBOL OF ACCESS FOR HEARING LOSS

FIG. 703.7.2.2 INTERNATIONAL SYMBOL OF TTY

FIG. 703.7.2.3 VOLUME CONTROL TELEPHONE

PARKING SPACES AND SIGNAGE

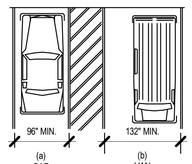


FIG. 502.2 VEHICLE PARKING SPACES

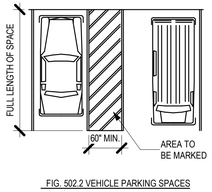


FIG. 502.2 VEHICLE PARKING SPACES

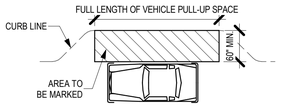
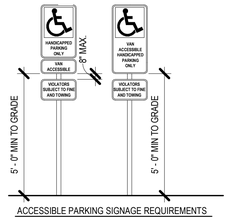


FIG. 503.3 PASSENGER LOADING ZONE ACCESS AISLE



ACCESSIBLE PARKING SIGNAGE REQUIREMENTS

ACCESSIBLE PARKING SIGNS NOTES:

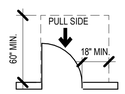
CHARACTERS AND BACKGROUND TO BE OF CONTRASTING COLORS. LIGHT CHARACTERS ON DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND ARE ACCEPTABLE.

CHARACTERS AND BACKGROUD SHALL HAVE AN EGGSHELL, MATTE, OR OTHER NON-GLARE FINISH ON THE FACE OF THE SIGNS.

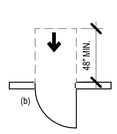
CHARACTERS ARE TO BE AT A WIDTH TO HEIGHT RATIO BETWEEN 3:5 AND 1:1.

PROVIDE ONE PARKING SIGN PER ACCESSIBLE PARKING SPACE.

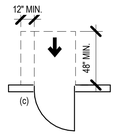
DOOR CLEAR SPACE



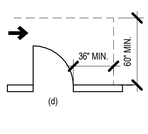
FRONT APPROACH, PULL SIDE



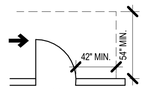
FRONT APPROACH, PUSH SIDE



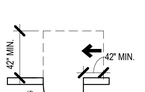
FRONT APPROACH, PUSH SIDE. DOOR PROVIDED WITH BOTH CLOSER AND LATCH



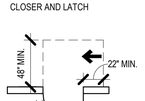
HINGE APPROACH, PULL SIDE



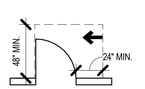
HINGE APPROACH, PULL SIDE



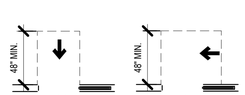
HINGE APPROACH, PUSH SIDE



HINGE APPROACH, PUSH SIDE DOOR PROVIDED WITH BOTH CLOSER AND LATCH

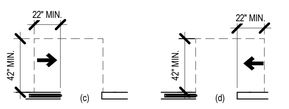


HINGE APPROACH, PULL SIDE



FRONT APPROACH

SIDE APPROACH



POCKET OR HINGE APPROACH

STOP OR LATCH SIDE APPROACH

FIG. 404.2.4.2 MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS,SLIDING DOORS, GATES AND FOLDING DOORS

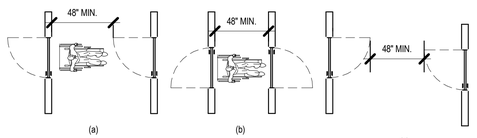
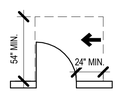
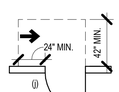


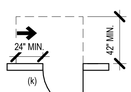
FIG. 404.2.6 DOORS IN SERIES AND GATES IN SERIES



LATCH APPROACH, PULL SIDE, DOOR PROVIDED WITH CLOSER



LATCH APPROACH, PUSH SIDE



LATCH APPROACH, PUSH SIDE DOOR PROVIDED WITH CLOSER

FIG. 404.2.4.1 MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES

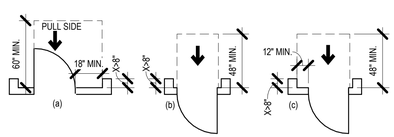


FIG. 404.2.4.3 MANEUVERING CLEARANCES AT RECESSED DOORS AND GATES

CLEAR SPACE & TURN AROUNDS

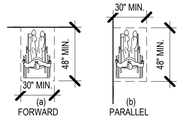


FIG. 305.5 POSITION OF CLEAR FLOOR OR GROUND SPACE

FIG. 305.7.1
MANEUVERING CLEARANCE
IN AN ALCOVE, FORWARD APPROACH

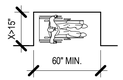


FIG.305.7.2
MANEUVERING CLEARANCE
IN AN ALCOVE, PARALLEL APPROACH

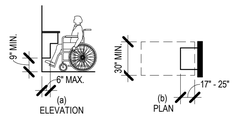


FIG. 306.2 TOE CLEARANCE

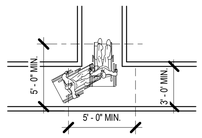
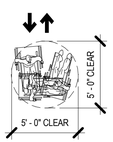


FIGURE 304.3.2
T-SHAPED TURNING SPACE



60" DIAMETER SPACE
WHEELCHAIR TURNING SPACE

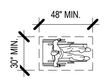


FIG. 305.3
CLEAR FLOOR SPACE OR GROUND SPACE

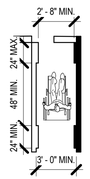


FIG. 403.5.1
CLEAR WIDTH OF AN ACCESSIBLE ROUTE

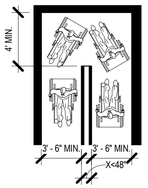


FIG.403.5.2
CLEAR WIDTH AT TURN

HANDRAILS

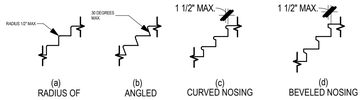


FIG. 504.5 STAIR NOSING

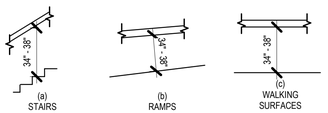


FIG. 505.4 HANDRAIL HEIGHT

FIG. 405.9.2 CURB OR BARRIER EDGE PROECTION

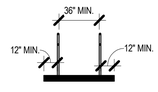


FIG. 405.9.1 EXTENDED FLOOR OR GROUND SURFACE EDGE PROTECTION

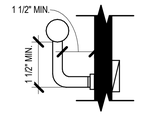


FIG. 505.5 HANDRAIL CLEARANCE

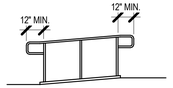


FIG.505.10.1 TOP AND BOTTOM HANDRAIL EXTENSION AT RAMPS

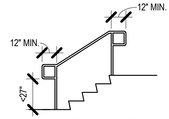


FIG. 505.10.2 TOP HANDRAIL EXTENSION AT STAIRS

FIG. 505.10.3 BOTTOM HANDRAIL EXTENSION AT STAIRS

PROTRUDING OBJECTS

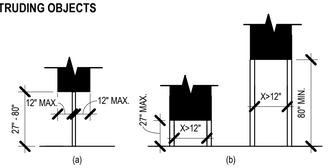


FIG 307.3 POST-MOUNTED PROTRUDING OBJECTS

PROTRUDING OBJECTS

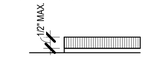


FIG. 302.2 CARPET PILE HEIGHT

FIGURE 303.2
VERTICAL CHANGE IN LEVEL

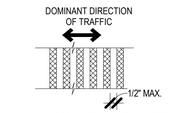


FIG. 302.3 ELONGATE OPENINGS IN FLOOR OR GROUND SURFACES

FIGURE 303.3
BEVELED CHANGE IN LEVEL

TOILET COMPARTMENTS

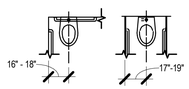


FIG. 604.2 WATER CLOSET LOCATION

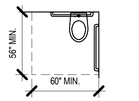


FIG. 604.3.1 SIZE OF CLEARANCE AT WATER CLOSETS

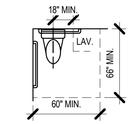
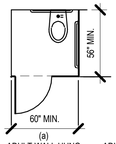


FIG. 604.3.2 (EXCEPTION) OVERLAP OF WATER CLOSET CLEARANCE IN RESIDENTIAL DWELLING UNITS



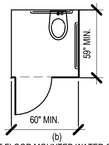


FIG. 604.8.1.1 SIZE OF WHEELCHAIR ACCESSIBLE TOILET COMPARTMENTS

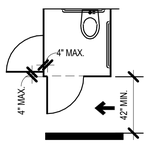


FIG. 604.8.1.2 WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT DOORS

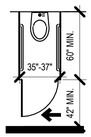


FIG. 604.8.2 AMBULATORY ACCESSIBLE TOILET COMPARTMENT

GENERAL NOTES - TAS 002

1	THE MINIMUM REQUIRED ACCESSIBILITY COMPLIANCE INCLUDES BUT IS NOT LIMITED TO THE INFORMATION SHOWN WITHIN. THE MINIMUM REQUIRED ACCESSIBILITY COMPLIANCE INCLUDES BUT IS NOT LIMITED TO THE INFORMATION SHOWN WITHIN.
2	NOT ALL CONDITIONS SHOWN ON THIS SHEET MAY BE REQUIRED BY THIS PROJECT. COMPARE THE REQUIREMENTS OF THE ARCHITECTURAL DRAWINGS WITH THIS SHEET FOR RELEVANCE OF INFORMATION.
3	DIMENSIONS INDICATED ARE THE MINIMUM CLEAR DIMENSIONS REQUIRED BY ACCESSIBILITY GUIDELINES. THE CONTRACTOR IS RESPONSIBLE FOR LAYOUT OF BUILDING ELEMENTS TO ASSURE THAT DIMENSIONS SHOWN ARE APPROVED.
4	NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE ARCHITECTURAL DRAWINGS AND THE INFORMATION GIVEN ON THIS SHEET. NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE ARCHITECTURAL DRAWINGS AND THE INFORMATION GIVEN ON THIS SHEET.
5	DO NOT SCALE THESE DRAWINGS.
6	THE MAJORITY OF THESE FIGURES AND NOTES REFER TO TAS (TEXAS ACCESSIBILITY STANDARDS OF THE ARCHITECTURAL BARRIERS DIVISION OF THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR)).
7	OUTDOOR SURFACES SHALL BE CONSTRUCTED SO THAT WATER WILL NOT ACCUMULATE ON WALKING SURFACES.
8	2012 TEXAS ACCESSIBILITY STANDARDS 402.2: ACCESSIBLE ROUTES SHALL CONSIST OF ONE OR MORE OF THE FOLLOWING COMPONENTS: WALKING SURFACES WITH A RUNNING SLOPE NOT STEEPER THAN 1:20(5%), DOORWAYS, RAMPS, CURB RAMPS EXCLUDING THE FLARED SIDES, ELEVATORS, AND PLATFORMS. ALL COMPONENTS OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF CHAPTER 4. WALKING SURFACES MUST HAVE RUNNING SLOPES NOT STEEPER THAN 1:20, OTHER COMPONENTS OF ACCESSIBLE ROUTES, SUCH AS RAMPS AND CURBS RAMPS ARE PERMITTED TO BE MORE STEEPLY SLOPED.

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03/03/2025

REVISIONS			
NO.	DATE	DESCRIPTION	BY

BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd.
Smithville, TX 78957

PROJECT NUMBER:	202415
PROJECT PHASE:	CONSTRUCTION DOCUMENTS
DRAWN BY:	CBA
CHECKED BY:	CBA
ISSUE DATE:	03.03.2025

ACCESSIBILITY STANDARDS

SHEET
A001

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ACCESSIBLE MOUNTING HEIGHTS SCHEDULE

DESCRIPTION	MOUNTING HEIGHT CHILDREN 3–4 *THIS COLUMN STATES BASIS OF DIMENSION*	MOUNTING HEIGHT CHILDREN 5–8	MOUNTING HEIGHT CHILDREN 9–12	MOUNTING HEIGHT ADULT	NOTES
ACCESSORIES					
GRAB BARS @ HC STALL	18" TO 20" (TOP OF GRIPPING SURFACE, TYP.)	20" TO 25"	25" TO 27"	33" TO 36"	MEET ADA STRENGTH STD.; CLEARANCES PER DTL. 7 ON THIS SHEET
WALL-MOUNTED SOAP DISPENSER	20" TO 36" A.F.F. (TO CONTROL, TYP.)	18" TO 40" A.F.F.	16" TO 44" A.F.F.	44" MAX. A.F.F.	MEET ADA STANDARD FOR VALVE FORCE
PAPER TOWEL DISPENSER /DISPOSAL	20" TO 36" A.F.F. (TO CONTROL, TYP.)	18" TO 40" A.F.F.	16" TO 44" A.F.F.	48" MAX. A.F.F.	27" MAX. CLEARANCE A.F.F.; OR IF NOT, 4" MAX. PROJECTION FROM WALL
PAPER TOWEL DISPENSER ONLY	20" TO 36" A.F.F. (TO CONTROL, TYP.)	18" TO 40" A.F.F.	16" TO 44" A.F.F.	44" MAX. A.F.F.	MOUNTED ABOVE COUNTER; OR IF NOT, 4" MAX. PROJECTION FROM WALL
TOILET PAPER DISPENSER	14" A.F.F. (TO DISPENSER, TYP.)	14" TO 17" A.F.F.	17" TO 19" A.F.F.	15" TO 48" A.F.F.	ALLOW CONT. PAPER FLOW
COAT HOOKS	20" TO 36" A.F.F. (TO HOOK, TYP.)	18" TO 40" A.F.F.	16" TO 44" A.F.F.	15" TO 48" A.F.F.	
SHELVES	SAME AS ADULT	SAME AS ADULT	SAME AS ADULT	40" TO 48" A.F.F.	
MIRROR ABOVE COUNTER OR LAV., ACCESSIBLE	SAME AS ADULT (TO REFLECTIVE SURFACE, TYP.)	SAME AS ADULT	SAME AS ADULT	40" MAX. A.F.F.	74" MIN. A.F.F TO TOP EDGE
MIRROR WITH CLEAR WALL BELOW, ACCESSSIBLE	SAME AS ADULT (TO REFLECTIVE SURFACE, TYP.)	SAME AS ADULT	SAME AS ADULT	35" MAX. A.F.F.	74" MIN. A.F.F TO TOP EDGE
BABY CHANGING STATION	SAME AS ADULT (TO RIM OF TABLE, TYP.)	SAME AS ADULT	SAME AS ADULT	34" MAX. A.F.F.	REFER TO DETAIL 3 ON THIS SHEET FOR TOE & KNEE CLEARANCE
PLUMBING FIXTURES					
WATER CLOSET, ACCESSIBLE	11" TO 12" A.F.F. (TO RIM OF SEAT, TYP.)	12" TO 15" A.F.F.	15" TO 17" A.F.F.	17" TO 19" A.F.F.	FLUSH HANDLE TO WIDE SIDE OF TOILET COMPARTMENT
FLUSH HANDLE	36" MAX. A.F.F. (TO CONTROL, TYP.)	36" MAX. A.F.F.	36" MAX. A.F.F.	44" MAX. A.F.F.	
LAVATORY, WALL MOUNTED	28" MAX. A.F.F. (TO RIM OF SINK, TYP.)	31" MAX. A.F.F.	31" MAX. A.F.F.	34" MAX. A.F.F.	ADA-LEVER FAUCET; PROVIDE ADA COMPLIANT PIPE PROTECTION
KNEE CLEARANCE	N/A; SIDE-APPROACH PER DTL. 16 THIS SHEET	24" HIGH MIN.	24" HIGH MIN.	SEE DTL. 3 ON THIS SHEET	REFER TO DETAIL 3 ON THIS SHEET FOR TOE & KNEE CLEARANCE
LAVATORY, COUNTER MOUNTED	28" MAX. A.F.F. (TO COUNTER SURFACE, TYP.)	31" MAX. A.F.F.	31" MAX. A.F.F.	34" MAX. A.F.F.	ADA-LEVER FAUCET; PROVIDE ADA COMPLIANT PIPE PROTECTION
KNEE CLEARANCE	N/A; SIDE-APPROACH PER DTL. 16 THIS SHEET	24" HIGH MIN.	24" HIGH MIN.	SEE DTL. 3 ON THIS SHEET	REFER TO DETAIL 3 ON THIS SHEET FOR TOE & KNEE CLEARANCE
URINAL, ACCESSIBLE	SEE ACCESSORY SCHEDULE	SEE ACCESSORY SCHED.	SEE ACCESSORY SCHED.	17" MAX. A.F.F. TO RIM OF BASIN	13.5" DEEP MIN. FROM WALL TO FRONT OF RIM
FLUSH HANDLE	20" TO 36" A.F.F. (TO CONTROL, TYP.)	18" TO 40" A.F.F.	16" TO 44" A.F.F.	15" TO 48" A.F.F.	
ELECTRICAL FIXTURES					
ELECTRIC WATER COOLER, ACCESSIBLE	30" MAX. A.F.F. (TO OUTLET OF SPOUT, TYP)	30" MAX. A.F.F.	30" MAX. A.F.F.	36" MAX. A.F.F.	PROVIDE MANUFACTURED APRON FOR ADA COMPLIANCE
KNEE CLEARANCE	N/A; SIDE-APPROACH PER DTL. 16 THIS SHEET	SIDE-APPROACH	SIDE-APPROACH	SEE DTL. 3 ON THIS SHEET	REFER TO DETAIL 3 ON THIS SHEET FOR TOE & KNEE CLEARANCE

ACCESSIBLE WATER CLOSET CENTERLINE DISTANCES FROM WALL

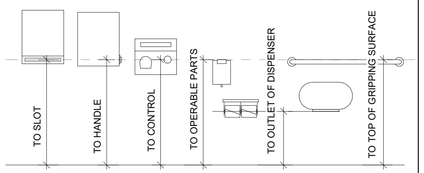
AGES 3–4	AGES 5–8	AGES 9–12	AGES 12 & UP (ADULT)
12" (FROM WALL, TYP.)	12" TO 15"	15" TO 18"	16" TO 18"

ACCESSIBLE VERTICAL REACH RANGES

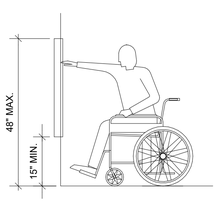
	FORWARD OR SIDE REACH	
	LOW (MIN.)	HIGH (MAX.)
AGES 3–4	20" A.F.F.	36" A.F.F.
AGES 5–8	18" A.F.F.	40" A.F.F.
AGES 9–12	16" A.F.F.	44" A.F.F.
AGES 12 & UP	SEE DETAILS 14–17 ON THIS SHEET	

GENERAL NOTES - TAS 003

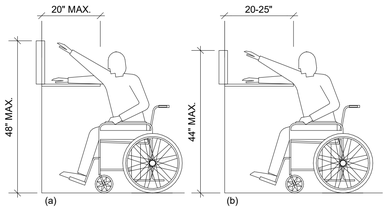
1	DIMENSIONS SHOWN ON DIAGRAMS ARE FOR ADULT FACILITIES UNLESS OTHERWISE NOTED. DIMENSIONS WILL VARY FOR FACILITIES USED PRIMARILY BY CHILDREN AGED 12 & YOUNGER – SEE MOUNTING HEIGHTS SCHEDULE.
2	PER §307.2, OBJECTS WITH LEADING EDGES MORE THAN 27" AND NOT MORE THAN 80" ABOVE THE FINISH FLOOR OR GROUND SHALL PROTRUDE NO MORE THAN 4" HORIZONTALLY INTO THE CIRCULATION PATH.
3	IN EACH TOILET ROOM THAT A LAVATORY, WATER CLOSET, MIRROR, OR URINAL IS PROVIDED, AT LEAST ONE OF EACH FIXTURE SHALL BE MADE ACCESSIBLE (TOGETHER WITH ITS ACCESSORIES) IN ACCORDANCE WITH THESE TAS SHEETS.
4	FOR ALL SINKS (LAVATORIES):A CLEAR FLOOR SPACE AT LEAST 30" BY 48" SHALL BE PROVIDED IN FRONT OF A SINK TO ALLOW FORWARD APPROACH. THE CLEAR FLOOR SPACE SHALL BE ON AN ACCESSIBLE ROUTE. TOE & KNEE CLEARANCE THAT IS AT LEAST 30" WIDE AND COMPLIES WITH DETAIL 1 ON THIS SHEET SHALL BE PROVIDED UNDERNEATH SINKS.
5	HOT WATER AND DRAIN PIPES EXPOSED UNDER SINKS SHALL BE INSULATED OR OTHERWISE CONFIGURED SO AS TO PROTECT AGAINST CONTACT. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER SINKS.
6	EACH SINK SHALL BE A MAXIMUM OF 6 1/2" DEEP.
7	FAUCETS SHALL COMPLY WITH 4.27.4, LEVER-OPERATED, PUSH-TYPE, TOUCH-TYPE OR ELECTRONICALLY CONTROLLED MECHANISMS ARE ACCEPTABLE DESIGNS.
8	ELECTRIC WATER COOLERS (AKA DRINKING FOUNTAINS, EWC'S): 50% OF ALL EWC'S IN THE BUILDING SHALL BE MADE ACCESSIBLE IN ACCORDANCE WITH THESE TAS SHEETS. THE REMAINING 50% SHALL BE MOUNTED AT 38" TO 43" A.F.F. TO SPOUT FOR STANDING-HEIGHT USERS.
9	COUNTERS, DINING AND WORK SURFACES: ACCESSIBLE PORTIONS OF COUNTERS, DINING AND WORK SURFACES SHALL HAVE TOE & KNEE CLEARANCE COMPLYING WITH DETAIL ON THIS PAGE.



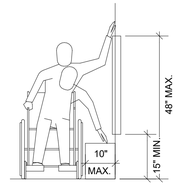
BASIS OF MOUNTING HEIGHTS



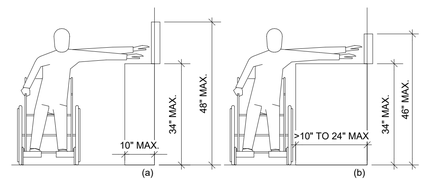
UNOBSTRUCTED FORWARD REACH



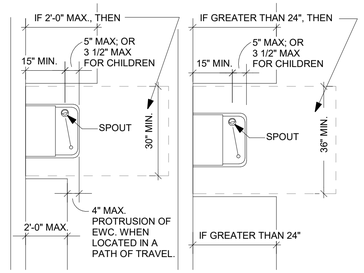
OBSTRUCTED HIGH FORWARD REACH



UNOBSTRUCTED SIDE REACH



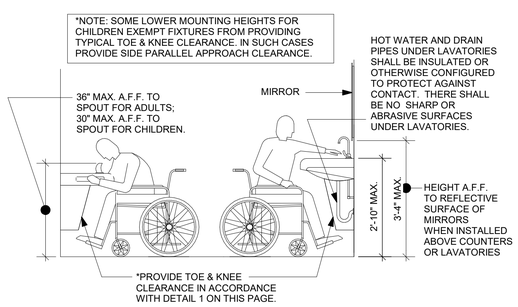
OBSTRUCTED HIGH SIDE REACH



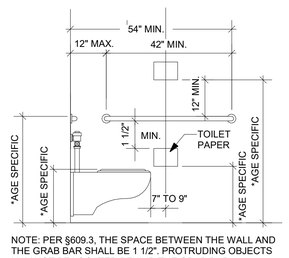
NOTE: ADJACENT STANDING-HEIGHT EWC'S ARE PERMITTED WITHIN THE CLEAR FLOOR SPACE OF AN ACCESSIBLE EWC, PROVIDED THE STANDING-HEIGHT EWC DOES NOT OBSTRUCT THE CONTROLS OR REQUIRED TOE & KNEE CLEARANCE OF THE ACCESSIBLE EWC.

NOTE: STANDING-HEIGHT EWC'S SHALL BE MOUNTED 38" TO 43" A.F.F. TO SPOUT.

EWC CLEAR FLOOR SPACE

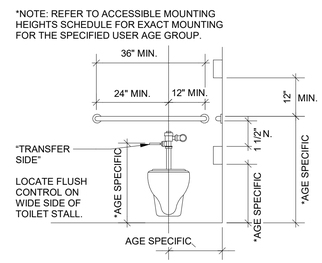


EWC & LAVATORY CLEARANCES

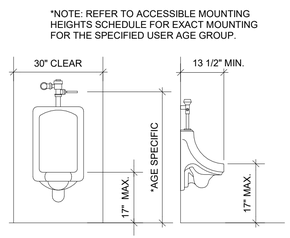


NOTE: PER §609.3, THE SPACE BETWEEN THE WALL AND THE GRAB BAR SHALL BE 1 1/2". PROTRUDING OBJECTS MAY NOT BE LOCATED BEHIND THE GRAB BAR.

TOILET STALL - SIDE WALL

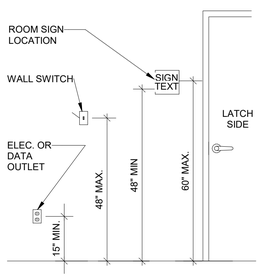


TOILET STALL - REAR WALL

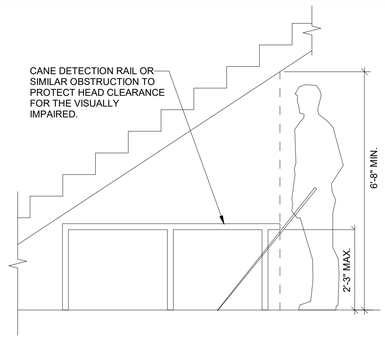


ACCESSIBLE WALL-HUNG URINAL

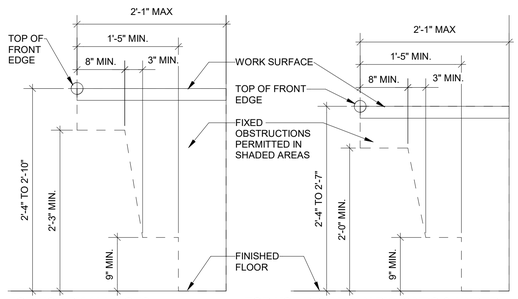
NOTE: WALL-MOUNTED TOILET ACCESSORIES SUCH AS GRAB BARS AND VARIOUS DISPENSERS ARE PERMITTED WITHIN THE REQUIRED CLEAR FLOOR SPACES FOR FIXTURES. **



MOUNTING HEIGHTS

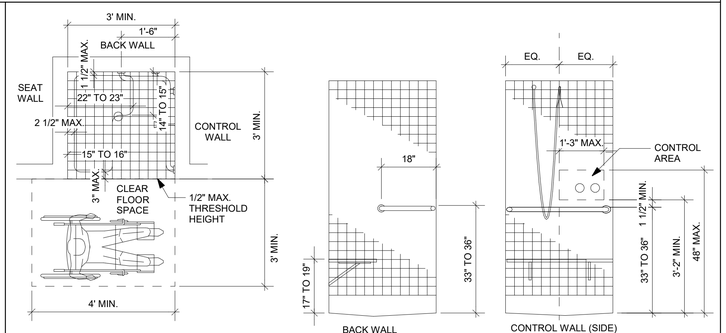


VERTICAL CLEARANCE @ STAIR



NOTE: THE TOE & KNEE CLEARANCE DIAGRAMS ABOVE APPLY TO THE FOLLOWING FORWARD-APPROACH ACCESSIBLE ELEMENTS: **LAVATORIES** (COUNTER AND WALL-MOUNTED), **DRINKING FOUNTAINS**, **COUNTERS**, **BABY CHANGING STATIONS**, AND ANY OTHER **WORK SURFACE** OR **DINING SURFACE**

TOE & KNEE CLEARANCE



NOTE: SHOWER SEAT SHALL BE FOLDING TYPE, WITH STRUCTURAL CAPACITY OF AT LEAST 250 LB FOR ALL COMPONENTS (SEAT, FASTENERS, MOUNTING, SUPPORTS)

NOTE: PER §608.6, PROVIDE SHOWER HEAD TO BE USED AS BOTH FIXED-POSITION & HAND-HELD, W/ HOSE 59" IN LENGTH. SHOWER SPRAY UNIT SHALL HAVE ON/OFF CONTROL WITH NON-POSITIVE SHUT-OFF.

SHOWER SIZE & CLEARANCES

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REGISTERED ARCHITECT — 29 — M. BEAMAN — 8889 — STATE OF TEXAS

03/03/2025

REVISIONS

NO.	DATE	DESCRIPTION	BY

BASTROP COUNTY

PRECINCT 2 ROAD & BRIDGE FACILITY

911 SE Martin Luther King Blvd.
Smithville, TX 78957

PROJECT NUMBER:	202415
PROJECT PHASE:	CONSTRUCTION DOCUMENTS
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ISSUE DATE:	03.03.2025

ACCESSIBILITY STANDARDS

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A002

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SCOPE OF WORK

NEW ONE STORY, NON-SPRINKLERED, PRE- ENGINEERED METAL BUILDING WITH CONCRETE SLAB WITH INSULATED ELECTRIC OVERHEAD DOORS. CONDITIONED SPACE AT OFFICES, BREAK ROOM, RESTROOM AND LOCKER ROOM. UNCONDITIONED SPACES AT SHOP AREAS.
PEMB SUPPLIER TO PROVIDE PEMB STRUCTURE, ROOF AND WALL PANELS, EXTERIOR SWINGING METAL DOORS AND FRAMES, INSULATION, PREFABRICATED METAL DOWNSPOUTS AND GUTTERS.

CODE INFORMATION

APPLICABLE CODES

2006 INTERNATIONAL BUILDING CODE
2015 INTERNATIONAL ENERGY CONSERVATION CODE
2006 UNIFORM FIRE CODE
2012 TEXAS ACCESSIBILITY STANDARDS

GENERAL NOTES

1. CONTRACTOR SHALL VISIT THE SITE AND VERIFY FIELD CONDITIONS PRIOR TO STARTING WORK.
2. CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES IN THE DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO START OF WORK
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO THE EXISTING PROPERTY, BUILDINGS OR OWNER'S EQUIPMENT INCURRED BY HIS STAFF OR SUBCONTRACTORS.
4. CONTRACTOR TO PROTECT AREAS AND SURFACES ADJACENT TO THE CONSTRUCTION AREA FROM DAMAGE AND DEBRIS. ALL AREAS ARE TO BE CLEAN AND SERVICEABLE AT THE COMPLETION OF DEMOLITION, PRIOR TO COMMENCEMENT OF NEW CONSTRUCTION.
5. WRITTEN DIMENSIONS GOVERN; DO NOT SCALE DRAWINGS.
6. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL EXISTING UTILITIES: TO BE REMOVED, TO BE RELOCATED TEMPORARILY, OR TO REMAIN.
7. ALL UTILITIES AND CONDUIT NOT TO BE REUSED SHALL BE CAPPED OFF AT THE FLOOR OR WALL LINES, IN METHODS ACCEPTABLE TO APPLICABLE CODES.
8. THE ARCHITECT WILL NOT BE RESPONSIBLE FOR, NOR HAVE CONTROL OF, NOR BE IN CHARGE OF CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, NOR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, AND WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE ARCHITECT WILL NOT BE RESPONSIBLE, NOR HAVE CONTROL OF, NOR BE IN CHARGE OF THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OF THEIR AGENTS OR EMPLOYEES, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK.
9. ALL DEMOLITION BUILDING MATERIALS ARE TO BE REMOVED FROM THE SITE, EXCEPT WHERE NOTED TO BE SALVAGED FOR THE OWNER'S USE MATERIAL SHALL BE DISPOSED IN A MANNER AND LOCATION IN ACCORDANCE WITH LOCAL CODES.
10. ANY REFERENCE TO SPECIFIC MANUFACTURER'S PRODUCTS IS FOR THE PURPOSE OF ESTABLISHING A STANDARD FOR PATTERNS, COLORS, AND TEXTURES. IT IS NOT INTENDED TO LIMIT SELECTIONS OF ANOTHER MANUFACTURER'S PRODUCTS.
11. CONTRACTOR TO INCLUDE IN HIS BID ALL COSTS FOR REPAIR AND PATCHING OF ADJACENT FLOORS, WALLS, CEILINGS, DOORS, AND ANY OTHER SURFACES AFFECTED BY THE WORK. ALL REPAIRS TO MATCH EXISTING UNLESS OTHERWISE NOTED IN THE DRAWINGS.
12. IF CONTRACTOR DISCOVERS WHAT HE SUSPECTS IS ASBESTOS CONTAINING MATERIALS (ACM) DURING THE WORK, HE SHALL NOTIFY THE REPRESENTATIVE OF THE OWNER AND THE ARCHITECT, AND TAKE SUCH ACTION AS REASONABLY NECESSARY AND FEASIBLE TO PROVIDE AN INTERIM SAFE AND SECURE ENVIRONMENT FOR ITS EMPLOYEES AND THIRD PARTIES UNTIL DETERMINATION CAN BE MADE AS TO HOW TO PROCEED.
13. ANY WORK REQUIRING SHUTTING OFF OF UTILITIES, BLOCK FIRE ESCAPE ROUTES, OR ANY OTHER WORK AFFECTING LIFE AND SAFETY IS TO BE COORDINATED WITH THE OWNER AND ARCHITECT PRIOR TO START OF WORK.

LOCATION PLAN

ARCHITECTURAL SYMBOLS

ROOM NAME 100 — ROOM TAG
X — GRID/COLUMN CENTER LINE
100A — DOOR TAG
E1 — WINDOW/STOREFRONT TAG
TA-1 — TOILET ACCESSORIES TAG
1 — REVISION TAG
℄ — CENTERLINE
#' - #" — ELEVATION INDICATOR
#' - #" — ELEVATION CHANGE
ROOF CRICKET
1/A100 — BUILDING SECTION / WALL SECTION
1 / 4 A1.1 2 / 3 — ELEVATION INDICATOR
1/A100 — ELEVATION
1/A100 — CALLOUT DETAIL
CG — CORNER GUARDS
NEW WALLS
EXISTING WALLS
DEMOLISHED WALLS
SMOKE PARTITION / 1/2 HOUR RATED PARTITION
1 HOUR FIRE-RATED PARTITION
2 HOUR FIRE-RATED PARTITION
3 HOUR FIRE-RATED PARTITION
4 HOUR FIRE-RATED PARTITION
A / A0.1 — PARTITION
ALIGN — ALIGN ITEMS SHOWN
BREAK LINE
PROPERTY LINE
AIR BARRIER / VAPOR BARRIER
MATCHLINE

MATERIAL CUT PATTERNS

EARTH FILL
SAND
CONCRETE
CONCRETE MASONRY UNIT
BRICK
STONE
STEEL
ALUMINUM
WOOD
EIFS
LUMBER (THROUGH MEMBER)
LUMBER (INTERRUPTED MEMBER)
GYPSUM WALL BOARD
RIGID INSULATION
BATT INSULATION

DRAWING ABBREVIATIONS

A.F.F	ABOVE FINISH FLOOR	M.O.	MASONRY OPENING
A.H.U.	AIR HANDLER UNIT	N.I.C.	NOT IN CONTRACT
ALT.	ALTERNATE	O.C.	ON CENTER
ALUM.	ALUMINUM	O.D.	OUTSIDE DIAMETER
APPROX.	APPROXIMATELY	O.F.	OWNER FURNISHED
@	AT	O.H.	OPPOSITE HAND
BD.	BOARD	O.I.	OWNER INSTALLED
B.O.	BOTTOM OF	P.E.M.B.	PRE-ENGINEERED METAL BUILDING
CAB.	CABINET	PLAM	PLASTIC LAMINATE
CG	CORNER GUARD	PTD.	PAINTED
C.I.	CONTRACTOR INSTALLED	RAD.	RADIUS
C.J.	CONTROL JOINT	RE:	REFER TO
CL	CENTER LINE	REINF.	REINFORCED
CLG.	CEILING	R.O.	ROUGH OPENING
COL.	COLUMN	SIM.	SIMILAR
CONC.	CONCRETE	SPEC.	SPECIFICATION
CPT.	CARPET	S.T.C.	SOUND TRANSMISSION COEFFICIENT
C.T.	CERAMIC TILE	SUSP.	SUSPENDED
D.F.	DRINKING FOUNTAIN	S.V.T.	SOLID VINYL TILE
DIA.	DIAMETER	T.B.	TACK BOARD
DN	DOWN	T.O.	TOP OF
D.S.	DOWNSPOUT	U.N.O.	UNLESS NOTED OTHERWISE
E.J.	EXPANSION JOINT	V.C.T.	VINYL COMPOSITION TILE
EQ.	EQUAL	W.C.	WATER CLOSET
EQUIP.	EQUIPMENT	WD.	WOOD
EXP.	EXPOSED	WDPL	WOOD WITH PLASTIC LAMINATE
F.A.C.P.	FIRE ALARM CONTROL PANEL	W.H.	WATER HEATER
F.D.	FLOOR DRAIN	W.W.M.	WELDED WIRE MESH
F.E.C.	FIRE EXTINGUISHER CABINET		
F.F.	FINISH FLOOR		
F.V.	FIELD VERIFY		
GA.	GAUGE		
G.W.B.	GYPSUM WALL BOARD		
H.K.	HOUSE KEEPING		
H.M.	HOLLOW METAL		
ID.D	INSIDE DIAMETER		
MB	MINI-BLINDS		
M.B.	MARKER BOARD		
MFR.	MANUFACTURER		

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REGISTERED ARCHITECT BEAN STATE OF TEXAS 8889
05/12/2025

REVISIONS

NO.	DATE	DESCRIPTION	BY
1.	04/29/25	Permit /Owner Revisions	CBA

BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd, Smithville, TX 78957

PROJECT NUMBER:	202415
PROJECT PHASE:	CONSTRUCTION DOCUMENTS
DRAWN BY:	Author
CHECKED BY:	Checker
ISSUE DATE:	03.03.2025

ARCHITECTURAL GENERAL INFORMATION

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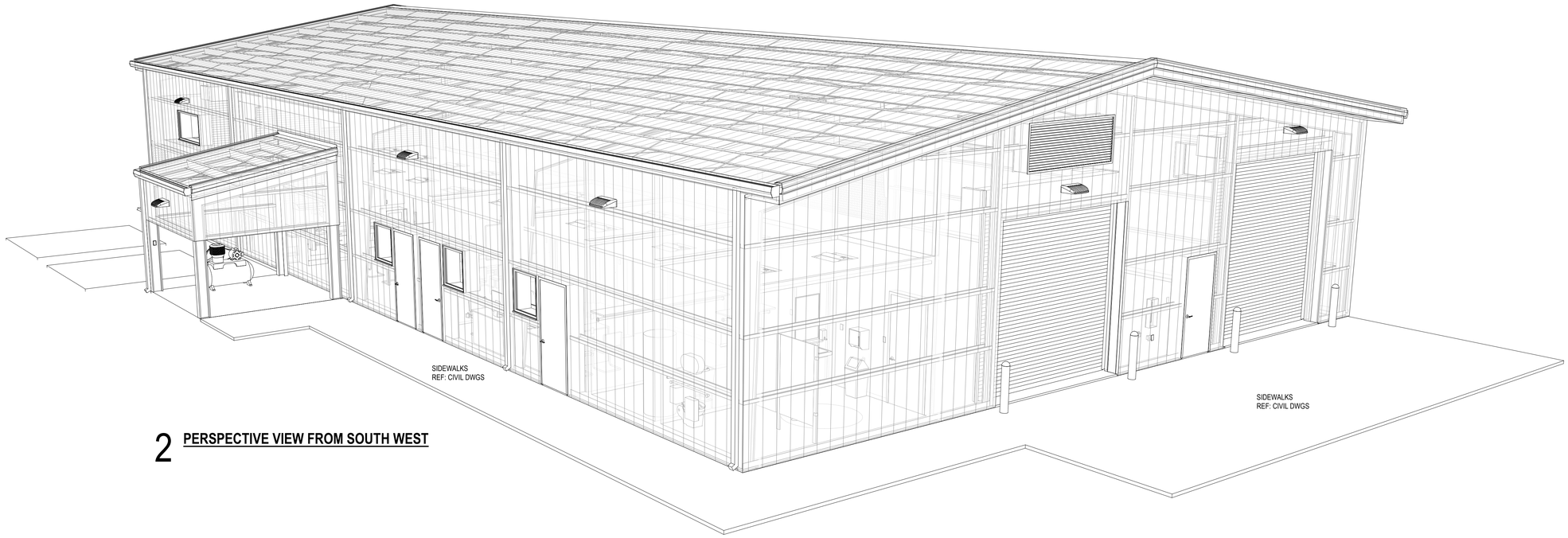
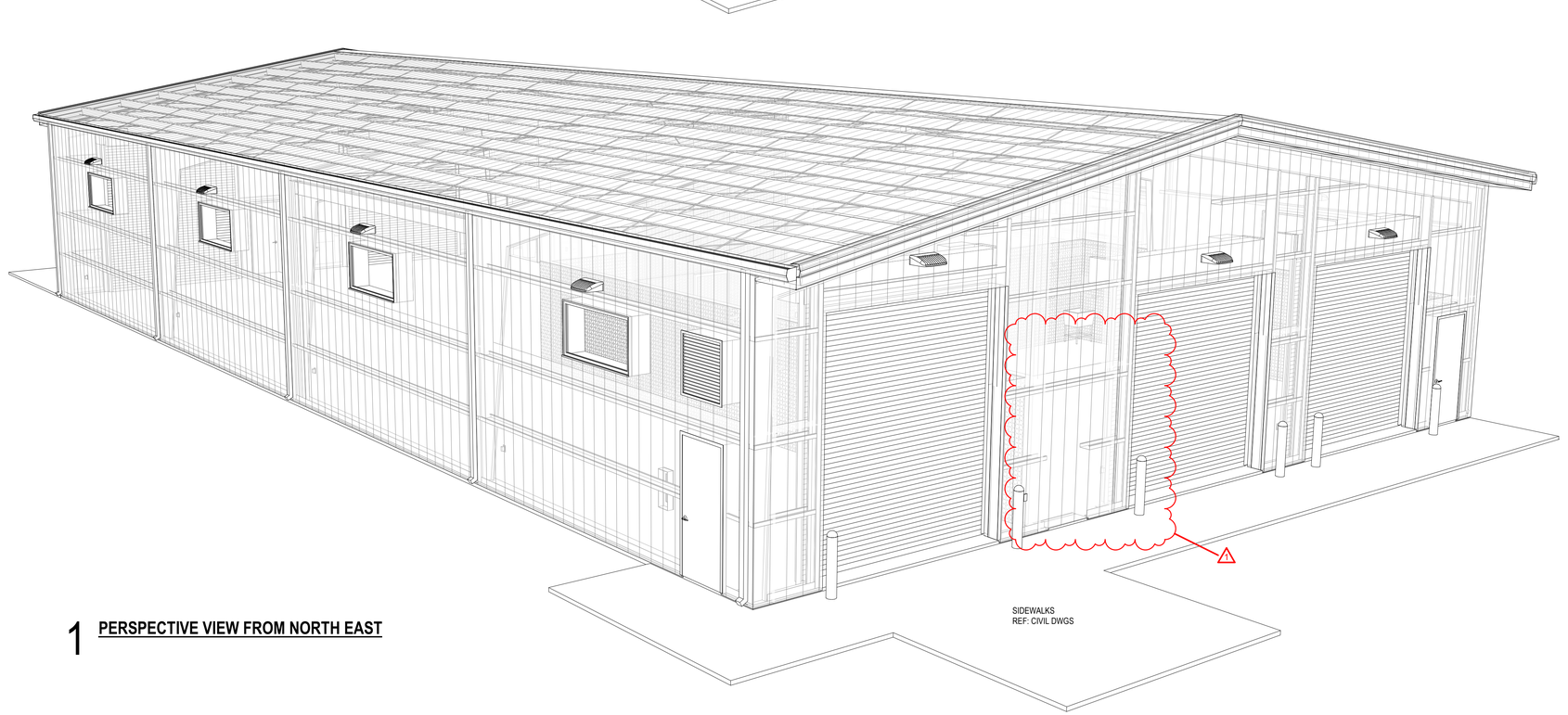


2 PERSPECTIVE VIEW FROM SOUTH WEST



1 PERSPECTIVE VIEW FROM NORTH EAST

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BEAMAN
JEFFREY
8889
STATE OF TEXAS
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PERSPECTIVE VIEWS

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SPECIFICATIONS

REFER TO CIVIL, STRUCTURAL (PEMB SUPPLIER), & MEP DRAWINGS FOR ADDITIONAL SPECIFICATIONS

CONTRACTOR TO COORDINATE ALL OF PEMB STRUCTURE W/ PEMB SUPPLIER; WALLS (CHARCOAL GREY), ROOF (GALVALUME FINISH), EXTERIOR WALL & ROOF INSULATION, EXTERIOR SWINGING DOORS, GUTTERS & DOWNSPOUTS,

DIVISION 1 - GENERAL REQUIREMENTS:
COORDINATE WITH OWNER

1. SUBMITTALS – REFER TO UNIFORM GENERAL CONDITIONS (UGC) FOR ADDITIONAL INFORMATION AND REQUIREMENTS. PROVIDE SUBMITTALS (ARCHITECTURAL) FOR THE FOLLOWING:

05 METALS- PROVIDE SHOP DRAWINGS OF CAGE AREA W/ GALVANIZED EXPANDED METAL, POST, BRACKETS, INSTALL.
06 FINISH CARPENTRY - MILLWORK & SHELVES
07 THERMAL & MOISTURE PROTECTION- INSULATION & SEALANTS
08 OPENINGS - INTERIOR DOORS, FRAME & WINDOWS, LOUVER
09 FINISHES- GYP. BD., SEALANTS, TILE, ACT CEILING SYSTEM, INTERIOR PAINT, EXTERIOR PAINT, WALL BASE, ALUM. DIAMOND CHECKER PLATE SHEET ROLL, LVT
10 SPECIALTIES - BUILDING & ROOM SIGNAGE, TOILET ACCESSORIES, TOILET PARTITION

1 KNOX BOX - PROVIDE & COORDINATE WITH FIRE MARSHALL & ARCHITECT FOR LOCATION

2. SUBSTITUTION PROCEDURES – SUBSTITUTION REQUESTS SHALL BE SUBMITTED DURING THE BIDDING PROCESS, A MINIMUM OF ONE WEEK PRIOR TO THE BID DUE DATE. CHANGES PROPOSED BY CONTRACTOR THAT ARE REQUIRED DUE TO CHANGED PROJECT CONDITIONS MAY BE CONSIDERED DURING THE SUBMITTAL PHASE. REFER TO THE UNIFORM GENERAL CONDITIONS (UGC), SECTION 8.3.5 FOR ADDITIONAL INFORMATION. SUBSTITUTION REQUESTS FOR CONVENIENCE OR FOR LACK OF PLANNING WILL NOT BE ACCEPTED.
PRODUCT REQUIREMENTS (STORAGE & HANDLING) – THE MANUFACTURER'S PRODUCT REQUIREMENTS FOR STORAGE AND HANDLING OF HAZARDOUS AND/OR TOXIC MATERIALS. COORDINATE WITH OWNER.

3. CLOSEOUT DOCUMENTS – PROVIDE CLOSEOUT DOCUMENTS, INCLUDING AS-BUILT DRAWINGS & OPERATION & MAINTENANCE (O&M) MANUALS.

4. WARRANTIES & GUARANTEES – UNLESS NOTED OTHERWISE IN THE DOCUMENTS & MANUFACTURER'S, ALL WARRANTIES MUST BE GOOD FOR AT LEAST ONE (1) YEAR AFTER THE DATE OF SUBSTANTIAL COMPLETION. REFER TO UNIFORM GENERAL CONDITIONS (UGC) FOR ADDITIONAL INFORMATION.

5. ALLOWANCE- NO.1 -CONTRACTOR TO INCLUDE $9,900 FOR INTERIOR DOOR HARDWARE (11 DOORS). THIS IS FOR THE PURCHASE, COORDINATION & INSTALLATION OF ALL INTERIOR DOOR HARDWARE.

6. ADA/TDLR- BEFORE SUBSTANTIAL COMPLETION, CONTRACTOR TO COORDINATE W/ OWNER TO SCHEDULE RAS INSPECTION. DURING CONSTRUCTION, CONTRACTOR TO COORDINATE & COMPLY WITH TAS COMPLIANCE FOR THE PROJECT. IF CONTRACTOR OBSERVES ANY DISCREPANCIES OR HAS QUESTIONS; COORDINATE WITH ARCHITECT & OWNER.

DIVISION 2 - SITE CONSTRUCTION:
COORDINATE ON SITE AND WITH OWNER ON EXISTING EXTERIOR METAL TANKS.
REF. TO CIVIL DRAWINGS

DIVISION 3 - CONCRETE:
REFER TO CIVIL & STRUCTURAL DRAWINGS FOR CONCRETE SLAB, FLOOR DRAIN COORDINATION & LOCATION.

CONCRETE BOLLARDS: PAINTED YELLOW, TYP., REF. CIVIL

DIVISION 4 - MASONRY: NOT USED

DIVISION 5 - METALS:
AT WALL PANELS:
ALUM. DIAMOND CHECKER PLATE SHEET ROLL
MANUF: METAL ROOFING SCREWS.COM
FINISH: GREY
SIZE: 1/32", 48" WIDE X 10 FT LONG
INSTALL: HIGH-STRENGTH CONSTRUCTION ADHESIVE FOR METAL

AT CAGE AREA:
GALVANIZED EXPANDED METAL MESH: 1/4" X #18, 1/2" , 4'X8'
MANUF: METALS DEPOT
GALVANIZED METAL POST: 2 3/8" DIA. 16 GA. FENCE CORNER POST, INCLUDE ALL ACCESSORIES FOR ATTACHING POST TO FLOOR, WALL & EXPANDED METAL CAGE DOOR REF. DIV. 08 OR SIMILAR TO MATCH CAGE WALL

DIVISION 6 - WOODS, PLASTICS & COMPOSITES:

ROUGH CARPENTRY: WOOD BLOCKING AS REQUIRED & SHOWN ON DRAWINGS;
AT RESTROOM GRAB BARS, AT CAGE WALL BRACING, TV/ SCREEN, LOCKER ROOM SHELVING, TOILET & URINAL WALL PARTITIONS.

FINISH CARPENTRY:
PLYWOOD WALL PANEL: 5/8" (4'X8') PANEL- MENARDS (MENARDS),
FIRE-RETARDANT PLYWOOD PANEL: 5/8" (4'X8') PANEL-FlamePRO (MENARDS),
PATTERN:STACK BOND, SCREWS: STAINLESS STEEL, FLAT TOP, EQUAL SPACING & ALIGNED

LOCKER ROOM:
1" WOOD SHELVING, EXPOSED EDGES-ROUNDED, METAL SUPPORT BRACKETS (WHITE) W/ ROD, PAINTED-WHITE, GLOSSY

BREAKROOM:
CABINETS: 3/4" PLYWOOD W/ PLASTIC LAMINATE AT EXPOSED FACES, WHITE MELAMINE INSIDE & AT SHELVING, RECESSED ADJUSTABLE METAL TRACKS & BRACKETS FOR SHELVING, PLAM COLOR: TBD- BY OWNER & ARCHITECT
HARDWARE: HANDLES- 4" WIDE STAINLESS STEEL WIRE, HINGES: EUROPEAN CONCEALED STYLE, SOFT CLOSE
COUNTER: W/ BULLNOSE(ROUNDED EDGE) & BACKSPLASH (4"). PLAM: TBD- BY OWNER

DIVISION 7 - THERMAL & MOISTURE PROTECTION:
PARTITION INSULATION: UNFACED ONE-SIDE BATT INSULATION, SIZE AS SHOWN ON DRAWINGS, SIM TO
MANUF.: CERTAINTEED CORP.,
JOINT SEALANT: AT GYPSUM BOARD, AT FLOOR & WALL BASE AREA

CONT.:

DIVISION 8 - DOORS AND WINDOWS:
OVERHEAD ROLLING METAL DOORS, ELECTRIC: COLOR TO MATCH WALL PANEL-CHARCOAL GREY, SIZE INDICATED ON DWGS, INSULATED R-VALUE 8.0, W/ LOCK,
SIM. TO MANUF.: CORNELL, ROLLING SERVICE DOOR, GALVANIZED STEEL W/ GALVANEX FINISH, SERIES ESD20CR / , ELECTRIC W/ ALL ACCESSORIES,
EXTERIOR DOORS: BY PEMB SUPPLIER (INSULATED METAL)
PAINT BY CONTRACTOR; COORDINATE COLOR W/ OWNER
INTERIOR DOOR FRAMES: PRE-FINISHED METAL, SIM TO: TIMELY, PREFINISHED, TA-8 STANDARD STEEL, S-SERIES, 20 GA., ADJUSTABLE FRAME, COLOR: TBD
INTERIOR DOORS:
SOLID CORE: PARTICLEBOARD CORE, 1 3/4" THICKNESS,
PLAM FINISH: HIGH PRESSURE DECORATIVE PLASTIC LAMINATE TYPE 1 WATER-RESISTANT ADHESIVE, COLOR: TBD BY OWNER
MANUF: VT INDUSTRIES, INC.
METAL DOOR: INSULATED, FACTORY PRIMED, PAINTED ON SITE, SIM. TO MANUF: CECO DOOR, STEEL SHEET ,LEVEL 1 -STANDARD DUTY, 18 GA., FLUSH - VISION PANEL STANDARD GLAZING,
CAGE DOOR: SIMILAR TO :MANUF. ULINE, HINGED DOOR W/ MTL. MESH 3' X 7' , MESH TO MATCH EXPANDED MTL. MESH AT WALLS, HARDWARE: STAINLESS PULL, W/ BRACKETS FOR PADLOCK, HINGES-STAINLESS STEEL/ GALV.
WINDOWS: ALUMINUM FINISH, EXTRUDED ALUM. WINDOWS W/ FIXED SASH, WARRANTY: 5 YRS, STANDARD 2" FRAMING, BASIS OF DESIGN: KAWNEER EXTERIOR 451-T CLASS II NATURAL ANODIZED AT EXTERIOR & INTERIOR FINISH, FACTORY FABRICATED, FACTORY FINISHED,THERMALLY BROKEN
GLAZING- S1/23, LOW-E, 1/4" INSULATED HEAT STRENGTHENED, BLUE/GREEN TINT
SILLS- EXTRUDED ALUMINUM , SLOPED FOR POSITIVE WASH, FIT UNDER SASH LEG TO 1/2" BEYOND WALL FACE, ONE PIECE FULL WIDTH OF OPENING
FINISHED HARDWARE: REF. ALLOWANCE

LOUVERS: GALV. METAL, FACTORY PRIMED, 18 GA., FINISH COAT IN FIELD, SIZE: TBD, COLOR: TO MATCH MTL. WALL PANEL

DIVISION 9 - FINISHES:
GYPSUM BOARD: 5/8" THICK, PAPER-FACED GYP. BD., FOR VERTICAL SURFACES, SIM. TO MANUF: GEORGIA PACIFIC GYPSUM (TOUGHROCK), CERTAINTEED CORP(TYPE C DRYWALL)., USG(SHEETROCK BRAND), AMERICAN GYP. COMPANY(LIGHT ROC),
PROVIDE ORANGE PEEL TEXTURE W/ LEVEL 4 PAINT FINISH, TYP.
PROVIDE GYP. BD. CONTROL JOINTS EVERY 30 FT OF UNINTERRUPTED & AT BOTH SIDES OF DOOR AT GYP. BD. WALLS, TYP. VINYL CONTROL JOINT ACCESSORIES
HARDIE BOARD @WET AREAS-RESTROOM & LOCKER RM- WHERE TILED, SIM TO MANUF:HARDIE-BOARD, GEORGIA PACIFIC DENSARMOR PLUS ABUSE-RESISTANT,
METAL STUDS: SIZE AS INDICATED ON DRAWINGS, SHEET STEEL SUPPORT MEMBER ASTM A1003/A1003M, SIM. TO : CLARKDIETRICH, R-STUD, JAMES INDUSTRIES W/ RUNNERS & TRACK, AISI S201
SUSPENDED CEILING: 2X2 3/4" THICK PANELS, WHITE W/ METAL GRID, SIM TO: ARMSTRONG WORLD IND., SQUARE, TYPE: DUNE, STANDARD TYPE
INTERIOR PAINT:
GYPSUM BOARD: SIM TO: SHERWIN WILLIAMS, PROMAR 200 ZERO VOC LATEX & PRIMER 1 COAT, EGGSHELL FINISH, COLOR : TBD , 2 COATS
PLYWOOD PANELS: SIM TO: SHERWIN WILLIAMS, PROMAR 200 ZERO VOC LATEX & PREMIUM WOOD PRIMER 1 COAT, GLOSSY FINISH, WHITE, 2 COATS
EXTERIOR PAINT:
METAL EXTERIOR & INTERIOR DOORS
1 COAT KEM KROMIK UNIVERSAL METAL PRIMER & 1 COAT DTM ALKYD ENAMEL, SEMI - GLOSS, SHERWIN WILLIAMS SW-B55-100 SERIES,
CONCRETE BOLLARDS- SW LOXON CONCRETE MASONRY PRIMER SEALER, A-100 EXTERIOR LATEX GLOSS A8, COLOR: TYP. CAUTION YELLOW
RUBBER WALL BASE: 4" HIGH W/ COVE, 1/8" THICK AT OFFICES, SIM TO: ROPPE 700 SERIES, BLACK/BROWN
TILE: AT FLOOR: PORCELAIN, WOOD LOOK PLANK -MANUF. FLORIDA HOME COLLECTION (HOME DEPOT), 6"X24", WOOD RIVER BEIGE
AT WALL: CORSO ITALIA-HOME DEPOT-ALPE IVORY, 12X24, MATTE FINISH, PORCELAIN
GROUT: FUSION PRO-MANUF. CUSTOM, SANDED, STAIN PROOF, COLOR: TBD

LUXURY VINYL PLANK: LIFEPROOF-TRAIL OAK 22 MIL 8.7X59 CLICK LOCK WATERPROOF, FLOATING FLOOR -HOME DEPOT, INSTALL PER MANUFACTURER INSTRUCTIONS

EPOXY COATING W/ ANTI-SLIP: RUST-OLEUM-SAFETEX-HIGH PERFORMANCE FOR VEHICLE TRAFFIC, BASIS OF DESIGN: AS9100 SYSTEM ANTI-SLIP HIGH PERFORMANCE, 5 STANDARD COLORS (NAVY GRAY OR SILVER GRAY) COORDINATE W/ OWNER, FINISH: GLOSS, ETCH CONCRETE W/ 108 CLEANING & ETCHING SOLUTION FOR PROPER EPOXY ADHERSION , THEN RINCE THROUGHLY AND ALLOW TO DRY. INSTALLATION , APPLICATION & CLEAN UP PER MANUFACTURERS INSTRUCTIONS.

DIVISION 10 - SPECIALITIES:
FIRE EXTINGUISHER: AT MECHSHOP- MANUF- BASIS OF DESIGN- ULINE- AT MECHSHOP -10LB ABC S-9874, AT BREAKROOM- ABC 5LB -S-22291, AT SHOP AREA-10LB ABC S-9874
FIRE EXTINGUISHER CABINET: ALL CABINETS STAINLESS STEEL(TYPE 304), CLEAR PLEXIGLASS WINDOW, SURFACE MOUNTED(BOTTOM OF CABINET 27" MAX AFF), ZINC PLATED MOUNTED HARDWARE, CONTINUOUS HINGE, MANUF-BASIS OF DESIGN, ULINE H-10025 (PROVIDE 2) & H-10026(PROVIDE ONE)
INTERIOR ROOM SIGNAGE: ACCOUNT FOR (7) SEVEN SIGNS, 1/8" THICK, SQUARED EDGES, ONE PIECE INJECTION MOLDED ACRYLIC PLASTIC W/ RAISED LETTERS & BRAILLE, TACTILE CHARACTERS, CHARCOAL BACKGROUND, WHITE ARIAL FONT UPPERCASE, ADA COMPLIANT
RESTROOM SIGNAGE: ACCOUNT FOR (1) ONE, 1/8" THICK, SQUARED EDGES, ONE PIECE INJECTION MOLDED ACRYLIC PLASTIC W/ RAISED LETTERS & BRAILLE, TACTILE CHARACTERS, CHARCOAL BACKGROUND, WHITE ARIAL FONT UPPERCASE, ADA COMPLIANT W/ ACCESSIBLY SYMBOL, STANDARD DOOR HARDWARE-STAINLESS STEEL
EXTERIOR ROOM SIGNAGE:
BUILDING SIGNAGE: COORDINATE W/ OWNER
TOILET PARTITIONS & URINAL SCREEN: SIM: MANUF: ASI - SOLID PLASTIC (PRIVACY DOORS W/ PRIVACY HINGES & ACCESSORIES), OVERHEAD & FLOOR BRACED, COLOR: TBD(MOSS, BROWN/OLIVE, OR METALLIC BRONZE)
TOILET ACCESSORIES: REF. TO TOILET ACCESSORY SCHEDULE ON DRAWINGS,
PIPE COVERS AT WALL MOUNTED SINKS
BREAK ROOM ACCESSORIES: WALL MOUNTED SOAP DISPENSER (ULINE-GOJO MANUAL H-1175), SOAP S24959 ANTIBACTERIAL, PAPER TOWEL DISPENSER -ROLL TYPE MANUAL (ULINE KIMBERLY-CLARK 8" DEPTH, H9608), WASTE RECEPTACLE (ULINE 23 GAL BLACK H2445)

DIVISION 11 - EQUIPMENT: NOT USED
DIVISION 12 - FURNISHINGS: NOT USED
DIVISION 13 - SPECIAL CONSTRUCTION: REF. PEMB SUPPLIER & THEIR SHOP DRAWINGS
DIVISION 14 - CONVEYING SYSTEMS: NOT USED

1 **DIVISIONS 21- FIRE SUPPRESSION :** NOT USED

DIVISIONS 22 - 48: REFER TO CIVIL & MEP ENGINEER DRAWINGS

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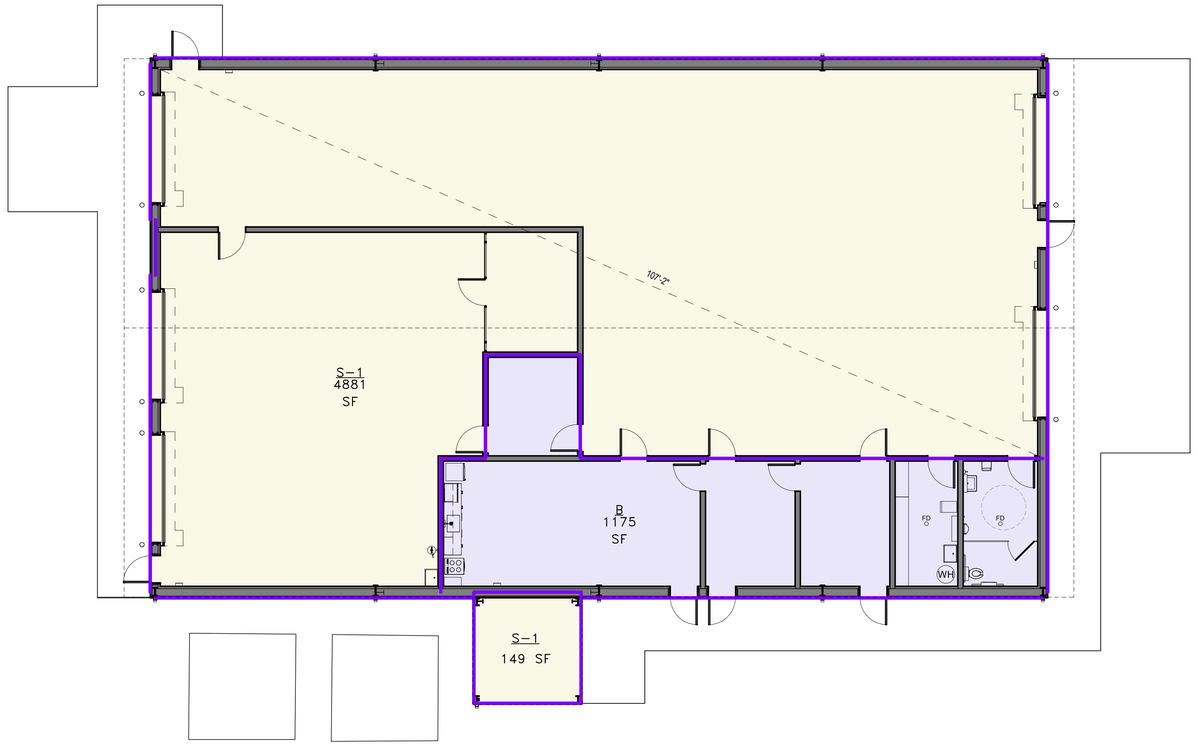
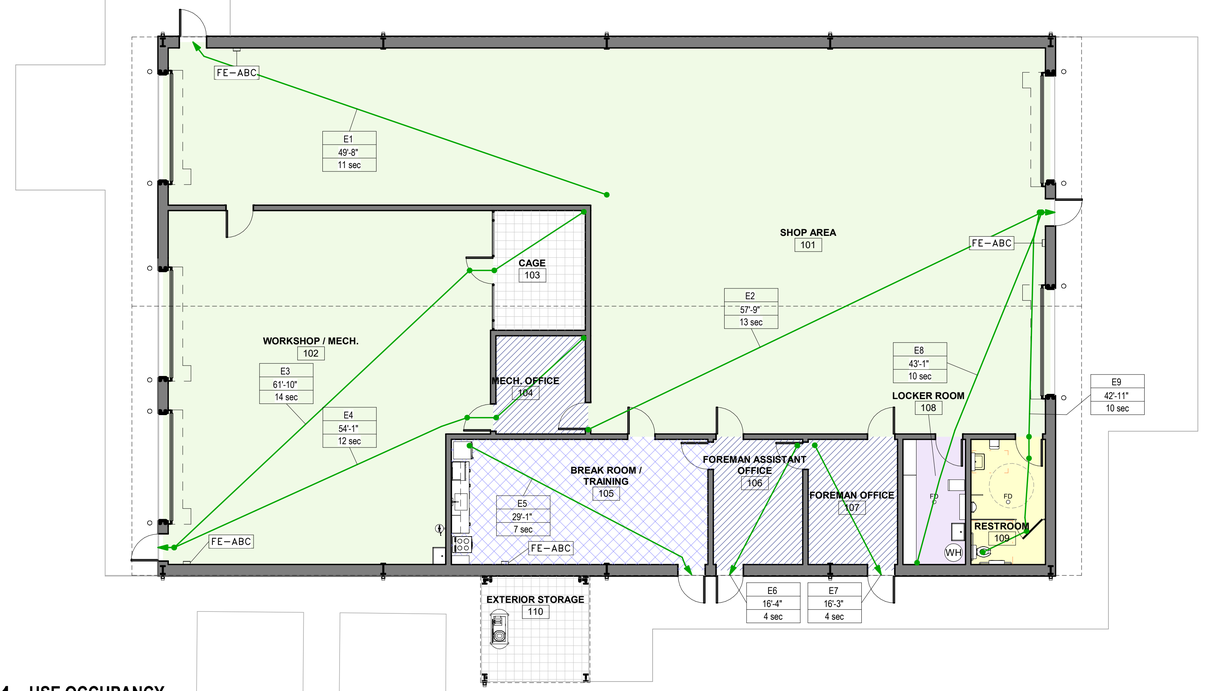


2 OCCUPANCY CLASSIFICATION

1/8" = 1'-0"



1 USE OCCUPANCY

1/8" = 1'-0"

OCCUPANCY LOAD (INDOORS)

ROOM NO.	ROOM NAME	ROOM AREA	CIRCULATION AREA	OCCUPANCY LOAD FACTOR	OCCUPANT LOAD
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM					
103	CAGE	138 SF	0 SF	300	1
120	FIRE RISER ROOM	Not Placed	0 SF	300	
		138 SF			1
ASSEMBLY W/O FIXED SEATS - UNCONCENTRATED (TABLES & CHAIRS)					
105	BREAK ROOM / TRAINING	402 SF	0 SF	15	27
		402 SF			27
BUSINESS AREAS					
104	MECH. OFFICE	110 SF	0 SF	100	2
106	FOREMAN ASSISTANT OFFICE	140 SF	0 SF	100	2
107	FOREMAN OFFICE	140 SF	0 SF	100	2
		390 SF			6
LOCKER ROOMS					
108	LOCKER ROOM	98 SF	0 SF	50	2
		98 SF			2
WAREHOUSES					
101	SHOP AREA	3,030 SF	0 SF	300	11
102	WORKSHOP / MECH.	1,359 SF	0 SF	300	5
		4,389 SF			16
OCCUPANCY TOTALS		5,417 SF			52

PER APPROVAL OF LOCAL JURISDICTION & OWNER, THERE WILL NOT BE 15 OR MORE PEOPLE OCCUPYING THIS BUILDING

OCCUPANCY LOAD (OUTDOORS)

ROOM NO.	ROOM NAME	ROOM AREA	CIRCULATION AREA	OCCUPANCY LOAD FACTOR	OCCUPANT LOAD
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM					
110	EXTERIOR STORAGE	142 SF	0 SF	300	1
		142 SF			1
OCCUPANCY TOTALS		142 SF			1

GROSS BUILDING AREA PER OCCUPANCY TYPE (INDOORS)

LEVEL	AREA SIZE	NOTES
BUSINESS GROUP B		
GROUND LEVEL	1175 SF	
	1175 SF	
MODERATE-HAZARD STORAGE, GROUP S-1		
GROUND LEVEL	4881 SF	
	4881 SF	
TOTAL GROSS AREA	6055 SF	

GROSS BUILDING AREA PER OCCUPANCY TYPE (OUTDOORS)

LEVEL	AREA SIZE	NOTES
MODERATE-HAZARD STORAGE, GROUP S-1		
GROUND LEVEL	149 SF	
	149 SF	
TOTAL GROSS AREA	149 SF	

EGRESS TRAVEL DISTANCE SCHEDULE

ROOM	TRAVEL LINE	LENGTH
GROUND LEVEL		
SHOP AREA 101	E1	49' - 8"
	E2	57' - 9"
CAGE 103	E3	61' - 10"
MECH. OFFICE 104	E4	54' - 1"
BREAK ROOM / TRAINING 105	E5	29' - 1"
FOREMAN ASSISTANT OFFICE 106	E6	16' - 4"
FOREMAN OFFICE 107	E7	16' - 3"
LOCKER ROOM 108	E8	43' - 1"
RESTROOM 109	E9	42' - 11"

FIRE EXTINGUISHER SCHEDULE

TAG	CLASS	SIZE	COUNT	COMMENTS
101				
FE-ABC	ABC	10 LBS	1	
FE-ABC	ABC	10 LBS	1	
			2	
102				
FE-ABC	ABC	10 LBS	1	
			1	
105				
FE-ABC	ABC	10 LBS	1	
			1	
TOTAL: 4			4	

FUNCTION OF SPACE LEGEND

- ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM
- ASSEMBLY W/O FIXED SEATS - UNCONCENTRATED (TABLES & CHAIRS)
- BUSINESS AREAS
- LOCKER ROOMS
- N/A
- WAREHOUSES

CODE REVIEW SUMMARY

APPLICABLE BUILDING CODES
2006 INTERNATIONAL BUILDING CODE
2015 INTERNATIONAL ENERGY CONSERVATION CODE
2020 NATIONAL ELECTRICAL CODE
2006 UNIFORM FIRE CODE
2012 TEXAS ACCESSIBILITY STANDARDS

CONSTRUCTION TYPE
TYPE II - B (NON-SPRINKLED)

OCCUPANCY GROUP CLASSIFICATION
BUSINESS (B) - STORAGE (S-1) ASSOCIATED WITH GROUP S OCCUPANCIES (303.1.3)

ALLOWABLE HEIGHT AND AREA
ALLOWABLE HEIGHT: 55'
ALLOWABLE # OF STORIES: 3 stories
ALLOWABLE AREA PER FLOOR (sf): 17,500 sf

ACTUAL HEIGHT AND FLOORS
ACTUAL # OF FLOORS: 1
ACTUAL HEIGHT: 21'-3" (Highest Point)

FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)
TABLE 601

BUILDING ELEMENT	TYPE II-B
STRUCTURAL FRAME	0
BEARING WALLS	
EXTERIOR	0
INTERIOR	0
NONBEARING WALLS	
EXTERIOR	0
INTERIOR	0
FLOOR/CEILING CONSTRUCTION	0
ROOF CONSTRUCTION	0

MINIMUN NUMBER OF EXITS FOR OCCUPANT LOAD PER TABLE 1006.3.1
1-500 OCCUPANTS 2
501-1,000 3
MORE THAN 1,000 4

TOTAL EXITS PROVIDED: 6

TWO EXITS OR EXIT ACCESS DOORWAYS SECTION 1015.2.1
107'-2" / 2 = 53'-7"
ACTUAL DISTANCE 98'-5"

EXIT ACCESS TRAVEL DISTANCE (TABLE 1017.2)
S-1 : 200 FEET WITHOUT SPRINKLER
B : 200 FEET WITHOUT SPRINKLER

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A006

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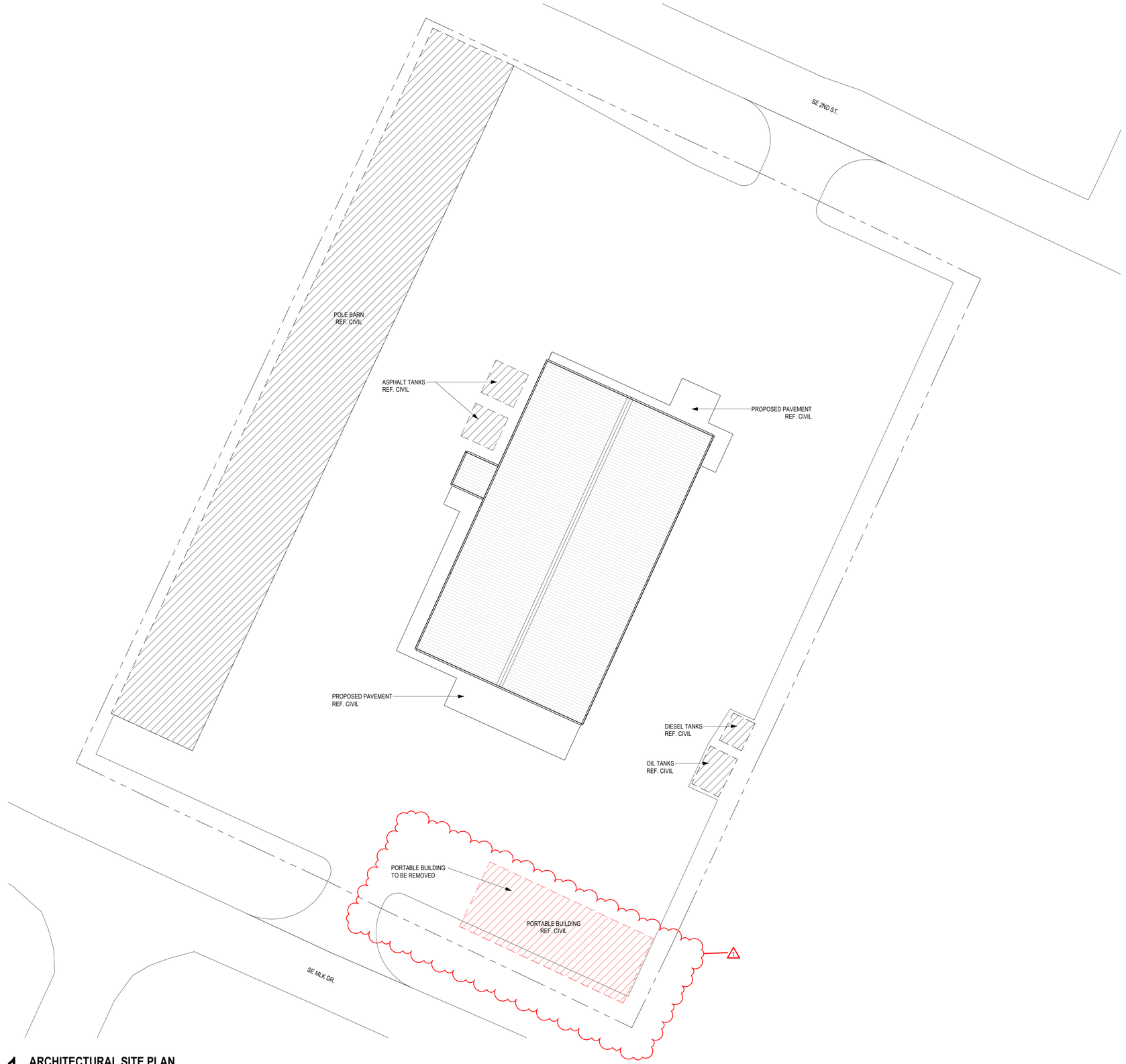

1 **ARCHITECTURAL SITE PLAN**
1/16" = 1'-0"

GENERAL NOTES - ARCHITECTURAL...	
1	INFORMATION SHOWN ON THIS SITE PLAN IS SUPPLEMENTARY TO SITE PLANS BY OTHERS, REFER TO CIVIL AND MEP SITE PLANS FOR ADDITIONAL SITE WORK AND INFORMATION.
2	VERIFY EXISTING SITE CONDITIONS AND REPORT ANY DISCREPANICES BETWEEN ACTUAL FIELD CONDITIONS AND THESE PLANS PRIOR TO COMMENCING WORK.
3	ALL NEW SIDEWALKS TO HAVE MAX 1:20 GRADE WITH CROSS SLOPE TO DRAIN AT 1/4" PER FOOT. BROOM FINISH UNLESS OTHERWISE NOTED.
4	ALL ACCESSIBLE PARKING AREAS, ACCESSIBLE LOADING ZONE, AND THE CROSS SLOPES OF SIDEWALKS ON ACCESSIBLE ROUTE TO MAINTAIN MAX 1:50 SLOPE
5	PROVIDE PAINTED CURB FOR FIRE LANE STRIPING IN ACCORDANCE WITH CITY/COUNTY FIRE STANDARDS.
6	ALL CURB RAMPS SHALL HAVE, FOR THE FULL WIDTH AND DEPTH OF THE RAMP, A LIGHT REFLECTIVE COLOR AND TEXTURE THAT SIGNIFICANTLY CONTRASTS WITH ADJOINING PEDESTRAIN ROUTES.

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BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd,
Smithville, TX 78957

PROJECT NUMBER:	202415
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ARCHITECTURAL
SITE PLAN

SHEET
A007

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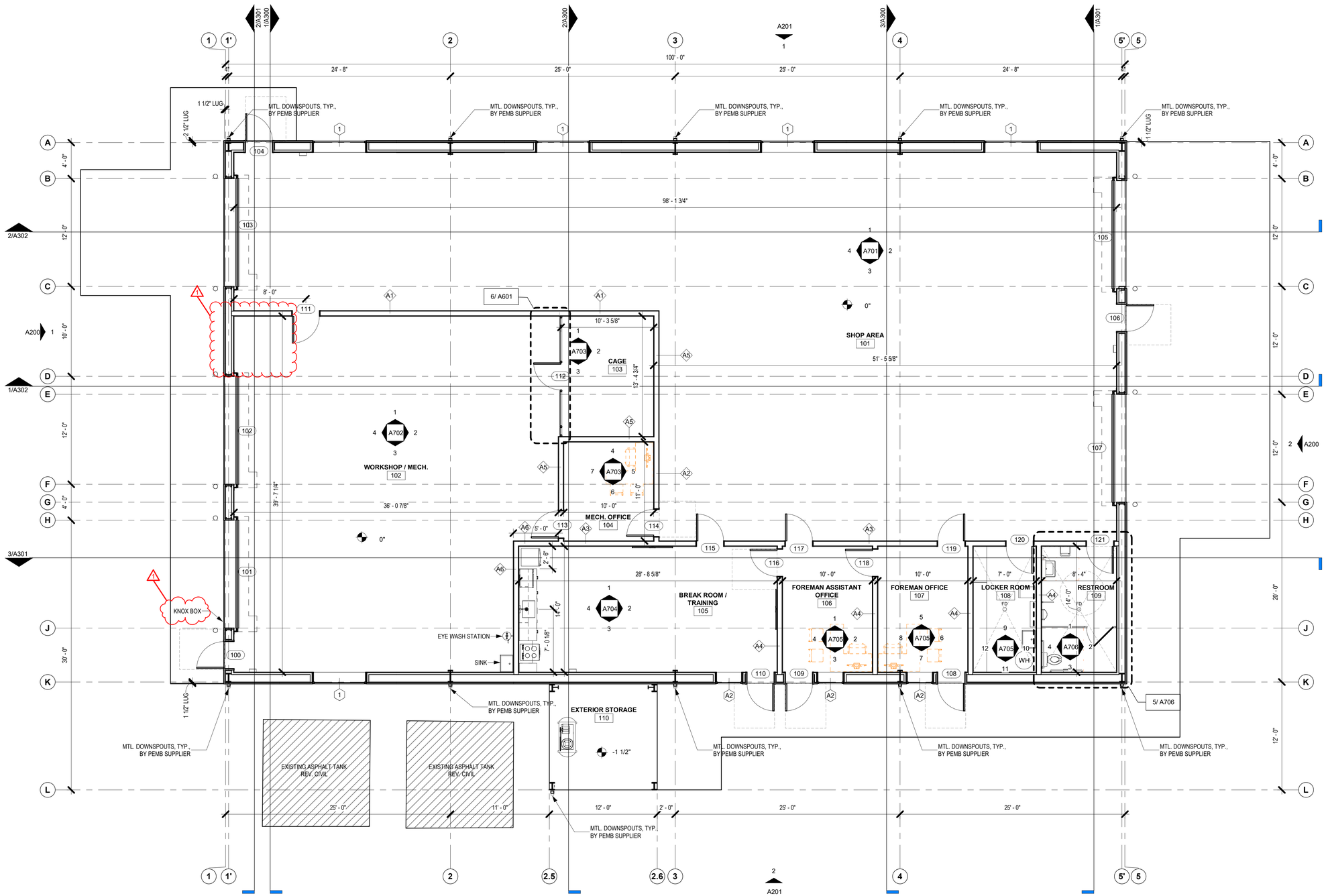
GENERAL NOTES - FLOOR PLAN

1	ALL DIMENSIONS ARE TO STUD DIMENSIONS, UNLESS OTHERWISE NOTED.
2	REFER TO SHEET A002 FOR ACCESSIBLE DOOR CLEARANCES, FIXTURE MOUNTING REQUIREMENTS AND CLEARANCES.
3	TYPICAL DOOR LOCATION 4" FROM CORNER OF ROOM TO HINGE, UNLESS OTHERWISE NOTED.
4	REFERENCE ENLARGED FLOOR PLANS FOR ADDITIONAL TAGS IN ENLARGED CALLOUTS.



1 FLOOR PLAN

3/16" = 1'-0"

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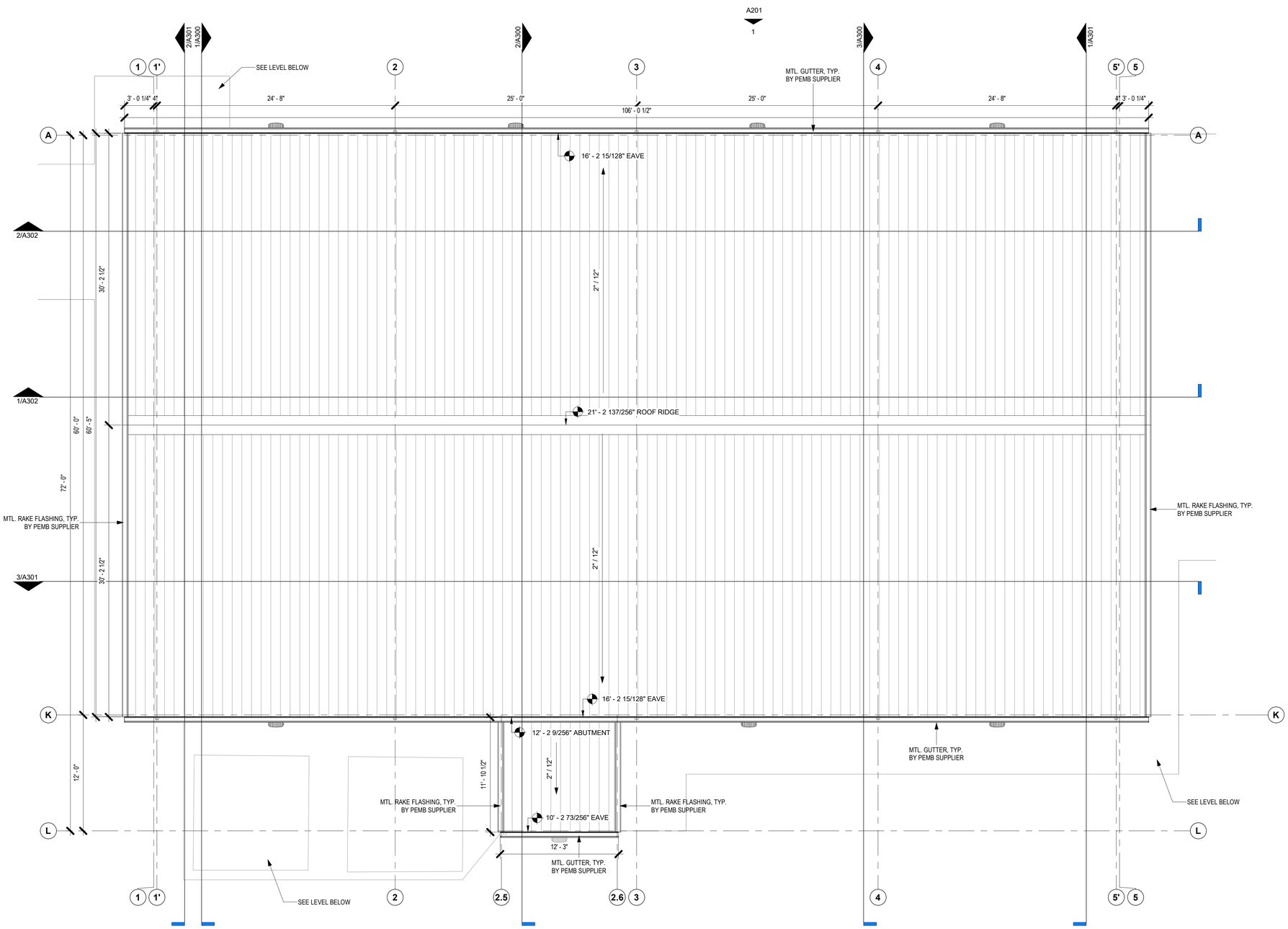
FLOOR PLAN

SHEET
A101

NOTE: REFER TO MEP DRAWINGS FOR ROOF PENETRATIONS



1 ROOF PLAN

3/16" = 1'-0"

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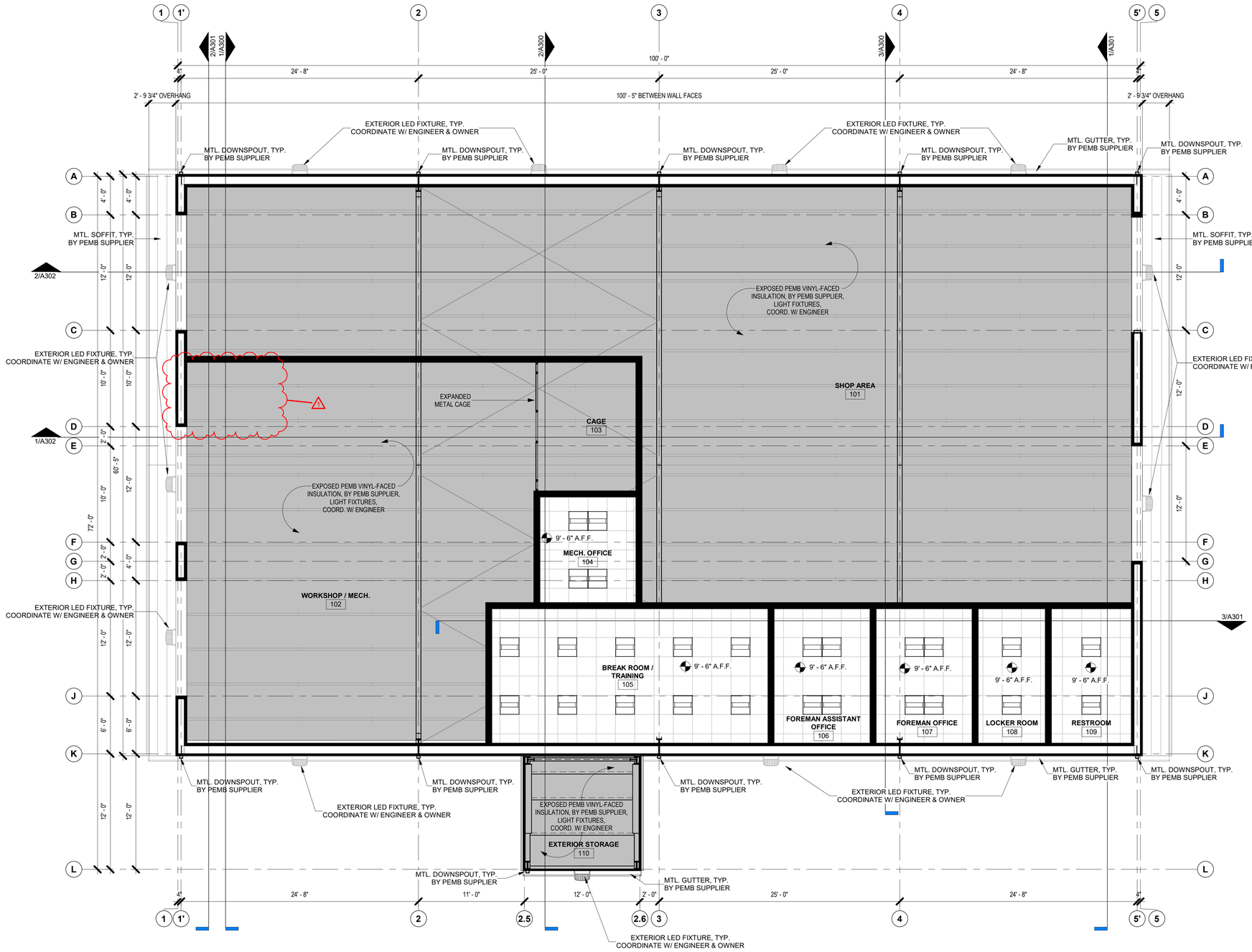
ROOF PLAN

SHEET
A102



1 REFLECTED CEILING PLAN

3/16" = 1'-0"

REFLECTED CEILING PLAN LEGEND

- 2x2 ACOUSTICAL CEILING TILE (ACP-1)
- GYPSUM BOARD CEILING (GYP)
- EXTERIOR SOFFIT (STAINED AND SEALED 1X6 SHIPLAP PROFILE SINKER CYPRESS-MATCH EXISTING CLASSROOM BUILDING)
- EXPOSED ROOF DECK
- 2x4 FIXTURE
- 2x2 FIXTURE

COORDINATE LIGHTING FIXTURE LOCATIONS WITH ELECTRICAL LIGHTING PLAN.

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REFLECTED CEILING PLAN

SHEET
A103

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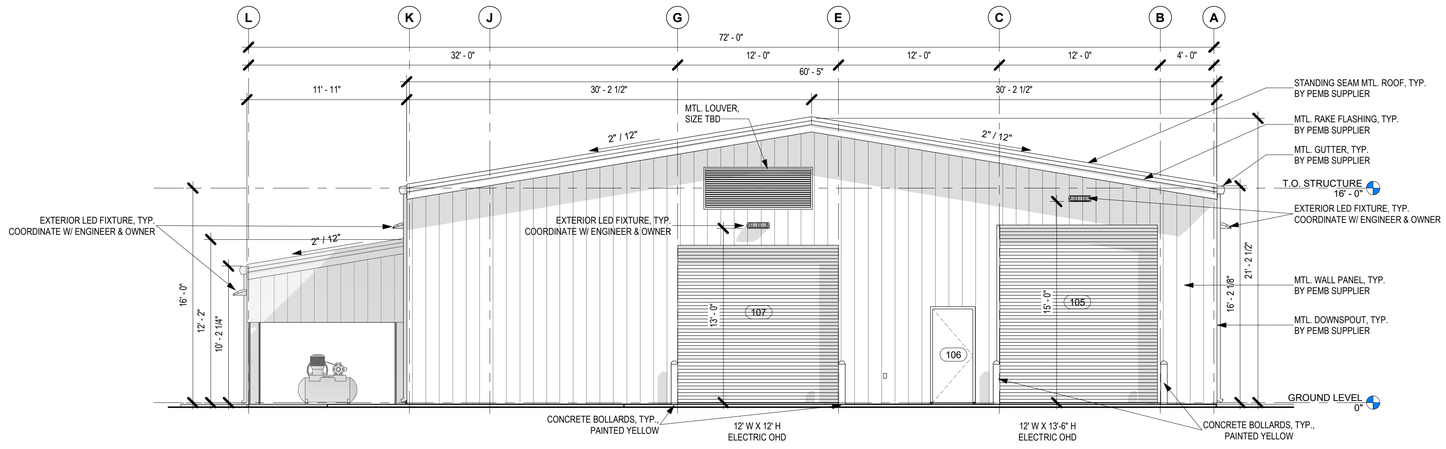
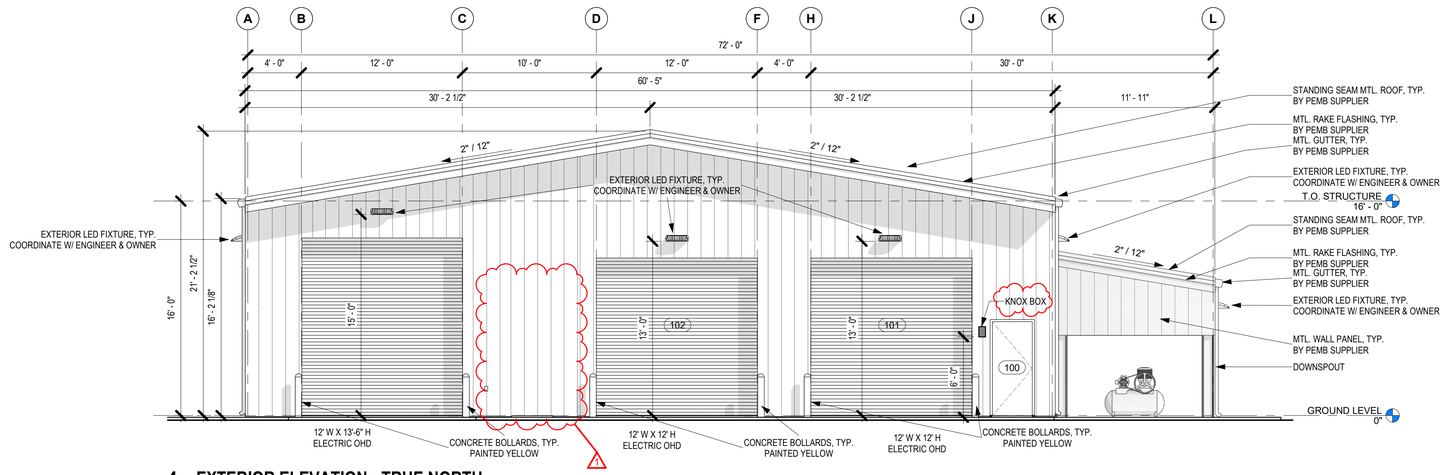
GENERAL NOTES - EXTERIOR...	
1	DOWNSPOUT LOCATIONS TO BE COORDINATED WITH PEMB
2	



2 EXTERIOR ELEVATION - TRUE SOUTH

3/16" = 1'-0"



1 EXTERIOR ELEVATION - TRUE NORTH

3/16" = 1'-0"

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EXTERIOR ELEVATIONS

SHEET
A200

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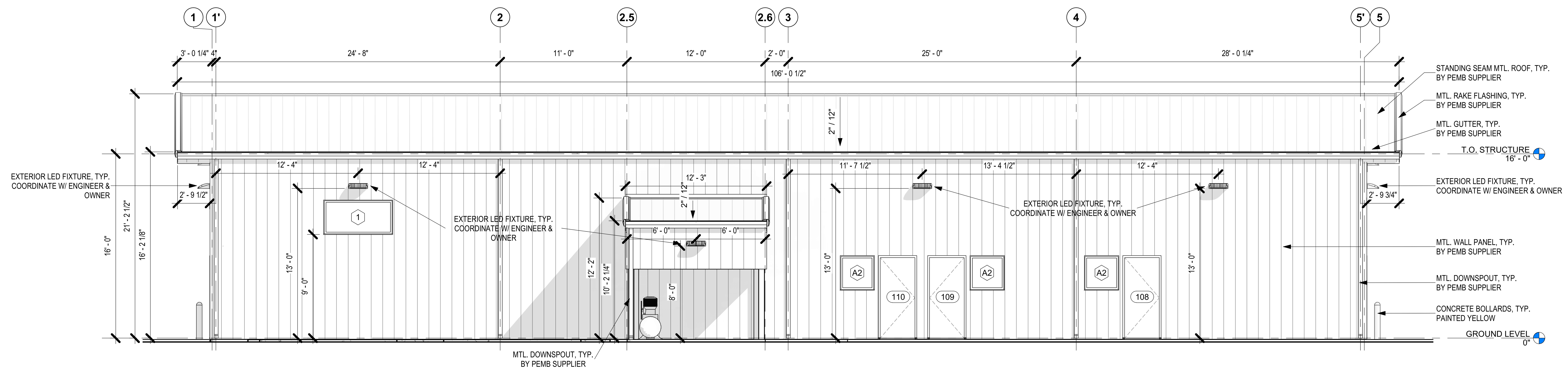
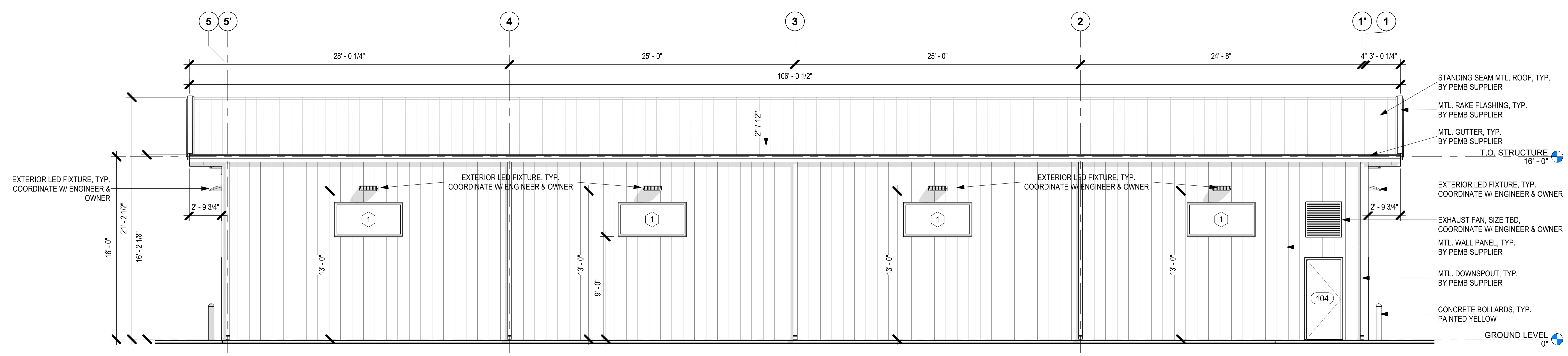
GENERAL NOTES - EXTERIOR...	
1	DOWNSPOUT LOCATIONS TO BE COORDINATED WITH PEMB
2	



2 EXTERIOR ELEVATION - TRUE WEST

3/16" = 1'-0"



1 EXTERIOR ELEVATION - TURE EAST

3/16" = 1'-0"

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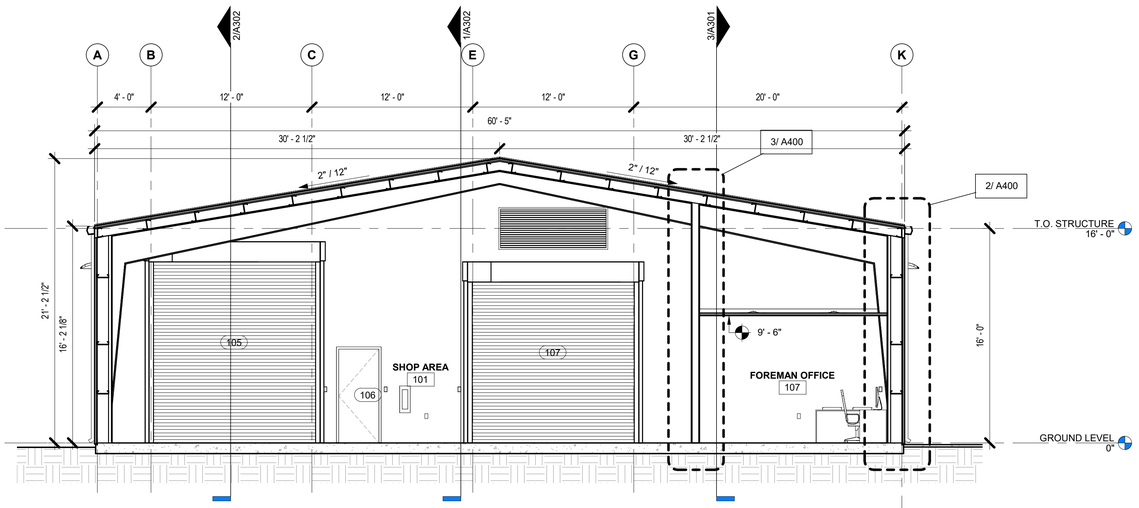
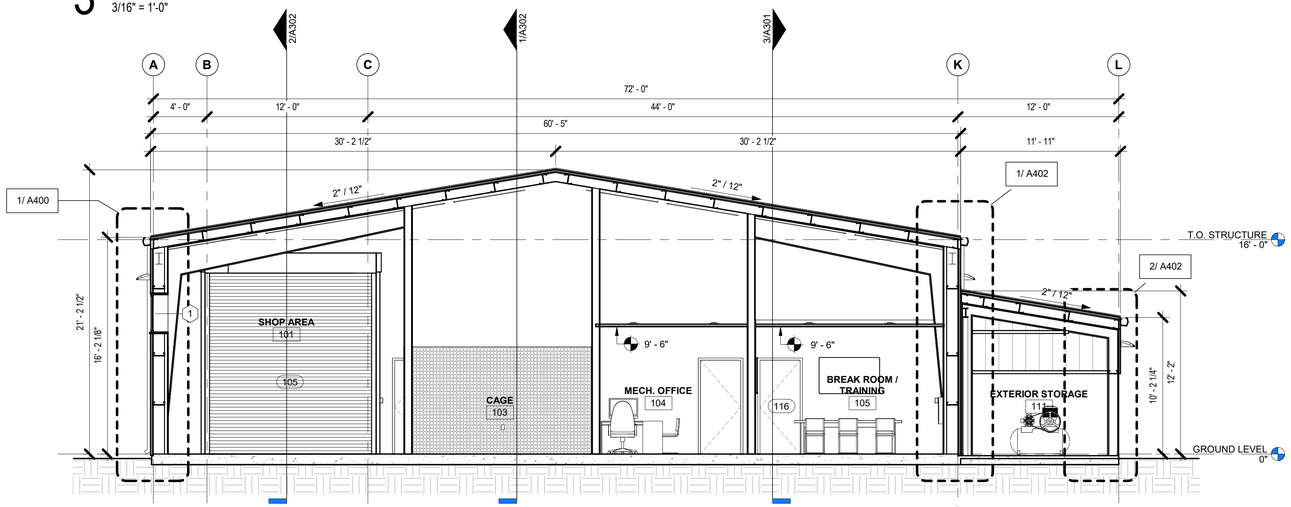
EXTERIOR ELEVATIONS

SHEET
A201



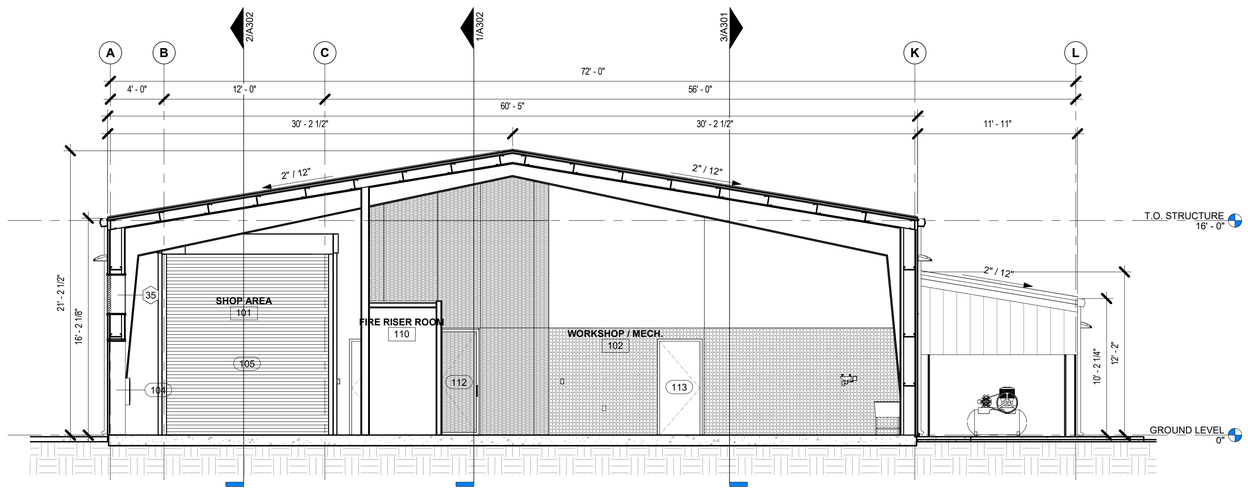
3 BUILDING SECTION - TRUE SOUTH 1.3

3/16" = 1'-0"



2 BUILDING SECTION - TRUE SOUTH 1.2

3/16" = 1'-0"



1 BUILDING SECTION - TRUE SOUTH 1.1

3/16" = 1'-0"

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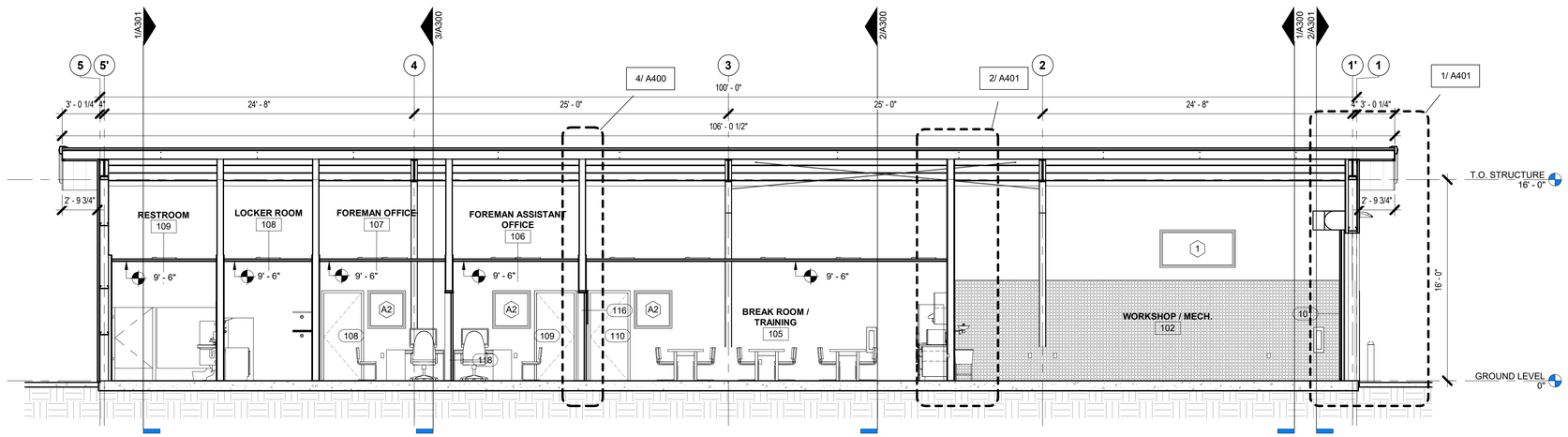
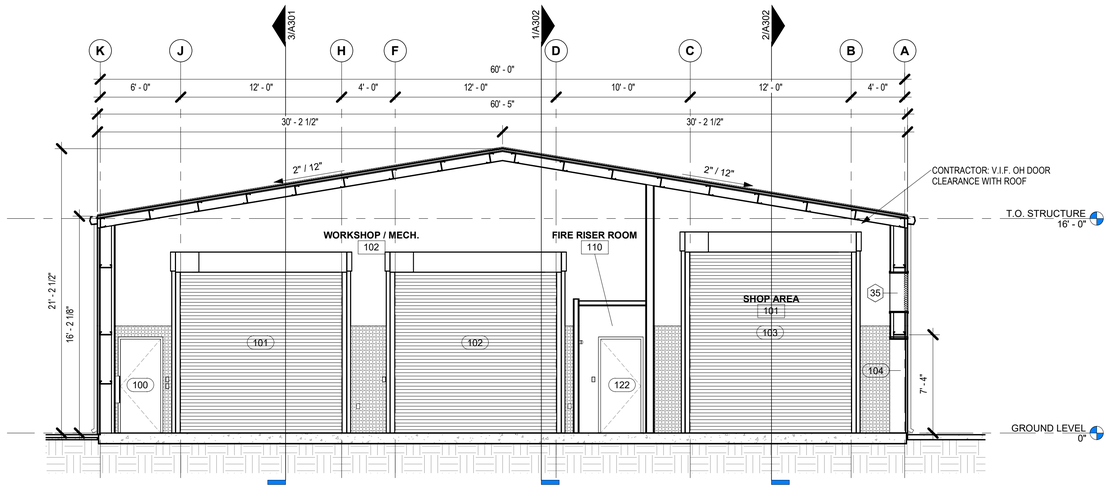
BUILDING SECTIONS

SHEET
A300



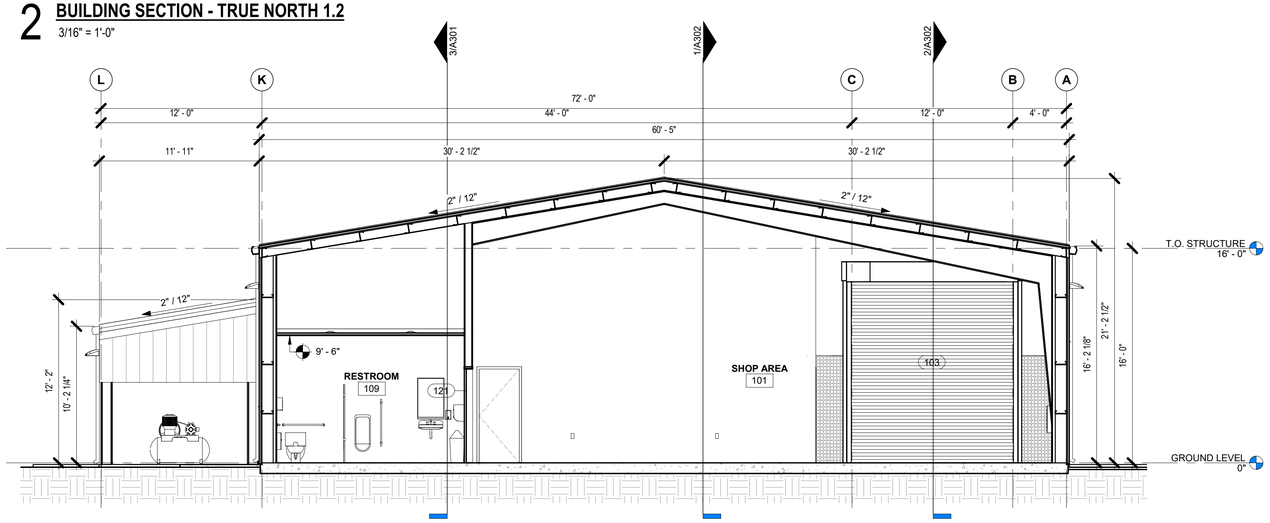
3 BUILDING SECTION - TRUE WEST 1.1

3/16" = 1'-0"



2 BUILDING SECTION - TRUE NORTH 1.2

3/16" = 1'-0"



1 BUILDING SECTION - TRUE NORTH 1.1

3/16" = 1'-0"

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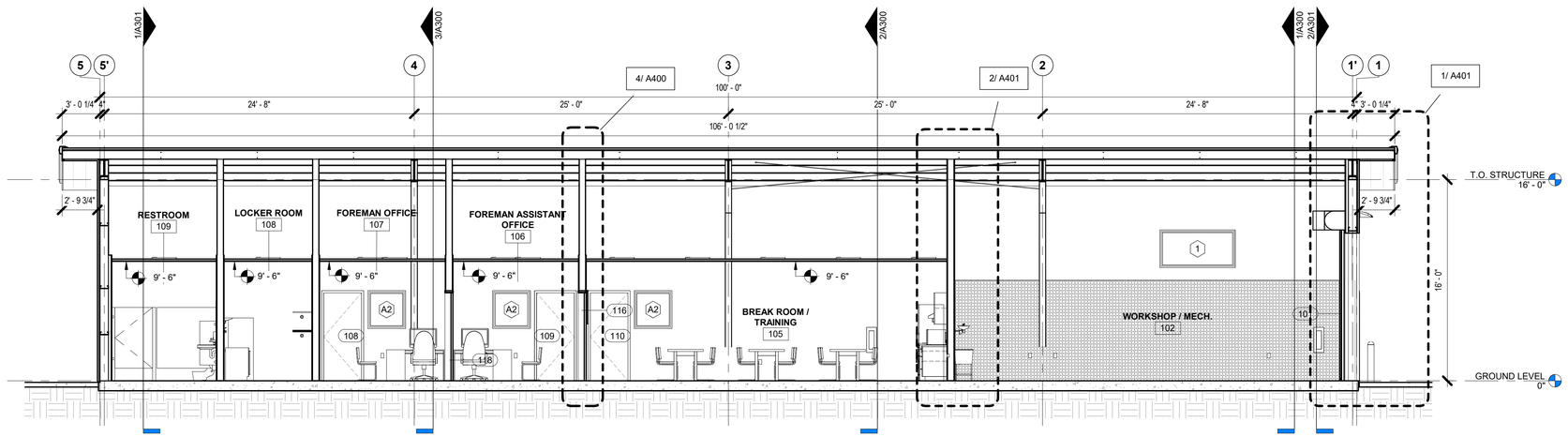
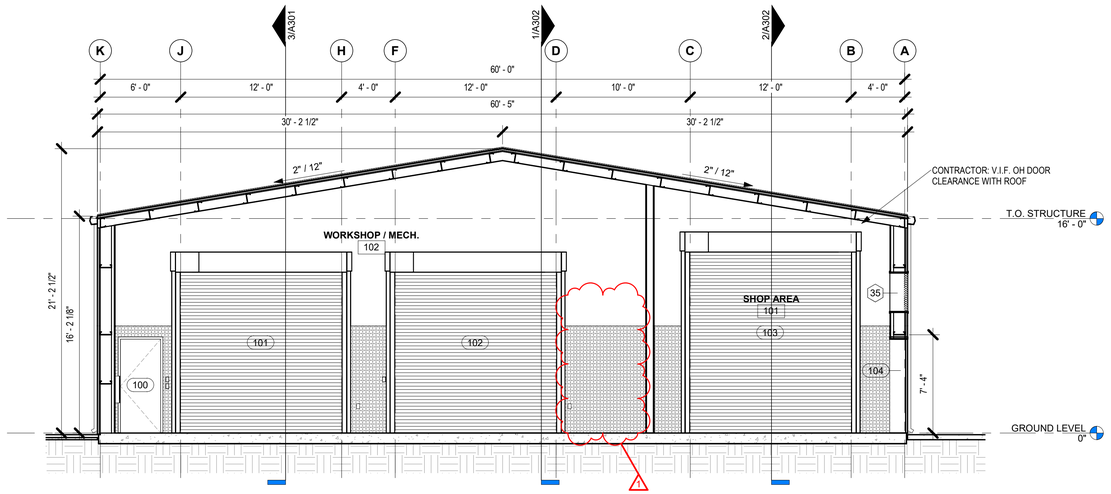
BUILDING SECTIONS

SHEET
A301



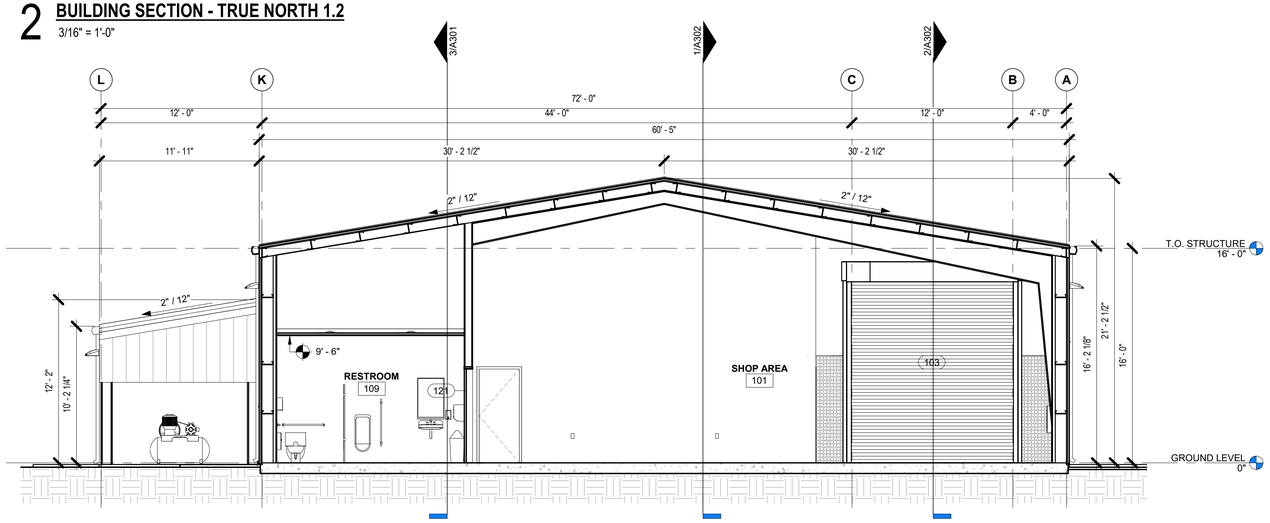
3 BUILDING SECTION - TRUE WEST 1.1

3/16" = 1'-0"



2 BUILDING SECTION - TRUE NORTH 1.2

3/16" = 1'-0"



1 BUILDING SECTION - TRUE NORTH 1.1

3/16" = 1'-0"

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BUILDING SECTIONS

SHEET
A301

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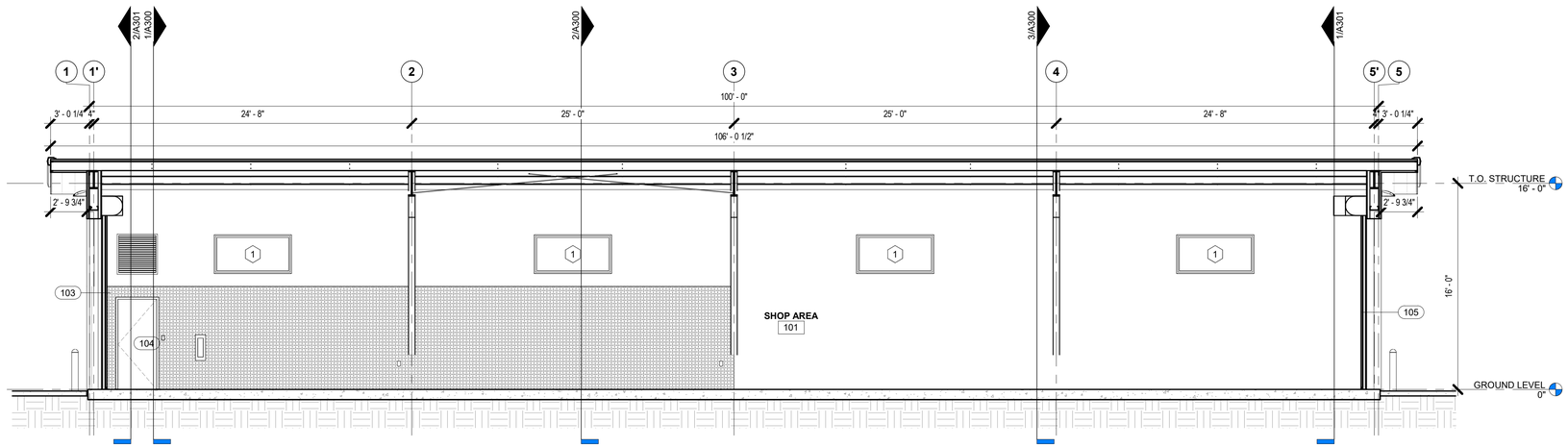
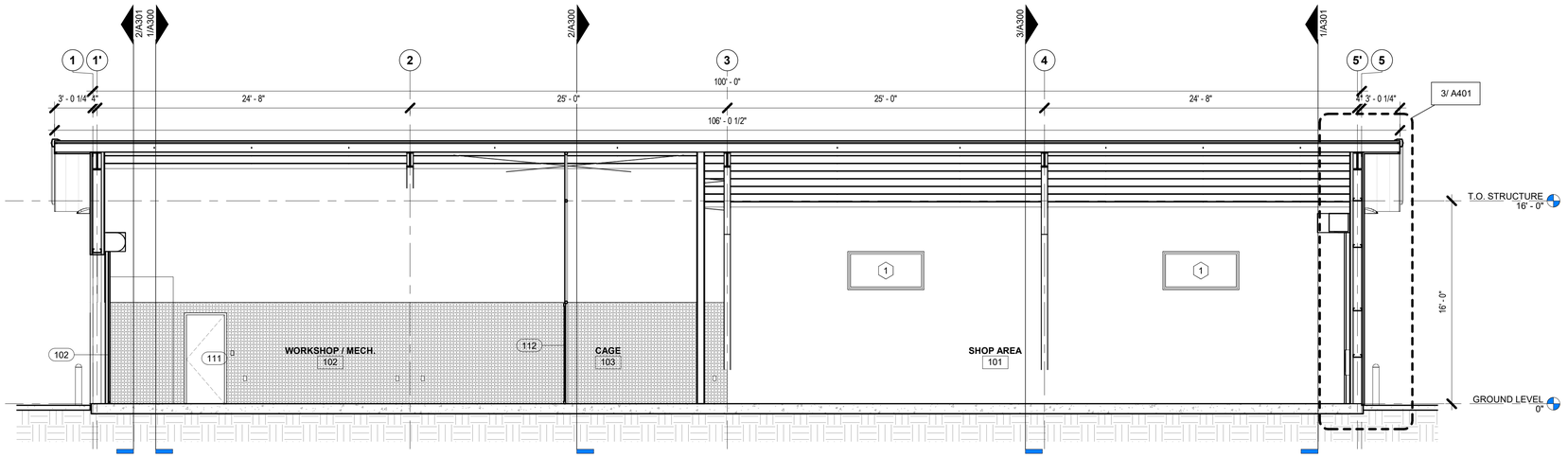


2 BUILDING SECTION - TRUE EAST 1.2

3/16" = 1'-0"



1 BUILDING SECTION - TRUE EAST 1.1

3/16" = 1'-0"

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BUILDING SECTIONS

SHEET
A302

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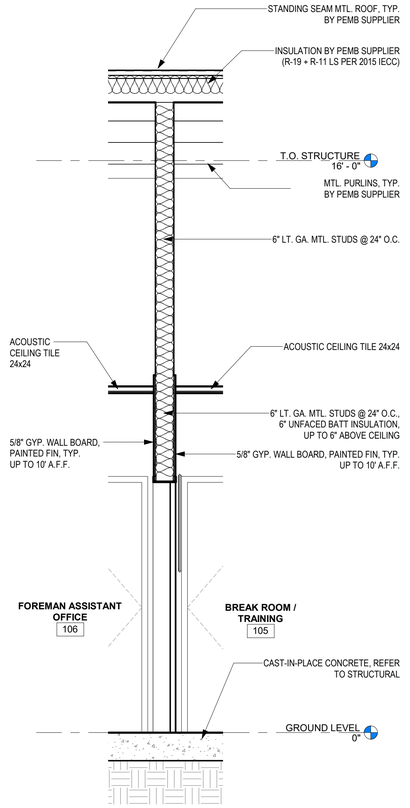
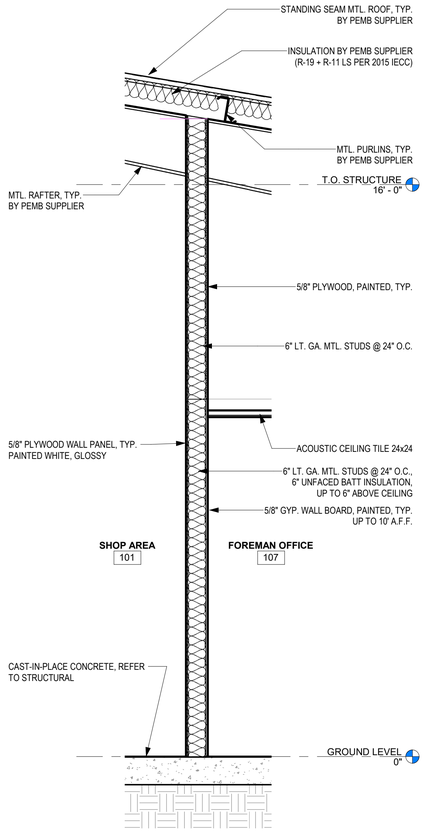


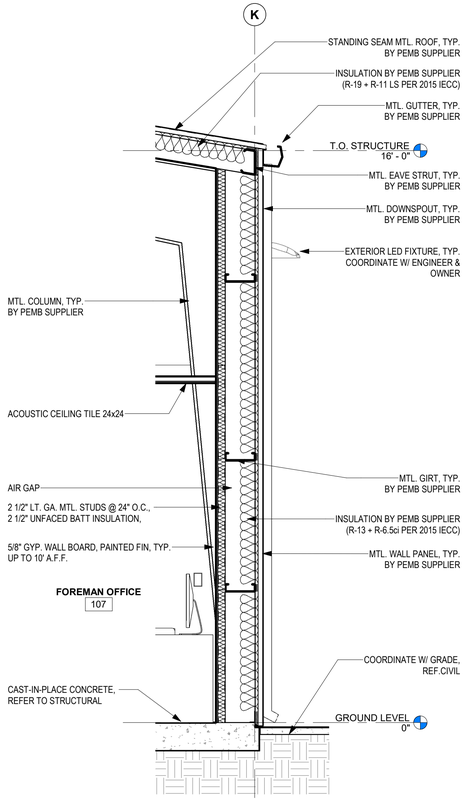
4 WALL SECTION - FOREMAN & FOREMAN ASSISTANT OFFICE (TRUE WEST)

1/2" = 1'-0"



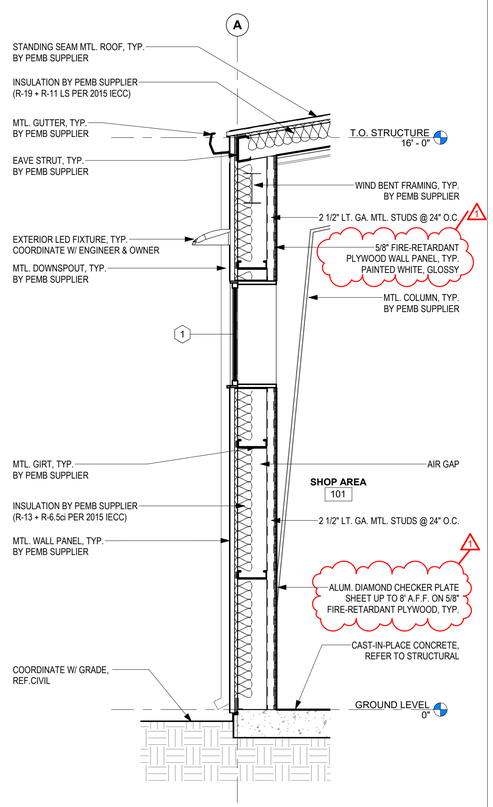
3 WALL SECTION - SHOP AREA & FOREMAN OFFICE (TRUE SOUTH)

1/2" = 1'-0"



2 WALL SECTION - FOREMAN OFFICE & EXTERIOR (TRUE SOUTH)

1/2" = 1'-0"



1 WALL SECTION - SHOP AREA & EXTERIOR (TRUE SOUTH)

1/2" = 1'-0"

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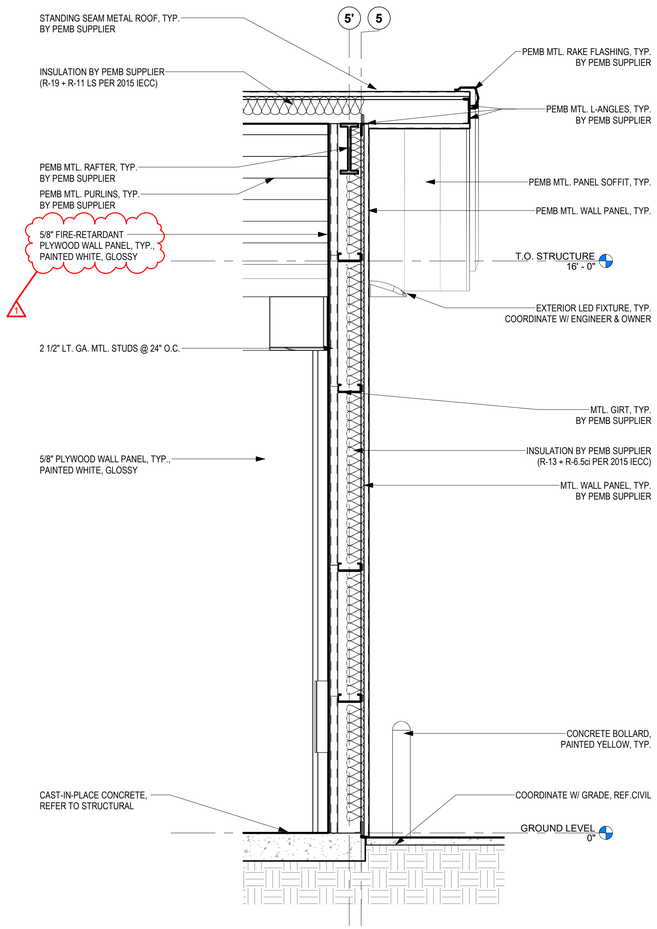
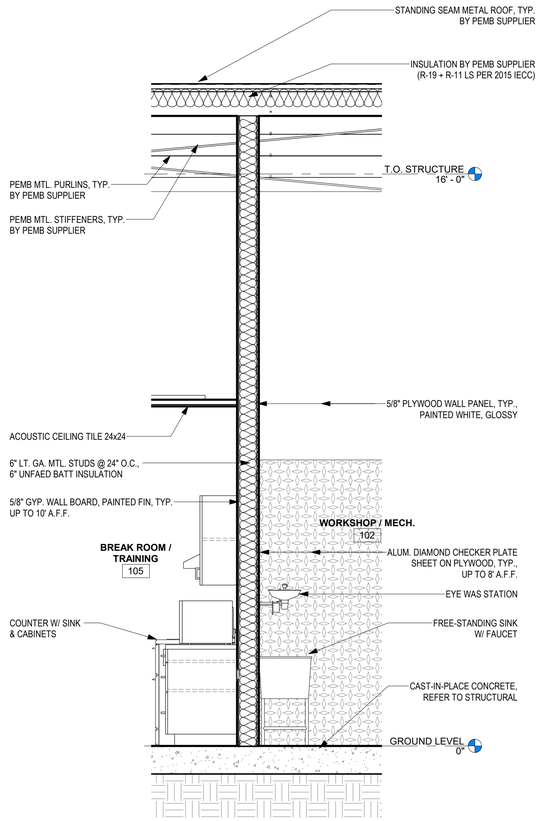
WALL SECTIONS

SHEET
A400



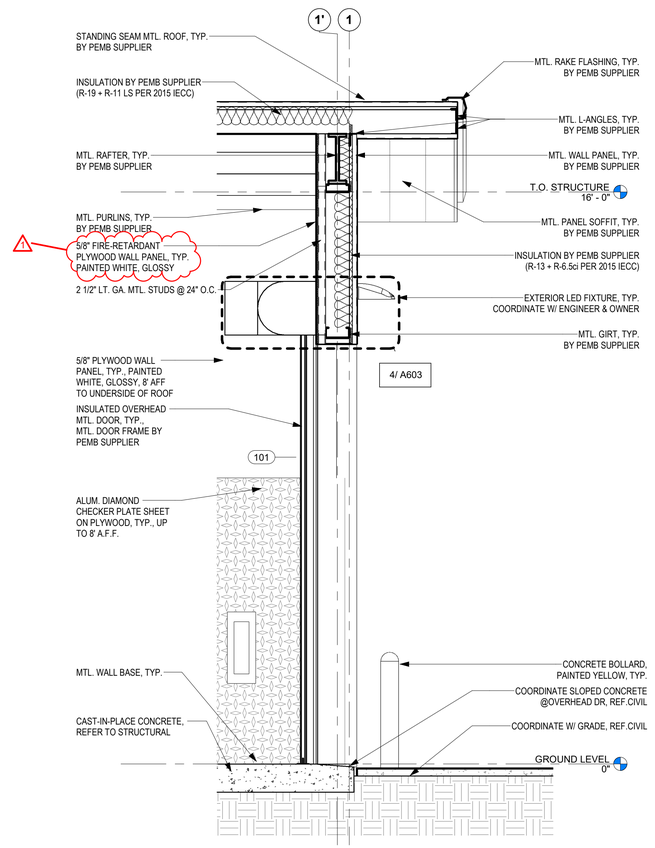
3 WALL SECTION - SHOP AREA & EXTERIOR (TRUE EAST)

1/2" = 1'-0"



2 WALL SECTION - BREAKROOM & WORKSHOP (TRUE WEST)

1/2" = 1'-0"



1 WALL SECTION - WORKSHOP & EXTERIOR @ OVERHEAD DOOR (TRUE WEST)

1/2" = 1'-0"

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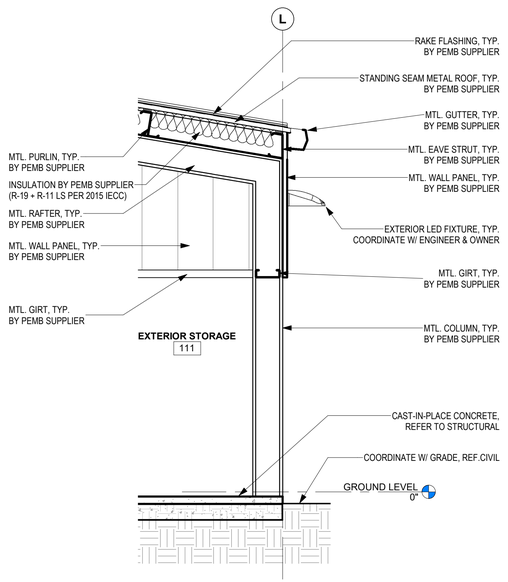
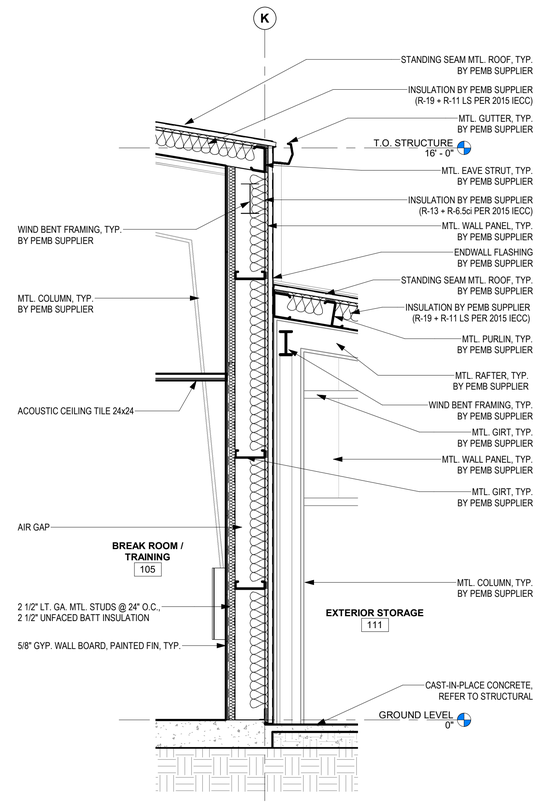
WALL SECTIONS

SHEET
A401



2 WALL SECTION - EXTERIOR STORAGE (TRUE SOUTH)

1/2" = 1'-0"



1 WALL SECTION - BREAKROOM & EXTERIOR STORAGE (TRUE SOUTH)

1/2" = 1'-0"

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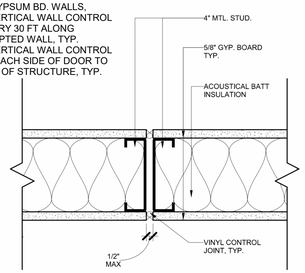
WALL SECTIONS

SHEET
A402

ROOM FINISH MATERIAL LIST

ABREV.	DESCRIPTION
FLOOR	
C1	EPOXY FLOORING W/ ANTI-SLIP ADDITIVE
T1	TILE - PORCELAIN
LVT	LUXURY VINYL TILE
BASE	
RB1	RESILIENT BASE, 4" STANDARD COVE BY ROPPE
TB1	TILE BASE, TO MATCH T1
S1	SEALANT, CLEAR
WALLS	
PT1	GYPSUM BOARD, PAINTED, LOW TEXTURE, SEMI-GLOSS FINISH
PT2	GYPSUM BOARD, PAINTED, LOW TEXTURE, EGGSHELL FINISH
PT3	PLYWOOD, PAINTED, LOW TEXTURE, GLOSSY FINISH, WHITE
PY1	PLYWOOD W/ ALUM. SHEET METAL (GREY) UP TO 8' AFF
T2	TILE
T3	TILE
TRIM	SCHLUTER METAL TRIM – COLOR, & SIZE: TBD
CEILING	
ACP1	2x2 SUSPENDED ACOUSTICAL CEILING TILE & GRID
EXP	EXPOSED CEILING, VINYL-FACED INSULATION
EXP2	EXPOSED TO UNDERSIDE OF MTL ROOF

NOTE: AT GYPSUM BD. WALLS, PROVIDE VERTICAL WALL CONTROL JOINTS EVERY 30 FT ALONG UNINTERRUPTED WALL, TYP. PROVIDE VERTICAL WALL CONTROL JOINTS AT EACH SIDE OF DOOR TO UNDERSIDE OF STRUCTURE, TYP.



GYP. BD. WALL CONTROL JOINT, TYP.

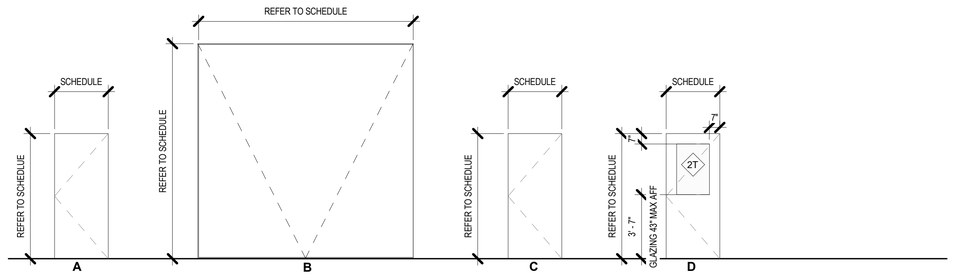
NOTE: LOCATIONS PER TRUE NORTH

ROOM FINISH SCHEDULE

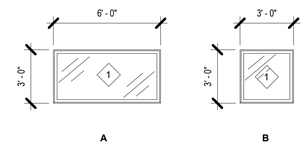
ROOM NUMBER	ROOM NAME	AREA	FLOOR	BASE	WALL FINISH NORTH	WALL FINISH SOUTH	WALL FINISH EAST	WALL FINISH WEST	CEILING	MILLWORK	COUNTERTOPS	NOTES
101	SHOP AREA	3030 SF	C1	S1	PY1/PT3	PT3	PY1/PT3	PY1/PT3	EXP			REF. INTERIOR ELEVATIONS, EXTERIOR SIGNAGE
102	WORKSHOP / MECH.	1330 SF	C1	S1	PY1/PT3	PY1/PT3	PY/PT3	PY1/PT3	EXP			EXTERIOR/INTERIOR ROOM SIGANGE
103	CAGE	138 SF	C1	S1		PY1/PT3	PY1/PT3	PY1/PT3	EXP			NORTH WALL REF DTL 5 & 6/A601
104	MECH. OFFICE	110 SF	LVT	RB	PT3	PT3	PT3	PT3	ACP			INTERIOR ROOM SIGNAGE
105	BREAK ROOM / TRAINING	402 SF	LVT	RB	PT2	PT2	PT2	PT2	ACP			EXTERIOR/INTERIOR ROOM SIGANGE
106	FOREMAN ASSISTANT OFFICE	140 SF	LVT	RB	PT2	PT2	PT2	PT2	ACP			EXTERIOR/INTERIOR ROOM SIGANGE
107	FOREMAN OFFICE	140 SF	LVT	RB	PT2	PT2	PT2	PT2	ACP			EXTERIOR/INTERIOR ROOM SIGANGE
108	LOCKER ROOM	98 SF	T1	RB	PT1	PT1/T2	PT1	PT1	ACP			INTERIOR ROOM SIGNAGE
109	RESTROOM	117 SF	T1	TB	PT1/T2	PT1/T2	PT1/T2	PT1/T2	ACP			INTERIOR ROOM SIGNAGE
110	FIRE RISER ROOM	25 SF	C1	RB	PT1	PT1	PT1	PT1	EXP			EXTERIOR SIGNAGE
111	EXTERIOR STORAGE	142 SF							EXP2			

DOOR SCHEDULE

LOCATION DOOR #	ROOM NAME	EXT.	INT.	SGL/PR /OH	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR MAT'L.	DOOR TYPE	FRAME MAT'L.	FRAME TYPE	DETAIL HEAD	DETAIL JAMB	DETAIL SILL	FIRE RATING	HARDWARE SET	REMARKS
GROUND LEVEL																	
100	WORKSHOP / MECH.	√		SGL	3' - 0"	7' - 0"	1 3/4"	PEMB	A	PEMB	E1			4/A601		PEMB	BY PEMB SUPPLIER
101	WORKSHOP / MECH.	√		OH	12' - 0"	12' - 0"		GS	B	STL						HW01	REF 4/A603
102	WORKSHOP / MECH.	√		OH	12' - 0"	12' - 0"		GS	B	STL						HW01	REF 4/A603
103	SHOP AREA			OH	12' - 0"	13' - 6"		GS	B	STL							
104	SHOP AREA	√		SGL	3' - 0"	7' - 0"	1 3/4"	PEMB	A	PEMB	E1			4/A601		PEMB	BY PEMB SUPPLIER
105	SHOP AREA	√		OH	12' - 0"	13' - 6"		GS	B	STL						HW02	OHD OPENING -12'W X 13'6"H & 4/A603
106	SHOP AREA	√		SGL	3' - 0"	7' - 0"	1 3/4"	PEMB	A	PEMB	E1			4/A601		PEMB	BY PEMB SUPPLIER
107	SHOP AREA	√		OH	12' - 0"	12' - 0"		GS	B	STL						HW01	REF 4/A603
108	FOREMAN OFFICE	√		SGL	3' - 0"	7' - 0"	1 3/4"	PEMB	A	PEMB	E1			3/A601		PEMB	BY PEMB SUPPLIER
109	FOREMAN ASSISTANT OFFICE	√		SGL	3' - 0"	7' - 0"	1 3/4"	PEMB	A	PEMB	E1			3/A601		PEMB	BY PEMB SUPPLIER
110	BREAK ROOM / TRAINING	√		SGL	3' - 0"	7' - 0"	1 3/4"	PEMB	A	PEMB	E1			3/A601		PEMB	BY PEMB SUPPLIER
111	WORKSHOP / MECH.		√	SGL	3' - 0"	7' - 0"	1 3/4"	I.MTL	A	AL		1/A601	2/A601	4/A601		PEMB	
112	CAGE		√	SGL	3' - 0"	7' - 10 13/16"	1 3/4"	HM	E	AL	I3					HW03	REF TO DTLS 5&6/A601
113	MECH. OFFICE		√	SGL	3' - 0"	7' - 0"	1 3/4"	I.MTL	A	AL		1/A601	2/A601	3/A601		HW04	
114	MECH. OFFICE			SGL	3' - 0"	7' - 0"	1 3/4"	WD	D	AL							
115	BREAK ROOM / TRAINING		√	SGL	3' - 0"	7' - 0"	1 3/4"	WD	D	AL		1/A601	2/A601	3/A601		HW05	PLAM FINISH
116	BREAK ROOM / TRAINING		√	SGL	3' - 0"	7' - 0"	1 3/4"	WD	D	AL		1/A601	2/A601	3/A601		HW05	PLAM FINISH
117	FOREMAN ASSISTANT OFFICE		√	SGL	3' - 0"	7' - 0"	1 3/4"	WD	D	AL		1/A601	2/A601	3/A601		HW06	PLAM FINISH
118	FOREMAN ASSISTANT OFFICE		√	SGL	3' - 0"	7' - 0"	1 3/4"	WD	D	AL		1/A601	2/A601	3/A601		HW06	PLAM FINISH
119	FOREMAN OFFICE		√	SGL	3' - 0"	7' - 0"	1 3/4"	WD	D	AL		1/A601	2/A601	3/A601		HW06	PLAM FINISH
120	LOCKER ROOM		√	SGL	3' - 0"	7' - 0"	1 3/4"	WD	C	AL		1/A601	2/A601	3/A601		HW07	PLAM FINISH
121	RESTROOM		√	SGL	3' - 0"	7' - 0"	1 3/4"	WD	C	AL		1/A601	2/A601	3/A601		HW08	PLAM FINISH
122	FIRE RISER ROOM	√		SGL	3' - 0"	7' - 0"	1 3/4"	PEMB	A	PEMB	E1			4/A601		HW09	BY PEMB SUPPLIER



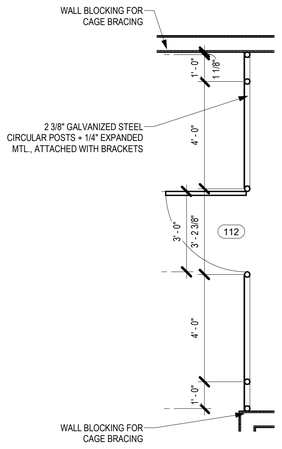
DOOR TYPES



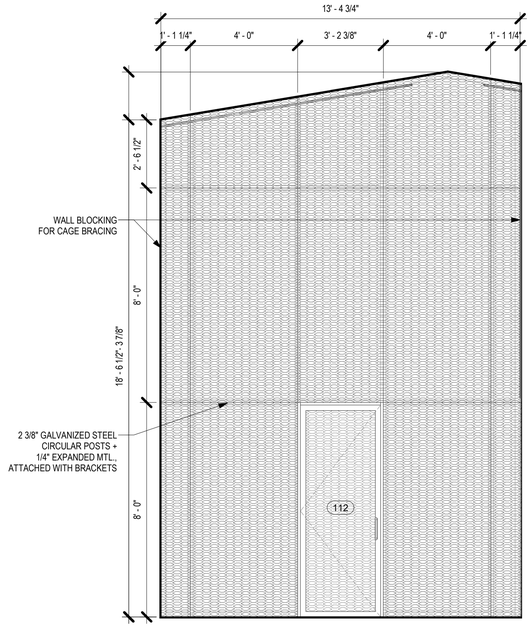
WINDOW TYPES

1 1" INSULATED LOW-E GLASS W/ GREEN/BLUE TINT

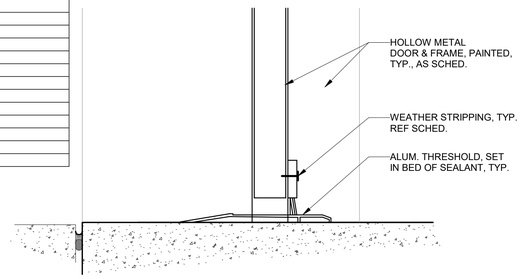
GLAZING TYPES



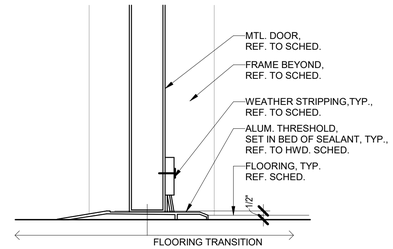
6 CAGE - FLOOR PLAN
3/8" = 1'-0"



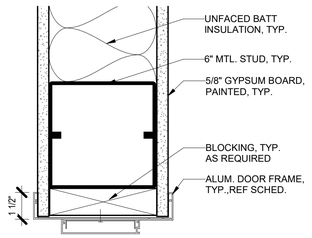
5 CAGE - ELEVATION
3/8" = 1'-0"



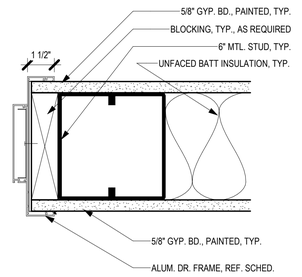
4 HM EXTERIOR SLAB DETAIL
3" = 1'-0"



3 INTERIOR DOOR SILL DETAIL
3" = 1'-0"



1 INTERIOR ALUMINUM FRAME HEAD DETAIL
3" = 1'-0"



2 INTERIOR ALUMINUM FRAME JAMB DETAIL
3" = 1'-0"

GENERAL NOTES - ROOM FINISH

1	PAINT (PT) COLORS SELECTION PER WALL WILL BE ASSIGNED DURING CONSTRUCTION VIA THE SUBMITTAL PROCESS.
2	TILE (T-) SELECTION WILL BE ASSIGNED DURING CONSTRUCTION VIA THE SUBMITTAL PROCESS.
3	ALL TRANSITIONS TO OCCUR UNDER DOOR, UNLESS OTHERWISE NOTED.
4	ALL FINISH WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FINISH STANDARD CODES, MANUALS, AND RULES OF ITS KIND. FINISH WORK NOT PERFORMED PER ITS STANDARDS OF ITS KIND SHALL BE REPLACED AND/OR ADJUSTED TO MEET THE STANDARDS AT NO ADDITIONAL COST.

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REGISTERED ARCHITECT BEAMAN 8889 STATE OF TEXAS

03/03/2025

REVISIONS NO.	DATE	DESCRIPTION	BY

BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd, Smithville, TX 78957

PROJECT NUMBER:	202415
PROJECT PHASE:	CONSTRUCTION DOCUMENTS
DRAWN BY:	CBA
CHECKED BY:	CBA
ISSUE DATE:	03.03.2025

SCHEDULES, DOOR & FRAME ELEVATIONS

SHEET
A601

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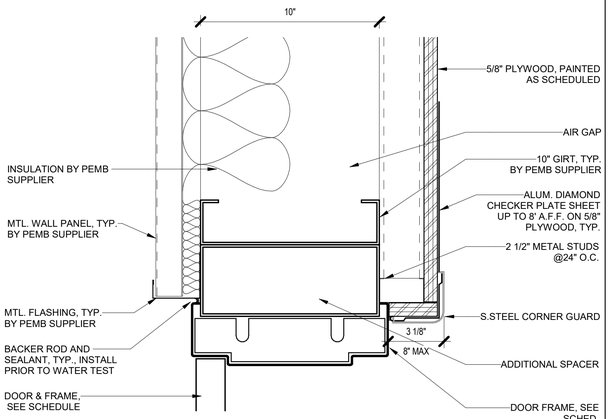
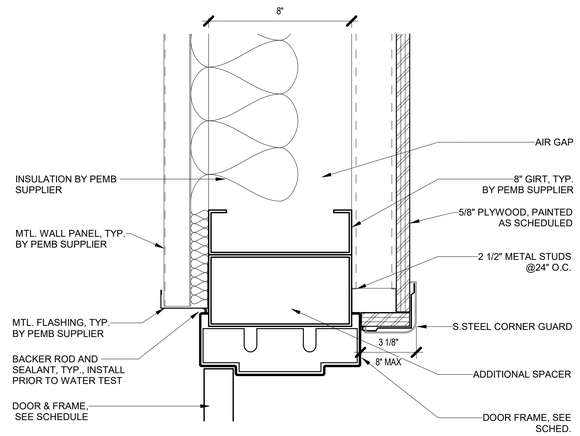


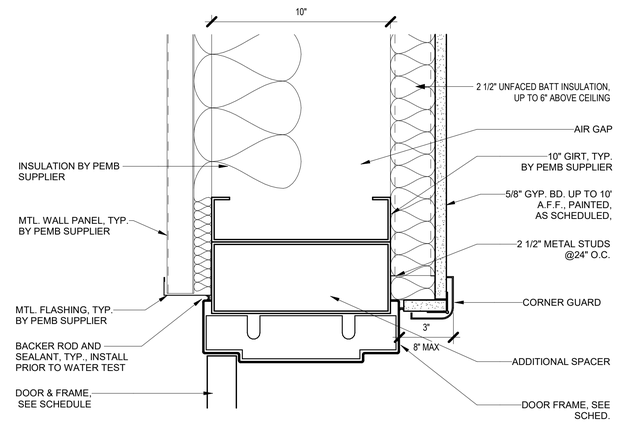
7 EXTERIOR MTL DOOR HEAD @DR 104

3" = 1'-0"



8 EXTERIOR MTL DOOR HEAD @DR 106, 122

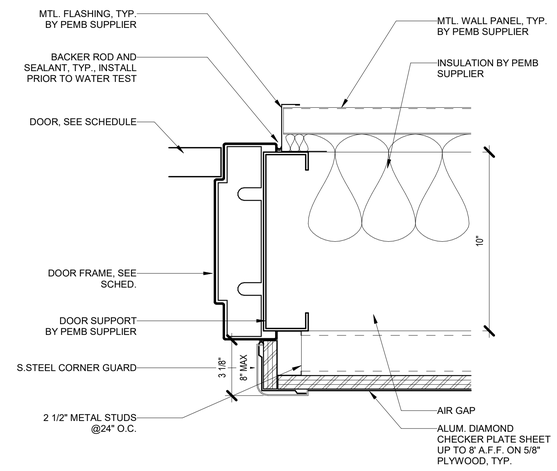
3" = 1'-0"



9 EXTERIOR MTL DOOR HEAD @DR 108,109,110,122

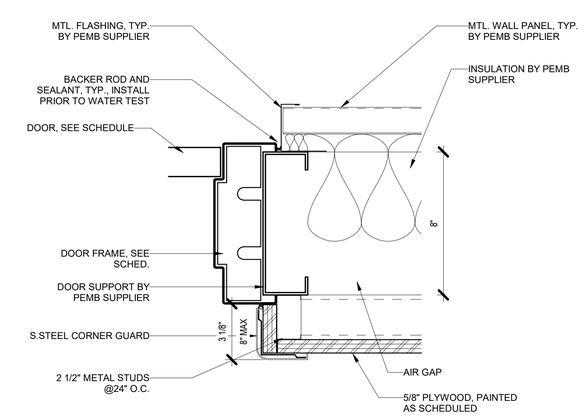
3" = 1'-0"

NOTE: ALL EXTERIOR SWINGING DOORS PROVIDED BY PEMB SUPPLIER. METAL STUDS SHOWN IN DETAIL ARE VISUAL



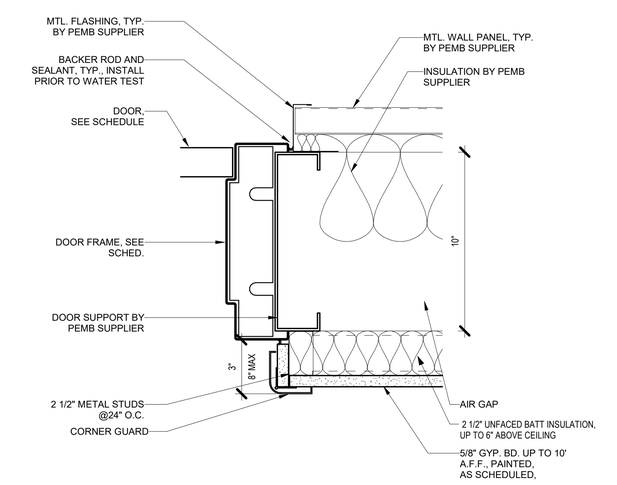
4 EXTERIOR MTL DOOR JAMB @DR 104

3" = 1'-0"



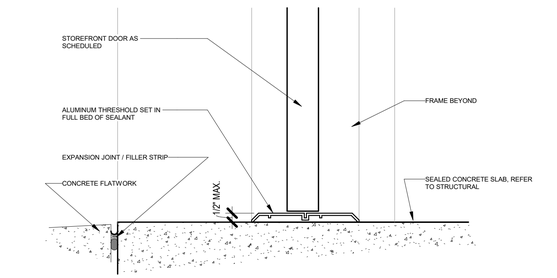
5 EXTERIOR MTL DOOR JAMB @DR 106, 122

3" = 1'-0"



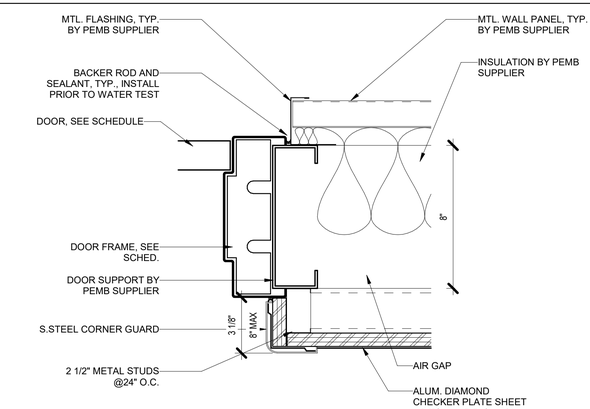
6 EXTERIOR MTL DOOR JAMB @DR 108,109.110,122

3" = 1'-0"



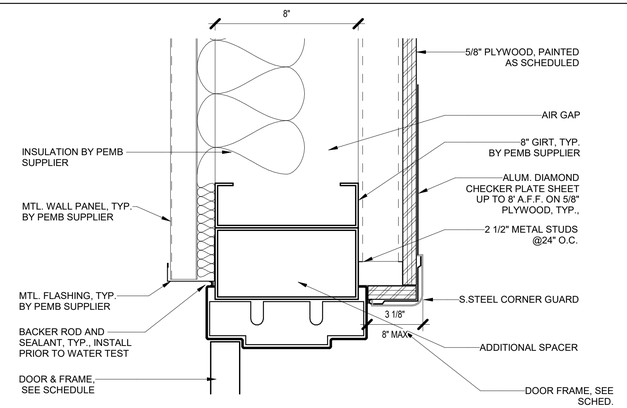
1 DOOR SLAB @WALKWAY

3" = 1'-0"



2 EXTERIOR MTL DOOR JAMB @DR 100

3" = 1'-0"



3 EXTERIOR MTL DOOR HEAD @DR 100

3" = 1'-0"

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REGISTERED ARCHITECT · M. BEAMAN · 28889 · STATE OF TEXAS

03/03/2025

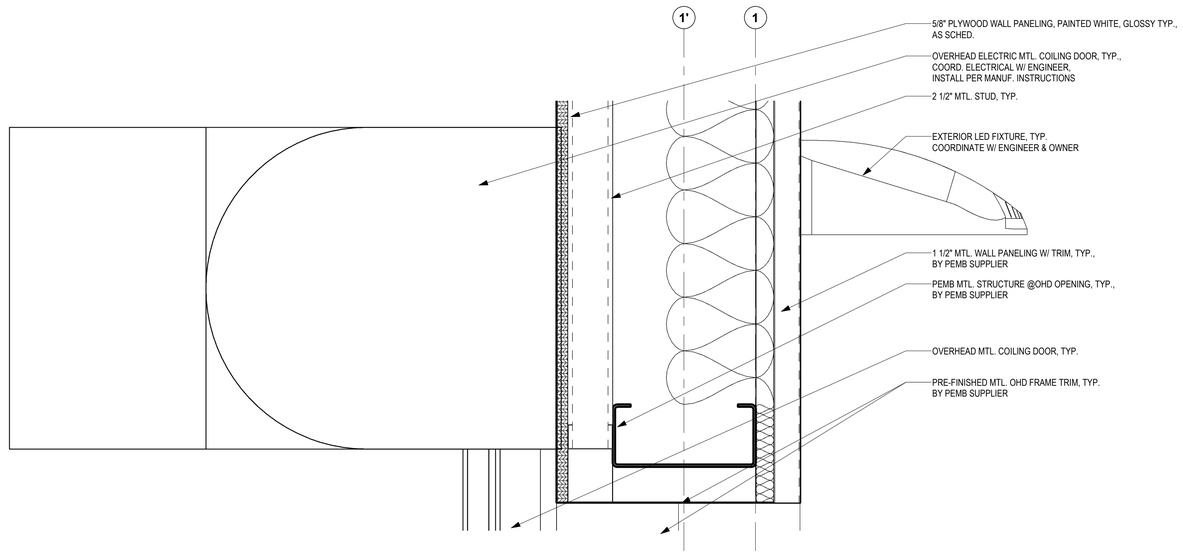
REVISIONS		
NO.	DATE	DESCRIPTION	BY

BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd, Smithville, TX 78957

PROJECT NUMBER:	202415
PROJECT PHASE:	CONSTRUCTION DOCUMENTS
DRAWN BY:	CBA
CHECKED BY:	CBA
ISSUE DATE:	03.03.2025

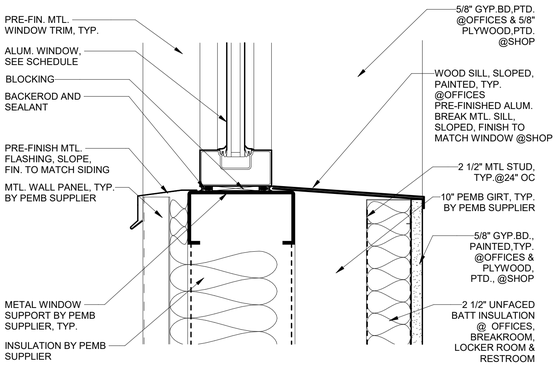
EXTERIOR DOOR DETAILS

SHEET
A602



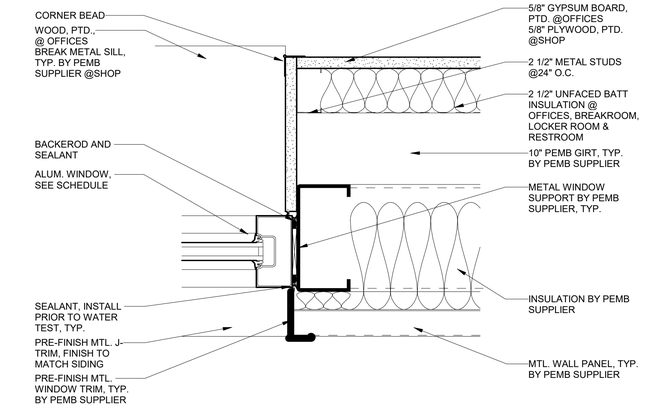
4 COILING OVERHEAD DOOR DETAIL

3" = 1'-0"



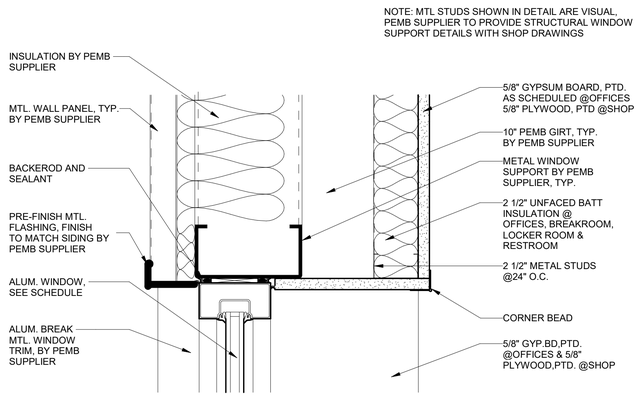
1 WINDOW SILL @OFFICES & SHOP

3" = 1'-0"



2 WINDOW JAMB @OFFICES & SHOP

3" = 1'-0"



3 WINDOW HEAD @OFFICES & SHOP

3" = 1'-0"

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REGISTERED ARCHITECT BEAMAN 8889 STATE OF TEXAS

03/03/2025

REVISIONS

NO.	DATE	DESCRIPTION	BY

BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd, Smithville, TX 78957

PROJECT NUMBER:	202415
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DRAWN BY:	CBA
CHECKED BY:	CBA
ISSUE DATE:	03.03.2025

EXTERIOR WINDOW & OH DOOR DETAILS

SHEET
A603

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ACOUSTIC NOTES:

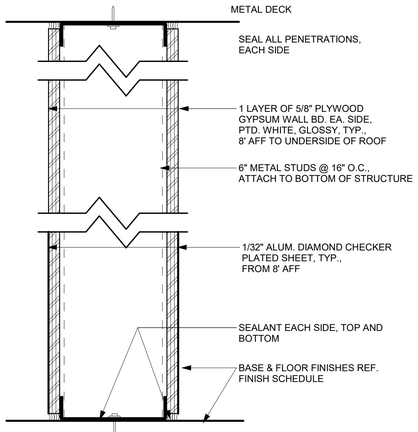
1. USE ACOUSTIC SEALANT (FIRE STOP CAULKING) AT TOP AND BOTTOM OF STUD WALLS.
2. USE ACOUSTIC SEALANT AROUND ALL PENETRATIONS IN GYPSUM BOARD WALLS.
3. STAGGER GYPSUM BOARD JOINTS.
4. PROVIDE AT LEAST ONE STUD BETWEEN PLUGS, SWITCHES, J-BOXES, ETC. THAT BACK AGAINST EACH OTHER.
5. EXTEND GYPSUM BOARD TO BOTTOM OF ROOF OR FLOOR DECK ON ALL WALLS NOTED AS ACOUSTIC PARTITIONS.

GYPSUM BOARD NOTES:

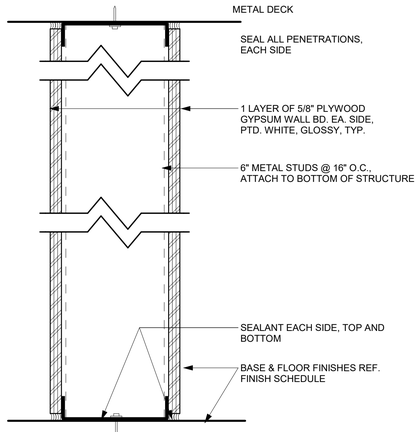
1. PLACE INTERIOR CONTROL JOINTS IN THE FOLLOWING LOCATIONS:
   A. WHERE PARTITIONS, FURRINGS, OR COLUMN FIREPROOFING ABUT A STRUCTURAL ELEMENT (EXCEPT FLOOR) OR DISSIMILAR WALL OR CEILING.
   B. WHERE CEILINGS OR SOFFITS ABUT A STRUCTURAL ELEMENT, DISSIMILAR WALL OR PARTITION, OR OTHER VERTICAL PENETRATION.
   C. WHERE CONSTRUCTION CHANGES WITHIN A PLANE OF A PARTITION OR CEILING.
   D. WHERE CEILING DIMENSIONS EXCEED 50' IN EITHER DIRECTION WITH PERIMETER RELIEF. 30' WITHOUT PERIMETER RELIEF.
   E. WHERE PARTITIONS OR FURRINGS EXCEED 30'.
   F. WHERE EXPANSION OR CONTROL JOINTS OCCUR ON EXTERIOR WALLS.
   G. AT BOTH SIDES OF DOOR HEADS.
   H. WHERE SHOWN ON DRAWINGS.
2. PLACE CORNER BEADS AT ALL EXTERNAL CORNERS USING THE LONGEST PRACTICAL LENGTH.
3. PLACE EDGE TRIM WHERE GYPSUM BOARD ABUTS DISSIMILAR MATERIALS.
4. GYPSUM WALL BOARD MUST BE SUPPORTED WITH STUD FRAMING OR BLOCKING ON BOTH SIDES OF CONTROL JOINTS.
5. ANY INTERIOR OR EXTERIOR GYMPUSM WALL BOARD SURFACE IN A ROOM WITH NO CEILING OR WITH A CEILING GREATER THAN 10 FEET HIGH SHALL HAVE HORIZONTAL CONTROL JOINTS AT THE TOPS OF GYPSUM BOARD PANELS OR AS SHOWN ON THE INTERIOR ELEVAIONS.

GENERAL NOTES:

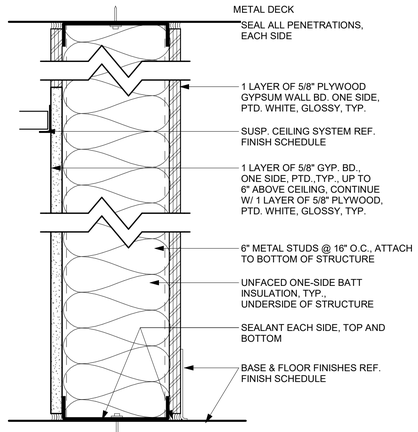
1. "METAL DECK", "STRUCTURE", OR "EXISTING WALL" INDICATED FOR EACH PARTITION IS DIAGRAMMATIC ONLY AND DOES NOT INDICATE EXACT CONSTRUCTION CONDITIONS OR GEOMETRY.
2. INSULATION: HEAD CONDITIONS AT FLOOR/ROOF DECK
   A. FIRE RATED PARTITIONS SHALL USE MINERAL WOOL INSULATION.
   B. NON-RATED PARTITIONS REQUIRING SOUND ATTENUATION SHALL USE SOUND ATTENUATION BLANKETS.
   C. PROVIDE FULL THICKNESS INSULATION INSIDE ALL STUD BOX BEAMS AND HEADERS.
3. REFER TO SPECIFICATIONS FOR MINIMUM STUD THICKNESS, MAXIMUM SPACING, AND ALLOWABLE LIMITING HEIGHTS DEFLECTION CRITERIA FOR GYPSUM BOARD ASSEMBLIES.
4. FOR PARTITIONS INDICATED TO RECEIVE SOUND ATTENUATION BLANKETS, EXTEND TO FULL HEIGHT OF PARTITION UNLESS OTHERWISE INDICATED. FLOOR TRACK TO BE SET IN A CONTINUOUS BED OF SEALANT.



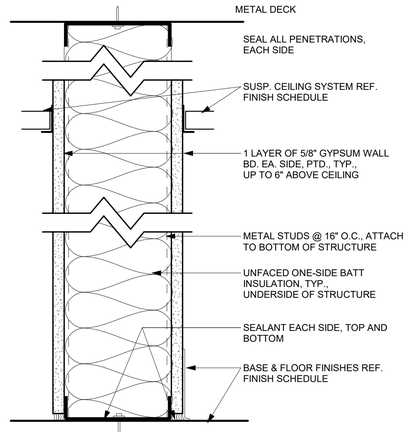
A1 NON-RATED SEPARATION WALL W/ 6" STUDS



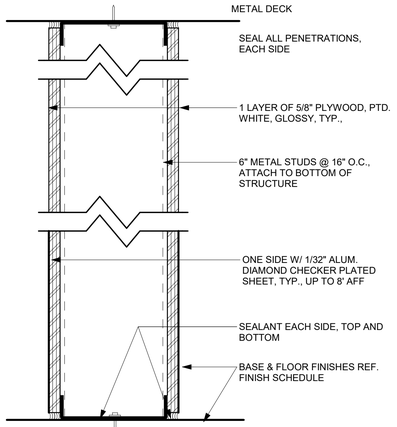
A2 NON-RATED SEPARATION WALL W/ 6" STUDS



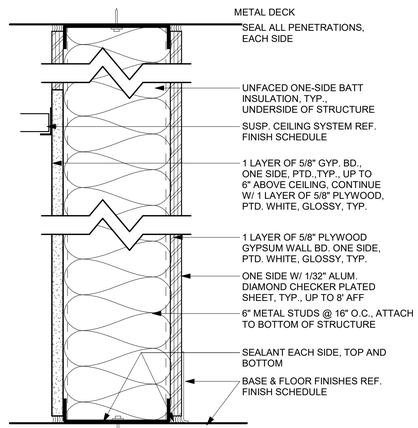
A3 NON-RATED SEPARATION WALL W/ 6" STUDS



A4 NON-RATED SEPARATION WALL W/ 6" STUDS



A5 NON-RATED SEPARATION WALL W/ 6" STUDS



A6 NON-RATED SEPARATION WALL W/ 6" STUDS

INTERIOR PARTITION TYPES - METAL STUDS

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REGISTERED ARCHITECT · W. BEAMAN · 8889 · STATE OF TEXAS

05/12/2025

REVISIONS		
NO.	DATE	DESCRIPTION	BY
1.	04/29/25	Permit /Owner Revisions	CBA

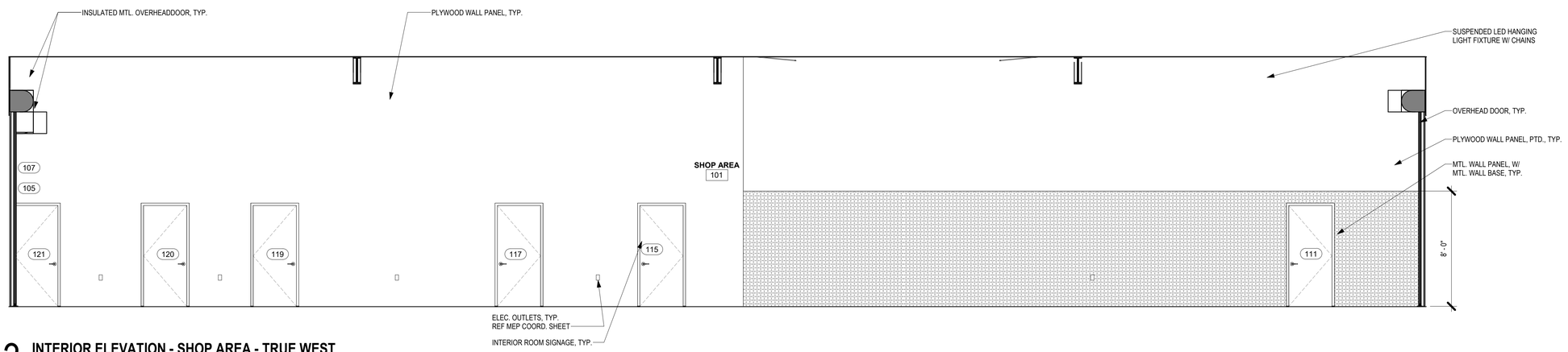
BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd, Smithville, TX 78957

PROJECT NUMBER:	202415
PROJECT PHASE:	CONSTRUCTION DOCUMENTS
DRAWN BY:	CBA
CHECKED BY:	CBA
ISSUE DATE:	03.03.2025

PARTITION TYPES

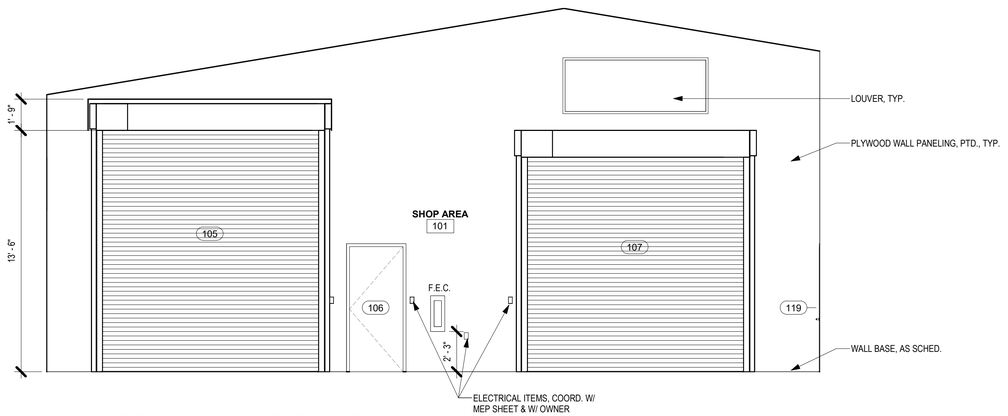
SHEET
A604

NOTE: COORDINATE ALL ELECTRICAL & PLUMBING WITH MEP COORDINATION SHEET, W/ OWNER & ENGINEERS



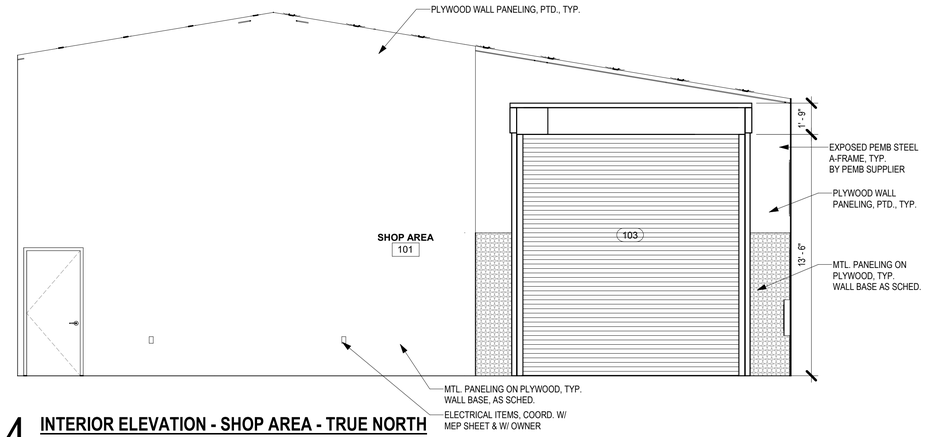
3 INTERIOR ELEVATION - SHOP AREA - TRUE WEST

1/4" = 1'-0"



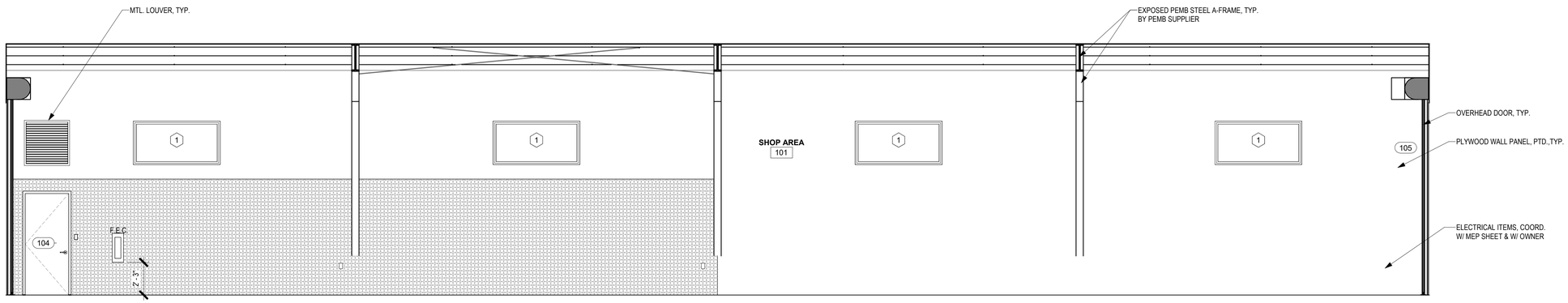
2 INTERIOR ELEVATION - SHOP AREA - TRUE SOUTH

1/4" = 1'-0"



4 INTERIOR ELEVATION - SHOP AREA - TRUE NORTH

1/4" = 1'-0"



1 INTERIOR ELEVATION - SHOP AREA - TRUE EAST

1/4" = 1'-0"

GENERAL NOTES - INTERIOR...

1	REFER TO SHEET A002 & A003 FOR ACCESSIBLE DOOR CLEARANCES, FIXTURE MOUNTING REQUIREMENTS AND CLEARANCES.
2	MILLWORK CABINETS ARE PLASTIC LAMINATE ON EXPOSED AND SEMI-EXPOSED SURFACES, RESILIENT BASE AT STANDARD 4" TOE KICK ONLY; AND MELAMINE ON INTERIORS, U.N.O.
3	TOE KICKS TO RECEIVE SCHED. WALL BASE IN STANDARD INSTANCES. EXCEPTIONS: TOE KICK TO BE PLAM TO MATCH BASE CABINET WHERE KICK IS GREATER THAN 4 INCHES, LOCATED IN RESTROOM OR WHEN OTHERWISE NOTED.

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REGISTERED ARCHITECT BEAMAN 8889 STATE OF TEXAS

03/03/2025

REVISIONS

NO.	DATE	DESCRIPTION	BY

BASTROP COUNTY

PRECINCT 2 ROAD & BRIDGE FACILITY

911 SE Martin Luther King Blvd, Smithville, TX 78957

PROJECT NUMBER:	202415
PROJECT PHASE:	CONSTRUCTION DOCUMENTS
DRAWN BY:	CBA
CHECKED BY:	CBA
ISSUE DATE:	03.03.2025

INTERIOR ELEVATIONS - SHOP AREA

SHEET

A701

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GENERAL NOTES - INTERIOR...	
1	REFER TO SHEET A002 & A003 FOR ACCESSIBLE DOOR CLEARANCES, FIXTURE MOUNTING REQUIREMENTS AND CLEARANCES.
2	MILLWORK CABINETS ARE PLASTIC LAMINATE ON EXPOSED AND SEMI-EXPOSED SURFACES, RESILIENT BASE AT STANDARD 4" TOE KICK ONLY; AND MELAMINE ON INTERIORS, U.N.O.
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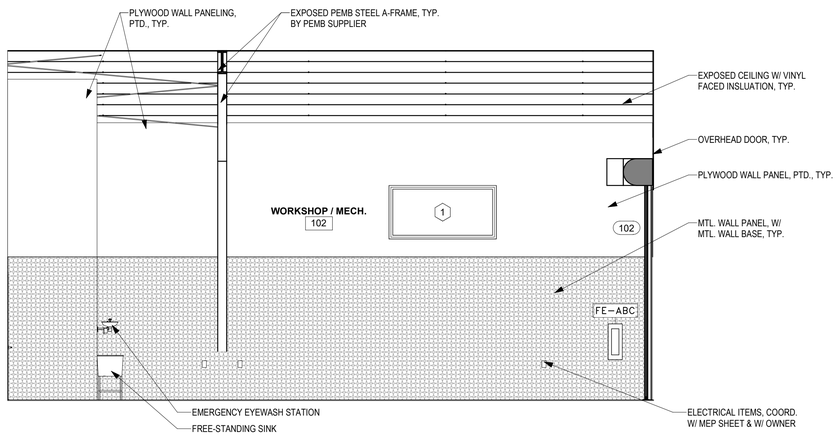
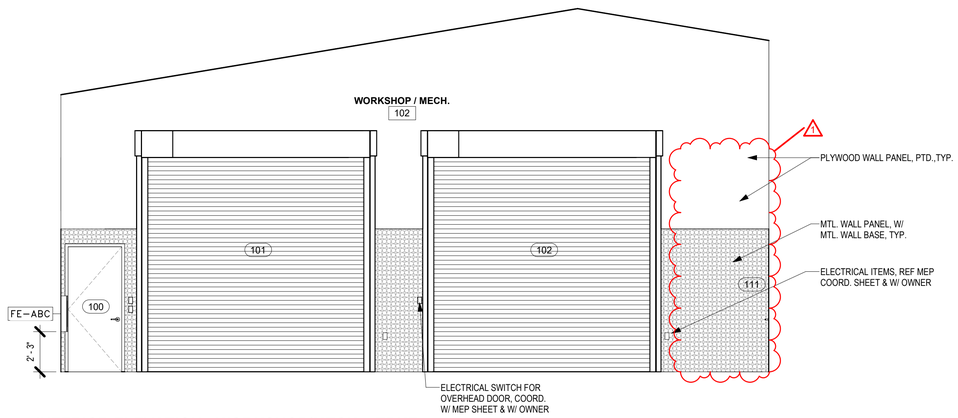
NOTE: COORDINATE ALL ELECTRICAL & PLUMBING WITH MEP COORDINATION SHEET, W/ OWNER & ENGINEERS



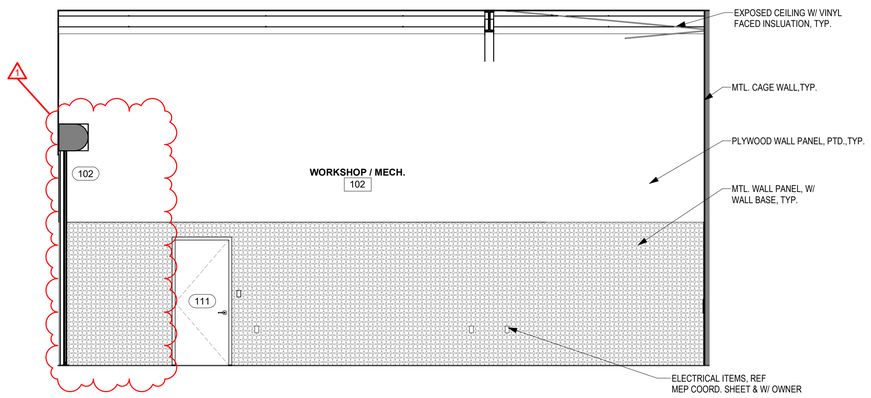
3 INTERIOR ELEVATION - WORKSHOP/MECH. - TRUE WEST

1/4" = 1'-0"



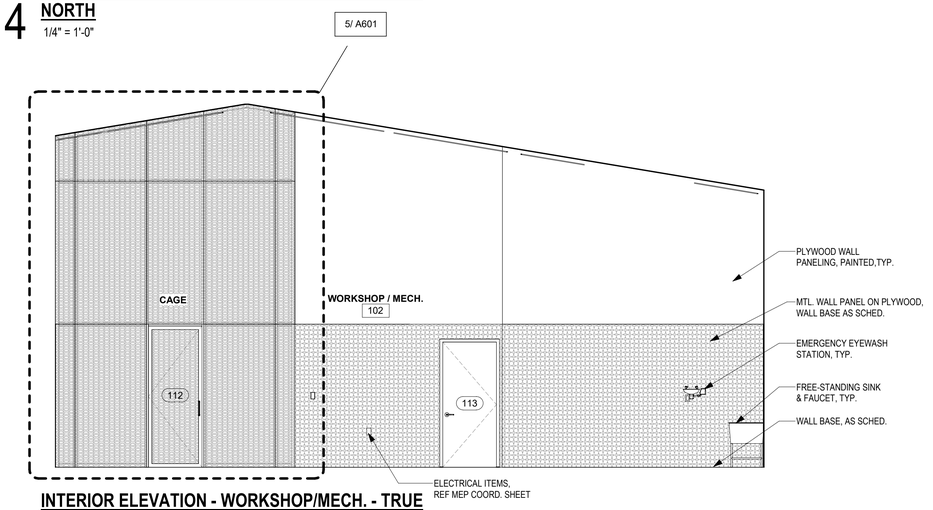
4 INTERIOR ELEVATION - WORKSHOP/MECH. - TRUE NORTH

1/4" = 1'-0"



1 INTERIOR ELEVATION - WORKSHOP/MECH. - TRUE EAST

1/4" = 1'-0"



2 INTERIOR ELEVATION - WORKSHOP/MECH. - TRUE SOUTH

1/4" = 1'-0"

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REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	04/29/25	Permit /Owner Revisions	CBA

BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd, Smithville, TX 78957

PROJECT NUMBER:	202415
PROJECT PHASE:	CONSTRUCTION DOCUMENTS
DRAWN BY:	Author
CHECKED BY:	Checker
ISSUE DATE:	05.12.2025

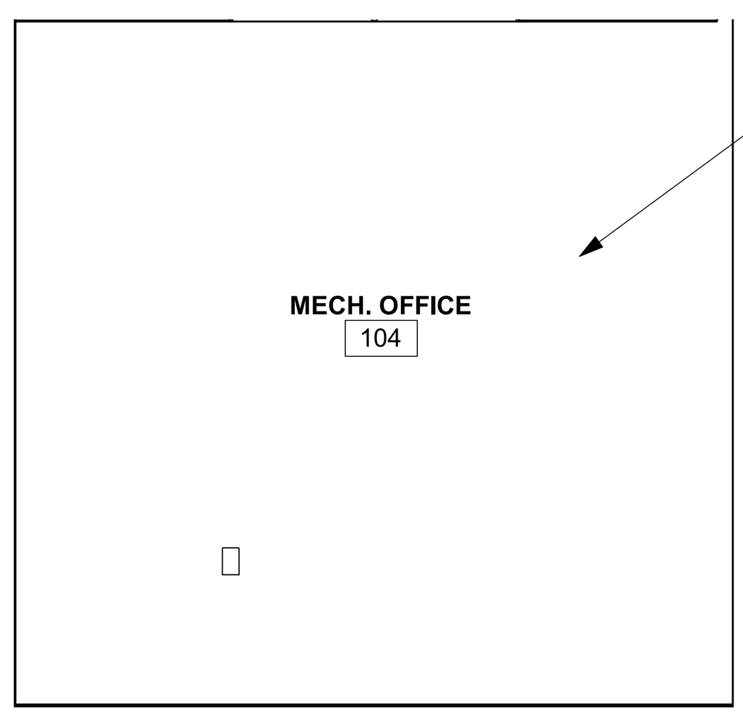
INTERIOR ELEVATIONS - WORKSHOP/MECH.

SHEET
A702

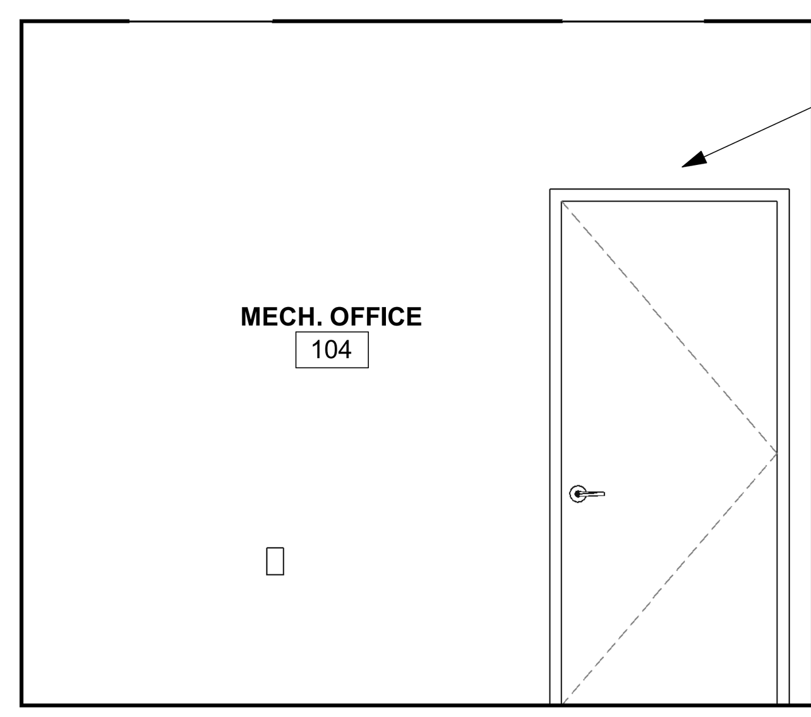
NOTE: COORDINATE ALL ELECTRICAL & PLUMBING WITH MEP COORDINATION SHEET, W/ OWNER & ENGINEERS

GENERAL NOTES - INTERIOR...

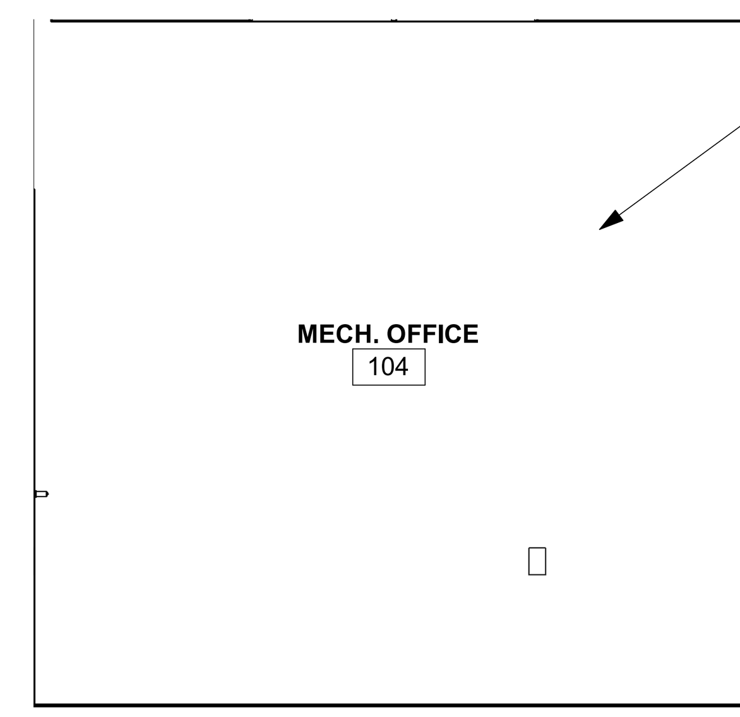
1	REFER TO SHEET A002 & A003 FOR ACCESSIBLE DOOR CLEARANCES, FIXTURE MOUNTING REQUIREMENTS AND CLEARANCES.
2	MILLWORK CABINETS ARE PLASTIC LAMINATE ON EXPOSED AND SEMI-EXPOSED SURFACES, RESILIENT BASE AT STANDARD 4" TOE KICK ONLY; AND MELAMINE ON INTERIORS, U.N.O.
3	TOE KICKS TO RECEIVE SCHED. WALL BASE IN STANDARD INSTANCES, EXCEPTIONS: TOE KICK TO BE PLAM TO MATCH BASE CABINET WHERE KICK IS GREATER THAN 4 INCHES, LOCATED IN RESTROOM OR WHEN OTHERWISE NOTED.



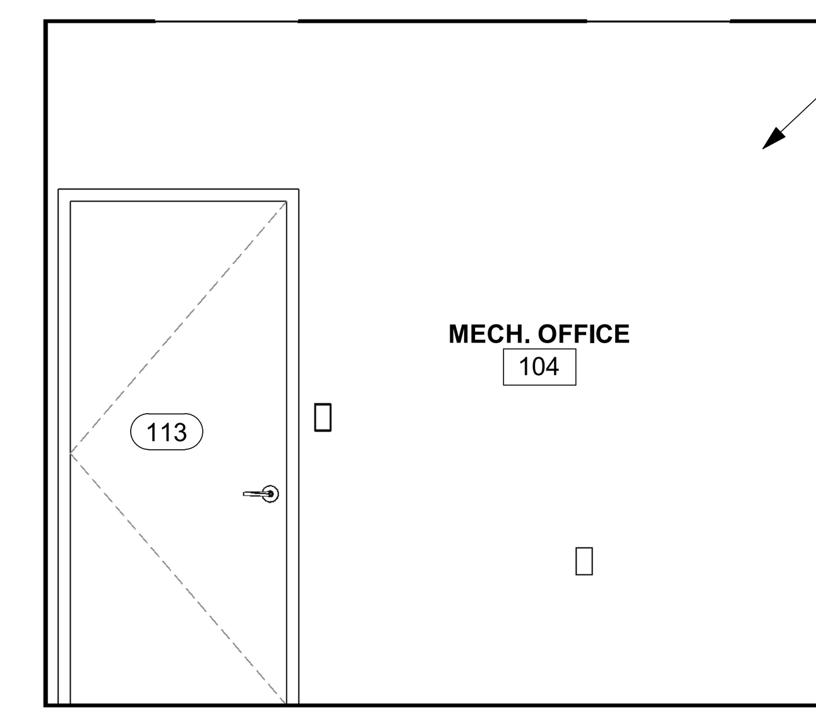
4 INTERIOR ELEVATION - MECH. OFFICE - TRUE EAST
3/8" = 1'-0"



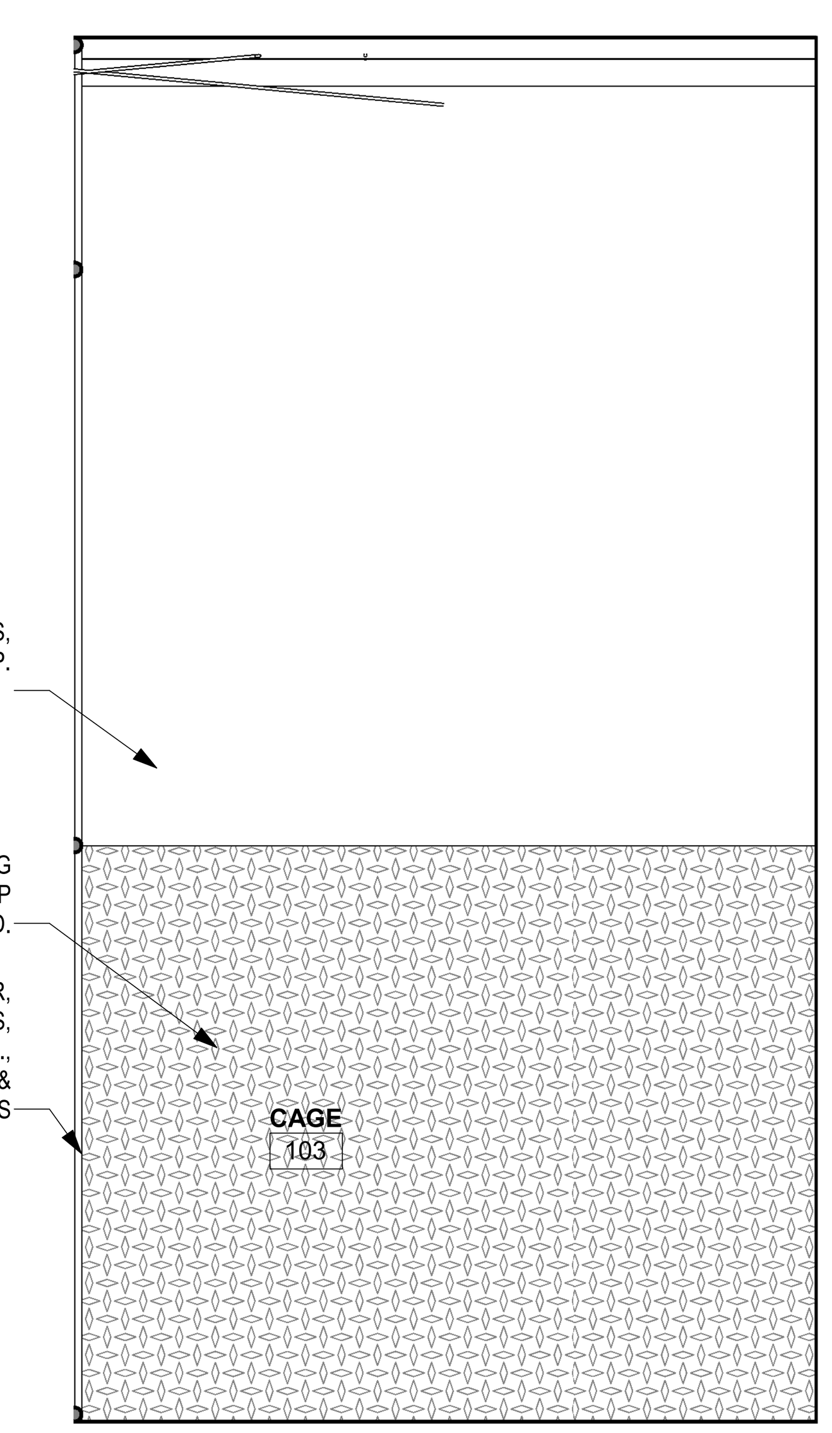
5 INTERIOR ELEVATION - MECH. OFFICE - TRUE SOUTH
3/8" = 1'-0"



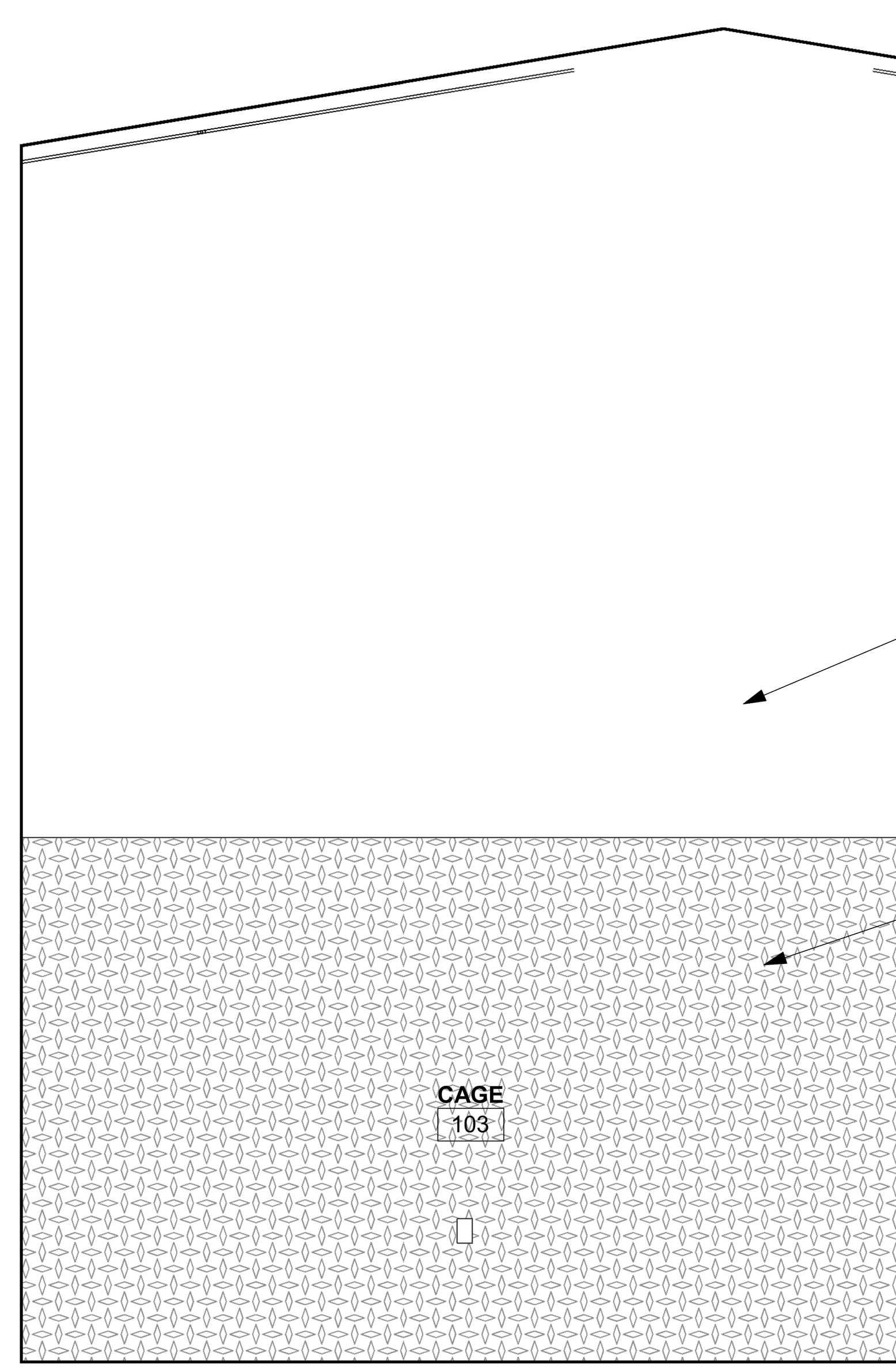
6 INTERIOR ELEVATION - MECH. OFFICE - TRUE WEST
3/8" = 1'-0"



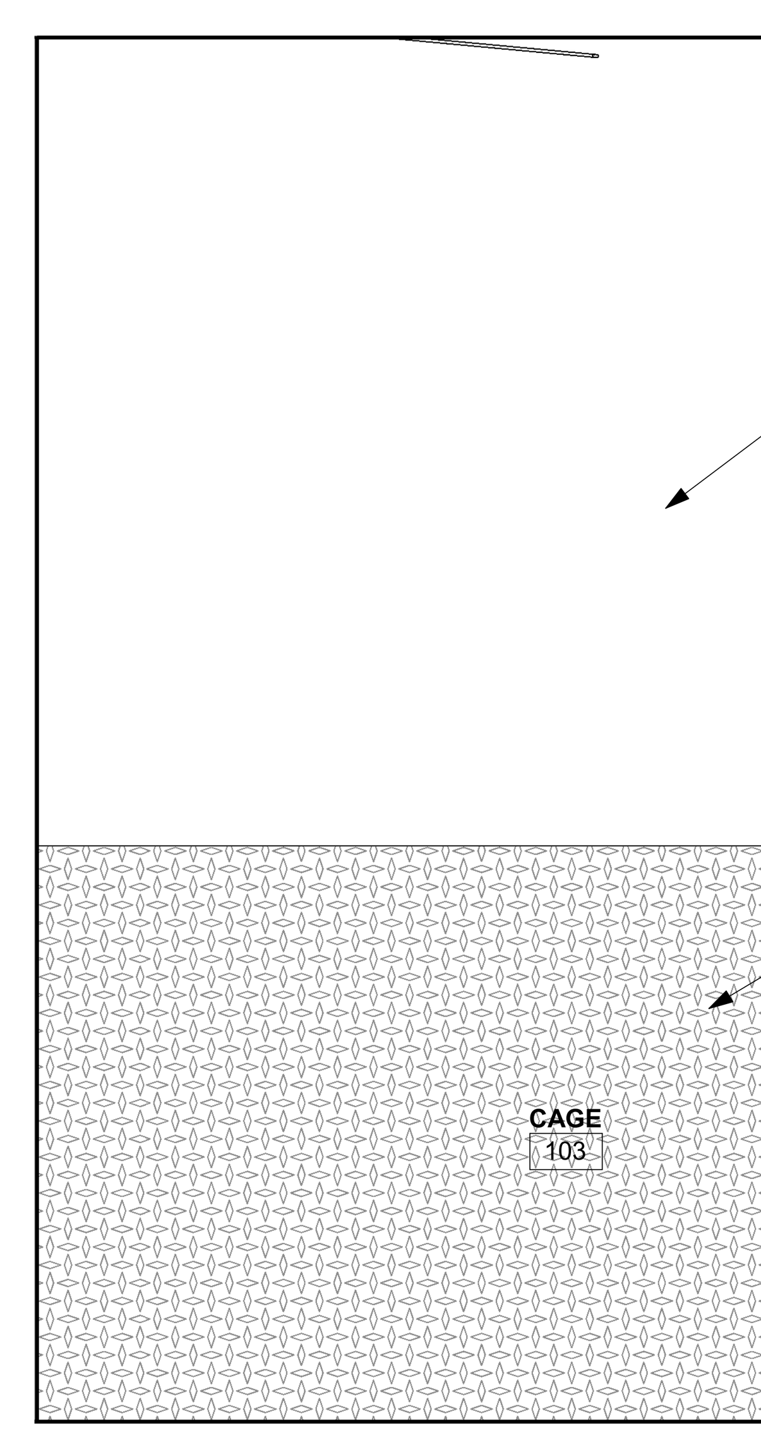
7 INTERIOR ELEVATION - MECH. OFFICE - TRUE NORTH
3/8" = 1'-0"



1 INTERIOR ELEVATION - CAGE - TRUE EAST
3/8" = 1'-0"



2 INTERIOR ELEVATION - CAGE - TRUE SOUTH
3/8" = 1'-0"



3 INTERIOR ELEVATION - CAGE - TRUE WEST
3/8" = 1'-0"

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03/03/2025

REVISIONS

NO.	DATE	DESCRIPTION	BY

BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd. Smithville, TX 78957

PROJECT NUMBER:	202415
PROJECT PHASE:	CONSTRUCTION DOCUMENTS
DRAWN BY:	Author
CHECKED BY:	Checker
ISSUE DATE:	03.03.2025

INTERIOR ELEVATIONS

SHEET
A703

NOTE: COORDINATE ALL ELECTRICAL & PLUMBING WITH MEP COORDINATION SHEET, W/ OWNER & ENGINEERS

GENERAL NOTES - INTERIOR...	
1	REFER TO SHEET A002 & A003 FOR ACCESSIBLE DOOR CLEARANCES, FIXTURE MOUNTING REQUIREMENTS AND CLEARANCES.
2	MILLWORK CABINETS ARE PLASTIC LAMINATE ON EXPOSED AND SEMI-EXPOSED SURFACES, RESILIENT BASE AT STANDARD 4" TOE KICK ONLY; AND MELAMINE ON INTERIORS, U.N.O.
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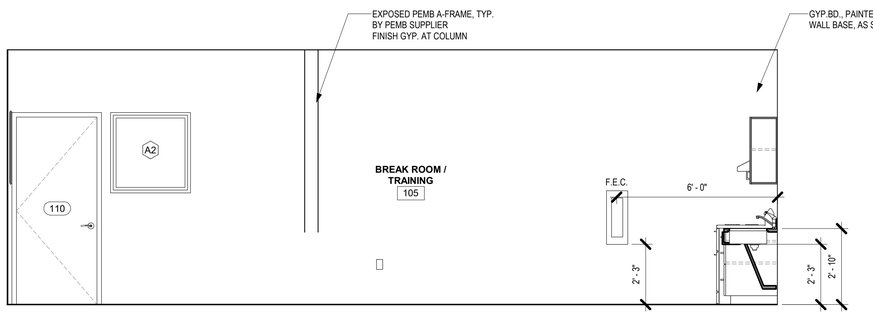
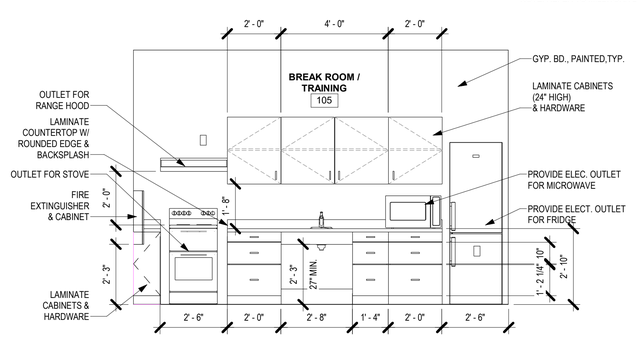
NOTE: REFER TO MILLWORK DETAILS 6-9/ A705



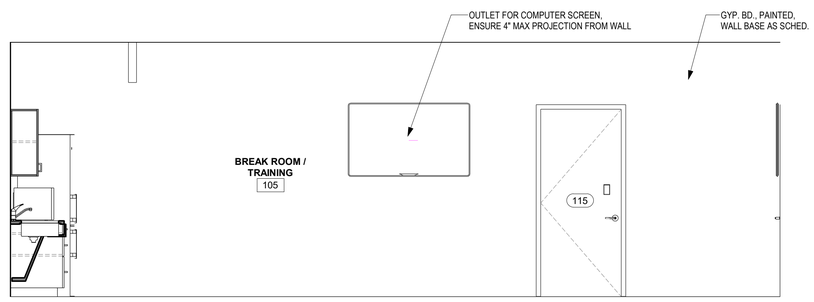
3 INTERIOR ELEVATION - BREAKROOM - TRUE WEST

3/8" = 1'-0"



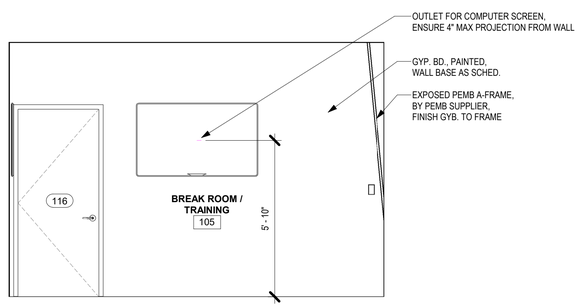
4 INTERIOR ELEVATION - BREAKROOM - TRUE NORTH

3/8" = 1'-0"



1 INTERIOR ELEVATION - BREAKROOM - TRUE EAST

3/8" = 1'-0"



2 INTERIOR ELEVATION - BREAKROOM - TRUE SOUTH

3/8" = 1'-0"

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REGISTERED ARCHITECT
BEAMAN
STATE OF TEXAS
8889

03/03/2025

REVISIONS		
NO.	DATE	DESCRIPTION BY

BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd,
Smithville, TX 78957

PROJECT NUMBER:	202415
PROJECT PHASE:	CONSTRUCTION DOCUMENTS
DRAWN BY:	Author
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ISSUE DATE:	03.03.2025

INTERIOR ELEVATIONS

SHEET
A704

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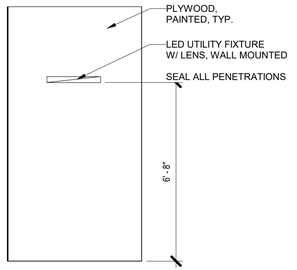

13 INTERIOR ELEVATION - RISER ROOM - TRUE WEST
3/8" = 1'-0"

NOTE: COORDINATE ALL ELECTRICAL & PLUMBING WITH MEP COORDINATION SHEET, W/ OWNER & ENGINEERS

GENERAL NOTES - INTERIOR...

1	REFER TO SHEET A002 & A003 FOR ACCESSIBLE DOOR CLEARANCES, FIXTURE MOUNTING REQUIREMENTS AND CLEARANCES.
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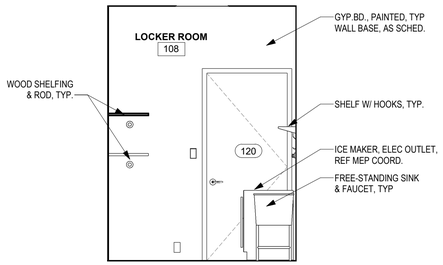
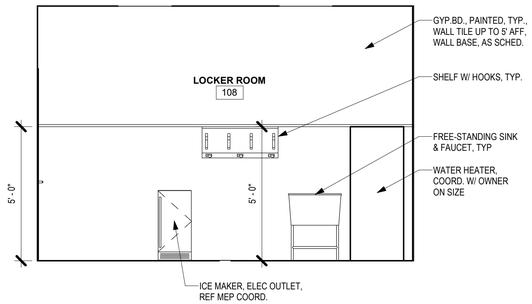
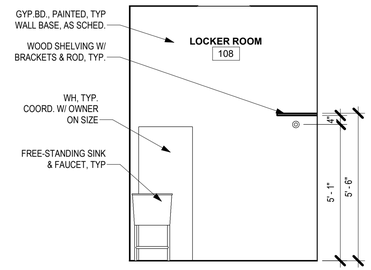


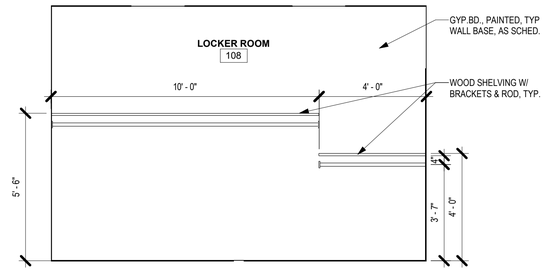
9 INTERIOR ELEVATION - LOCKER RM - TRUE EAST
3/8" = 1'-0"



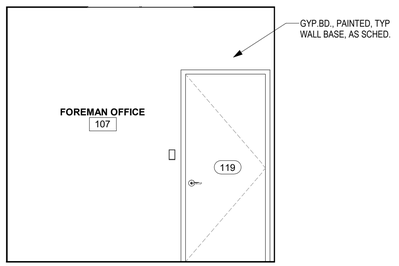
10 INTERIOR ELEVATION - LOCKER RM - TRUE SOUTH
3/8" = 1'-0"



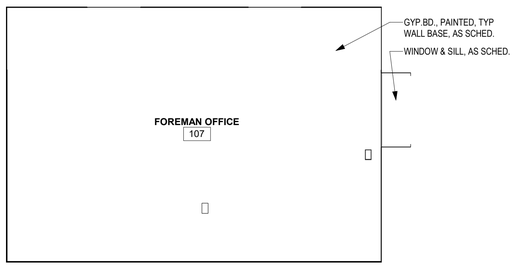
11 INTERIOR ELEVATION - LOCKER RM - TRUE WEST
3/8" = 1'-0"



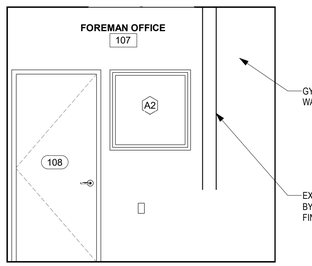
12 INTERIOR ELEVATION - LOCKER RM - TRUE NORTH
3/8" = 1'-0"



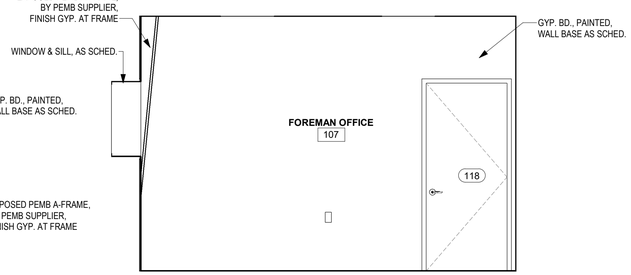
5 INTERIOR ELEVATION - FOREMAN OFFICE - TRUE EAST
3/8" = 1'-0"



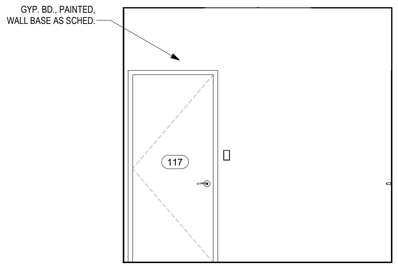
6 INTERIOR ELEVATION - FOREMAN OFFICE - TRUE SOUTH
3/8" = 1'-0"



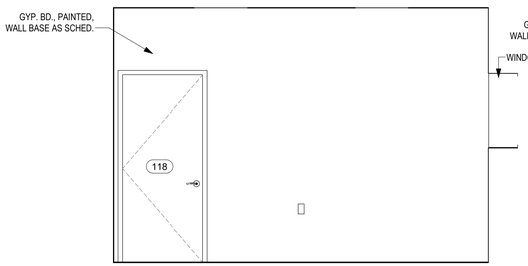
7 INTERIOR ELEVATION - FOREMAN OFFICE - TRUE WEST
3/8" = 1'-0"



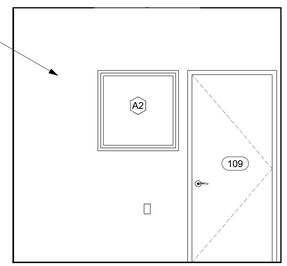
8 INTERIOR ELEVATION - FOREMAN OFFICE - TRUE NORTH
3/8" = 1'-0"



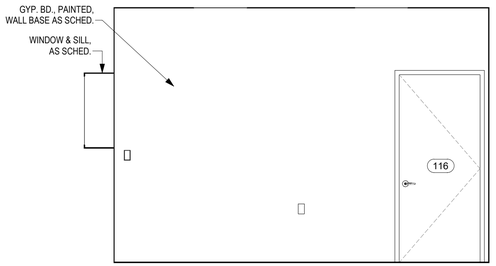
1 INTERIOR ELEVATION - FOREMAN ASSISTANT - TRUE EAST
3/8" = 1'-0"



2 INTERIOR ELEVATION - FOREMAN ASSISTANT - TRUE SOUTH
3/8" = 1'-0"



3 INTERIOR ELEVATION - FOREMAN ASSISTANT - TRUE WEST
3/8" = 1'-0"



4 INTERIOR ELEVATION - FOREMAN ASSISTANT - TRUE NORTH
3/8" = 1'-0"

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AUSTIN TEXAS 78738
512.458.5700 | casabella-architects.com

REGISTERED ARCHITECT BEAMAN STATE OF TEXAS 8889
03/03/2025

REVISIONS

NO.	DATE	DESCRIPTION	BY

BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd, Smithville, TX 78957

PROJECT NUMBER:	202415
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DRAWN BY:	Author
CHECKED BY:	Checker
ISSUE DATE:	03.03.2025

INTERIOR ELEVATIONS

SHEET
A705

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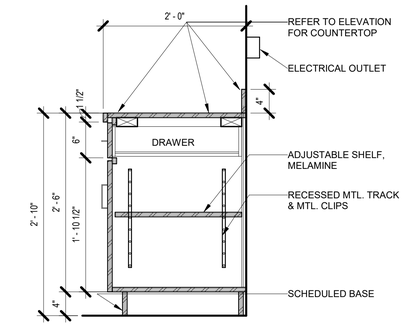
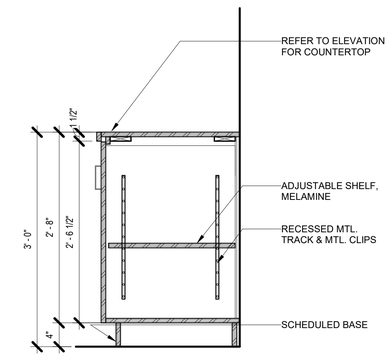
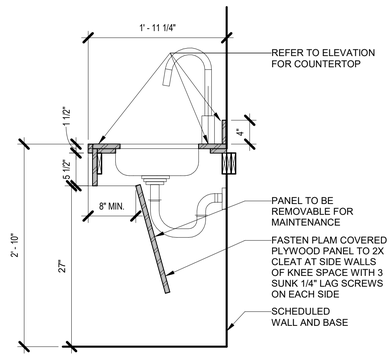


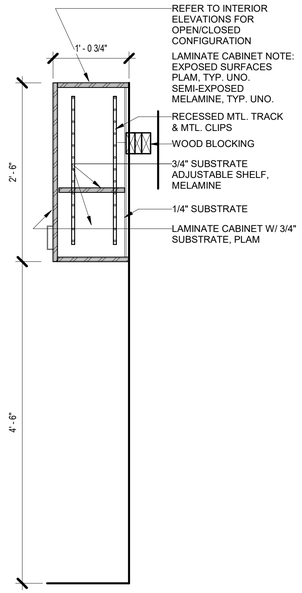
6 BASE CABINET WITH DRAWER DETAIL
1" = 1'-0"



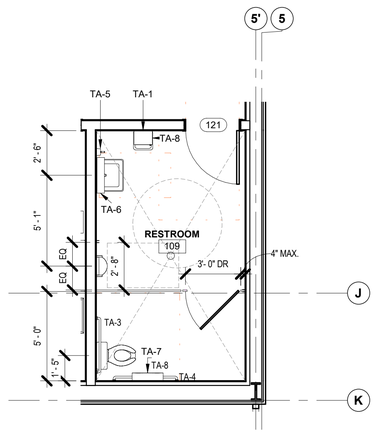
7 BASE CABINET WITH DETAIL
1" = 1'-0"



8 UNDERMOUNT SINK DETAIL
1" = 1'-0"

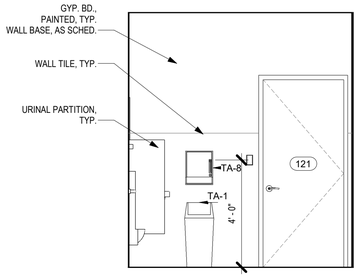


9 UPPER CABINET DETAIL
1" = 1'-0"

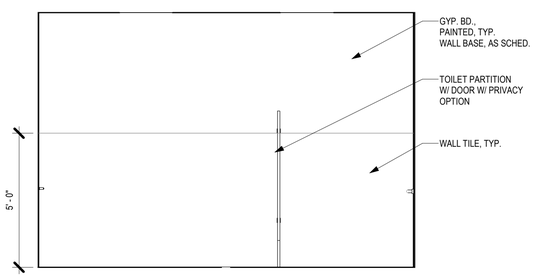


TOILET ACCESSORIES SCHEDULE		
ITEM #	DESCRIPTION	PRODUCT/ MODEL
TA-1	WASTE RECEPTACLE	ULINE 2445 BLACK 16X16X36 23 GAL
TA-2	SANITARY NAPKIN DISPOSAL	ULINE S.STEEL H3454
TA-3	36" GRAB BAR - ADULT	ULINE H6484
TA-4	42" GRAB BAR - ADULT	ULINE H6485
TA-5	WALL-MOUNTED SOAP DISPENSER-LIQUID	ULINE GOJO H1175
TA-6	FRAMED MIRROR	ULINE H9524 24X36X3/4"
TA-7	DUAL TOILET PAPER DISPENSER	ULINE H5114 S.STEEL
TA-8	HAND TOWEL ROLL DISPENSER	SEE SPEC.

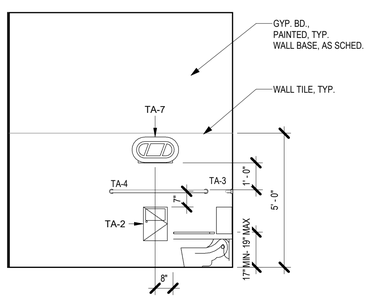
5 ENLARGED RESTROOM PLAN - TOILET ACCESSORIES
1/4" = 1'-0"



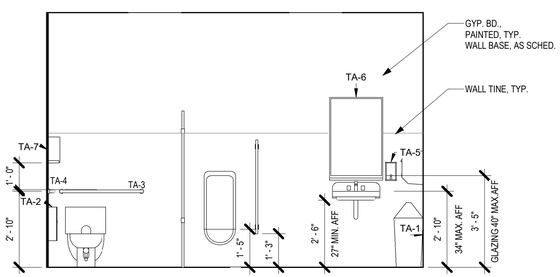
1 INTERIOR ELEVATION - RESTROOM - TRUE EAST
3/8" = 1'-0"



2 INTERIOR ELEVATION - RESTROOM - TRUE SOUTH
3/8" = 1'-0"



3 INTERIOR ELEVATION - RESTROOM - TRUE WEST
3/8" = 1'-0"



4 INTERIOR ELEVATION - RESTROOM - TRUE NORTH
3/8" = 1'-0"

GENERAL NOTES - INTERIOR...	
1	REFER TO SHEET A002 & A003 FOR ACCESSIBLE DOOR CLEARANCES, FIXTURE MOUNTING REQUIREMENTS AND CLEARANCES.
2	MILLWORK CABINETS ARE PLASTIC LAMINATE ON EXPOSED AND SEMI-EXPOSED SURFACES, RESILIENT BASE AT STANDARD 4" TOE KICK ONLY; AND MELAMINE ON INTERIORS, U.N.O.
3	TOE KICKS TO RECEIVE SCHED. WALL BASE IN STANDARD INSTANCES. EXCEPTIONS: TOE KICK TO BE PLAM TO MATCH BASE CABINET WHERE KICK IS GREATER THAN 4 INCHES, LOCATED IN RESTROOM OR WHEN OTHERWISE NOTED.

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REGISTERED ARCHITECT BEAMAN STATE OF TEXAS 8889
03/03/2025

REVISIONS		
NO.	DATE	DESCRIPTION BY

BASTROP COUNTY
PRECINCT 2 ROAD & BRIDGE FACILITY
911 SE Martin Luther King Blvd, Smithville, TX 78957

PROJECT NUMBER:	202415
PROJECT PHASE:	CONSTRUCTION DOCUMENTS
DRAWN BY:	Author
CHECKED BY:	Checker
ISSUE DATE:	03.03.2025

INTERIOR ELEVATIONS & MILLWORK SECTIONS

SHEET
A706

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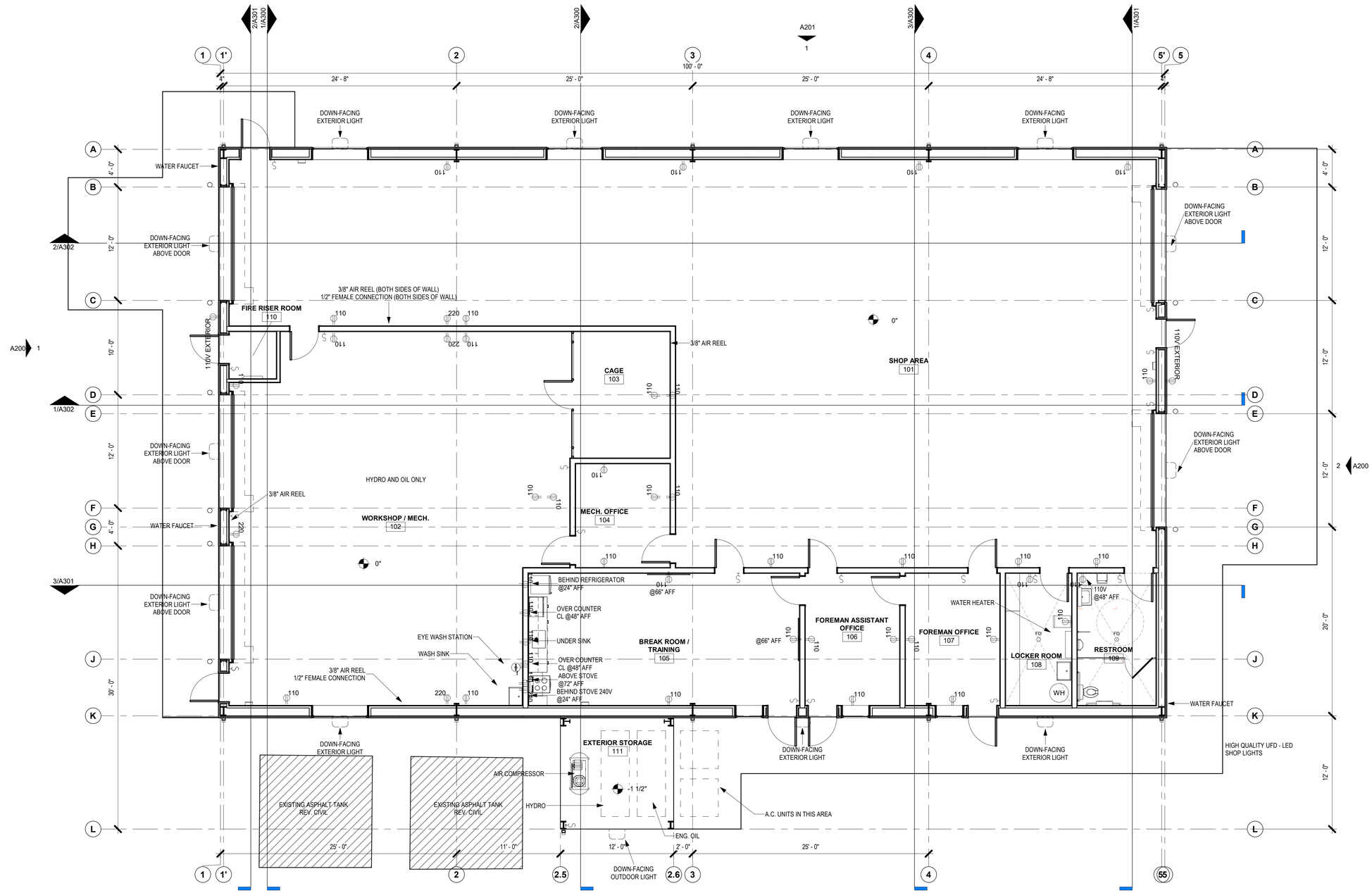

1 FLOOR PLAN - MEP COORDINATION

3/16" = 1'-0"

2 A201

USE FOR REFERENCE ONLY

PLOTTED: 3/3/2025 2:36:10 PM

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MEP COORDINATION

SHEET

MEP01

BASTROP COUNTY

PRECINCT 2 ROAD AND BRIDGE FACILITY

911 SE MARTIN LUTHER KING BLVD,
SMITHVILLE, TX 78957

PROJECT NARRATIVE:

THE SCOPE OF THIS PROJECT IS THE MECHANICAL, ELECTRICAL AND PLUMBING DESIGN FOR A REPLACEMENT OFFICE/SHOP BUILDING. THE EXISTING BUILDING WILL BE DEMOLISHED PRIOR TO THE START OF THIS PROJECT.

DRAWING INDEX:

TOTAL SHEET COUNT: 21

BASTROP COUNTY
1041 LOVERS LANE
BASTROP COUNTY, TEXAS 78602

ENGINEER OF RECORD:

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STATE OF TEXAS
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91932
LICENSED
PROFESSIONAL ENGINEER
04/04/2025

PRICINCT 2 ROAD AND BRIDGE FACILITY
BASTROP COUNTY
911 SE MARTIN LUTHER KING BLVD SMITHVILLE TX, 78957

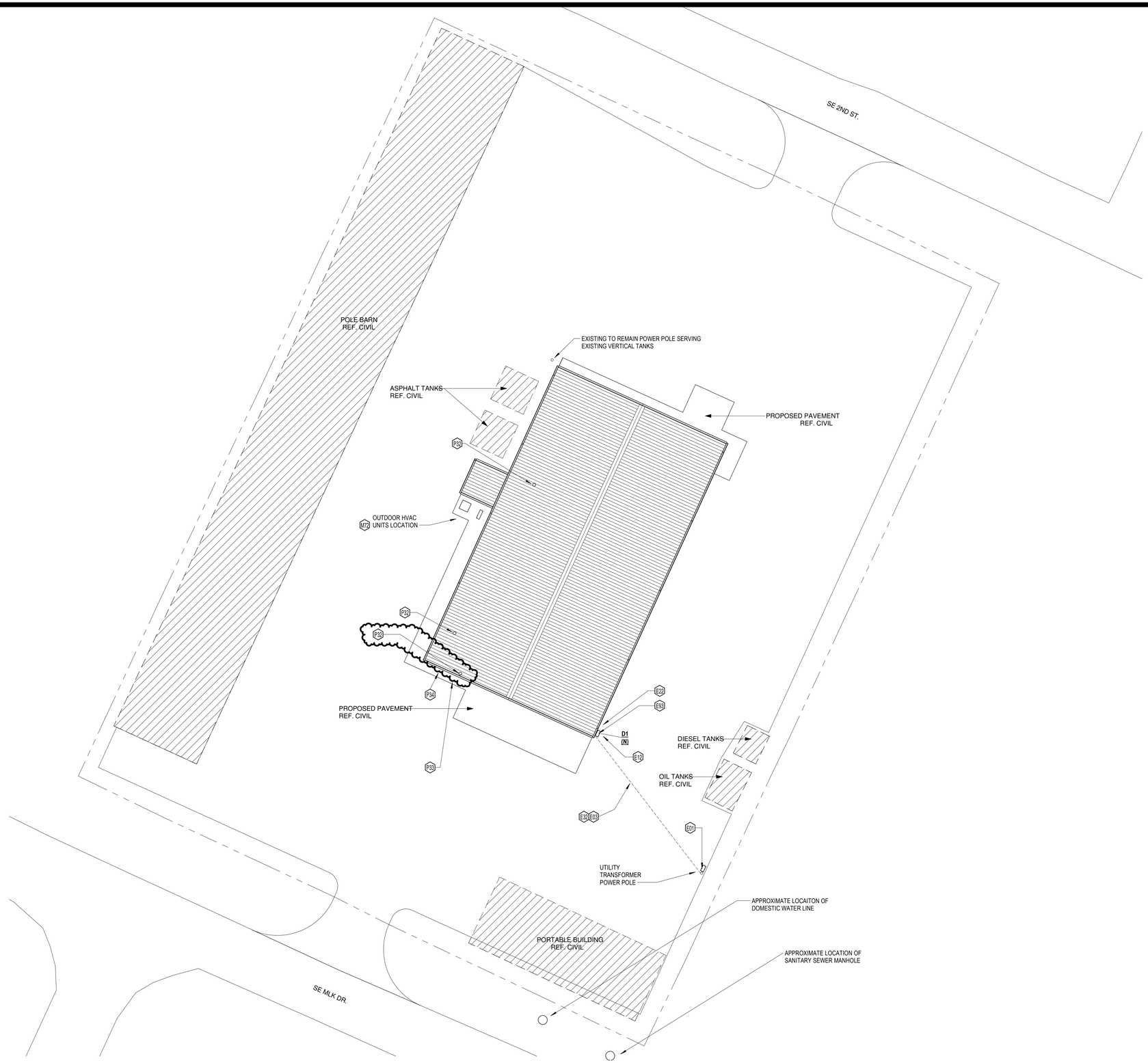
SHEET TITLE: COVER SHEET

REVISIONS:

NO.	DATE

Job No:	T2414
Drawn by:	TO
Checked by:	TS/SK/EB
Sheet No.	C0.0
Date:	APRIL 2025

4/4/2025 8:07:53 PM C:\Users\ottent\Documents\T2414_Bastrop Co New Road & Bridge Facility_R23_thomasotten.rvt



1 Site and Roof Plan
1/16" = 1'-0"

GENERAL ELECTRICAL NOTES

1. REFER TO SHEET E1.1 FOR GENERAL NOTES AND LEGENDS.
2. COORDINATE WITH OTHER TRADES (MECH, CONTROLS, PLUMBING, AND FIRE ALARM) FOR DEMOLITION AND NEW WORK, INCLUDING ANY ADDITIONAL CONDUIT/POWER REQUIREMENTS.
3. SNAP SWITCHES USED AS DISCONNECTS SHALL BE AC GENERAL USE SNAP SWITCHES PER NEC 2020 404.14(A)(3)
4. FOR ELECTRICAL EQUIPMENT BEING ADDED, THE CONTRACTOR SHALL:
   A. RECORD THE CIRCUIT NUMBER AND BREAKER RATING OF EQUIPMENT.
   B. REPORT IN TABULAR FORM (UNIT #, CIRCUIT #(s), AND V/A/P,) TO ENGINEER AND OWNER FOR O&M RECORDS. LABEL EQUIPMENT FOR DISCONNECT SWITCHES WITH EQUIPMENT VOLTAGE, AMPERAGE, PHASE AND CIRCUIT NUMBER.
5. BEFORE ROUGHING IN OUTLET AND SWITCH LOCATIONS, CONTRACTOR TO COORDINATE WITH ARCHITECT'S FURNITURE LAYOUT, AND PRESENT SHOP DRAWING FOR ARCHITECT AND OWNER APPROVAL. SHOP DRAWING SHALL INDICATE VERTICAL AND HORIZONTAL WALL LOCATION OF ALL OUTLETS AND SWITCHES.
6. PROVIDE OUTLET RECEPTACLES FOR EQUIPMENT AS PER EQUIPMENT MANUFACTURER'S RECOMMENDATION. OWNER TO PROVIDE CUT SHEETS FOR ALL EQUIPMENT REQUIRING SPECIAL RECEPTACLES.

ELECTRICAL NEW WORK KEYED NOTES

E01 THE FOLLOWING ARE OWNER PROVIDED AND INSTALLED BY UTILITY. NEW ELECTRICAL SERVICE INCLUDING POWER POLE AND METER, SECONDARY CONDUIT FROM TRANSFORMER, TRANSFORMER, GROUNDING ELECTRODES AT TRANSFORMER, AND METERING EQUIPMENT ENCLOSURES. COORDINATE WITH ELECTRICAL UTILITY WHEN CONNECTING TO NEW ELECTRIC SERVICE.

E03 BURY NEW CONDUITS A MINIMUM OF 36" BELOW GRADE.

E12 APPROXIMATE LOCATION OF GROUND ROD. SEE SINGLE LINE DIAGRAM ON SHEET E2.1 FOR MORE DETAILS.

E22 LOCATION OF OWNER PROVIDED DATA ENTRANCE TO BUILDING FROM BELOW GROUND.

E32 COORDINATE ROUTING OF BURIED CONDUIT WITH FOUNDATION, CIVIL AND PLUMBING CONTRACTORS.

E93 MOUNT DISCONNECT ON OUTSIDE OF BUILDING.

GENERAL MECHANICAL NOTES

1. REFER TO SHEET M1.1 FOR GENERAL NOTES AND LEGENDS.
2. PERFORM ALL WORK IN ACCORDANCE WITH LOCAL CODES.
3. ALL PENETRATIONS OF THE ROOF SHALL BE SHIELDED AND SEALED IN COMPLIANCE WITH REQUIREMENTS OF THE ROOF MFGR AND OWNER'S ROOFING SPECIALIST.
4. FIRE SEAL ALL PENETRATIONS OF FIRE RATED CONSTRUCTION TO PRESERVE THE FIRE RATING. CONFIRM WALL RATINGS WITH OWNER. FOR BIDDING, ASSUME THAT CORRIDOR WALLS ARE RATED ONE HOUR.
5. TESTING, ADJUSTING, AND BALANCING (TAB) WORK FOR HVAC SYSTEMS WITHIN THE SCOPE OF WORK IS REQUIRED FOR PROJECT ACCEPTANCE. REFERENCE SPECIFICATIONS.
6. ALL DUCTWORK SHALL BE SHEET METAL CONSTRUCTED & SUPPORTED IN ACCORDANCE WITH THE LATEST EDITION OF SHEET METAL & AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. (SMACNA) STANDARD "HVAC DUCT CONSTRUCTION STANDARDS, METAL & FLEXIBLE".
7. DETAILED DIMENSIONED SHOP DRAWINGS SHALL BE PREPARED AND SUBMITTED (MANDATORY REQUIREMENT) BY CONTRACTOR FOR REVIEW AND APPROVAL BY ENGINEER AND OWNER.

MECHANICAL NEW WORK KEYED NOTES

M72 APPROXIMATE LOCATION OF NEW HVAC OUTDOOR UNITS.

GENERAL PLUMBING NOTES

1. REFER TO SHEET P1.1 FOR GENERAL NOTES AND LEGENDS.

PLUMBING NEW WORK KEYED NOTES

P32 APPROXIMATE LOCATION OF PLUMBING VENTS. COORDINATE WITH ROOFING MANUFACTURER FOR PROPER INSTALLATION FOR METAL ROOF.

P33 APPROXIMATE LOCATION OF DOMESTIC WATER LINE. COORDINATE WITH CIVIL.

P34 APPROXIMATE LOCATION OF WASTE LINE. COORDINATE WITH CIVIL.

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LICENSED PROFESSIONAL ENGINEER
05/12/2025

PRICINCT 2 ROAD AND BRIDGE FACILITY
BASTROP COUNTY
911 SE MARTIN LUTHER KING BLVD
SMITHVILLE TX, 78957

MEP SITE AND ROOF PLAN

SHEET TITLE:

REVISIONS:		
NO.		DATE
1	PERMIT/OWNER REVISIONS	5/12/2025

Job No:	T2414
Drawn by:	TO
Checked by:	TS/SK/EB
Sheet No.	MEP1
Date:	APRIL 2025

MECHANICAL ABBREVIATIONS

A		
	A/C	AIR CONDITIONING
	ACCU	AIR COOLED CONDENSOR UNIT
	AD	ACCESS DOOR
	AFF	ABOVE FINISHED FLOOR
	AFC	ABOVE FINISHED CEILING
	AFG	ABOVE FINISHED GRADE
	AHU	AIR HANDLING UNIT
	AI	ANALOG IN
	AO	ANALOG OUT
	AP	ACCESS PANEL
	AS	AIR SEPARATOR
	APPROX	APPROXIMATE
	AUX	AUXILARY
B		
	BAS	BUILDING AUTOMATION SYSTEM
	BACNET	BACNET CONTROL PROTOCOL
	BFF	BELOW FINISHED FLOOR
	BFG	BELOW FINISHED GRADE
	BFS	BELOW FINISHED SLAB
	BFG	BELOW FINISHED GRADE
	BFP	BACKFLOW PREVENTER
	BLDG	BUILDING
	BLR	BOILER
	BOD	BOTTOM OF DUCT
	BTU	BRITISH THERMAL UNIT
	BTUH	BRITISH THERMAL UNIT PER HOUR
C		
	CD	COLD DECK OR CONDENSATE DRAIN
	CFH	CUBIC FEET PER HOUR
	CFM	CUBIC FEET PER MINUTE
	CH	CHILLER
	CHW	CHILLED WATER
	CHWP	CHILLED WATER PUMP
	CHWR	CHILLED WATER RETURN
	CHWS	CHILLED WATER SUPPLY
	CI	CAST IRON
	CLG	CEILING
	COD	CENTER OF DUCT
	CO	CLEANOUT
	COND	CONDENSATE
	CP	CIRCULATING PUMP
	CT	COOLING TOWER OR CURRENT TRANSFORMER
	CTRL	CONTROL
	CU	COPPER
	CV	CONSTANT VOLUME
	CW	CONDENSER WATER
	CWP	CONDENSER WATER PUMP
	CWR	CONDENSER WATER RETURN
	CWS	CONDENSER WATER SUPPLY
D		
	DA	DISCHARGE AIR
	DB	DRY BULB
	DCW	DOMESTIC COLD WATER
	DDC	DIRECT DIGITAL CONTROL
	DHW	DOMESTIC HOT WATER
	DI	DUCTILE IRON
	DIA	DIAMETER
	DN	DOWN
	DO	DISCRETE OUT, DIGITAL OUT
	DP	DIFFERENTIAL PRESSURE
	DTB	DROP TO BELOW
	DX	DIRECT EXPANSION
E		
	EA	EACH, OR EXHAUST AIR
	EAT	ENTERING AIR TEMPERATURE
	EDH	ELECTRIC DUCT HEATER
	EF	EXHAUST FAN
	EMS	ENERGY MANAGEMENT SYSTEM
	ERV	ENERGY RECOVERY VENTILATOR
	ETR	EXISTING TO REMAIN
	EVAP	EVAPORATOR
	EWT	ENTERING WATER TEMPERATURE
	EWH	ELECTRIC WATER HEATER
	EXH	EXHAUST
	EXT	EXTERNAL
F		
	FCU	FAN COIL UNIT
	FD	FIRE DAMPER/FLOOR DRAIN
	FH	FIRE HYDRANT
	FLR	FLOOR
	FPM	FEET PER MINUTE
	FPTU	FAN POWERED TERMINAL UNIT
	FS	FLOOR SINK
	FSD	FIRE/SMOKE DAMPER
	FT	FEET/FOOT
G		
	GAL	GALLONS
	GC	GENERAL/PRIME CONTRACTOR
	GEN	GENERAL
	GPH	GALLONS PER HOUR
	GPM	GALLONS PER MINUTE
H		
	HHW	HEATING HOT WATER
	HP	HORSEPOWER
	HR	HOUR
	HRU	HEAT RECOVERY UNIT
	HRV	HEAT RECOVERY VENTILATOR
	HTG	HEATING
	HUM	HUMIDITY
	HW	HOT WATER
	HWR	HOT WATER RETURN
	HWS	HOT WATER SUPPLY
	HX	HEAT EXCHANGER
	HZ	HERTZ
I		
	IN	INCHES
	IOM OR I.O.M	INSTALLATION & OPERATION MANUAL
K		
	K	KILO
	KW	KILOWATTS
L		
	LAN	LOCAL AREA NETWORK
	LAT	LEAVING AIR TEMPERATURE
	LBS	POUNDS
	LON	LONWORKS CONTROL PROTOCOL
	LTG	LIGHTING
	LWT	LEAVING WATER TEMPERATURE
M		
	MA	MIXED AIR
	MAU	MAKE-UP AIR UNIT
	MAX	MAXIMUM
	MBH	THOUSAND BTU'S PER HR.
	MIN	MINIMUM
	MZ	MULTI-ZONE
N		
	NA	NOT APPLICABLE
	NC	NORMALLY CLOSED
	NG	NATURAL GAS
	NO	NORMALLY OPEN
O		
	OA	OUTSIDE AIR
	OAH	OUTSIDE AIR HUMIDITY
	OAT	OUTSIDE AIR TEMPERATURE
	OBD	OPPOSED BLADE DAMPER
	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
P		
	PD	PRESSURE DROP
	PPG	PIPING
	PSI	POUNDS PER SQUARE INCH
	PWM	PULSE WIDTH MODULATION
Q		
	QTY	QUANTITY
R		
	RA	RETURN AIR
	RAT	RETURN AIR TEMPERATURE
	REF	REFERENCE
	RF	RELIEF FAN OR RETURN FAN
	RFB	RISE FROM BELOW
	RH	RELATIVE HUMIDITY
	RM	ROOM
	RPZA	REDUCED PRESSURE ZONE ASSEMBLY
	RTA	RISE TO ABOVE
	RTU	ROOF TOP UNIT
S		
	SA	SUPPLY AIR
	SD	SMOKE DETECTOR, OR SINGLE DUCT
	SF	SUPPLY FAN
	SP	STATIC PRESSURE
	STPT	SETPOINT
	S/S	START/STOP
	SW	SANITARY WASTE
	SZ	SINGLE ZONE
T		
	TEMP	TEMPERATURE
	TU	TERMINAL UNIT
	TYP	TYPICAL
U		
	UH	UNIT HEATER
	UON	UNLESS OTHERWISE NOTED
	UV	UNIT VENTILATOR
V		
	V	VENT/VOLTS
	VAC	VOLTS ALTERNATING CURRENT
	VAV	VARIABLE AIR VOLUME
	VFD	VARIABLE FREQUENCY DRIVE
	VRF	VARIABLE REFRIGERANT FLOW
	VTR	VENT THRU ROOF
W		
	W	WATTS
	W/	WITH
	WB	WET BULB
	WG	WATER GAUGE
	WP	WEATHERPROOF
X		
	XT	EXPANSION TANK
Z		
	ZN	ZONE

AIR DISTRIBUTION LEGEND

- SUPPLY AIR DIFFUSER
- RETURN GRILLE/REGISTER
- EXHAUST GRILLE/REGISTER
- SUPPLY DIFFUSER W/ FLEX DUCT
- ROUND SUPPLY DIFFUSER
- SIDEWALL SUPPLY, RETURN OR EXHAUST GRILLE THRU WALL
- SLOT DIFFUSER
- DIFFUSER TAG (S1 / CFM / L"/W")
- DUCT SIZE TAG W/D (12"/12")
- DUCT HEATER
- RECTANGULAR ACCESS DOOR (SIDE VIEW) (AD)
- RECTANGULAR ACCESS DOOR (TOP VIEW) (AD)
- CIRCULAR ACCESS DOOR (TOP VIEW) (AD)
- PARRALLEL BLADE CONTROL DAMPER
- MOTORIZED CONTROL DAMPER
- MANUAL BALANCING DAMPER
- MANUAL BALANCING DAMPER
- FIRE SMOKE DAMPER (FSD-X; X = RATING 1 = 1 HR)
- BACK DRAFT (GRAVITY) DAMPER
- BAROMETRIC PRESSURE RELIEF DAMPER
- 90 DEGREE RADIAL ELBOW
- 45 DEGREE RADIAL ELBOW
- 90 DEGREE DUCT ELBOW WITH TURNING VANES
- RECTANGULAR DUCT TEE
- ROUND DUCT TEE
- DUCT END CAP
- RECTANGULAR TO ROUND TRANSITION (12"/12" 12"ø)
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- 45 DEGREE BOOT TAP WITH BALANCING DAMPER
- DUCT 16" WIDE & 12" DEEP. (16"/12")
- RECTANGULAR ELBOW UP
- RECTANGULAR ELBOW DOWN
- RECTANGULAR DUCT RISE
- RECTANGULAR DUCT DROP
- ROUND DUCT RISE
- ROUND DUCT DROP
- NEW DUCTWORK
- EXISTING DUCTWORK
- DEMOLISHED DUCTWORK

HYDRONIC PIPING LEGEND

SINGLE LINE	DESCRIPTION	SINGLE LINE	DESCRIPTION
	ELBOW DOWN		HOSE BIBB W/ FREEZE PROTECTION
	ELBOW UP		VALVE IN VERTICAL
	TEE DOWN		VALVE IN VERTICAL
	45° OFFSET		GENERIC ISOLATION VALVE (FILL INDICATES NORMALLY CLOSED)
	PIPE CONTINUATION		GENERIC ISOLATION VALVE (FILL INDICATES NORMALLY CLOSED)
	END CAP OR PLUG		GATE VALVE
	REDUCER		VALVE IN BOX
	UNION		2-WAY CONTROL VALVE
	THREADED UNION		3-WAY CONTROL VALVE
	FLANGED UNION		THERMOSTATIC MIXING VALVE
	PIPE SLEEVE		3-WAY VALE
	COMBINATION WYE & 1/8 BEND		CHECK VALVE
	DOUBLE-WYE & 1/8 BEND		BALL VALVE (FILLED CENTER INDICATES NORMALLY CLOSED)
	SINGLE WYE		BUTTERFLY VALVE (FILLED CENTER INDICATES NORMALLY CLOSED)
	VENT STACK WYE		BALANCING VALVE
	IN-LINE CLEAN OUT		PLUG VALVE
	WALL CLEAN OUT		RELIEF (X=TYPE) T = TEMPERATURE P=PRESSURE T&P= TEMPERATURE & PRESSURE
	FLOOR CLEAN OUT GRADE CLEAN OUT		SAFETY RELIEF VALVE
	TWO-WAY CLEAN OUT		PRESSURE REDUCING VALVE
	FLOOR DRAIN		PRESSURE REGULATOR (X=TYPE: G=GAS/A=AIR/W=WATER)
	BTU METER		PRESSURE REGULATING VALVE
	FLOW SWITCH		BACKFLOW PREVENTION ASSEMBLY
	AUTO AIR VENT		WYE STRAINER W/ BLOW OFF
	AIR VENT		PUMP
	BAS SENSOR IN WELL (X=TYPE) T = TEMPERATURE P=PRESSURE DP= DIFFERENTIAL PRESSURE		
	FIXTURE VALVE		

GENERAL LEGEND

- POINT OF CONNECTION NEW TO EXISTING OR DISCONNECTION DEMO FROM EXISTING. MAY NOT BE INDICATED AT ALL SUCH POINTS. CROSS REF W/ LINE-WEIGHT AND STYLE CONVENTIONS AT RIGHT.
- 1 REVISION CLOUD & MARKER
- DETAIL REFERENCE (3 / M1)
- BOUNDARY MARKS
- SHEET REFERENCE
- BREAK MARK
- PHOTO OR AXON VIEW REFERENCE (3 / M1)
- APPROX. AXONOMETRIC VIEWING LOCATION & DIRECTION
- SHEET REFERENCE

- 1 NEW WORK KEYED NOTE
- 1 DEMOLITION KEYED NOTE
- 1 DETAIL KEYED NOTE
- 1 MISC. KEYED NOTE
- AREA " " / AREA " " MATCHLINE
- (N) - NEW WORK
- (X) - DEMOLITION
- (R) - RELOCATE/REINSTALL
- (E) - EXISTING, REMAINS

NOTE: PHASING NOTATIONS, e.g. (N), (E), etc. MAY NOT NECESSARILY BE INDICATED ON ALL ITEMS. CROSS REF WITH LINE-WEIGHT AND STYLE CONVENTIONS ABOVE.

DUCTWORK CONNECTION SCHEDULE

CFM RANGE	FLEXIBLE DUCT DIAMETER (IN.)	RECTANGULAR DUCT RUNOUT (IN.)
UP TO 120	6"	8" x 8"
121 TO 230	8"	8" x 10"
231 TO 350	10"	8" x 12"
351 TO 525	12"	10" x 14"

DUCTWORK CONNECTION SCHEDULE NOTES:

1. MAXIMUM LENGTH OF FLEX DUCT NOT TO EXCEED 5 FEET.
2. RECTANGULAR RUN OUT DIMENSIONS ARE FOR REFERENCE ONLY, DIMENSIONS MAY BE ADJUSTED TO PROVIDE EQUIVALENT AREA AS REQUIRED.
3. REF: GENERAL AND KEYED NOTES.

GENERAL MECHANICAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL CODES & STANDARDS. CRAFTSMANSHIP AND MATERIAL SHALL BE OF THE FINEST QUALITY.
2. REFER TO SPECIFICATION DIVISION 23 FOR ADDITIONAL INFORMATION REGARDING THE PROJECT. THE DRAWINGS AND THE SPECIFICATIONS ARE BOTH INCLUDED IN THE CONTRACT DOCUMENTS.
3. ALL DUCTWORK SHALL BE CONSTRUCTED & SUPPORTED IN ACCORDANCE WITH THE LATEST EDITION OF SHEET METAL & AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. STANDARD "HVAC DUCT CONSTRUCTION STANDARDS, METAL & FLEXIBLE".
4. UNLESS NOTED OTHERWISE, ALL CAPACITIES INDICATED ARE AT SITE CONDITIONS. ALL EQUIPMENT SHALL BE ADJUSTED, MODIFIED, AND ORDERED TO ACCOMMODATE SITE CONDITIONS.
5. THE CONTRACTOR SHALL REVIEW THE CONTRACT DOCUMENTS FULLY PRIOR TO THE SUBMITTAL PHASE OF THE PROJECT. CONFLICTS WITHIN AND BETWEEN THE CONTRACT DOCUMENTS SHALL BE NOTED IN WRITING TO THE ENGINEER PRIOR TO SUBMITTING DATA SHEETS FOR REVIEW.
6. IT IS THE INTENT OF THE DRAWINGS TO SHOW A COMPLETE DESIGN IN EVERY RESPECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A COMPLETE AND FULLY FUNCTIONAL INSTALLATION. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK BETWEEN SUBCONTRACTORS TO ASSURE THAT THE INSTALLATION WILL BE COMPLETE WITHOUT ADDITIONAL COST TO THE CONTRACT.
7. BRANCH DUCTS SERVING DIFFUSERS SHALL BE THE SAME SIZE AS THE DIFFUSER NECK UNLESS NOTED OTHERWISE.
8. THE MAX. ALLOWABLE FLEXIBLE DUCT LENGTH IS 5'-0". ADDITIONAL LENGTHS SHALL BE COMPENSATED BY ROUND SHEET METAL DUCTWORK OF EQUAL SIZE, UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS.
9. SLOPE ALL CONDENSATE DRAINAGE TOWARDS THE DISCHARGE AT 1/8" DROP PER 12" HORIZONTAL RUN WHEREVER POSSIBLE, BUT IN NO CASE LESS THAN A MIN. OF 1/16" DROP PER 12" HORIZONTAL RUN, UNLESS NOTED OTHERWISE.
10. MOUNT ALL CONTROLS INTENTED FOR GENERAL OCCUPANT USE, SUCH AS SWITCHES AND THERMOSTATS, IN ACCORDANCE WITH AMERICANS WITH DISABILITIES ACT STANDARDS OF 48" A.F.F. FRONT REACH AND 54" A.F.F. SIDE REACH. UNLESS NOTED OTHERWISE. CONTROLS WITH RESTRICTED ACCESS SHALL BE MOUNTED 60" A.F.F., REFERENCE ARCHITECTURAL PLANS FOR EXACT MOUNTING HEIGHTS OR CONFIRM WITH OWNER.
11. MAINTAIN MIN. CLEARANCES IN FRONT OF ALL CONTROL AND ELECTRIC PANELS ON EQUIPMENT SUCH AS FANS, AIR TERMINAL UNITS, ETC. IN ACCORDANCE WITH THE FOLLOWING: 120/208V = 36", 277/480V = 48". WHERE FACTORY MOUNTED PANELS DO NOT ALLOW ADEQUATE CLEARANCE, COORDINATE WITH ELECTRICAL CONTRACTOR TO RELOCATE & REMOUNT AS REQUIRED. ALL FACTORY WARRANTEES SHALL BE MAINTAINED.
12. MOUNT ALL INSTRUMENTS AND GAGES TO ALLOW OBSERVATION OF READINGS FROM THE FLOOR LEVEL.
13. BE AWARE OF UNDERGROUND UTILITIES IN THE AREA.
14. PROVIDE VALVE HANDLE EXTENSIONS AS REQUIRED TO ACCOMMODATE INSULATION. VALVE HANDLE ACTUATION SHALL NOT DISTURB INSULATION.
15. BOTH THE SUBCONTRACTOR FOREMAN AND PRIME CONTRACTOR FOREMAN SHALL VISUALLY INSPECT THE QUALITY & COMPLETENESS OF INSTALLATION PRIOR TO REQUESTING A FIELD OBSERVATION BY THE ENGINEER. PROVIDE A MIN. OF 24 HOUR WRITTEN NOTICE TO THE ENGINEER PRIOR TO ANY FIELD OBSERVATION REQUIREMENTS.
16. COORDINATE THE INSTALLATION OF DUCTWORK & CEILING DIFFUSERS WITH THE STRUCTURE, LIGHTS, & CEILING GRID. WHERE THE ALTERATION OF DUCT SIZES ARE NECESSARY, MAINTAIN CROSS-SECTIONAL FREE AIR AREAS. IF RATIO OF LARGE/SMALL DUCT DIMENSIONS INCREASES BY 50% OR MORE, OBTAIN ENGINEER'S APPROVAL BEFORE FABRICATION.
17. INSTALL EQUIPMENT TO MINIMIZE SOUND OR NOISE TRANSMISSION TO OCCUPIED SPACES.
18. ALL EQUIPMENT, FIXTURES, PIPING, AND DUCTWORK SHALL BE INSTALLED PARALLEL TO BUILDING LINES U.O.N.
19. ALL VALVE & DAMPER ACTUATORS AND INSTRUMENT SETTING DEVICES SHALL BE INSTALLED TO ALLOW ADJUSTMENT WHILE VISIBLE TO THE PERSON MAKING ADJUSTMENTS.
20. SCHEDULING SHALL BE CLOSELY COORDINATED WITH THE OWNER, & NO WORK SHALL PROCEED WITHOUT AN OWNER APPROVED SCHEDULE. WORK SHALL BE DONE SO AS TO MINIMIZE DISRUPTIONS TO BLDG. ACTIVITIES. SCHEDULE ALL SHUTDOWNS AT LEAST 48 HOURS IN ADVANCE WITH OWNER IN WRITING. REFER TO SPECIFICATIONS FOR AREAS REQUIRING SPECIAL ACCESS, SCHEDULING, AND/OR SECURITY.
21. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES. CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE PRIME CONTRACTOR, ARCHITECT/ENGINEER AND AS NECESSARY, THE OWNER.
22. TEST, ADJUST AND BALANCE HVAC SYSTEMS AFTER INSTALLATION.
23. TURN OVER ALL EQUIPMENT & MATERIAL, OPERATING AND MAINTENANCE (O&M) MANUALS TO OWNER WITHIN 30 DAYS AFTER INSTALLATION IS COMPLETE.
24. KEEP DUCTWORK AND PIPING INTERIORS CLEAN AND FREE OF DEBRIS THROUGHOUT THE PROJECT. CAP ALL PIPING & DUCTWORK EXPOSED TO THE ELEMENTS DURING THE DURATION OF CONSTRUCTION.
25. EQUIPMENT OR MATERIAL SUBSTITUTED AS APPROVED EQUAL TO THAT SHOWN ON THE PLANS & SPECIFICATIONS SHALL BE COMPATIBLE IN EVERY RESPECT. ANY CHANGES OR MODIFICATIONS REQUIRED TO ACCOMMODATE THE SUBSTITUTE ITEMS SHALL BE MADE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
26. IMPORTANT: ALL HVAC AIR DUCT DIMENSIONS ARE INSIDE FREE AIR DIMENSIONS. ALL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS DESCRIBED IN THE LATEST EDITION OF ASHRAE, SMACNA, & LOCAL CODES.
27. ALL EXTERNAL INSULATION SHALL BE A MIN. OF 2" THICK UNLESS OTHERWISE NOTED. REFERENCE DIV. 23 SPECIFICATIONS FOR DENSITY, VAPOR BARRIER, SEALANT AND OTHER REQUIREMENTS. INSULATION MUST MEET OR EXCEED CURRENT APPLICABLE ENERGY CODE REQUIREMENTS.
28. USE TURNING VANES AT TEES AND ELBOWS AS REQUIRED. PROVIDE VOLUME DAMPERS ON ALL RETURN AIR & OUTSIDE AIR DUCTS TO THE UNIT. PROVIDED THERE IS ADEQUATE SPACE, SUPPLY AIR MAY USE A 1.5 TIMES RADIUS ELBOW IN LIEU OF TURNING VANES.
29. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD. VERIFY AT JOB SITE EXACT LOCATION OF STRUCTURAL MEMBRANE & FIREWALL LOCATION. PROVIDE FIREPROOFING AND INSTALL FIRE/SMOKE DAMPERS AS REQUIRED.
30. ALL AHU'S SHALL SHUT DOWN WHEN A FIRE IS DETECTED. SYSTEMS WITH 2000 CFM OR GREATER SUPPLY AIR (BASED ON SUM OF ALL UNITS SERVING A COMMON SPACE OR SHARING ANY SUPPLY OR RETURN DUCTS) SHALL HAVE SMOKE DETECTORS IN THE SUPPLY DUCT(S) PER NFPA 72. COORDINATE ALL REQUIREMENTS WITH THE FIRE ALARM CONTRACTOR AS REQUIRED.
31. WHERE EXISTING SPRAY-APPLIED FIRE RESISTIVE MATERIAL (SFRM) ON BUILDING STRUCTURE IS DISTURBED TO RECEIVE HANGERS, FASTENERS, ETC. UNDER THE PROJECT, PATCH WITH APPROVED LISTED HAND-APPLIED PATCH PRODUCT TO MAINTAIN FIRE RESISTIVE RATING.
32. VERIFY THE EXACT LOCATION OF ALL STRUCTURAL MEMBERS AT THE JOB SITE, TO LOCATE EQUIPMENT AND DUCTWORK. VERIFY THE LOCATION OF OUTDOOR EQUIPMENT AS REQUIRED. MAINTAIN CLEARANCE AS REQUIRED FOR ROUTINE MAINTENANCE & EQUIPMENT CHANGE OUT.
33. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL FIRE/SMOKE DAMPER(S) AS INDICATED. THE FIRE ALARM CONTRACTOR SHALL CONNECT THE DAMPER TO THE FIRE ALARM SYSTEM. THE FIRE ALARM CONTRACTOR SHALL FURNISH THE DUCT MOUNTED SMOKE DETECTOR, THE MECHANICAL CONTRACTOR SHALL INSTALL THE DUCT MOUNTED SMOKE DETECTOR & THE FIRE ALARM CONTRACTOR SHALL CONNECT THE DETECTOR TO THE FIRE ALARM SYSTEM. ALL ELECTRICAL POWER WIRING TO BE INSTALLED BY ELECTRICAL CONTRACTOR.
34. ALL CABLING ABOVE CEILINGS (CONTROLS, DATA, SPECIAL SYSTEMS) SHALL BE SUPPORTED WITH ACCEPTABLE DEVICES SUCH AS J-HOOKS OR BRACES TO PREVENT LOOSE WIRING FROM FALLING ON THE CEILING GRID.
35. UNLESS OTHERWISE NOTED, INTERNALLY LINE TEN FEET OF ALL DUCTWORK TO/FROM AHU's W/ 1" THICK ANTIMICROBIAL COATED MINERAL FIBER OR APPROVED EQUAL MATERIAL. USE LINER THAT IS EROSION AND MOLD RESISTANT, AS SPECIFIED. DUCT LINER TO MEET THE FOLLOWING MINIMUM STANDARDS: ASTM C1071, NFPA 90A, NFPA 90B, GREENGUARD CHILDREN AND SCHOOLS.

GENERAL DEMOLITION NOTES

1. FIELD VERIFY ALL EXISTING CONDITIONS, INCLUDING EQUIPMENT AND UTILITY SERVICE LOCATIONS, PRIOR TO START OF ANY WORK. VISIT JOB SITE PRIOR TO BIDDING TO VERIFY EXISTING CONDITIONS. NOTIFY GC AND ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND.
2. PERFORM ALL WORK AND DISPOSAL/RECYCLING IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, CODES, AND ORDINANCES.
3. KEEP THE CONSTRUCTION AREA CLEAN AT ALL TIMES. RESTORE ANY WORK SPACE TO WIPED-CLEAN STATUS BEFORE SCHEDULED OCCUPANCY BY OWNER.
4. COORDINATE WITH APPROPRIATE TRADES TO DISCONNECT RELATED SERVICES BEFORE DEMOLITION OF ANY ITEM. CLOSE AND TAG OUT WATER AND GAS VALVES. TAG AND LOCK OUT ELECTRICAL POWER. DISABLE AND DOCUMENT STATUS OF FIRE ALARM, SECURITY, AND CONTROL POINTS.
5. WHERE PIPING OR CONDUIT IS REMOVED, REMOVE ALL ANCILLARY SUPPORTS, VALVES, DEVICES AND CONNECTORS NOT TO BE REUSED.
6. OPENINGS IN WALLS, CEILINGS, FLOORS, AND ROOFS WHERE PENETRATING DUCTS, PIPES, ETC. ARE REMOVED BUT NOT REPLACED IN KIND, SHALL BE SHORED AND PATCHED WITH LIKE MATERIALS AND FINISH TO THE SURROUNDING SURFACE.
7. CAP & SEAL ANY PIPES LEFT OPEN-ENDED BY DEMOLITION.
8. REFERENCE HAZARDOUS MATERIAL ABATEMENT SPECIFICATIONS FOR IDENTIFICATION OF HAZARDOUS MATERIALS IN THE PROJECT AREA AND INSTRUCTIONS FOR SCOPE INVOLVED THEREWITH. DO NOT PROCEED WITH ANY WORK THAT MAY DISTURB ASBESTOS OR OTHER IDENTIFIED HAZARDOUS MATERIALS UNTIL ANY REQUIRED ABATEMENT HAS BEEN COMPLETED.

SCOPE DIRECTIVES GENERAL DEFINITIONS

1. "FURNISH" MEANS GENERALLY ONLY TO PURCHASE AND DELIVER A SPECIFIED ITEM TO ANOTHER ENTITY FOR FURTHER INSTALLATION.
2. "INSTALL" MEANS GENERALLY ONLY TO RECEIVE AN ITEM PURCHASED BY OTHERS AND INSTALL AS SPECIFIED.
3. "INSTALL," WHERE USED WITH AND IN CONTRAST TO "CONNECT," GENERALLY MEANS TO PHYSICALLY INSTALL A SPECIFIED ITEM (E.G. IN DUCTWORK OR PIPING), WITH CONNECTION OF SPECIFIED ANCILLARY UTILITIES (E.G. POWER, CONTROLS, ETC.) BY OTHERS.
4. "CONNECT," WHERE USED WITH AND IN CONTRAST TO "INSTALL," GENERALLY MEANS TO TERMINATE SPECIFIED ANCILLARY UTILITIES (E.G. POWER, CONTROLS, ETC.) TO AN ITEM PURCHASED AND PHYSICALLY INSTALLED BY A SEPARATE ENTITY OR ENTITIES.
5. "PROVIDE" MEANS GENERALLY TURNKEY FURNISHMENT AND INSTALLATION OF A SPECIFIED ITEM, PLUS ALL ANCILLARY CONNECTIONS AS REQUIRED.
6. WHERE THE DOCUMENTS DIRECT TO "COORDINATE" WORK WITH ANOTHER TRADE OR PARTY, THE CURRENT TRADE IS NOT NECESSARILY RESPONSIBLE FOR INITIATING SUCH WORK, BUT IS RESPONSIBLE FOR CONFIRMING AND ADVISING OF CROSS-TRADE DIMENSIONAL, CLEARANCE, ROUGH-IN, ELECTRICAL, SUPPORT, ET AL REQUIREMENTS OF SAID WORK PRIOR TO START IN ORDER TO AVOID CONFLICTS IN THE FIELD.
7. WHERE THE DOCUMENTS DIRECT TO "ENGAGE" ANOTHER TRADE OR PARTY FOR A GIVEN SCOPE OF WORK, THE CURRENT TRADE IS GENERALLY RESPONSIBLE FOR INITIATING AND ENSURING COMPLETION OF SAID WORK, EVEN IF NOT DIRECTLY PERFORMING IT, UNLESS OTHERWISE ARRANGED WITH THE GC/PRIME.
8. WHERE WORK IS NOTED TO BE "BY OTHERS", "BY GC/PRIME CONTRACTOR", OR "BY DIV-X/X CONTRACTOR" (WHERE 'X' IS SOME SEPARATE TRADE), SAID WORK IS SO NOTED FOR COORDINATION PURPOSES AND TO ALERT THE PRIME CONTRACTOR THERETO. SAID WORK MAY OR MAY NOT BE FURTHER DEFINED ELSEWHERE IN THE DOCUMENTS. UNLESS SAID WORK IS SPECIFICALLY NOTED TO BE "NOT IN CONTRACT (N.I.C.)", "UNDER SEPARATE CONTRACT" OR "BY OWNER", THE PRIME CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR ASSIGNING AND COMPLETING THE WORK PER APPLICABLE CODES, THE PLANS AND SPECIFICATIONS, AND INDUSTRY STANDARDS ACCORDING TO THEIR OWN MEANS AND METHODS.

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MECHANICAL GENERAL NOTES AND LEGENDS

SHEET TITLE:

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SPLIT-DX INDOOR FAN COIL UNIT (FCU) SCHEDULE

UNIT MARK	TYPE	LOCATION	SUPPLY CFM	OA	SUPPLY FAN E.S.P. "WG	SUPPLY FAN HP (QTY)	DX COOLING COIL CAPACITY (MBH) TOTAL	DX COOLING COIL CAPACITY (MBH) SENS	E.D.B. (°F)	E.W.B. (°F)	L.D.B. (°F)	L.W.B. (°F)	HEAT PUMP PERFORMANCE HEATING AT 47/17 F OUTDOOR (°F)	HEAT PUMP PERFORMANCE MBH @47°F / COP	HEAT PUMP PERFORMANCE MBH @17°F / COP	AUX ELEC. HTG KW	SINGLE PT. ELECTRICAL VAC / PH	MCA	MOCP	APPROX. WEIGHT (LBs)	BASIS OF DESIGN MODEL (MFGR: TRANE)	FOOT NOTES
FCU-1 (FOREMAN OFFICES, LOCKER ROOM AND RESTROOM)	CONCEILED DUCT	ABOVE OFFICE CEILING	875	209	0.6, SELECTABLE	121 W	30	21	79.8	68.0	57.6	57.5	70 / 70	34 / 3.3	18 / 2.6	-	POWERED BY OUTDOOR			67	PEAD-AA30NL	3, 4, 6
FCU-2-1 (WORKSHOP AREA)	HORIZONTAL	ABOVE OFFICE CEILING	535	535	1.00	278 BHP (1)	37	28	104.0	75.0	55.5	54.6	NA	NA	NA	DUCT MOUNTED	240/60/1	5.3	15	150	BCHE024	1,2,5,6,7,8
FCU-2-2 (WORKSHOP AREA)	HORIZONTAL	ABOVE OFFICE CEILING	535	535	1.00	278 BHP (1)	37	28	104.0	75.0	55.5	54.6	NA	NA	NA	DUCT MOUNTED	240/60/1	5.3	15	150	BCHE024	1,2,5,6,7,8
FCU-3 (BREAK ROOM, MECH OFFICE)	CONCEILED DUCT	ABOVE OFFICE CEILING	875	209	0.6, SELECTABLE	121 W	30	21	79.8	68.0	57.6	57.5	70 / 70	34	18 / 2.6	-	POWERED BY OUTDOOR			67	PEAD-AA30NL	3, 4, 6

FCU SCHEDULE GENERAL NOTES

G1 PROVIDE ITEM SCHEDULED (BASIS OF DESIGN TRANE) OR APPROVED EQUAL BY LENNOX, CARRIER OR LG. EQUIPMENT SUBMITTED AS APPROVED EQUAL VARIANTS TO THE BASIS OF DESIGN SHALL BE EQUAL IN ALL RESPECTS. ALL STRUCTURAL, ELECTRICAL, PIPING, DUCTWORK, CONTROLS, AND ARCHITECTURAL MODIFICATIONS REQUIRED TO ACCOMMODATE SAID VARIANTS SHALL BE INCLUDED IN THE PRIME CONTRACTOR'S BID PRICE.
G2 SYSTEM EFFICIENCY TO MEET OR EXCEED AS NOTED ON CONDENSING UNIT SCHEDULE.
G3 PROVIDE 5-YEAR EXTENDED WARRANTY ON ENTIRE UNIT (PARTS, LABOR, & REFRIGERANT) FROM THE DATE OF PROJECT SUBSTANTIAL COMPLETION.
G4 PROVIDE WITH TXV AND ALL REQUIRED REFRIGERANT ACCESSORIES. REFRIGERANT LINE SIZING AND OIL RETURN TRAPS AS PER MANUFACTURER'S INSTRUCTIONS.
G5 COPPER TUBE COILS WITH ALUMINUM FINS. MAXIMUM 450 FPM COOLING COIL FACE VELOCITY.
G6 THIS NOTE NOT USED.
G7 INDOOR FAN FOR UNITS LESS THAN 6 TONS SHALL HAVE DIRECT DRIVE EC MOTOR.
G8 A DETAILED SHOP DRAWING DEMONSTRATING MAINTENANCE CLEARANCES TO BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
G9 PROVIDE W/ 2" MERV13 EZ FILTER BASE. (TWO SETS, ONE FOR CONSTRUCTION PHASE AND ONE AT JOB ACCEPTANCE BY OWNER)
G10 INDOOR SUMMER CONDITIONS: 74 F DB / 55% RH, INDOOR WINTER CONDITIONS: 69 F DB - UNLESS INDICATED OTHERWISE.
G11 PROVIDE WITH ACCESS PANELS FOR ALL ACCESS, FAN AND FILTER SECTIONS.

FCU SCHEDULE FOOTNOTES

1 SINGLE POINT ELECTRICAL CONNECTION FOR FAN AND HEAT. UNIT SHALL HAVE INTERNAL FLOW SWITCH SAFETY FOR HEAT ELEMENT ENERGIZATION GIVEN REMOTE ENABLE SIGNAL.
2 PROVIDE DUCT MOUNTED ELECTRIC HEATER
3 PROVIDE STAINLESS STEEL DRAIN PAN AND DRAIN PAN OVERFLOW SWITCH.
4 PROVIDE CONDENSATE DRAIN PUMP.
5 UNIT TO HAVE ONBOARD CONTROLLER WITH TOUCHSCREEN EQUAL TO TRANE SYMBIO 600 THAT WILL CONTROL FAN (START-STOP AND STATUS), COOLING STAGES, HEATER STAGES, SPACE TEMPERATURE AND HUMIDITY, MODULATING HOT GAS REHEAT VALVES, WITH REFRIGERANT TEMPERATURE SENSORS AND A2L REFRIGERANT MITIGATION SEQUANCE THAT MONITORS REFRIGERANT SENSORS AND UPON ALARM, STOPS HEAT AND COMPRESSORS AND ENGAGES FAN FOR 5 MINUTES BEFORE RESETTING TO NORMAL MOFE. ONBOARD CONTROLLER SHALL HAVE TOD CONTROLS. SPACE TEMPERATURE SENSOR SHALL HAVE A THUMBWHEEL FOR ADJUSTMENT.
6 PROVIDE PROGRAMMABLE THERMOSTAT SYSTEM.
7 PROVIDE MODULATING HOT GAS REHEAT SYSTEM.
8 PROVIDE ALL NECESSARY FACTORY ADAPTER BOARDS AND CONTROLLERS TO ENABLE UNIT TO CONTROL OUTSIDE AIR DAMPER, HOT GAS REHEAT, FREEEZSTAT, AND CONDENSOR STAGING.

AIR DEVICE SCHEDULE (FOR REFERENCE ONLY)

MARK	TYPE	MATERIAL	MOUNTING	SERVICE	MAKE, SERIES	NOTES
S1	CEILING DIFFUSER	STEEL	LAY-IN or surf.	SUPPLY	TITUS TMS	
S2	SUPPLY GRILL	ALUMINUM	DUCT	SUPPLY	TITUS 272FL	1,2,b
S4	CEILING DIFFUSER	ALUMINUM	DUCT	SUPPLY	TITUS TMS-AA	1,3
S10	DOUBLE DEFLECTION	STEEL	FLUSH, CEILING	SUPPLY	TITUS 272 RL	a,b
R1	CEILING GRILLE	ALUMINUM OR STEEL	LAY-IN	RETURN/TRANSFER	TITUS 50F	
R3	30 DEG DEFLECTION	STEEL	FLUSH, CEILING	RETURN	TITUS 23 RS	a,c
R4	SIDEWALL GRILL	STEEL	DUCT	RETURN	TITUS 25RL	1,2
E1	CEILING GRILLE	ALUMINUM OR STEEL	LAY-IN	EXHAUST	TITUS 50FF	
E2	CEILING GRILLE	ALUMINUM OR STEEL	LAY-IN OR SURF.	EXHAUST	TITUS 50F	

GENERAL NOTES FOR AIR DEVICES:

G1 DEVICE SHALL BE AS SCHEDULED, OR APPROVED EQUAL BY TITUS, METAL*AIRE, OR PRICE.
G2 SEE DRAWINGS FOR QUANITIES AND APPROXIMATE LOCATIONS.
G3 FOR GRILLES WITH NO MARK ON DRAWING, SUBMIT THE OBVIOUS TYPE OR OBTAIN CLARIFICATION.
G4 REFER TO ARCHITECTURAL DRAWINGS OR SCHEDULES TO DETERMINE TYPE OF CEILING. PROVIDE APPROPRIATE TRIM. FOR EXAMPLES, TITUS TYPE 1 FOR SURFACE, TYPE 3 FOR LAY-IN.
G5 UNLESS OTHERWISE NOTED, SELECT DEVICES FOR NC<30 AND FOR NECK VELOCITY < 700 FPM.
G6 SIZE DEVICE FACES AS INDICATED ON DRAWINGS. WHERE FEASIBLE, PROVIDE 24" X 24" FACE PANELS FOR LAY-IN CEILINGS. MODIFY T-BAR CEILING GRID WHERE REQUIRED.
G7 PROVIDE FINISH AS NOTED, OR AS SELECTED BY ARCHITECT FROM AMONG MANUFACTURER'S STANDARD PAINT FINISHES.

NUMBERED NOTES FOR AIR DEVICES:

1 PROVIDE W/ OPPOSED BLADE DAMPER (OBD) ADJUSTABLE THRU FACE.
2 PROVIDE ADJUSTABLE ACCESSORIES FOR INSTALLATION IN EXPOSED ROUND DUCT.
3 ALL-ALUMINUM CONSTRUCTION, WHITE PAINT FINISH.
4 HORIZONTAL FACE BLADES OR BARS.
T1 VAV DIFFUSER WITH INTEGRAL THERMOSTATIC FLOW RATE CONTROL, PLUS AUTOMATIC HEAT-COOL CHANGE-OVER BASED ON SUPPLY AIR TEMPERATURE.
T2 BALANCE AHU & DIFFUSER WITH DIFFUSER SET FOR MAX. COOLING AIRFLOW. SET MINIMUM AIRFLOW IF ONE IS SHOWN ON DRAWING.
a PAINTED STEEL, FLUSH FRAME, RIGID CONSTRUCITON, 3/4" BAR SPACING.
b DOUBLE DEFLECTION WITH LONG FACE BARS.
c FIXED 30 DEG DEFLECTION WITH SHORT FACE BARS.
d WHITE PAINTED ALUMINUM, ZERO DEGREE DEFLECTION WITH SHORT FACE BARS, RIGID CONSTRUCTION, 3/4" BAR SPACING.

SPLIT-DX CONDENSING UNIT (CU) AND HEAT PUMP (HP) SCHEDULE

MARK	MIN. STAGES	REFRIG'T	VAC/PH/HZ	MCA	MOCP	BASIS OF DESIGN (MFGR: TRANE)	MIN. (AHRI) SEER / EER	FOOT-NOTES
HPCU-1	MODULATING	R-454B	230 / 1/ 60	22	35	PUZ-A30NHA7	18.2 SEER2, 9.9 EER2	1,2,4,5
HPCU-3	MODULATING	R-454B	230 / 1/ 60	22	35	PUZ-A30NHA7	18.2 SEER2, 9.9 EER2	1,2,4,5
CU-2-1	1	R-454B	230 / 1/ 60	23	35	5TTR5048A	4.0 ISMRE	2,3,5
CU-2-2	1	R-454B	230 / 1/ 60	23	35	5TTR5048A	4.0 ISMRE	2,3,5

SCHEDULE GENERAL NOTES

G1 PROVIDE ITEM SCHEDULED OR APPROVED EQUAL BY CARRIER, LG, OR LENNOX. EQUIPMENT SUBMITTED AS APPROVED EQUAL VARIANTS TO THE BASIS OF DESIGN SHALL BE EQUAL IN ALL RESPECTS. ALL STRUCTURAL, ELECTRICAL, PIPING, DUCTWORK, CONTROLS, AND ARCHITECTURAL MODIFICATIONS REQUIRED TO ACCOMODATE SAID VARIANTS SHALL BE INCLUDED IN THE PRIME CONTRACTOR'S BID PRICE.
G2 ALL COMPRESSOR MOTORS SHALL BE INTERNALLY ISOLATED.
G3 PROVIDE 5-YEAR COMPREHENSIVE WARRANTY ON ENTIRE UNIT (PARTS, LABOR, & REFRIGERANT) FROM THE DATE OF SUBSTANTIAL COMPLETION.
G4 PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL TO 0F TIME DELAY RELAY, ANTI-SHORT CIRCUIT TIMER AND INSTALL ON NEOPRENE ISOLATORS.
G5 ALL REFRIGERANT PIPE SIZING, REFRIGERANT SPECIALTIES AND ROUTING IN ACCORDANCE WITH MFG APPROVED PROCEDURES.
G6 ENSURE MIN. REQUIRED MAINTENANCE AND AIRFLOW CLEARANCE RECOMMENDED BY MFG.
G7 EER AND SEER RATING IS FOR THE SYSTEM, MEANING INDOOR AND OUTDOOR UNIT.

SCHEDULE FOOT NOTES

1 PROVIDE UNIT WITH SCROLL COMPRESSOR UNLESS OTHERWISE NOTED.
2 PROVIDE WITH TERMINAL BLOCK ACCESSORY AS REQUIRED TO ACCEPT REMOTE FAN AND COMPRESSOR COMMANDS.
3 PROVIDE WITH MODULATING HOT GAS REHEAT.
4 INDOOR FAN SHALL NOT OPERATE WHILE IN DEFROST MODE.
5 PROVIDE UNIT WITH LOUVERED HAIL GUARDS PAINTED TO MATCH THE UNIT (WIRE GUARDS ARE NOT ACCEPTABLE).

INTAKE AND EXHAUST LOUVER SCHEDULE

MARK	LOCATION	CAPACITY UPTO (CFM)	WIDTH (in.)	HEIGHT (in.)	MANUFACTURER MODEL	MOUNT / FLOW	NOTES
L-1	SEE PLANS	535	22	18	RUSKIN ELF211D	WALL INTAKE	1,2,3,4,5,6
L-2	SEE PLANS	1,070	26	18	RUSKIN ELF211D	WALL EXHAUST	1,2,3,4,5,6
L-3	SEE PLANS	200	22	18	RUSKIN ELF211D	WALL EXHAUST	1,2,3,4,5,6
L-4	SEE PLANS	150	16	12	RUSKIN ELF151J	WALL EXHAUST	1,2,3,4,5,6

LOUVER NOTES:

1. PROVIDE MODEL SCHEDULED OR APPROVED EQUAL
2. MAXIMUM RAIN PENETRATION SHALL BE 0.01 OZ/FT^2 AT 803 FPM. LOUVER TO BE SELECTED AT MAX VELOCITY OF 550 FPM.
3. DOUBLE DRAINABLE TYPE WITH ALUMINUM INSECT SCREEN.
4. PROVIDE WITH ALL REQUIRED STRUCTURAL SUPPORTS.
5. REFERENCE PLANS FOR QUANTITY.
6. COORDINATE EXACT LOCATION AND FINISH WITH GC AND A/E. FOR BIDDING PURPOSES ASSUME BRONZE ANODIZED FINISH.

EXHAUST FAN SCHEDULE

FAN #	SERVES	TYPE	MOUNT	DISCHARGE	DRIVE	MAKE	MODEL	CFM	S.P. / W.P.	MAX FAN RPM	MOTOR MAX HP	MOTOR MAX RPM	MOTOR VOLT	MOTOR PH	MAX SONES	MAX WEIGHT	SWITCHING	FOOT-NOTES
E-R	RESTROOM	BATHROOM CEILING	CEILING	6"	DIRECT	GREENHECK	SP-A50-90-VG	70	0.5	838	<.01	838	120	1	2	12	WALL SWITCH, INTERLOCKED WITH LIGHTING	2,3,4
E-L	LOCKER ROOM	BATHROOM CEILING	CEILING	6"	DIRECT	GREENHECK	SP-A50-90-VG	70	0.5	838	<.01	838	120	1	2	12	WALL SWITCH, INTERLOCKED WITH LIGHTING	2,3,4
E-1	SHOP EXHAUST	INLINE	SUSPENDED	OUTDOOR	DIRECT	GREENHECK	SQ-100-VG	1070	0.3	1460	0.14	1460	120	1	7	-	INTERLOCKED WITH FCU-2-1,FCU-2-2	2,3,4
E-2	WAREHOUSE EXHAUST	INLINE	SUSPENDED	OUTDOOR	DIRECT	GREENHECK	SQ-80-VG	200	0.3	1288	0.03	1460	120	1	4.7	-	ON TIME SWITCH CORRESPONDING WITH OCCUPANCY	2,3,4

SCHEDULE GENERAL NOTES

G1 APPROVED EQUAL BY GREENHECK OR PENN.
G2 PREMIUM EFFICIENCY MOTORS WITH INTEGRAL THERMAL OVERLOAD PROTECTION.
G3 PROVIDE ALUMINUM BIRD-INSECT SCREENS. MIN. 70% FREE AREA.
G4 PROVIDE FACTORY-MOUNTED NEMA3R DISCONNECTS, PREWIRED TO MOTOR.
G5 PROVIDE STANDARD VIBRATION ISOLATION MOUNTS.

DL

SCHEDULE FOOT NOTES

1 PROVIDE FULLY WELDED 18" GALV. STEEL ROOF CURB WITH DAMPER TRAY AND BACKDRAFT DAMPER PER IECC 2021.
2 PROVIDE WITH PREWIRED FAN SPEED CONTROLLER AT THE FAN.
3 PROVIDE BACKDRAFT DAMPER.
4 SEE PLANS FOR QUANTITIES AND LOCATIONS

ELECTRIC UNIT HEATER SCHEDULE

MARK	EUH-2	EUH-3	EUH-4
SERVES	SHOP AREA	SHOP AREA	SHOP AREA
KW	10	10	10
VOLTS/PHASE/HERTZ	240/1/60	240/1/60	240/1/60
WATTS	10000	10000	10000
MCA	51.25	51.25	51.25
MANUFACTURER	KING	KING	KING
MODEL NO.	SKB	SKB	SKB
NOTES	1	1	1

NOTES:

1. SHALL INCLUDE BUILT-IN THERMOSTAT, FUSED CONTROL CIRCUIT, AND WALL BRACKET.

ELECTRIC DUCT HEATER (EDH) SCHEDULE

MARK	SERVES	CFM	POSITION	CAPACITY (KW)	STAGES	VAC / PH	MCA	MOCP	BASIS OF DESIGN MODEL	NOTES
EDH-2-1	FCU-2-1	535	DUCT	11	SCR	240 / 1	57.3	60	TUTCO FLIP-ABLE SLIP-IN	ALL
EDH-2-2	FCU-2-2	535	DUCT	11	SCR	240 / 1	57.3	60	TUTCO FLIP-ABLE SLIP-IN	ALL

GENERAL NOTES FOR EDH SCHEDULE

G1 OR APPROVED EQUAL BY INDEECO OR NAILOR.
G2 ALL WORK PER NEC AND NFPA, MOUNT IN ACCORDANCE WITH MFGR. INSTRUCTIONS.
G3 FAN INTERLOCK PER U.L. AND NEC, SUPPLY WITH FLOW PROOF SWITCH, FUSED DISCONNECT AND ALL ACCESSORIES INCLUDING EMS INTERFACE.
G4 EDH ELECTRIC CIRCUITS SEPARATE FROM AHU FAN.
G5 DO NOT EXCEED HEATER AIR PRESSURE DROP OF 0.1" AT SCHEDULED CFM.
G6 HEATERS CONNECTED TO UNITS W/ VFD'S, ENSURE MINIMUM FLOW SETTING FOR PROPER HEATER OPERATIONS AND COORDINATE REQUIREMENTS WITH CONTROLS.
G7 PROVIDE WITH TEMPERATURE LIMIT SWITCH.
G8 REFER TO PLANS FOR DUCT WIDTH AND HEIGHT.
G9 PROVIDE 5-YEAR MANUFACTURER EXTENDED WARRANTY FROM THE DATE OF PROJECT SUBSTANTIAL COMPLETION.
G10 INCLUDE UNIT MOUNTING AND PROVIDE STRUCTURAL SUPPORT AS PER MANUFACTURE RECOMMENDATION.

FOOTNOTES FOR EDH SCHEDULE

1 PROVIDE WITH SCR CONTROLLER FOR FULL CAPACITY RANGE MODULATION.
2 CONTRACTOR TO VERIFY EXACT DUCT SIZE PRIOR TO ORDERING AND INSTALLATION .
3 DUCT HEATER TO HAVE SILICON CONTROLLED RECTIFIER (SCR), ENABLIING CONTROL STAGING FROM FAN COIL UNIT CONTROLLER.
4 PROVIDE INDOOR RATED CONTROL PANEL, WITH INTEGRAL FUSES AND FUSED DISCONNECT PER NEC.
5 PROVIDE: DISCONNECTING CONTACTORS, SCR CONTROL, MANUAL BACK UP LIMITS, POWER FUSING, AIRFLOW SWITCH, ANALOG CTs FOR AMP DRAW, CONTROL TRANSFORMER, MIN. 2" INSULATION, DISCONNECT SWITCH, STEP CONTROLLER, CONTROL PANEL.

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MECHANICAL SCHEDULES

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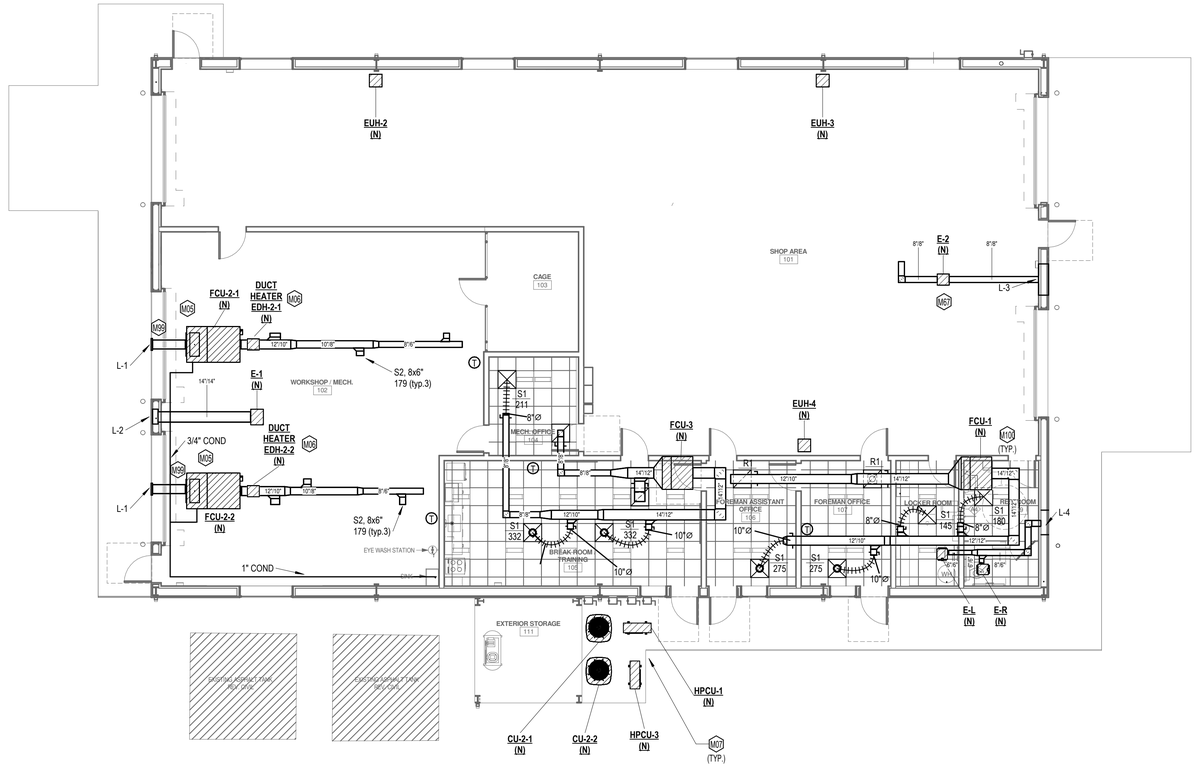

1 LVL01 HVAC NEW WORK PLAN
1/8" = 1'-0"

CONTRACTOR TO PRODUCE SHOP PLANS, INDICATING STRUCTURAL MODIFICATIONS REQUIRED FOR ALL MECHANICAL EQUIPMENT SUPPORTED BY ROOF, OR SUSPENDED FROM STRUCTURE. SHOP PLANS MUST BE PREPARED BY STRUCTURAL ENGINEER, SEE SPECIFICATIONS FOR FURTHER INFORMATION.

HVAC CONTROLS AND SEQUENCE OF OPERATION.

1. ALL FAN COIL UNITS OPERATE UNDER CONTROL OF REMOTE THERMOSTATS.
2. ALL FCU'S WILL OPERATE CONTINUOUSLY DURING OCCUPIED HOURS.

SHOP BUILDING

EXHAUST FAN E-1 WILL OPERATE SIMULTANEOUSLY WITH FCU-2-1 AND FCU-2-2..

EXHAUST FAN E-2 WILL OPERATE CONTINUOSULY DURING OCCUPIED HOURS.

NOTES REGARDING USE OF FACILITY:

VEHICLES SERVICED IN THE WORKSHOP 102 WILL BE OPERATED INSIDE THE BUILDING ONLY FOR THE DURATION NECESSARY TO MOVE THE VEHICLE IN AND OUT OF THE BUILDING. THEREFORE, A SOURCE CAPTURE SYSTEM IS NOT REQUIRED PER EXCEPTION 3 OF IMC 502.14.

FOR THE STORAGE AREA 101, VEHICLES WILL NOT BE REPAIRED IN THIS AREA. VEHICLES OPERATION WILL BE ONLY FOR THE DURATION NECESSARY TO MOVE THE MOTOR VEHICLE IN AND OUT OF THE BUILDING. THEREFORE, A SOURCE CAPTURE SYSTEM IS NOT REQUIRED PER EXCEPTION 3 OF IMC 502.14.

1

GENERAL MECHANICAL NOTES

1. REFER TO SHEET M1.1 FOR GENERAL NOTES AND LEGENDS.
2. PERFORM ALL WORK IN ACCORDANCE WITH LOCAL CODES.
3. ALL PENETRATIONS OF THE ROOF SHALL BE SHIELDED AND SEALED IN COMPLIANCE WITH REQUIREMENTS OF THE ROOF MFGR AND OWNER'S ROOFING SPECIALIST.
4. FIRE SEAL ALL PENETRATIONS OF FIRE RATED CONSTRUCTION TO PRESERVE THE FIRE RATING. CONFIRM WALL RATINGS WITH OWNER. FOR BIDDING, ASSUME THAT CORRIDOR WALLS ARE RATED ONE HOUR.
5. TESTING, ADJUSTING, AND BALANCING (TAB) WORK FOR HVAC SYSTEMS WITHIN THE SCOPE OF WORK IS REQUIRED FOR PROJECT ACCEPTANCE. REFERENCE SPECIFICATIONS.
6. ALL DUCTWORK SHALL BE SHEET METAL CONSTRUCTED & SUPPORTED IN ACCORDANCE WITH THE LATEST EDITION OF SHEET METAL & AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. (SMACNA) STANDARD "HVAC DUCT CONSTRUCTION STANDARDS, METAL & FLEXIBLE".
7. DETAILED DIMENSIONED SHOP DRAWINGS SHALL BE PREPARED AND SUBMITTED (MANDATORY REQUIREMENT) BY CONTRACTOR FOR REVIEW AND APPROVAL BY ENGINEER AND OWNER.

MECHANICAL NEW WORK KEYED NOTES

M05 SUSPEND AIR HANDLING UNIT FROM ROOF STRUCTURE, WITH ADDITIONAL REINFORCING AND WEIGHT BEARING MEMBERS AS NECESSARY. LOCATE UNITS AS HIGH AS POSSIBLE, OUT OF THE WAY OF GARAGE DOORS AND OPENING EQUIPMENT. ROUTE 3/4" CONDENSATE DRAIN LINES TO WALL, AND DROP DOWN ALONG WALL, AND DISCHARGE OVER DRAIN SHOWN WITH 2" AIR GAP. SEE NOTE REGARDING SHOP PLAN REQUIREMENT FOR SUPPORTED AND SUSPENDED EQUIPMENT.

M06 INSTALL ELECTRIC DUCT HEATER A MIN. OF 2' FROM ELBOWS ON EITHER SIDE, AND AS PER MANUFACTURER'S INSTALLATION MANUAL.

M07 INSTALL NEW OUTDOOR CONDENSING UNIT/HEAT PUMPS AS SHOWN. CONSULT INSTALLATION MANUALS FOR CLEARANCES BETWEEN UNITS AND NEARBY WALLS. INSTALL NEW CONDENSOR PAD IN LOCATION APPROVED BY OWNER. LEVEL OF PAD TO BE APPROX. 4" ABOVE PAVEMENT. DO NOT ROUTE REFRIGERANT LINES BELOW GRADE. COORDINATE WITH HVAC UNIT MANUFACTURER'S INSTALLATION INSTRUCTIONS AND COORDINATE WITH OWNER.

M67 PROVIDE MIN. 4 FT DUCTING FOR EXHAUST FAN, INCLUDING AT LEAST ONE ELBOW FOR SOUND ATTENUATION PURPOSES. MOUNT DUCTING AS HIGH AS POSSIBLE, MINIMALLY AT SAME HEIGHT AS LOUVER, TRANSITIONING AS NECESSARY TO LOUVER. PROVIDE STRUCTURAL SUPPORT. BELOW ROOF PANEL AS PER SHOP PLANS BY STRUCTURAL ENGINEER. SEE NOTE REGARDING SHOP PLAN REQUIREMENT FOR SUPPORTED AND SUSPENDED EQUIPMENT.

M99 ROVIDE BACKDRAFT DAMPER IN OUTSIDE AIR DUCT, ONE FOR EACH UNIT IN DUCT BRANCH PRECEEDING UNIT NEAR LOUVER.

M100 SUSPEND AIR HANDLING UNIT FROM ROOF STRUCTURE, WITH ADDITIONAL REINFORCING AND WEIGHT BEARING MEMBERS AS NECESSARY. LOCATE UNIT ABOVE CEILING, CLOSE TO WALL TO ALLOW FOR EASY ACCESS WITH LADDER FROM SHOP TO CHANGE OUT FILTER. ROUTE 3/4" CONDENSATE DRAIN LINES TO WALL, AND DROP DOWN ALONG WALL, AND DISCHARGE OVER JANITOR'S SINK LOCKER ROOM WITH 2" AIR GAP. SEE NOTE REGARDING SHOP PLAN REQUIREMENT FOR SUPPORTED AND SUSPENDED EQUIPMENT.

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MECHANICAL FLOOR PLAN

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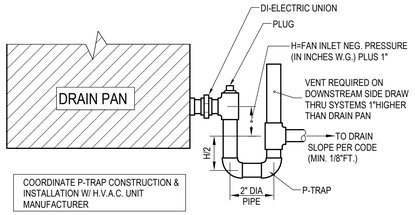
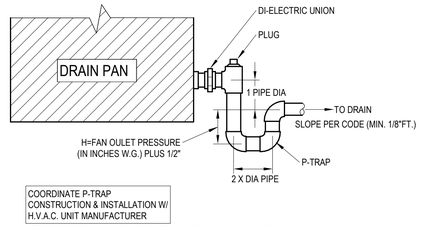
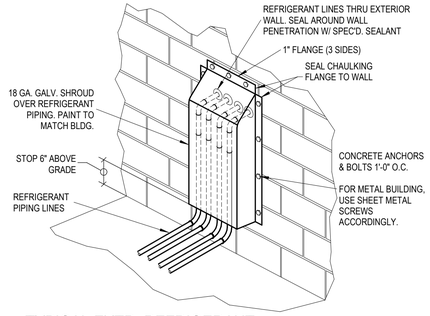


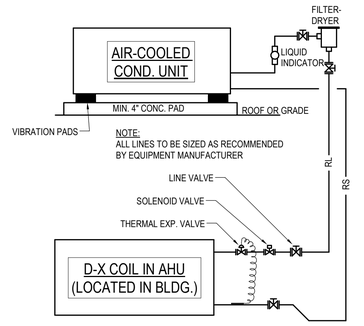
1 TYPICAL AHU DRAW THRU UNIT CONDENSATE DRAIN DETAIL



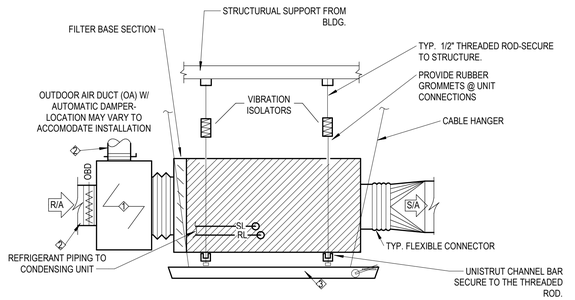
2 TYPICAL AHU BLOW THRU UNIT CONDENSATE DRAIN PIPING DETAIL



3 TYPICAL EXTR. REFRIGERANT PIPING AT WALL PENETRATION SHROUD DETAIL



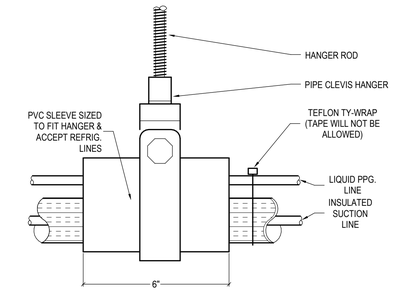
4 TYPICAL REFRIGERANT PIPING COMPONENT DIAGRAM DETAIL



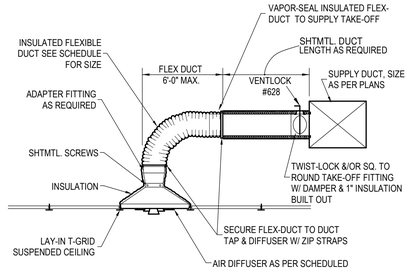
KEYED NOTES:

1. FIELD CONSTRUCTED (INSULATED) SHTMTL. MIXING PLENUM. SIZE TO ACCOMODATE ALL DUCT CONNECTIONS, REF: PLAN.
2. R/A & O/A DUCTING W/ AUTOMATIC BALANCING DAMPER PROVIDE QUAN. & SIZES AS PER PLAN. LOCATIONS ON MIXING PLENUM MAY VARY TO ACCOMODATE INSTALLATION.
3. PROVIDE 3" DEEP SECONDARY PAN UNDER COOLING COIL. EXTEND MIN. 2"< THAN COIL FOOTPRINT & PROVIDE W/ CONDENSATE SENSOR SHUT-OFF SWITCH.

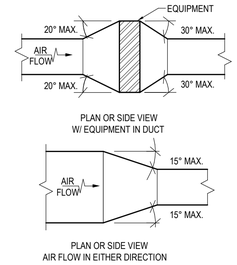
5 TYPICAL INLINE AHU INSTALLATION DETAIL



6 TYPICAL REFRIGERANT BLDG. STRUCTURE HUNG SUPPORT DETAIL



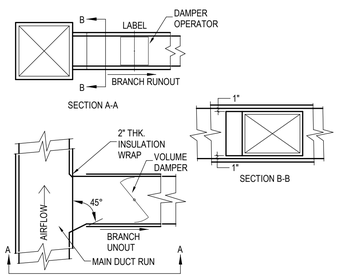
7 TYPICAL SUSPENDED TGRID DIFFUSER INSTALLATION DETAIL



NOTE:
UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

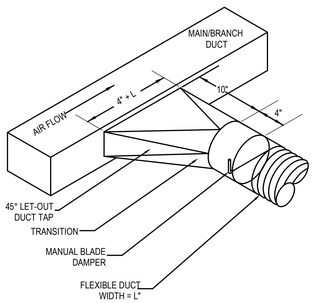
DESIGNER NOTES:
WHEN SPACE DOES NOT PERMIT ANGLES SHOWN ABOVE, DESIGNER SHOULD SHOW MAXIMUM ALLOWABLE ANGLE ON PLANS.

8 TYPICAL DUCTSIZE TRANSITION CONSTRUCTION DETAIL

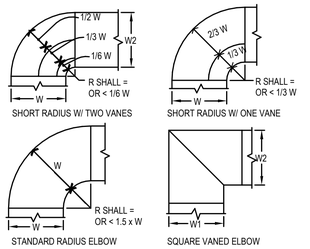


NOTE:
FOR EXTERNALLY INSULATED DUCT SUPPLY AIR DUCT APPLICATIONS SHOWN HERE. FOR RETURN OR EXHAUST DUCT APPLICATIONS DUCT CONFIGURATION SIMILAR EXCEPT AIR FLOW DIRECTION SHALL BE OPPOSITE SHOWN.

9 TAKEOFF RECTANGULAR TO RECTANGULAR DUCT DETAIL



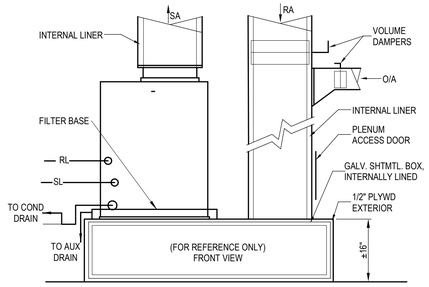
10 TYPICAL RECTANGULAR TO ROUND DUCT TAKEOFF INSTALLATION DETAIL



NOTE:

1. ALL ELBOWS SHALL BE CONSTRUCTED, SUPPORTED, FASTENED & VANED AS SPECIFIED) PER, LATEST EDITION OF "SMACNA".
2. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND, TO MATCH RADIUS OF ELBOW.
3. WHEN W-1 DOES NOT EQUAL W-2 VANE SHALL BE SINGLE VANE TYPE REGARDLESS OF "W" DIMENSION.
4. ALL SINGLE VANES SHALL HAVE A 2" RADIUS, 1-1/2" MAX. SPACE BETWEEN VANES & A 3/4" TRAILING EDGE.
5. WHEN W-1 EQUALS W-2 & W-1 IS GREATER THAN 20" VANES SHALL BE DOUBLE VANE TYPE.

11 TYPICAL RADIUS & MITERED DUCT ELBOW CONSTRUCTION DETAIL



NOTE:
PROVIDE ANGLE IRON BRACES @ 16" CENTERS AS REQ'D. FOR PLENUM BOX. LINE PLENUM BOX SUPPLY AIR & RETURN AIR DUCTS W/ 1/2" ACOUSTICAL INSULATION USING "STICK PINS" 18" ON & SEAL ALL JOINTS W/ FIRE RATED MASTIC. INSULATE ALL LIQUID LINES AS REQ'D.

12 TYPICAL DRAW THRU AHU INSTALLATION DETAIL

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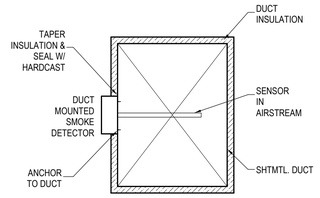
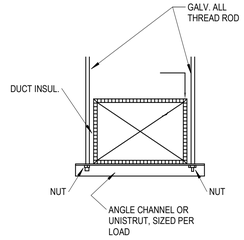
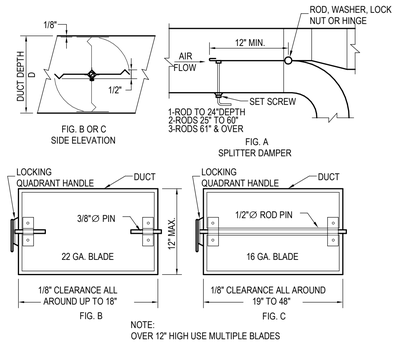


1 TYPICAL DUCT MOUNTED SMOKE DETECTOR INSTALLATION DETAIL

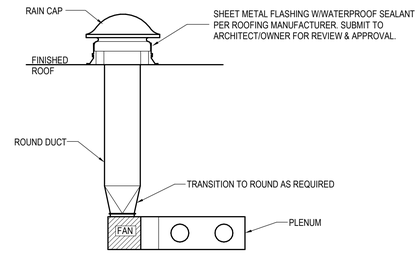


2 M-421 - TRAPEZE DUCT HANGER DETAIL



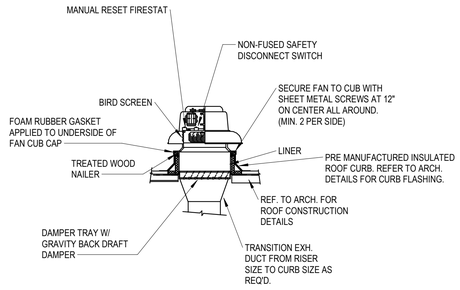
NOTE:
OVER 12" HIGH USE MULTIPLE BLADES

3 TYPICAL AIR VOLUME DAMPER DETAIL



NOTE:
CONTRACTOR TO VERIFY W/ ARCHITECT FOR ALL ROOF SLOPE & MATERIAL COMPOSITION MAKE-UP.

4 TYPICAL EXHAUST FAN DUCT THRU ROOF DETAIL
1/8" = 1'-0"



5 M-422 - ROOF MOUNTED UPBLAST EXHAUST FAN DETAIL
1 1/2" = 1'-0"

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ELECTRICAL ABBREVIATIONS

--A
AFF ABOVE FINISHED FLOOR
AFC ABOVE FINISHED CEILING
AFG ABOVE FINISHED GRADE
AD ACCESS DOOR
AP ACCESS PANEL
A/C AIR CONDITIONING
APPROX APPROXIMATE
ACT ACTUATOR
ACCU AIR COOLED CONDENSING UNIT
AHU AIR HANDLING UNIT
AI ANALOG IN
ALM ALARM
AO ANALOG OUT
AUX AUXILIARY
--B
BAS BUILDING AUTOMATION SYSTEM
BFF BELOW FINISHED FLOOR
BFG BELOW FINISHED GRADE
BLDG BUILDING
BLR BOILER
BTU BRITISH THERMAL UNIT
BTUH BRITISH THERMAL UNIT PER HOUR
BOR BREAK ON RISE
--C
CH CHILLER
CHWP CHILLED WATER PUMP
CLG CEILING
COM COMMUNICATIONS
CS CURRENT STATUS SWITCH
CT COOLING TOWER
CTF COOLING TOWER FAN
CTRL CONTROL
CU CONDENSING UNIT
CWP CONDENSER WATER PUMP
--D
DAT DATA
DDC DIRECT DIGITAL CONTROL
DET DETECTOR
DIA DIAMETER
DIS DISCRETE INPUT, DIGITAL IN
DN DOWN
DO DISCRETE OUT, DIGITAL OUT
DP DIFFERENTIAL PRESSURE
DPS DIFFERENTIAL PRESSURE SWITCH
DPT DIFFERENTIAL PRESSURE TRANSDUCER
DSP DISCHARGE STATIC PRESSURE
DX DIRECT EXPANSION
°C DEGREES CELSIUS
°F DEGREES FAHRENHEIT
--E
EA EACH
EWC ELECTRIC WATER COOLER
EWH ELECTRIC WATER HEATER
EXT EXTERNAL
EDH ELECTRIC DUCT HEATER
EF EXHAUST FAN
EMS ENERGY MANAGEMENT SYSTEMS
ENA ENABLE
ENCL ENCLOSURE
ENET ETHERNET
ERH ELECTRIC RE-HEAT
ERW ENERGY RECOVERY WHEEL
ERV ENERGY RECOVERY VENTILATOR
ETR EXISTING TO REMAIN
EGC EQUIP. GROUNDING CONDUCTOR
--F
FCU FAN COIL UNIT
FT FEET/FOOT
FSD FIRE/SMOKE DAMPER
FLEX FLEXIBLE
FLR FLOOR
FPMB FAN POWERED MIXING BOX
FRZ FREEZER
--G
GALV GALVANIZE
GRD GROUND
GRN GREEN
GEC GROUNDING ELECTRODE CONDUCTOR
--H
HL HIGH LIMIT THERMOSTAT
HP HORSEPOWER
HRU HEAT RECOVERY UNIT
HRV HEAT RECOVERY VENTILATOR
HTG HEATING
HZ HERTZ
--I
IN INCHES
IOM INSTALLATION & OPERATION MANUAL
--K
KVA KILOVOLT-AMPS
KW KILOWATTS
K KILO
--L
LBS POUNDS
LAN LOCAL AREA NETWORK
LG LARGE
LLT LOW LIMIT THERMOSTAT
LON LOCAL OPERATING NETWORK
--M
MAX MAXIMUM
MIN MINIMUM
MVA MEGAVOLT-AMPS
MOR MAKE ON RISE
--N
NA NOT APPLICABLE
NU NUMBER
NC NORMALLY CLOSED
NO NORMALLY OPEN
--O
OFCI OWNER FURNISHED, CONTRACTOR INSTALLED
--P
PWM PULSE WIDTH MODULATION
--Q
QTY QUANTITY
--R
REC RECEPTACLE
REF REFERENCE
R RELAY
RM ROOM
RTU ROOFTOP UNIT
--S
SD SMOKE DETECTOR
SF SUPPLY FAN
SOL SOLENOID
S/S START/STOP
STAS STATUS
STG STAGE
--T
TEL TELEPHON
TYP E
TWR TYPICAL
--U TOWER
UG UNDERGROUND
UGE UNDERGROUND ELECTRICAL
UON UNLESS OTHERWISE NOTED
UPE UNDERGROUND PRIMARY ELECTRICAL
USE UNDERGROUND SECONDARY ELECTRICAL
--V
VAC VOLTS ALTERNATING CURRENT
VDC VOLTS DIRECT CURRENT
VFD VARIABLE FREQUENCY DRIVE
--W
W WATTS
WP WEATHERPROOF
WD WATER DETECTOR
W/ WITH
--X
XFMR TRANSFORMER
--Z
ZN ZONE
ZR ZONE RELAY

BRANCH CIRCUIT SIZING TABLE

MAX CKT AMPS	BASE WIRE SIZE (AWG)	EGC WIRE SIZE (AWG)	LENGTH (FT) FOR 3% DROP AT 120V, 1 PH			
			BASE SIZE	NEXT SIZE	NEXT SIZE	NEXT SIZE
20	12	12	45	70	110	180
30	10	10	45	70	110	180
50	8	10	45	70	110	140
65	6	8	55	85	110	135
85	4	8	65	80	100	130
100	3	8	70	85	110	140
115	2	6	75	90	115	150
130	1	6	80	100	125	160
150	1/0	6	90	110	140	180
175	2/0	6	90	110	140	
200	3/0	6	95	115		
225	4/0	4	100			

VOLTS, PHASE	VOLTAGE FACTOR
120V, 1PH	1.00
208V, 1PH	1.73
277V, 1PH	2.31
480V, 1PH	4.00
208V, 3PH	2.00
480V, 3PH	4.62

EGC = EQUIPMENT GROUNDING CONDUCTOR

NOTES:
1. ALLOWABLE CIRCUIT LENGTH (AL) MAY BE ADJUSTED FROM TABLE LENGTH (TL) BY LOAD FACTOR (LF=AMPS/MAX CKT AMPS) AND VOLTAGE FACTOR (VF) USING THE FORMULA: AL = TL x VF / LF
2. FOR THIS PURPOSE, ASSUME THAT ANY CIRCUIT SERVING ANY UNDESIGNATED RECEPTACLE IS LOADED AT ITS PROTECTION RATING.
3. IF CIRCUIT CONDUCTOR SIZE IS INCREASED FOR VOLTAGE DROP, INCREASE EQUIPMENT GROUNDING CONDUCTOR SIZE BY SAME NUMBER OF AWG SIZES (SAME CIRCULAR MILLS RATIO).

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
CIRCUIT RELATED	
	LIGHTING/POWER CKT. ARROW INDICATES HOME RUN, TICS INDICATE NUMBER OF CONDUCTORS EXCLUDING GROUNDS. TICS GENERALLY USED TO DIFFERENTIATE SEPARATE SWITCH LEGS ON THE SAME CIRCUIT.
	CONDUIT STUBBED OR ROUTED UP
	CONDUIT STUBBED OR ROUTED DOWN
	CONNECT TO EQUIPMENT
J	JUNCTION BOX, MOUNTED AS INDICATED
POWER OUTLETS	
XX	DUPLEX RECEPTACLE, NEMA 5-20R
XX	FOURPLEX RECEPTACLE, NEMA 5-20R
XX	SINGLE RECEPTACLE, NEMA 5-20R, UNLESS OTHERWISE NOTED
XX	FLUSH MOUNTED FLOOR DUPLEX RECEPTACLE WITH COVER AS INDICATED
XX	COMMON NOTATIONS: X-XXR = NEMA CONFIGURATION; IG = ISOLATED GROUND; GFI = GROUND FAULT CIRCUIT INTERRUPTER; WP = WEATHERPROOF GFI
	DUPLEX RECEPTACLE & DATA RECEPTACLE IN DUAL CHANNEL, SURFACE RACEWAY
	FOUR-PLEX RECEPTACLE & DATA RECEPTACLE IN DUAL CHANNEL, SURFACE RACEWAY
TELEPHONE/DATA	
	DATA OUTLET; FLUSH FLOOR DATA OUTLET
	COMB DATA & TELEPHONE OUTLET; FLUSH FLOOR COMB. DATA & TELEPHONE OUTLET
	TELEPHONE OUTLET; FLUSH FLOOR TELEPHONE OUTLET
TV	TV OUTLET BOX
POWER EQUIPMENT	
	DISCONNECT SWITCH, SIZE & TYPE AS INDICATED OR REQUIRED
	COMBINATION STARTER / DISCONNECT SWITCH
	MOTOR STARTER
	TRANSFORMER; THICK LINE DENOTES FRONT
	SWITCHGEAR; THICK LINE DENOTES FRONT
	PANELBOARD
	PANELBOARD - FLUSH MOUNTED
TV/TEL	TV OR TELEPHONE TERMINAL BOARD; 3/4"THK x 8' HT TYPE AC PLYWD.
SRV/HUB	SERVER/HUB
VFD	VARIABLE FREQUENCY DRIVE
LOW VOLTAGE CONTROL	
M	MOTION SENSOR, ARROWS INDICATE DIRECTION OF SENSING FIELD
R	RELAY MODULE W/ LOW VOLTAGE POWER SUPPLY
$	LOW VOLTAGE SWITCH STATION, REF 'MISC DEVICES' BELOW FOR APPLICABLE SWITCH TYPE/FUNCTION CALLOUTS (e.g. DIMMING, 3-WAY, ETC.)
P	PHOTO SENSOR (A=ANOLOG, S=SWITCH)BOR)
	LOW VOLTAGE SIGNAL WIRING
MISC. DEVICES	
T X	THERMOSTAT; MARK INDICATES UNIT OR ZONE CONTROLLED
P	PHOTO-CONTROL RELAY
	POWER/COMM POLE, NUMBER OF CHANNELS &/OR DEVICES AS INDICATED, WIREMOLD OR APPROVED EQUAL
	MOMENTARY CONTACT, PUSHBUTTON, MUSHROOM HEAD
	MOMENTARY CONTACT, PUSHBUTTON
$ X	MANUAL SWITCH, CALL OUTS 'X'; 'K'-INDICATES KEYED SWITCH; '2'-DOUBLE POLE, '3'-3-WAY SWITCH; '4'-4-WAY SWITCH; 'M'-DOUBLE THROW, MOMENTARY CONTACT; 'F'-CAPACITOR TYPE, 4 SPEED FAN CONTROL; 'OS'-INTEGRAL OCCUPANCY SENSOR; 'VS'-VACANCY SENSOR MANUAL ON SWITCH; 'T'-7-DAY PROGRAMMABLE TIMER; 'D'-DIMMER; 'SC'-SPEED
VS OS	VACANCY SENSOR (TYP. OFFICE), OCCUPANCY SENSOR (TYP. HALLWAYS)
	GROUND BAR

GENERAL LEGEND

SYMBOL	DESCRIPTION
	POINT OF CONNECTION NEW TO EXISTING OR DISCONNECTION DEMO FROM EXISTING. MAY NOT BE INDICATED AT ALL SUCH POINTS. CROSS REF W/ LINE-WEIGHT AND STYLE CONVENTIONS AT RIGHT.
	REVISION CLOUD & MARKER
DETAIL REFERENCE, 3 M1, SHEET REFERENCE	BOUNDARY MARKS
	BREAK MARK
PHOTO OR AXON VIEW REFERENCE, 3 M1, SHEET REFERENCE	APPROX. AXONOMETRIC VIEWING LOCATION & DIRECTION
1	NEW WORK KEYED NOTE
1	DEMOLITION KEYED NOTE
1	DETAIL KEYED NOTE
1	MISC. KEYED NOTE
AREA " " / AREA " "	MATCHLINE
	(N) - NEW WORK (X) - DEMOLITION (R) - RELOCATE/REINSTALL (E) - EXISTING, REMAINS

NOTE: PHASING NOTATIONS, e.g. (N), (E), etc. MAY NOT NECESSARILY BE INDICATED ON ALL ITEMS. CROSS REF WITH LINE-WEIGHT AND STYLE CONVENTIONS ABOVE.

NOT ALL LEGEND SYMBOLS SHOWN MAY BE APPLICABLE TO THIS PROJECT

GENERAL ELECTRICAL NOTES

1. ELECTRICAL CONTRACTOR SHALL COORDINATE W/ OTHER TRADES TO MINIMIZE CONFLICTS.
2. ALL NEW WIRE & CABLE SIZES ARE FOR COPPER, ALUMINUM WILL NOT BE ALLOWED.
3. CONFIRM W/ LOCAL CODES, MECHANICAL CONTRACTOR & EQUIPMENT VENDORS ON THE LOCATION & MOUNTING METHOD FOR DISCONNECT SWITCHES, MANUAL MOTOR STARTERS, COMBINATION STARTER/DISCONNECTS, ETC. PRIOR TO ELECTRICAL ROUGH-IN & INSTALLATION.
4. ELECTRICAL CONTRACTOR SHALL COORDINATE WORK W/ MECHANICAL DRAWINGS & REPORT ANY DISCREPANCIES TO ARCHITECT/ENGINEER IMMEDIATELY.
5. UNLESS OTHERWISE NOTED, BRANCH CIRCUIT CONDUCTORS & EQUIPMENT GROUNDING CONDUCTORS SHALL BE COPPER, THWN-2, SIZED PER BRANCH CIRCUIT SIZING TABLE, THIS SHEET.
6. ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED & BONDED PER THE NEC. ISOLATED GROUND RECEPTACLES SHALL HAVE SEPARATE GROUND CONDUCTOR SIZED SAME AS EQUIPMENT GROUNDING CONDUCTOR.
7. ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO OWNER-PROVIDED EQUIPMENT.
8. ALL J-BOXES SHALL BE ACCESSIBLE FOR FUTURE SERVICE PER NEC.
9. CONDUITS SHALL NOT BE ROUTED EXPOSED IN FINISHED AREAS UNLESS NOTED.
10. ALL INTERIOR CONDUIT SHALL BE EMT OR RGSC.
11. EQUIPMENT OR MATERIAL SUBSTITUTED AS APPROVED EQUAL TO THAT SHOWN ON PLANS & SPECIFIED SHALL BE COMPATIBLE IN ALL RESPECTS. ANY CHANGES OR MODIFICATIONS REQUIRED TO ACCOMMODATE THE SUBSTITUTED ITEMS SHALL BE MADE BY THE CONTRACTOR WITH APPROVAL FROM & AT NO EXTRA COST TO THE OWNER.
12. MOUNTING HEIGHTS FOR OUTLETS, SWITCHES & CONTROLS SHALL BE IN COMPLIANCE W/ TEXAS ACCESSIBILITY STANDARDS.
13. ELECTRICAL CONTRACTOR SHALL PROVIDE ROUGH-IN & POWER FOR OTHER TRADES.
14. ALL WALL MOUNTED PANELBOARDS NOT LOCATED IN MECHANICAL OR ELECTRICAL EQUIPMENT ROOMS SHALL BE FLUSH MOUNTED, UNLESS NOTED OTHERWISE. FROM FLUSH MOUNTED PANELS, PROVIDE AT LEAST ONE 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING FOR EACH THREE POLES WITHOUT WIRE CONNECTED.
15. ALL RECEPTACLES IN RESTROOMS OR OUTDOORS SHALL BE GFI RECEPTACLES. ALL RECEPTACLES WITHIN 6 FEET OF THE OUTSIDE EDGE OF SINK(S) SHALL BE GFI RECEPTACLES. THESE REQUIREMENTS APPLY WHETHER OR NOT RECEPTACLES ARE MARKED AS GFI RECEPTACLES ON THE POWER PLAN.
16. ELECTRICAL CONTRACTOR SHALL CLOSELY COORDINATE HIS ROUGH-IN W/ ALL OTHER TRADES & SUBCONTRACTORS FOR THE EXACT MOUNTING HEIGHT REQUIREMENTS. NOTIFY THE OWNER/ENGINEER OF ANY CONFLICT PRIOR TO ROUGH-IN.
17. CONTRACTOR SHALL COORDINATE W/ THE OWNER FOR THE REMOVAL OF OWNER'S MATERIALS IN THE WORK AREA.
18. ALL OCCUPIED WORK AREAS SHALL BE LEFT IN A WIPED CLEAN CONDITION EACH TIME THE CONTRACTOR LEAVES THE WORK AREA.
19. CONTRACTOR SHALL USE A DUST COLLECTING VACUUM DURING ANY DRILLING OR HAMMER DRILLING TO HELP MAINTAIN A CLEAN WORK ENVIRONMENT. COORDINATE W/ OWNER FOR APPROPRIATE TIMES FOR DRILLING.
20. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL DEVICES REQUIRED TO MEET CODE REQUIREMENTS WHETHER SHOWN OR NOT.
21. ALL WORK SHALL COMPLY WITH APPLICABLE LOCAL, STATE AND FEDERAL CODES AND ORDINANCES. FOLLOW RECOMMENDED PRACTICES AS DEFINED BY ASME, SMACNA, ASHRAE, NFPA, APPLICABLE BUILDING CODES, APPLICABLE ELECTRICAL CODE, NATIONAL ELECTRICAL CODE, AGA, ADA AND OSHA.

ONE-LINE WIRING LEGEND

SYMBOL	DESCRIPTION
1/2	MOTOR CONNECTION, NUMBER IN CIRCLE INDICATES HORSEPOWER
	GROUNDING ELECTRODE
	RELAY WITHOUT POWER SUPPLY
	RELAY WITH POWER SUPPLY
	CIRCUIT BREAKER
	NORMALLY OPEN (NO) CONTACT
	NORMALLY CLOSED (NC) CONTACT
	SINGLE POLE SINGLE THROW (SPST) SWITCH
	SINGLE POLE DOUBLE THROW (SPDT) SWITCH
O A H	HAND - OFF - AUTO (HOA) SELECTOR SWITCH
	TRANSFORMER

LIGHTING LEGEND

- REF: TO LIGHTING FIXTURE SCHEDULE -

SYMBOL	DESCRIPTION
	LIGHT FIXTURE (Fixture size per Schedule)
	LIGHT FIXTURE (Fixture size per Schedule & furnished with Battery Back-up Unit)
	SMALL DIRECTIONAL LIGHT FIXTURE
	SMALL LIGHT FIXTURE
	WALL MOUNTED SMALL LIGHT FIXTURE
	SMALL LIGHT FIXTURE (With Battery Back-up)
E	AID LIGHT FIXTURE
	BATTERY EMERGENCY LIGHT FIXTURE DUAL HEAD UNIT
	POLE MOUNTED SITE LIGHTING
	FLOOD LIGHTING
	TRACK LIGHTING
	EXIT LIGHT FIXTURE (Arrow denotes egress direction, fill denotes single &/or double faced)

GENERAL DEMOLITION NOTES

1. FIELD VERIFY ALL EXISTING CONDITIONS, INCLUDING EQUIPMENT AND UTILITY SERVICE LOCATIONS, PRIOR TO START OF ANY WORK. VISIT JOB SITE PRIOR TO BIDDING TO VERIFY EXISTING CONDITIONS. NOTIFY GC AND ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND.
2. PERFORM ALL WORK AND DISPOSAL/RECYCLING IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, CODES, AND ORDINANCES.
3. KEEP THE CONSTRUCTION AREA CLEAN AT ALL TIMES. RESTORE ANY WORK SPACE TO WIPED-CLEAN STATUS BEFORE SCHEDULED OCCUPANCY BY OWNER.
4. COORDINATE WITH APPROPRIATE TRADES TO DISCONNECT RELATED SERVICES BEFORE DEMOLITION OF ANY ITEM. CLOSE AND TAG OUT WATER AND GAS VALVES. TAG AND LOCK OUT ELECTRICAL POWER. DISABLE AND DOCUMENT STATUS OF FIRE ALARM, SECURITY, AND CONTROL POINTS.
5. WHERE PIPING OR CONDUIT IS REMOVED, REMOVE ALL ANCILLARY SUPPORTS, VALVES, DEVICES AND CONNECTORS NOT TO BE REUSED.
6. OPENINGS IN WALLS, CEILINGS, FLOORS, AND ROOFS WHERE PENETRATING DUCTS, PIPES, ETC. ARE REMOVED BUT NOT REPLACED IN KIND, SHALL BE SHORED AND PATCHED WITH LIKE MATERIALS AND FINISH TO THE SURROUNDING SURFACE.
7. CAP & SEAL ANY PIPES LEFT OPEN-ENDED BY DEMOLITION.
8. REFERENCE HAZARDOUS MATERIAL ABATEMENT SPECIFICATIONS FOR IDENTIFICATION OF HAZARDOUS MATERIALS IN THE PROJECT AREA AND INSTRUCTIONS FOR SCOPE INVOLVED THEREWITH. DO NOT PROCEED WITH ANY WORK THAT MAY DISTURB ASBESTOS OR OTHER IDENTIFIED HAZARDOUS MATERIALS UNTIL ANY REQUIRED ABATEMENT HAS BEEN COMPLETED.

CONDUIT SIZING/FILL SCHEDULE

CONDUCTOR SIZE (AWG/MCM)	MAXIMUM NUMBER CONDUCTORS (INCLUDES NEUTRAL & GROUNDS, SEE NOTE 3) — NOMINAL CONDUIT SIZE								
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	
14	9	17	28	51	70	118	170	265	SEE NOTE 4
12	6	12	20	37	51	86	124	193	
10	4	7	13	23	32	54	78	122	
8	2	4	7	13	18	31	45	70	
6	1	3	5	9	13	22	32	51	
4	1	1	3	6	8	14	20	31	
3	1	1	3	5	7	12	17	26	
2	1	1	2	4	6	10	14	22	
1	0	1	1	3	4	7	10	16	
1/0	0	1	1	2	3	6	9	14	
2/0	0	1	1	1	3	5	7	11	
3/0	0	1	1	1	2	4	6	9	
4/0	0	0	1	1	1	3	5	8	
250	0	0	1	1	1	3	4	6	SEE NOTE 5
300	0	0	0	1	1	2	3	5	
350	0	0	0	1	1	1	3	5	
400	0	0	0	1	1	1	3	4	
500	0	0	0	1	1	1	2	3	

NOTES:
1. TABLE VALUES ARE BASED ON NATIONAL ELECTRIC CODE LIMIT TO 40% OF CONDUIT CROSS SECTION AND ASSUME COMMON CONDITIONS OF PROPER CABLING AND ALIGNMENT OF CONDUCTORS WHERE LENGTH OF PULL AND NUMBER OF BENDS ARE WITHIN REASONABLE LIMITS.
2. TABLE ASSUMES THWN-2 CONDUCTORS OF THE SAME SIZE. FOR DIFFERENT WIRING TYPES WHERE SPECIFICALLY INDICATED IN THE DESIGN, OR FOR DIFFERENT SIZED WIRES IN A SINGLE CONDUIT, CALCULATE AND LIMIT FILL PERCENT BASED ON ACTUAL WIRE AND CONDUIT CROSS SECTIONS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
3. EQUIPMENT GROUNDING OR BONDING CONDUCTORS, WHERE INSTALLED, SHALL BE INCLUDED IN CONDUIT FILL LIMITATIONS ABOVE. FOR CONDUIT SIZING PURPOSES, ASSUME EGC AT SAME SIZE AS PHASE CONDUCTORS.
4. DERATE CONDUCTORS ADDITIONALLY FROM SIZES ON PLANS FOR INDOOR (AMBIENT TEMP<86°F) INSTALLATIONS OF MORE THAN 6 CURRENT-CARRYING CONDUCTORS IN SINGLE RACEWAY IN ACCORDANCE WITH NEC.
5. DERATE CONDUCTORS ADDITIONALLY FROM SIZES ON PLANS FOR OUTDOOR (OR INDOOR WHERE >86° AMBIENT) INSTALLATIONS OF MORE THAN 3 CURRENT-CARRYING CONDUCTORS IN SINGLE RACEWAY, IN ACCORDANCE WITH NEC.

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STATE OF TEXAS
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04/04/2025

PRICINCT 2 ROAD AND BRIDGE FACILITY
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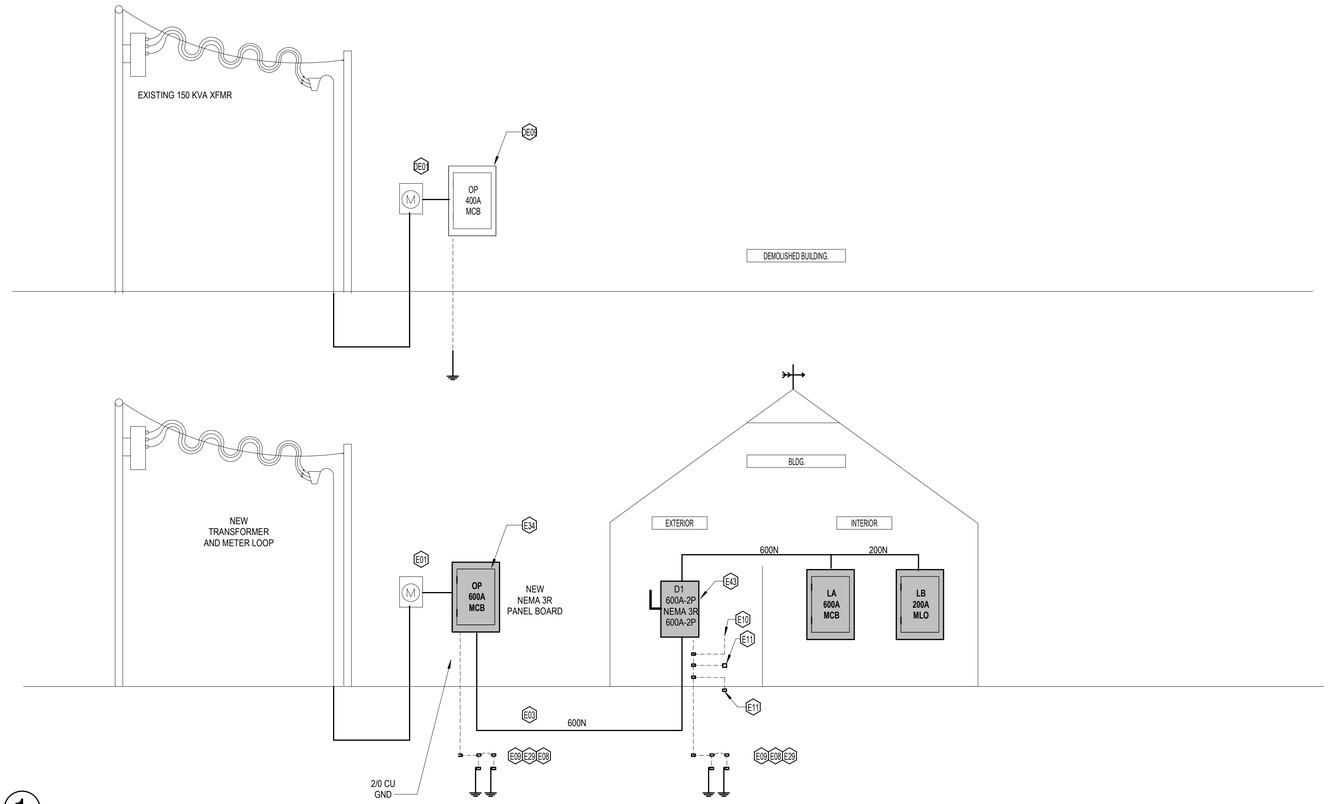
911 SE MARTIN LUTHER KING BLVD
SMITHVILLE TX, 78957

SHEET TITLE:
ELECTRICAL GENERAL NOTES, LEGENDS, AND SCHEDULES

REVISIONS:

NO.	DATE

Job No: T2414
Drawn by: TO
Checked by: TS/SK/EB
Sheet No.
E1.1
Date: APRIL 2025



1 POWER RISER DIAGRAM E2.1
1/8" = 1'-0"

EXISTING POWER METER BY CITY OF SMITHVILLE

ELECTRICAL RISER LEGEND

COMPONENTS

NEW **EXISTING**

FEEDER
X = MIN. WIRE & CONDUIT SIZES. NEW WIRE IN EXISTING CONDUIT NOTED WHERE APPLICABLE.

TRANSFORMER
X = MARK & RATING

METER

DISCONNECT
X = RATING, TYPE, FUSING

PANELBOARD
X = MARK, MAIN RTG & TYPE

MAIN SWITCH BOARD OR DISTRIBUTION PANEL
X = MARK, MAIN RTG & TYPE

SUB-COMPONENTS

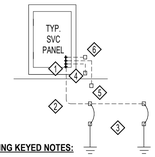
4" (U.O.N.) CONCRETE HOUSEKEEPING PAD.
PADS FOR EXISTING EQUIP'T TO REMAIN U.O.N.

C-CHANNEL AND THREADED ROD HANGERS
COORD'T WITH STRUCTURAL ENGINEER FOR BLDG LOAD CAPACITY, HANGING LOC'NS, ATTACHMENT METHODS, AND C-CHANNEL&ROD SIZES&QTY's.

GROUNDING AND BONDING
BOND NEW EQUIPMENT TO BUILDING'S GROUNDING SYSTEM. PROVIDE ADDITIONAL GROUNDING ELECRODES AND BONDING WHERE NOTED.

ROOM XXX — **SPACE/BLDG BOUNDARIES & NAMES**

TYPICAL SERVICE GROUNDING CONNECTIONS



SERVICE GROUNDING KEYED NOTES:

1. CONNECT GROUND WIRES TO SERVICE PANEL GROUND BUS ONLY. DO NOT GROUND NEUTRAL.
2. PROVIDE #3/0 AWG GROUNDING CONDUCTOR (GEC), BARE, 36" OR DEEPER IN EARTH WHERE HORIZONTAL.
3. PROVIDE 2 X 5/8" DIA. GALV STEEL GROUNDING RODS, MIN. 8' LENGTH, DRIVEN VERTICAL. PROVIDE #4 AWG JUMPER FOR EACH GROUND ROD. SPACE GROUND RODS 10 FT FROM BLDG AND EACH OTHER.
4. IF WATER SUPPLY PIPING TO THE BUILDING QUALIFIES AS A GROUNDING ELECTRODE (METAL, 10 FT CONTINUOUS BURIED), PROVIDE #4 AWG GEC JUMPER FROM BUILDING STEEL TO WATER PIPE AT ENTRY POINT INSIDE BUILDING AND TERMINATE WITH LISTED GROUND CLAMPS. OTHERWISE, BOND TO INDOOR METAL WATER PIPE.
5. COORDINATE WITH NEW FOUNDATION WORK WHERE APPLICABLE TO ENSURE THAT A GALVANIZED ROD IS EMBEDDED IN AND PROTRUDED FROM THE FOUNDATION NEARBY TO CREATE A CONCRETE-ENCASED ELECTRODE (UNDER GROUND). ROD SHOULD BE 1/2" HOT DIP GALV. STEEL, WITH AT LEAST 20' HORIZONTAL IN THE BOTTOM OF THE GRADE BEAM, TIED TO THE REINFORCING STEEL IN THE USUAL MANNER FOR RENFORCING STEEL. PROTRUSION SHALL BE SUITABLE FOR ELECTRIC CONNECTION BY EXOTHERMIC WELDING PROCESS. PROVIDE #4 AWG BONDING JUMPER TO ROD PROTRUSION AND CONNECT THUSLY.
6. PROVIDE #4 AWG BONDING JUMPER CONNECTED TO BUILDING STEEL AS APPLICABLE AND WHERE ALLOWED BY STRUCTURAL ENGINEER. CONNECT AT THE NEAREST ACCESSIBLE LOCATION. PROVIDE ACCESS DOOR FOR INSPECTION IF LOCAITON IS CONCEALED. UTILIZE EITHER BOLTED GROUNDING PLATE, EXOTHERMIC WELD, OR LISTED CLAMP FOR CONNECTION TO STEEL.

GENERAL SINGLE LINE NOTES

1. ALL ELECTRICAL WORK FOR THIS PROJECT IS NEW UNLESS OTHERWISE IDENTIFIED.
2. SEE SHEET E1.1 FOR GENERAL NOTES AND LEGENDS.
3. REFER TO PANELBOARD SCHEDULES ON SHEETS E2.2, AND TO SINGLE LINE RISER DIAGRAM ON SHEET E2.1 FOR SCHEMATIC SCOPE OVERVIEW.
4. REFER TO BOTTOM OF PANEL SCHEDULES ON E2 SERIES SHEETS AND SHEET E1.1 FOR SIZES OF FEEDER CONDUIT AND CONDUCTORS.

ELECTRICAL DEMO KEYED NOTES

DE01 COORDINATE WITH OWNER AND UTILITY COMPANY FOR REMOVAL OF METER AND ARRANGE FOR NEW TRANSFORMER AND METER LOOP TO BE INSTALLED.

DE09 EXISTING OUTDOOR PANEL TO BE REMOVED.

ELECTRICAL NEW WORK KEYED NOTES

E01 THE FOLLOWING ARE OWNER PROVIDED AND INSTALLED BY UTILITY. NEW ELECTRICAL SERVICE INCLUDING POWER POLE AND METER, SECONDARY CONDUIT FROM TRANSFORMER, TRANSFORMER, GROUNDING ELECTRODES AT TRANSFORMER, AND METERING EQUIPMENT ENCLOSURES. COORDINATE WITH ELECTRICAL UTILITY WHEN CONNECTING TO NEW ELECTRIC SERVICE.

E03 BURY NEW CONDUITS A MINIMUM OF 36" BELOW GRADE.

E08 CONNECT GEC TO GROUND RODS WITH #4 JUMPERS. GROUND ROD CONNECTIONS MUST BE INSPECTABLE.

E09 TWO 8' GROUND RODS TO BE DRIVEN 12" BELOW GRADE. GROUND RODS SHOULD BE AT LEAST 6' APART.

E10 BOND TO METAL INDOOR WATER PIPE WITH #4 JUMPERS AND PIPE CLAMPS

E11 CONNECT TO BOTH BUILDING STEEL AND FOUNDATION REINFORCED STEEL WITH #3/0 CONDUCTORS. COORDINATE LOCATIONS AND METHODS OF CONNECTION TO SLAB REINFORCEMENT AND BUILDING STRUCTURAL STEEL WITH STRUCTURAL ENGINEER.

E29 PROVIDE BARE COPPER GROUNDING ELECTRODE CONDUCTOR NETWORK CONSISTING OF 2/0 MAIN CONDUCTOR JOINED WITH IRREVERSIBLE CONNECTORS. USE CRIMP OR EXOTHERMIC WELDS EQUIVALENT TO "CADWELD" ABOVE GRADE, AND EXOTHERMIC WELDS ONLY BELOW GRADE.

E34 PROVIDE NEW OUTDOOR PANELBOARD.

E43 GROUNDED CONDUCTOR TO BE ISOLATED FROM NEUTRAL CONDUCTOR.

FEEDER SCHEDULE

MARK	CONDUCTOR QUANTITY AND SIZE	CONDUIT SIZE	SETS	COMMENTS
600N	CU, 3 350 KCMIL, 1#1 G	2-1/2	2	
200N	CU, 3 3/0 KCMIL, 1#3 G	2	1	

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SINGLE LINE DIAGRAM

SHEET TITLE:

REVISIONS:

NO.	DATE

Job No: T2414
Drawn by: TO
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Sheet No.
E2.1
Date: APRIL 2025

NEW PANEL 'MDP'

PROJECT : BASTROP | MAIN CIRCUIT BREAKER : 600 **MCB** | ENCLOSURE : NEMA 3R
PROJECT # : T2414 | MAIN LUGS ONLY : | MOUNTING : SURFACE
LOCATION : OUTDOOR RACK | BUSSING : 600A | CB TYPE : STANDARD
NOTES : | VOLTAGE : 240/120 | PROVIDE : NEUTRAL BUS
SCHEDULE DATE : 05/12/25 | INTERRUPTING : 65 kAIC RMS SYM | GROUND BUS

CKT	AMPS	POLE	CIRCUIT DESCRIPTION	LOAD	TYPE	PH	TYPE	LOAD	CIRCUIT DESCRIPTION	AMPS	POLE	CKT
1	600	2	PANEL LA	67,901		A						2
3				67,951		B						4
5						A						6
7						B						8
9						A						10
11						B						12
13						A						14
15						B						16
17						A						18
19						B						20
21						A						22
23						B						24
25						A						26
27						B						28
29						A						30
31						B						32
33						A						34
35						B						36
37						A						38
39						B						40
41						A						42

	PANEL VA	SUB FEED	FEED THRU	TOTAL CONN	TOTAL DEMAND VA	AMPS	NOTES: [1],[2],[3],[4]
PHASE A	0	67,901	0	67,901	66,015	550	
PHASE B	0	67,951	0	67,951	66,064	551	
	0	135,851	0	135,851	132,079	550	*Total Amps on this line represents the average of the phases

VOLTAGE (L-N)	120	PANEL LOAD ANALYSIS					SCHEDULE DATE :		NEC NOTES	
LOAD TYPE	LOAD DESC	PANEL VA	SUB FEED	FEED THRU	TOTAL CONN	DEMAND FACTOR	NEC NOTES	DEMAND VA	1	TABLE 220.44
0	RECPT	-	12,540		12,540	0.90	1	11,270	2	ART 215.2(A)(1)
1	LTG	-	3,433		3,433	1.25	2	4,291	3	ART 220.51
2	EQUIP	-	37,280		37,280	1.00		37,280	4	TABLE 220.56
3	MTR	-	7,020		7,020	1.00		7,020	5	TABLE 620.14
4	COMP	-	-		-	1.00		-	6	ART 430.24
5	HEAT	0	65,978		65,978	1.00		65,978		
6	A/C	-	-		-	0.00	3	-		
7	KITCH	-	9,600		9,600	0.65	4	6,240		
8	ELEV	-	-		-	1.00	5	-		
9	1.25	-	135,851		135,851	1.25	1, 6	-	PHASE BALANCE	
TOTAL VA		-	67,901	-		0.97		132,079	A	0.0%
PHASE	A	-	67,951		67,901	0.97		66,015	B	0.0%
PHASE	B	-	135,851		67,951	0.97		66,064	NEUTRAL CURRENT	
TOTAL VA		-		-	135,851	0.97		132,079	0.41	AMPS

NEW PANEL 'LA'

PROJECT : BASTROP | MAIN CIRCUIT BREAKER : 600 **MCB** | ENCLOSURE : NEMA 1
PROJECT # : T2414 | MAIN LUGS ONLY : | MOUNTING : SURFACE
LOCATION : SHOP | BUSSING : 600A | CB TYPE : STANDARD
NOTES : | VOLTAGE : 240/120 | PROVIDE : NEUTRAL BUS
SCHEDULE DATE : 05/12/25 | INTERRUPTING : 42 kAIC RMS SYM | GROUND BUS

CKT	AMPS	POLE	CIRCUIT DESCRIPTION	LOAD	TYPE	PH	TYPE	LOAD	CIRCUIT DESCRIPTION	AMPS	POLE	CKT
1	60	2	EUH-2	5,000	5	A	0	1,200	KITCHEN OUTLET 1	30	1	2
3				5,000	5	B	0	1,200	KITCHEN OUTLET 2	30	1	4
5	60	2	EUH-3	5,000	5	A	0	1,200	KITCHEN OUTLET 3	30	1	6
7				5,000	5	B	0	1,200	KITCHEN OUTLET 4	30	1	8
9	60	2	EUH-4	5,000	2	A	7	4,800	220V OVEN RANGE	50	2	10
11				5,000	2	B	7	4,800				12
13	60	2	AUX. DUCT HEATER 2-1	5,500	5	A	2	5,000	220V WORKSHOP OUTLET	30	1	14
15				5,500	5	B	2	5,000				16
17	60	2	AUX. DUCT HEATER 2-2	5,500	5	A	0	720	EXTERIOR OUTLETS	30	1	18
19				5,500	5	B	5		SPARE	20	1	20
21	20	1	BREAK ROOM / TRAINING OUTLETS	1,260	0	A		16,637	PANEL LB	200	2	22
23	20	1	WAREHOUSE AREA OUTLETS	1,440	0	B		16,843				24
25	20	1	MECHANICAL OFFICE OUTLETS	720	0	A	2	2,880	240V OUTLET	30	2	26
27	20	1	WORKSHOP / MECH. OUTLETS	720	0	B	2	2,880				28
29			SPACE			A	1	1,074	WORKSHOP / MECH. LIGHTING	30	1	30
31	20	1	WORKSHOP / MECH. OUTLETS	720	0	B	1	1,388	WAREHOUSE LIGHTING	30	1	32
33	30	2	240V OUTLET	2,880	2	A	1	650	BREAK/OFFICE/LOCKER/RESTROOM LIGHTING	30	1	34
35				2,880	2	B	2	2,880	240V OUTLET	30	2	36
37			PROVIDE TYPE 1 SURGE PROTECTOR SUCH AS THQLSURGE OR SIMILAR			A	2	2,880				38
39						B			SPACE			40
41			SPACE			A			SPACE			42

	PANEL VA	SUB FEED	FEED THRU	TOTAL CONN	TOTAL DEMAND VA	AMPS	NOTES: [1],[2],[3],[4]
PHASE A	51,264	16,637	0	67,901	66,015	550	
PHASE B	51,108	16,843	0	67,951	66,064	551	
	102,372	33,479	0	135,851	132,079	550	*Total Amps on this line represents the average of the phases

VOLTAGE (L-N)	120	PANEL LOAD ANALYSIS					SCHEDULE DATE :		NEC NOTES	
LOAD TYPE	LOAD DESC	PANEL VA	SUB FEED	FEED THRU	TOTAL CONN	DEMAND FACTOR	NEC NOTES	DEMAND VA	1	TABLE 220.44
0	RECPT	10,380	2,160		12,540	0.90	1	11,270	2	ART 215.2(A)(1)
1	LTG	3,112	321		3,433	1.25	2	4,291	3	ART 220.51
2	EQUIP	37,280	-		37,280	1.00		37,280	4	TABLE 220.56
3	MTR	-	7,020		7,020	1.00		7,020	5	TABLE 620.14
4	COMP	-	23,978		-	1.00		-	6	ART 430.24
5	HEAT	42000			65,978	1.00		65,978		
6	A/C	-	-		-	0.00	3	-		
7	KITCH	9,600	-		9,600	0.65	4	6,240		
8	ELEV	-	-		-	1.00	5	-		
9	1.25	-	33,478		135,851	1.25	1, 6	-	PHASE BALANCE	
TOTAL VA		102,372	16,637	-		0.97		132,079	A	0.0%
PHASE	A	51,264	16,843		67,901	0.97		66,015	B	0.0%
PHASE	B	51,108	33,479		67,951	0.97		66,064	NEUTRAL CURRENT	
TOTAL VA		102,372		-	135,851	0.97		132,079	0.41	AMPS

NEW PANEL 'LB'

PROJECT : BASTROP | MAIN CIRCUIT BREAKER : | ENCLOSURE : NEMA 1
PROJECT # : T2414 | MAIN LUGS ONLY : 200A | MOUNTING : SURFACE
LOCATION : SHOP | BUSSING : 200A | CB TYPE : STANDARD
NOTES : | VOLTAGE : 240/120 | PROVIDE : NEUTRAL BUS
SCHEDULE DATE : 05/12/25 | INTERRUPTING : 22 kAIC RMS SYM | GROUND BUS

CKT	AMPS	POLE	CIRCUIT DESCRIPTION	LOAD	TYPE	PH	TYPE	LOAD	CIRCUIT DESCRIPTION	AMPS	POLE	CKT
1	20	1	SPARE			A	5	508.8	FCU-2-1	15	2	2
3	15	1	EXHAUST FAN E-R AND E-L	15	5	B	5	508.8				4
5	15	1	EXHAUST FAN E-1	528	5	A	5	508.8	FCU-2-2	15	2	6
7	15	1	EXHAUST FAN E-2	528	5	B	5	508.8				8
9	30	1	EXTERIOR BUILDING SIDES LIGHTING	191	1	A	5	1152	HPCU-1	35	2	10
11	20	1	LOCKER ROOM/RESTROOM OUTLETS	720	0	B	5	1,152				12
13	20	1	FOREMAN AND ASSISTANT OFFICE OUTLETS	1,440	0	A	5	1,152	HPCU-3	35	2	14
15	20	1	GARAGE DOOR OPENER	1,404	3	B	5	1,152				16
17	20	1	GARAGE DOOR OPENER	1,404	3	A	5	2,208	CU-2-1	35	2	18
19	20	1	GARAGE DOOR OPENER	1,404	3	B	5	2,208				20
21	20	1	GARAGE DOOR OPENER	1,404	3	A	5	2,208	CU-2-2	35	2	22
23	20	1	GARAGE DOOR OPENER	1,404	3	B	5	2,208				24
25						A	5	3,500	WATER HEATER	30	2	26
27						B	5	3,500				28
29						A	5	432	CP-1	15	1	30
31						B	1	130	EXTERIOR BUILDING FRONT/BACK LIGHTING	30	1	32
33						A						34
35						B						36
37						A						38
39						B						40
41						A						42

	PANEL VA	SUB FEED	FEED THRU	TOTAL CONN	TOTAL DEMAND VA	AMPS	NOTES: [1],[2],[3],[4]
PHASE A	16,637	0	0	16,637	16,676	139	
PHASE B	16,843	0	0	16,843	16,883	141	
	33,479	0	0	33,479	33,559	140	*Total Amps on this line represents the average of the phases

VOLTAGE (L-N)	120	PANEL LOAD ANALYSIS					SCHEDULE DATE :		NEC NOTES	
LOAD TYPE	LOAD DESC	PANEL VA	SUB FEED	FEED THRU	TOTAL CONN	DEMAND FACTOR	NEC NOTES	DEMAND VA	1	TABLE 220.44
0	RECPT	2,160			2,160	1.00	1	2,160	2	ART 215.2(A)(1)
1	LTG	321			321	1.25	2	401	3	ART 220.51
2	EQUIP	-			-	1.00		-	4	TABLE 220.56
3	MTR	7,020			7,020	1.00		7,020	5	TABLE 620.14
4	COMP	-			-	1.00		-	6	ART 430.24
5	HEAT	23978.2			23,978	1.00		23,978		
6	A/C	-			-	0.00	3	-		
7	KITCH	-			-	0.65	4	-		
8	ELEV	-			-	1.00	5	-		
9	1.25	-			33,478	1.25	1, 6	-	PHASE BALANCE	
TOTAL VA		33,479	-	-		1.00		33,559	A	0.6%
PHASE	A	16,637			16,637	1.00		16,676	B	0.6%
PHASE	B	16,843			16,843	1.00		16,883	NEUTRAL CURRENT	
TOTAL VA		33,479	-	-	33,479	1.00		33,559	1.7	AMPS

ABBREVIATIONS AND NOTES FOR PANELBOARD SCHEDULES

ABBREVIATIONS

CB	CIRCUIT BREAKER
CNDT	CONDUIT
EGC	EQUIPMENT GROUNDING CONDUCTOR
NEU	NEUTRAL
PH	PHASE
TM	THERMAL-MAGNETIC
SS	SOLID STATE
IL	CURRENT LIMITING
GFI	GROUND FAULT INTERRUPTER (5 mA)
GFE	GROUND FAULT EQUIPMENT ROTECTION (1/2 NOM. RATING, 0.2 SEC. U.O.N.)
SW/F	SWITCH/FUSE
FR/TR	FRAME/TRIP
XBS	AUXILIARY BUS SECTION
HPOU	HEAT PUMP OUTDOOR UNIT
HPIU	HEAT PUMP INDOOR UNIT
OCP	OVERCURRENT PROTECTION

GENERAL NOTES

1. WIRE SIZES ARE EXPRESSED IN AWG UP TO 4/0 AND IN KCM FOR LARGER CONDUCTORS. SIZES SHOWN ARE MINIMUM, AND MUST BE INCREASED FOR TEMPERATURE DERATING AND VOLTAGE DROP. SEE VOLTAGE DROP CORRECTION TABLE ON SHEET E1.1 FOR CIRCUITS BELOW 400A.
2. REFER TO CONDUIT SIZING/FILL SCHEDULE ON SHEET E1.1 FOR CONDUIT SIZE REQUIREMENTS.
3. CONFIRM CIRCUIT CHARACTERISTICS WITH EQUIPMENT SUPPLIERS BEFORE ORDERING IF POSSIBLE. COORDINATE WITH ENGINEER TO RESOLVE CIRCUIT, WIRE, RECEPTACLE, AND LOAD DISCREPANCIES.
4. LABEL EACH DISCONNECT SWITCH WITH THE NAME OF THE EQUIPMENT AND THE CIRCUIT NUMBER.
5. LABEL THE FACE OF EACH RECEPTACLE OUTLET COVER PLATE AND THE INSIDE OF EACH SWITCH COVER PLATE WITH THE CIRCUIT NUMBER(S).

SERVICE ENTRANCE NOTES

1. FAULT RATINGS IN PANEL SCHEDULES ARE BASED ON THE FOLLOWING SOURCE ASSUMPTIONS: 240V SPLIT PHASE XFMR(s) HAVING MAX 225kVA CAPACITY, MIN 5% IMPEDANCE AND MIN. 200 FT PHASE CONDUCTOR FEEDERS TO NEW BUILDING. NOTIFY ENGINEER IF ANY OF THESE LIMITS ARE BREACHED.
2. REFER TO NEC AND TO PLANS AND DIAGRAMS FOR GROUNDING REQUIREMENTS.

BRACKETED NOTES (APPLY WHERE INDICATED BY '[.]')

PANELBOARD BRACKETED NOTES:

1. UNLESS SPECIFICALLY APPROVED BY THE ENGINEER IN WRITING, PROVIDE BRANCHES NUMBERED AS SCHEDULED AND POSITIONED ACCORDINGY IN THE PANEL. FOR SQUARE D I-LINE PANELS, THE LEFT AND RIGHT SIDES MAY BE REVERSED, AND THE MAIN MAY BE MOUNTED ON EITHER SIDE.
2. FOR WALL MOUNTED EQUIPMENT, PROVIDE HINGED FRONT FOR ACCESS TO PANEL INTERIOR AND HINGED DOOR FOOR ACCESS TO DEVICE HANDLES ONLY.
3. AT CONTRACTOR'S OPTION, PROVIDE PANELBOARD WITH MAIN TM CB THAT IS SERIES RATED WITH BRANCHES SO THAT NOMINAL 10 KAIC BRANCH BREAKERS MAY BE USED WHILE RETAINING THE SERIES RATING INDICATED. FAULT RATING MAY NOT RELY ON A BREAKER OUTSIDE OF THE PANEL.
4. FAULT RATING MAY RELY ON SERIES RATING OF PANEL MAIN AND PANEL BRANCHES, BUT NOT ON ANY EXTERNAL DEVICES.

1 Various Changes to Panel Schedules

SURGE PROTECTIVE DEVICE SCHEDULE

PART 1		PART 2	L-N	L-G	N-G	L-L
PANEL MARK	L1A	NOM. V.	120	120	0	240
UL TYPE	2	SVR	403	405	440	736
ENCLOSURE	NEMA 4X	VPR	700	700	800	1000
NOM. FREQ.	60 HZ	MCOV	150	150	150	320
SCCR	>=PANEL	C3 #	1000	1000	1000	1500
LOAD AMPS	N/A	I(n)	100	100	100	100
PROTECTION	30 A [1]	MOV	YES	YES	YES	YES
MAKE	THOR SYSTEMS	SAD	OK	OK	OK	OK
MODEL	TSnc	FILTER	OK	OK	OK	OK
FOOTNOTES	[1]					

GENERAL NOTES:

G2 SIZE WIRE IN ACCORDANCE WITH TVSS LISTING AND MANUFACTURER'S RECOMMENDATIONS.
G3 ROUTE WIRE WITH MINIMUM BENDS POSSIBLE. USE MINIMUM BEND RADIUS OF 12".
G4 ANY SUBSTITUTE DEVICE MUST BE DOCUMENTED AS EQUAL.

FOOTNOTES:

[1] CONNECT VIA 30 AMP FUSE OR BREAKER IN PANEL.

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LICENSED PROFESSIONAL ENGINEER
05/12/2025

PRICINCT 2 ROAD AND BRIDGE FACILITY
BASTROP COUNTY
911 SE MARTIN LUTHER KING BLVD
SMITHVILLE TX, 78957

PANEL SCHEDULES

SHEET TITLE:

REVISIONS:

NO.		DATE
1	PERMIT/OWNER REVISIONS	5/12/2025

Job No: T2414
Drawn by: TO
Checked by: TS/SK/EB
Sheet No.

E2.2

Date: APRIL 2025

EQUIPMENT CONNECTION SCHEDULE

UNIT	DISCONNECT	CONDUCTORS	NOTES
WATER HEATER	PLUG AND CORD	3 #10 AND 1#12 GND IN 1/2" CONDUIT	
E-R	15A/1P GENERAL-USE SNAP SWITCH	2 #12 AND 1#12 GND IN 1/2" CONDUIT	
E-L	15A/1P GENERAL-USE SNAP SWITCH	2 #12 AND 1#12 GND IN 1/2" CONDUIT	
E-1	15A/1P GENERAL-USE SNAP SWITCH	2 #12 AND 1#12 GND IN 1/2" CONDUIT	
E-2	15A/1P GENERAL-USE SNAP SWITCH	2 #12 AND 1#12 GND IN 1/2" CONDUIT	
AUX. DUCT HEATER 2-1	60A/2P/ FUSED/N-1	3 #6 AND 1#10 GND IN 3/4" CONDUIT	
AUX. DUCT HEATER 2-2	60A/2P/ FUSED/N-1	3 #6 AND 1#10 GND IN 3/4" CONDUIT	
CP-1, Circ. Pump	PLUG AND CORD	2 #12 AND 1#12 GND IN 1/2" CONDUIT	
FCU-2-1	15A/2P GENERAL-USE SNAP SWITCH	3 #12 AND 1#12 GND IN 1/2" CONDUIT	
FCU-2-2	15A/2P GENERAL-USE SNAP SWITCH	3 #12 AND 1#12 GND IN 1/2" CONDUIT	
HPCU-1	40A/2P/ NF/N-3R	3 #10 AND 1#12 GND IN 3/4" CONDUIT	
HPCU-3	40A/2P/ NF/N-3R	3 #10 AND 1#12 GND IN 3/4" CONDUIT	
CU-2-1	40A/2P/ NF/N-3R	3 #10 AND 1#12 GND IN 3/4" CONDUIT	
CU-2-2	40A/2P/ NF/N-3R	3 #10 AND 1#12 GND IN 3/4" CONDUIT	
UNIT HEATER EUH-2	60A/2P/ FUSED/N-1	3 #6 AND 1#10 GND IN 3/4" CONDUIT	
UNIT HEATER EUH-3	60A/2P/ FUSED/N-1	3 #6 AND 1#10 GND IN 3/4" CONDUIT	
UNIT HEATER EUH-4	60A/2P/ FUSED/N-1	3 #6 AND 1#10 GND IN 3/4" CONDUIT	
240V OUTLET	PLUG/SOCKET	3 #10 AND 1#12 GND IN 3/4" CONDUIT	
220V OVEN RANGE	PLUG/SOCKET	3 #8 AND 1#10 GND IN 3/4" CONDUIT	

General Notes for All Equipment:
1. Provide one switch per unit within eyesight of each unit.

Notes:

1

LIGHTING FIXTURE SCHEDULE

TAG TYPE	MFG	CATALOG NO.	MOUNTING	VOLTAGE	COLOR TEMP (K)	INPUT VA (MAX)	DESCRIPTION	NOTES
A	LITHONIA LIGHTING	CPX 2X4 4000LM 40K	RECESSED	120	4000	38.9	2' X 4' LED RECESSED FLAT PANEL, DIMMABLE VIA 0-10V	1
C	LITHONIA LIGHTING	CPX 2X2 3200 LM 50K	RECESSED	120	4000	31.5	2' X S' LED RECESSED FLAT PANEL, DIMMABLE VIA 0-10V	1
D	LITHONIA LIGHTING	CSS L48 4000 LM MVOLT 40K 80 CRI [CS ALL OPTIONS]	SURFACE	120	4000	34.2	LED STRIP LIGHT, DIMMABLE	1
H	LITHONIA LIGHTING	CPHB 24LM MVOLT 40K	HIGH BAY	120	4000	172.33	COMPACT PRO HIGHBAY, GLARE CONTROL LENS, DIMMABLE	1
W	LITHONIA LIGHTING	TWX LED P1 40K MVOLT DDBXD	EXTERIOR WALL	120	4000	23W	EXTERIOR WALLPACK, DARK BRONZE	1
WE	THE LIGHT SOURCE	LPW-15-4K-EM	EXTERIOR WALL	120	4000	15	EXTERIOR WALLPACK, DARK BRONZE	1
E1	LITHONIA LIGHTING	EMERGENCY EXIT LIGHT	WALL OR STEM	120	-	4.3	2-LAMP WALL MOUNTED EGRESS LAMP	1
E2	LITHONIA LIGHTING	EMERGENCY LIGHT	WALL	120	-	0.33	2-LAMP WALL MOUNTED EGRESS LAMP	1

1

GENERAL NOTES:

1. SEE PLANS FOR QUANTITIES.

2. PROVIDE AN ADDITIONAL NON-SWITCHED HOT LEG TO ALL EMERGENCY FIXTURES FOR BATTERY CHARGING AND POWER-LOSS DETECTION. PROVIDE AN EXTRA HOT AND SPLICE AROUND CONTACTORS/CONTROLLERS IF NECESSARY.

3. ALL EXIT SIGNS TO BE NON-SWITCHED.

NOTES:

1. ALL FIXTURE SUSTITUTIONS MUST MEET CONFORM TO LUMEN PER WATT AND COMPLY WITH CURRENT ENERGY CODES (IECC).

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05/12/2025

PRICINCT 2 ROAD AND BRIDGE FACILITY

BASTROP COUNTY

911 SE MARTIN LUTHER KING BLVD
SMITHVILLE TX, 78957

ELECTRICAL SCHEDULES

SHEET TITLE:

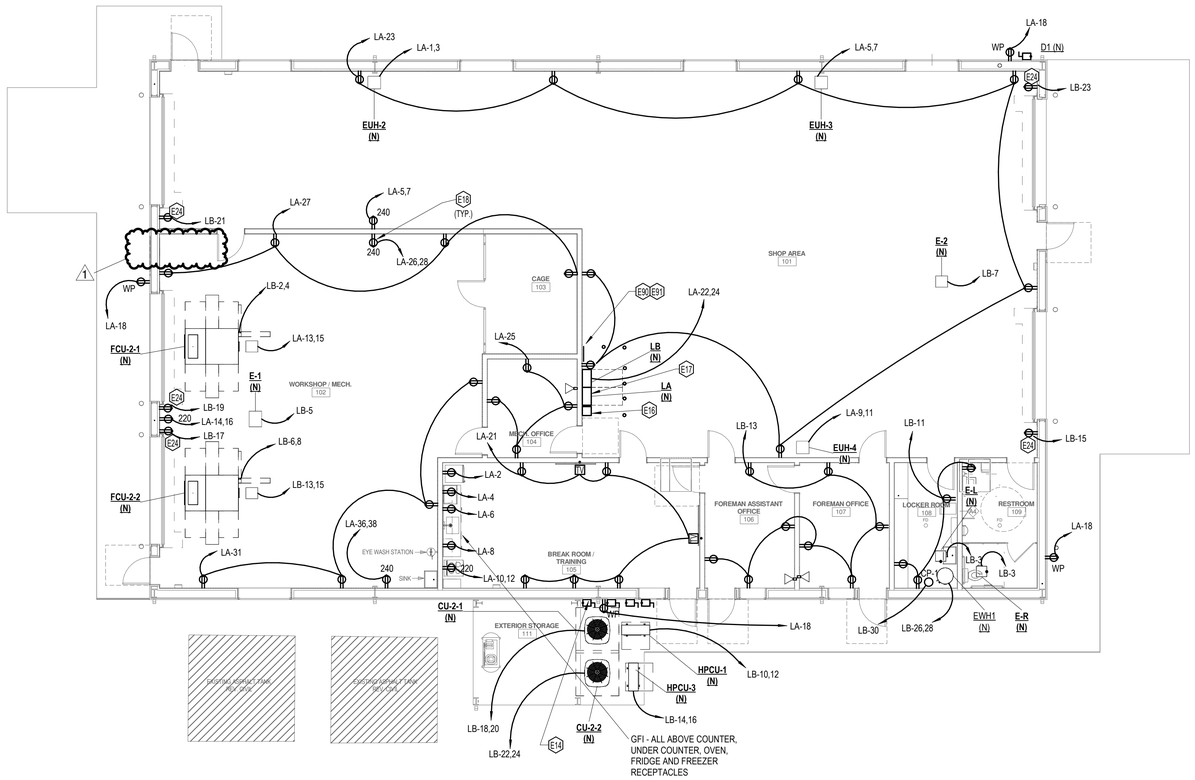
REVISIONS:

NO.		DATE
1	PERMIT/OWNER REVISIONS	5/12/2025

Job No: T2414
Drawn by: TO
Checked by: TS/SK/EB
Sheet No.

E2.3

Date: APRIL 2025



1 LVL01 POWER NEW WORK PLAN

1/8" = 1'-0"

GENERAL ELECTRICAL NOTES

1. REFER TO SHEET E1.1 FOR GENERAL NOTES AND LEGENDS.
2. NOT ALL EXISTING DEVICES MAY BE SHOWN.
3. SNAP SWITCHES USED AS DISCONNECTS SHALL BE AC GENERAL USE SNAP SWITCHES PER NEC 2017 404.14(A)(3)
4. FOR ELECTRICAL EQUIPMENT BEING REPLACED:
   A. RECORD THE CIRCUIT NUMBER AND BREAKER RATING OF EQUIPMENT.
   B. RECORD ANY UNSATISFACTORY CIRCUIT CONDITIONS.
   C. REPORT IN TABULAR FORM (UNIT #, CIRCUIT #(s), V/A/P, DEFICIENCIES IF ANY) TO ENGINEER AND OWNER FOR O&M RECORDS AND CORRECTIVE ACTION IF NEEDED.

ELECTRICAL NEW WORK KEYED NOTES

E14 FOR OUTDOOR HVAC UNITS MOUNT DISCONNECT ON ADJACENT WALL UNLESS OTHERWISE NOTED. PROVIDE AND MOUNT ALL OUTDOOR AND INDOOR DISCONNECTS SEPERATE FROM ALL HVAC EQUIPMENT EVEN IF DISCONNECT IS NOT PHYSICALLY SHOWN ON DRAWINGS.

E16 LOCATION OF FIRE ALARM PANEL (PROVIDED BY OTHERS).

E17 ROUTE CONDUIT FOR PANELS L1A FROM DISCONNECT UP THROUGH CONDUIT ATTACHED TO STRUCTURE OF METAL BUILDING. PROVIDE AND INSTALL BOLLARDS AS SHOWN TO PROTECT THE ELECTRICAL EQUIPMENT FROM VEHICLE TRAFFIC.

E18 COORDINATE WITH OWNER ON THEIR EXISTING EQUIPMENT FOR EXACT NEMA OUTLET TYPES FOR 240V OUTLETS.

E24 INSTALL RECEPTACLE FOR GARAGE DOOR OPENER 2 FT FROM THE SIDE OF THE OPENING AND 1 FT. BELOW TOP OF OPENING. COORDINATE EXACT LOCATION AND HEIGHT WITH OWNER.

E90 PROVIDE FIRE-RETARDANT TREATED PLYWOOD FOR TELECOM AND DATACOM DEVICE MOUNTING BACKBOARD. BACKBOARD TO BE SIZED BY TELECOM INSTALLER.

E91 PROVIDE COMMUNICATIONS SYSTEM GROUNDING ELECTRODE RISER EXTENDING FROM SYSTEM GROUNDING ELECTRODE TO DATA ROOM (SEE SPECIFICATIONS FOR SIZE), WITH 1/2" X 12" COPPER BUS ON STANDOFF BRACKETS, WALL MOUNTED TO FIRE RATED BACKING.

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POWER PLAN

SHEET TITLE:

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Job No: T2414
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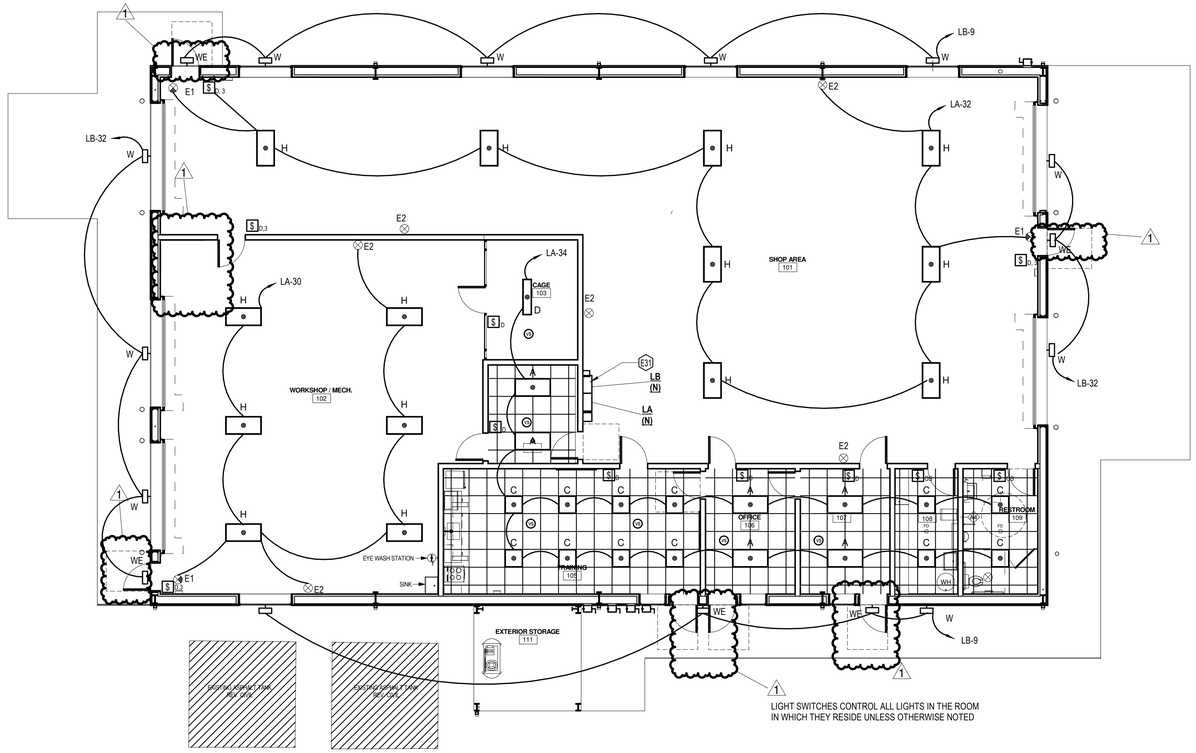
Checked by: TS/SK/EB
Sheet No.

E4.2

Date: APRIL 2025



1 LVL01 LIGHTING NEW WORK PLAN

1/8" = 1'-0"

GENERAL ELECTRICAL NOTES

1. REFER TO SHEET E1.1 FOR GENERAL NOTES AND LEGENDS.
2. NOT ALL EXISTING DEVICES MAY BE SHOWN.
3. SNAP SWITCHES USED AS DISCONNECTS SHALL BE AC GENERAL USE SNAP SWITCHES PER NEC 2017 404.14(A)(3)
4. FOR ELECTRICAL EQUIPMENT BEING REPLACED:
   A. RECORD THE CIRCUIT NUMBER AND BREAKER RATING OF EQUIPMENT.
   B. RECORD ANY UNSATISFACTORY CIRCUIT CONDITIONS.
   C. REPORT IN TABULAR FORM (UNIT #, CIRCUIT #(s), V/A/P, DEFICIENCIES IF ANY) TO ENGINEER AND OWNER FOR O&M RECORDS AND CORRECTIVE ACTION IF NEEDED.

LIGHTING INSTALL KEYED NOTES

ELECTRICAL NEW WORK KEYED NOTES

E31 INSTALL LITHONIA NDTC DIGITAL TIME CLOCK OR EQUAL TO CONTROL EXTERIOR LIGHTS.

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SHEET TITLE:
LIGHTING PLAN

REVISIONS:

NO.		DATE
1	PERMIT/OWNER REVISIONS	5/12/2025

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E5.2
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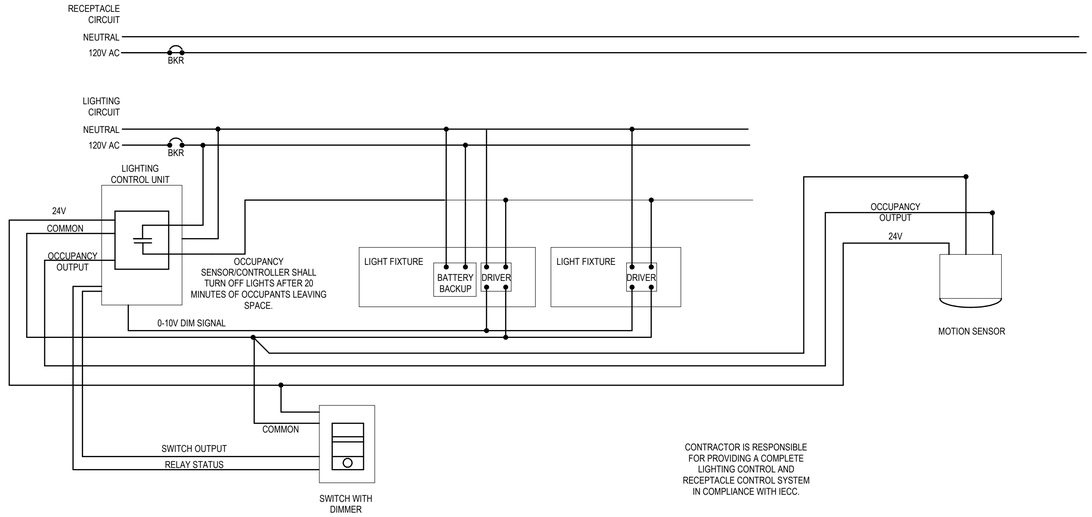
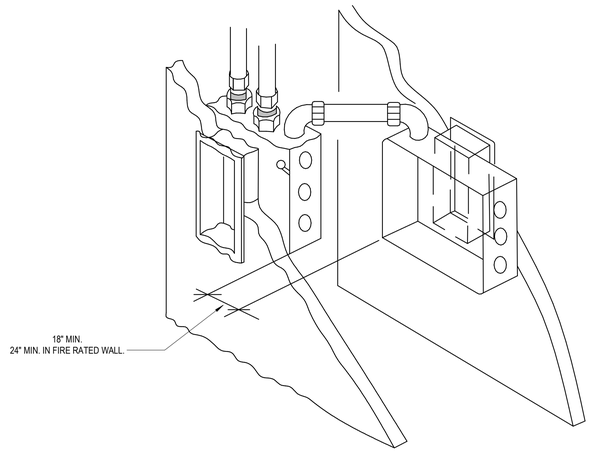
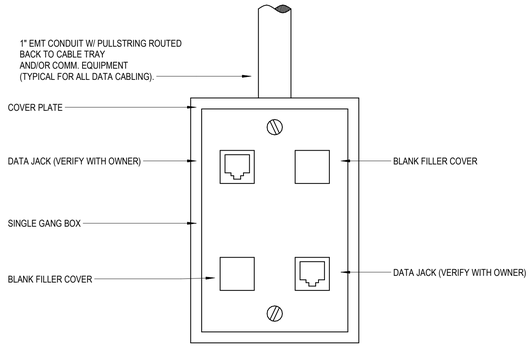


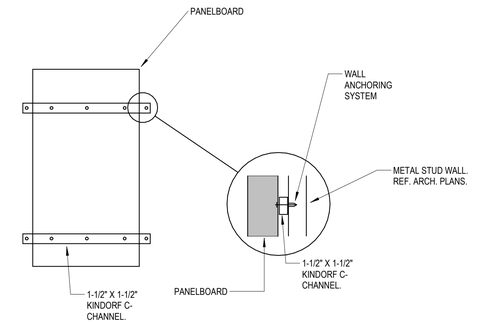
1 TYP. LIGHTING CONTROLS FOR SINGLE SWITCHED LED FIX. w DIMMING & OCCUPANCY SENSOR



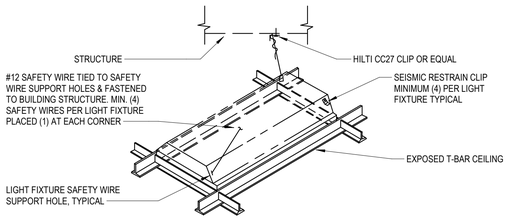
2 BACK TO BACK TYPICAL CONDUIT BOX MOUNTING DETAIL.



3 E-051 - TYPICAL COMM. OUTLET DETAIL.

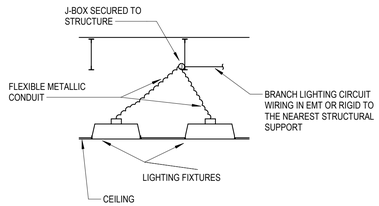


4 E-052 - TYPICAL PANELBOARD WALL SURFACE MOUNTING DETAIL

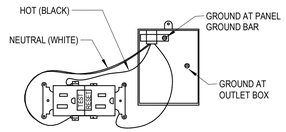


NOTES:
1. ALL WIRES ARE TO BE TAUT WITH A MINIMUM OF 3 TIGHT TURNS AROUND SELF - TYPICAL.
2. THIS DETAIL IS FOR REFERENCE ONLY. MOUNTING LOCATIONS MAY REQUIRE ADDITIONAL STRUCTURAL SUPPORT WHICH SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR DURING INSTALLATION.

5 E-053 - LIGHTING FIXTURE SUPPORT DETAIL



6 E-054 - LIGHTING FIXTURE WIRING DETAIL



7 E-055 - ABOVE COUNTER GFCI INSTALLATION DETAIL

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STATE OF TEXAS
THOMAS PAUL ARTHUR OTTEN
91932
LICENSED
PROFESSIONAL ENGINEER
04/04/2025

PRICINCT 2 ROAD AND BRIDGE FACILITY
BASTROP COUNTY
911 SE MARTIN LUTHER KING BLVD
SMITHVILLE TX, 78957

ELECTRICAL DETAILS

SHEET TITLE

REVISIONS:

NO.	DATE

Job No:	T2414
Drawn by:	TO
Checked by:	TS/SK/EB
Sheet No.	E6.0
Date:	APRIL 2025

PLUMBING ABBREVIATIONS

A		
	ACT	ACTUATOR
	AD	ACCESS DOOR
	AFC	ABOVE FINISHED CEILING
	AFF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	AI	ANALOG IN
	ALM	ALARM
	AO	ANALOG OUT
	AP	ACCESS PANEL
	APPROX	APPROXIMATE
	AS	AIR SEPARATOR
	AUX	AUXILARY
	AV	ACID VENT
	AW	ACID WASTE
B		
	BAS	BUILDING AUTOMATION SYSTEM
	BCS	BUILDING CONTROL SYSTEM
	BCU	BUILDING CONTROL UNIT
	BFF	BELOW FINISHED FLOOR
	BFS	BELOW FINISHED SLAB
	BFG	BELOW FINISHED GRADE
	BLDG	BUILDING
	BOP	BOTTOM OF PIPE
	BTU	BRITISH THERMAL UNIT
	BTUH	BRITISH THERMAL UNIT PER HOUR
C		
	CH	CHILLER
	CHW	CHILLED WATER
	CHWP	CHILLED WATER PUMP
	CHWR	CHILLED WATER RETURN
	CHWS	CHILLED WATER SUPPLY
	CI	CAST IRON
	CKV	CHECK VALVE
	CLG	CEILING
	CO	CLEANOUT
	COND	CONDENSATE
	CP	CIRCULATING PUMP
	CT	COOLING TOWER
	CTRL	CONTROL
	CU	COPPER
	CV	CONSTANT VOLUME, CONRTOL VALVE
	CW	COLD WATER/CITY WATER
D		
	DCW	DOMESTIC COLD WATER
	DDC	DIRECT DIGITAL CONTROL
	DET	DETECTOR
	DFA	DROP FROM ABOVE
	DHW	DOMESTIC HOT WATER
	DI	DUCTILE IRON
	DIA	DIAMETER
	DIS	DISCRETE INPUT, DIGITAL IN
	DN	DOWN
	DO	DISCRETE OUT, DIGITAL OUT
	DP	DIFFERENTIAL PRESSURE
	DPS	DIFFERENTIAL PRESSURE SWITCH
	DPT	DIFFERENTIAL PRESSURE
		TRANSDUCER
	DR	DRAIN
	DS	DOWN SPOUT
	DTB	DROP TO BELOW
E		
	EA	EACH
	EL	ELBOW
	EMS	ENERGY MANAGEMENT SYSTEM
	ENA	ENABLE
	ENCL	ENCLOSURE
	ENET	ETHERNET
	EP	EXPLOSION PROOF
	ERH	ELECTRIC RE-HEAT
	ETR	EXISTING TO REMAIN
	EWC	ELECTRIC WATER COOLER
	EWH	ELECTRIC WATER HEATER
	EWT	ENTERING WATER TEMPERATURE
	EWS	EYE WASH STATION
	EXT	EXTERNAL
F		
	FA	FRESH AIR
	FCO	FLOOR CLEAN-OUT
	FD	FIRE DAMPER/FLOOR DRAIN
	FH	FIRE HYDRANT
	FLEX	FLEXIBLE
	FLR	FLOOR
	FLTR	FILTER
	FM	FLOW MONITOR
	FOH	FEET OF HEAD
	FPS	FEET PER SECOND
	FS	FLOOR SINK
	FT	FEET/FOOT
G		
	G	GAS
	GAL	GALLONS
	GCO	GRADE CLEANOUT
	GEN	GENERAL
	GPM	GALLONS PER MINUTE
	GPH	GALLONS PER HOUR
	GT	GREASE TRAP
H		
	HA	HAMMER ARRESTOR
	HB	HOSE BIBB
	HP	HORSEPOWER
	HR	HOUR
	HTG	HEATING
	HUM	HUMIDITY
	HW	HOT WATER (DOMESTIC)
	HWR	HOT WATER RETURN
	HWS	HOT WATER SUPPLY
	HX	HEAT EXCHANGER
I		
	IN	INCHES
	INV	INVERT
	IOM	INSTALLATION & OPERATION MANUAL
	IS	IMMERSION SENSOR
K		
	K	KILO
	KW	KILOWATTS
L		
	LBS	POUNDS
	LG	LARGE
	LWT	LEAVING WATER TEMPERATURE
M		
	MAX	MAXIMUM
	MBH	THOUSAND BTU'S PER HR.
	MH	MANHOLE
	MIN	MINIMUM
	MS	MOP SINK
	MZ	MULTI-ZONE
N		
	NA	NOT APPLICABLE
	NC	NORMALLY CLOSED
	NG	NATURAL GAS
	NO	NORMALLY OPEN
	NU	NUMBER
O		
	ODF	OUTSIDE DRINKING FOUNTAIN
	OF	OVERFLOW
	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
	OSD	OPEN SIGHT DRAIN
P		
	PCR	PUMPED CONDENSATE
	PD	PRESSURE DROP
	PMP	PUMP
	PPG	PIPING
	PSI	POUNDS PER SQUARE INCH
Q		
	QTY	QUANTITY
R		
	RD	ROOF DRAIN
	RECIR	RECIRCULATION
	REF	REFERENCE
	REV	REVISION
	RFB	RISE FROM BELOW
	RM	ROOM
	RTA	RISE TO ABOVE
	RV	RELIEF VALVE
S		
	SFV	SHUT-OFF VALVE
	SHT	SHEET
	SOL	SOLENOID
	SPC	SPACE
	S_PT	SETPOINT
	S/S	START/STOP
	SS	SANITARY SEWER
	ST/AS	STATUS
	STG	STAGE
	STM	STEAM
	STS	STORM SEWER
	STZ	SINGLE ZONE
	SV	SOLENOID VALVE
	SW	SANITARY WASTE
T		
	TE	TEMPERATURE ELEMENT
	TEMP	TEMPERATURE
	TP	TRAP PRIMER
	TPRV	TEM. PRESSURE RELIEF VALVE
	TRV	THERMOSTATIC RECIRC. VALVE
	TW	TEMPERED WATER
	TWCO	TWO WAY CLEAN OUT
	TWR	TOWER
	TYP	TYPICAL
U		
	UH	UNIT HEATER
	UON	UNLESS OTHERWISE NOTED
V		
	V	VENT/VOLTS
	VEL	VELOCITY
	VFD	VARIABLE FREQUENCY DRIVE
	VTR	VENT THRU ROOF
W		
	W	WATTS
	W/	WITH
	WC	WATER CLOSET
	WCO	WATER CLEANOUT
	WCU	WATER COOLED UNIT
	WD	WATER DETECTOR
	WH	WATER HYDRANT
	WP	WEATHERPROOF
Z		
	ZN	ZONE
	ZR	ZONE RELAY

PLUMBING NOTES

1. PLUMBING CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR A.D.A. PLUMBING FIXTURE & STANDARD MOUNTING HEIGHTS.
2. PLUMBING CONTRACTOR SHALL INSTALL TRAP GUARDS IN ALL FLOOR DRAINS & FLOOR SINKS.
3. PLUMBING CONTRACTOR SHALL COORDINATE ALL PIPE ROUTING ABOVE CEILING WITH THE MECHANICAL & ELECTRICAL CONTRACTORS BEFORE INSTALLING.
4. PLUMBING CONTRACTOR SHALL COORDINATE THE MOUNTING HEIGHTS OF ALL AIR HANDLERS WITH THE MECHANICAL CONTRACTOR TO GUARANTEE POSITIVE DRAINAGE OF THE CONDENSATE DRAINS (1/8" PER FOOT SLOPE - MINIMUM).
5. PLUMBING VENTS SHALL NOT BE INSTALLED WITHIN 10' OF ANY FRESH AIR INTAKES. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.
6. ALL VALVES SHALL BE INSTALLED NO HIGHER THAN 2'-0" ABOVE THE CEILING. ACCESS DOORS SHALL BE INSTALLED IN GYPBOARD CEILINGS.
7. ALL PIPING PENETRATIONS SHALL BE SLEEVED & GROUTED AROUND OUTSIDE OF SLEEVE. FILL VOIDS AROUND THE PIPING WITH FIRE SEALANT APPROVED FOR THE PURPOSE.
8. ALL DISSIMILAR METAL CONNECTIONS SHALL BE INSTALLED WITH DIELECTRIC UNIONS IMMEDIATELY TO MINIMIZE USE OF GALVANIZED PIPE MATERIAL.
9. MOUNT A.D.A. FLUSH CONTROLS TO WIDE SIDE OF STALL.
10. THE PLUMBING CONTRACTOR SHALL MINIMIZE ALL PLUMBING VENT PENETRATIONS THRU ROOF. PAINT ALL VENTS ON ROOF TO MATCH THE COLOR TONE OF THE METAL ROOF COLOR.
11. THE PLUMBING CONTRACTOR SHALL ALIGN ALL VENTS THRU ROOF IN A REASONABLE MANNER.
12. THE PLUMBING CONTRACTOR SHALL VENT ALL SANITARY WASTE SEPARATELY FROM THE ACID WASTE VENTS.
13. THE PLUMBING INSTALLATION SHALL BE IN ACCORDANCE WITH A.D.A. & LOCAL PLUMBING CODE.
14. INSTALL INSULATION KITS AT ALL HANDICAP LAVATORIES & SINKS.
15. CAULK AROUND ALL PLUMBING FIXTURES.
16. WHERE COLD WATER IS PROVIDED TO TWO CONNECTIONS, CONNECT COLD WATER TO BOTH CONNECTIONS.
17. ALL TOILET SEATS TO BE OPEN FRONT LESS COVER.
18. PROVIDE BACKING SUPPORT FOR ALL WALL HUNG PLUMBING EQUIPMENT.
19. LAVATORIES SHALL CONFORM TO ANSI Z124.3, ASME A112.19 /CSA B45.2, ASME A112.19.2 /CSA B45.1 OR ASME A112.19.3 /CSA B45.4. GROUP WASHUP EQUIPMENT SHALL CONFORM TO REQMNTS OF IPC SECTION 402. EVERY 20 INCHES OF RIM SPACE SHALL BE CONSIDERED ONE (1) LAVATORY.
20. TEMPERED WATER SHALL BE DELIVERED FROM LAVATORIES AND GROUP WASH FIXTURES THRU AN APPROVED TEMPERATURE LIMITING DEVICE CONFORMING TO ASSE 1070 OR CSA B125.3.
21. WATER CLOSETS SHALL CONFORM TO CONSUMPTION REQMNTS OF IPC SECTION 604.4, AND TO ANSI Z124.4, ASME A112.19 /CSA B45.1, ASME A112.19 /CSA B45.4 OR CSA B45.5. WATER CLOSETS SHALL CONFORM TO HYDRAULIC REQMNTS OF ASME A112.19.2 /CSA B45.1. WC TANKS SHALL CONFORM TO ANSI Z124.4, ASME A112.19.2 /CSA B45.1, ASME A112.19.3 /CSA B45.4 CSA B45.5. ELECTRO-HYDRAULIC WC SHALL COMPLY WITH ASME 112..19.2 CSA B45.1.
22. WATER CLOSETS SHALL BE EQUIPPED WITH SEATS OF SMOOTH NON-ABSORBANT MATERIAL, BE OF THE HINGED OPEN FRONT TYPE AND BE SIZED FOR THE WC BOWL TYPE.

PLUMBING SYMBOLS LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SANITARY WASTE		DOMESTIC COLD WATER
	SANITARY VENT		DOMESTIC HOT WATER SUPPLY
GW	SW TO GREASE TRAP		DOMESTIC HOT WATER RETURN
GT	GREASE TRAP		FLOOR DRAIN
NG	NATURAL GAS		SHUT OFF VALVE
	SAW CUT REGION		CLEAN OUT

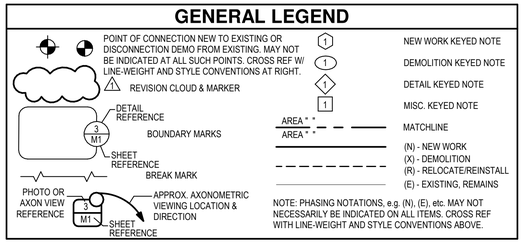
PLUMBING FIXTURE PIPING SCHEDULE

FIXTURE MARK	PIPE SIZE					FIXTURE DESCRIPTION/REMARKS
	COLD	HOT	TRAP	WASTE	VENT	
WC	1-1/4"	---	---	4"	2"	FLOOR MOUNTED, SCHEDULED HEIGHT (NOTE #2), FLUSH VALVE
WC	1-1/4"	---	---	4"	2"	WALL MOUNTED, SCHEDULED HEIGHT (NOTE #2), FLUSH VALVE
SH	3/4"	3/4"	3"	3"	2"	SHOWER SPRAY-HEAD & FLOOR DRAIN
LAV	1/2"	1/2"	1-1/4"	2"	2"	COUNTER-TOP MOUNTED OR WALL MOUNTED (NOTE #2).
SINK	1/2"	1/2"	1-1/4"	2"	2"	COUNTER-TOP MOUNTED OR WALL MOUNTED.
MS	3/4"	3/4"	3"	3"	2"	FLOOR MOUNTED MOP SINK.
UR	3/4"	---	---	2"	2"	WALL MOUNTED URINAL.
EWC	1/2"	---	1-1/4"	2"	2"	ELECTRICAL WATER COOLER (NOTE #2).
FD	---	---	3"	3"	2"	FLOOR DRAIN.
TP	1/2"	---	---	---	---	TRAP PRIMER.

NOTES:

1. PIPE SIZES FOR REFERENCE ONLY. REFERENCE PLANS AND EQUIPMENT MANUFACTURER FOR EXACT SIZES.
2. REF: ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS OF FIXTURES.

GENERAL LEGEND



GENERAL CONCRETE CUT/PATCH NOTES

1. FIELD VERIFY EXISTING CONDITIONS, PRIOR TO START OF ANY WORK. CONFIRM ROUTE AFTER SCANNING WITH CONCRETE-PENETRATING EQUIPMENT SUCH AS HILIT FERROSCAN OR GROUND-PENETRATING RADAR (GPR) TO FIND AND AVOID EMBEDDED ITEMS.
2. COORDINATE PLACEMENT OF DRILLED CORES AND ROUTING OF TRENCH CUTS WITH ALL AVAILABLE DRAWINGS SHOWING STRUCTURAL FEATURES SUCH AS BEAMS AND REINFORCEMENT, AS WELL AS ANY BEARING SUBSTRATE. ALSO, EXAMINE MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS THAT MAY SHOW OR INFER THE LOCATIONS OF EMBEDDED ITEMS.
3. PLUMBING LINES SHALL BE PLACED AT A DEPTH TO EITHER COMPLETELY PASS BELOW THE BOTTOM OF THE EXISTING FOUNDATION BEAMS OR WITHIN THE MIDDLE THIRD OF THE BEAM DEPTH. TAKE CARE TO NOT DAMAGE ANY BEAM REINFORCING WHILE DRILLING. MAXIMUM CORE SIZE SHALL NOT EXCEED 8" IN DIAMETER. CORES THROUGH THE MIDDLE THIRD OF THE BEAM DEPTH SHALL BE HORIZONTAL AND PERPENDICULAR TO THE FACE OF BEAM.
4. PLAN CONCRETE CUT PLACEMENT AND WIDTH TO ALLOW FOR THE FOLLOWING:
   A. AVOID ANY CUTS LONGER THAN 30" THAT ARE PARALLEL WITH, AND WITHIN 12"OF, A BEAM OR EXISTING WALL TO REMAIN.
   B. SUFFICIENT WIDTH TO REPAIR REBAR BY LAP-AND-TIE SPLICES.
   C. SUFFICIENT CUT WIDTH TO ALLOW FOR TRENCH SIDES TO MAINTAIN A STABLE SLOPE AND STILL BE WIDE ENOUGH FOR THE NEW BURIED ITEMS PLUS SAND CUSHION.
   D. DO NOT OVERCUT TRENCH SIDES UNLESS SUCH CUTS ARE SQUARED OFF THEREAFTER.
5. DRILL SMALL PILOT HOLES AS NECESSARY AT INTENDED LIMITS OF SLAB DEMOLITION TO ENSURE THAT SAWCUTS DO NOT CONFLICT WITH EXISTING FOUNDATION BEAMS.
6. PEEL BACK OR REMOVE FLOOR COVERING TO BEYOND THE WORK AREA. IF FLOORING IS REUSABLE, PRESERVE IT. ANY SHEET MATERIAL OR CARPET TO BE RE-INSTALLED SHALL BE CLEANLY CUT DOWN THE CENTERLINE OF THE TRENCH AND FOLDED OUTWARD SO THAT ONLY ONE AXIAL SEAM IS REQUIRED TO RESTORE IT.
7. CUT CONCRETE SLAB IN TRENCH PATH USING ONE OF THE FOLLOWING METHODS, SUBJECT TO APPROVAL BY THE OWNER, ARCHITECT, AND STRUCTURAL ENGINEER AS APPLICABLE FOR THE PROJECT:
   A. TO PRESERVE EMBEDDED REBARS AND AVOID NEED TO DRILL AND EPOXY REPLACEMENT REBARS:
      a. SAW-CUT SIDES TO DEPTH OF STEEL TOP ONLY.
      b. SAW-CUT TRENCH CENTERLINE THROUGH SLAB, BUT NOT THROUGH BEAMS.
      c. CUT SLAB TO DEPTH OF STEEL TOP ONLY AT EACH SIDE OF EACH BEAM, AND CUT FULLY THROUGH THE SLAB AT LEAST THIRTY (30) BAR DIAMETERS AWAY FROM THE BEAM.
   B. FOR LESS CUTTING AND MORE DIFFICULT STEEL REPAIR:
      a. SAW-CUT TRENCH SIDES THROUGH SLAB, BUT NOT THROUGH BEAMS.
      b. CUT FULLY THROUGH THE SLAB AT EACH SIDE OF EACH BEAM.
8. BREAK OUT SLAB CONCRETE (AND BEND BACK REBAR AS REQUIRED) TO EXCAVATE TRENCH AND INSTALL ITEMS BELOW FLOOR AND BEAMS.
9. EXISTING VAPOR BARRIER SHALL BE CUT ALONG THE CENTERLINE OF THE INTENDED TRENCH AND PULLED BACK PRIOR TO TRENCH EXCAVATION.
10. EXCAVATE SUBSTRATE ENSURING THAT SLAB EDGES ARE NOT UNDERMINED. PROVIDE AT LEAST 1" CUSHION OF SAND AROUND ALL SIDES OF INSTALLED ITEMS. BACKFILL WITH EXCAVATED MATERIAL IN HORIZONTAL LOOSE LIFTS NOT EXCEEDING 6" AND COMPACT LIFTS ABOVE 95% OF THE STANDARD PROCTOR (ASTM D 698) MAXIMUM DRY DENSITY AND WITHIN -3% TO 3% OPTIMAL MOISTURE CONTENT.
11. RESTORE CONTINUITY OF REBAR BY LAP-AND-TIE SPLICES. IF AND WHERE EXISTING REBAR CANNOT BE SO RESTORED, DRILL INTO SLAB EDGES ON EACH SIDE AND ANCHOR REPAIR REBAR IN EACH HOLE WITH EPOXY, LAP BARS AND TIE THEM. EPOXY FOR DOWELS INTO EXISTING CONCRETE SHALL BE INTENDED FOR HORIZONTAL APPLICATION AND SHALL BE CAPABLE OF DEVELOPING THE YIELD STRENGTH OF THE DOWEL WITH EMBEDMENT AS SPECIFIED BY THE EPOXY MANUFACTURER. EPOXY TECHNICAL DATA SHALL BE SUBMITTED TO THE A/E FOR APPROVAL PRIOR TO USE. FOLLOW MANUFACTURER'S INSTRUCTIONS. SUBMIT DETAILS OF EMBEDMENT AND LAP-AND-TIE SPLICES TO STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO INSTALLATION. NEW REINFORCING SHALL BE OF SIZE AND SPACING IDENTICAL TO ORIGINAL REINFORCING.
12. PLACE INFILL CONCRETE AT LEAST FULL THICKNESS OF ORIGINAL SLAB AND TROWEL SMOOTH WITH EXISTING TOP OF SLAB. USE CONCRETE WITH AT LEAST 4000 PSI STRENGTH, AND APPROVED BY THE STRUCTURAL ENGINEER.
13. REPLACE OR RESTORE FLOOR FINISH TO MATCH SURROUNDINGS AS DIRECTED BY OWNER AND ARCHITECT.

PLUMBING PIPING SUPPORT SPACING

PIPING MATERIAL	SIZE (DIA)	MAXIMUM HORIZONTAL SPACING (FT)	MAXIMUM VERTICAL SPACING (FT)	NOTES
ABS PIPE	---	4	10	2
ALUMINUM PIPE & TUBING	---	10	15	---
BRASS PIPE	---	10	10	---
BRASS TUBING	≤ 1-1/4"	6	10	---
BRASS TUBING	≥ 1-1/2"	10	10	---
CAST IRON PIPE	---	5	15	1
COPPER & COPPER ALLOY PIPE	---	12	10	---
COPPER & COPPER ALLOY TUBING	≤ 1-1/4"	6	10	---
COPPER & COPPER ALLOY TUBING	≥ 1-1/2"	10	10	---
CPVC PIPE & TUBING	≤ 1"	3	10	2
CPVC PIPE & TUBING	≥ 1-1/4"	4	10	2
STEEL PIPE	---	12	15	---
STEEL TUBING	---	8	10	---
LEAD PIPE	---	CONTINUOUS	4	---
PP PIPE & TUBING	---	2-2/3 (32 INCHES)	10	2
PEX TUBING	---	2-2/3 (32 INCHES)	10	2
PVC PIPE	---	4	10	2

SOURCE REF: 2021 UNIFORM PLUMBING CODE; LOCATION: T:\Design Master\01 - PROJECT FILE Structure Folders For Project Folder\Design\120 - Design Phase\Plbg\Calculations

NOTES:

1. THE MAXIMUM HORIZONTAL SPACING OF CAST IRON PIPE HANGERS SHALL BE INCREASED TO 10 FEET WHERE 10 FOOT LENGTHS OF PIPE ARE INSTALLED.
2. PROVIDE MID-STORY GUIDES.

GENERAL PLUMBING NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, & FEDERAL CODES/STANDARDS. CRAFTSMANSHIP & MATERIAL SHALL BE OF THE HIGHEST QUALITY.
2. REFER TO SPECIFICATION DIVISION 22 FOR ADDITIONAL INFORMATION REGARDING THE PROJECT. THE DRAWINGS & THE SPECIFICATIONS ARE BOTH INCLUDED IN THE CONTRACT DOCUMENTS.
3. ALL PLUMBING SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN SOCIETY OF PLUMBING ENGINEERS "DATA BOOK".
4. THE CONTRACTOR SHALL REVIEW THE CONTRACT DOCUMENTS FULLY PRIOR TO THE SUBMITTAL PHASE OF THE PROJECT. CONFLICTS WITHIN & BETWEEN THE CONTRACT DOCUMENTS SHALL BE NOTED IN WRITING TO THE ENGINEER PRIOR TO SUBMITTING DATA SHEETS FOR REVIEW.
5. IT IS THE INTENT OF THE DRAWINGS TO SHOW A COMPLETE DESIGN IN EVERY RESPECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A COMPLETE & FULLY FUNCTIONAL INSTALLATION. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK BETWEEN SUBCONTRACTORS TO ASSURE THAT THE INSTALLATION WILL BE COMPLETE WITHOUT ADDITIONAL COST TO THE CONTRACT.
6. AVOID EXCESSIVE OFFSETS IN PIPING UNLESS SPECIFICALLY INDICATED.
7. PROVIDE VALVE HANDLE EXTENSIONS AS REQUIRED TO ACCOMMODATE CLEARANCE OF INSULATION. VALVE HANDLE ACTUATION SHALL NOT DISTURB INSULATION.
8. BOTH THE SUBCONTRACTOR FOREMAN & THE PRIME CONTRACTOR FOREMAN SHALL VISUALLY INSPECT THE QUALITY & COMPLETENESS OF INSTALLATION PRIOR TO REQUESTING A FIELD OBSERVATION BY THE ENGINEER. PROVIDE A MINIMUM OF TWENTY-FOUR HOUR WRITTEN NOTICE TO THE ENGINEER PRIOR TO ANY FIELD OBSERVATION REQUIREMENTS.
9. DO NOT COVER ANY MECHANICAL OR PLUMBING WORK IN WALLS, BENEATH SLABS, IN TRENCHES, ABOVE CEILINGS, ETC. PRIOR TO REQUESTING OBSERVATION BY THE ENGINEER. ALL WORK COVERED WITHOUT OBSERVATION BY THE ENGINEER SHALL BE UNCOVERED FOR OBSERVATION.
10. ALL EQUIPMENT, FIXTURES, & PIPING SHALL BE INSTALLED PARALLEL TO BUILDING LINES.
11. SCHEDULING SHALL BE CLOSELY COORDINATED WITH THE OWNER, & NO WORK SHALL PROCEED WITHOUT AN OWNER-APPROVED SCHEDULE. WORK SHALL BE DONE SO AS TO MINIMIZE DISRUPTIONS TO BUILDING ACTIVITIES. SCHEDULE ALL SHUTDOWNS AT LEAST 48 HOURS IN ADVANCE WITH OWNER IN WRITING. REFER TO SPECIFICATIONS FOR AREAS REQUIRING SPECIAL ACCESS, SCHEDULING, &/OR SECURITY.
12. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES. CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE PRIME CONTRACTOR, THE ARCHITECT/ENGINEER, & AS NECESSARY, THE OWNER.
13. AT SUBSTANTIAL COMPLETION OF EQUIPMENT INSTALLATION, BIND & TURN OVER ALL EQUIPMENT OPERATION & MAINTENANCE MATERIAL TO OWNER.
14. KEEP PIPING INTERIOR CLEAN & FREE OF DEBRIS THROUGHOUT THE PROJECT. CAP ALL OPEN ENDS OF PIPING EXPOSED TO THE ELEMENTS.
15. EQUIPMENT OR MATERIALS SUBSTITUTED AS APPROVED EQUAL TO THAT SHOWN ON THE PLANS & SPECIFIED SHALL BE COMPATIBLE IN ALL RESPECTS. ANY CHANGES OR MODIFICATIONS REQUIRED TO ACCOMMODATE THE SUBSTITUTED ITEMS SHALL BE MADE BY THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.
16. FIRE-STOP ALL DEMISING WALL PENETRATIONS. ALL EXTERIOR WALL PENETRATIONS TO BE SEALED WEATHER TIGHT.
17. ALL OCCUPIED WORK AREAS SHALL BE LEFT IN A WIPE CLEAN & SECURE CONDITION EACH TIME THE CONTRACTOR LEAVES THE WORK AREA.
18. CONTRACTOR SHALL USE A DUST COLLECTING VACUUM DURING ANY DRILLING OR HAMMER DRILLING TO HELP MAINTAIN A CLEAN WORK ENVIRONMENT. COORDINATE WITH THE GENERAL CONTRACTOR FOR APPROPRIATE TIMES FOR DRILLING.
19. HORIZONTAL VENT PIPING SHALL BE SLOPED TO FACILITATE LIQUID GRAVITY FLOW BACK TO THE SOIL OR WATER WASTE PIPE.
20. PROVIDE SHUTOFF VALVES IN ALL DOMESTIC WATER PIPING SYSTEM BRANCHES IN WHICH BRANCH PIPING SERVES TWO OR MORE FIXTURES.
21. UNLESS OTHERWISE NOTED, ALL DOMESTIC COLD & HOT WATER PIPING SHALL BE 3/4-INCH SIZE.
22. UNLESS OTHERWISE NOTED, ALL PIPING SHALL BE OVERHEAD OR TIGHT TO UNDERSIDE OF SLAB, WITH SPACE FOR INSULATION IF REQUIRED.
23. INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, & OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.
24. WHERE DOMESTIC COLD & HOT WATER PIPING DROPS INTO A PIPE CHASE, THE SIZE SHOWN FOR THE PIPE DROPS SHALL BE USED TO THE LAST FIXTURE.
25. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
26. ALL PIPING SHALL GRADE TO LOW POINTS. PROVIDE HOSE & DRAIN VALVES AT THE BOTTOM OF ALL RISERS & LOW POINTS.
27. UNIONS &/OR FLANGES SHALL BE INSTALLED AT EACH PIECE OF EQUIPMENT, IN BYPASSES, & IN LONG PIPING RUNS (100-FEET OR GREATER) TO PERMIT DISASSEMBLY FOR ANY ALTERATIONS & REPAIRS.
28. ALL VALVES SHALL BE ADJUSTED FOR SMOOTH & EASY OPERATION.
29. ALL VALVES (EXCEPT CONTROL VALVES) & STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTION TO EQUIPMENT & CONTROLS.
30. PROVIDE ALL PLUMBING FIXTURES & EQUIPMENT WITH ACCESSIBLE STOPS.
31. UNLESS OTHERWISE NOTED, DRAINS SHALL BE INSTALLED AT THE LOW POINT OF AREAS, WALKWAYS, FLOORS, ETC.
32. ALL VALVES SHALL BE INSTALLED SO THAT VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.
33. ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
34. INSULATE ALL SUPPLY PIPING IN UNCONDITIONED SPACE WITH A LEAST 1/2" INSULATION FOR FREEZE PROTECTION. WHERE DIRECTLY EXPOSED TO AMBIENT OUTDOOR AIR TEMPERATURES, ALSO PROVIDE THERMOSTATIC ELECTRIC HEAT TAPE, RATED 1 WATT PER LINEAR FOOT.
35. ALL PIPING TO BE INSULATED PER IECC ENERGY CODE, 2021 EDITION .

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SMITHVILLE TX, 78957

PLUMBING GENERAL NOTES AND LEGENDS

SHEET TITLE:

REVISIONS:

NO.	DATE

Job No:	T2414
Drawn by:	TO
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PLUMBING FIXTURE SCHEDULE:

MARK	PLUMBING FIXTURES	MANUFACTURE & MODEL NO.	TRIM
CP-1	DOMESTIC HOT WATER	BELL & GOSSET, SERIES 100 Model # BG-106190	5 GPM @ 7.5 FEET HEAD, 1/12 HP, 120 V, 3/4" FLANGED, ALL BRONZE, IN LINE W/ REMOTE SENSING AQUA STAT CONTROLLER (B&G AQS-XX) AND TIMER (B&G TC-1) PER IECC
FCO	FLOOR CLEANOUT	WADE,# W-8130-AF &/OR MIFAB C1100-R-1 J.R.SMITH, #4031L	PVC FLOOR CLEANOUT W/ ADJUSTABLE BRASS TOP, BRASS W/ ROUND NICKEL BRONZE VP TOP, PLUG & STAIN NICKEL BRONZE SECURED SCOR. COVER.
		ZURN, ZN1400-BZ1	PROVIDED WITH ROUGH-IN COVER AND POST POUR ADJUSTABILITY
TWCO	TWO-WAY GRADE CLEANOUT	J.R.SMITH, #4031L	SETS OF FITTINGS & CONCRETE PADS W/ OPPOSED Y-FITTINGS
		ZURN, ZN1400-BZ1	
WCO	WALL CLEANOUT	WADE,# W-8470-R &/OR MIFAB C1430-RD J.R.SMITH, #4402C &/OR #4472T	BRASS PLUG W/ ROUND POLISHED BRASS VANDAL PROOF SCREW ACCESS COVER PLATE
		ZURN Z1441-C	
FD-1	FLOOR DRAIN CP REST ROOMS.	PROSET T*5630-F-CI, T*(5630-F-P, (* INDICATES PIPE SIZE) OR APPROVED EQUAL. ZURN Z1072	1/2" TRAP PRIMER CONNECTION ON PLANS, *** DIGIT IN MODEL NUMBER DENOTES CONNECTION SIZE. REFERENCE PLANS. INTEGRAL TRAP GUARD OR EQUIVALENT: NORMALLY CLOSED TRAP SEAL DEVICE; OPEN AGAINST AS LITTLE 1 OZ. INLET WATER; HOLD SEAL AGAINST 2" W.G. AT OULET; DRAIN SNAKE ACCEPTING: ELASTOMERIC GUARD MATERIAL TESTED TO CSA B602-05 OR EQUIVALENT STANDARD FOR TENSILE STRENGTH HARDNESS, OIL/FLUID IMMERSION, WATER ABSORPTION, HEAT AGING, LOW TEMP FLEXIBILITY & TEAR STRENGTH.
TP	TRAP PRIMER	PRECISION PLUMBING PRODUCTS MIFAB M500/MI-100/MI-300	INDIVIDUAL & MULTIPLE MODULES REQUIRED SEE PLANS & DETAILS
		ZURN Z1022-XL	
HB	HOSE BIB /WALL HYDRANT, OUTDOOR	ZE MIFAB MHY-16-3; ZURN Z1321-XL	W/ VACUUM BREAKER ENCASED STAINLESS STEEL BOX. CONCEALED HOSE CONNECTION & KEY ACTIVATED. NON-FREEZE TYPE.
LAV-B	LAVATORY ADA COMPLIANT (LAV & ALL ACCESSORIES) COLD & HOT WATER	KOHLER K2006-0; ZURN Z5364 WALL HUNG (8" CENTER) REF: ARCHITECTURAL PLANS FOR MOUNTING HEIGHT	VITREOUS CHINA WHITE C.P. RIGID SUPPLIES WITH REMOVABLE STOPS. C.P.-PTRAP W/ CLEANOUT. LAV FAUCET T&S BRASS B-2990-WH4-CRM; OR ZURN Z831R4-XL-ICT W/ COVER FLANGE, VANDAL RESISTANT FAUCET & AERATOR, WATTS L1170 OR ZURN Z831R4-XL-ICT HOT H2O MIXING VALVE, WALL BRACKET AND GRID STRAINER DRAIN, CHROME FINISH 3/8" ODLP SUPPLIES ADA COMPLIANT LAVGUARD, INSTALL ALL BRASS CARTRIDGE WITH THE FAUCET LAV SUPPORT W/ CONCEALED ARM - MIFAB MC-41 OR ZURN Z1231.
MS-B	MOP BASIN FLOOR MTD.	ZURN, Z1996-36	PROVIDE W/ SHELF, FAUCET MOD. Z843M1-XL, HOSE & HOSE BRACKET MOD. Z1996-HH, MOP HANGER MOD. Z1996-MH, STRAINER MODEL 1453-BB, OR ZURN Z5850-D3 DRAIN CONNECTION QDC3-2, BUMPER GUARD, SERVICE FAUCET TO BE 8" CC.
SK-1	SINK CW & HW (ADULTS)	ELKAY LRAD2219C SINGLE BOWL - 6.5" DEEP ADA COMPLIANT	PROVIDE W/ T&S BRASS B-2866-01 OR ZURN Z831C4-XL-ICT FAUCET & ELKAY LKAD-35, OR ZURN ZSS3000W-SS DRAIN SYSTEM. COORDINATE SIZE W/ MILLWORK. REFERENCE ARCHITECTURAL PLANS.
TMV-1	TEMPERING MIXING VALVE (LAWLER, ARMSTRONG/LEONARD SYMMONS)	LEONARD LV-186-983 LAWLER MOD 804 ARMSTRONG RADA 40 OR RADA 50	HIGH-LOW THERMOSTATIC WATER MIXING VALVE - SIZED FOR EACH APPLICATION OR APPROVED EQUAL BY LEONARD MEGRATION OR SYMMONS.
LTMV-1	TEMPERING MIXNG VALVE FOR SINGLE LAVATORIES & SINKS	WATTS MOD.#LFMMV-UT-M1 POWERS MOD.#LFLM4951; ZURN ZW1070XL	PROVIDE MIXING VALVE ON EACH SINGLE SINK &/OR LAVATORY. SIZE FOR 1/2" CONNECTIONS.
UR "A"	URINAL ELONGATED URINAL @ 14" RIM	KOHLER DEXTER K-5016-ET-0; ZURN Z5730 (ADA)	WALL HUNG WHITE VITREOUS CHINA SIPHON JET FLUSH ACTION SLOAN ROYAL FLUSH VALVE #186-0.5, 0.5 GAL. FLUSH VALVE (3912697) JR SMITH 0836. ZURN Z6003AV-EWS FLUSH VALVE & ZURN Z1221 CARRIER SYSTEM
			ALTERNATE SENSOR FV: ZER6003AV-EWS-CPM
US2	WASH SINK	EAGLE, 2424-1-16/4-IF	SINK INCLUDES FAUCET. PROVIDE STAINLESS STEEL DRAIN.
WS1	EYEWASH	HUGHES 18GS45GT WITH SIGNAGE	20"X30"X103"
WC-C	WATER CLOSET FLOOR MOUNTED (17" HIGH), ADA HEIGHT	KOHLER K-3519 ZURN Z5560 1.6 GPF OR Z5561 1.1 GPF ELONGATED BOWL ADA COMPLIANT	W/ K4484 FLUSHMETER PRESSURE ASSISTED TANK, #735084-400 TANK COVER WHITE, SLOAN VALVE FLUSHMATE III TANK SYSTEM; BARRINGTON PRESSURE ASSISTED 1.6 GPF TOILET

NOTES:

1. REFERENCE ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS AND OTHER PERTINENT INFO.
2. PROVIDE SINK DISPOSER ROUGH-IN PREP ONLY IN THE FOOD PRODUCTION AREA.
2. CONTRACTOR TO VERIFY ALL MANUFACTURER MODEL NUMBERS W/ SUGGESTED MANUFACTURERS LATEST MATCHING COMPONENT & IT'S CORRESPONDING MODEL NUMBER.
3. PROVIDE ALL SINKS & LAV'S SUPPLIED W/ HOT WATER - 'POWERS' HYDROGUARD SERIES LFLM495 (FOR SINGLE FIXTURE) LFLM490 (FOR UP TO FOUR FIXTURES MAX.)
   THERMOSTATIC TEMPERING VALVE(S) OR APPROVED EQUAL.

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PLUMBING SCHEDULES

SHEET TITLE:

REVISIONS:

NO.	DATE

Job No:	T2414
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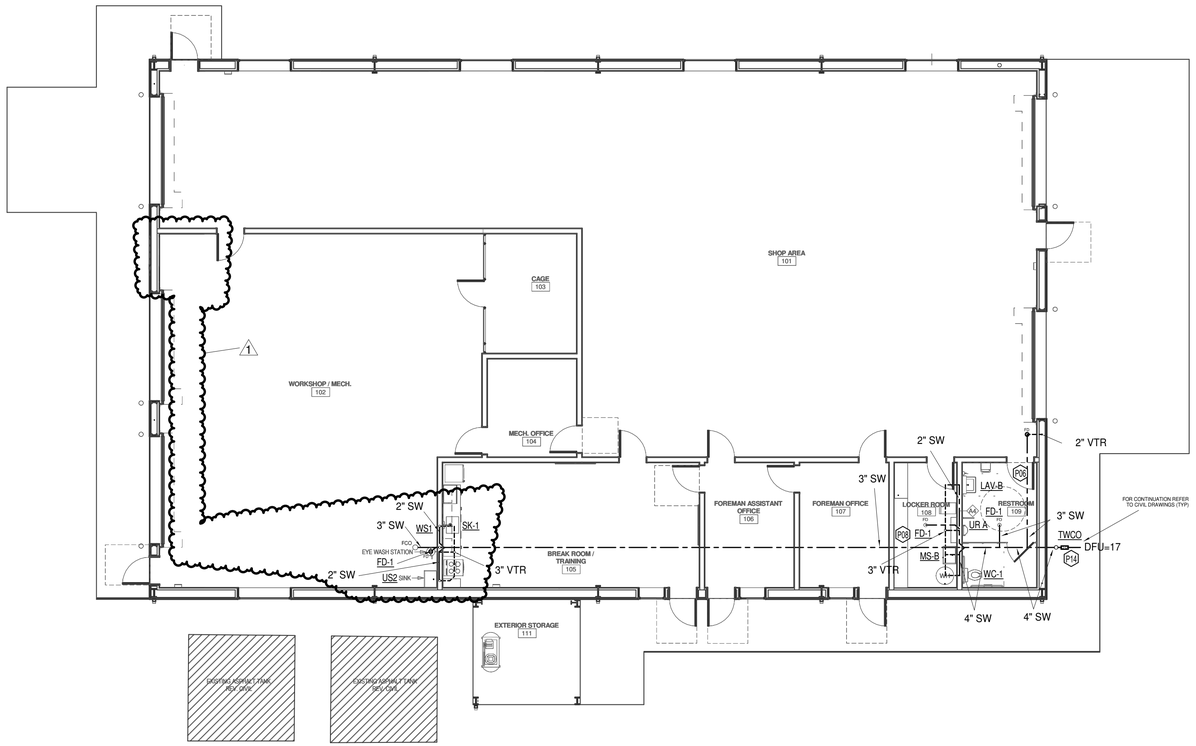
Checked by:	TS/SK/EB
Sheet No.	

P2.1

Date: APRIL 2025

GENERAL PLUMBING NOTES

1. REFER TO SHEET P1.1 FOR GENERAL NOTES AND LEGENDS.



1 LVL01 SANITARY & VENT PLAN
1/8" = 1'-0"

PLUMBING NEW WORK KEYED NOTES

P06 TYPICAL RESTROOM LAYOUT & DESIGN INCLUDES FLOOR DRAIN (FD-1), WATER CLOSET (WC-C), LAVATORY (LAV-B), URINAL (UR-A), SANITARY WASTE & VENT FOR EACH. DHW, DCW AND HW RECIRQ FOR LAV-B, DCW FOR WC-C AND UR-A. PROVIDE TRAP PRIMER (TP) ON FLOOR DRAIN AND TEMPERING VALVE (LTMV-1) ON LAVATORY.

P08 COORDINATE FLOOR SINK AND/OR DRAIN LOCATIONS WITH MECHANICAL EQUIPMENT, WATER HEATER, EQUIPMENT DRAINS, COMPRESSOR, CONDENSATE ROUTING, ETC. PROVIDE TRAP PRIMER (TP) ON FLOOR SINK. (TYP)

P14 COORDINATE BELOW GRADE SS INVERTS AND DW SUPPLY PIPING ELEVATIONS WITH FOUNDATION GRADE BEAMS UPON ENTERING AND EXITING THE BUILDING. (TYP)

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SANITARY AND VENT INSTALLATION PLAN

SHEET TITLE:

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1	PERMIT/OWNER REVISIONS	5/12/2025

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Sheet No.	**P4.1**
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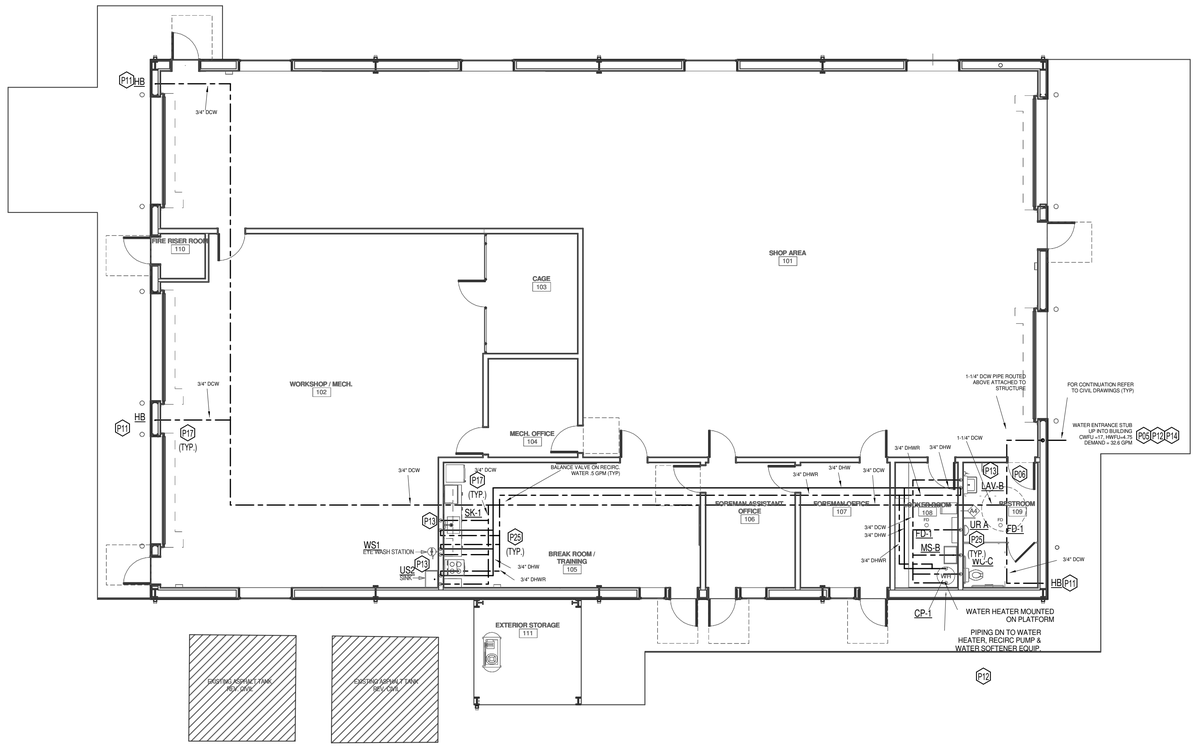

1 LVL01 DOMESTIC WATER PLAN
1/8" = 1'-0"

GENERAL PLUMBING NOTES

1. REFER TO SHEET P1.1 FOR GENERAL NOTES AND LEGENDS.

PLUMBING NEW WORK KEYED NOTES

P05 PROVIDE DOUBLE CHECK BACKFLOW WITH ISOLATION VALVES AT DOMESTIC WATER ENTRY INTO THE BUILDING. PROVIDE DRAINAGE PIPE ROUTED TO NEARBY FLOOR DRAIN. PROVIDE 2" AIR GAP WHERE BACKFLOW ASSEMBLY DRAINS TO DRAINAGE PIPE. ALLOW CLEARANCES FOR MAINTENANCE. COORDINATE LOCATION WITH ALL OTHER TRADES

P06 TYPICAL RESTROOM LAYOUT & DESIGN INCLUDES FLOOR DRAIN (FD-1), WATER CLOSET (WC-C), LAVATORY (LAV-B), URINAL (UR-A), SANITARY WASTE & VENT FOR EACH. DHW, DCW AND HW RECIRQ FOR LAV-B. DCW FOR WC-C AND UR-A. PROVIDE TRAP PRIMER (TP) ON FLOOR DRAIN AND TEMPERING VALVE (LTMV-1) ON LAVATORY.

P11 ISOLATION VALVE WITH 3/4" DW DOWN TO HOSE BIB (TYP)

P12 WATER SOFTENING PIPING, CONNECTIONS, AND EQUIPMENT BY OTHERS

P13 DHW PIPING DOWN TO SINKS AND LAVATORIES SHALL MEET IECC 2018 REQUIREMENTS FOR CONNECTION TO PLUMBING FIXTURE. THE 3/4" DHW SUPPLY PIPING IS TO DROP DOWN CLOSE ENOUGH TO FIXTURE THEN BRANCH OFF WITH 1/2" DHW CONNECTION SO THAT THE 1/2" LENGTH FROM 3/4" DHW SUPPLY TO FIXTURE CONNECTION IS 24" MAX. THE 3/4" DHWS PIPING AT THE 1/2" BRANCH CONTINUES ON AS 3/4" DHWR AND THEN UP TO THE 3/4" DHWR PIPING OVERHEAD, THROUGH THE VALVES AND BACK TO THE HW HEATER. (TYP)

P14 COORDINATE BELOW GRADE SS INVERTS AND DW SUPPLY PIPING ELEVATIONS WITH FOUNDATION GRADE BEAMS UPON ENTERING AND EXITING THE BUILDING. (TYP)

P17 MODIFICATIONS TO STRUCTURE MAY BE NECESSARY WHEN ROUTING INTERIOR PIPING. OWNER TO CONSULT WITH A STRUCTURAL ENGINEER AND /OR PREFABRICATED BUILDING PROVIDER. (TYP)

P25 PROVIDE ACCESSIBLE ISOLATION VALVES ABOVE CEILING IN EACH FIXTURE BRANCH.

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DOMESTIC WATER INSTALLATION PLAN
SHEET TITLE:

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Sheet No.	P4.2
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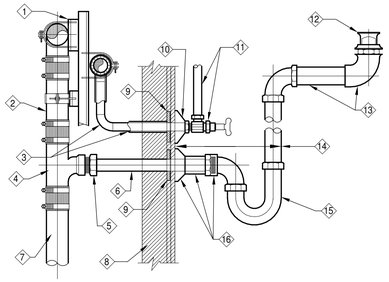
GEN. NOTES :

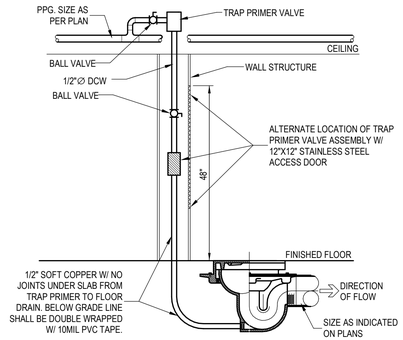
1. ALL EXPOSED PIPING, VALVES, EQUIPMENT, ECT. TO BE A.D.A. COMPLIANT.
2. INSULATION SHALL RUN CONTINUOUS THRU SUPPORTS, REF. GEN. NOTES & SPECIFICATIONS.
3. NO-HUB PIPE CLAMPS SHALL BE MINIMUM 4-BAND, TYP.



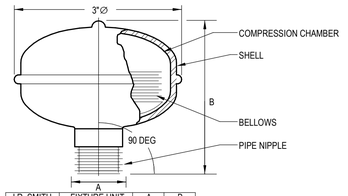
DETAIL KEYED NOTES:

1. FOR PPG. SUPPORTS REF: PPG. HANGERS & SUPPORTS DETAIL.
2. VENT PPG. SIZED PER PLAN.
3. TYPE 'L' COPPER PIPE (INSULATE PER SPEC'S.).
4. 2"x1-1/2" FOR (SINK, EDF'S & LAV'S.) SANITARY TAPPED TEE.
5. NIBCO TYPE DWV 804 ADAPTOR.
6. TYPE 'L' COPPER PIPE.
7. CAST IRON SANITARY WASTE (2" MIN.). REF: TO PLANS FOR LOCATION/ROUTING.
8. WALL CONSTRUCTION (REF: ARCH. DWG'S.)
9. COPPER STUB-OUT SUPPORT BRACKETS TO SPAN STUDS, SOLDER TO PIPE, OR ENGINEER APPROVED EQUAL. PIPE INSULATION: STUB TO BACK OF BRACKET & SEAL.
10. NIBCO TYPE 604 CHROME PLATED BRASS ESCUTCHEON.
11. HEAVY LAVATORY SUPPLY KIT: HEAVY PATTERN COMMERCIAL, 1/4 TURN BALL ANGLE STOP VALVE W/ LOOSE KEY HANDLES & HEAVY CHROME PLATED COPPER SUPPLIES W/ INSULATED COVERS. (TYP. DO NOT USE BRAIDED FLEXIBLE SUPPLY CONNECTORS.)
12. GRID STRAINER.
13. A.D.A LAVATORY OFFSET, USE AS REQUIRED TO ACHIEVE (T.A.S.) COMPLIANCE, REQUIRES ENGINEER APPROVAL.
14. LOCATE P-TRAP TO PROVIDE FOR MIN. KNEE CLEARANCE OF 8" (PER T.A.S.).
15. HEAVY CHROME PLATED 17 GAUGE BRASS P-TRAP & HEAVY CHROME BRASS ELBOW. INSULATE ALL EXPOSED SINK WASTE & WATER OUTLET PPG. & STOP VALVES, AS PER SPECIFICATIONS & (T.A.S.).
16. NIBCO DWV TRAP ADAPTOR & HEAVY CHROME PLATED BRASS COVER TUBE OR CHROME PLATED BRASS NIPPLE. PROVIDE CHROME PLATED SOLID CAST BRASS ESCUTHEON W/ SET SCREW, (TYP. AT WASTE & WATER WALL PENETRATIONS).

1 TYPICAL LAVATORY & SINK PIPING CONNECTION DETAIL



2 TYPICAL TRAP PRIMER & ASSEMBLY CONNECTION DETAIL

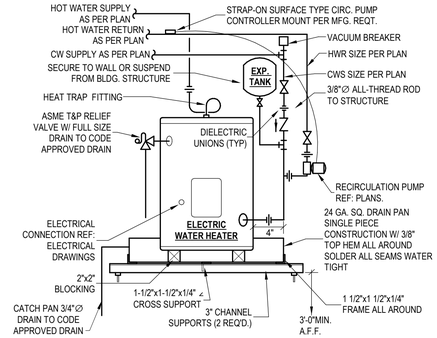


J.R. SMITH FIG. NO	FIXTURE UNIT RATING	A SIZE	B SIZE
5005	1 - 11	3/4"	4"
5010	12 - 32	1"	5"
5020	33 - 60	1"	6"
5030	61 - 113	1"	7"
5040	114 - 154	1"	8"
5050	155 - 330	1"	9"

NOTE:

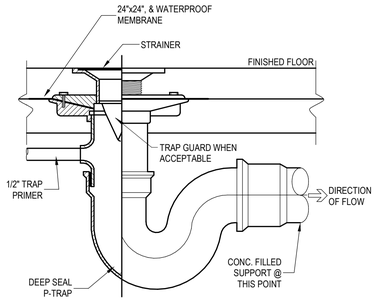
1. SELECT & INSTALL WATER HAMMER ARRESTORS PER PDH-WH 201.
2. INSTALL WATER HAMMER ARRESTORS AT END OF EACH BRANCH LINE BETWEEN LAST 2 FIXTURES SERVED.
3. INSTALL ADDITIONAL WATER HAMMER ARRESTOR IN BRANCH LINES EXCEEDING 20' IN LENGTH.
4. INSTALL WATER HAMMER ARRESTORS IN UPRIGHT POSITION W/ GATE VALVE.
5. INSTALL MIN. 6"x 8" ACCESS PANEL, FINISH TO BE SELECTED BY OWNER/ARCHITECT.

3 TYPICAL WATER HAMMER ARRESTOR DETAIL



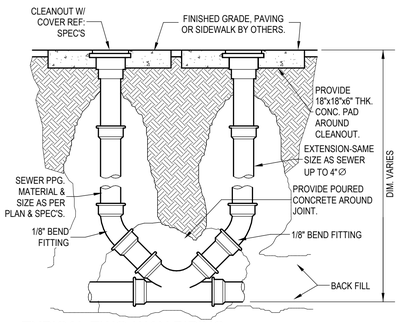
NOTES: 1) ALL DHW PIPING TO BE INSULATED PER IECC, CURRENT EDITION.

4 TYPICAL SMALL ELECTRIC WATER HEATER W/ RECIR. PUMP & PIPING DETAIL

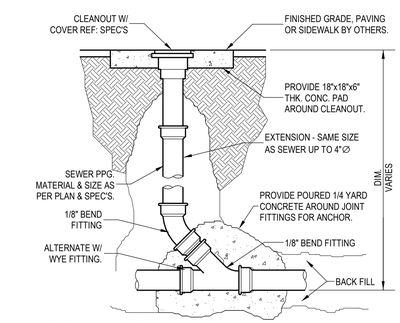


NOTE:
PROVIDE A PROSET/MIFAB OR APPROVED EQUAL FLOOR/SINK DRAIN TRAP GUARD WHEN TRAP PRIMER IS NOT ACCEPTABLE.

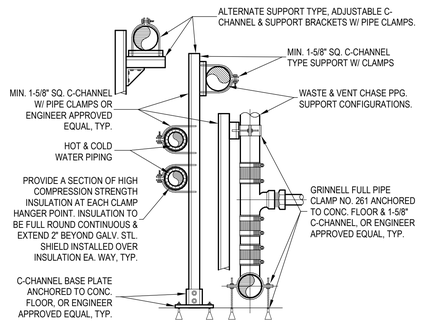
5 TYPICAL FLOOR DRAIN w TRAP PRIMER INSTALLATION DETAIL



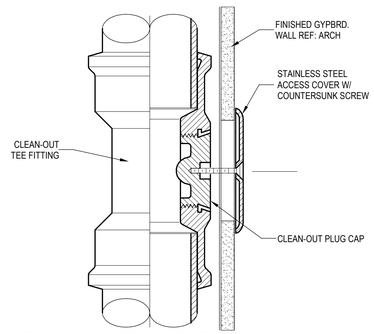
6 TYPICAL TWO-WAY PIPING CLEANOUT INSTALLATIONDETAIL



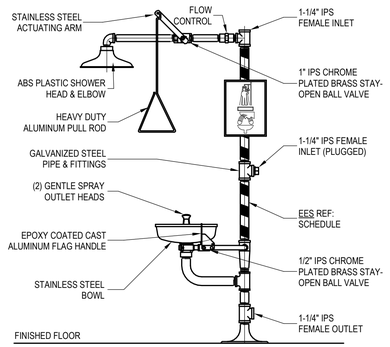
7 TYPICAL ONE-WAY PIPING CLEANOUT INSTALLATION DETAIL



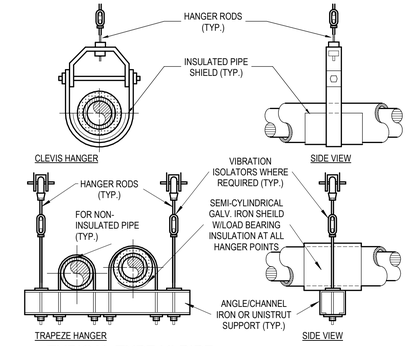
8 TYPICAL WASTE & VENT PIPING HANGER SUPPORT DETAIL



9 TYPICAL WASTE & VENT WALL CLEANOUT INSTALLATION DETAIL



10 TYPICAL EMERGENCY EYE FACE SHOWER WASH DETAIL



11 TYPICAL TYPE VI PIPE STRUCTURE HUNG SUPPORT DETAIL

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LICENSED PROFESSIONAL ENGINEER
04/04/2025

PRICINCT 2 ROAD AND BRIDGE FACILITY

BASTROP COUNTY

911 SE MARTIN LUTHER KING BLVD
SMITHVILLE TX, 78957

PLUMBING DETAILS

SHEET TITLE:

REVISIONS:

NO.	DATE

Job No:	T2414
Drawn by:	TO
Checked by:	TS/SK/EB
Sheet No.	

P9.1

Date: APRIL 2025