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June 21, 2024

To: Plan Holders for Improvements to the
KIRKSVILLE REGIONAL AIRPORT
KIRKSVILLE, MISSOURI
MODOT PROJECT NO. 24-028A-1

Transmitted herewith is Addendum **No. 4** to the Issued for Bid Contract Documents, Specifications and Plans dated May 30, 2024 for Improvements to the IRK Airport.

Schedule I Construct New Terminal Building

Schedule II Reconstruct Terminal Parking Lot

Schedule III Demolish Existing Terminal and Construct New Parking Lot

Sincerely,

Woolpert, Inc.

Adam Acree

Adam Acree
Project Manager

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ADDENDUM NO. 4
TO
CONTRACT DOCUMENTS, SPECIFICATIONS AND PLANS
FOR IMPROVEMENTS TO THE
KIRKSVILLE REGIONAL AIRPORT
KIRKSVILLE, MISSOURI
MODOT PROJECT NO. 24-028A-1

To All Bidders: You are requested to make all changes and/or additions contained in this addendum to the Bidding Documents. Failure to acknowledge this Addendum in Proposal shall result in rejection of bid. Bidders are informed that the above referenced Contract Documents, Specifications and Plans are modified as follows as of June 18, 2024:

1. CONTRACT DOCUMENTS:

Section: Line 255
Title: TABLE OF CONTENTS
Revision: Added Geotechnical Investigation Report Appendix
Justification: To Clarify.

Section: Line 46
Title: REQUEST FOR BIDS/INVITATION FOR BIDS
Revision: Added the working days for all three schedules.
Justification: To specify the different amount of working days for each construction schedule.

Section: 80-08, Line 1792
Title: FAILURE TO COMPLETE ON TIME
Revision: Added the working days for all three schedules and changed the liquidated damages cost to reflect the same amount, $1000/day/working day.
Justification: To specify the different amount of working days for each construction schedule and clarify the liquidated damages.

Section: 16, Lines 4763-4793
Title: LIQUIDATED DAMAGES
Revision: Removed portions related to liquidated damages that are irrelevant/not accurate.
Justification: For Clarification

Section: Appendix 3
Title: GEOTECHNICAL INVESTIGATION REPORT
Revision: Added Geotechnical Investigation Report Appendix
Justification: To Clarify.

2. SPECIFICATIONS:

Title: 27 40 10 DIGITAL DISPLAYS
Revision:
Justification: For Clarification

Title: 11 14 00 PEDESTRIAN EXIT LANE BREACH CONTROLS
Revision:
Justification: For Clarification

2. <u>SHEETS:</u>

Sheet No.: G-002
Title: LIFE SAFETY PLAN
Revision:
Justification: For clarity.

Sheet No.: CD-100
Title: SITE DEMOLITION PLAN
Revision: Include pavement between apron and existing terminal building to be removed. Added covered area on west side of existing terminal as part of the existing terminal building to be demolished. Include additional sidewalk on south side of existing terminal building to be removed.
Justification: For clarity.

Sheet No.: S-001
Title: GENERAL NOTES
Revision:
Justification: For clarity.

Sheet No.: S-100
Title: FOUNDATION PLAN
Revision:
Justification: For clarity.

Sheet No.: S-130
Title: ELEVATIONS 1
Revision:
Justification: For clarity.

Sheet No.: S-140
Title: ELEVATIONS 2
Revision:
Justification: For clarity.

Sheet No.: S-202
Title: TYPICAL FOUNDATION DETAILS
Revision:
Justification: For clarity.

Sheet No.: A-601
Title: DOOR SCHEDULE, TYPES, AND DETAILS
Revision: Door Schedule
Justification: Fire ratings.

Sheet No.: A-621
Title: STOREFRONT SCHEDULE AND DETAILS
Revision: Curtain Wall Indication.
Justification: For clarity.

Sheet No.: A-701
Title: FINISH PLAN AND SCHEDULES
Revision: Finish Legend and wall covering information.
Justification: For clarity.

Sheet No.: A-702
Title: SIGNAGE, EQUIPMENT AND FURNITURE PLAN AND SCHEDULES
Revision: Revised Schedules
Justification: For clarity.

Sheet No.: ME-001
Title: SCHEDULE & SPECS
Revision:
Justification: For clarity.

Sheet No.: P-101
Title: PLUMBING PLAN
Revision:
Justification: For clarity.

Sheet No.: P-601
Title: WASTE RISER DIAGRAM
Revision:
Justification: For clarity.

Sheet No.: P-602
Title: SUPPLY RISER DIAGRAM
Revision:
Justification: For clarity.

Sheet No.: M-101
Title: HVAC PLAN
Revision:
Justification: For clarity.

Sheet No.: E-101
Title: POWER PLAN
Revision:
Justification: For clarity.

Sheet No.: E-102
Title: LIGHTING PLAN
Revision:
Justification: For clarity.

Sheet No.: E-103
Title: PANEL SCHEDULES & ELECTRICAL RISER
Revision:
Justification: For clarity.

3. <u>QUESTIONS:</u>

1. *Sheet A-702 mentions items such as Corner Guards but we failed to see any Fire Extinguisher Cabinets.*

   Response: Refer to A-701 and A-702 for corner guard locations. The fire extinguishing cabinets are located in the Life Safety Plan on sheet G-002 of the bid documents.

2. *Sheet A-702 states CFCI for a Trash/Recycle container. Do you have specifications for this?*

   Response: Refer to A-401 for basis of design or approved equal. Trash Can TA12 has been added to Gender Neutral Restrooms 115 and 116.

3. *Sheet A-702 states CFCI for TV Monitors. Do you have any specifications for this?*

   Response: Refer to A-702 for make and model as basis of design or approved equal.

4. *Sheet S-100 Foundation Plan calls for wall footing WF-24. What are the dimensions? We assumed 24" x 12".*

   Response: Refer to S-100.

5. *Sheet S-100 Foundation Plan calls out for a variety of column footing pads. What are the dimensions? We assumed F-6.0 is 6'-0" x 6'-0" x 1'-6". F5.0 is 5'-0" x 5'-0" x 1'-3". F4.0 is 4'-0" x 4'-0" x 1'-0".*

   Response: Refer to S-100.

6. *Sheet A-002 Detail A6 and B6 indicate two different types of fireproofing. Which one goes where? We have assumed that A6 goes everywhere.*

   Response: Plans details will be provided in Addendum 5 as the extent of 1 hour spray foam insulation vs the areas that will receive 2 layers of type-x to achieve a 1 hour rating. The Back of house not open to the public rooms shall receive the most competitive options between spray foam and type-x gyp to achieve a 1 hour rating. The areas above the ACT ceiling shall also receive the most competitive option. Areas in the public viewing shall receive 2 layers of type-x gyp. Beams exposed in public areas shall also receive a continuous wood laminate to match the ticket counters given in finish schedule.

7. *Sheet S-200 Detail 2 states concrete stem wall. What is the thickness of the wall? We assumed a 12" thick wall.*

Response: Refer to S-100.

8. *Sheet S-200 Detail 2 indicates a footing schedule. We did not find one.*
   Response: Refer to S-100.

9. Room 109 has a Flip Flow component. Are there any specifications for this?
   Response: Refer to 11 14 00 PEDESTRIAN EXIT LANE BREACH CONTROLS.

10. *Sheet A-111 has a note stating that we are to Wrap Exposed Beams at ACT. We do not see a detail on how to configure this wrapping. We assumed metal stud and drywall, 12" wide and 24" to the deck.*
    Response: Plans details will be provided in Addendum 5 as the extent of 1 hour spray foam insulation vs the areas that will receive 2 layers of type-x to achieve a 1 hour rating. The Back of house not open to the public rooms shall receive the most competitive options between spray foam and type-x gyp to achieve a 1 hour rating. The areas above the ACT ceiling shall also receive the most competitive option. Areas in the public viewing shall receive 2 layers of type-x gyp. Beams exposed in public areas shall also receive a continuous wood laminate to match the ticket counters given in finish schedule.

11. *Sheet A-521 detail A1 states, "WOOD WRAPPED STEEL BEAM, SEE STRUCTURAL". Structural does not have a detail. There are no section details showing this work nor is there any indication which beams receive this. We assumed the lobby only. We, also, assume some type of wood wrapping, 12" wide and 42" tall.*

    Response: Plans details will be provided in Addendum 5 as the extent of 1 hour spray foam insulation vs the areas that will receive 2 layers of type-x to achieve a 1 hour rating. The Back of house not open to the public rooms shall receive the most competitive options between spray foam and type-x gyp to achieve a 1 hour rating. The areas above the ACT ceiling shall also receive the most competitive option. Areas in the public viewing shall receive 2 layers of type-x gyp. Beams exposed in public areas shall also receive a continuous wood laminate to match the ticket counters given in finish schedule.

12. *Specs 93013-3.7-A-1. Floor installation schedule: They note thick set mortar bed installation (F111). Is this wanted as it's pretty rare to see it specified?*

    Response: Contractor to follow finish schedule for selection and mfr. recommendation for installation.

13. *In general, you list 12 different installation methods for the ceramic tile. Please specify one for floors and one for walls so we know what to bid.*

    Response: Contractor to follow the Finish Legend on sheet A-701. The options are intended to cover all scenarios, contractor to provide means and methods. Choose the most competitive system.

14. *Also is auto sliding doors black anodized on interior to match frames next to it?*

    Response: Yes, that is correct. All storefront and sliding doors to be mfr's black anodized.

15. *Is exterior sliding door to be champagne paint?*

    Response: No, the exterior sliding doors are to be black anodized.

16. *Exterior is curtain wall, correct? Spec has curtain wall in it, and details show curtain wall, but on sheets it says storefront and shows 2" profiles. Curtain wall is 2 ½" profile.*

    Response: Refer to A-621. Windows in Hold Room exceed limit for storefront and shall be a deferred submittal for curtain wall system. Contractor to verify with storefront manufacture of sizes of storefront for acceptable warranty upon submittal.

17. *On door schedule sheet A601 it is showing 45 MIN. rating on all doors? Automatic sliding doors will not be fire rated. If aluminum swing doors need to be fire rated, this can be done BUT I will not be able to get a price on those by bid date. Also exterior curtain wall calling out champagne and black anodized on interior. (spec says exterior frames sf-3 & sf-6 black anodized as well) Is this correct on black frames?*

    Response: Fire ratings have been clarified on sheet G-002. The only wall that shall receive a fire rated gyp is the north wall of the TSA Offices, IT Room, and Storage Room. Door 121 is the only door that requires 45 minute fire rating. Refer to A-601.

18. *Exterior I am assuming is painted. They do not anodize champagne anymore.*

    Response: Exterior storefront is to be black anodized per mfr.

**** END OF ADDENDUM NO. 4. FINAL DAY FOR QUESTIONS SHALL BE JUNE 24TH, 2024 AT 5:00 P.M. CST. ****

BID DOCUMENTS & TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

REQUEST FOR BIDS/INVITATION FOR BIDS

Kirksville Regional Airport
Kirksville, MO
State Block Grant Project No. 23-01

Sealed bids will be received until 3:00 p.m., Thursday, June 27, 2024, and then publicly opened and read by the Kirksville Regional Airport at City Hall, 201 South Franklin St. Kirksville, MO 63501 for furnishing all labor, materials and equipment and performing all work necessary to

Schedule I - Construct New Terminal Building
Schedule II- Reconstruct Terminal Parking Lot
Schedule III- Demolish Existing Terminal and Construct New Parking Lot

Contract Documents. The complete set of bid documents (Contract Documents, Plan Set, Specifications, and Addendums) can be downloaded from Quest Construction Data Network (Quest CDN) at www.questcdn.com and/or https://woolpert.com/markets/aviation by selecting the "Project Bids" header and inputting Quest Project #9145611 – IRK New Terminal on the Project Search page beginning on May 30, 2024. Interested parties may view the bid documents at no cost prior to deciding to become a plan holder and bidding on the project. To be considered a plan holder, register with www.questcdn.com for a free Regular membership and download the bid documents in digital form at a cost of twenty-two dollars ($22.00). Downloading the documents and becoming a plan holder is required to bid as plan holder's receive automatic notice of addendum(s) for this project and bid updates. It is the bidder's responsibility to review the site for addendums and changes before submitting their proposal. This includes review for environmental changes. Environmental changes during construction could take up to four weeks for approval. Contact QuestCDN Customer Support at 952-233-1632 or info@QuestCDN.com for assistance in membership registration and downloading digital bidding documents.

Pre-Bid Conference. The pre-bid conference for this project will be held on Tuesday, June 11, 2024 at 2:00 p.m., at City Hall, 201 South Franklin St. Kirksville, MO 63501. All bidders are required to examine the site to become familiar with all site conditions.

Bid Conditions. The bidder is required to provide all information as required within the Contract Documents. The bidder is required to bid on all items of every schedule or as otherwise detailed in the Instructions to Bidders.

Each proposal must be accompanied by a bid guaranty in the amount of five (5) percent of the total amount of the bid. The bid guaranty may be by certified check or bid bond made payable to Kirksville Regional Airport.

Bids may be held by Kirksville Regional Airport for a period not to exceed 120 calendar days from the date of the bid opening for the purpose of evaluating bids prior to award of contract.

The right is reserved, as Kirksville Regional Airport may require, to reject any and all bids and to waive any informality in the bids received.

Construction for this project is expected to take: Schedule 1- 300 working day(s), Schedule II- 40 working day(s) and Schedule III- 45 working day(s).

All questions regarding the bid are to be directed to Adam Acree with Jviation, a Woolpert Company, 720 S. Colorado Blvd., Suite 1200-S, Glendale, Colorado, 80246, (303) 947-9074, or email adam.acree@woolpert.com.

In accordance with the Davis-Bacon Act, and the Missouri Prevailing Wage Law, the Contractor will be required to comply with the wage and labor requirements and to pay minimum wages in accordance with the

80-08 FAILURE TO COMPLETE ON TIME. For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in the paragraph 80-07, *DETERMINATION AND EXTENSION OF CONTRACT TIME,* the sum specified in the contract and proposal as liquidated damages will be deducted from any money due or to become due the Contractor or his or her surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages including but not limited to additional engineering services that will be incurred by the Owner should the Contractor fail to complete the work in the time provided in their contract.

Schedule	Liquidated Damages Cost	Allowed Construction Time
Schedule I	$1000/day/working day(s)	300 Working Days
Schedule II	$1000/day/working day(s)	40 Working Days
Schedule III	$1000/day/working day(s)	45 Working Days

The maximum construction time allowed for Schedule **I** will be the sum of the time allowed for individual schedules but not more than **300 Working** days. Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a wavier on the part of the Owner of any of its rights under the contract.

80-09 DEFAULT AND TERMINATION OF CONTRACT. The Contractor shall be considered in default of their contract and such default will be considered as cause for the Owner to terminate the contract for any of the following reasons if the Contractor:

a. Fails to begin the work under the contract within the time specified in the Notice to Proceed, or

b. Fails to perform the work or fails to provide sufficient workers, equipment and/or materials to assure completion of work in accordance with the terms of the contract, or

c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or

d. Discontinues the execution of the work, or

e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or

f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or

g. Allows any final judgment to stand against the Contractor unsatisfied for a period of 10 days, or

h. Makes an assignment for the benefit of creditors, or

i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

Should the Owner consider the Contractor in default of the contract for any reason above, the Owner shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the contract.

If the Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then the Owner will, upon written notification from the RPR of the facts of such delay, neglect, or default and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the execution of the work out of the hands of the Contractor. The Owner may appropriate or use any or all materials and equipment that have been mobilized for use in the work and are acceptable and may enter into an agreement for the completion of said contract according to the terms and provisions thereof,

13. EXECUTED CONTRACTS:

Each contract shall be executed in five original copies and there shall be executed originals of the Contractor's Performance Bond and Payment Bond in equal number to the executed originals of the contract. Two copies of such executed documents will be retained by Kirksville Regional Airport, one copy shall be delivered to the FAA, and two copies will be delivered to the Contractor. The cost of executing the Contract, bonds and insurance, including all notary fees and incidental expenses are to be paid by the Contractor to whom the contract is awarded.

14. SUBLETTING OR ASSIGNING OF CONTRACTS:

The Contractor shall perform, with his organization, an amount of work equal to at least 50 percent of the total contract cost. No assignment by the Contractor of any principal construction contract or any part thereof or of the funds to be received thereunder by the Contractor will be recognized unless such assignment has received the prior written approval of the Sponsor, which shall be at Sponsor's sole discretion, and the Surety has been given due notice of such assignment and has also consented in writing thereto.

Such written approval of the Sponsor shall not relieve the Contractor of any obligation incurred by him, under the contract, unless otherwise expressly stated in the approval.

The following language must appear in any assignment:

"It is agreed that the funds to be paid to the assignee under this assignment are subject to a prior lien for services rendered or materials supplied for the performance of the work called for in said contract in favor of all persons, firms, or corporations rendering such services or supplying such materials."

15. QUALIFICATION OF DISADVANTAGED BUSINESS ENTERPRISES:

A Contractor, or subcontractor, will be considered as certified if that company has received a letter of certification from an organization, whose procedures for certifying business, is acceptable to the FAA.

A Contractor is permitted to use 100 percent of the Contract amount for the unit of work if the Contractor, or subcontractor, performs the construction, installation, rehabilitation, etc. of that work item(s).

A Contractor is permitted to use only 60 percent of the Contract amount for the purchase of material from a certified DBE supplier.

The Contractor is required to submit, to the Engineer, the names, work terms and contract value of all subcontractors, prior to commencing work. The Contractor is required to submit the names, work items and final contract amounts of all subcontractors after the substantial completion of the project

16. LIQUIDATED DAMAGES:

Subject to the provisions of the Contract Documents, the Sponsor shall be entitled to liquidated damages for failure of the Contractor to complete the work within the specified contract time.

The Contractor further agrees to pay liquidated damages for failure to complete the work within the specified contract time and for expenses incurred by the Sponsor for unscheduled employment of the Engineer during the contract time overrun.

As compensation for non-use, the Contractor shall be assessed a liquidated damage of $1000/day/working day(s) for each day that the work remains uncompleted beyond the contract period.

~~As compensation for expenses incurred for unscheduled employment of the Engineer, up to $1,730/Calendar day for the construction manager plus up to $1,390/Calendar day for each additional resident engineer plus any incurred expenses (per diem, lodging, etc.) will be charged to the Contractor for that time which exceeds the number of working day(s) allowed in this paragraph. Further, each phase of work under the project has additional liquidated damage clauses, as outlined in Section 80-08 FAILURE TO COMPLETE ON TIME.~~

~~The Contractor further agrees to pay compensation for the unscheduled employment of the Engineer (and their Sub-Contractors) necessitated by the Contractor for any of the following: 1) working more than ten (10) hours per day, 2) furnishing materials or equipment not in conformance with the Contract Documents necessitating redesign, retesting, or additional review time by the Engineer and their Sub-Contractors, and 3) working beyond the time of completion established in the Notice to Proceed with Construction according to the following hourly rates:~~

~~Description~~	~~Straight Time~~
~~Staff Engineer~~	~~$173/hr~~
~~Engineer~~	~~$139/hr~~
~~Associate Engineer~~	~~$128/hr~~
~~Out of Pocket Cost, material, equipment, supplies, transportation, subsistence~~	~~At Cost~~

~~Compensation shall be paid by deduction from monthly progress payments and the final payment.~~

~~The engineering budget will be analyzed at the end of the project to determine whether any unscheduled employment of the Engineer, during the scheduled contract time, resulted in a cost savings to the Sponsor. If, as a result of working more than (10) ten hours per day, the Contractor completes the project within the scheduled contract time, and if the overtime results in a reduced contract time and cost savings to the Sponsor, no liquidated damages will be assessed for the unscheduled employment of the Engineer during the scheduled contract time. Liquidated damages will be assessed as stipulated for each day the work remains uncompleted beyond the scheduled contract time.~~

17. ACCEPTANCE TESTING:

Acceptance testing shall be the responsibility of the Engineer.

18. CONSTRUCTION MANAGEMENT PLAN:

The Contractor and testing firm are required to prepare a Quality Control Program as required under SECTION 100, CONTRACTOR QUALITY CONTROL PROGRAM, of the General provisions. The Contractor shall obtain from the testing laboratory a proposed schedule of material testing submitted on forms provided by the Engineer, an example of which, is included following this specification. The requirements for the quality control program specified under Section 100 shall formulate a portion of the **CONSTRUCTION MANAGEMENT PLAN (CMP)** required under this item.

The Engineer will assemble and submit the CMP. The Contractor must complete sections of the CMP as indicated on the following pages. All sections indicated to be completed by the Contractor must be titled as shown. Other sections will be completed by the Engineer as indicated. The plan will be submitted to the Sponsor and FAA for approval a minimum of 10 days prior to construction. Approval of the CMP must be obtained prior to commencing any paving operations. Changes in the Contractor's personnel, sub-contractor's personnel, testing laboratory's personnel or testing procedures will require revision to the plan. The Contractor is required to submit any changes immediately to the Engineer.

SECTION 274010 – DIGITAL DISPLAYS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Provide work specified but not shown on Drawings, and work shown on Drawings but not specified, as though expressly required by both.

1.2 SUMMARY

A. Section Includes:

1. LCD displays.

B. Contractor: The Contractor shall perform the following services and provide the following equipment and documentation:

1. Contractor shall perform all work, integration, engineering design, and testing, and shall provide all products required in order to ensure a fully operative system and proper installation of equipment. System operability and proper installation shall be verified via successful completion of all Test Plans.
2. LCD displays and other equipment as specified.
3. Installation and setup of the LCD displays.
4. System Warranty as specified.
5. Training as specified.
6. System Final Testing and Acceptance Plan as specified.
7. Maintenance and support as specified.
8. Coordination with multi-user flight information display system (MUFIDS).
9. Coordination with public address system for visual paging.
10. Coordination with passenger processing system.
11. Coordination with other system providers and Contractors to ensure all external system interfaces are fully functional.
12. Provide all project documentation and Submittals.
13. Comply with all codes, ordinances, regulations, and other legal requirements of public authorities that bear on performance and execution of the work.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

A. Field quality control reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For displays to include in emergency, operation, and maintenance manuals.

1. In addition to items specified in Section 017700 "Closeout Procedures" and Section 017823 "Operation and Maintenance Data," include the following:

a. Training plan.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of equipment required for this Project.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Unless noted otherwise, the stated requirements shall apply to all displays.

B. The system shall include equipment and appurtenances necessary for a fully functional system.

2.2 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. LCD Displays:

a. LG.
b. Samsung.
c. NEC/Mitsubishi.
d. Clarity.
e. Panasonic.
f. Philips.
g. Sony.
h. Engineer Approved Equal.

2. Display Mounts:

a. Peerless.
b. Chief Manufacturing, Inc.

c. Engineer Approved Equal.

2.3 HARDWARE REQUIREMENTS

A. All hardware requirements given are the minimum requirements. The Contractors product shall meet or exceed these requirements. Additionally, the hardware selected shall meet the operational, functional, and performance requirements specified herein.

B. Display Devices:

1. 43inch (GID) and 49-inch (CID) LCD Displays

a. Refer to plans for display locations and quantities.
b. Refer to Digital Display Schedule on drawings for orientation, display information and data source.
c. LCD displays shall be controlled by a Display Device Controller (DDC).
d. Monitors shall have an aspect ratio of 16:9.
e. Display format resolution shall be at least 1920 x 1080 non-interlaced at minimum 120 Hz vertical scan.
f. Viewing angle in the horizontal and vertical plane with respect to the monitor baseline shall be no less than 178 degrees.
g. Brightness: capable of at least 450 nit.
h. Refresh Rate: No more than 12 ms.
i. Monitor and controller shall be capable of displaying at least 65,000 colors simultaneously from a palette of at least 16.7 million colors.
j. Regulatory: UL 1950, FCC CFR 47 Class A.
k. Power: 115 VAC, 60 Hz auto switching.
l. Power Consumption: No greater than 160W in full power consumption mode.
m. Controls: Adjustments shall also be controllable via multi-user flight information data system (MUFIDS) or passenger processing system software.
n. Remote Operation: Provide addressable infrared remote control for tuning of adjustable parameters.
o. External Interfaces: power in shall be standard IEC socket with separate mains on/off switch, network connection shall be an Ethernet 10/100 Base RJ-45, video connectivity shall include a VGA 15-pin D-sub parallel port, DVI and HDMI port. Video connectivity to DDC shall be via DVI or HDMI.
p. Backlight: LED.
q. Reliability: The backlight lifetime (to ½ brightness) shall be rated at no less than 50,000 hours.
r. Mounting: VESA patterns, 600 x 400 or 400 x 400.
s. Bezel: no more than 0.9 mm.
t. Rated for 24/7/365 continuous operation.

2. 75-inch LCD Displays

a. Refer to plans for display locations and quantities.
b. Refer to Digital Display Schedule on drawings for orientation, display information and data source.
c. LCD displays shall be controlled by a Display Device Controller (DDC).
d. Monitors shall have an aspect ratio of 16:9.

e. Display format resolution shall be at least 1920 x 1080 non-interlaced at minimum 120 Hz vertical scan.
f. Viewing angle in the horizontal and vertical plane with respect to the monitor baseline shall be no less than 178 degrees.
g. Brightness: capable of at least 450 nit.
h. Sound: 2 speakers (min 20 W).
i. Refresh Rate: No more than 12 ms.
j. Monitor and controller shall be capable of displaying at least 65,000 colors simultaneously from a palette of at least 16.7 million colors.
k. Regulatory: UL 1950, FCC CFR 47 Class A.
l. Power: 115 VAC, 60 Hz auto switching.
m. Power Consumption: No greater than 120W in full power consumption mode.
n. Controls: Adjustments shall also be controllable via multi-user flight information data system (MUFIDS) or passenger processing system software.
o. Remote Operation: Provide addressable infrared remote control for tuning of adjustable parameters.
p. External Interfaces: power in shall be standard IEC socket with separate mains on/off switch, network connection shall be an Ethernet 10/100 Base RJ-45, video connectivity shall include a VGA 15-pin D-sub parallel port, DVI and HDMI port. Video connectivity to DDC shall be via DVI or HDMI.
q. Backlight: LED.
r. Reliability: The backlight lifetime (to ½ brightness) shall be rated at no less than 50,000 hours.
s. Mounting: VESA patterns, 400 x 400 or 300 x 300.
t. Bezel: no more than 18 mm.
u. Rated for 24/7/365 continuous operation.

PART 3 - EXECUTION

3.1 HARDWARE INSTALLATION

A. The Contractor shall install and inspect all hardware required in this Specification in accordance with the manufacturers installation instructions.

B. The Contractor shall provide all tools and test equipment required to install, verify, and test the installation and to determine that it meets the specifications. The Contractor shall furnish all necessary materials required to implement and to achieve the required work performance.

3.2 SYSTEM STARTUP

A. The Contractor shall not apply power to the displays until after:

1. Displays and components have been installed and inspected in accordance with the manufacturer's installation instructions.
2. A visual inspection of the components has been conducted to ensure that defective equipment items have not been installed and that there are no loose connections.
3. System wiring has been tested and verified as correctly connected.

4. All system grounding and transient protection systems have been verified as properly installed and connected.
5. Power supplies to be connected to the system and equipment have been verified as the correct voltage, phasing, and frequency as indicated.

B. Satisfaction of the above requirements shall not relieve the Contractor of responsibility for incorrect installations, defective equipment items, or collateral damage as a result of Contractor work/equipment.

3.3 GENERAL TESTING REQUIREMENTS

A. Phases of Testing:

1. Display Performance Verification Testing.
2. 168 Hour Continuous On-Site Endurance Testing.

B. Project Testing: Each display shall not be considered complete until Display Performance Verification and On-Site Endurance Testing are completed. In general, these tests shall verify:

1. Proper function and information display.
2. System is performing within defined parameters.
3. On-Site Endurance Testing.

C. The test procedures shall provide conformity to display manufacturer’s Specification requirements. Satisfactory completion of the test procedure is necessary as a condition of system acceptance.

D. The Contractor's Quality Assurance organization shall review all formal test procedures prepared by the Contractor and deliverable under the contract to assure the tests cover all requirements and that there is conformity between the conducted test, the test results and Specification requirements.

E. The Contractor shall provide PURDUE project representative the opportunity(s) to participate in any or all tests.

F. Test Reports: The Contractor shall prepare, for each test, a test report document that shall certify successful completion of that test. Six (6) copies of the test report shall be submitted for review and acceptance within seven (7) days following each test. The test report shall contain, at a minimum:

1. Commentary on test results.
2. A listing and discussion of all discrepancies between expected and actual results and of all failures encountered during the test and their resolution.
3. Complete copy of test procedures and test data sheets with annotations showing dates, times, initials, and any other annotations entered during execution of the test.
4. Signatures of persons who performed and witnessed the test.

G. Test Resolution: Any discrepancies or problems discovered during these tests shall be corrected by the Contractor at no cost to PURDUE.

H. Test: The purpose is to test the equipment installed under this project and demonstrate that all specified features and performance criteria are met. All requirements of the Specification shall be tested including:

1. Display response time.
2. Hardware interaction.
3. Hardware and software interaction.
4. Display performance.

I. Acceptance: Acceptance of system to perform sufficiently and provide specified functions shall be determined by PURDUE project representative.

1. Acceptance Criteria: Performance of system shall equal or exceed criteria stated in individual Specification sections.
2. If system does not perform satisfactorily, the Contractor shall make corrections and modifications and schedule a new test.

J. Reporting:

1. Record all test procedures and results.
2. Submit report in accordance with reporting requirements in the previous General Testing Requirements section.

3.4 TRAINING

A. The Contractor shall prepare training materials and conduct all training for administrators. PURDUE will provide a training classroom to conduct project training.

B. The Contractor shall supply the appropriate training for designated airport personnel. The training shall provide personnel with a working knowledge of display features.

C. The following general training guidelines shall be followed:

1. By means of training classes augmented by individual instruction as necessary, the Contractor shall fully instruct the airport designated staff in the operation, adjustment, and maintenance of all displays. The Contractor shall be required to provide all training aids (e.g., notebooks, manuals).
2. All training shall be completed a minimum of two weeks prior to the displays becoming operational. Training schedule subject to PURDUE project representative approval.
3. All training requirements identified are minimum requirements.

D. Additional training shall be bid on a per person per hour basis.

E. Training: System users shall be instructed in all aspects of operations of the displays. A minimum of six (6) hours of basic user training shall be provided (2-hour class repeated 3 times with 8 system users per class as a minimum). User training shall be conducted on site.

END OF SECTION 274010

SECTION 11 14 00 – Pedestrian Exit lane breach controls

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This section covers the furnishing and installation of a complete Automatic Security Breach Control System. Provide complete system that has been fabricated and tested for proper operation at the factory. It includes side walls, canopy, ceiling, automatic doors, hardware, glass, drive systems, and TOF sensor systems.

1.02 RELATED SECTIONS

A. Section 07915 – Sealants, Caulking and Seals
B. Section 08400 – Entrance and Storefronts
C. Section 08710 – Door Hardware
D. Section 08810 – Glass and Glazing
E. Section 09600 – Flooring
F. Section 16123 – Electrical Supply and Termination

1.03 QUALITY ASSURANCE

A. Manufacturer shall be a company specializing in the supply of automatic security breach doors with a minimum of 10 years' experience.
B. Manufacturer must be able to provide a minimum of ten (10) references and have a minimum of forty (40) exit lane breach control systems installed and operating in North American airports.
C. Manufacturer must have received TSA approval for unmanned operation at all installations upon initial release.
D. Installation shall be factory employed trained and certified experts. Localized non-factory employed personnel not previously trained and certified is not acceptable.

1.04 SUBMITTALS

A. Submit project shop drawings and finish samples.
B. Indicate pertinent dimensions, general construction, component connections, anchorage methods and locations.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to job site in manufacturer's packaging undamaged, complete with installation instructions.
B. Store off ground, under cover, protected from weather and construction activities.
C. Stored materials must be readily accessible at initiation of installation.

1.06 PROJECT/SITE CONDITIONS

A. Install security breach doors on finished floor only. Floor must be level ± 1/16" (1.5mm) at all locations within the footprint of the security breach door.

1.07 WARRANTY

A. record-usa warrants its products against defects in material and workmanship for a period of one (1) year from the date of substantial completion or one and one half (1-1/2) years from date of shipment. This warranty excludes glass breakage, normal wear on finishes or damage that occurs due to time advancement, abuse, misuse or acts of God.

1.08 SERVICE

A. Manufacturer to provide a per lane cost to provide once or twice a year on site service by factory employed and trained technicians.

1.09 MANUFACTURING LOCALE

A. The security exit lane should be wholly manufactured in the United States and use metals acquired in the US. Assembly of electronics, components and structure shall take place fully in a manufacturing facility in the United States.

PART 2 PRODUCTS

2.01 MANUFACTURER

record- usa
4324 Phil Hargett Court
Monroe, NC 28110
(800) 438-1937

2.02 FUNCTION

A. The Flip Flow security breach door system is an automatic high capacity anti-pass back system, providing the regulations of passenger/user traffic flow in airports, industrial manufacturing facilities, and other sensitive areas in various types of buildings. Pedestrians may pass through the Flip Flow in single file and in one direction only. Attempts at reverse entry are detected by an intelligent sensor system and the automatic doors will inhibit such action. In addition, an alarm is generated locally and an alert message is generated for remote monitoring.

2.03 APPLICATIONS

A. Passenger flow regulation in airports (separates the secure airside from the non-secure landside)
B. Protection of other sensitive areas in seaports and railway stations.
C. Access to sensitive areas in public, commercial, and industrial buildings
D. Entrance to court houses or judicial buildings
E. Side entrance in supermarkets

2.04 CONSTRUCTION

A. Self-supporting aluminum construction, clad in stainless steel. **The unit is capable of being free-standing, however, units installed in seismic areas requiring special anchoring and attachment shall be tied into a supporting structure**
B. Twin (two sets of doors) or Triple (three sets of doors) configurations available.
C. Two or Three double leaf record-usa door operators are provided as standard for a long life. These doors must have been tested and used in previously demanding applications such as grocery stores or hospitality environments.
D. Entrance, middle doors (on a triple unit) and exit doors are supplied with robust electromechanical brakes or optionally electromagnetic locks to inhibit door open motion in fully closed position.
E. A master control, supplemented with a modular, expandable sensor system, monitors passenger flow.
F. Transparent side panels in laminated security glass facilitate monitoring requirements.
G. Passage status is indicated by red/green traffic-light style indicators at both the entrance and exit doors.
H. Interior lighting is provided by six (6) LED spot lights.
I. Three widths area available
    a. 900mm (35'' Clear Opening) opening width to allow for wheelchair access
    b. 1100mm (43" Clear Opening) suitable opening width to allow for wheelchair access
    c. 1200mm (47" Clear Opening) opening width to allow for side by side passage
J. Overall dimensions:
    a. Twin (2 doors) 3245mm (10'-7 ¾") long x 2363mm (7'-9") high
    b. Triple (3 doors) 6345mm (20'-9 ¾") long x 2363mm (7'-9") high
    c. Extension (optional) 1524mm (5'0") long x 1042mm (3'-5") high
K. If installed utilizing existing transom, location for structural means shall be determined by facility.
L. The space between the top of the unit and the ceiling above must be closed off, or limited, to prevent objects from being thrown over, or set on top of the unit.
M. Object detection on all side walls, ceiling and floor is required (floor detection is standard, all detection is available)
N. Flow mode to interlock mode must have an optional automated setting and able to be controlled without personnel having to physically visit the lane.
O. Wall structures and posts shall be clad in stainless steel, unless otherwise directed, allowing for easy removal of the clad covers for maintenance and replacement of damaged components in the form of dents, scratches, etc., from luggage and regular use.

2.05 SENSORS

A. Sensors- Sensors for the SEL must utilize TOF-3D, an automatic anti-return detection sensor with high resolution. The TOF 3-D sensor utilizes a matrix of 500 pixels with which the sensor measures the distance to the object and captures it three-dimensionally. This is made possible by Time-Of-Flight (TOF) technology which calculates the distance to the object by measuring the light travel time.

B. This sensor shall also facilitate reliable anti-return object detection under adverse environmental influences such as extraneous light, humidity, or dirt. This makes it possible to determine the presence, stature and movement of people and objects within the field of vision with very high accuracy.

C. The sensor system shall not require dependency from low or ambient light and also perform in complete darkness in case of power outages or emergency scenarios. Detection of small objects and crawling people within the tunnel while the doors are open is mandatory. Alternates will not be accepted.

D. Video analytic systems not permissible.

2.06 SURFACE TREATMENT

A. Aluminum frame:
   a. Stainless Steel Clad
      1. Cladding material to be easily replaced in case of damage
   b. Standard RAL colors
   c. Power Coated to match architectural specification

2.07 GLASS SPECIFICATIONS

A. Wall Panels and Glass doors are 5/16” laminated safety glass
B. Extensions are ½” safety glass

2.08 ELECTRICAL/CAT6

A. 110 Volt @ 20amp (per lane)
   Maximum power requirements:
      i. 600 Watts for Flip Flow Twin with extension gates
      ii. 1000 Watts for Flip Flow Triple with extension gates
      iii. 200 Watts in Standby mode
B. CAT6 Ethernet connection is required

2.09 OPERATION MODES

A. FLOW MODE

a. Motion sensor detects approaching pedestrian(s) and actuates entrance doors.
b. Pedestrian(s) proceed into the anti-pass-back passageway.
c. The entrance doors close when motion is no longer detected and a presence is not detected in the door leaf swing areas.
d. The pedestrian(s) continue through the passageway.
e. A motion sensor in the passageway detects pedestrian(s) and actuates the exit doors. If equipped with three doors the process is repeated through a second set of doors and into a second chamber, at which time the exit doors are actuated.
f. Infra-red cameras are used to body track heat signature direction and detect possible pass through attempts
g. Pedestrian(s) exit the anti-pass-back passageway(s).
h. Red/Green traffic lights indicate when passage is allowed.
i. Interior spot lights are on.
j. Both entrance middle (if equipped) and the exit doors may be open at the same time.
k. Pedestrians who passed more than one-half way through the passageway cannot reverse direction without causing the entrance doors to close and lock.

B. INTERLOCK MODE

a. Motion sensor detects approaching pedestrians(s) and actuates entrance doors.
b. Pedestrian(s) proceed into the anti-pass-back passageway.
c. Threshold safety beams
    i. Inhibit closing if the threshold is occupied.
    ii. After the entrance doors have closed, the interior doors (if equipped) and exit doors will automatically open, allowing exit from the passageway. A pedestrian in the passageway will have a nominal 5 -6 second delay before exiting.
d. The entrance door closes when motion is no longer detected, or if 3 or more pedestrians have entered the passageway.
e. When all pedestrians have exited the passageway, the interior doors (if equipped) and exit doors will close.
    i. The interior of the passageway(s) are scanned for objects, and if clear, the entrance doors will automatically re-open.
    ii. If objects are detected, the entrance doors will remain closed and the interior doors (if equipped) and exit doors will reopen and remain open until the object has been removed.
f. Red/Green traffic lights indicate when passage is allowable.
g. Interior spot lights are on.
h. The entrance, interior doors (if equipped) and the exit doors are interlocked and prevented from being open at the same time.

C. OPEN MODE
   a. Entrance and exit doors are kept open.
   b. Back Flow detection can be disabled to allow free passage in both directions of the tunnel
   c. The monitoring sensor systems are disabled (optional alarm contact available to indicate incorrect walking direction).
   d. Green traffic light indicates unhindered passage.
   e. Interior spot lights are on.

D. LOCKED MODE
   a. Both entrance and exit doors closed and locked.
   b. Traffic through the Flip Flow is inhibited in both directions.
   c. Red traffic lights indicate no access.
   d. Interior spot lights are off.

E. EMERGENCY CLOSE MODE
   a. Both automatic doors are equipped with battery packs.
      i. During a power failure, the doors complete a final movement (entrance doors are closed and locked; exit doors are opened). The tunnel can be freely exited to the landside.
   b. For emergency evacuation, a local key switch (by others) is recommended to be installed near the exit lane.

F. EMERGENCY OPEN MODE
   a. Allows the opening of both doors in emergency evacuation scenarios under the highest priority without addressing any means of security. This mode will be triggered via a hard wired contact or via a TCP/IP connection remotely. See also section 2.08

G. MAINTENANCE AND CLEANING
   a. An optional key switch (key switch by others) can be installed to allow maintenance personnel to access the lane during a preset time. During this time the alarms are not triggered.
      i. Allows a service technician to access, service, adjust, and test the Flip Flow.
      ii. A local audible alarm is actuated if the maintenance switch is not reset after a preset, configurable time delay.
      iii. Dry contact output can be used for remote monitoring of service hatch access.

b. An optional contact for a key-switch (switch by others) that allows for simple cleaning of the passageway is available.
    i. Access to interior of passageway is by opening the Exit doors; the Entry doors are closed and locked.
    ii. Alarm outputs are suppressed.
    iii. A local audible alarm is actuated if the cleaning mode switch is not reset after a preset, configurable time delay.
    iv. Dry contact output, similar to above Alarm Outputs, can be used for remote monitoring of service hatch access.

H. AUTOMATED FLOW TO INTERLOCK MODE
    a. Detects flow increases and decreases and automatically converts Flow Mode to Interlock Mode and vice versa without the requirement of airport personnel having to physically go to the lane.

2.10 OPTIONS

A. INSIDE MONITORING AND OBJECT DETECTION- Infrared and microwave of sensors allow for monitoring the interior passageway of the Flip Flow.
    a. Detection of objects as small as 2” by 2” by 2” (50mm x 50mm x 50mm) at the floor and ceiling and sidewalls

B. OBJECT DETECTION – the following options are available individually or in combination:
    a. Detection of stationary objects attached to interior ceiling, sidewalls and floor.

C. SIDE RAILS AND BARRIER AT EXIT
    a. Additional glass guide rails are installed on the exterior or the exit doors:
        i. This will increase security and deter attempts to enter the exit door from the landside. Inhibiting access on the landside will reduce nuisance interference of the exit doors and subsequently increase throughput of the Flip Flow.

    b. Additional glass tunnel to extend the whole system to a TRIPLE unit with
        i. Three sets of swing doors; the length of the TRIPLE tunnel is approx.20’-9” (6352mm)
        ii. long and offers the highest possible security while managing the same throughput
        iii. For the Twin Configurations, the extension is recommended to deter object pass through.

D. INTEGRATION OR ACCESS CONTROL SYSTEM- a special operation mode is available in the closed/locked position:
   a. The connection of an access control system (card reader, etc.) admits a single passage of the Flip Flow from the landside to the airside.
   b. For security reasons, only one door is opened at the same time.
   c. After the passage has completed, the designated operation mode is resumed.

E. SERVICE DISPLAY- the record- usa service display module is designed primarily for use by service technicians, and provides the following features:
   a. Adjustments and modification of operational mode parameters.
   b. Adjustment of various timers according to customer's requirements.
   c. Display status of digital inputs and relays outputs.
   d. Display error messages in user-friends text.
   e. Password protected access levels.
   f. To meet individual requirements, this useful tool is provided in two alternative physical packages:
      i. Securely integrated into each Flip Flow, or
      ii. As a portable service tool, compatible with all current Flip Flow units.

F. BATTERY BACK UP- one cycle open after the detection of loss of power
   a. Implementation of an UPS (uninterrupted power supply) backup system to guarantee the operation of up to three hours.

G. REAL TIME MONITORING- offers airport security personnel the ability to monitor the status of all Flip Flow units.
   a. When an airport allows temporary access to the local PC that runs the record REALTIME software via remote monitoring, record has the ability to support and assist in resolving problematic occurrences.
      i. Allows for security personnel to receive e-mail alerts of events
      ii. Allow for staff to monitor doors with smart phone tablet type of devices
      iii. Upon granted access, a secure remote connection is established with an internal PC to actively monitor and observe all occurrences over specific and defined time periods.
      iv. This analysis will provide information that allows visits to once or twice per year maximum.

2.11 INCORRECT USE AND ALARM OUTPUTS

A. A local audible alarm is actuated when an alarm occurs. A PLC output, rated 25W at 24VDC, will actuate, and can be used to turn on a flashing strobe for visual notification. Additionally, the following individual alarm outputs are provided, each with dedicated dry contacts, and can be used for remote monitoring and/or integration with a building management system.

   - INTRUSION: An audible alarm is immediately enabled when the pass-back sensors are triggered while the entry door was still open signaling the possibility that a person was able to clear the doors prior to closing and locking

- WRONG DIRECTION: An audible alarm is immediately enabled if a pedestrian has travelled more than half-way through the passageway then stops and attempts to turn around and walk back through the entry doors.
- FLOW DISTURBANCE: An audible alarm is enabled when normal traffic flow has been hindered by external influences. This includes obstructing access to travelling through the Flip Flow, and/or detection of a person or object in the Flip Flow passageway when both entry and exit doors are closed.
- TECHNICAL DISTURBANCE: A malfunction in either of the door operators or the monitored sensors and cameras will enable the audible alarm, and actuate a separate dry contact.

  -8 Dry contact outputs are available

2.12 REMOTE CONTROL

A. REMOTE CONTROL: Inputs are provide for external control of the following functions, and can be controlled by remote contacts or a building management system, and have priority over the local controller.
   a. Immediately open both Entry, interior doors (if equipped) and the Exit doors (Evacuation mode).
   b. Immediately close and lock the Entry doors, and open the interior doors (if equipped) and the exit doors.
   c. Switch the Flip Flow from interlock mode, and back automatically.

PART 3 EXECUTION

3.01 EXAMINATION AND PREPARATION

A. Installer shall examine the location and advise of any site conditions unacceptable for proper installation of the product. These conditions include, but are not limited to the following:
   a. Identification and planning for expansion joints, project access, onsite staging areas.
      i. Site configuration/temporary construction enclosures, and work hours as related to other activities.
      ii. Floor must be leveled and smooth with no deviations in excess of 1/16” from a twelve (12) foot location, in any direction.
      iii. The ability for the breach door system to be installed level shall be verified prior to installation of any part of the security breach door system.
      iv. Power supply must be installed and verified to be of the correct voltage.
      v. Required facility systems such as security interface and electrical power must be ready for connection/termination at time of installation.

3.02 INSTALLATION

A. System shall be installed by factory employed and certified installers
B. System shall be commissioned by factory technicians.
C. System shall be installed in accordance with manufacturer's provided instructions.
D. System must be set level, plumb, with uniform hairline joints, and anchored securely into place.
E. Assembly dimensional tolerances, as indicated within manufacturing are recommended instructions must be maintained.
F. All alignment with adjacent work must be maintained.
G. Coordinate installation with facility requirements such as electric power, security interface and cat6 connections.
H. Door(s) must meet all safety codes and standards.
I. Adjust door, hardware and sensors for smooth operation and smooth performance.
J. Installation crew should be proven to have five (5) confirmed and successful installations within the United Sates.
K. Factory installer shall demonstrate to the owner's dedicated staff the proper operation of the exit lane system and the necessary service requirements such as lubrication, cleaning, and inspection of components.

3.03 OPERATIONAL ADJUSTMENTS

A. Operational adjustments in the field shall be achievable with trained field personnel. An engineer from the manufacturer should not be required to adjust the physical system or software programming.

3.04 TRAINING

A. Manufacturer/installer shall provide two (2) hours of on-site training for the necessary airport personnel on the functions and use of the exit lanes or as directed by airport.

3.05 MAINTENANCE PLAN

A. Manufacture shall offer an onsite annual, semiannual or quarterly maintenance plan options at an additional cost for planned service provided by factory trained technicians, to suit the owner's needs.

END OF SECTION

REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION

KIRKSVILLE REGIONAL
AIRPORT – NEW TERMINAL BUILDING
KIRKSVILLE, MISSOURI
TSI PROJECT NO. 20241059.00

WOOLPERT
931 Wildwood Drive
Jefferson City, Missouri 65109

8248 NW 101st Terrace, #5
Kansas City, Missouri 64153

June 18, 2024

June 18, 2024

Mr. Fu Durandal
WOOLPERT
931 Wildwood Drive
Jefferson City, Missouri 65109

Re: Report of Subsurface Exploration and
Geotechnical Engineering Evaluation
Kirksville Regional Airport – New Terminal Building
Kirksville, Missouri
TSi Project No. 20241059.00

Dear Mr. Durandal:

TSi Geotechnical, Inc. (TSi) has completed the authorized Subsurface Exploration and Geotechnical Engineering Evaluation for the referenced project and is pleased to submit this report of our findings to Woolpert. The purpose of our work was to assess subsurface conditions at specific test boring locations in order to prepare geotechnical recommendations for use in the design and construction of the proposed new terminal at the Kirksville Regional Airport in Kirksville, Missouri. This report presents the field and laboratory data and includes our evaluations and recommendations relative to the geotechnical engineering aspects of the project.

We appreciate the opportunity to assist you with this project. If you have any questions, or if we may be of further service to you, please call us.

Respectfully submitted,
TSI GEOTECHNICAL, INC.

Anderson L. Borges
Project Manager

STATE OF MISSOURI
ANDREW DECLUE
6-18-24
NUMBER PE-2022001621
PROFESSIONAL ENGINEER

Andrew Declue, PE
Director of Operations

Denise B. Hervey, PE
Principal

CONTENTS

SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION KIRKSVILLE REGIONAL AIRPORT – NEW TERMINAL BUILDING KIRKSVILLE, MISSOURI

1.0 SCOPE OF WORK

This report summarizes the results of a subsurface exploration and geotechnical evaluation completed for use in the design and construction of the proposed new terminal at the Kirksville Regional Airport in Kirksville, Missouri. The study was performed in general accordance with TSi's proposal to Woolpert dated March 28, 2024 and authorized in May 9, 2024. Based on TSi's understanding of the project, the following items have been identified for inclusion in this geotechnical study report:

- Subsurface conditions including material types at the boring locations;
- Laboratory test results for soil samples;
- Potential impact of groundwater on design and construction;
- Locations and descriptions of any existing fill or potentially deleterious materials encountered at the site that may interfere with construction progress or structure performance;
- Soil strength parameters;
- Soil remediation recommendations;
- Foundation recommendations;
- A general assessment of potential settlement (total/differential) and/or liquefaction;
- Existing pavement evaluation;
- Pavement design recommendations options;
- Recommendations for fill and backfill materials, placement, and compaction;
- General construction considerations; and
- Recommendations for engineering observation and testing during construction.

2.0 PROJECT AND SITE DESCRIPTIONS

The following understanding of the project is based on information provided by Woolpert. We understand the project will consist of a single-story new terminal building and renovation or improvements of existing parking lot with addition of an access road for passenger and personnel cars to the Kirksville Regional Airport in Kirksville, Missouri.

The proposed project area is located be north of the existing terminal and northwest of the existing parking lot at the Kirksville Regional Airport in Kirksville, Missouri. An existing hangar is located north of the proposed site. Structural details have not been finalized at this time for the new terminal and renovation/improvements of existing parking lot, but we anticipate that the maximum loads for the columns will be about 15 kips.

The existing pavement surfaces appear to have some distresses such as alligator and transverse cracking with some localized rutting near Borings B-3 and B-4 locations.

The general location of the project site is shown on the Vicinity Map, Figure 1 in Appendix A. General site features and the location of the test boring performed for this study are provided on the Site and Boring Location Plan, Figure 2 in Appendix A.

3.0 FIELD EXPLORATION AND LABORATORY TESTING

3.1 FIELD EXPLORATION

TSi conducted an exploration program at the proposed project site on May 9, 2024. The exploration consisted of four (4) borings, designated as Borings B-1 to B-4. Borings were advanced to the depths of about 10.0 to 20.0 feet. The boring locations were selected by Woolpert, and marked in the field by TSi. The borings were located by using a site plan and measuring from site physical features and handheld GPS device. The ground surface elevations and coordinates were provided by Woolpert. The approximate location of the borings are indicated on the Boring Location Plan, Figure 2 in Appendix A.

A geotechnical specialist from TSi observed drilling and sampling procedures for the borings that were drilled. Split-spoon samples were recovered using a 2-inch outside-diameter, split-barrel sampler, driven by an automatic hammer, in accordance with ASTM D 1586. Shelby tube samples were obtained in general accordance with ASTM D 1587. The split-spoon samples were placed in plastic bags for later testing in the laboratory. The Shelby tube samples were preserved by sealing the entire sample in the tube. A 5-gallon bucket bulk soil sample for the standard Proctor test was obtained adjacent to Boring B-4, at depths of about 3 to 5 feet. Borings were backfilled with auger cuttings, and asphalt cold patch was placed in the pavements. The sampling sequence for each boring is summarized on the Logs of Boring in Appendix B.

The results of the field tests and measurements were recorded on field logs and appropriate data sheets. Those data sheets and logs contain information concerning the boring methods, samples attempted and recovered, indications of the presence of various subsurface materials, and the observation of groundwater. The field logs and data sheets contain the geotechnical specialist's interpretations of the conditions between samples, based on the performance of the drilling equipment and the cuttings brought to the surface by the drilling tools.

3.2 LABORATORY TESTING

A laboratory testing program was conducted by TSi to determine selected engineering properties of the obtained soil samples. The results of the individual tests are presented on the Logs of Boring and in the Laboratory Test Data in Appendix C of this report. The following laboratory tests were performed on the samples recovered from the boring in general accordance with the applicable ASTM standards:

- Visual descriptions by color and texture of each sample;
- Natural moisture content of soil samples;
- Unconfined compression strength tests on selected cohesive samples;
- Unit weight on selected cohesive samples;
- Free swell test;
- Hydrometer analysis;
- Pavement core photos;
- California bearing ratio tests (CBR) on the bulk sample;
- Standard Proctor compaction test on the bulk sample; and
- Atterberg limit tests on selected cohesive samples.

Data and observations from laboratory tests were recorded on laboratory data sheets during the course of the testing program. The logs represent considered interpretation of the field and laboratory data. The analyses and conclusions contained in this report are based on field and laboratory test results and on the interpretations of the subsurface conditions as reported on the logs. Only data pertinent to the objectives of this report have been included on the log; therefore, this log should not be used for other purposes.

4.0 SUBSURFACE CONDITIONS

Details of the subsurface conditions encountered at the test borings are presented on each Log of Boring in Appendix B. The general subsurface conditions encountered and their pertinent engineering characteristics are described in the following paragraphs. Conditions represented by the borings should be considered applicable only at that exploration location on the date shown; the reported conditions may be different at other locations or at other times.

4.1 GENERAL GEOLOGY

Based on the United States Geological Survey (USGS) and the Missouri Department of Natural Resources (MDNR) data bases, the site location lies in the Glacial Drift surface geology overlying the carboniferous aged Marmaton Group bedrock.

The soils in this location typically consist of deposits of glacial drift soils to depths of over 200 feet. The glacial drift typically consists of lean and fat clays with variable amounts of sand and gravel.

The underlying bedrock belongs to the Marmaton Group of the Desmoinesian Stage in the upper Pennsylvanian Series in the Carboniferous System. The bedrock in the area of Missouri typically consists of cyclic deposits, shale and limestone with sandstone, clay and several coal beds.

4.2 GENERALIZED SUBSURFACE PROFILE

Surface materials at the site generally consists of grass covered fill soils, and pavements with 5.0 to 7.5 inches of asphaltic concrete (AC) underlain by about 4.5 to 5.0 inches of aggregate base. Pavement core photographs are shown in Appendix D. The upper 2 inches of pavement section appears to be overlay layer. Note that some core losses may have occurred due to the deteriorated lower pavement sections.

From the ground surface of Borings B-1 and B-2 and below the pavement of Boring B-3 and B-4, fill material soils consisting of lean clay (CL in accordance with the Unified Soil Classification System) with various amounts of sand, gravel and organics to depths of about 3 feet below ground surface. Standard penetration test (N) values in the fill soils range from 5 blows per foot (bpf) to 12 bpf. Moisture contents within the fill range from 22% to 37%. Atterberg limit tests within the fill resulted in liquid limits (LL) ranging from 35 to 41, and plasticity indices (PI) ranging from 15 to 21.

Native soils underlain fills, consist of lean and fat clays (CL and CH, in accordance with the Unified Soil Classification System) with various amounts of sand and gravel extending to planned boring depths of about 10 to 20 feet below ground surface. However, Boring B-1 encountered clayey sands below a depth of about 17 feet. Standard penetration test (N) values in

the native soils range from 6 bpf to 53 bpf. Moisture contents within these soils range from 18 to 44%. Atterberg limit tests within the soils resulted in liquid limits (LL) ranging from 33 to 58, and plasticity indicies (PI) ranging from 17 to 34. Dry unit weights and undrained shear strength values range from 90 to 104 pounds per cubic foot (pcf) and 0.51 to 0.84 tons per square foot (tsf), respectively. Atterberg limit test of the bulk sample collected adjacent to Boring B-4 resulted in LL of 32 and PI of 11.

4.3 GROUNDWATER

Groundwater was generally encountered in the borings at depths of about 8.0 to 16.5 feet during drilling and prior to backfilling. The presence or absence of groundwater at a particular location does not necessarily mean that groundwater will be present or absent at that location at other times. Seasonal variations and other unknown considerations could cause fluctuations in water levels. Groundwater seepage is not expected at the shallow, temporary excavation for the proposed construction of the new terminal, parking lot and new access road.

5.0 DESIGN RECOMMENDATIONS

5.1 CONSTRUCTION OPTIONS OVER EXISTING FILL

The proposed new terminal and parking lot area are underlain by fill extending to a depth of approximately 2.8 to 3.0 feet. The fill encountered in the borings consists of lean clay materials with various percentages of sand, gravel and organics. The consistency of the existing fill encountered is generally medium stiff to stiff and is variable in composition and consistency. TSi is unable to verify if the fill was placed and compacted in a controlled manner. If compaction testing data is available for review it should be provided to TSi. As a result, the engineering properties of the fill cannot be predicted with certainty, and there is a risk for excessive total or differential settlement or other performance problems if the new pavement and structures are supported on the existing fill. Fill materials with greater variability and thickness could also be present between or away from the boring locations.

Several options are available for mitigating the risks associated with the existing fill material, the most common of which are described below. It will ultimately be the decision of the owner to decide which course of action to take, based on a comparison of risks that result from the presence of the existing fill with the costs associated with reducing or eliminating the risks.

Option 1:
Complete Removal and Replacement – The risks associated with building upon the existing fill may not be acceptable to owner and designers. In order to eliminate the settlement risk to the pavement and structure, the existing fill could be removed entirely from the planned development areas and replaced with compacted, suitable select fill.

Option 2:
Leave the old fill entirely in place – Some owners elect not to mitigate existing fill and instead choose to build directly upon the material in order to save construction costs. The risks resulting from building upon the fill involve the effects of differential settlement, which could include cosmetic cracking of masonry, uneven floor slabs or pavements, and doors or windows that may require occasional re-leveling. Provided that the same type of fill, as encountered in our borings, exists between or away from our borings, catastrophic bearing failure is typically not considered a possibility. The owner must be willing to accept the risk for performance issues in exchange for the cost savings that would result from not having to remove and replace the material. However, any type of deleterious materials such as construction debris or organics should be removed from subgrade of any proposed structures and the overexcavated areas should be backfilled with properly placed and compacted structure fill as described in this report. Anticipated settlements cannot be accurately quantified in undocumented fill.

Option 3:
Partial Removal and Replacement – The existing fill could be removed from under proposed shallow foundations to a depth of 2 feet and replaced with properly compacted, structural fill to reduce settlement risks. We anticipate shallow foundations in new fill to bear at depths of about

2.5 feet. These footing excavations should extend wider than the footings to support the footings and allow for proper compaction. The excavations should be widened a distance beyond the outside edges of the footings equal to the overexcavation depths. For instance, a 4 foot square footing would be over excavated a depth of 2 feet below the bottom of the footing and widened 2 feet on all sides for a 8 foot square excavation, or a strip footing 6 feet wide should be excavated to a depth of 2 feet below the bearing elevation and 10 feet wide. Care should be taken to not undermine existing foundations or utilities. This option will reduce but not eliminate the risk of differential settlement of the shallow foundations. Anticipated settlements cannot be accurately quantified in undocumented fill; however, removing and replacing 2 feet under footings will reduce potential differential settlement.

Floor Slabs – Removal of the upper 2 feet of fill below the bottom of slab, followed by compaction and proofrolling of the exposed subgrade and replacement with a proper structural fill, as described in this report, is recommended for this site to reduce the risks associated with constructing over the existing fills. If Option 2 or Option 3 is selected; however, the risk will not be eliminated.

5.2 Swelling Clay Considerations

Based on the laboratory tests and our visual classifications, fat clay soils were encountered within the soil materials at this site below the pavements. The liquid limit of tested fat clays ranges from 52 to 58, and plasticity indices of 34. Holtz and Gibbs free swell index tests resulted in 40% free swell, which is considered to have a low degree of expansion. Fat clays are considered to be highly plastic and prone to moisture-induced potential vertical movements. At locations where fat clay is encountered within 2 feet of the structures and pavement subgrade elevation, the fat clay materials should be overexcavated to a depth of at least 24 inches and be replaced with properly placed and compacted Low Volume Change (LVC) fill material, which is considered select or engineered fill. LVC fill should consist of approved, well-graded granular materials or low plasticity cohesive soil. Low plasticity cohesive materials used as LVC fill should consist of inorganic clay with a liquid limit less than 45 and a plasticity index between 10 and 25. Granular fill, such as crushed limestone (MODOT Type 5 or 7 aggregate), should be well-graded, have a maximum particle size of 1.5 inch.

Lime products such as Code-L or hydrated lime could be added and thoroughly mixed with fat clays to modify higher liquid limits and plasticity indices to create a suitable 2-foot thick LVC layer. Laboratory testing is required to determine the percentages of lime products needed to modify fat clays.

Alternatively, the upper subgrade soils can be lime or cement stabilized to a depth of at least 12 inches. For lime stabilization about 1% to 2% more lime is added than needed to increase the soil PH above 12 and the unconfined compressive strength should be at least 50 psi. For cement stabilization about 1% to 2% more than required using the PCA method should be used. These stabilization methods require complete mixing of the soil and additives using equipment such as a gator.

In addition to the removal and replacement or stabilization, some relatively simple design and construction considerations are recommended that will help to maintain the natural moisture content of the fat clay. Avoiding conditions that could result in excessive wetting or drying of the fat clay will reduce its potential for volume change. The following design and construction precautions are recommended:

1. Positive surface drainage should be provided during construction to prevent ponding of water in and around any excavations or the exposed subgrade;
2. Storm water runoff should be collected and carried away from the pavement and structures to avoid saturating the subgrade;
3. Excessive watering of grass adjacent to the pavement and structures should be avoided;
4. Install joint sealant and seal cracks immediately;
5. Extend curbs into the proper subgrade for a depth of at least 4 inches to help reduce moisture migration into the subgrade soils beneath the pavement section; and
6. Place compacted, low permeability clayey backfill against the exterior side of the curb and gutter.

5.3 SHALLOW FOUNDATIONS

Shallow foundations for building columns and strip footings for lightly loaded bearing walls could be used to support new building if existing fills are removed and replaced with new structural fill. Additional removal could be required if soft or loose fill is encountered. Fat clays, if encountered on the subgrade of new building, should be removed to a depth of at least 2 feet below footings and replaced with new structural fill. Over excavations below the footings should be widened by one foot on each side of the footing for each foot of over-excavation.

To limit the total and differential settlements, spread footings on properly compacted fill may be designed for a net allowable bearing pressure (pressure in excess of adjacent overburden pressure) of up to 2,000 pounds per square foot (psf) for structural dead load plus maximum live load. If spread footings are used, strip-type footings and individual footing pads should be 2.0 and 3.0 feet in minimum plan dimension, respectively, regardless of the applied structural load in order to provide a bearing area that will account for minor variations in the supporting soils. Exterior footings should be constructed at least 30 inches below the adjacent grade to provide protection against the detrimental effects of seasonal moisture variations and frost penetration.

The design loads will result in some compression of the soils beneath the footings. Based on the general character of the soils encountered in the borings, and if the footing subgrade is over excavated and re-compacted according to Section 6.0 of this report, the maximum anticipated settlement of shallow footings should be less than 1 inch. The differential settlements are

anticipated to be approximately one-half the total settlements. Lower bearing pressures would result in reduced settlements.

5.4 Floor Slab Subgrade

TSi anticipates the existing soils underlying the floor slabs will be compacted to attain properties of structural fill to a depth of at least 2 feet below the floor slab and base course material. TSi suggests that all floor slabs be underlain by at least 4 inches of compacted granular material in order to achieve more uniform support. A maximum particle size of 1.5 inches, such as MODOT Type 5 or 7, is recommended for the granular base material.

On some projects, there is a significant time lag between the initial grading and the time when the contractor is ready to place concrete for the floor slabs. Even though the bearing material may have been placed and compacted adequately during the initial grading, exposure to weather and construction activity can damage the condition of the subgrade soils. Prior to the construction of the slab and placement of base rock, the subgrade should be thoroughly recompacted to the required density.

A modulus-of-subgrade reaction value of 64 pounds per cubic inch (pci) can be used for the design of the slab. This value is based on the assumption that the floor slab is carrying only point or short term load and the subgrade is prepared in accordance with the recommendations in this report.

5.5 Pavement Design Considerations

As mentioned previously, undocumented existing fill material was encountered in the boring locations. The character of the existing fill is discussed in Section 5.1. It is not known how this fill was placed and how much deleterious material may be in the fill between the locations sampled during this exploration. TSi recommends that any existing fill beneath pavement sections that do not meet specifications in Section 6 be removed to a depth of 24 inches and replaced with properly compacted new fill. The aggregate base underlaying the existing pavement ranges from about 4.5 to 5 inches thick. A thin layer of aggregate base, the highly deteriorated lower pavement section, or the underlying variable fill materials could possibility be factors of the existing pavement deterioration.

According to the information provided by Woolpert, we understand to assist accommodating the projected traffic design period of the access roadway and parking lot, pavement is planned to be rehabilitated or reconstructed. The roadway access and parking lot are expected to generate a total of 75 passenger or personnel car trips per day and 1 daily trip of a triple-axle fuel delivery tanker (60,000 lbs.). The computed traffic loading for a 20-year design period is about 55,000 ESAL’S. The recommendations presented below could be used in evaluation on existing pavement strength or a new pavement design.

Based on the cohesive soils encountered in the borings, a California Bearing Ratio (CBR) value of 2.8 could be used for design of a new flexible pavement. A modulus-of-subgrade reaction of 64 pounds per cubic inch can be used for the design of a rigid pavement. These values are based on the assumption that the subgrade is prepared in accordance with the recommendations provided in Section 6 of this report.

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 preventative maintenance. Preventative 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 determine the type and extent of preventative maintenance.

Stabilization of the subgrade will provide a stiffer, more durable subgrade, which will improve the durability of the pavements. It will also provide a subgrade that is less prone to disturbance under construction traffic, especially during rainy weather. If the design team desires to increase the CBR value of the subgrade, subgrade stabilization with cement or lime could be used. Our experience indicates that CBR values of up to 15 or more can be achieved with cement or lime-treated subgrades. The CBR value for lime treated soils will be greater than the CBR values measured in the fat clay. Laboratory tests should be conducted to determine the percentage of lime or cement that is required to stabilize the pavement subgrades and the resulting increased CBR values for pavement design. The stabilized soils should be compacted as recommended in Section 6.4 of this report. The CBR value used in design for treated soils should be verified during construction using dynamic cone penetrometer (DCP) tests or other methods.

Full Depth Reclamation (FDR) could also be used to improve the subgrade soils. This procedure involves thoroughly grinding and mixing the upper AC pavement, aggregate base, and some of the subgrade materials in place. Cement is mixed into the material and compacted in place. Resilient modulus values of 550 to 750 ksi are typically achieved and should be designed in a lab and field verified per FAA guidelines.

5.6 Pavement Design for Access Roadway and Parking Area

Based on a ASSHTO method pavement design using 55,000 ESAL'S minimum pavement thicknesses were calculated. TSi recommends that asphaltic concrete pavements for the roadway, drive lanes and parking lots have a minimum thickness of 4.0 inches with a 6.0-inch thick crushed aggregate base. A rigid pavement section of Portland cement concrete (PCC) should have a minimum thickness of 5.0 inches with at least 4.0-inch thick crushed aggregate base. A thicker PCC section about 7 inches thick should be considered for locations with repeated

turning or concentrated loads such as a dumpster pad or driveway entrance apron. The crushed aggregate base for pavements should consist of MoDOT Type 5 or 7 aggregate, or equivalent. The rigid pavement section is based on a 28-day compressive strength for the concrete of 4,000 pounds per square inch (psi). TSi recommends that pavement section materials and construction procedures conform to the Missouri Department of Transportation Specifications.

5.7 Regional Seismicity

Based on the general soil characteristics as determined by field and laboratory tests, anticipated depths to bedrock, and anticipated soil types, the project area is designated as Site Class D, in accordance with the ASCE 7. The N-values from the borings suggest that the soil has adequate density and cohesion to resist liquefaction in consideration of the distance to known seismic sources. Thus, the site soil is not considered to be susceptible to liquefaction, or to substantial settlement or loss in strength when subject to the design earthquake loading.

6.0 Site Preparation and Excavation Considerations

6.1 Subgrade Preparation

Prior to construction, the structure areas should be stripped of any vegetation, unsuitable existing fill, organic soil, and any deleterious materials. The pavement areas may remove the pavement section and possibly some subgrade materials depending on the chosen improving methods. The exposed subgrade should be proofrolled. Proofrolling is accomplished by passing over the subgrade with proper compaction equipment and observing the subgrade for pockets of excessively soft, wet, disturbed, or otherwise unsuitable soils. Any soft, loose, wet, or otherwise unsuitable areas identified by proofrolling should be reworked in accordance with the recommendations presented in this report. After proofrolling and the removal of any unsuitable soils, the subgrade should be scarified to a depth of 6 inches, the moisture content of the soil adjusted to near its optimum moisture content, and the subgrade recompacted to a minimum of 95% of the standard Proctor (ASTM D 698) maximum dry density of the soil. The recommended proofrolling and recompaction of the subgrade may be waived by TSi if it is determined, based on field observations, that it is unnecessary or could be detrimental to the existing subgrade condition.

6.2 Subgrade Protection

Construction areas should be properly drained in order to reduce or prevent surface runoff from collecting on the subgrade. Any ponded water on the exposed subgrade should be removed immediately. To prevent unnecessary disturbance of the subgrade soils, heavy construction vehicles should be restricted from traveling through the finished subgrade. If areas of disturbed subgrade develop, they should be properly repaired in accordance with the recommendations in this report.

6.3 Fill and Backfill Materials

The lean clay soils at the site should be suitable for use as structural fill. Any fat clays exposed during excavations are not recommended for use as fill due to their shrink/swell potential. The suitability of any existing fill material should be determined by TSi as it is excavated. Off-site fill should consist of lean clay having a liquid limit of 45 or less and a plasticity index between 10 and 25. Off-site fill should be approved by TSi prior to being imported to the job site. In general, acceptable fill materials would include predominantly soil with no significant content of inert material such as brick, concrete, or stone pieces. Soil with decayable material such as wood, metal, or vegetation is not acceptable. Well-graded granular soils with the maximum particle size of 1.5 inches are acceptable, such as MODOT Type 5 or 7 aggregate.

At this time, the moisture content of the on-site soil is variable, and at the time of construction may not be within a range necessary for proper placement and compaction. Prior to compaction, some of the soil may require moisture reduction. During warm weather, moisture reduction can generally be accomplished by disking, or otherwise aerating the soil. Some of the soil may

require the addition of moisture prior to compaction. This should be performed in a controlled manner using a tank truck with a spray bar, and the moistened soil should be thoroughly blended with a disk or pulverizer to produce a uniform moisture content. Repeated passages of the equipment may be required to achieve uniform moisture content.

If the project is constructed during the winter season, fill materials should be carefully observed to see that no ice or frozen soils are placed as fill or remain in the base materials upon which fill is placed.

6.4 Fill and Backfill Placement

Lean clay fill placed for structure support should be compacted to a dry density of at least 95% of the standard Proctor maximum dry density (ASTM D 698) of the soil. Fat clay should not be used as structural fill or backfill. Granular material, such as crushed limestone that is placed for structure support, should be compacted to at least 100% of the standard Proctor maximum dry density. The moisture content of fill at the time of compaction should generally be within plus or minus 3% of the optimum moisture content of the material as determined by the standard Proctor compaction test. Fill should be placed in loose lifts not in excess of 8 inches thick, and compacted to the aforementioned criterion. However, it may be necessary to place fill in thinner lifts to achieve the recommended compaction when using small hand-operated equipment.

7.0 CONSTRUCTION OBSERVATION AND TESTING

It is recommended that TSi be retained during construction to perform testing and observation, and documentation services for the following items:

- Site stripping, fill and existing pavement removal as required, proofrolling, recompaction, and preparation of the soil subgrade that will support new fill or structural elements;
- Evaluation of the suitability of fill and backfill materials;
- Placement and compaction of fill and backfill;
- Observation and documentation of the installation of slab and shallow footing foundations for suitability of the supporting soil and proper preparation; and
- Quality assurance testing for asphalt and concrete materials.

These quality assurance services should help to verify the design assumptions and maintain construction procedures in accordance with the project plans, specifications, and good engineering practice.

8.0 REPORT LIMITATIONS

This report has been prepared for the exclusive use of **WOOLPERT** for the specific application to the subject project. The recommendations contained in this report have been made in accordance with generally accepted soil and foundation engineering practices; no other warranties are implied or expressed.

The analysis and recommendations submitted in this report are based in part upon the data obtained from the test borings. The nature and extent of variations away from the borings may not become evident until construction. If variations then appear evident, it may be necessary to re-evaluate the recommendations of this report.

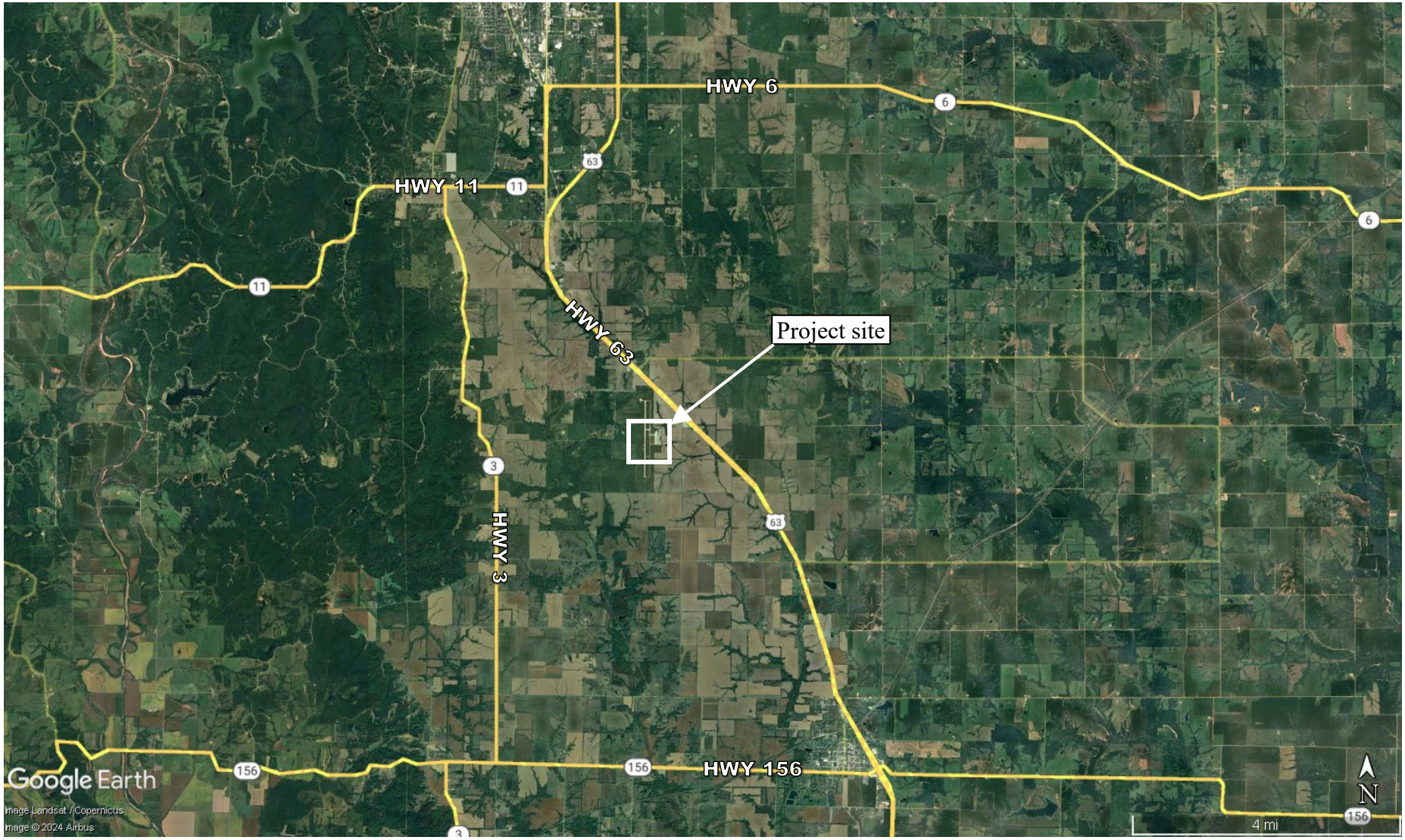
We emphasize that this report was prepared for design purposes only and may not be sufficient to prepare an accurate construction bid. Contractors reviewing this report should acknowledge that the information and recommendations contained herein are for design purposes.

If conditions at the site have changed due to natural causes or construction operations, this report should be reviewed by TSi to determine the applicability of the analysis and recommendations considering the changed conditions. The report should also be reviewed by TSi if changes occur in the structure locations, sizes, and types, or in the planned loads, elevations, or project concepts.

TSi requests the opportunity to review the final plans and specifications for the project prior to construction to verify that the recommendations in this report are properly interpreted and incorporated in the design and construction documents. If TSi is not accorded the opportunity to make this recommended review, we can assume no responsibility for the misinterpretation of our recommendations.

APPENDIX A

Vicinity Map, Figure 1
Site and Boring Location Plan, Figure 2



Note: This plan was prepared from an image obtained from Google Earth on May 1, 2024.

Figure 1, Vicinity Map		Project No. 20241059.00
Kirksville Regional Airport - New Terminal Building Kirksville, Missouri		TSi geotechnical, inc.
Not to Scale	Approved by: AB	

Legend

Approximate Boring Locations

Note: This plan was prepared from an image obtained from Google Earth on May 1, 2024.

N W E S

Figure 2, Site and Boring Location Plan	Project No. 20241059.00
Kirksville Regional Airport - New Terminal Building Kirksville, Missouri	
Not to Scale	Approved by: AB

TSi geotechnical, inc.

APPENDIX B

Boring Logs
General Notes
Unified Soil Classification System

LOG OF BORING NO. B-1

Project Description: **Kirksville Regional Airport - New Terminal Building**
Kirksville, Missouri

TSi Geotechnical Inc.
8248 NW 101st Terrace, #5
Kansas City, Missouri 64153
(816) 599-7965 (816) 599-7967 FAX

Surface El.: **962.0**

Location: **See Site and Boring Location Plan**

Lat.: 40º 05' 37.56"

Long.: -92º 32' 26.68"

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Undrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
		SS-1		FILL: Brown, lean CLAY (CL), trace sand and organics	67		5 7 5	2.75			37	35	20	15
		SS-2		Brown and gray, lean CLAY (CL), trace sand	78		8 17 36	2.50			25			
5		ST-3			100			1.75	0.60	103	23	33	14	19
		SS-4		▽ - trace gravel below 8.5 ft.	100		3 2 4	2.00			21			
10														
		SS-5			100		8 7 13	3.50			23	48	20	28
15				▼										
		SS-6		Brown, clayey SAND (SC), trace gravel (21% passing No. 200 sieve)	78		6 8 12	1.75			18			
20				Boring terminated at 20.0 ft.										
25														

Completion Depth:	20.0
Date Boring Started:	5/9/24
Date Boring Completed:	5/9/24
Engineer/Geologist:	SO
Project No.:	20241059.00

Remarks: Boring drilled with CME-550 using FA and auto SPT.
Groundwater encountered at 8.0 ft. during drilling.
Delayed groundwater level at 16.5 ft. after 30 min.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

KC LOG WITH LAB 20241059.00 KIRKSVILLE REGIONAL AIRPORT.GPJ 6/6/24

LOG OF BORING NO. B-2

Project Description: **Kirksville Regional Airport - New Terminal Building**
Kirksville, Missouri

TSi Geotechnical Inc.
8248 NW 101st Terrace, #5
Kansas City, Missouri 64153
(816) 599-7965 (816) 599-7967 FAX

Surface El.: **961.0**

Location: **See Site and Boring Location Plan**

Lat.: 40º 05' 36.88"

Long.: -92º 32' 26.14"

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Undrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
		SS-1		FILL: Brown, lean CLAY (CL), trace sand and organics	83		2 3 4	2.50			25	41	20	21
5		SS-2		Brown and gray, fat CLAY (CH), trace sand	50		7 6 6	2.25			30	58	24	34
		SS-3			100		8 11 12	2.25			22			
10		SS-4		- trace gravel below 8.5 ft.	100		4 6 6	2.50			21			
15		ST-5		▽	100			3.50	0.51	104	22			
20		SS-6			100		4 4 5	2.50			19			
25				Boring terminated at 20.0 ft.										

Completion Depth:	20.0
Date Boring Started:	5/9/24
Date Boring Completed:	5/9/24
Engineer/Geologist:	SO
Project No.:	20241059.00

Remarks: Boring drilled with CME-550 using FA and auto SPT. Groundwater encountered at 13.0 ft. during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

KC LOG WITH LAB 20241059.00 KIRKSVILLE REGIONAL AIRPORT.GPJ 6/6/24

LOG OF BORING NO. B-3

Project Description: **Kirksville Regional Airport - New Terminal Building**
Kirksville, Missouri

TSi Geotechnical Inc.
8248 NW 101st Terrace, #5
Kansas City, Missouri 64153
(816) 599-7965 (816) 599-7967 FAX

Surface El.: **959.0**

Location: **See Site and Boring Location Plan**

Lat.: 40º 05' 36.34"

Long.: -92º 32' 24.78"

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Undrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
				Asphaltic concrete (7.5")										
				Aggregate base (4.5")										
		SS-1		FILL: Brown, lean CLAY (CL), with sand and gravel	11		10 5 6	2.00			22			
5		ST-2		Brown and gray, lean CLAY (CL), trace sand and gravel	75			2.00	0.84	90	31	39	18	21
		SS-3			100		6 4 4	1.75			24	33	16	17
		SS-4		▽	100		4 4 4	2.00			23			
10				Boring terminated at 10.0 ft.										
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/9/24
Date Boring Completed: 5/9/24
Engineer/Geologist: SO
Project No.: 20241059.00

Remarks: Boring drilled with CME-550 using FA and auto SPT. Groundwater encountered at 8.5 ft. during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

KC LOG WITH LAB 20241059.00 KIRKSVILLE REGIONAL AIRPORT.GPJ 6/6/24

LOG OF BORING NO. B-4

Project Description: **Kirksville Regional Airport - New Terminal Building**
Kirksville, Missouri

TSi Geotechnical Inc.
8248 NW 101st Terrace, #5
Kansas City, Missouri 64153
(816) 599-7965 (816) 599-7967 FAX

Surface El.: **959.0**

Location: **See Site and Boring Location Plan**
Lat.: 40º 05' 38.57"
Long.: -92º 32' 23.79"

Depth, feet	Samples	Sample #	Graphic Log	MATERIAL DESCRIPTION	Recovery %	RQD	Penetration Blows Per 6 inches	Hand Penetrometer, Qu TSF	Undrained Shear Strength, TSF	Unit Dry Weight, lb/cu ft.	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
				Asphaltic concrete (5.0")										
				Aggregate base (5.0")										
		SS-1		FILL: Brown, lean CLAY (CL), trace sand and gravel	39		2 2 3	1.50			34	38	17	21
5		SS-2		Gray, fat CLAY (CH), trace sand	100		3 3 3	2.25			24			
		SS-3		- gray and brown below 6.0 ft.	100		2 3 4	2.25			44			
10		ST-4		Boring terminated at 10.0 ft.	100			2.50	0.58	100	24	52	18	34
15														
20														
25														

Completion Depth: 10.0
Date Boring Started: 5/9/24
Date Boring Completed: 5/9/24
Engineer/Geologist: SO
Project No.: 20241059.00

Remarks: Boring drilled with CME-550 using FA and auto SPT. Groundwater encountered at 8.0 ft. during drilling.

The stratification lines represent approximate strata boundaries.
In situations, the transition may be gradual.

KC LOG WITH LAB 20241059.00 KIRKSVILLE REGIONAL AIRPORT.GPJ 6/6/24

GENERAL NOTES

The number of borings is based on: topographic and geologic factors; the magnitude of structure loading; the size, shape, and value of the structure; consequences of failure; and other factors. The type and sequence of sampling are selected to reduce the possibility of undiscovered anomalies and maintain drilling efficiency. Attempts are made to detect and/or identify occurrences during drilling and sampling such as the presence of water, boulders, gas, zones of lost circulation, relative ease or resistance to drilling progress, unusual sample recovery, variation in resistance to driving split-spoon samplers, unusual odors, etc. However, lack of notation regarding these occurrences does not preclude their presence.

Although attempts are made to obtain stabilized groundwater levels, the levels shown on the Logs of Boring may not have stabilized, particularly in more impermeable cohesive soils. Consequently, the indicated groundwater levels may not represent present or future levels. Groundwater levels may vary significantly over time due to the effects of precipitation, infiltration, or other factors not evident at the time indicated.

Unless otherwise noted, soil classifications indicated on the Logs of Boring are based on visual observations and are not the result of classification tests. Although visual classifications are performed by experienced technicians or engineers, classifications so made may not be conclusive.

Generally, variations in texture less than one foot in thickness are described as layers within a stratum, while thicker zones are logged as individual strata. However, minor anomalies and changes of questionable lateral extent may appear only in the verbal description. The lines indicating changes in strata on the Logs of Borings are approximate boundaries only, as the actual material change may be between samples or may be a gradual transition.

Samples chosen for laboratory testing are selected in such a manner as to measure selected physical characteristics of each material encountered. However, as samples are recovered only intermittently and not all samples undergo a complete series of tests, the results of such tests may not conclusively represent the characteristics of all subsurface materials present.

NOTATION USED ON BORING LOGS

APPROXIMATE PROPORTIONS

TRACE	<15%
WITH	15-30%
MODIFIER	>30%

Clay or clayey may be used as major material or modifier, regardless of relative proportions, if the clay content is sufficient to dominate the soil properties.

PARTICLE SIZE

BOULDERS		>12 Inches
COBBLES		12 Inches – 3 Inches
GRAVEL		
	Coarse	3 Inches – ¾ Inch
	Fine	¾ Inch – No. 4 Sieve (4.750 mm)
SAND		
	Coarse	No. 4 – No. 10 Sieve (2.000 mm)
	Medium	No. 10 – No. 40 Sieve (0.420 mm)
	Fine	No. 40 – No. 200 Sieve (0.074 mm)
SILT		No. 200 Sieve - 0.002 mm
CLAY		< 0.002 mm

PENETRATION – BLOWS

Number of impacts of a 140-pound hammer falling a distance of 30 inches to cause a standard split-barrel sampler, 1 3/8 inches I.D., to penetrate a distance of 6 inches. The number of impacts for the first 6 inches of penetration is known as the seating drive. The sum of the impacts for the last 12 inches of penetration is the Standard Penetration Test Resistance or "N" value, blows per foot. For example, if blows = 6-8-9, "N" = 8+9 or 17.

OTHER NOTATIONS

Recovery % – length of recovered soil divided by length of sample attempted.

50/2"	Impacts of hammer to cause sampler to penetrate the indicated number of inches
WR	Sampler penetrated under the static loading of the weight of the drill rods
WH	Sampler penetrated under the static loading the weight of the hammer and drill rods
HSA	Hollow stem auger drilling method
FA	Flight auger drilling method
RW	Rotary wash drilling methods with drilling mud
AH	Automatic hammer used for Standard Penetration Test sample
SH	Safety hammer with rope and cathead used for Standard Penetration Test sample

GRAPHIC SYMBOLS


Depth at which groundwater was encountered during drilling


Depth at which groundwater was measured after drilling


Standard Penetration Test Sample, ASTM D1586


3-inch diameter Shelby Tube Sample, ASTM D1587

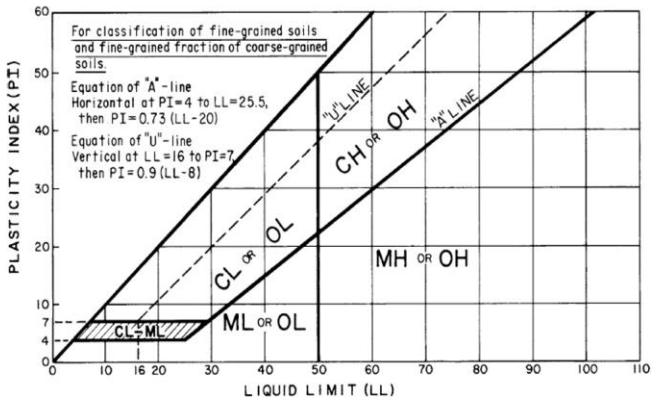
Sample grabbed from auger


NX Size rock core sample

TSi geotechnical

UNIFIED SOIL CLASSIFICATION SYSTEM, (ASTM D-2487)

Major Divisions			*Group Symbols*		*Typical Names*	*Laboratory Classification Criteria*	
Coarse-grained soils (More than half of materials is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean gravels (Little or no fines)	GW		Well-graded gravels, gravel-sand mixtures, little or no fines	Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-Grained soils are classified as follows: Less than 5 per cent GW, GP, SW, SP; More than 12 per cent GM, GC, SM, SC; 5 to 12 per cent Borderline cases requiring dual symbols[b]	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3
			GP		Poorly graded gravels, gravel-sand mixtures, little or no fines		Not meeting all gradation requirements for GW
		Gravels with fines (Appreciable amount of fines)	GM[a]	d	Silty gravels, gravel-sand-silt mixtures	Atterberg limits below "A" line or P.1. less than 4	Above "A" line with P.1. between 4 and 7 are *borderline* cases requiring use of dual symbols
				u			
			GC		Clayey gravels, gravel-sand-clay mixtures	Atterberg limits below "A" line with P.1. greater than 7	
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (Little or no fines)	SW		Well-graded sands, gravelly sands, little or no fines		$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3
			SP		Poorly graded sands, gravelly sands, little or no fines		Not meeting all gradation requirements for SW
		Sands with fines (Appreciable amount of fines)	SM[a]	d	Silty sands, sand-mix mixtures	Atterberg limits about "A" line or P.I. less than 4	Limits plotting in hatched zone with P.I. between 4 and 7 are *borderline* cases requiring use of dual symbols
				u			
			SC		Clayey sands, sand-clay mixtures	Atterberg limits about "A" line with P.I. greater than 7	
Fine-grained soils (More than half of materials is smaller than No. 200 sieve size)	Silts and clays (Liquid limit less than 50)		ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity		
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays		
			OL		Organic silts and organic silty clays of low plasticity		
	Silts and clays (Liquid limit greater than 50)		MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts		
			CH		Inorganic clays of medium to high plasticity, organic silts		
			OH		Organic clays of medium to high plasticity, organic silts		
	Highly organic soils		Pt		Peat and other highly organic soils		



[a]Division of GM and SM groups into subdivisions of d and u are for roads and airfields only. Subdivision is based on Atterberg limits; suffix d used when L.L. is 26 or less and the P.1. is 6 or less; the suffix u used when L.L. is greater than 28.

[b]Borderline classifications, used for soils possessing characteristics of two groups, are designated by combinations of group symbols. For example: GW-GC, well-graded gravel-sand mixture with clay binder.

APPENDIX C

Laboratory Test Data

TSI geotechnical, inc.
1340 NORTH PRICE ROAD
ST. LOUIS, MISSOURI 63132

UNCONFINED COMPRESSION TEST: BORING B-1 / ST-3

PROJECT NAME: Kirksville Regional Airport - New Terminal Building		Tested by:	ML
PROJECT LOCATION: Kirksville, Missouri		Calculated by:	MN
PROJECT NUMBER: 20241059.00		Checked by:	AB

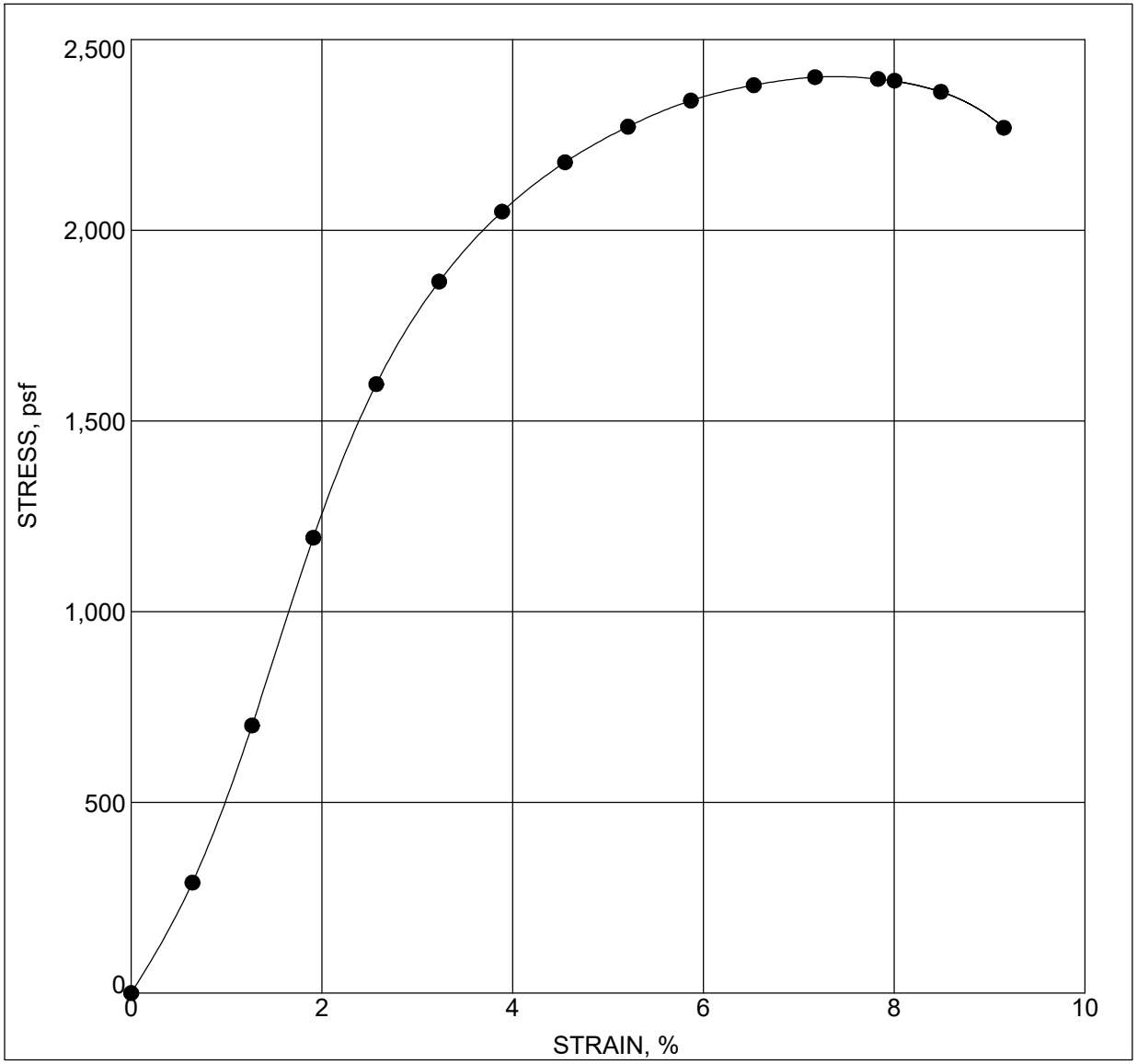
BORING NO.	**B-1**
Sample No.	**ST-3**
Sample Depth (ft)	**6.0**
Visual Classification (USCS)	**Lean CLAY (CL)**

ASTM DESIGNATION	
Unconfined Compression	ASTM D2166
Atterberg Limits	ASTM D4318
Visual Classification (USCS)	ASTM D2488

ATTERBERG LIMITS	
Liquid Limit	33
Plastic Limit	14
Plasticity Index	19
Classification (USCS)	CL

DENSITY & MOISTURE	
Wet Unit Weight (pcf)	125.9
Moisture Content (%)	22.8
Dry Unit Weight (pcf)	102.6

STRENGTH	
Undrained Shear Strength, S_u (tsf)	0.60
% Strain at q_U	7.2



TSI geotechnical, inc.
1340 NORTH PRICE ROAD
ST. LOUIS, MISSOURI 63132

UNCONFINED COMPRESSION TEST: BORING B-1 / ST-3

PROJECT NAME: Kirksville Regional Airport - New Terminal Building		Tested by:	ML
PROJECT LOCATION: Kirksville, Missouri		Calculated by:	MN
PROJECT NUMBER: 20241059.00		Checked by:	AB

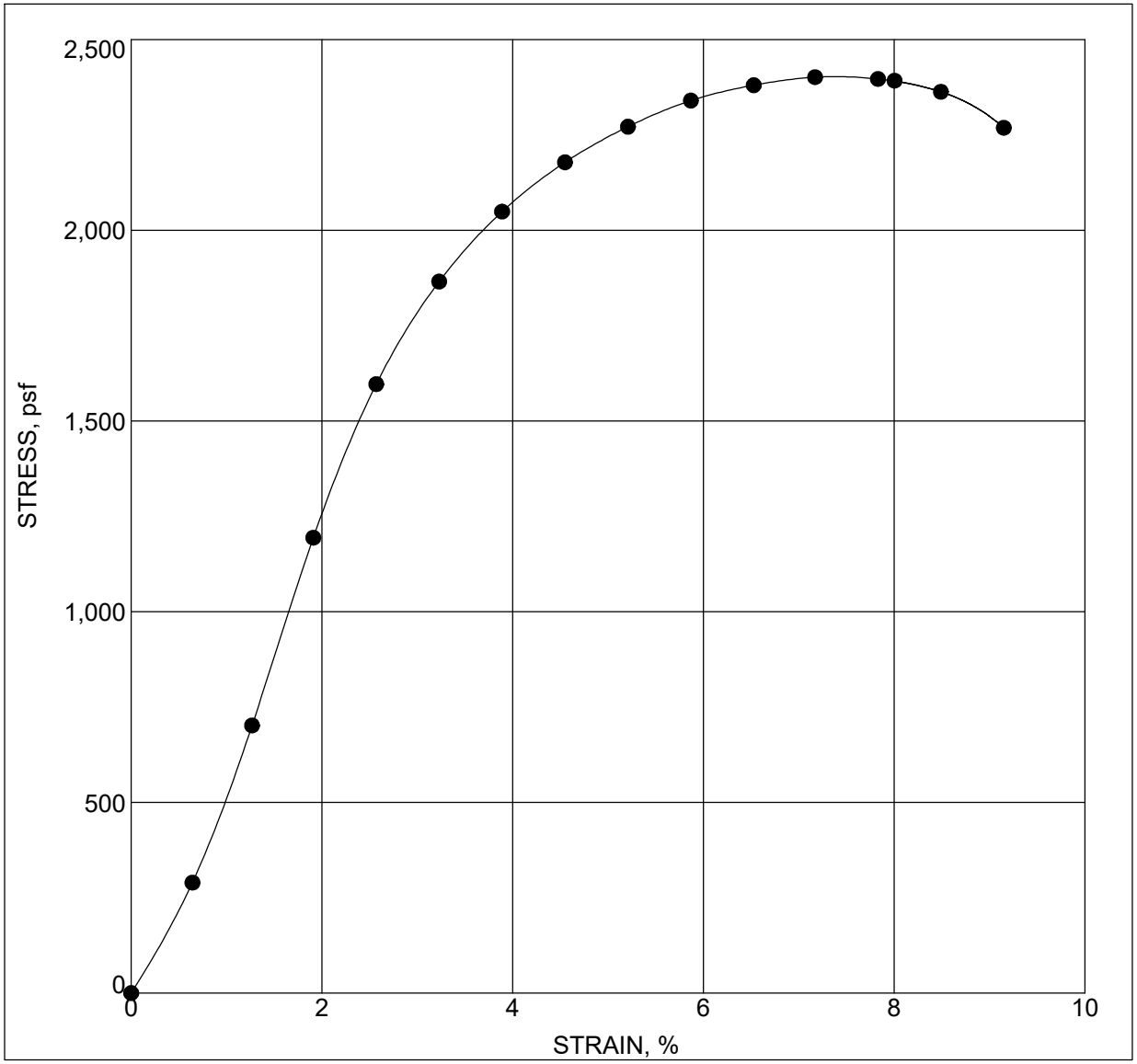
BORING NO.	**B-1**
Sample No.	**ST-3**
Sample Depth (ft)	**6.0**
Visual Classification (USCS)	**Lean CLAY (CL)**

ASTM DESIGNATION	
Unconfined Compression	ASTM D2166
Atterberg Limits	ASTM D4318
Visual Classification (USCS)	ASTM D2488

ATTERBERG LIMITS	
Liquid Limit	33
Plastic Limit	14
Plasticity Index	19
Classification (USCS)	CL

DENSITY & MOISTURE	
Wet Unit Weight (pcf)	125.9
Moisture Content (%)	22.8
Dry Unit Weight (pcf)	102.6

STRENGTH	
Undrained Shear Strength, S_u (tsf)	0.60
% Strain at q_U	7.2



TSI geotechnical, inc.
1340 NORTH PRICE ROAD
ST. LOUIS, MISSOURI 63132

UNCONFINED COMPRESSION TEST: BORING B-2 / ST-5

PROJECT NAME: Kirksville Regional Airport - New Terminal Building		Tested by:	ML
PROJECT LOCATION: Kirksville, Missouri		Calculated by:	MN
PROJECT NUMBER: 20241059.00		Checked by:	AB

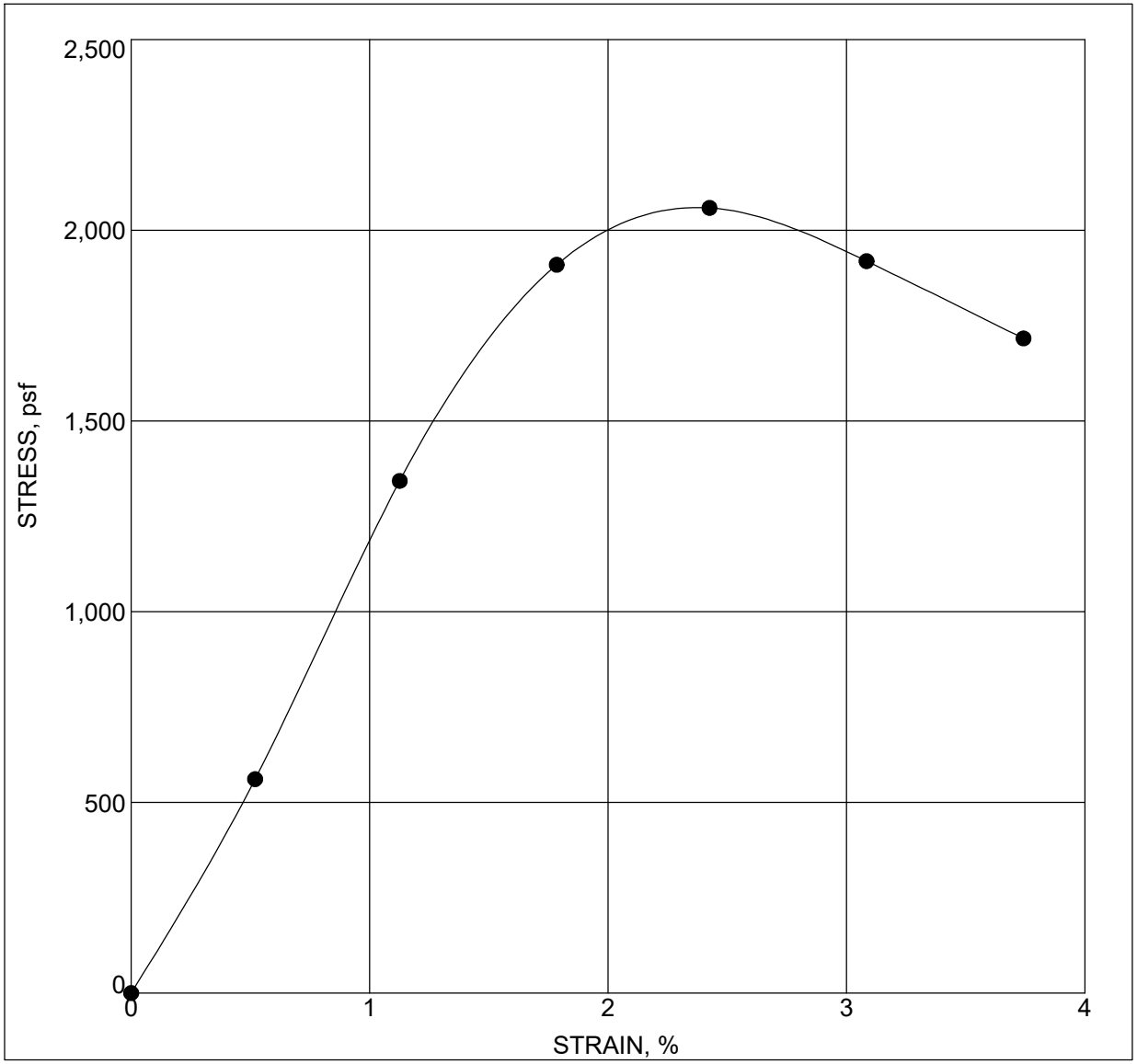
BORING NO.	**B-2**
Sample No.	**ST-5**
Sample Depth (ft)	**13.0**
Visual Classification (USCS)	**Fat CLAY (CH)**

ASTM DESIGNATION	
Unconfined Compression	ASTM D2166
Atterberg Limits	ASTM D4318
Visual Classification (USCS)	ASTM D2488

ATTERBERG LIMITS	
Liquid Limit	
Plastic Limit	
Plasticity Index	
Classification (USCS)	

DENSITY & MOISTURE	
Wet Unit Weight (pcf)	127.4
Moisture Content (%)	22.4
Dry Unit Weight (pcf)	104.1

STRENGTH	
Undrained Shear Strength, S_u (tsf)	0.51
% Strain at q_U	2.4



TSI geotechnical, inc.
1340 NORTH PRICE ROAD
ST. LOUIS, MISSOURI 63132

UNCONFINED COMPRESSION TEST: BORING B-3 / ST-2

PROJECT NAME: Kirksville Regional Airport - New Terminal Building		Tested by:	ML
PROJECT LOCATION: Kirksville, Missouri		Calculated by:	MN
PROJECT NUMBER: 20241059.00		Checked by:	AB

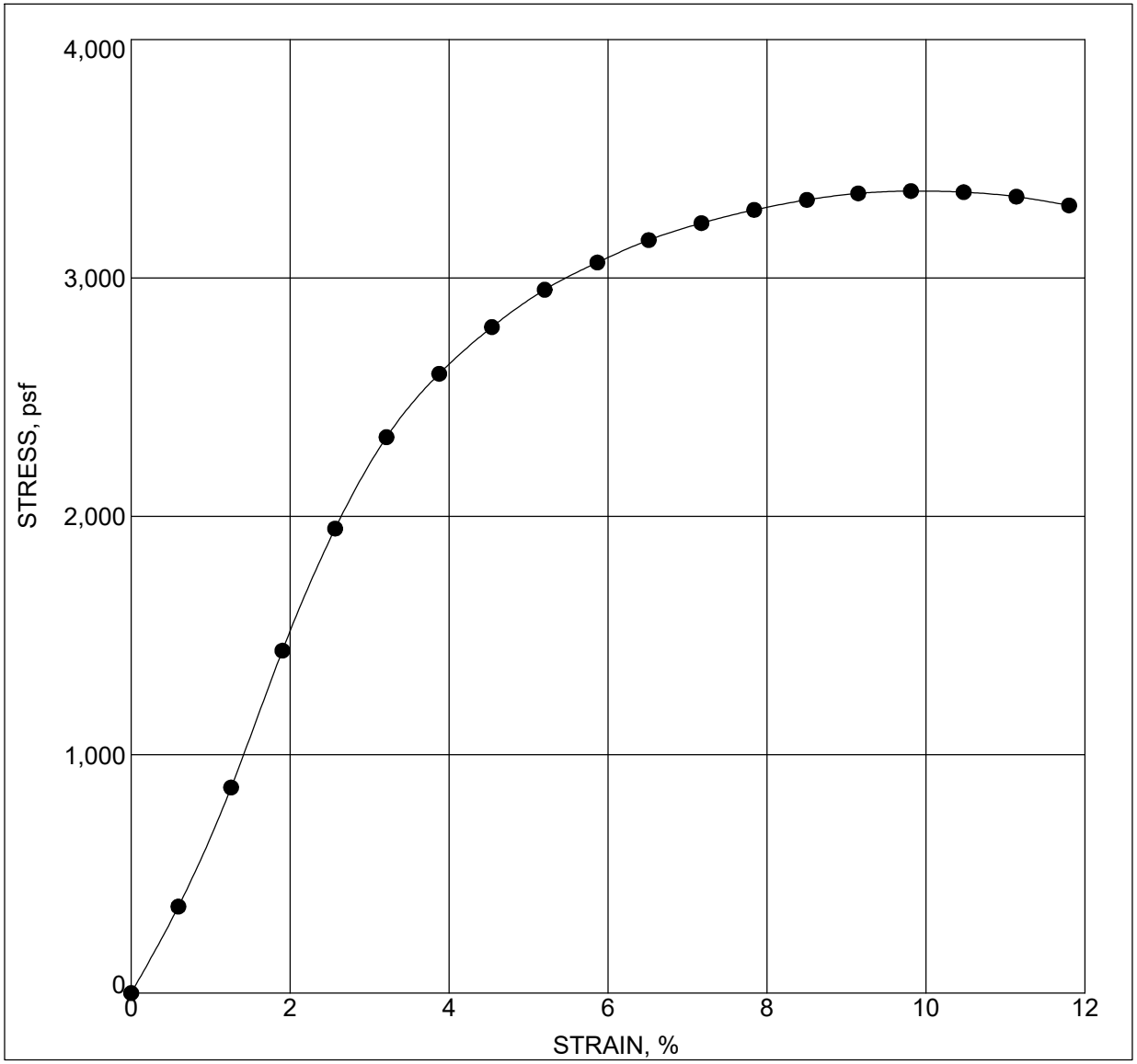
BORING NO.	**B-3**
Sample No.	**ST-2**
Sample Depth (ft)	**3.5**
Visual Classification (USCS)	**Lean CLAY (CL)**

ASTM DESIGNATION	
Unconfined Compression	ASTM D2166
Atterberg Limits	ASTM D4318
Visual Classification (USCS)	ASTM D2488

ATTERBERG LIMITS	
Liquid Limit	39
Plastic Limit	18
Plasticity Index	21
Classification (USCS)	CL

DENSITY & MOISTURE	
Wet Unit Weight (pcf)	117.3
Moisture Content (%)	30.6
Dry Unit Weight (pcf)	89.8

STRENGTH	
Undrained Shear Strength, S_u (tsf)	0.84
% Strain at q_u	9.8



TSI geotechnical, inc.
1340 NORTH PRICE ROAD
ST. LOUIS, MISSOURI 63132

UNCONFINED COMPRESSION TEST: BORING B-4 / ST-4

PROJECT NAME: Kirksville Regional Airport - New Terminal Building		Tested by:	ML
PROJECT LOCATION: Kirksville, Missouri		Calculated by:	MN
PROJECT NUMBER: 20241059.00		Checked by:	AB

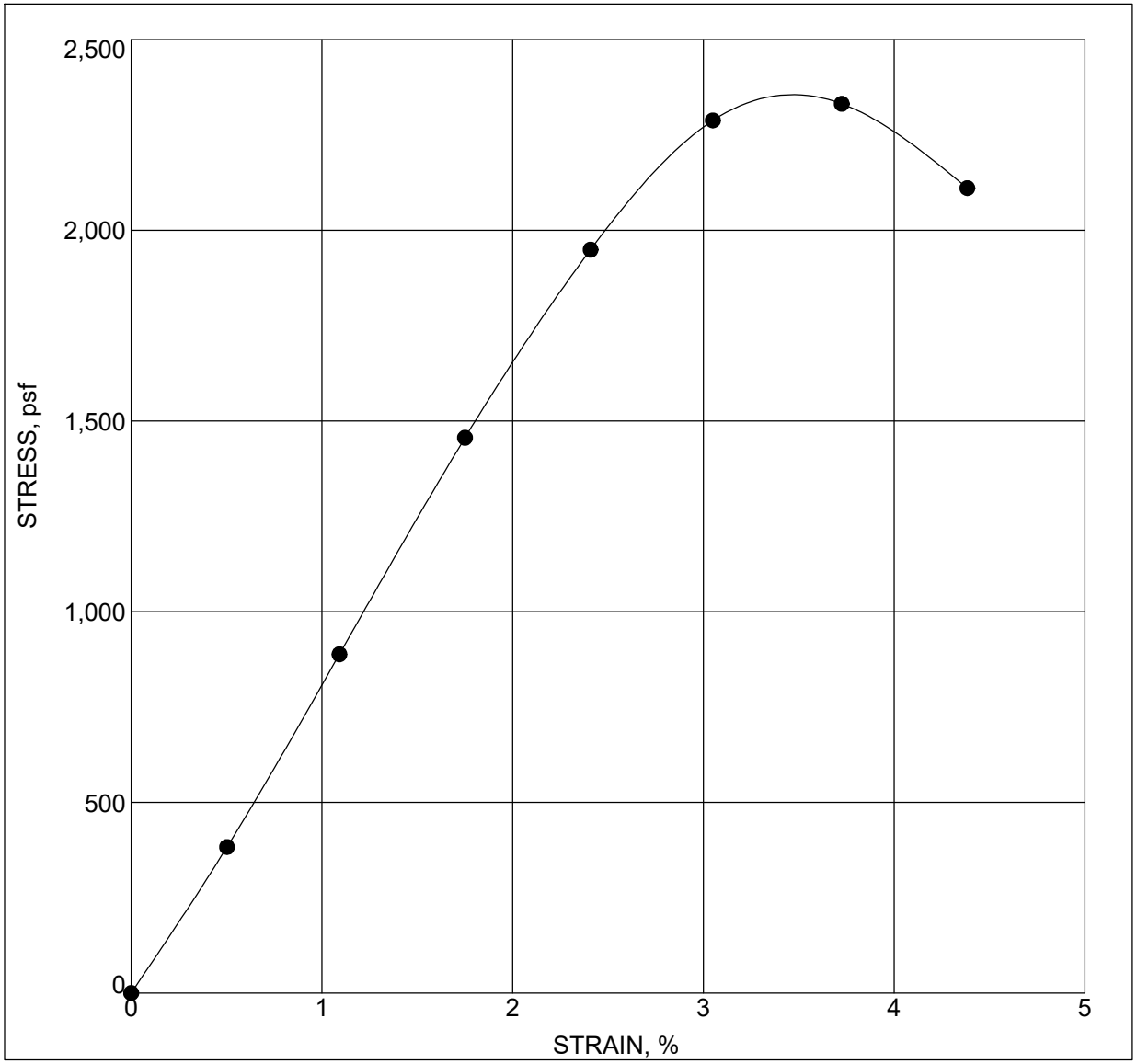
BORING NO.	**B-4**
Sample No.	**ST-4**
Sample Depth (ft)	**8.0**
Visual Classification (USCS)	**Fat CLAY (CH)**

ASTM DESIGNATION	
Unconfined Compression	ASTM D2166
Atterberg Limits	ASTM D4318
Visual Classification (USCS)	ASTM D2488

ATTERBERG LIMITS	
Liquid Limit	52
Plastic Limit	18
Plasticity Index	34
Classification (USCS)	CH

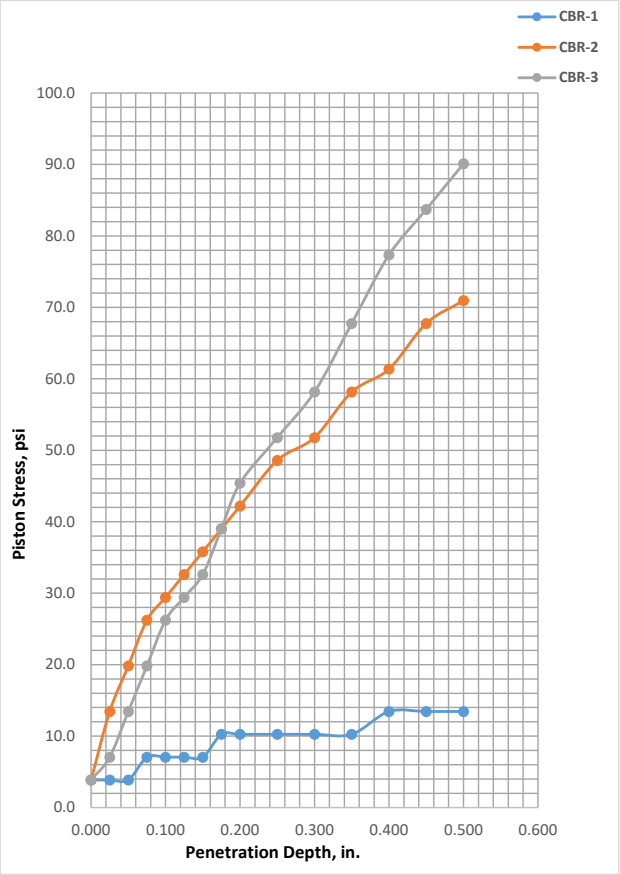
DENSITY & MOISTURE	
Wet Unit Weight (pcf)	124.3
Moisture Content (%)	23.8
Dry Unit Weight (pcf)	100.5

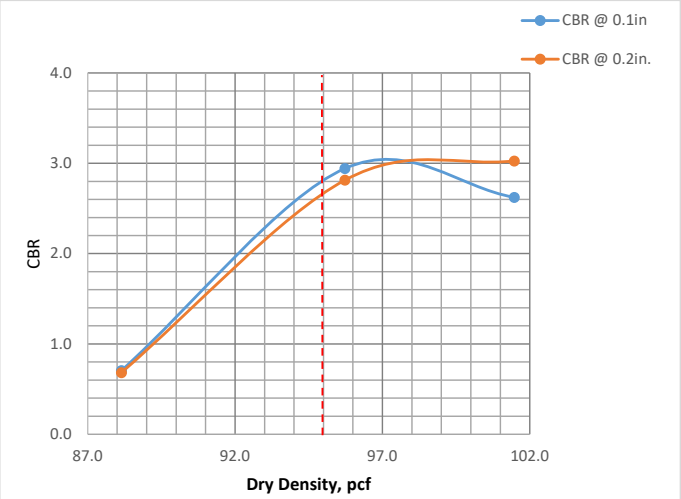
STRENGTH	
Undrained Shear Strength, S_u (tsf)	0.58
% Strain at q_U	3.7

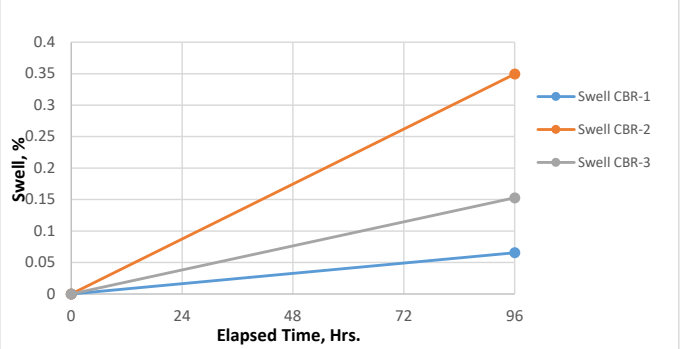


CALIFORNIA BEARING RATIO TEST REPORT
ASTM D 1883-07

% CBR Value @ 95% Compaction = 2.8 @ 0.1 in. penetration
% CBR Value @ 95% Compaction = 2.7 @ 0.2 in. penetration







Specimen ID	Molded			CBR%		Moisture of Top 1" Layer, %	Surcharge lbs	Max Swell, %
	Density, pcf	Percent of Max. Density	Moisture	0.1 in.	0.2 in			
CBR-1	88.1	88.1	20.8	0.7	0.7	26.3	10	0.1
CBR-2	95.7	95.7	21.0	2.9	2.8	23.7	10	0.3
CBR-3	101.5	101.5	21.2	2.6	3.0	23.5	10	0.2

Material Description	USCS	MAX DENSITY, pcf	OPTIMUM MOISTURE, %	LL	PI
Brown and gray, lean CLAY (CL), trace sand, gravel and organics, silty	CL	100.0	21.5	32	11

Remarks:

Compaction Method: ASTM D698

Project: Kirksville Regional Airport – New Terminal

Location: Kirkssville, Missouri

Client: Woolpert

Sample No.: BS-1

Boring: Bulk | **Project No.: 20241059.00**

Depth: 3 to 5 ft. | **Date: 6/4/24**

TSi geotechnical, inc.

8248 NW 101st
Terrace #5
Kansas City,
Missouri 64153
p| 816.599.7965
f| 816.599.7967

PROCTOR TEST

PROJECT NAME:	**Kirksville Regional Airport – New Terminal**
PROJECT No.:	20241059
SAMPLE NUMBER:	**BS-1**
SAMPLE LOCATION:	**Bulk**
DEPTH:	**3 to 5 ft**
VISUAL CLASS. (USCS):	**Brown and gray, lean CLAY (CL), trace sand, gravel and organics, silty**

TYPE OF COMPACTION	**Std.**	**D698**		
SIEVE ANALYSIS RESULTS	0.75	0.375	No. 4	**PROCEDURE**
% Retained(cummulative)				**A**

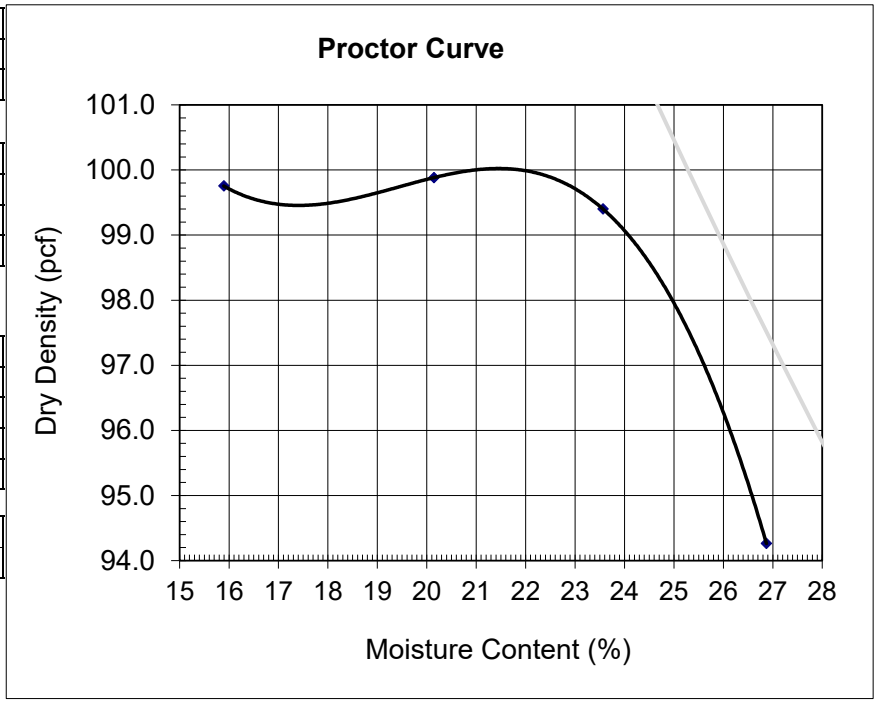
SOIL WEIGHT DATA					
Determination Number	1	2	3	4	5
Weight- Soil + Mold (wet),g	3867.8	3825.2	3758.8	3819.0	
Weight of Mold,g	2012.6	2012.6	2012.6	2012.6	
Weight Wet Soil,g	**1855.2**	**1812.6**	**1746.2**	**1806.4**	
Volume of Mold (ft^3)	**0.0333**	**0.0333**	**0.0333**	**0.0333**	
MOISTURE DATA					
Weight- Soil + Tare (wet),g	411.8	409.8	236.0	207.9	
Weight- Soil + Tare (dry),g	334.9	342.8	217.3	184.4	
Weight- Tare,g	8.6	10.2	99.2	97.2	
COMPUTED DATA					
Wet unit weight (pcf)	**122.8**	**120.0**	**115.6**	**119.6**	
Moisture content (%)	**23.6**	**20.1**	**15.9**	**26.9**	
Dry unit weight (pcf)	**99.4**	**99.9**	**99.8**	**94.3**	

Maximum Dry Density (pcf)	**100.0**
Optimum Moisture Content (%)	**21.5**
Natural Moisture Content (%)*	**26.9**

Liquid Limit	**32**
Plastic Limit	21
Plasticity Index	**11**
CLASSIFICATION. (USCS)*	**CL**

	Date
Tested by: ML	5/29/2024
Calculated by: MN	5/30/2024
Checked by: TBS	
Entered Into Excel by: MN	5/30/2024

NOTE:



Atterberg Limits

8248 NW 101st Terr
Kansas City, MO

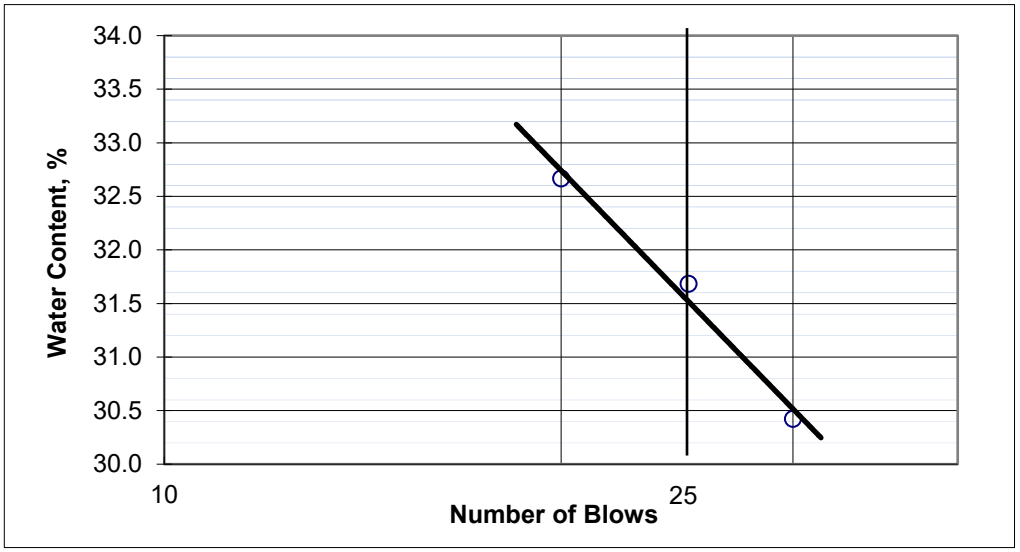
PROJECT # 20241059

PROJECT Kirksville Regional Airport – New Terminal DATE 5/31/2024

BORING # BS-1 SAMPLE # Bulk DEPTH 3 to 5 ft.

LIQUID LIMIT

Run No.	1 (25-35)	2 (20-30)	3 (15-25)	4	5	6	7
Tare No.	12	2	9				
Tare Plus Wet Soil, g	107.980	107.280	107.540				
Tare Plus Dry Soil, g	105.680	105.040	105.250				
Water, g	2.300	2.240	2.290				
Tare, g	98.120	97.970	98.240				
Dry Soil, g	7.560	7.070	7.010				
Water content, %	30.42	31.68	32.67				
Number of Blows	30	25	20				



LL	32
PL	21
PI	11
Symbol from plasticity chart	CL

Plastic LIMIT

Run No.	1	2	3	4	5	6	7
Tare No.	8	2					
Tare Plus Wet Soil, g	107.780	104.700					
Tare Plus Dry Soil, g	106.740	103.670					
Water, g	1.040	1.030					
Tare, g	101.710	98.650					
Dry Soil, g	5.030	5.020					
Water content, %	20.68	20.52					
Plastic Limit	20.6						

Remarks

Technician MN Computed By MN Checked By AB

TSi Geotechnical, Inc.
HYDROMETER ANALYSIS (ASTM D422)

Project Name:	Kirksville Regional Airport - New Terminal	**Project Number:**	20241059.00
Boring Number:	BS-1	**Tested by:**	MN
Sample Number:	Bulk	**Calculated by:**	MN
Sample Depth:	3 to 5 ft.	**Checked by:**	AB
Visual Description:	Brown and gray, lean CLAY (CL), trace sand, gravel and organics, silty		

Coarse Analysis

Initial Air Dry Mass, Total: 163.9 grams

Sieve	Particle Size, mm	Cummulative Mass Retained, grams	Percent Retained	Percent Passing
1"	25.40	0	0.00	100.0
1/2"	12.70	0	0.00	100.0
3/8"	9.53	0	0.00	100.0
No.4	4.75	1.33	0.81	99.2
No.10	2.00	3.71	1.45	97.7
Pan				

Fine Analysis

Initial Air Dry Mass, Fine: 77.51 grams

Sieve	Particle Size, mm	Cummulative Mass Retained, grams	Percent Retained	Percent Passing
No.20	0.85	1.5	1.94	95.8
No.40	0.43	2.99	1.92	94.0
No.80	0.18	4.41	1.83	92.2
No.100	0.15	4.62	0.27	91.9
No.200	0.08	5.21	0.76	91.2
Pan		5.27		**91.1**

Hydrometer analysis

Specific Gravity 2.65		**Hydrometer Reading**		**Combined Correction:**			
Constant, a 1				**Hygroscopic Corrected Mass, g.** 77.51			
Elapsed Time minutes	**Temperature °C**	**Uncorrected, Ra**	**Corrected, Rc**	**Effective Depth, L cm**	**Constant K**	**Particle Size mm**	**Percent Passing**
2	26.8	38.5	35.4	10.6	0.01261	0.0290	44.6
5	26.7	33.0	29.9	11.5	0.01262	0.0191	37.6
15	26.4	26.5	23.2	12.5	0.01266	0.0116	29.3
30	26.1	23.8	20.3	13.0	0.01271	0.0084	25.6
60	25.5	21.0	17.3	13.5	0.01279	0.0061	21.8
120	25.0	19.5	15.5	13.8	0.01286	0.0044	19.5
240	24.5	18.0	13.8	14.2	0.01294	0.0031	17.3
444	24.0	17.0	12.5	14.3	0.01301	0.0023	15.7619
1440	23.7	15.8	11.1	14.5	0.01306	0.0013	13.9966

Hygroscopic Moisture Correction	
Air Dry Mass + Tare:	15
Oven Dry Mass + Tare:	15
Tare:	1
Correction Factor:	1

TSi Geotechnical, Inc.
HYDROMETER ANALYSIS (ASTM D422)

Project Name:	Kirksville Regional Airport - New Terminal	**Project Number:**	20241059.00
Boring Number:	BS-1	**Tested by:**	MN
Sample Number:	Bulk	**Calculated by:**	MN
Sample Depth:	3 to 5 ft.	**Checked by:**	AB
Visual Description:	Brown and gray, lean CLAY (CL), trace sand, gravel and organics, silty		

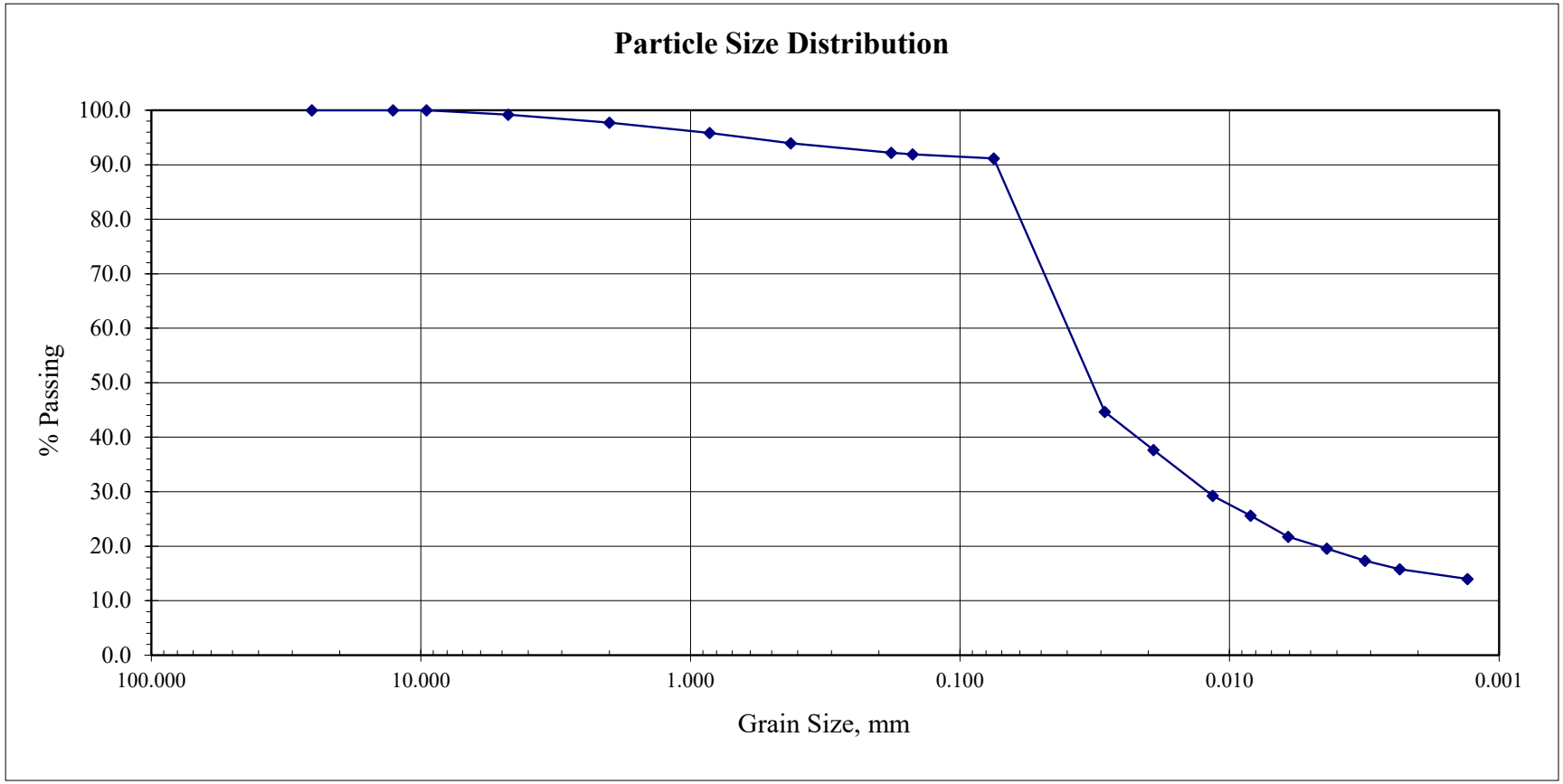
Sieve	Particle Size, mm	Percent Finer
1"	25.40	100
1/2"	12.70	100
3/8"	9.53	100
No.4	4.75	99
No.10	2.00	98
No.20	0.85	96
No.40	0.425	94
No.80	0.180	92
No.100	0.150	92
No.200	0.075	91
Hydrometer Analysis	0.0290	45
	0.0191	38
	0.0116	29
	0.0084	26
	0.0061	22
	0.0044	20
	0.0031	17
	0.0023	16
	0.0013	14

Particle Size Description
Soil Classification System

Particle	Size Range, mm	Percent of Specimen
Gravel	4.75 to 76.4	1
Coarse Sand	2.00 to 4.75	1
Medium Sand	0.43 to 2.00	4
Fine Sand	0.075 to 0.43	3
Silt	0.005 to 0.075	71
Clay	<0.005	20

TSi Geotechnical, Inc.
HYDROMETER ANALYSIS (ASTM D422)

Project Name:	Kirksville Regional Airport - New Terminal	**Project Number:**	20241059.00
Boring Number:	BS-1	**Tested by:**	MN
Sample Number:	Bulk	**Calculated by:**	MN
Sample Depth:	3 to 5 ft.	**Checked by:**	AB
Visual Description:	Brown and gray, lean CLAY (CL), trace sand, gravel and organics, silty		



TSi Geotechnical, Inc.
HYDROMETER ANALYSIS (ASTM D422)

Project Name:	Kirksville Regional Airport - New Terminal Building	**Project Number:**	20241059.00
Boring Number:	B-1	**Tested by:**	MN
Sample Number:	SS-6	**Calculated by:**	MN
Sample Depth:	18.50	**Checked by:**	AB
Visual Description:	Brown, clayey SAND (SC), trace gravel		

Coarse Analysis

Initial Air Dry Mass, Total: 384.5 grams

Sieve	Particle Size, mm	Cummulative Mass Retained, grams	Percent Retained	Percent Passing
1"	25.40	0	0.00	100.0
1/2"	12.70	0	0.00	100.0
3/8"	9.53	0	0.00	100.0
No.4	4.75	5.98	1.56	98.4
No.10	2.00	13.84	2.04	96.4
Pan				

Fine Analysis

Initial Air Dry Mass, Fine: 118.67 grams

Sieve	Particle Size, mm	Cummulative Mass Retained, grams	Percent Retained	Percent Passing
No.20	0.85	5.37	4.53	92.0
No.40	0.43	23.63	15.39	77.2
No.80	0.18	78.85	46.53	32.3
No.100	0.15	84.67	4.90	27.6
No.200	0.08	92.59	6.67	21.2
Pan				**96.4**

Hydrometer analysis

Specific Gravity 2.65		**Hydrometer Reading**		**Combined Correction:**			
Constant, a 1				**Hygroscopic Corrected Mass, g.** 118.67			
Elapsed Time minutes	**Temperature °C**	**Uncorrected, Ra**	**Corrected, Rc**	**Effective Depth, L cm**	**Constant K**	**Particle Size mm**	**Percent Passing**
2	23.3	16.8	11.9	14.5	0.01312	0.0353	9.7
5	23.3	16.0	11.2	14.5	0.01312	0.0223	9.1
15	23.2	15.3	10.4	14.7	0.01314	0.0130	8.4
30	23.1	14.8	9.8	14.8	0.01315	0.0092	8.0
60	23.1	14.3	9.3	14.8	0.01315	0.0065	7.6
120	23.1	13.5	8.6	15.0	0.01315	0.0047	6.9
240	23.6	13.0	8.3	15.0	0.01307	0.0033	6.7
444	23.6	12.5	7.8	15.2	0.01307	0.0024	6.3363
1440	23.6	12.5	7.8	15.2	0.01307	0.0013	6.3363

Hygroscopic Moisture Correction	
Air Dry Mass + Tare:	15
Oven Dry Mass + Tare:	15
Tare:	1
Correction Factor:	1

TSi Geotechnical, Inc.
HYDROMETER ANALYSIS (ASTM D422)

Project Name:	Kirksville Regional Airport - New Terminal Building	**Project Number:**	20241059.00
Boring Number:	B-1	**Tested by:**	MN
Sample Number:	SS-6	**Calculated by:**	MN
Sample Depth:	18.5	**Checked by:**	AB
Visual Description:	Brown, clayey SAND (SC), trace gravel		

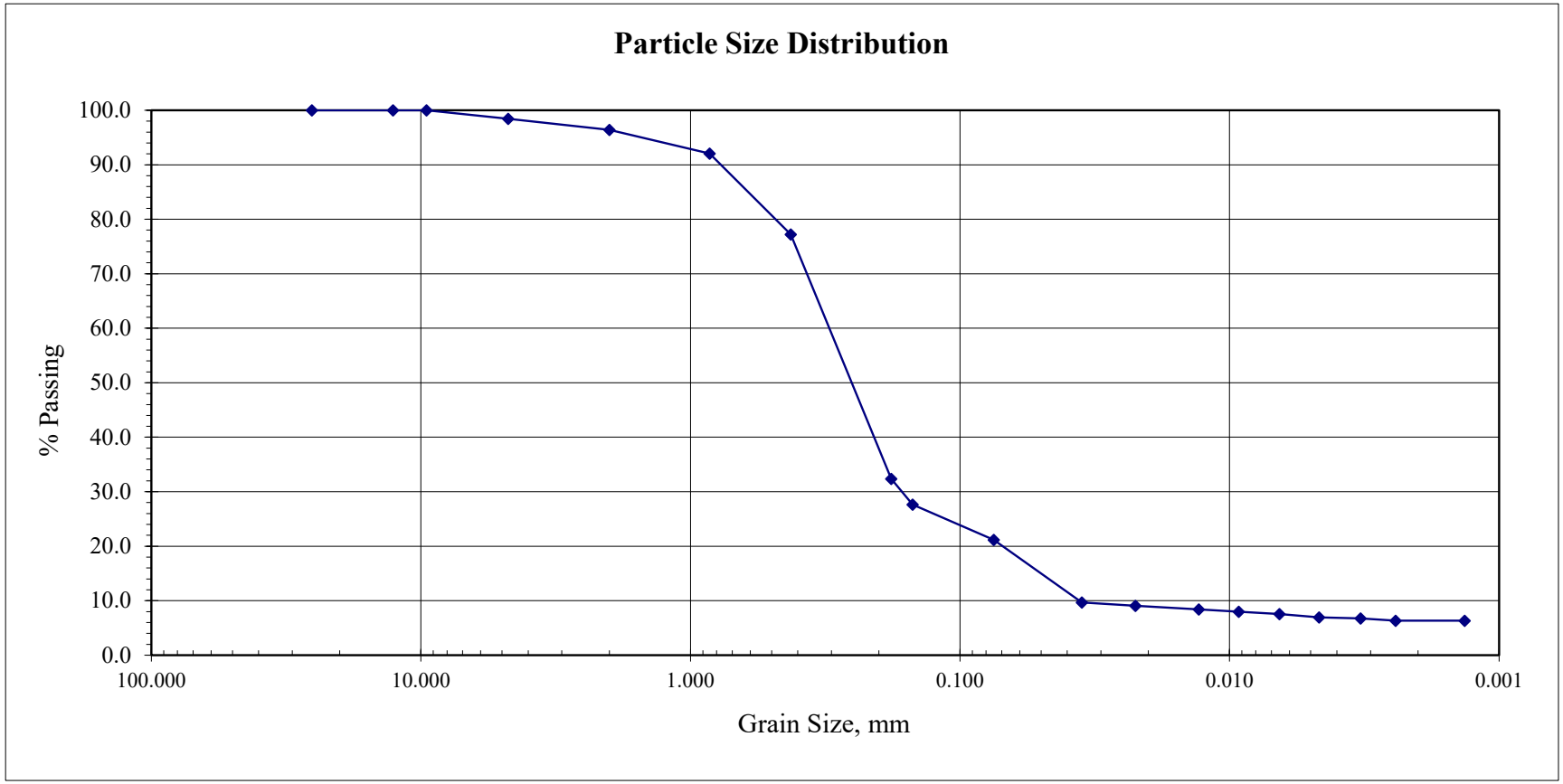
Sieve	Particle Size, mm	Percent Finer
1"	25.40	100
1/2"	12.70	100
3/8"	9.53	100
No.4	4.75	98
No.10	2.00	96
No.20	0.85	92
No.40	0.425	77
No.80	0.180	32
No.100	0.150	28
No.200	0.075	21
Hydrometer Analysis	0.0353	10
	0.0223	9
	0.0130	8
	0.0092	8
	0.0065	8
	0.0047	7
	0.0033	7
	0.0024	6
	0.0013	6

Particle Size Description
Soil Classification System

Particle	Size Range, mm	Percent of Specimen
Gravel	4.75 to 76.4	2
Coarse Sand	2.00 to 4.75	2
Medium Sand	0.43 to 2.00	19
Fine Sand	0.075 to 0.43	56
Silt	0.005 to 0.075	14
Clay	<0.005	7

TSi Geotechnical, Inc.
HYDROMETER ANALYSIS (ASTM D422)

Project Name:	Kirksville Regional Airport - New Terminal Building	**Project Number:**	20241059.00
Boring Number:	B-1	**Tested by:**	MN
Sample Number:	SS-6	**Calculated by:**	MN
Sample Depth:	18.50	**Checked by:**	AB
Visual Description:	Brown, clayey SAND (SC), trace gravel		



APPENDIX D

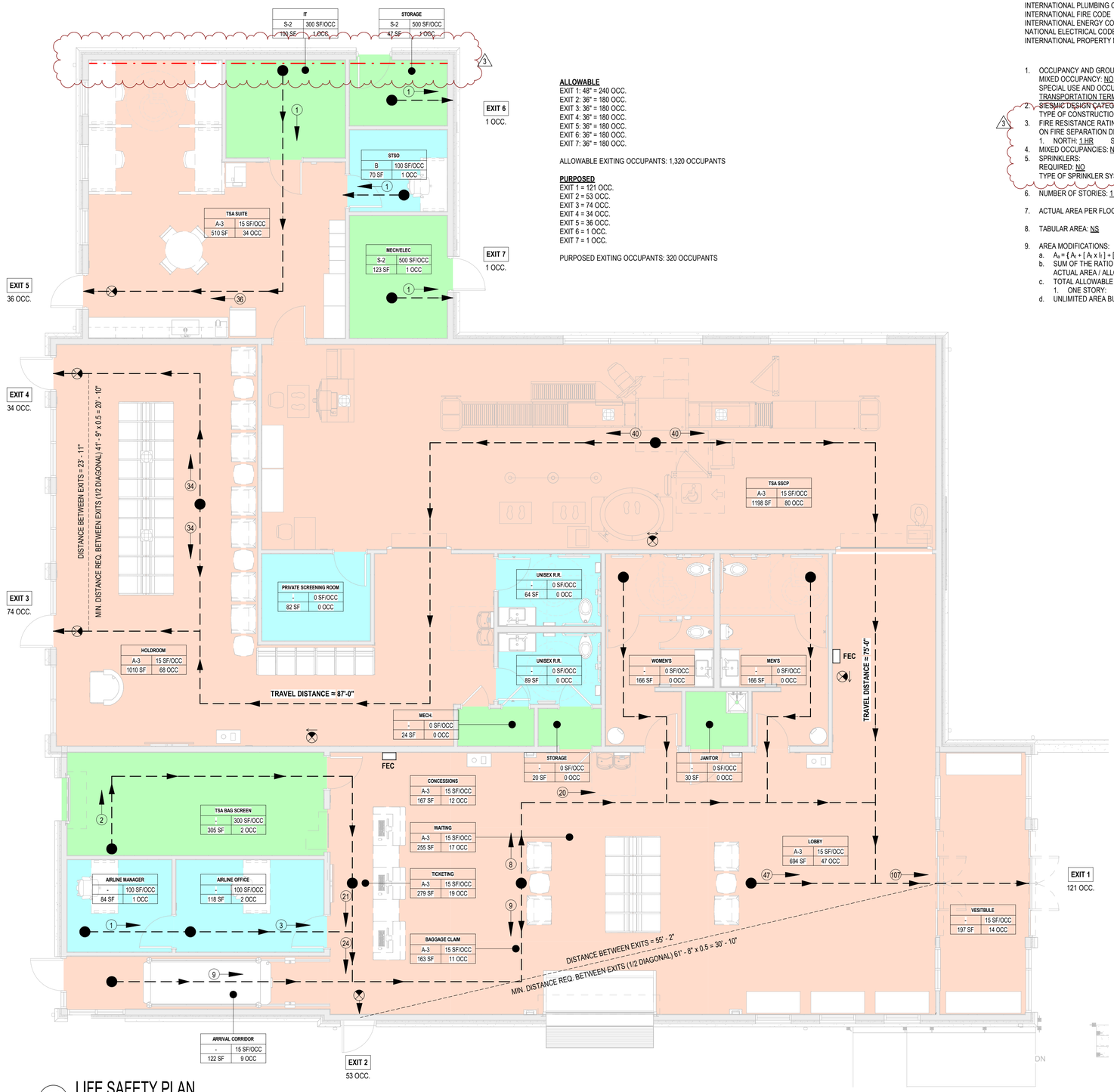
Pavement Core Photographs

B-3 | **Kirksville Regional Airport** | **20241059.00**
New Terminal Building

Material	Approximate Thickness (in)	Notes
Asphalt	**7.5**	Approximate aggregate base thickness of 4.5”

B-4 | **Kirksville Regional Airport** | **20241059.00**
New Terminal Building

Material	Approximate Thickness (in)	Notes
Asphalt	**5.0**	Approximate aggregate base thickness of 5.0”



A1 **LIFE SAFETY PLAN**
3/16" = 1'-0"

ALLOWABLE
EXIT 1: 48" = 240 OCC.
EXIT 2: 36" = 180 OCC.
EXIT 3: 36" = 180 OCC.
EXIT 4: 36" = 180 OCC.
EXIT 5: 36" = 180 OCC.
EXIT 6: 36" = 180 OCC.
EXIT 7: 36" = 180 OCC.

ALLOWABLE EXITING OCCUPANTS: 1,320 OCCUPANTS

PURPOSED
EXIT 1 = 121 OCC.
EXIT 2 = 53 OCC.
EXIT 3 = 74 OCC.
EXIT 4 = 34 OCC.
EXIT 5 = 36 OCC.
EXIT 6 = 1 OCC.
EXIT 7 = 1 OCC.

PURPOSED EXITING OCCUPANTS: 320 OCCUPANTS

PROJECT INFORMATION:

APPLICABLE CODES:

INTERNATIONAL BUILDING CODE	2021
INTERNATIONAL MECHANICAL CODE	2021
INTERNATIONAL FUEL GAS CODE	2021
INTERNATIONAL PLUMBING CODE	2021
INTERNATIONAL FIRE CODE	2021
INTERNATIONAL ENERGY CONSERVATION CODE	2015
NATIONAL ELECTRICAL CODE	2020
INTERNATIONAL PROPERTY MAINTENANCE CODE	2021

1. OCCUPANCY AND GROUP: A-3
   MIXED OCCUPANCY: NO
   SPECIAL USE AND OCCUPANCY (E.G. HIGH RRISE, COVERED MALL):
   TRANSPORTATION TERMINAL
2. SEISMIC DESIGN CATEGORY: ____ DESIGN WIND SPEED: ____
   TYPE OF CONSTRUCTION: VA
3. FIRE RESISTANCE RATING REQUIREMENTS FOR THE EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE (IN HOURS)
   1. NORTH: 1 HR SOUTH: 0 HR EAST: 0 HR WEST: 0 HR
4. MIXED OCCUPANCIES: NO NONSEPARATED USES: YES
5. SPRINKLERS:
   REQUIRED: NO PROVIDED: NO
   TYPE OF SPRINKLER SYSTEM (IBC 903.3.1): N/A
6. NUMBER OF STORIES: 1 BUILDING HEIGHT: 23'
7. ACTUAL AREA PER FLOOR (SQUARE FEET): 6,360 SF
8. TABULAR AREA: NS
9. AREA MODIFICATIONS:
   a. $A_a = \{ A_t + [A_t \times I_f] + [A_t \times I_s] \}$ $I_f = [F / P - 0.25] W / 30$
   b. SUM OF THE RATIO CALCULATIONS FOR MIXED OCCUPANCIES: ACTUAL AREA / ALLOWABLE AREA ≤ 1
   c. TOTAL ALLOWABLE AREA FOR:
      1. ONE STORY: 11,500 SF
   d. UNLIMITED AREA BUILDING: NO

10. FIRE RESISSTANC RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

ELEMENT	HOURS
EXTERIOR BEARING WALLS	1 HR
INTERIOR BEARING WALLS	1 HR
EXTERIOR NON-BEARING WALLS	0 HR
STRUCTURAL FRAME	1 HR
PARTITIONS - PERMANENT	0 HR
FIRE BARRIERS	1 HR
FLOORS - CEILING FLOORS	N/A
ROOFS - CEILING ROOFS	1 HR
EXTERIOR DOORS AND WINDOWS	0 HR
SHAFT ENCLOSURES	1 HR
FIRE WALLS FIRE PARTITIONS	1 HR
SMOKE PARTITIONS	1 HR

11. DESIGN OCCUPANT LOAD: 329
    EXIT WIDTH REQUIRED: ____ EXIT WIDTH PROVIDED: ____
12. MINIMUM NUMBER OF REQUIRED PLUMBING FACILITIES:
    A. WATER CLOSETS:
       • REQUIRED (M) 1 (F) 1 PROVIDED (M) 2 (F) 2
    B. URINALS:
       • REQUIRED (M) 1 (F) N/A PROVIDED (M) 1 (F) N/A
    C. LAVATORIES:
       • REQUIRED (M) 1 (F) 1 PROVIDED (M) 1 (F) 1
    D. BATH TUBES OR SHOWERS:
       • REQUIRED (M) 0 (F) 0 PROVIDED (M) N/A (F) N/A
    E. DRINKING FOUNTAINS:
       • REQUIRED 1 PROVIDED 2
    F. SERVICE SINKS:
       • REQUIRED 1 PROVIDED 1

FOOTNOTES:

1. **INCASE OF CONFLICT WITH THE U.S. DEPARTMENT OF JUSTICE FEDERAL REGISTERS PARTS I THROUGH V - ADA GUIDELINES AND SPECIFIC REFERENCE TO THE INTERNATIONAL BUILDING CODE ACCESSIBILITY CHAPTERS THE MORE RESTRICTIVE THE REQUIREMENT SHALL GOVERN.**
2. **ADDITIONAL CODE INFORMATION SHALL BE PROVIDED AT THE DISCRETION OF THE BUILDING OFFICIAL FOR COMPLEX BUILDINGS. INCLUDING BUT NOT LIMITED TO:**
   A. HIGH RIS REQUIREMENTS.
   B. ATRIUMS.
   C. PERFORMANCE BASED CRITERIA.
   D. MEANS OR EGRESS ANALYSIS.
   E. FIRE ASSEMBLY LOCATOR SHEET.
   F. EXTERIOR AND INTERIO ACCESSIBILITY ROUTE.
   G. FIRE STOPPING, INCLUDING TESTED DESIGN NUMBERM.

LEGEND:

- CEILING MOUNTED EXIT SIGN
- **FEC** FIRE EXTINGUISHER CABINET
- **FAP** FIRE ALARM PANEL
- **EGRESS TAG** — NUMBER OF OCCUPANTS EXITING IN DIRECTION OF TRAVEL
- EGRESS
- 1-HR RATED WALL
- **ROOM OCCUPANCY TAG** — ROOM NAME, OCCUPANT LOAD (RM / OG, XX SF/OCC / SF, XXX OCC); ROOM OCCUPANCY, OCCUPANCY GROUP, ROOM AREA
- GROUP A-3
- GROUP B
- GROUP S-2

TRUE NORTH

GRAPHIC SCALE
3/16"=1'-0"
0 2' 4' 8' 16'

WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL
720 SOUTH COLORADO BLVD.
SUITE 1200-S
GLENDALE, CO 80246
937.461.0743

100%
SUBMITTAL

ISSUED FOR BID
NOT FOR CONSTRUCTION

ISSUANCE SCHEDULE

NUMBER	DATE	DESCRIPTION
1	05/30/24	ISSUED FOR BID
3	06/21/24	BID ADD. 4

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05/30/2024
DESIGNED BY: AMA
DRAWN BY: RCS
CHECKED BY: AJR

SHEET NAME:
LIFE SAFETY PLAN AND CODE SUMMARY

SHEET NO:
G-002

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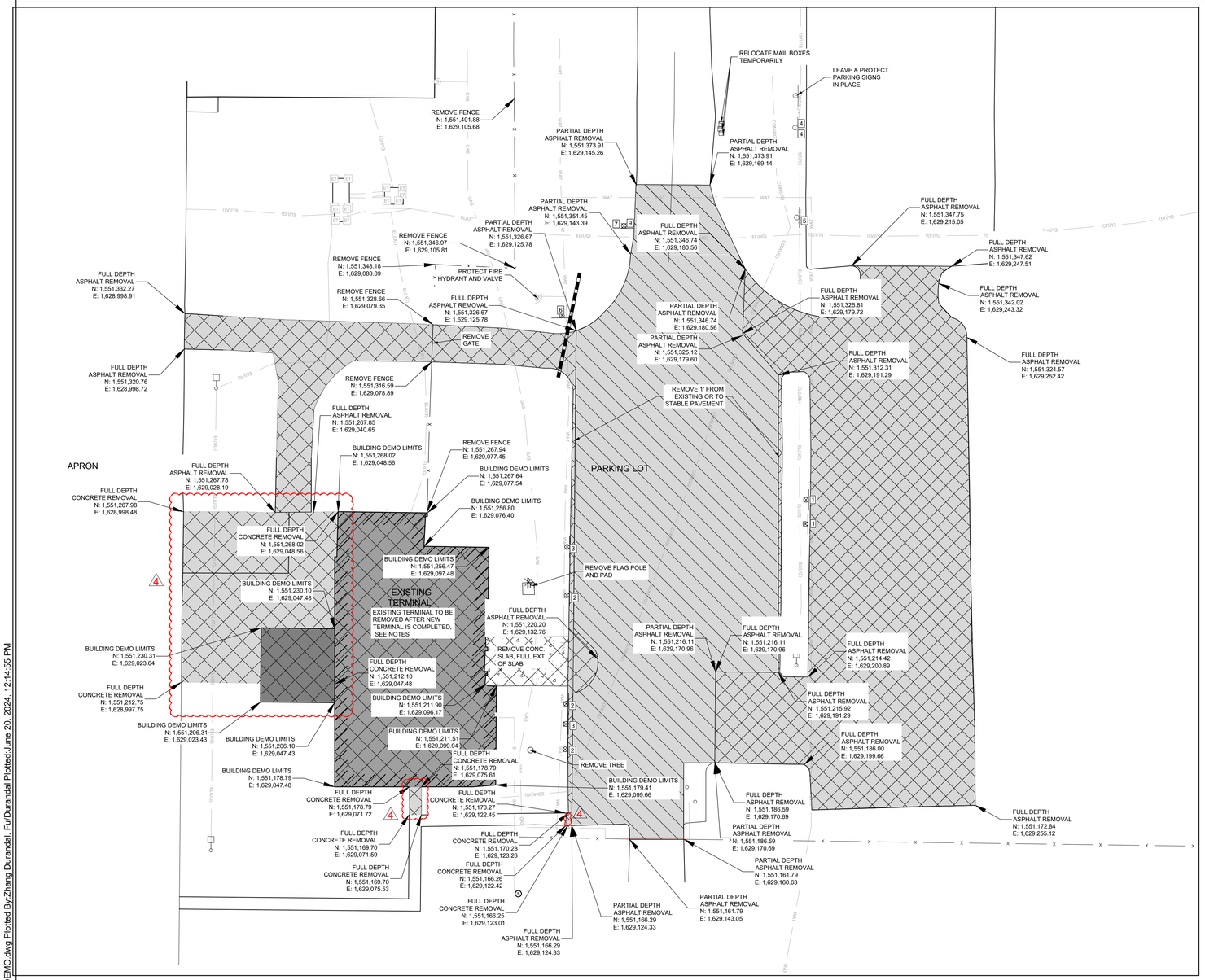

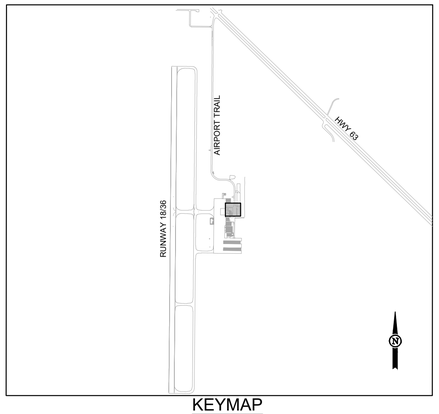

KEYMAP

DEMOLITION LEGEND

- FULL DEPTH ASPHALT REMOVAL
- PARTIAL DEPTH ASPHALT REMOVAL
- FULL DEPTH CONCRETE REMOVAL
- BUILDING REMOVAL
- XXXXXXXXXX REMOVE ITEM
- ABANDON ITEM
- REMOVE SIGN - PARKING, RESTRICTED AREA, AND OTHER
- REMOVE LIGHT POLE
- REMOVE GAS METER
- REMOVE/RELOCATE ELECTRIC TRANSFORMER

GENERAL DEMOLITION NOTES

1. DEMOLITION OF EXISTING PAVEMENTS SHALL BE PERFORMED WITHIN THE CONSTRUCTION PHASING PLAN PARAMETERS. SEE PHASING SHEETS.
2. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO DEMOLITION ACTIVITIES. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT CONTRACTORS'S EXPENSE
3. CONTRACTOR MAY ELECT TO SAW ALTERNATE BUTT JOINT WIDTH TO ACCOMMODATE PAVING EQUIPMENT, SUBJECT TO APPROVAL OF THE RESIDENT ENGINEER. ADDITIONAL MATERIAL WILL NOTE BE DIRECTLY PAID FOR, BUT WILL BE INCIDENTAL TO THE CONSTRUCTION OF THE BUTT JOINT.
4. ANY PAVEMENT DAMAGED DURING REMOVAL OUTSIDE THE PROPOSED REMOVAL LIMITS SHALL BE SQUARED OFF TO THE SATISFACTION OF THE ENGINEER. ALL COSTS ASSOCIATED WITH THE ADDITIONAL REMOVAL AND RECONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. FULL DEPTH PAVEMENT REMOVAL INCLUDES THE REMOVAL OF ANY UNDERLYING ASPHALT PAVEMENT AND STABILIZED BASE LAYERS.
6. UNCLASSIFIED EXCAVATION INCLUDES THE REMOVAL AND DISPOSAL OF STABILIZED SOILS.
7. CONTRACTOR TO REMOVE ALL EXISTING VEGETATION AND LANDSCAPING (TREES, BUSHES, BOULDERS, ROCK BEDS, ETC.) LOCATED WITHIN PROJECT LIMITS, REGARDLESS OF WHERE THE ITEM IS SHOWN OR NOT SHOWN ON THE PLANS. CONTRACTOR SHALL THOROUGHLY INSPECT SITE PRIOR TO BID TO DETERMINE THE EXTENTS OF EXISTING VEGETATION AND LANDSCAPING. REMOVAL SHALL BE IN ACCORDANCE WITH P-151 CLEARING AND GRUBBING. IF ANY TREES, BUSHES, AND LANDSCAPING ARE TO REMAIN IN PLACE THEY ARE TO BE PROTECTED, SUCH CASES WILL BE CALLED OUT IN THE PLANS IF ANY.
8. AT THE ENGINEER'S DIRECTION, ANY MATERIAL DESIRED BY THE AIRPORT TO SALVAGED SHALL BE NEATLY STACKED ON PALLETS, SECURED, AND STORED IN A LOCATION DETERMINED BY THE AIRPORT. ALL COSTS TO SALVAGE AND STORE MATERIALS SHALL BE INCIDENTAL TO THE RESPECTIVE DEMOLITION BID ITEM.
9. FOR ON-SITE STOCKPILE LOCATIONS FOR DURATION OF THE PROJECT ONLY, THE LOCATION SHALL BE CONSULTED WITH THE ENGINEER AND AIRPORT. MATERIAL DISPOSED OFF SITE SHALL BE DISPOSED AT A SITE DETERMINED BY THE CONTRACTOR.
10. ALL DEMOLITION ITEMS THAT DO NOT HAVE A SPECIFIC BID ITEM ARE INCIDENTAL TO SECTION 202 ITEMS.
11. ALL REMOVAL NORTHINGS AND EASTINGS ARE APPROXIMATE.
12. PARKING LOT SIGNS SHALL BE REMOVED, STORED AND REPLACED ONCE PAVING OPERATIONS ARE CONCLUDED.
13. SEE SHEET CD101 FOR UTILITY DEMOLITION PLAN.
14. THE EXISTING TERMINAL SHALL BE PROTECTED UNTIL THE NEW TERMINAL IS IN PLACE AND THEN DEMOLISHED AS PART OF SCHEDULE III. DEMOLITION WORK TO INCLUDE THE REMOVAL AND BACKFILL OF ALL STRUCTURES (BUILDINGS) ON AND AROUND THE PROPERTY SHOWN ON THIS DRAWING INCLUDING ANY OTHER STRUCTURES NOT MENTIONED IN THIS NOTE BELOW EXISTING GRADE INCLUDING NOT LIMITED TO PORCHES (ATTACHED OR DETACHED), ATTACHED UTILITIES AND POSSIBLE FOUNDATIONS/UNDERDRAINS.
15. DEMOLITION WORK SHALL INCLUDE THE REMOVAL AND BACKFILL OF ALL UTILITIES INCLUDING UTILITIES NOT SHOWN ON THE PLANS. THEY ARE STILL REQUIRED TO BE REMOVED AND PAID FOR UNDER THE TERMINAL DEMOLITION PAY ITEM AT NO ADDITIONAL COST TO THE OWNER (UNLESS NOTED OTHERWISE). ALL UTILITY JUNCTION BOXES, ELECTRICAL BOXES/MANHOLES AND ASSOCIATED TANKS/PUMPS ARE ALSO TO BE REMOVED AS A PART OF THIS WORK.

DEMOLITION NOTES

1. DEMOLITION TO INCLUDE REMOVAL AND BACKFILL OF ALL STRUCTURES (BUILDINGS) ON AND AROUND THE PROPERTY SHOWN ON THIS PROPERTY INCLUDING THE STRUCTURE AND ITS COMPONENTS.
2. DEMOLITION WORK TO INCLUDE THE REMOVAL AND BACKFILL OF ALL UTILITIES INCLUDING UTILITIES NOT SHOWN ON THE PLANS. THEY ARE STILL REQUIRED TO BE REMOVED AND PAID FOR UNDER P-101c AND AT NO ADDITIONAL COST TO THE OWNER (UNLESS NOTE OTHERWISE). ALL UTILITY JUNCTION BOXES, ELECTRICAL BOXES/MANHOLES AND ASSOCIATED TANKS/PUMPS AREA ALSO TO BE REMOVED AS PART OF THIS WORK.
3. ALL MATERIALS (SALVAGEABLE, NON-SALVAGEABLE) SHALL BE DISPOSED OF AS APPROVED BY THE ENGINEER IN WRITING. TEMPORARY OR SHORT TERM DISPOSAL STOCKPILES ARE PERMITTED WITH APPROVAL FROM THE ENGINEER. BURIAL, BURNING OR USE OF BLASTING FOR DEMOLITION OR DISPOSAL OF MATERIALS ON-SITE IS STRICTLY PROHIBITED. IN NO CASE SHALL REGULATED MATERIALS BE REMOVED AND DISPOSED WITHOUT REQUIRED DOCUMENTATION.
4. REGULATED (E.G. ASBESTOS OR LEAD BASED PAINTS) OR CONTAMINATED SOILS (E.G. FUEL IN SOILS) ARE NOT SUSPECTED NOR ANTICIPATED TO BE ENCOUNTERED ON THE PROJECT.
5. SALVAGEABLE MATERIALS (ITEMS) INCLUDING BUT NOT LIMITED TO MERCHANTABLE TIMBER MAY BE PROPERTY OF THE CONTRACTOR WHEN IN ACCORDANCE WITH THE BUILDING DEMOLITION (P-101c) AND RESTORATION. OTHERWISE, IT SHALL BE DISPOSED OFF SITE AS NON-SALVAGEABLE MATERIAL.
6. SIGN REMOVAL AND REPLACEMENT WILL BE INCIDENTAL TO REMOVAL ITEMS 202.
7. THREE (3) OF THE H-CAP SIGNS CAN BE RE-PURPOSED FOR THE ADDITIONAL PARKING AREA PARKING SPACES.
8. THE RESTRICTED AREA SIGN CAN BE RE-PURPOSED TO BE USED ALONG THE PROPOSED FENCE.
9. OVERNIGHT PARKING AND TOW SIGNS TO BE RE-PURPOSED AT AIRPORT'S DESIRED LOCATIONS.
10. STREET SIGNS TO BE RELOCATED AT PERTINENT LOCATION TO DENOTE THE STREET.
11. MOVE MAIL BOXES TEMPORARILY UNTIL REGULAR ACCESS TO PARKING LOT IS RESTORED.

EXISTING SIGNS TABLE

NO.	SIGN NO.	TYPE OF SIGN	NORTHING	EASTING
1	R1-1	ENTERPRISE PARKING	1551264.00	1629200.1100
2	R1-1	ENTERPRISE PARKING	1551272.6880	1629200.2950
3	R1-1	H-CAP PARKING	1551190.9300,	1629122.2060
4	R1-1	H-CAP PARKING	1551205.7260	1629122.5360
5	R1-1	H-CAP PARKING	1551240.9440	1629122.7650
6	R1-1	TOW WARNING	1551256.5800	1629122.8350
7	R1-1	TOW WARNING	1551190.1510	1629122.4060
8	R1-1	TSA PARKING	1551402.8800	1629196.8880
9	R1-1	TSA PARKING	1551392.5340	1629196.7760
10	R1-1	UNKNOWN	1551383.4300	1629197.2640
11	R1-1	RESTRICTED AREA	1551331.6580	1629121.1520
12	R1-1	OVERNIGHT PARKING	1551360.7260	1629141.2380
13	R1-1	UNKNOWN	1551363.0330	1629197.3460
14	R1-1	PARKING	1551392.5290	1629196.2870
15	R1-1	PARKING	1551402.8520	1629196.4070
16	R1-1	STREET	1551509.4000	1629174.4830
17	R1-1	STREET	1551360.5920	1629144.4250

REMOVE AND STORE SIGNS FOR AIRPORT TO DETERMINE IF TO RE-USE OR DISPOSE, AIRPORT SHALL DETERMINE WHERE TO PLACE RE-USE SIGNS OTHER THAN THE ONES SHOWN IN THE PLANS (C-700) . PLACE SIGNS OTHER THAN H-CAP PLANS SHOWN IN C-700 WHERE THE AIRPORT REQUIRES AND OR DESIRES. ONLY NUMBERED SIGNS TO BE REMOVED AND STORED, ANY SIGNS TO BE KEPT IN PLACE WILL HAVE A CALL OUT.

SIGNS TO BE LEFT IN PLACE 5 AND 8 SHOWN IN PLANS (CD-100).

GRAPHIC SCALE
20 0 20 40
(IN FEET)

WOOLPERT
ARCHITECTURE| ENGINEERING| GEOSPATIAL
720 SOUTH COLORADO BLVD.
SUITE 1200-S
GLENDALE, CO 80246
937.461.0743

BID
SUBMITTAL

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE SCHEDULE

NUMBER	DATE	DESCRIPTION
1	05/30/24	ISSUED FOR BID - D.R.J.
2	6/10/24	BID ADDENDUM NO.1 - D.R.J.
4	6/21/24	BID ADDENDUM NO.4 - D.R.J.

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05/30/2024
DESIGNED BY: F.Z.D.
DRAWN BY: F.Z.D.
CHECKED BY: C.L.G.

SHEET NAME:
SITE DEMOLITION PLAN

SHEET NO:
CD-100

Layout Tab Name: CD-100
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GENERAL STRUCTURAL NOTES

010000 - GENERAL REQUIREMENTS:

All construction, unless specifically identified otherwise, shall conform to:

International Building Code (IBC) - 2021 Edition
2021 Kirksville Amendments to the 2021 IBC
Minimum Design Loads for Building and Other Structures - ASCE 7-16
Risk Category of Building - II

STRUCTURAL LIVE LOADING:

The structure has been designed in accordance with the building code and/or more restrictive requirements for loads as given below unless specific areas of the drawings indicate different loading criteria. Refer to drawings for load schedules.

Occupancy or Use	Uniform Live Load
Roofs	20 psf, or 300 pounds concentrated load
Public assembly areas	100 psf
Mechanical Equipment Rooms	100 psf
- Equipment Weight	See Plans

SNOW DESIGN DATA (IBC 1603-1.3):

The structure and its components have been designed in accord with the building code for a ground snow load of 25 psf. The following design criteria components are provided for reference.

Flat Roof Load: Pf = 21 psf
Exposure: Ce =1.2
Importance Factor: Is = 1.0
Thermal Factor: Ct = 1.0

WIND DESIGN DATA (IBC 1603-1.4):

The structure and its components have been designed in accordance with the building code for a wind load criteria as follows.

Wind Speed: V(3sec) = 115 mph
Exposure Category: B or C
Importance Factor: Iw = 1.0
Internal Pressure Coefficient: 0.18
Components and Cladding (Corner Zone, based on 10 Square Feet)
Roof: -87.1 psf
Walls: -44.7 psf
Net Uplift Pressure on Roof Joists: 43.3 psf
(Based on 0.6D - 0.6W load combination)

SEISMIC DESIGN DATA (IBC 1603-1.5):

The structure and its components have been designed in accordance with the building code for a seismic load criteria as follows.

Site Class: D
Seismic Design Category: B
Basic Seismic Force Resisting System: Steel System Not Specifically Detailed for Sesmic Reisitance
Method of Analysis: Equivalent Lateral Force Method
Importance Factor: Ie = 1.0

Spectral Acceleration (short): S_S = 9.6%
Spectral Acceleration (1 sec): S_1 = 7%

Spectral Response Coefficients: S_{DS} = 0.103
S_{d1} = 0.111

Response Modification Factor: R = 3.0

Seismic Response Coefficient: Cs = 0.034

Design Base Shear: Ve = 10 k

013100 - COORDINATION:

The contract structural drawings and specifications represent the finished structure. They do not indicate the means or method or sequence of construction. The Contractor shall be responsible for and provide all measures necessary to protect the structure during construction. These measures shall include, but not be limited to: bracing, shoring of loads due to construction equipment, etc. The Contractor shall be responsible for the design and implementation of all scaffolding, bracing and shoring. Observation visits to the site by the Structural Engineer shall not include inspection of the above items. The Structural Engineer will not be responsible for the Contractor's means, methods, techniques, sequences or procedures of construction, nor will the Structural Engineer be responsible for construction site safety, or the safety precautions and the programs incident thereto.

Contractor shall verify all dimensions and coordinate site conditions with the drawings prior to construction. Any discrepancies and omissions shall be resolved with the Architect prior to construction and prior to proceeding. Do not use scaled dimensions. Where any discrepancies occur between plans, details, structural notes and specifications, the greater requirements shall govern. Where no specific detail is shown, construction shall conform to similar work on the project.

Not all openings, blockouts, inserts, curbs, pads, piping, ductwork, equipment, or sitework items and dimensions pertaining thereto are shown on the structural drawings. Refer to Architectural, Mechanical, Plumbing, Electrical and Civil drawings where applicable. It is the General Contractor's responsibility to coordinate with other disciplines and the subcontractors and equipment suppliers/manufacturers. Equipment being supported by or suspended from the structure shall be coordinated with the manufacturer of any pre-engineered framing or components. Where equipment weight is not shown on the Structural Drawings, verify actual weight and provide to Structural Engineer for confirmation of the structure's capacity. All openings shall be properly reinforced as approved by the Engineer.

Construction materials shall be spread out if placed on framed floors or roofs so as not to exceed the design live load per square foot.

All pre-engineered/prefabricated items and materials shall be installed in strict accordance with the manufacturer's requirements and alterations are allowed only with written permission from the manufacturer. Third party engineer's stamp may be required.

All details shown shall be incorporated into the project at all appropriate locations, whether specifically indicated or not. Typical details may or may not be cut on the drawings, and details may or may not be cut at all specific locations, but shall apply unless noted otherwise.

For clarity, all roof, floor and wall openings may not be shown on structural drawings. For exact size, number and location of openings, see architectural, mechanical, electrical and plumbing drawings. For framing at openings, see typical structural details. Verify all sizes, weights and location of mechanical and electrical equipment, ducts, etc. with mechanical and electrical engineers through Architect.

013200 - SUBMITTALS - SHOP DRAWINGS & PRODUCT DATA:

The review of shop drawings and other submittals is only for review of general compliance with the design concept of the project and the information provided in the contract documents. It is the General Contractor's responsibility to review the shop drawings prior to submitting to the Architect. The General Contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction; coordinating the work with that of all other trades; and performing the work in a safe and satisfactory manner.

Shop drawings shall be submitted for all structural items in addition to any items required by the specifications. The Submittals, Testing & Inspection matrix is provided as a guide only, and may not be all-inclusive. Construction documents shall not be reproduced for use as shop drawings.

The General Contractor shall review and stamp all shop drawings and product data for conformance with the construction documents prior to submittal. Any shop drawings or product data not reviewed and stamped by the General Contractor will be returned without review. The Contractor shall cloud or flag all items not in accordance with the contract documents.

Any changes, substitutions, or deviations from the original contract drawings shall be clouded by the manufacturer or fabricator. The Structural Engineer reserves the right to allow or not allow any changes to the original contract drawings at any time before or after shop drawing review.

The shop drawings do not replace the original contract drawings. Items omitted or shown incorrectly and which are not noted as allowed by the Structural Engineer or Architect are not to be considered changes to the original contract drawings.

Shop drawings will be returned for resubmittal if major errors or omissions are found during review.

Allow a minimum of five working days for review of shop drawings by the Structural Engineer.

013300 - SUBMITTALS - STRUCTURAL DESIGN REQUIRED:

Submittals under this section pertain to supplier or sub-contractor designed components or systems. Where specific loading criteria is not outlined on the structural contract drawings, designer shall follow applicable requirements outlined in the referenced codes above.

All engineering designs and layouts performed by others shall be sealed by a Civil or Structural Engineer registered in the State of Jurisdiction. Complete design calculations, erection plans, and fabrication details, as applicable shall be included in the submittal process.

Deferred Structural Submittal Items (Delegated Design)
1. Open Web Steel Joists and Joist Girders
2. Steel Beam Connections
3. Structural Cold-Formed Metal Framing

014000 - SPECIAL INSPECTIONS & QUALITY CONTROL

Special inspections shall be performed by a qualified inspector retained by the Owner and approved by the Architect and the Building Official.

Special inspections shall be performed by a qualified inspector under the direct supervision of a professional engineer registered in the State of Jurisdiction. Final inspection reports shall be signed and sealed by the supervising Engineer. The Contractor shall be responsible for providing a minimum of 24 hours notice to the special inspector and the testing laboratory prior to beginning any work for which special inspection or testing is required.

Duties and responsibilities of the special inspector:

- The special inspector shall observe the work assigned for conformance with the approved design drawings and specifications.
- The special inspector shall furnish inspection reports to the building official and to the Engineer or Architect of record. All discrepancies shall be brought to the immediate attention of the Contractor for correction, then, if uncorrected, to the Engineer or Architect of record and the Building Official.
- Upon completion of the assigned work, the Special Inspector shall complete and sign a final report certifying that to the best of the inspector's knowledge, the work is in conformance with the approved plans and specifications, and the applicable workmanship provisions of the code.

Special inspection is required during the following operations per IBC Section 1704:

Grading, excavation and filling: During earthwork excavations, grading and filling as required to satisfy requirements of the geotechnical report and IBC Chapters 17, 18 & 33 and Appendix J and during placement of engineered fill.

Drilled Piers: During drilling and placement of all concrete and reinforcing steel.

Reinforcing steel: Verify size, quantity and placement of all reinforcing steel prior to placing of any concrete. Review both permit drawings and shop drawings (mild steel and post tension shops) for rebar requirements.

Prestressing strands: Verify size, quantity and placement, including cable profile of all prestressing strands and anchorages shown on post tensioning shop drawings. Verify all stressing logs and elongation reports during and after stressing operation.

Concrete: During taking of specimens and placement of all concrete. Unless noted otherwise, special inspection of non-structural slabs on grade is not required. See general structural notes and/or project specifications for frequency of testing and strength requirements.

Structural masonry: Required - see section 042200 of the General Notes.

Welding: All structural field welding and shop welding (including welding of reinforcing steel), except welding performed in the shop of a building official-approved fabricator, as required by Section 1704.3 of the IBC.

High strength bolting: Review of all bolt installations to ensure that the plies of the connected elements have been brought into snug contact.

Expansion bolting: Review torque of all bolts to ensure that installation and embedment requirements have been met.

Epoxy bolting: During installation of all bolts to ensure that installation and embedment requirements have been met.

Anchor bolts: Prior to and during placement of concrete.

015000 - BUILDING MOVEMENT

Building elements shall be designed to accommodate the story drifts specified herein. Elements include but are not limited to:

- Exterior cladding
- Stairs
- Elevators
- Mechanical, Electrical, Plumbing systems and supports
- Interior metal stud framing
- Fire protection systems and supports
- Miscellaneous metals
- Other elements as required by the building code

Appropriate modifications per chapter 13 of the ASCE 7 shall be applied.

The primary structure will experience lateral movement between adjacent floors (drift) as follows:
Service level wind (0.42W) H/400 (1/2" max)
Strength level seismic (1.0E) H/50

Building elements shall be designed to remain undamaged under service-level drifts, and shall maintain overall integrity and remain attached to the primary under strength level drifts.

Exterior cladding shall be designed and detailed to accommodate vertical movement of the slab. The typical deflection of each floor due to live loading is 1/2". This deflection occurs at the free end of cantilevers or mid-span of slab edge/wall.

013400 - SUBMITTALS - REQUIRED STRUCTURAL SUBMITTALS

	ITEM	SUBMITTALS
EARTHWORK/ FOUNDATIONS	IMPORTED FILL	• SOURCE AND GRADING
	HELICAL PIERS	• PRODUCT DATA AND INSTALLATION PROCEDURES INCL. CAPACITY/TORQUE RATIOS • LAYOUT DRAWINGS
	DRILLED PIERS	• REINFORCING SHOP DRAWINGS • CONCRETE MIX DESIGNS • LAYOUT DRAWINGS

	ITEM	SUBMITTALS
CONCRETE	GENERAL	• MIX DESIGN • PRODUCT DATA
	REINFORCING	• SHOP DRAWINGS
	FINISHING	• SUBMIT SURFACE FINISHING PLAN TO ARCHITECT
	CURING	• STATEMENT OF CURING PROCEDURES

	ITEM	SUBMITTALS
STEEL	STRUCTURAL STEEL	• SHOP DRAWINGS • MILL TEST REPORTS
	STEEL DECK	• PRODUCT DATA • SHOP DRAWINGS
	WELDING	• WELDERS CERTIFICATES FOR ALL WELD TYPES ON JOB
	BOLTING	• N/A

	ITEM	SUBMITTALS
MISCELLANEOUS	STAIRS AND HANDRAILS	• SHOP DRAWINGS • SEALED CALCULATIONS
	EXTERIOR CLADDING/ EXTERIOR CFMF	• SHOP DRAWINGS • SEALED CALCULATIONS
	MECHANICAL EQUIPMENT	• PRODUCT DATA • SEALED CALCULATIONS FOR ANCHORAGE (WHERE NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS)

NOTE:
-NOT ALL SUBMITTALS, INSPECTIONS AND TESTS FOR THE PROJECT ARE NECESSARILY LISTED. REFER TO SPECIFICATIONS FOR OTHER REQUIREMENTS.
-THIS TABLE MAY NOT INCLUDE ALL STRUCTURAL INSPECTIONS AND TESTS REQUIRED BY ALL JURISDICTIONS, REFER TO THE LOCAL BUILDING OFFICIAL FOR REQUIREMENTS.

020000 - FOUNDATIONS

Foundation design based on GEOTECHNICAL report #20241059.00 prepared by TSI Geotechnical, Inc. dated June 7, 2024. Based on that report, the foundation system will be shallow spread footings with an over excavation designated in the report. All construction shall comply with the recommendations of the soils report. The structural engineer is not responsible for any geotechnical aspects of this project.

Owner shall employ a Geotechnical Engineer licensed in the State of Jurisdiction to perform necessary testing and inspections for quality control and to ensure that the requirements of the geotechnical report are complied with. Test reports shall be submitted directly to the Architect and Engineer from the geotechnical engineer, with copy to Contractor.

Filled excavations or buried structures such as cesspools, cisterns, existing foundations, etc., or any unusual soils conditions encountered during site clearing or excavation shall be brought to the attention of the Architect immediately. Do not proceed until written instructions to remedy are received.

Abandoned footings, new or existing utilities, etc., that interfere with new construction shall be rerouted or removed as directed by the Architect.

Slope all exterior finished grades away from the building to ensure no ponding of water occurs around buildings.

Contractor is responsible for all shoring, cribbing, sheet piling, etc. as required to safely retain excavations and trenches during construction. Contractor shall retain a professional engineer licensed in the State of Jurisdiction to design all shoring, tie backs, etc. Where shoring is to be permanent, the design must meet all requirements of the building code.

SPREAD FOOTINGS

Spread footing design is based on an allowable bearing pressure of 2,000 psf. Minimum footing widths, unless otherwise indicated, shall be 18 inches for continuous footings and 24 inches for isolated pad footings. Bearing elevation shall be a minimum of 48 inches below adjacent exterior grade.

Bearing capacity of subgrade shall be verified in the field by a qualified Geotechnical Engineer registered in the State of Jurisdiction.

STRUCTURAL SHEET LIST

SHEET NUMBER	SHEET NAME
S-001	GENERAL NOTES
S-002	GENERAL NOTES (CONT.)
S-003	STATEMENT OF SPECIAL INSPECTIONS
S-100	FOUNDATION PLAN
S-110	LOWER ROOF FRAMING PLAN
S-120	ROOF FRAMING PLAN
S-130	ELEVATIONS 1
S-140	ELEVATIONS 2
S-200	TYPICAL FOUNDATION DETAILS
S-201	TYPICAL FOUNDATION DETAILS
S-202	TYPICAL FOUNDATION DETAILS
S-300	TYPICAL STEEL FRAMING DETAILS
S-301	STEEL ROOF FRAMING DETAILS
S-302	TYPICAL STEEL DECKING DETAILS
S-500	TYPICAL STEEL FRAMING DETAILS 501-524

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ISSUANCE SCHEDULE

NUMBER	DATE	DESCRIPTION
1	05/30/24	ISSUED FOR BID
3	6/21/2024	ADD #4

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 06/21/2024

DESIGNED BY: GDH
DRAWN BY: CR
CHECKED BY: STM

SHEET NAME:
GENERAL NOTES

SHEET NO:
S-001

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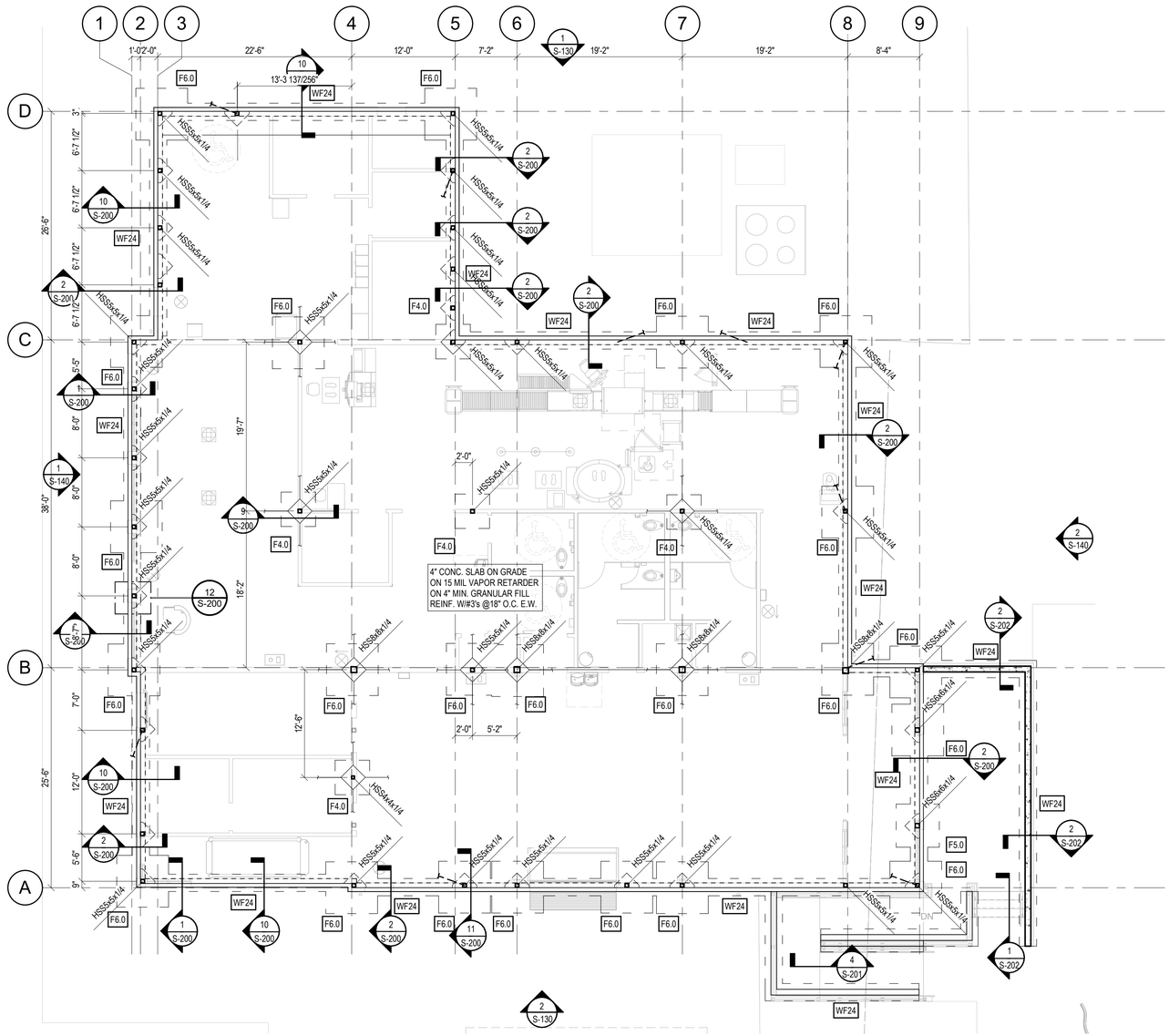

FOUNDATION PLAN

1/8" = 1'-0"

FOUNDATION PLAN NOTES

A. SEE SHEET S-001 FOR GENERAL STRUCTURAL NOTES, LEGEND, AND ABBREVIATIONS.

B. COORDINATE DIMENSIONS WITH ARCHITECTURAL DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR SLAB SLOPES, STEPS, AND OTHER INFORMATION. RESOLVE ANY DISCREPANCIES WITH ARCHITECT PRIOR TO CONSTRUCTION.

C. DO NOT SCALE PLANS.

D. COORDINATE PENETRATIONS THROUGH SLAB AND LOCATIONS OF EQUIPMENT WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS.

E. S - INDICATES STEP IN TOP OF FOOTING. SEE FOUNDATION DETAILS FOR ADDITIONAL INFO.

F. FOR CLARITY, ALL EXTERIOR SLABS AND SIDEWALKS MAY NOT BE SHOWN. FOR EXACT DIMENSIONS, JOINTS, AND SCORE LINES, SEE ARCHITECTURAL DRAWINGS.

G. SLAB SUB-BASE SHALL BE 6" COMPACTED GRAVEL UNLESS OTHERWISE RECOMMENDED BY THE GEOTECHNICAL ENGINEER. SEE SPECIFICATIONS.

H. ALL CONCRETE ANCHORS SHALL BE TIED IN PLACE PRIOR TO POURING CONCRETE. WET-SETTING OR DRILLING OF THE CONCRETE SLAB IS NOT PERMITTED.

I. TYPICAL T/FTG ELEVATION IS AS FOLLOWS UNLESS NOTED OTHERWISE ON PLAN:
INTERIOR FOOTINGS: T/FTG = 99'-0"
EXTERIOR/PERIMETER FOOTINGS: T/FT = 96'-0"

3

FOOTING SCHEDULE - F

MARK	DIMENSIONS "W"	"L"	"T"	FOOTING REINFORCING	COMMENTS
F4.0	48"	48"	12"	(5) #5 E.W. BOT	
F5.0	60"	60"	12"	(6) #5 E.W. BOT.	
F6.0	72"	72"	12"	(6) #6 E.W. BOT.	

FOOTING SCHEDULE - WF

MARK	DIMENSIONS "W"	"T"	FOOTING REINFORCING	COMMENTS
WF24	24"	12"	(3) #5 CONT. BOT. #5 @ 18" O.C. TRANS	

WALL SCHEDULE - CW

MARK	THICKNESS	WALL REINFORCEMENT VERTICAL	HORIZONTAL	COMMENTS
CW8	8"	#5 @ 18' O.C. CENTERED	#5 @ 12" O.C.	
CW12	12"	#5 @ 18' O.C. B.S.	#5 @12" OC. B.S.	

3

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ISSUANCE SCHEDULE

NUMBER	DESCRIPTION	DATE
1	ISSUED FOR BID	05/30/24
3	ADD #4	6/21/2024

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 06/21/2024

DESIGNED BY: GDH
DRAWN BY: CR
CHECKED BY: STM

SHEET NAME:
FOUNDATION PLAN

SHEET NO:
S-100

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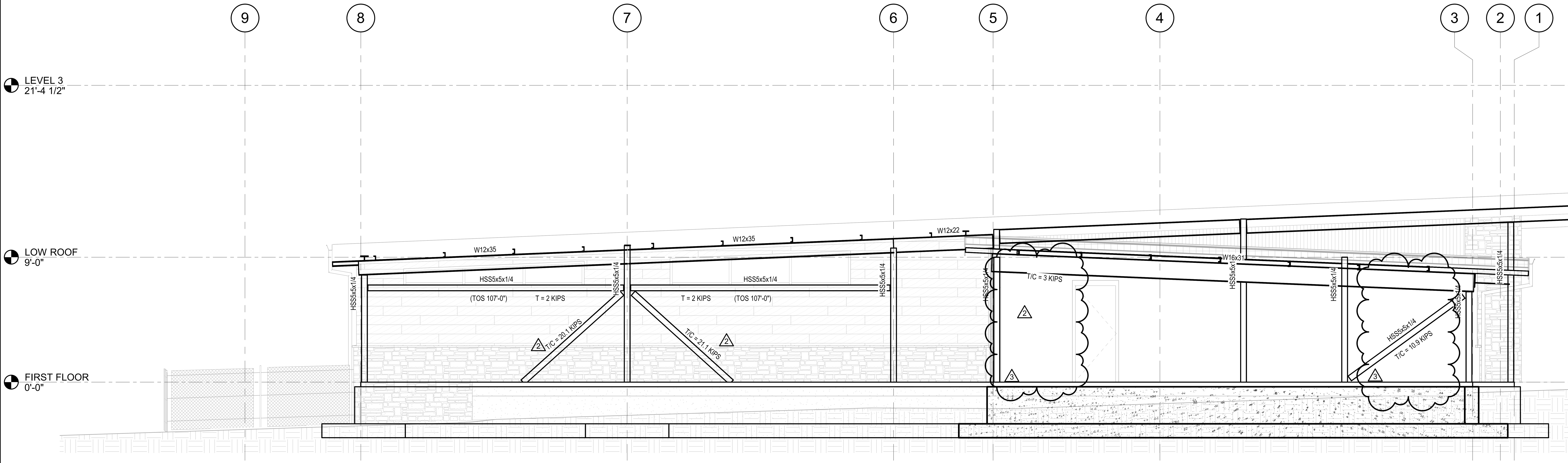
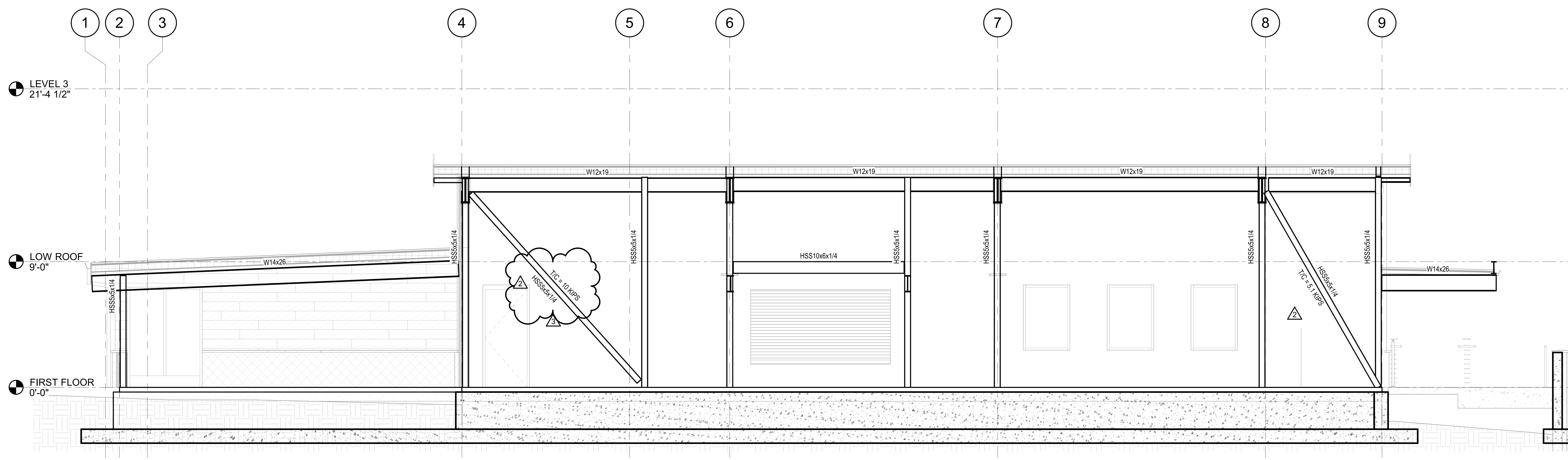


Elevation 5 - a

1/4" = 1'-0"



Elevation 3 - a

1/4" = 1'-0"

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ISSUANCE SCHEDULE

NUMBER	DATE	DESCRIPTION
1	05/30/24	ISSUED FOR BID
2	6/13/2024	ADD #2
3	6/21/2024	ADD #4

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING

27161 DAVID HALL TRAIL
KIRKSVILLE, MO 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 06/21/2024

DESIGNED BY: GDH
DRAWN BY: CR
CHECKED BY: STM

SHEET NAME:
ELEVATIONS 1

SHEET NO:
S-130

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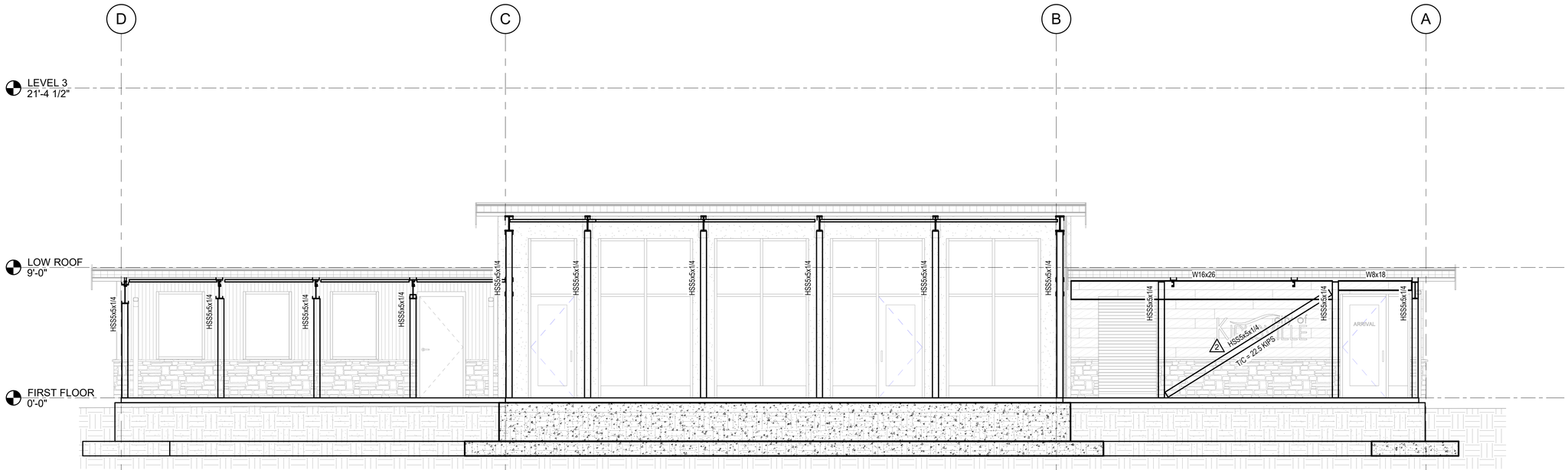
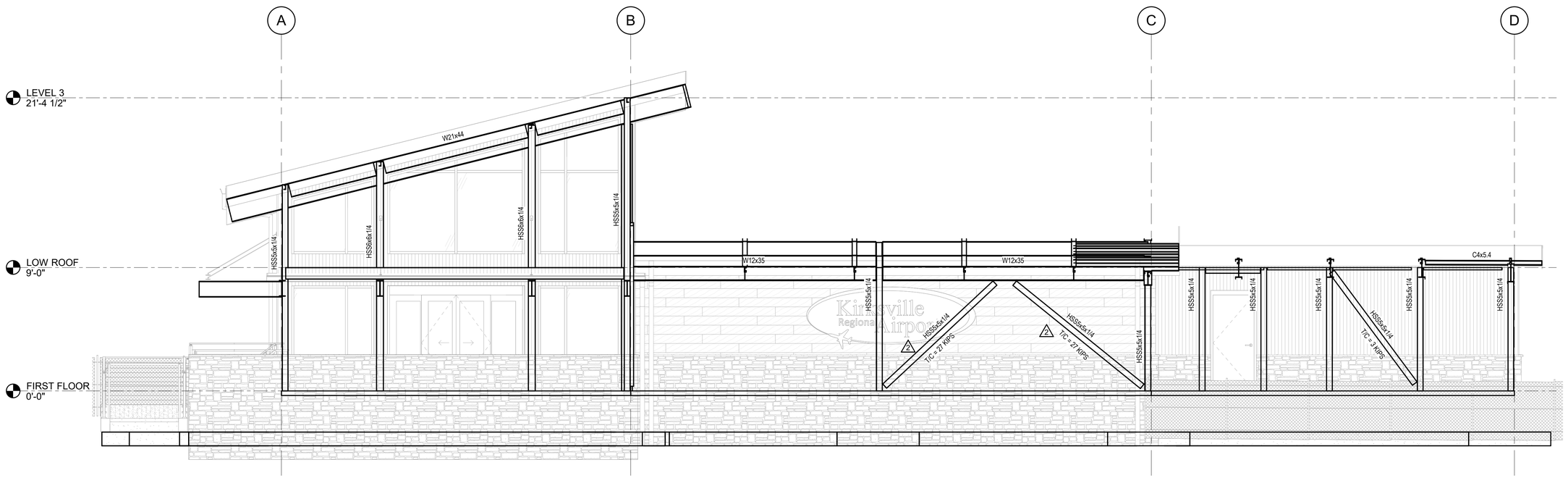


Elevation 10 - a

1/4" = 1'-0"



Elevation 11 - a

1/4" = 1'-0"

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ISSUANCE SCHEDULE

NUMBER	DATE	DESCRIPTION
1	05/30/24	ISSUED FOR BID
2	6/13/2024	ADD #2

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 06/21/2024

DESIGNED BY: GDH
DRAWN BY: CR
CHECKED BY: STM

SHEET NAME:
ELEVATIONS 2

SHEET NO:
S-140

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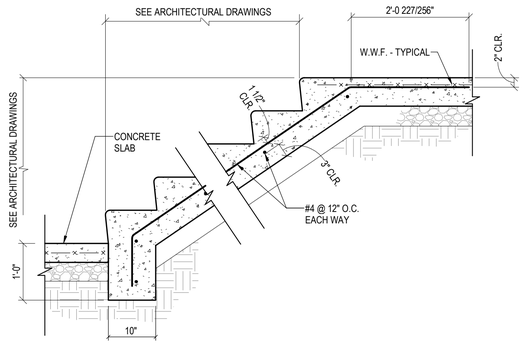
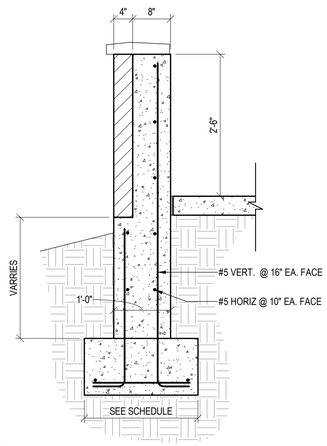
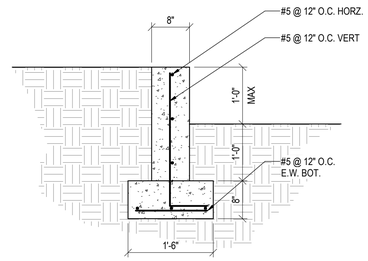


1 TYPICAL CONCRETE STAIR ON GRADE
3/4" = 1'-0"



2 Drafting 3
3/4" = 1'-0"



3 SMALL CURB
3/4" = 1'-0"

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ISSUANCE SCHEDULE

NUMBER	DATE	DESCRIPTION
1	05/30/24	ISSUED FOR BID
3	6/21/2024	ADD #4

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 06/21/2024

DESIGNED BY: GDH
DRAWN BY: CR
CHECKED BY: STM

SHEET NAME:
TYPICAL FOUNDATION DETAILS

SHEET NO:
S-202

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DOOR SCHEDULE

DOOR NO.	ROOM	DOOR TYPE	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR THICKNESS	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	RATING FIRE	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	HARDWARE NO.	DOOR NOTES
101A	VEST.	D5	9' - 8 1/2"	7' - 0"	0' - 1 3/4"	AL / GL	-	SF	AL	-	-	-	-	-	1	
101B	VEST.	D5	9' - 8 1/2"	7' - 0"	0' - 1 3/4"	AL / GL	-	SF	AL	-	-	-	-	-	1	
105A	TICKETING	D1	3' - 0"	7' - 0"	0' - 1 3/4"	HM	PNT5	F2	HM	PNT5	-	D1 / A-602	B1 & C1 / A-602	A3 / A-602	8	
105B	BAGGAGE CLAIM	D7	10' - 0"	5' - 4"	0' - 2"	-	-	-	-	-	-	C4 / A-602	B4 / A-602	-	7	GALVANIZED OVERHEAD ROLLING STEEL DOOR
107A	AIRLINE OFFICE	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	5	
107B	AIRLINE MANAGER	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	5	
108A	TSA BAG SCREEN	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	6	
108B	TSA BAG SCREEN	D4	4' - 0"	5' - 0"	0' - 2"	-	-	-	-	-	-	-	A4 / A-602	A6 / A-602	7	GALVANIZED OVERHEAD ROLLING STEEL DOOR
108C	TSA BAG SCREEN	D7	4' - 0"	7' - 0"	0' - 2"	-	-	-	-	-	-	C4 / A-602	B4 / A-602	-	7	GALVANIZED OVERHEAD ROLLING STEEL DOOR
109	ARRIVAL CORRIDOR	D3	3' - 0"	7' - 0"	0' - 2"	AL / GL	-	SF	AL	-	-	C2 / A-601	A2, B2 & B3 / A-601	A3 / A-601	8	
110	WOMEN'S	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	4	
111A	JAN.	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	2	
111B	STORAGE	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	2	
112	MEN'S	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	4	
113A	TSA SSCP	D6	9' - 0"	7' - 0"	0' - 0 1/2"	-	-	-	-	-	-	C6 / A-602	B6 / A-602	-	7	UPWARD COILING SECURITY GRILLE DOOR
113B	TSA SSCP	D6	6' - 0"	7' - 0"	0' - 0 1/2"	-	-	-	-	-	-	C6 / A-602	B6 / A-602	-	7	UPWARD COILING SECURITY GRILLE DOOR
113C	TSA OFFICES	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	6	PROVIDE CIPHER LOCK
114	PRIVATE SCREENING ROOM	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	9	
115	UNISEX R.R.	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	9	
116A	UNISEX R.R.	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	9	
116B	STORAGE	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	2	
117A	MECH.	D2	2' - 6"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	2	
117B	MECH.	D2	2' - 6"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	2	
118A	HOLDROOM	D3	3' - 0"	7' - 0"	0' - 2"	AL / GL	-	SF	AL	-	-	C3 / A-601	A2, B2 & B3 / A-601	A3 / A-601	8	
118B	HOLDROOM	D3	3' - 0"	7' - 0"	0' - 2"	AL / GL	-	SF	AL	-	-	C3 / A-601	A2 / A-601	A3 / A-601	8	
119	TSA OFFICES	D1	3' - 0"	7' - 0"	0' - 1 3/4"	HM	PNT5	F2	HM	PNT5	-	D1 / A-602	B1 & C1 / A-602	A3 / A-602	8	PROVIDE CIPHER LOCK
120	IT	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	2	PROVIDE MEDECO CORE AND LOCK
121	STORAGE	D1	3' - 0"	7' - 0"	0' - 1 3/4"	HM	PNT5	F2	HM	PNT5	45 MIN.	D1 / A-602	B1 & C1 / A-602	A3 / A-602	3	
122	STSO	D1	3' - 0"	7' - 0"	0' - 1 3/4"	WD	STN	F1	HM	PNT5	-	D3 / A-602	C3 / A-602	B3 / A-602	9	
123	MECH/ELEC	D1	3' - 0"	7' - 0"	0' - 1 3/4"	HM	PNT5	F2	HM	PNT5	-	D1 / A-602	B1 & C1 / A-602	A3 / A-602	3	

MANUFACTURERS USED IN HARDWARE SET B.O.D.

BO	BOMMER HINGE
BR	BURNS
PQ	PDQ
PE	PEMKO
BE	BEST LOCK
CR	CAL-ROYAL
RE	REESE

KEYING AND LOCKS

KEY TO EXISTING SCHLAGE MASTER KEY SYSTEM. ALL CYLINDER AND MORTISE LOCKSETS TO MATCH ATO RELOCATION HARDWARE.

AL	ALUMINUM
GL	GLASS
HM	HOLLOW METAL
PNT	PAINT
STN	STAIN
WD	WOOD

HARDWARE SCHEDULE

HW. GROUP	DOORS
HW 1	101A, 101B - MAIN ENTRANCE DOORS
ALL HARDWARE BY ENTRY DOOR SUPPLIER	
HW 2	111A, 111B, 116B, 117, 120 - INTERIOR MAINTENANCE

3	HINGES	BB5000 450 640	BO
1	STOREROOM LOCK	MR115 BJSJ 613 L	PQ
1	CYLINDER	1E64 C161 613	BE
1	STOP	575 613	BR
3	SILENCERS	500	BR

HW 3	121, 123 - EXTERIOR MAINTENANCE

3	HINGES	BB5000 450 640	BO
1	CLOSER	7101 BC PA 695	PQ
1	STOREROOM LOCK	MR115 BJSJ 613 L	PQ
1	CYLINDER	1E64 C161 613	BE
1	KICKPLATE	KP50 10 X 2" LDW 613	BR
1	THRESHOLD	271A 36"	PE
1	DOOR BOTTOM	18061CNB 36"	PE
1	WEATHERSTRIP	306DV 1/36 2/84	PE
1	DRIP CAP	346C 40"	PE

HW 4	110, 112 - PUBLIC RESTROOMS

3	HINGES	BB5000 450 640	BO
1	CLOSER	7101 BC PA 695	PQ
1	PUSH PLATE	56 613	BR
1	PULL PLATE	5421A 613	BR
1	STOP	575 613	BR
1	KICKPLATE	KP50 10 X 2" LDW 613	BR
3	SILENCERS	501	BR

HW 5	107A, 107B - AIRLINE OFFICES

3	HINGES	BB5000 450 640	BO
1	OFFICE LOCK	MR181 BJSJ 613 L	PQ
1	CYLINDER	1E64 C161 613	BR
1	STOP	575 613	BR
1	KICKPLATE	KP50 10 X 2" LDW 613	BR
3	SILENCERS	501	BR

HW 6	108A, 113C - TSA BAG SCREEN / TSA OFFICES

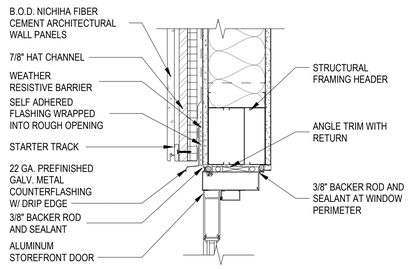
3	HINGES	BB31 4 1/2" X 4 1/2" US10A NRP	CR
1	CLOSER	CR441 DURO	CR
1	CYPHER LOCK	CR3000 US10B	CR
1	STOP	WB26 US10B	CR
1	KICKPLATE	10 X 2" LDW US10B	CR
3	SILENCERS	DSM21	CR

HW 7	105B, 108B, 108C, 113A, 113B - OVERHEAD DOORS
ALL HARDWARE BY OVERHEAD DOOR SUPPLIER	
HW 8	105A, 109, 118A, 118B, 119 - SIDA EXITING

3	HINGES	BB31 4 1/2 X 4 1/2 NRP 26D	CR
1	CLOSER	CR441 DA X CR 3077	CR
1	EXIT DEVICE	GLS7700 EO US32D	CR
1	EXIT TRIM	GLS RIM 9800 US26D	CR
1	RIM CYLINDER	MATCH PURDUE STANDARD	
1	WEATHERSTRIP	BY DOOR SUPPLIER	
1	DOOR SWEEP	BY DOOR SUPPLIER	
1	THRESHOLD	S425A-36	RE
1	TSA SIDA SECURITY WARNING SIGN STICKER		

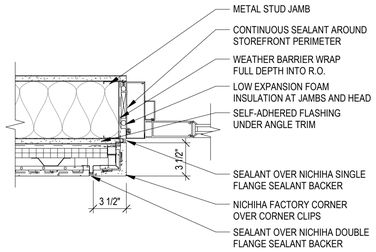
HW 9	114, 115, 116A, 122 - PRIVACY

3	HINGES	BB5000 450 640	BO
1	CLOSER	7101 BC PA 695	PQ
1	PRIVACY	MR179 BJSJ 613	PQ
1	STOP	575 613	BR
1	KICKPLATE	KP50 10 X 2" LDW 613	BR
3	SILENCERS	501	BR



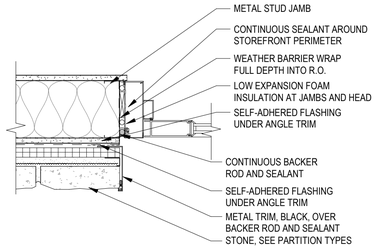
C2 STOREFRONT DOOR HEAD DTL. @ FIBER CEMENT

1 1/2" = 1'-0"



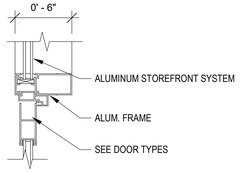
B2 STOREFRONT DOOR JAMB DTL. @ FIBER CEMENT

1 1/2" = 1'-0"



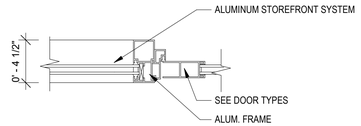
A2 STOREFRONT DOOR JAMB DTL. @ STONE

1 1/2" = 1'-0"



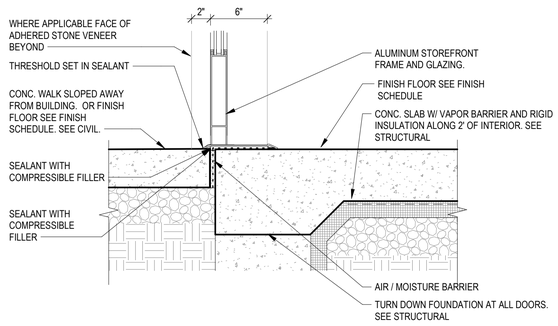
C3 STOREFRONT DOOR HEAD DTL. @ MULLION

1 1/2" = 1'-0"



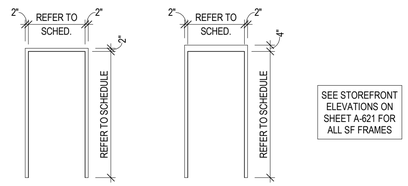
B3 STOREFRONT DOOR JAMB DTL. @ MULLION

1 1/2" = 1'-0"



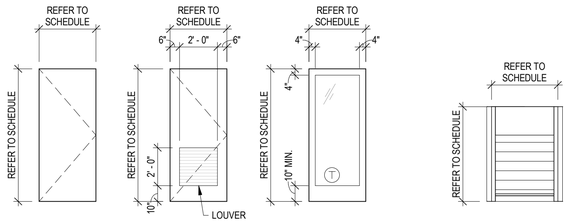
A3 STOREFRONT DOOR SILL DTL.

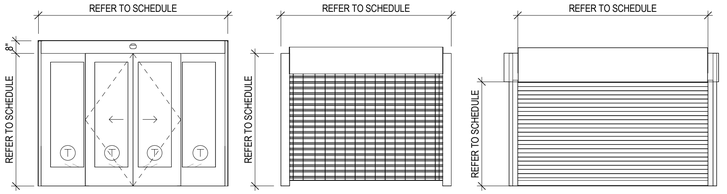
1 1/2" = 1'-0"



DOOR FRAMES

1/4" = 1'-0"





DOOR TYPES

T = TEMPERED SAFETY GLASS

1/4" = 1'-0"

GENERAL SHEET NOTES:

A. REFER TO SPECIFICATIONS FOR ADDITIONAL DOOR HARDWARE REQUIREMENTS, INCLUDING SUBMITTAL REQUIREMENTS.
B. PROVIDE LOCKABLE, REMOVABLE MULLION BETWEEN EXTERIOR DOUBLE DOORS. FINISH TO MATCH DOOR FRAME.
C. ALL HARDWARE TO BE COORDINATED WITH ELECTRICAL, SECURITY AND ACCESS CONTROL REQUIREMENTS.
D. FRAME TYPE "AL" SHALL BE DEFINED AS ALUMINUM STOREFRONT. REFER TO A-XXX FOR DETAILS
E. REFER TO SHEET A-XXX FOR DOOR AND FRAME ELEVATIONS.
F. REFER TO SHEET A-XXX FOR DOOR TRANSITION DETAILS.

DOOR NOTES

1. PROVIDE WRITTEN DESCRIPTION OF DOOR NOTE HERE FOR SCHED. ABOVE
2. PROVIDE WRITTEN DESCRIPTION OF DOOR NOTE HERE FOR SCHED. ABOVE

GRAPHIC SCALE

1/4"=1'-0" 0 2' 4' 8' 12'

1 1/2"=1'-0" 0 3" 6" 9" 1' 2'

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ISSUANCE SCHEDULE

NUMBER	DESCRIPTION	DATE
1	ISSUED FOR BID	05/30/24
3	BID ADD. 4	06/21/24

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING

27161 DAVID HALL TRAIL
KIRKSVILLE, MO 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05/30/2024

DESIGNED BY: AMA
DRAWN BY: RCS
CHECKED BY: AJR

SHEET NAME:
DOOR SCHEDULE, TYPES, AND DETAILS

SHEET NO:
A-601

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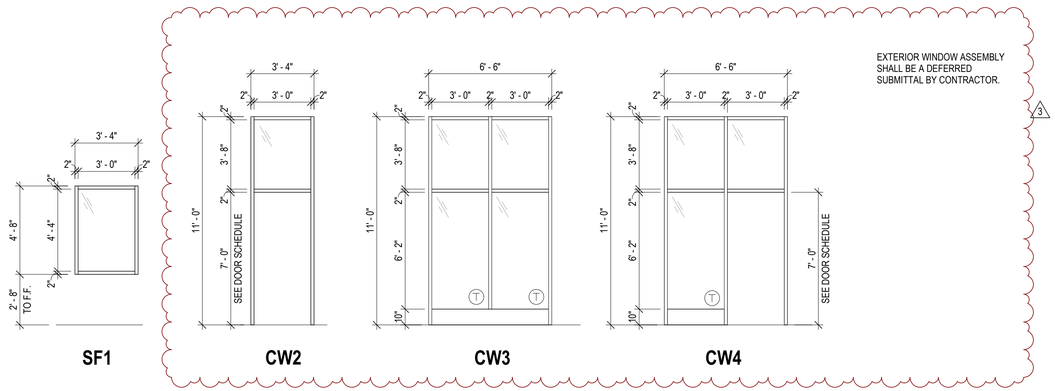
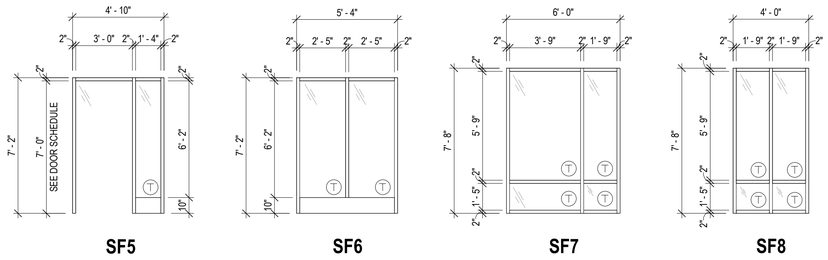
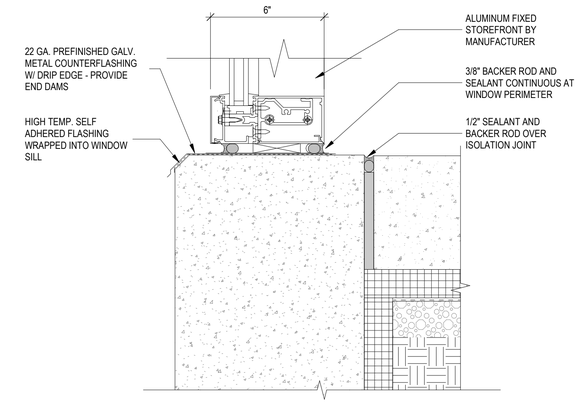






D5 EXTERIOR STOREFRONT SILL AT GRADE

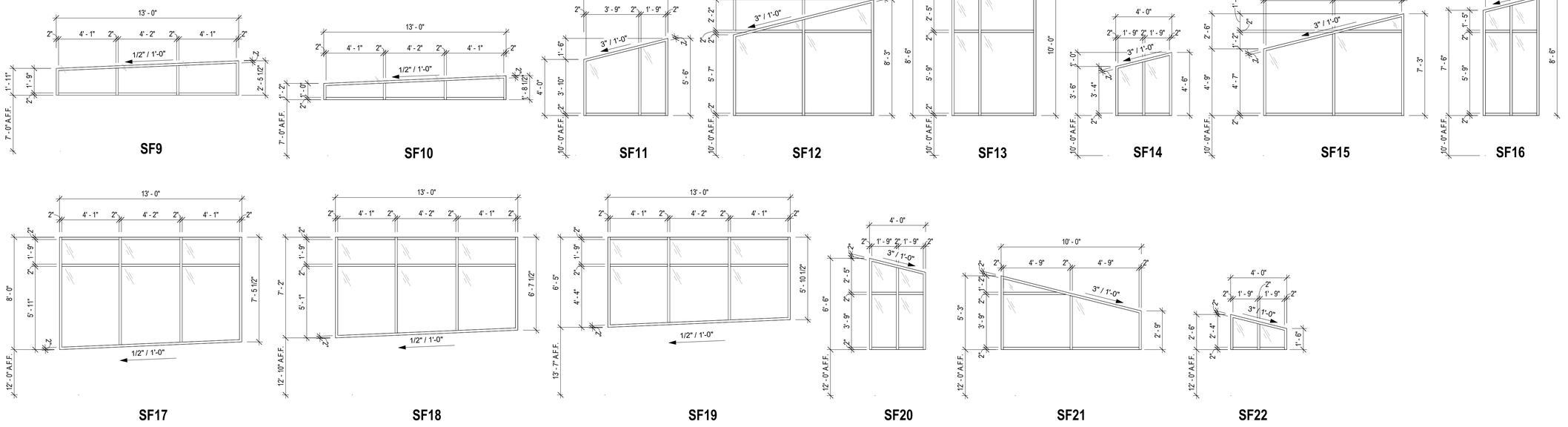
3" = 1'-0"

LEGEND:

WINDOW GLAZING TYPES

- INSULATED GLASS
- (T) INSULATED TEMPERED GLASS

NOTES:
A. COORDINATE FRAME PREP. AND CONDUIT ROUTING FOR DOOR CONTACTS; REFER TO ELEC. DWGS. FOR LOCATIONS.
B. ALL EXTERIOR CURTAIN WALL AND STOREFRONT SHALL BE THERMALLY BROKEN. INTERIOR STOREFRONT / SIDELIGHTS / BORROW LIGHTS SHALL NOT BE THERMALLY BROKEN.



STOREFRONT ELEVATIONS

1/4" = 1'-0"

(T) = TEMPERED SAFETY GLASS

GRAPHIC SCALE

1/4"=1'-0" 0 2' 4' 8' 12'

3"=1'-0" 0 1" 2" 3" 4" 5" 6" 9" 1'

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ISSUANCE SCHEDULE

NUMBER	DATE	DESCRIPTION
1	05/30/24	ISSUED FOR BID
3	06/21/24	BID ADD. 4

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05/30/2024
DESIGNED BY: AMA
DRAWN BY: RCS
CHECKED BY: AJR

SHEET NAME:
STOREFRONT ELEVATIONS AND DETAILS

SHEET NO:
A-621

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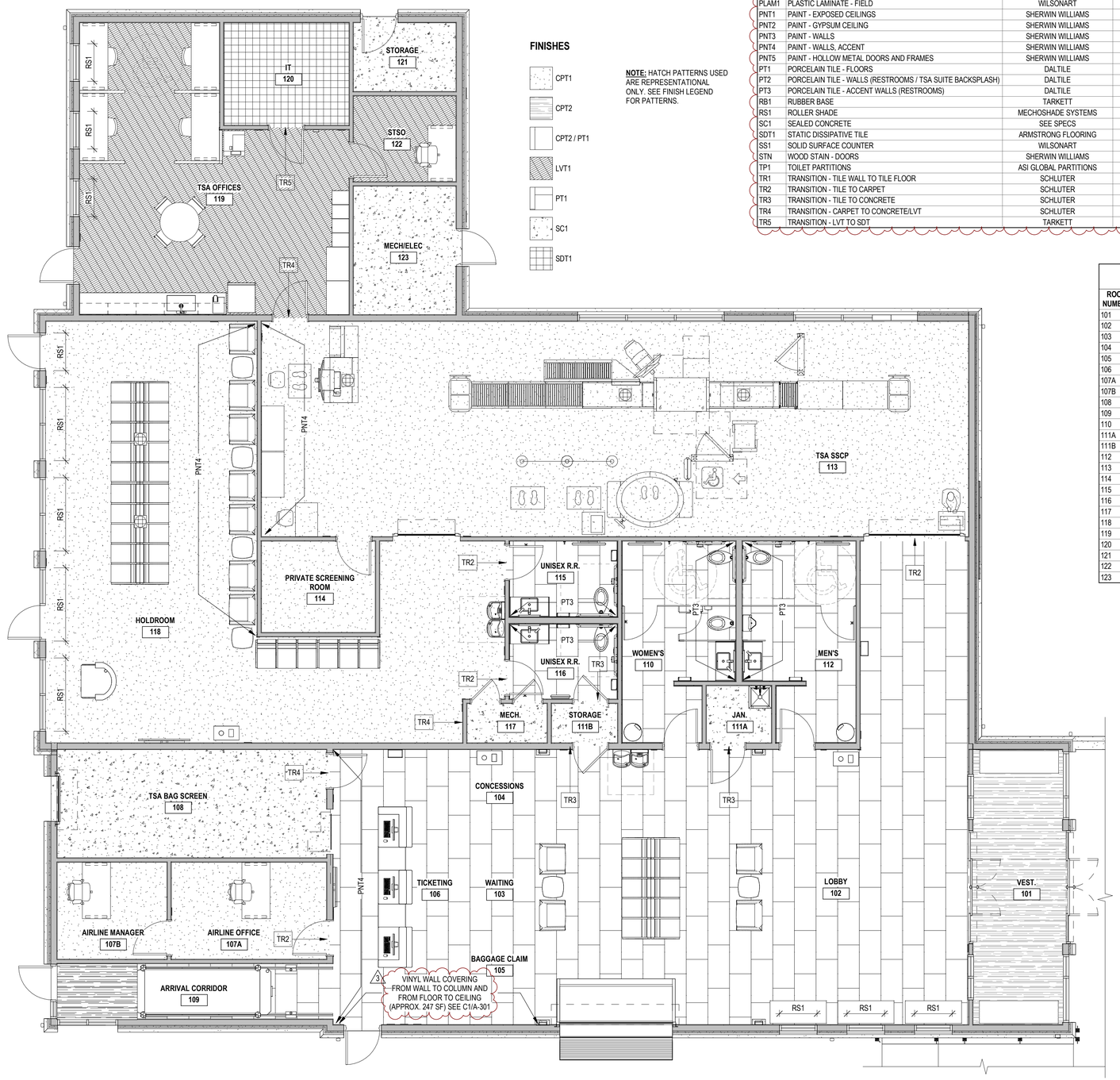
FINISH LEGEND

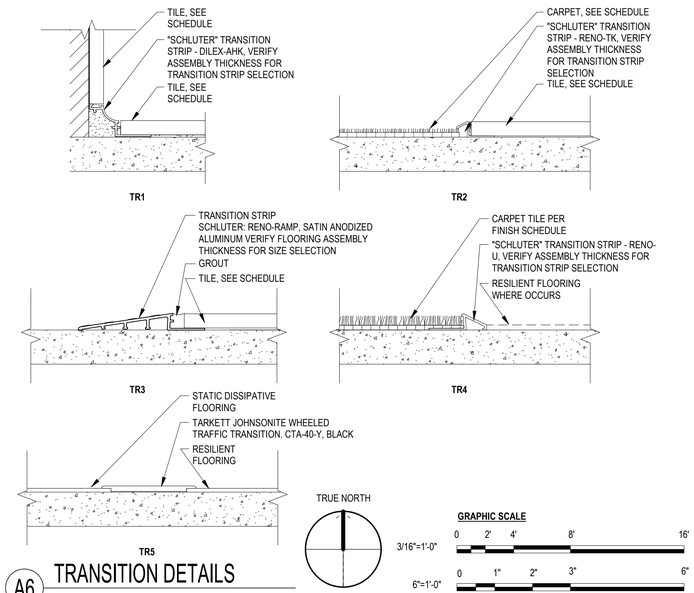
TAG	MATERIAL	MANUFACTURER	STYLE / TYPE / COLOR	FINISH	SIZE	INSTALLATION	REMARKS
ACT1	ACOUSTIC CEILING TILE	ARMSTRONG CEILINGS	ULTIMA 15/16" BEVELED TEGULAR 1911 / WHITE	-	24"X24"X3/4"		
CG1	CORNER GUARD	CONSTRUCTION SPECIALTIES	SM-20AN ACROVYN CORNER GUARD / FOLKSTONE 927	-	3" LEG x 5'H	USE ADHESIVE, MOUNT 4" A.F.F.	
CPT1	CARPET TILE - FIELD	PATCRAFT	CRAFTED SURFACE / OVERLAYER I0550 / TAUPE TUFT 00540	-	18"X36"X0.265"	ASHLAR METHOD	
CPT2	WALK-OFF CARPET	CONSTRUCTION SPECIALTIES	PEDIMAT M1	-	-	SURFACE MOUNTED	
GR1	GROUT	CUSTOM BUILDING PRODUCTS	#165 DELOREAN GRAY	-	-		
LVT1	LUXURY VINYL TILE	ARMSTRONG FLOORING	LVT OXIDIZE VANTA ST882 COALESCE / VANTA	-	18"X36"X0.1"	ASHLAR METHOD	
PLAM1	PLASTIC LAMINATE - FIELD	WILSONART	LANDMARK WOOD	-	-		
PNT1	PAINT - EXPOSED CEILINGS	SHERWIN WILLIAMS	GAUNTLET GRAY SW 7019	FLAT	-		
PNT2	PAINT - GYPSUM CEILING	SHERWIN WILLIAMS	HIGH REFLECTIVE WHITE SW 7757	FLAT	-		
PNT3	PAINT - WALLS	SHERWIN WILLIAMS	REPOSE GRAY SW 7015	EGGSHELL	-		
PNT4	PAINT - WALLS, ACCENT	SHERWIN WILLIAMS	CELESTIAL SW 6808	EGGSHELL	-		
PNT5	PAINT - HOLLOW METAL DOORS AND FRAMES	SHERWIN WILLIAMS	GRIZZLE GRAY SW 7068	SEMI-GLOSS	-		
PT1	PORCELAIN TILE - FLOORS	DALTILE	HAUT MONDE EMPIRE BLACK RECTANGLE HM06	MATTE	24"X48"X3/8"	ASHLAR METHOD	1/8" GROUT JOINTS
PT2	PORCELAIN TILE - WALLS (RESTROOMS / TSA SUITE BACKSPLASH)	DALTILE	COLOR WHEEL CLASSIC MATTE ALMOND RECTANGLE X735	MATTE	3"X6"X3/8"	1/2" OFFSET	1/16" GROUT JOINTS
PT3	PORCELAIN TILE - ACCENT WALLS (RESTROOMS)	DALTILE	ACACIA VALLEY ARK PLANK AV06	MATTE	6"X36"X3/8"		1/8" GROUT JOINTS
RB1	RUBBER BASE	TARKETT	JOHNSONITE BASEWORKS THERMOSET RUBBER / TSB CHARCOAL 20	-	4"H		
RS1	ROLLER SHADE	MECHOSHADE SYSTEMS	URBANSHADE MANUAL / SOHO SLATE 1616	-	VARIES	FIELD VERIFY	
SC1	SEALED CONCRETE	SEE SPECS	-	-	-		
SDT1	STATIC DISSIPATIVE TILE	ARMSTRONG FLOORING	EXCELON SDT 4-PART SYSTEM / RIDGE 51957	-	12"X12"X1/8"	MONOLITHIC, RUNNING PLAN	
SS1	SOLID SURFACE COUNTER	WILSONART	CARRARA EMPORIO	-	-		
STN	WOOD STAIN - DOORS	SHERWIN WILLIAMS	AMBER PINE MW 433	SEMI-TRANSPARENT	-		
TP1	TOILET PARTITIONS	ASI GLOBAL PARTITIONS	COLOR-THRU PHENOLIC / BLACK 2000C	-	-		
TR1	TRANSITION - TILE WALL TO TILE FLOOR	SCHLUTER	DILEX-AHK	SATIN ANODIZED	3/8"	FIELD VERIFY	
TR2	TRANSITION - TILE TO CARPET	SCHLUTER	RENO-TK	SATIN ANODIZED	3/8"	FIELD VERIFY	
TR3	TRANSITION - TILE TO CONCRETE	SCHLUTER	RENO-RAMP	SATIN ANODIZED	3/8"	FIELD VERIFY	
TR4	TRANSITION - CARPET TO CONCRETE/LVT	SCHLUTER	RENO-U	SATIN ANODIZED	FIELD VERIFY		
TR5	TRANSITION - LVT TO SDT	TARKETT	JOHNSONITE WHEELED TRAFFIC TRANSITIONS / CTA-40-Y / BLACK	-	2-1/2"X.08"	FIELD VERIFY	

FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR FINISH	BASE FINISH	WALL MATERIAL	WALL FINISH	CEILING MATERIAL	CEILING FINISH	NOTES
101	VEST.	CPT2	RB1	GWB	PNT3	GWB	PNT1	
102	LOBBY	PT1	RB1	GWB	PNT3 / PNT4	GWB	PNT1	
103	WAITING	PT1	RB1	GWB	PNT3	GWB	PNT1	
104	CONCESSIONS	PT1	RB1	GWB	PNT3	GWB	PNT1	
105	BAGGAGE CLAIM	PT1	RB1	GWB	PNT3	GWB	PNT1	
106	TICKETING	PT1	RB1	GWB	PNT3	GWB	PNT1	
107A	AIRLINE OFFICE	CPT1	RB1	GWB	PNT3	ACT1	-	
107B	AIRLINE MANAGER	CPT1	RB1	GWB	PNT3	ACT1	-	
108	TSA BAG SCREEN	SC1	RB1	GWB	PNT3	-		CEILING TO RECEIVE SPRAY ON FIREPROOFING
109	ARRIVAL CORRIDOR	CPT2 / PT1	RB1	GWB	PNT3	GWB	PNT1	
110	WOMEN'S	PT1	-	GWB	PT2 / PT3	GWB	PNT2	
111A	JAN.	SC1	RB1	GWB	PNT3	-	-	CEILING TO RECEIVE SPRAY ON FIREPROOFING
111B	STORAGE	SC1	RB1	GWB	PNT3	-	-	CEILING TO RECEIVE SPRAY ON FIREPROOFING
112	MEN'S	PT1	-	GWB	PT2 / PT3	GWB	PNT2	
113	TSA SSCP	CPT1	RB1	GWB	PNT3 / PNT4	GWB	PNT1	
114	PRIVATE SCREENING ROOM	CPT1	RB1	GWB	PNT3	ACT1	-	
115	UNISEX R.R.	PT1	-	GWB	PT2 / PT3	GWB	PNT2	
116	UNISEX R.R.	PT1	-	GWB	PT2 / PT3	GWB	PNT2	
117	MECH.	SC1	RB1	GWB	PNT3	-	-	CEILING TO RECEIVE SPRAY ON FIREPROOFING
118	HOLDROOM	CPT1	RB1	GWB	PNT3 / PNT4	GWB	PNT1	
119	TSA OFFICES	LVT1	RB1	GWB	PNT3 / PT2	ACT1	-	PT2 AT KITCHENETTE BACKSPLASH ONLY
120	IT	SDT1	RB1	GWB	PNT3	-	-	CEILING TO RECEIVE SPRAY ON FIREPROOFING
121	STORAGE	SC1	RB1	GWB	PNT3	-	-	CEILING TO RECEIVE SPRAY ON FIREPROOFING
122	STSO	LVT1	RB1	GWB	PNT3	ACT1	-	
123	MECH/ELEC	SC1	RB1	GWB	PNT3	-	-	CEILING TO RECEIVE SPRAY ON FIREPROOFING



A1 FIRST FLOOR FINISH PLAN
3/16" = 1'-0"



A6 TRANSITION DETAILS
6" = 1'-0"

TRUE NORTH

GRAPHIC SCALE
3/16"=1'-0" 0 2' 4' 8' 16'
6"=1'-0" 0 1" 2" 3" 6"

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ISSUANCE SCHEDULE

NUMBER	DESCRIPTION	DATE
1	ISSUED FOR BID	05/30/24
3	BID ADD. 4	06/21/24

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05/30/2024

DESIGNED BY: AMA
DRAWN BY: RCS
CHECKED BY: AJR

SHEET NAME:
FINISH PLAN AND SCHEDULES

SHEET NO:
A-701

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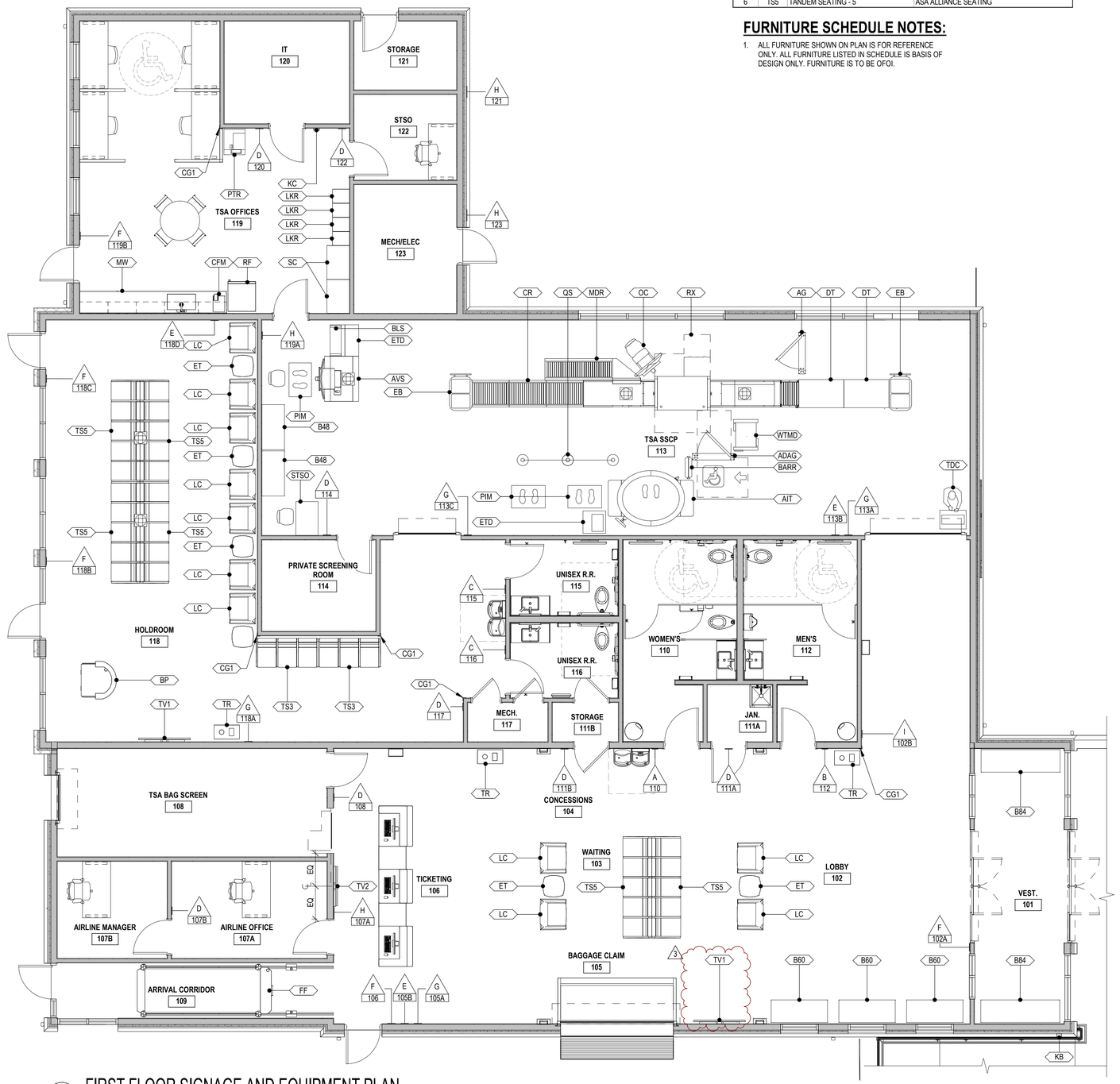

A1 FIRST FLOOR SIGNAGE AND EQUIPMENT PLAN

3/16" = 1'-0"

FURNITURE SCHEDULE

QTY	TAG	DESCRIPTION	MANUFACTURER / MODEL
2	B48	BENCH - 24"D X 48"L	ENCORE / PLAYGROUND
3	B60	BENCH - 24"D X 60"L	ENCORE / PLAYGROUND
2	B84	BENCH - 24"D X 84"L	ENCORE / PLAYGROUND
6	ET	END TABLE	CAROLINA OFS / 447-23SQ
11	LC	LOUNGE CHAIR	ENCORE / CLIPSE
2	TS3	TANDEM SEATING - 3	ASA ALLIANCE SEATING
6	TS5	TANDEM SEATING - 5	ASA ALLIANCE SEATING

FURNITURE SCHEDULE NOTES:

1. ALL FURNITURE SHOWN ON PLAN IS FOR REFERENCE ONLY. ALL FURNITURE LISTED IN SCHEDULE IS BASIS OF DESIGN ONLY. FURNITURE IS TO BE OFOI.

EQUIPMENT SCHEDULE

QTY	TAG	DESCRIPTION	TSA F TSA I	CFCI	OFCI	OFOI	REQUIRES POWER / DATA	REQUIRES PLUMBING	REQUIRES BLOCKING	MANUFACTURER / MODEL
1	BP	BOARDING PODIUM	-	X	-	-	X	-	-	SEE ENLARGED GATE PODIUM PLAN AND DETAILS
1	CFM	COFFEE MAKER	-	-	X	-	-	X	-	KEURIG COMMERCIAL / K-3500
5	CG1	CORNER GUARD	-	X	-	-	-	-	-	SEE FINISH LEGEND
1	FF	FLIP FLOW	-	X	-	-	X	-	-	RECORD FLIPFLOW SINGLE EXTENDED
1	KB	KNOX BOX	-	X	-	-	-	-	-	PER LOCAL FIRE DEPARTMENT RECOMMENDATION
1	KC	KRONOS CLOCK	-	-	X	-	X	-	-	TO BE DETERMINED BY TSA
4	LKR	LOCKER	-	-	-	X	-	-	-	GLOBAL INDUSTRIAL / WB968262GY
1	MW	MICROWAVE	-	X	-	-	X	-	-	SHARP / SMD3070ASY
1	PTR	PRINTER / COPIER	-	-	-	X	X	-	-	TO BE DETERMINED BY TSA
1	RF	REFRIGERATOR	-	X	-	-	X	-	-	FRIGIDAIRE / ITEM #5742321 / MODEL #FFHT2022AS
2	SC	STORAGE CABINET	-	-	X	-	-	-	-	SANDUSKY ELITE / T9FB3153212
3	TR	TRASH / RECYCLING	-	X	-	-	-	-	-	TRASH CANS WAREHOUSE / ARISTATA SERIES DOUBLE TIER IV
2	TV1	TV MONITOR - 55"	-	X	-	-	X	-	X	SAMSUNG / 55" NEO QLED 4K
1	TV2	TV MONITOR - 43"	-	X	-	-	X	-	X	SAMSUNG / 43" NEO QLED 4K

TSA EQUIPMENT SCHEDULE

QTY	TAG	DESCRIPTION	TSA F TSA I	CFCI	OFCI	OFOI	REQUIRES POWER / DATA	REQUIRES PLUMBING	REQUIRES BLOCKING	MANUFACTURER / MODEL
1	ADAG	ADA GATE	X	-	-	-	-	-	-	TO BE DETERMINED BY TSA
1	AG	ACCESS GATE	X	-	-	-	-	-	-	TO BE DETERMINED BY TSA
1	AIT	ADVANCED IMAGING TECHNOLOGY	X	-	-	-	X	-	-	TO BE DETERMINED BY TSA
1	AVS	ALTERNATE VIEWING STATION	X	-	-	-	X	-	-	TO BE DETERMINED BY TSA
1	BARR	BARRIER - 2'-0"	X	-	-	-	-	-	-	TO BE DETERMINED BY TSA
1	BLS	BOTTLED LIQUIDS SCANNERS	X	-	-	-	X	-	-	TO BE DETERMINED BY TSA
1	CR	COMPOSURE ROLLERS	X	-	-	-	-	-	-	TO BE DETERMINED BY TSA
2	DT	DIVEST TABLE - 30" X 48"	X	-	-	-	X	-	-	TO BE DETERMINED BY TSA
2	EB	EMPTY BINS	X	-	-	-	-	-	-	TO BE DETERMINED BY TSA
2	ETD	ELECTRONIC TRACE DETECTION	X	-	-	-	X	-	-	TO BE DETERMINED BY TSA
1	MDR	MANUAL DIVERTER	X	-	-	-	-	-	-	TO BE DETERMINED BY TSA
1	OC	OPERATOR CART	X	-	-	-	X	-	-	TO BE DETERMINED BY TSA
3	PIM	PASSENGER INSPECTION MAT	X	-	-	-	-	-	-	TO BE DETERMINED BY TSA
1	QS	QUEUING STANCHIONS	X	-	-	-	-	-	-	TO BE DETERMINED BY TSA
1	RX	RAPISCAN AT X-RAY	X	-	-	-	X	-	-	TO BE DETERMINED BY TSA
1	STSO	SUPERVISORY TRANSPORTATION SECURITY OFFICER PODIUM	X	-	-	-	X	-	-	TO BE DETERMINED BY TSA
1	TDC	TRAVEL DOCUMENT CHECKER	X	-	-	-	X	-	-	TO BE DETERMINED BY TSA
1	WTMD	WALK-THROUGH METAL DETECTOR	X	-	-	-	X	-	-	TO BE DETERMINED BY TSA

TSA EQUIPMENT SCHEDULE NOTES:

1. NO TSA EQUIPMENT TO BE INCLUDED IN BID.
2. ALL TSA EQUIPMENT TO BE INSTALLED BY TSA APPROVED RIGGING COMPANY (SYSTEM INTEGRATORS). PREAPPROVED TSA SYSTEM INTEGRATORS MUST BE PROVIDED TO PERFORM TSA EQUIPMENT INSTALLATION/CALIBRATION.

SIGNAGE SCHEDULE

ROOM NUMBER	ROOM NAME	SIGN TYPE	SIGN TEXT	SIGN NUMBER	SIGN NOTES
102	LOBBY	F	EXIT	102A	
102	LOBBY	I	N/A	102B	
106	TICKETING	G	EVACUATION ROUTE	105A	
106	TICKETING	E	MAX OCCUPANCY 106	105B	SEE SIGNAGE TYPES
106	TICKETING	F	EXIT	106	
107A	AIRLINE OFFICE	H	AIRLINE OFFICE	107A	
107B	AIRLINE MANAGER	D	AIRLINE MANAGER	107B	
108	TSA BAG SCREEN	D	TSA BAG SCREEN	108	
110	WOMEN'S	A	WOMEN	110	
111A	JAN.	D	JANITOR	111A	
111B	STORAGE	D	STORAGE	111B	
112	MEN'S	B	MEN	112	
113	TSA SSCP	G	EVACUATION ROUTE	113A	
113	TSA SSCP	E	MAX OCCUPANCY 80	113B	SEE SIGNAGE TYPES
113	TSA SSCP	G	EVACUATION ROUTE	113C	
114	PRIVATE SCREENING ROOM	D	PRIVATE SCREENING ROOM	114	
115	UNISEX R.R.	C	ALL GENDER	115	
116	UNISEX R.R.	C	ALL GENDER	116	
117	MECH.	D	MECHANICAL	117	
118	HOLDROOM	G	EVACUATION ROUTE	118A	
118	HOLDROOM	F	EXIT	118B	
118	HOLDROOM	F	EXIT	118C	
118	HOLDROOM	E	MAX OCCUPANCY 68	118D	SEE SIGNAGE TYPES
119	TSA OFFICES	H	TSA OFFICES	119A	
119	TSA OFFICES	F	EXIT	119B	
120	IT	D	IT CLOSET	120	
121	STORAGE	H	STORAGE ROOM	121	EXTERIOR GRADE
122	STSO	D	STSO	122	
123	MECH/ELEC	H	MECHANICAL ROOM ELECTRICAL ROOM	123	EXTERIOR GRADE

TRUE NORTH

GRAPHIC SCALE

3/16"=1'-0" 0 2' 4' 8' 16'

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GLENDALE, CO 80246
937.461.0743

100% SUBMITTAL

ISSUED FOR BID
NOT FOR CONSTRUCTION

ISSUANCE SCHEDULE

NUMBER	DATE	DESCRIPTION
1	05/30/24	ISSUED FOR BID
3	06/21/24	BID ADD. 4

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING

27161 DAVID HALL TRAIL
KIRKSVILLE, MO 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05/30/2024

DESIGNED BY: AMA
DRAWN BY: RCS
CHECKED BY: AJR

SHEET NAME:
SIGNAGE, EQUIPMENT, AND FURNITURE PLAN AND SCHEDULES

SHEET NO:
A-702

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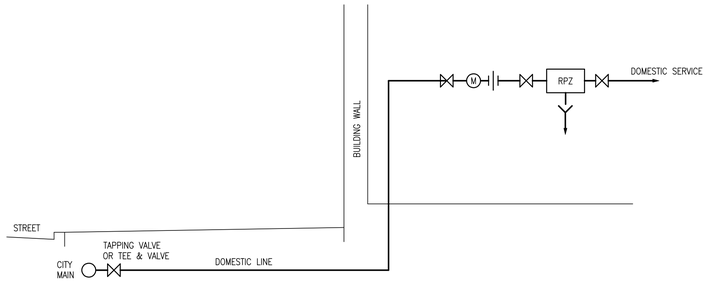
MECHANICAL SYMBOL SCHEDULE

WST	WASTE PIPING	
V	VENT PIPING	
VW	VENT PIPING OVER WASTE PIPING	
CW	COLD WATER PIPING	
HW	HOT WATER PIPING	
G	GAS PIPING	
	PIPE FITTINGS (ELL DOWN – TEE DOWN – TEE UP)	
	VALVE	– CHECK VALVE
	UNION	– STRAINER
	GAS COCK	– BALANCING COCK
A200 12x12	AIR TERMINAL TAG. "A" INDICATES MARK ON GRILLE AND REGISTER SCHEDULE.	
	"200" INDICATES AIR VOLUME IN CFM. "12x12" INDICATES FACE SIZE.	
	AIR TERMINALS (REGISTER – GRILLE)	
	FIRE DAMPER	
	SMOKE DAMPER	
	MANUAL DAMPER	
	MOTORIZED DAMPER	
T_1 H_1	THERMOSTAT – HUMIDISTAT (ZONE SUBSCRIPT)	
WST V	WASTE	– VENT
CO VTR	CLEAN OUT	– VENT THROUGH ROOF
SA RA	SUPPLY AIR	– RETURN AIR
FA EA	FRESH AIR	– EXHAUST AIR
N/E E/R	NEW CONNECTS TO EXISTING	– EXISTING TO REMAIN
	PENDANT MOUNTED SPRINKLER HEAD	
	UPRIGHT MOUNTED SPRINKLER HEAD	
	PENDANT HEAD BELOW / UPRIGHT HEAD ABOVE	
	SIDEWALL SPRINKLER HEAD	
	EXTENDED COVERAGE SIDEWALL SPRINKLER HEAD	

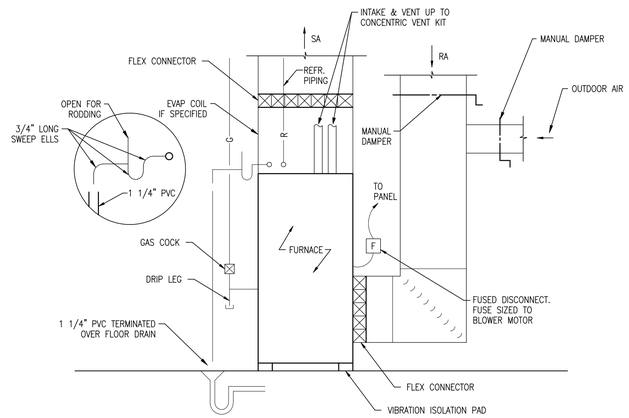
ELECTRICAL SYMBOL SCHEDULE

P2–22,24	HOME RUN CIRCUIT TO PANEL P2, CIRCUITS 22,24
	EACH ARROW INDICATES ONE CIRCUIT
	SHORT HATCH MARKS INDICATE # OF PHASE CONDUCTORS
	LONG HATCH MARKS INDICATE # OF NEUTRAL CONDUCTORS
	NO HATCH MARK INDICATES TWO CONDUCTORS
E	ELECTRICAL SERVICE OR FEEDER WIRING
	WIRING IN WALL OR CEILING – WIRING IN FLOOR
	RECEPTACLE OUTLET (DUPLEX – QUADRUPLEX – SPECIAL POWER)
	COMMUNICATIONS OUTLET (TELEPHONE – CATV – DATA/PHONE)*
3 D 4 P S K T OS	WALL SWITCH (3–WAY – DIMMER – 4–WAY – PILOT – SPEED – KEYED – TIMER – OCCUPANCY)
	LED STYLE LIGHT FIXTURE (CEILING MOUNTED – WALL MOUNTED)
	LED STYLE LIGHT FIXTURE (ENCLOSED – STRIP) (S INDICATES SPLIT WIRED)
	EXIT LIGHT – EMERGENCY LIGHT – EMERGENCY/EXIT LIGHT
C	OTHER RECEPTACLE OUTLET (CLOCK – FLOOR – SPLIT WIRED)
	ELECTRIC PANEL
S I	SPEAKER – PUSH TO TALK
J P	JUNCTION BOX – PULL BOX
F D	DISCONNECT (FUSED – NONFUSED)
S C	STARTER – CONTACTOR
5–208–3	ELECTRIC MOTOR (5 HP – 208V – 3 PHASE)
T_1 H_1	THERMOSTAT – HUMIDISTAT (ZONE SUBSCRIPT)
42 G W U	OUTLET MODIFIERS (MOUNT HEIGHT INCHES – GFI PROTECTED – WEATHER PROOF GFI – USB)
S H D F	SMOKE DETECTOR – HEAT DETECTOR – DUCT DETECTOR – MANUAL PULL STATION
AV V	AUDIO VISUAL – VISUAL
M R	MAGNETIC DOOR HOLDER – INTERLOCK RELAY
	END OF LINE RESISTOR
FACP	FIRE ALARM CONTROL PANEL
DIAL	DIALER

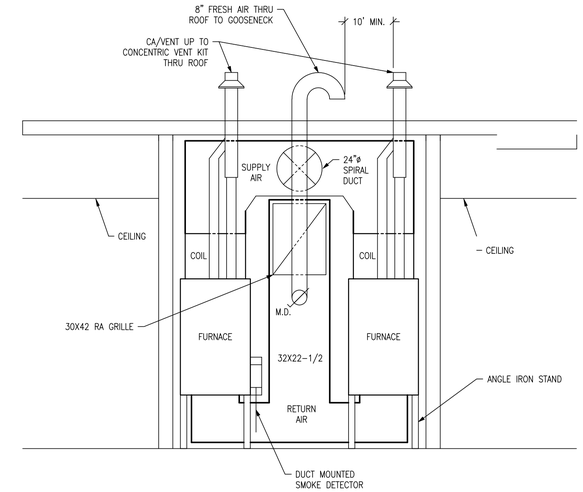
*INDICATES A 4X4 BOX WITH HANDY BOX COVER TO ACCOMMODATE TELEPHONE(LAND LINE), COMPUTER, INTERNET, TV, ETC.



1 BACKFLOW ASSEMBLY
ME–001 NO SCALE

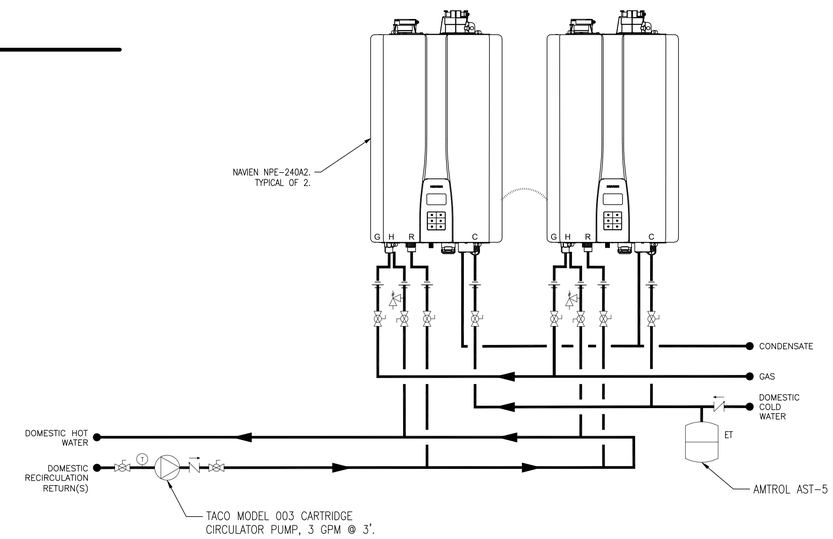


2 FURNACE DETAIL
ME–001 NO SCALE



4 FURNACE SECTION DETAIL
ME–001 NO SCALE

SYMBOL LEGEND			
UNION	CHECK VALVE	FULL–PORT VALVE	EXPANSION TANK
CASCADE CABLE	PRESSURE RELIEF VALVE	MIXING VALVE	AQUASTAT
DHW CIRCULATOR W/ AQUASTAT, OPTIONAL TIMER & CHECK VALVE	CIRCULATOR		



3 WATER HEATER PIPING DETAIL
ME–001 NO SCALE

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FREDDIE L. MALICOAT - ENGINEER
MO# E-16897

STATE OF MISSOURI — FREDDIE L. MALICOAT — NUMBER E-16897 — REGISTERED PROFESSIONAL ENGINEER — 06-21-24

ISSUED FOR BID
NOT FOR CONSTRUCTION

ISSUANCE SCHEDULE

NUMBER	DESCRIPTION	DATE
1	BID ADD #2	06–13–24
2	BID ADD #4	06–21–24

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO, 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05-30-24

DESIGNED BY: FLM
DRAWN BY: JDB
CHECKED BY: FLM

SHEET NAME:
SCHEDULES & SPECS

SHEET NO: ME-001

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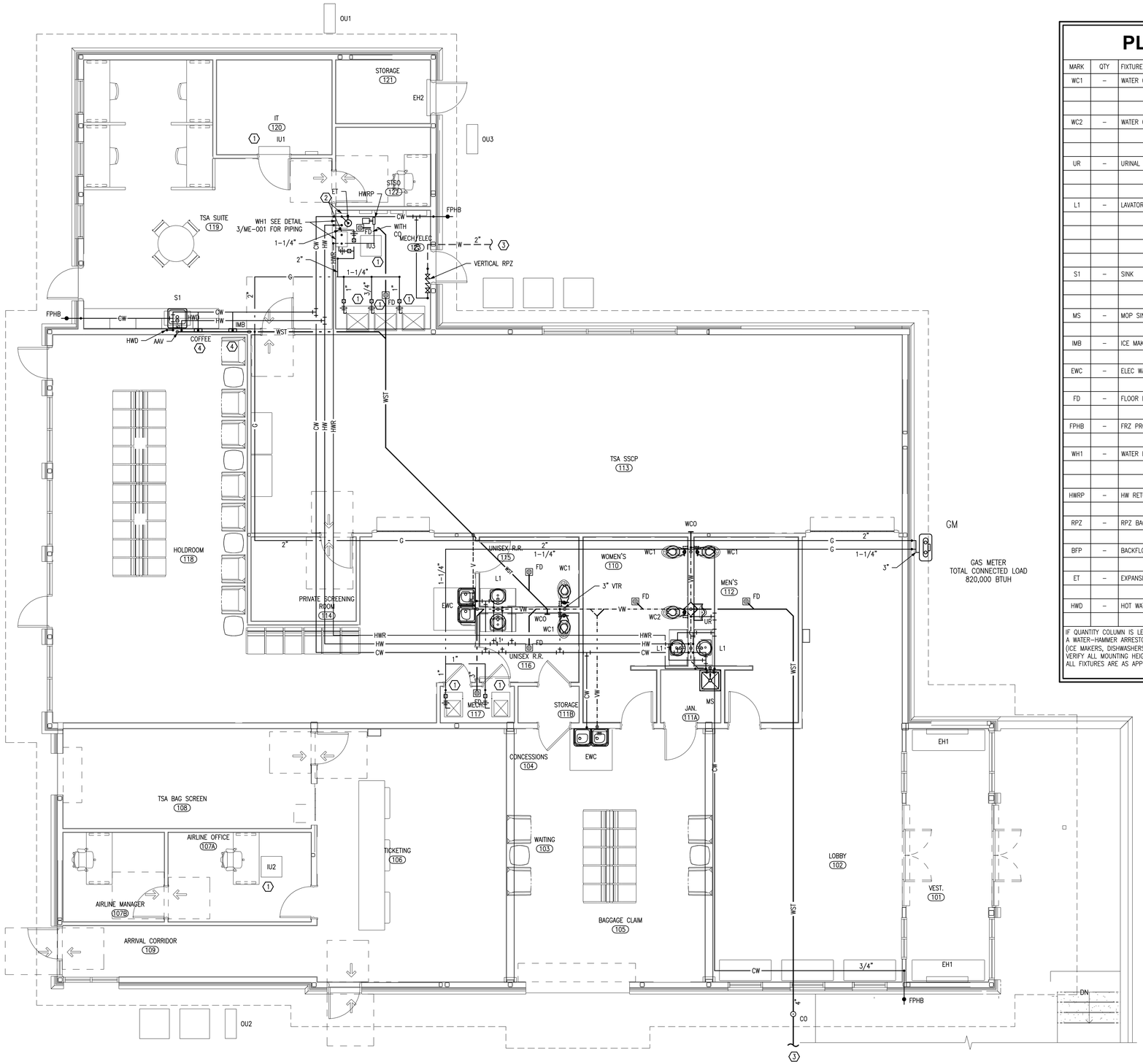

PLUMBING FIXTURE SCHEDULE

MARK	QTY	FIXTURE	MODEL NUMBER
WC1	–	WATER CLOSET	AMERICAN STANDARD 3451.001.020, WHITE VITREOUS CHINA, 15" HEIGHT, ELONGATED BOWL,
			ZURN Z6000AV-WS1-YB-YC FLUSH VALVE, AMERICAN STANDARD 5901.110 WHITE SEAT.
WC2	–	WATER CLOSET	AMERICAN STANDARD 3461.001.020, WHITE VITREOUS CHINA, 16 1/2" HEIGHT, ELONGATED BOWL,
			ZURN Z6000AV-WS1-TB-YC FLUSH VALVE, AMERICAN STANDARD 5901.110 WHITE SEAT, ADA HEIGHT.
UR	–	URINAL	AMERICAN STANDARD 6550.005.020, WHITE VITREOUS CHINA, 3/4" TOP SPUD,
			ZURN Z6003AV-WS1-YB-YC FLUSH VALVE.
L1	–	LAVATORY	AMERICAN STANDARD 0476.028.020, WHITE VITREOUS CHINA, SELF-RIMMING, MOEN CA8301 FAUCET,
			AUTOMATIC ELECTRONIC MOTION SENSE FAUCET POWERED VIA 4 AA BATTERIES
			DEARBORN BRASS 760-1 GRID DRAIN, P-TRAP, SPEEDWAY 1920A SUPPLIES AND STOPS
			FOR EXPOSED PIPING WITH TRUEBRO INSULATION KIT, MOUNT PER ADA.
S1	–	SINK	ELKAY LR-2522, 18GA STAINLESS STEEL, LK-35 STRAINER, LK2423C FAUCET W/SPRAY, SPEEDWAY
			CR1920A SUPPLIES AND STOPS.
MS	–	MOP SINK	SWAN MS 2424-3, MS-2412 FAUCET, MS-2405 HOSE, MS-2408 RIM GUARD, STRAINER.
IMB	–	ICE MAKER BOX	GUY GRAY BIM875 ICE MAKER CONNECTION BOX.
EWC	–	ELEC WATER COOLER	ELKAY EZSTL8WSLK DOUBLE COOLER, W/ BOTTLE FILLERS.
FD	–	FLOOR DRAIN	JOSAM 30003-6A, NICKALOY TOP, WITH P-TRAP, TRAP SEAL, AND CLEAN OUT.
FPHB	–	FRZ PROOF HOSE BIB	WOODFORD MODEL 67 SERIES POLISHED CHROME WALL FAUCET WITH TEE KEY, VACUUM BREAKER.
WH1	–	WATER HEATER	NAVIEN NPE-240A 199,900 BTUH INPUT RE-CIRCULATING TANKLESS WATER HEATER, 4GPM MAX,
			2" CONCENTRIC VENT KIT, (120V SIMPLEX RECEPTACLE, 350W)
HWRP	–	HW RETURN PUMP	TACO MODEL 003 CARTRIDGE CIRCULATOR PUMP, 1/40 HP, 0.43A, 120V, 1ø, 3 GPM @ 3'.
RPZ	–	RPZ BACKFLOW PREV	WATTS LF909M1-QT-S (VERTICAL) -- REDUCED PRESSURE ZONE ASSEMBLY
BFP	–	BACKFLOW PREV	WATTS LF9D ICE MACHINE/BEVERAGE BACKFLOW PREVENTION DEVICE.
ET	–	EXPANSION TANK	AMTROL AST-5
HWD	–	HOT WATER DISP.	IN-SINK-ERATOR HOT 100C – HOT WATER DISPENSER

IF QUANTITY COLUMN IS LEFT BLANK REFER TO PLANS. VERIFY WITH PLANS ALL QUANTITIES OF FIXTURES.
A WATER-HAMMER ARRESTOR SHALL BE INSTALLED WHERE QUICK-CLOSING VALVES ARE UTILIZED (ICE MAKERS, DISHWASHERS, AND WASHING MACHINES).
VERIFY ALL MOUNTING HEIGHTS WITH ARCHITECTURAL PLANS.
ALL FIXTURES ARE AS APPROVED EQUAL BY SUBMITTAL.

GENERAL NOTES:

1. VERIFY PLUMBING, HVAC, POWER, AND LIGHTING REQUIREMENTS FOR OWNER'S SPECIFIC EQUIPMENT PRIOR TO ROUGH-IN.
2. COORDINATE INSTALLATION OF EQUIPMENT WITH MANUFACTURERS' INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-IN.
3. CONTRACTOR SHALL MAINTAIN FIRE RATING OF ANY PENETRATION AND SHALL SEAL ANY PENETRATION IN A FLOOR, CEILING, OR EXTERIOR WALL.
4. VERIFY RECEPTACLE MOUNTING HEIGHTS AND LOCATIONS WITH OWNER AND ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.
5. PLUMBING SUPPLY RISER SHOWN FOR CLARITY, THE PIPING SYSTEM SHALL BE ROUTED ENTIRELY WITHIN THE CONDITIONED SPACES, WITHIN INTERIOR CONDITION WALLS WERE ABLE. WHERE ROUTED BELOW SLAB, SLEEVED IN SCH 40 PVC.

KEYED NOTES:

1. PIPE 3/4" SCH 40 PVC CONDENSATE TO MOP SINK, STAND PIPE, OR NEAREST DRAIN. 1-1/4" IF CONNECTING MULTIPLE DRAINS.
2. PIPE WATER HEATER RELIEF AND DRAIN TO MOP SINK OR NEAREST FLOOR DRAIN.
3. SEE CIVIL FOR CONTINUATION.
4. INSTALL BACKFLOW PREVENTION DEVICE, BFP, ON ICE MACHINE AND SODA/COFFEE/TEA MACHINE COLD WATER LINES.

1 / P-101 **PLUMBING PLAN**
SCALE: 3/16" = 1'-0"

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MO# E-16897

STATE OF MISSOURI — FREDDIE L. MALICOAT — NUMBER E-16897 — REGISTERED PROFESSIONAL ENGINEER — 06-21-24

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NUMBER	DESCRIPTION	DATE
2	BID ADD #2	06-13-24
4	BID ADD #4	06-21-24

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO, 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05-30-24

DESIGNED BY:	FLM
DRAWN BY:	JDB
CHECKED BY:	FLM

SHEET NAME:
PLUMBING PLAN

SHEET NO: 4
P-101

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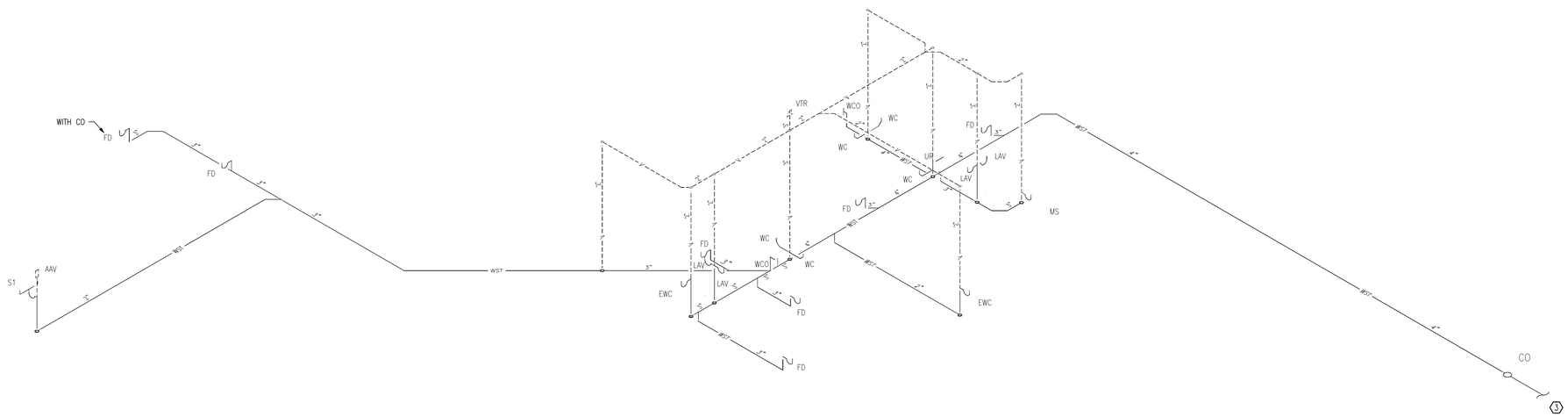

1 P-601 WASTE RISER DIAGRAM

SCALE: NO SCALE

GENERAL NOTES:

1. VERIFY PLUMBING, HVAC, POWER, AND LIGHTING REQUIREMENTS FOR OWNER'S SPECIFIC EQUIPMENT PRIOR TO ROUGH-IN.
2. COORDINATE INSTALLATION OF EQUIPMENT WITH MANUFACTURERS' INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-IN.
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4. VERIFY RECEPTACLE MOUNTING HEIGHTS AND LOCATIONS WITH OWNER AND ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.
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KEYED NOTES:

1. PIPE 3/4" SCH 40 PVC CONDENSATE TO MOP SINK, STAND PIPE, OR NEAREST DRAIN. 1-1/4" IF CONNECTING MULTIPLE DRAINS.
2. PIPE WATER HEATER RELIEF AND DRAIN TO MOP SINK OR NEAREST FLOOR DRAIN.
3. SEE CIVIL FOR CONTINUATION.
4. INSTALL BACKFLOW PREVENTION DEVICE, BFP, ON ICE MACHINE AND SODA/COFFEE/TEA MACHINE COLD WATER LINES.

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06-21-24

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4	06-21-24	BID ADD #4

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KIRKSVILLE, MO, 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05-30-24

DESIGNED BY: FLM
DRAWN BY: JDB
CHECKED BY: FLM

SHEET NAME:
WASTE RISER DIAGRAM

SHEET NO:
P-601 2

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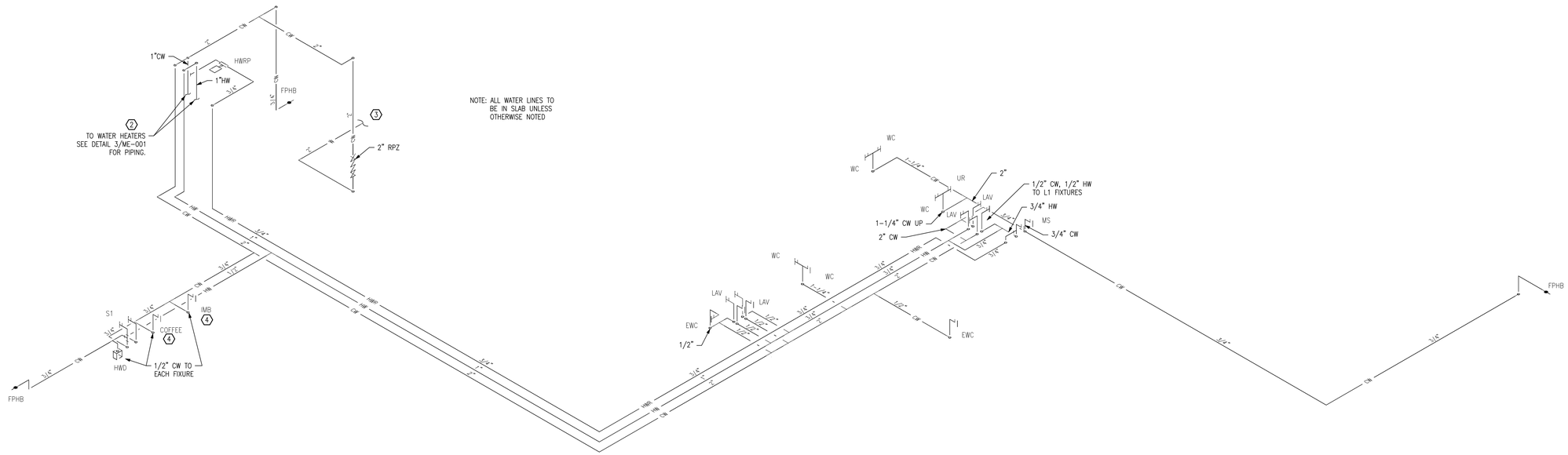

1 P-602 **SUPPLY RISER DIAGRAM**

SCALE: NO SCALE

GENERAL NOTES:

1. VERIFY PLUMBING, HVAC, POWER, AND LIGHTING REQUIREMENTS FOR OWNER'S SPECIFIC EQUIPMENT PRIOR TO ROUGH-IN.
2. COORDINATE INSTALLATION OF EQUIPMENT WITH MANUFACTURERS' INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-IN.
3. CONTRACTOR SHALL MAINTAIN FIRE RATING OF ANY PENETRATION AND SHALL SEAL ANY PENETRATION IN A FLOOR, CEILING, OR EXTERIOR WALL.
4. VERIFY RECEPTACLE MOUNTING HEIGHTS AND LOCATIONS WITH OWNER AND ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.
5. PLUMBING SUPPLY RISER SHOWN FOR CLARITY, THE PIPING SYSTEM SHALL BE ROUTED ENTIRELY WITHIN THE CONDITIONED SPACES, WITHIN INTERIOR CONDITION WALLS WERE ABLE. WHERE ROUTED BELOW SLAB, SLEEVED IN SCH 40 PVC.

KEYED NOTES:

1. PIPE 3/4" SCH 40 PVC CONDENSATE TO MOP SINK, STAND PIPE, OR NEAREST DRAIN. 1-1/4" IF CONNECTING MULTIPLE DRAINS.
2. PIPE WATER HEATER RELIEF AND DRAIN TO MOP SINK OR NEAREST FLOOR DRAIN.
3. SEE CIVIL FOR CONTINUATION.
4. INSTALL BACKFLOW PREVENTION DEVICE, BFP, ON ICE MACHINE AND SODA/COFFEE/TEA MACHINE COLD WATER LINES.

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937.461.0743

FREDDIE L. MALICOAT - ENGINEER
MO# E-16897

STATE OF MISSOURI · FREDDIE L MALICOAT · NUMBER E-16897 · REGISTERED PROFESSIONAL ENGINEER · 06-21-24

ISSUED FOR BID
NOT FOR CONSTRUCTION

ISSUANCE SCHEDULE

NUMBER	DATE	DESCRIPTION
2	06-13-24	BID ADD #2
4	06-21-24	BID ADD #4

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO, 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05-30-24

DESIGNED BY: FLM
DRAWN BY: JDB
CHECKED BY: FLM

SHEET NAME:
SUPPLY RISER DIAGRAM

SHEET NO:
P-602 4

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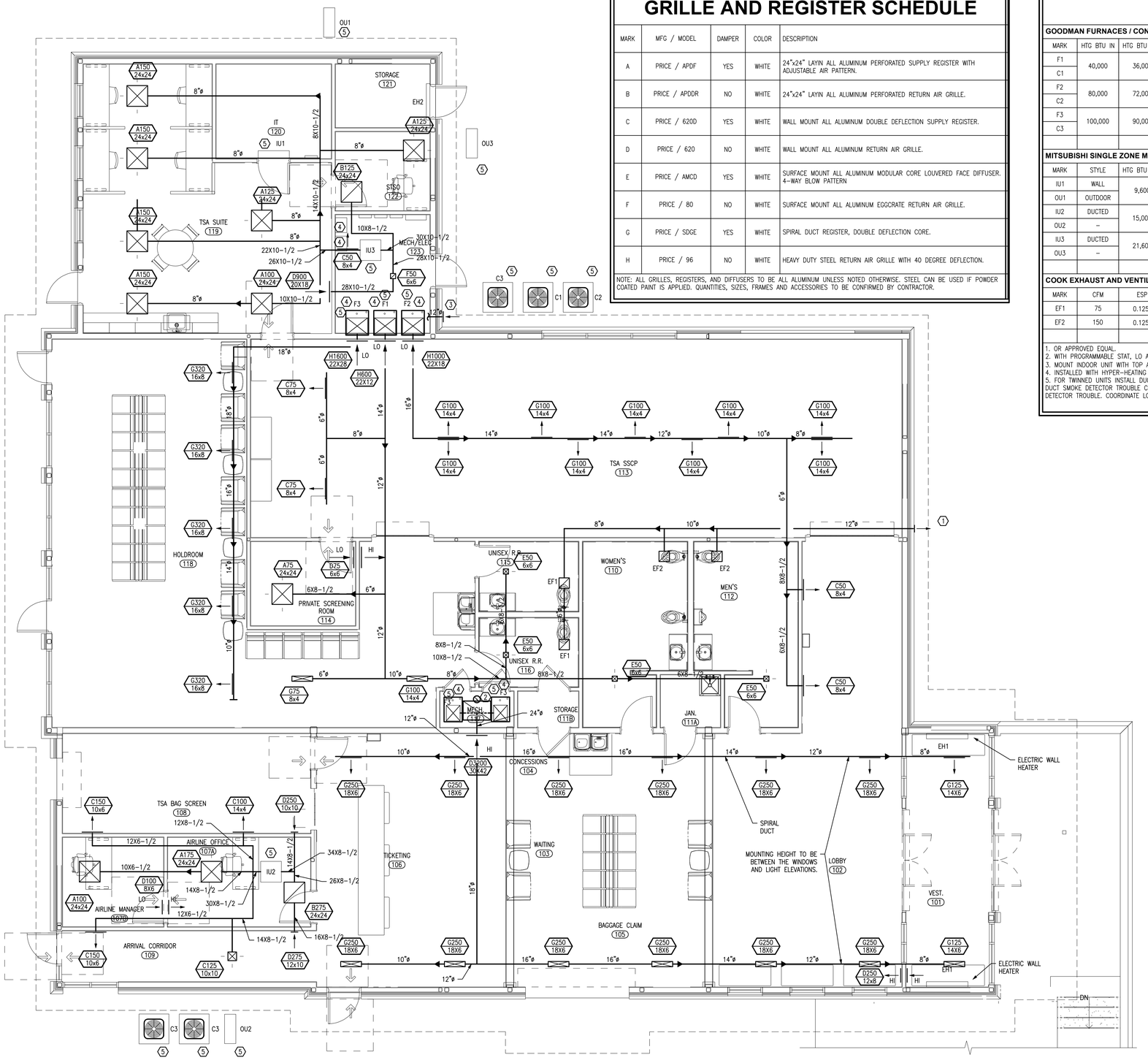

HVAC PLAN

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

GRILLE AND REGISTER SCHEDULE

MARK	MFG / MODEL	DAMPER	COLOR	DESCRIPTION
A	PRICE / APDF	YES	WHITE	24"x24" LAYIN ALL ALUMINUM PERFORATED SUPPLY REGISTER WITH ADJUSTABLE AIR PATTERN.
B	PRICE / APDDR	NO	WHITE	24"x24" LAYIN ALL ALUMINUM PERFORATED RETURN AIR GRILLE.
C	PRICE / 620D	YES	WHITE	WALL MOUNT ALL ALUMINUM DOUBLE DEFLECTION SUPPLY REGISTER.
D	PRICE / 620	NO	WHITE	WALL MOUNT ALL ALUMINUM RETURN AIR GRILLE.
E	PRICE / AMCD	YES	WHITE	SURFACE MOUNT ALL ALUMINUM MODULAR CORE LOUVERED FACE DIFFUSER. 4-WAY BLOW PATTERN
F	PRICE / 80	NO	WHITE	SURFACE MOUNT ALL ALUMINUM EGGCRATE RETURN AIR GRILLE.
G	PRICE / SDGE	YES	WHITE	SPIRAL DUCT REGISTER, DOUBLE DEFLECTION CORE.
H	PRICE / 96	NO	WHITE	HEAVY DUTY STEEL RETURN AIR GRILLE WITH 40 DEGREE DEFLECTION.

NOTE: ALL GRILLES, REGISTERS, AND DIFFUSERS TO BE ALL ALUMINUM UNLESS NOTED OTHERWISE. STEEL CAN BE USED IF POWDER COATED PAINT IS APPLIED. QUANTITIES, SIZES, FRAMES AND ACCESSORIES TO BE CONFIRMED BY CONTRACTOR.

HVAC EQUIPMENT SCHEDULE

GOODMAN FURNACES / CONDENSING UNITS (ALT. CARRIER, LENNOX, YORK)

MARK	HTG BTU IN	HTG BTU OUT	TOTAL CLG	SENS CLG	CFM @ 0.5"	O.A. CFM	V / ø	FLA	MOCP	MODEL	REMARKS
F1	40,000	36,000	18,000	13,500	600	120	120 / 1	7.8	20	GMVC960403BNA	1,2
C1							208 / 1	7.4	20	GSX140181L	1,2
F2	80,000	72,000	30,000	22,500	1,000	200	120 / 1	7.8	20	GMVC960803BNA	1,2
C2							208 / 1	13.8	30	GSX140301K	1,2
F3	100,000	90,000	48,000	36,000	1,600	320	120 / 1	14.4	20	GMVC961005CNA	1,2,5
C3							208 / 1	21.5	50	GSX140481K	1,2

MITSUBISHI SINGLE ZONE MINI SPLIT SYSTEM (ALT. CARRIER, LG, YORK)

MARK	STYLE	HTG BTU OUT	TOTAL CLG	SENS CLG	CFM @ 0.5"	O.A. CFM	V / ø	FLA	MOCP	MODEL	REMARKS
IU1	WALL	9,600	9,000	6,750	300	60	208 / 1	0.75	20	MSZ-GS09NA	1,2,3
OU1	OUTDOOR							7.2		MUZ-GS09NAHZ	1,2,4
IU2	DUCTED	15,000	12,000	9,000	–	–	208 / 1	0.72	30	SEZ-KD12NA4	1,2
OU2	–							13.7		SUZ-KA12NAHZ	1,2,4
IU3	DUCTED	21,600	18,000	13,500	–	–	208 / 1	0.9	30	SEZ-KD18NA4	1,2
OU3	–							17		SUZ-KA18NAHZ	1,2,4

COOK EXHAUST AND VENTILATION FANS (ATL. BROAN, JENCO, GREENHECK)

MARK	CFM	ESP	DRIVE	RPM	SONES	HP	V / ø	WATTS	MOCP	MODEL	REMARKS
EF1	75	0.125"	DIRECT	750	0.9	–	120 / 1	30	20	GC-128	1
EF2	150	0.125"	DIRECT	1,100	3.0	–	120 / 1	50	20	GC-166	1

1. OR APPROVED EQUAL.
2. WITH PROGRAMMABLE STAT, LO AMBIENT KIT FOR 0° OPERATION.
3. MOUNT INDOOR UNIT WITH TOP AT 7'-0" AFF.
4. INSTALLED WITH HYPER-HEATING FOR 100% HEATING CAPACITY AT 5°F AND 88% HEATING CAPACITY AT -13°F.
5. FOR TWINNED UNITS INSTALL DUCT SMOKE DETECTOR, ACTUATION OF A SMOKE DETECTOR SHALL ACTIVATE A VISIBLE AND AUDIBLE SIGNAL IN AN APPROVED LOCATION. DUCT SMOKE DETECTOR TROUBLE CONDITIONS SHALL ACTIVATE A VISIBLE OR AUDIBLE SIGNAL IN AN APPROVED LOCATION AND SHALL BE IDENTIFIED AS AIR DUCT DETECTOR TROUBLE. COORDINATE LOCATION WITH AUTHORITY HAVING JURISDICTION.

GENERAL NOTES:

1. VERIFY PLUMBING, HVAC, POWER, AND LIGHTING REQUIREMENTS FOR OWNER'S SPECIFIC EQUIPMENT PRIOR TO ROUGH-IN.
2. COORDINATE INSTALLATION OF EQUIPMENT WITH MANUFACTURERS' INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-IN.
3. CONTRACTOR SHALL MAINTAIN FIRE RATING OF ANY PENETRATION AND SHALL SEAL ANY PENETRATION IN A FLOOR, CEILING, OR EXTERIOR WALL.
4. VERIFY RECEPTACLE MOUNTING HEIGHTS AND LOCATIONS WITH OWNER AND ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.
5. THERMOSTATS SHALL BE MOUNTED AT 60" (42" ADA) TO CENTER ABOVE FINISHED FLOOR.

KEYED NOTES:

1. 12x12 EXHAUST WALLCAP WITH BIRDSCREEN, MAINTAIN 10' MINIMUM CLEARANCE FROM FRESH AIR OPENINGS.
2. 10"ø FRESH AIR DUCT WITH MANUAL DAMPER SET TO 200CFM UP TO GOOSENECK/ROOF JACK WITH BIRDSCREEN ON ROOF.
3. 12X12 FRESH AIR LOUVER WITH 8"ø FRESH AIR DUCT WITH MANUAL DAMPER SET TO 100CFM TO FURNACE F1, 8"ø FRESH AIR DUCT WITH MANUAL DAMPER SET TO 125CFM TO FURNACE F2, AND 10"ø FRESH AIR DUCT WITH MANUAL DAMPER SET TO 175CFM TO FURNACE F3.
4. WATER HEATER/FURNACE COMBUSTION AIR AND VENT TO CONCENTRIC VENT KIT THRU WALL/ROOF, MAINTAIN 10' MINIMUM CLEARANCE FROM FRESH AIR OPENINGS. INSTALL STAINLESS STEEL DRIP GUARD WHEN THRU BRICK WALL.
5. REFRIGERANT PIPING TO/FROM INDOOR/OUTDOOR UNITS. PAINT EXTERIOR REFRIGERANT PIPING WITH UV RESISTANT PAINT.

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MO# E-16897

STATE OF MISSOURI — FREDDIE L. MALICOAT — NUMBER E-16897 — REGISTERED PROFESSIONAL ENGINEER — 06-21-24

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Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING

27161 DAVID HALL TRAIL
KIRKSVILLE, MO, 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05-30-24

DESIGNED BY: FLM
DRAWN BY: JDB
CHECKED BY: FLM

SHEET NAME:
HVAC PLAN

SHEET NO:
M-101 4

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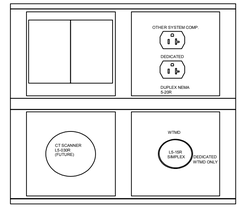
ELECTRICAL EQUIPMENT SCHEDULE

MARLEY ELECTRIC HEATERS (QMARK)

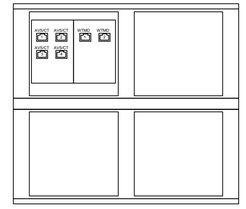
MARK	HTG KW IN	HTG BTU OUT	WEIGHT	DIMENSIONS	V / ø	FLA	MOCP	MODEL	REMARKS
EH1	1.5	5,115	26 LBs	–	120 / 1	12.5	20	E3323TD-RP	1,3,4
EH2	0.5	1,535	7 LBs	42" LONG	120 / 1	3.8	20	CV4512X	1,2,4,5

IF QUANTITY COLUMN IS LEFT BLANK REFER TO PLANS. VERIFY WITH PLANS ALL QUANTITIES OF EQUIPMENT.
1. OR APPROVED EQUAL.
2. WITH IN-LINE VOLTAGE THERMOSTAT.
3. WITH INTEGRAL THERMOSTAT.
4. VERIFY COLOR WITH ARCHITECT AND OWNER PRIOR TO PURCHASE.
5. MOUNT A MINIMUM OF 2-1/2" FROM FINISHED CEILING.

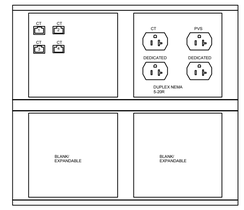
FRONT XRAY FLOOR BOX POWER (A)



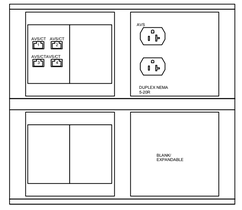
FRONT XRAY FLOOR BOX DATA (A1)



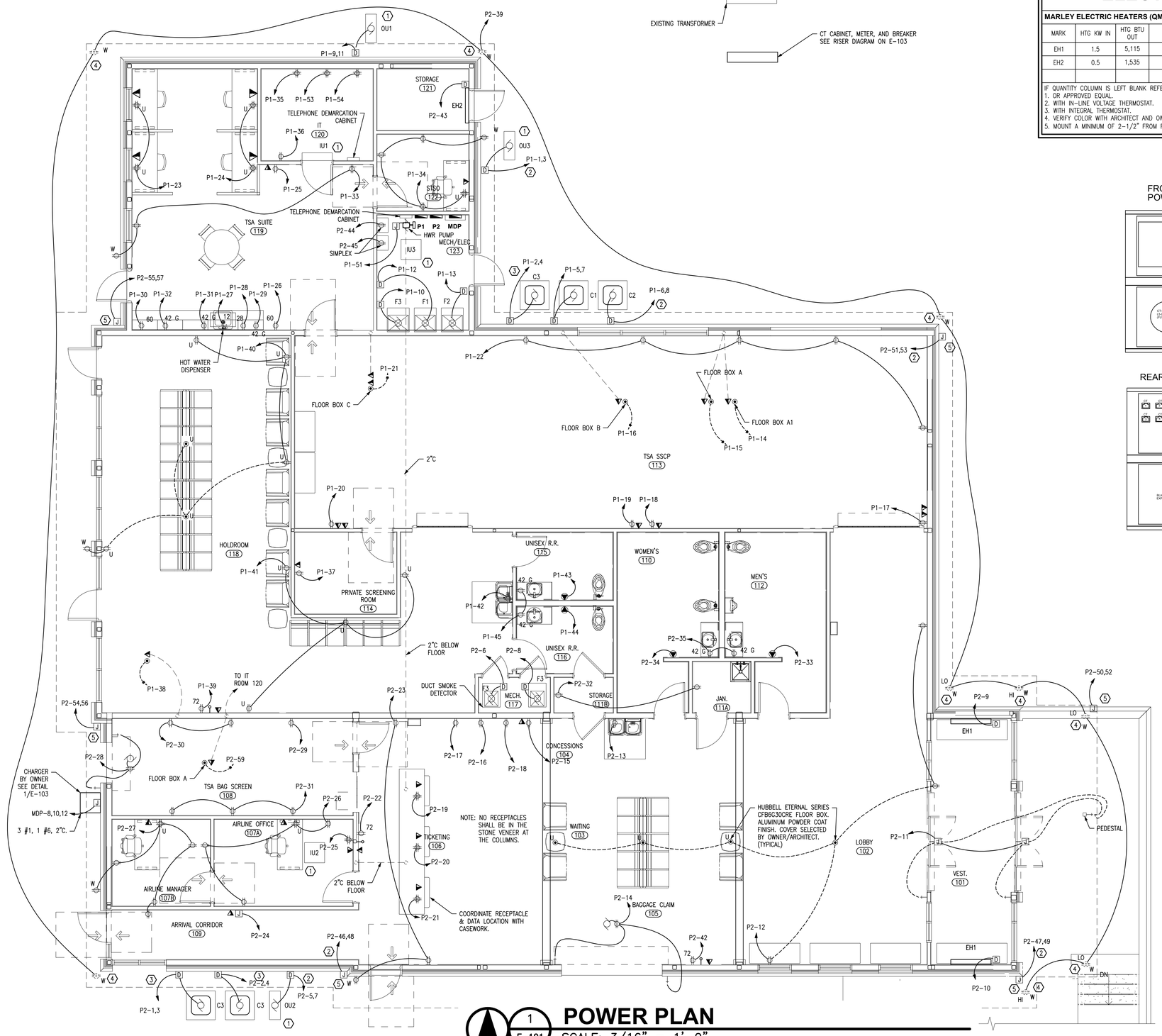
REAR XRAY FLOOR BOX (B)



AVS FLOOR BOX (C)



2 E-101 **TSA FLOOR BOX DETAIL**
SCALE: NO SCALE



1 E-101 **POWER PLAN**
SCALE: 3/16" = 1'-0"

GENERAL NOTES:

1. VERIFY PLUMBING, HVAC, POWER, AND LIGHTING REQUIREMENTS FOR OWNER'S SPECIFIC EQUIPMENT PRIOR TO ROUGH-IN.
2. COORDINATE INSTALLATION OF EQUIPMENT WITH MANUFACTURERS' INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-IN.
3. CONTRACTOR SHALL MAINTAIN FIRE RATING OF ANY PENETRATION AND SHALL SEAL ANY PENETRATION IN A FLOOR, CEILING, OR EXTERIOR WALL.
4. VERIFY RECEPTACLE MOUNTING HEIGHTS AND LOCATIONS WITH OWNER AND ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.
5. RECEPTACLES SHALL BE MOUNTED AT 18" TO BOTTOM ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE ON PLANS.

KEYED NOTES:

1. POWER TO/FROM INDOOR/OUTDOOR UNITS.
2. 2#10, 1#10G (30A-2P BREAKER)
3. 2#6, 1#10G (50A-2P BREAKER)
4. RECEPTACLE IN SOFFIT WITH W.P. COVER. INSTALL ON GFI BREAKER
5. WEATHER PROOF JUNCTION BOX FOR RAYCHEM GM-2XT GUTTER HEAT TRACE TAPE. INSTALL ON GFI BREAKER PER MANUFACTURER'S SPECIFICATIONS.

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ISSUANCE SCHEDULE

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2	06-21-24	BID ADD #4

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO, 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05-30-24

DESIGNED BY: FLM
DRAWN BY: JDB
CHECKED BY: FLM

SHEET NAME:
POWER PLAN

SHEET NO:
E-101 2

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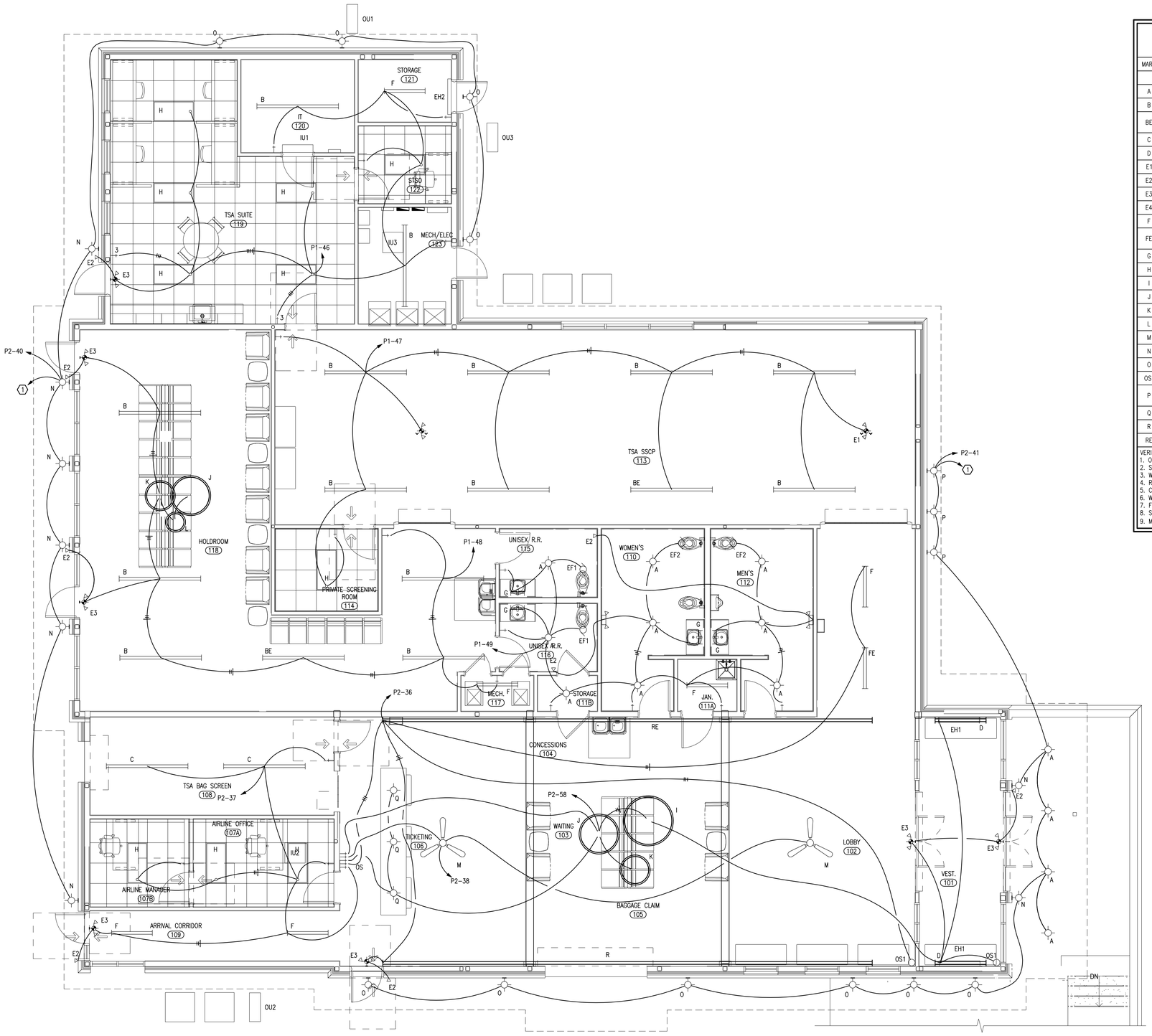

LIGHTING FIXTURE SCHEDULE

MARK	FIXTURE	MANUFACTURER AND MODEL NUMBER	TYPE	LAMPS		MOUNTING	REMARKS
				#	SIZE		
A	CAN	HALO SLD6129S1EMWR	LED	1	7	RECESSED	1,7
B	8' STRIP	DAY-O-LITE PRFL-44-D-FL-40K-HO-8-AC-W-DIM10	LED	1	72	CABLE	1,8
BE	8' STRIP	DAY-O-LITE PRFL-44-D-FL-40K-HO-8-AC-W-DIM10-EPC10	LED	1	72	CABLE	1,3,8
C	8' STRIP	DAY-O-LITE PRFL-44-D-FL-40K-SO-8-AC-W-DIM10	LED	1	56	CABLE	1,8
D	5' STRIP	CREE ST3-WI-5-H-H--35K-L-10V-BK	LED	1	94	WALL	1,8
E1	EMERG/EXIT	WILLIAMS EXIT/EM/LED-R-WHT-D	LED	2	6	SURFACE	1
E2	EGRESS	WILLIAMS RHL-T-WHT-HL-MV	LED	1	2	WALL	1
E3	EMERG/EXIT	WILLIAMS EXIT/EM/LED-R-WHT-RC-D	LED	2	6	SURFACE	1,4
E4	EMERG	WILLIAMS EMER/LED-WHT-RC-D	LED	2	6	SURFACE	1,4
F	4' STRIP	DAY-O-LITE PRFL-44-D-FL-40K-HO-4-AC-W-DIM10	LED	1	36	CABLE	1,8
FE	4' STRIP	DAY-O-LITE PRFL-44-D-FL-40K-HO-4-AC-W-DIM10-EPC10	LED	1	36	CABLE	1,3,8
G	2' STRIP	DAY-O-LITE PRFL-44-D-FL-40K-LO-2-S-W-DIM10	LED	1	10	SURFACE	1
H	TROFFER	WILLIAMS BP-24-LS/8CS-DIM-UNV	LED	1	28	RECESSED	1
I	SPECIALTY	OCL RV1-P1EU-60-MW-BKP-LED2/40K-UNV-#-DM1	LED	1	89	CABLE	1,2
J	SPECIALTY	OCL RV1-P1EU-48-MW-BKP-LED2/40K-UNV-#-DM1	LED	1	64	CABLE	1,2
K	SPECIALTY	OCL RV1-P1EU-36-MW-BKP-LED2/40K-UNV-#-DM1	LED	1	53	CABLE	1,2
L	SPECIALTY	OCL RV1-P1EU-24-MW-BKP-LED2/40K-UNV-#-DM1	LED	1	35	CABLE	1,2
M	CLG FAN	HUNTER DOWNTOWN MODEL: 51592	–	0	33	CEILING	1
N	SCONCE	OCL AU1-010A-18-GW-BKP-LED2/40K-UNV-DM1	LED	1	25	WALL	1,5,6,8
O	SCONCE	AFX DKTW050410L30D2BK	LED	1	12	WALL	1,5,6,8
OS1	CLG SENSOR	WATTSTOPPER LMDX-100	–	0	0	SURFACE	1
P	SCONCE	BASELITE WE14/41/E27/41/LED25W/4K/LDM0-10/CLT4	LED	1	25	WALL	1,5,6,8
Q	PENDANT	LITON DL340B-UE-D10-T35	LED	1	10.4	PENDANT	1,9
R	48' STRIP	CREE ST3-WI-48-H-L-35K-L-10V-BK	LED	1	606	WALL	1,8
RE	48' STRIP	CREE ST3-WI-48-H-L-35K-L-10V-BK-EB	LED	1	606	WALL	1,3,8

VERIFY COLOR AND MOUNTING HEIGHT WITH ARCHITECTURAL PLANS.
1. OR APPROVED EQUAL.
2. SEE ARCHITECTURAL FOR MOUNTING CABLE LENGTH.
3. WITH EMERGENCY BATTERY BACKUP.
4. REMOTE HEADS AS SHOWN.
5. CONTROLLED VIA INTERMATIC STO1 SERIES TIMER AND K4221C PHOTOCONTROL.
6. WET LOCATION APPROVED.
7. FIXTURES IN AWNING DAMP RATED AND CONTROLLED VIA INTERMATIC STO1 SERIES TIMER AND K4221C PHOTOCONTROL.
8. SEE ARCHITECTURAL FOR MOUNTING HEIGHT.
9. MOUNT AT 10' AFF WITH LPCMDL4XXB (XX – STEM LENGTH COORDINATE WITH ARCHITECT AND SLOPED CEILING)

GENERAL NOTES:

1. VERIFY PLUMBING, HVAC, POWER, AND LIGHTING REQUIREMENTS FOR OWNER'S SPECIFIC EQUIPMENT PRIOR TO ROUGH-IN.
2. COORDINATE INSTALLATION OF EQUIPMENT WITH MANUFACTURERS' INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-IN.
3. CONTRACTOR SHALL MAINTAIN FIRE RATING OF ANY PENETRATION AND SHALL SEAL ANY PENETRATION IN A FLOOR, CEILING, OR EXTERIOR WALL.
4. VERIFY RECEPTACLE MOUNTING HEIGHTS AND LOCATIONS WITH OWNER AND ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.
5. LIGHT SWITCHES SHALL BE MOUNTED AT 42" TO CENTER ABOVE FINISHED FLOOR.

KEYED NOTES:

1. CONTROLLED VIA INTERMATIC STO1 SERIES TIMER AND K4221C PHOTOCONTROL.

1 E-102 **LIGHTING PLAN**
SCALE: 3/16" = 1'-0"

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SHEET NAME:
LIGHTING PLAN

SHEET NO:
E-102 2

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P1

VOLTS 120/208 | PHASE 3 | WIRE 4 | MAIN CAPACITY 200 A MLO | BUSS MATERIAL | MOUNTING

A WATTS 17716 | B WATTS 16365 | C WATTS 12812 | TOTAL WATTS 46893

CIRC	LOCATION / DESCRIPTION	BRKR	WATTS	ø	WATTS	BRKR	LOCATION / DESCRIPTION	CIRC
1	OUTDOOR UNIT OU3	30–2	1862	A	2236	50–2	CONDENSING UNIT C3	2
3	–	–	1862	B	2236	–	–	4
5	CONDENSING UNIT C1	20–2	770	C	1436	30–2	CONDENSING UNIT C2	6
7	–	–	770	A	1436	–	–	8
9	OUTDOOR UNIT OU1	20–2	827	B	1728	20–1	FURNACE F3	10
11	–	–	827	C	936	20–1	FURNACE F1	12
13	FURNACE F2	20–1	936	A	500	20–1	TSA SSCP/FLOOR BOX A1	14
15	TSA SSCP/FLOOR BOX A	20–1	500	B	500	20–1	TSA SSCP/FLOOR BOX B	16
17	TSA SSCP/COMPUTER	20–1	250	C	500	20–1	TSA SSCP/BODY SCANNER	18
19	TSA SSCP/BODY SCANNER	20–1	500	A	250	20–1	TSA SSCP/COMPUTER	20
21	TSA SSCP/COMPUTER	20–1	500	B	900	20–1	TSA SSCP/RECEPTACLES	22
23	TSA SUITE/COMPUTERS	20–1	720	C	720	20–1	TSA SUITE/COMPUTERS	24
25	TSA SUITE/COPIER	20–1	500	A	500	20–1	TSA SUITE/REFRIGERATOR	26
27	TSA SUITE/HOT WATER DISP.	20–1	750	B	1500	20–1	TSA SUITE/COFFEE MAKER	28
29	TSA SUITE/MICROWAVE	20–1	1500	C	1500	20–1	TSA SUITE/MICROWAVE	30
31	TSA SUITE/RECEPTACLES	20–1	1500	A	1500	20–1	TSA SUITE/RECEPTACLES	32
33	TSA SUITE/RECEPTACLES	20–1	540	B	1080	20–1	STSO/RECEPTACLES	34
35	IT/RECEPTACLES	20–1	360	C	180	20–1	IT/RECEPTACLES	36
37	PRIVATE SCREENING/RECEPTACLES	20–1	180	A	180	20–1	HOLDROOM/KIOSK	38
39	HOLDROOM/TV	20–1	180	B	1260	20–1	HOLDROOM/RECEPTACLES	40
41	HOLDROOM/RECEPTACLES	20–1	720	C	360	20–1	HOLDROOM/EWC	42
43	UNISEX R.R./HAND DRYER	20–1	1450	A	1450	20–1	UNISEX R.R./HAND DRYER	44
45	UNISEX R.R./RECEPTACLES	20–1	360	B	480	20–1	TSA SUITE/LIGHTS	46
47	TSA SSCP/LIGHTS	20–1	626	C	687	20–1	HOLDROOM/LIGHTS	48
49	RESTROOM/LIGHTS	20–1	856	A	1110	20–2	PARKING LOT LIGHTS*	50
51	HWRP	20–1	52	B	1110	–	–	52
53	IT/RECEPTACLES	20–1	360	C	360	20–1	IT/RECEPTACLES	54

*SEE SHEETS CE100 AND CE200 FOR LOCATION AND SPECIFICATIONS RESPECTIVELY

MDP

VOLTS 120/208 | PHASE 3 | WIRE 4 | MAIN CAPACITY 600 A MLO | BUSS MATERIAL | MOUNTING

A WATTS 43513 | B WATTS 45659 | C WATTS 37695 | TOTAL WATTS 126867

CIRC	LOCATION / DESCRIPTION	BRKR	WATTS	ø	WATTS	BRKR	LOCATION / DESCRIPTION	CIRC
1	PANEL P1	200–3	17716	A	19317	200–3	PANEL P2	2
3	–	–	16365	B	22814	–	–	4
5	–	–	12812	C	18403	–	–	6
7	SPARE	200–3	0	A	6480	125–3	CHARGER	8
9	–	–	0	B	6480	–	–	10
11	–	–	0	C	6480	–	–	12

P2

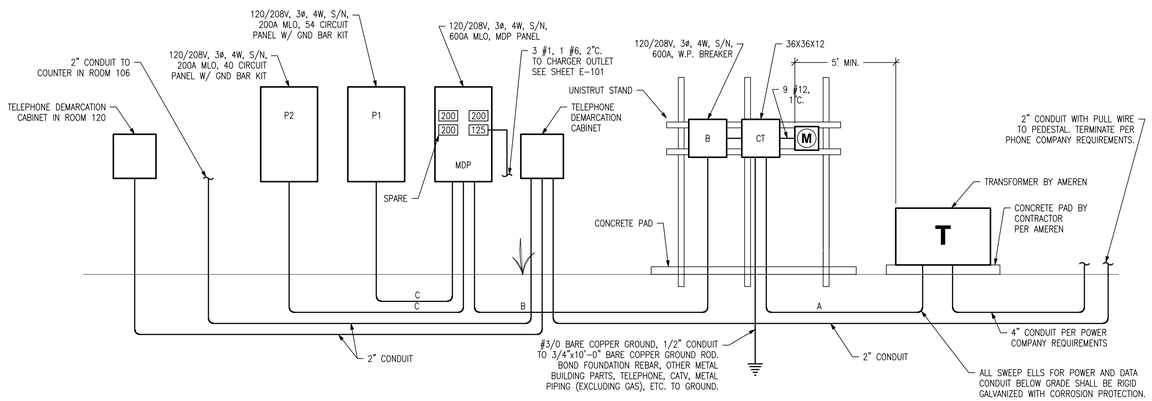
VOLTS 120/208 | PHASE 3 | WIRE 4 | MAIN CAPACITY 200 A MLO | BUSS MATERIAL | MOUNTING

A WATTS 19317 | B WATTS 22814 | C WATTS 18403 | TOTAL WATTS 60534

CIRC	LOCATION / DESCRIPTION	BRKR	WATTS	ø	WATTS	BRKR	LOCATION / DESCRIPTION	CIRC
1	CONDENSING UNIT C3	50–2	2236	A	2236	50–2	CONDENSING UNIT C3	2
3	–	–	2236	B	2236	–	–	4
5	OUDOOR UNIT OU2	30–2	1500	C	1728	20–1	FURNACE F3	6
7	–	–	1500	A	1728	20–1	FURNACE F3	8
9	VEST./EH1	20–1	1000	B	1000	20–1	VEST./EH1	10
11	VEST./DOOR OPERATOR	20–1	400	C	1260	20–1	LOBBY/RECEPTACLES	12
13	LOBBY/EWC	20–1	360	A	500	20–1	BAGGAGE CLAIM/OHD OPENER	14
15	CONCESSIONS/POS	20–1	180	B	1500	20–1	CONCESSIONS/COFFEE MAKER	16
17	CONCESSIONS/REFRIGERATOR	20–1	500	C	180	20–1	CONCESSIONS/RECEPTACLE	18
19	TICKETING/POS	20–1	360	A	360	20–1	TICKETING/POS	20
21	TICKETING/POS	20–1	360	B	180	20–1	TICKETING/TV	22
23	TICKETING/RECEPTACLES	20–1	540	C	1000	20–1	ARRIVAL CORRIDOR MACHINE	24
25	AIRLINE OFFICES/SERVER	20–1	360	A	900	20–1	AIRLINE OFFICES/RECEPTACLES	26
27	AIRLINE OFFICES/RECEPTACLES	20–1	1260	B	500	20–1	TSA BAG SCREEN/OHD OPENER	28
29	TSA BAG SCREEN/RECEPTACLES	20–1	180	C	360	20–1	TSA BAG SCREEN/RECEPTACLES	30
31	TSA BAG SCREEN/RECEPTACLES	20–1	540	A	360	20–1	JANITOR/CLEANING MACHINE	32
33	MENS/HAND DRYER	20–1	1450	B	1450	20–1	WOMENS/HAND DRYER	34
35	RESTROOM/RECEPTACLES	20–1	360	C	1284	20–1	LOBBY/TICKETING/LIGHTS	36
37	TSA BAG SCREEN/LIGHTS	20–1	334	A	660	20–1	LOBBY/TICKETING/FANS	38
39	SOFFIT/RECEPTACLES	20–1	1620	B	198	30–1	EXTERIOR LIGHTS	40
41	EXTERIOR LIGHTS	20–1	398	C	180	20–1	BAGGAGE CLAIM/TV	42
43	STORAGE/EH2	20–1	450	A	180	20–1	MECH/WH1	44
45	MECH/WH1	20–1	180	B	1800	30–2	HEAT TAPE	46
47	HEAT TAPE	30–2	1800	C	1800	–	–	48
49	–	–	1800	A	1467	20–2	HEAT TAPE	50
51	HEAT TAPE	30–2	2091	B	1467	–	–	52
53	–	–	2091	C	1342	20–2	HEAT TAPE	54
55	HEAT TAPE	20–2	1644	A	1342	–	–	56
57	–	–	1644	B	462	20–1	LOBBY/TICKETING/LIGHTS	58
59	TSA BAG SCREEN/FLOOR BOX A	20–1	1500	C	0	20–1	SPARE	60
61	SPARE	20–1	0	A	0	20–1	SPARE	62
63	SPARE	20–1	0	B	0	20–1	SPARE	64
65	SPARE	20–1	0	C	0	20–1	SPARE	66
67	SPARE	20–1	0	A	0	20–1	SPARE	68
69	SPARE	20–1	0	B	0	20–1	SPARE	70
71	SPARE	20–1	0	C	0	20–1	SPARE	72
73	SPARE	20–1	0	A	0	20–1	SPARE	74
75	SPARE	20–1	0	B	0	20–1	SPARE	76
77	SPARE	20–1	0	C	0	20–1	SPARE	78
79	SPARE	20–1	0	A	0	20–1	SPARE	80
81	SPARE	20–1	0	B	0	20–1	SPARE	82
83	SPARE	20–1	0	C	0	20–1	SPARE	84

WIRE SIZE SCHEDULE

MARK	DESCRIPTION	RATING	WIRE SIZE
A	CT CABINET	600–3	2 Ø3"C. EA. W/ 4 #350MCM.
B	MDP	600–3	2 Ø3"C. EA. W/ 4 #350MCM, 1 #3/0 GND.
C	PANELS P1 & P2	200–3	4 #3/0, 1 #6 GND, 3"C.



1 E-103 **ELECTRIC RISER DIAGRAM**

NO SCALE

WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL
720 SOUTH COLORADO BLVD.
SUITE 1200-S
GLENDALE, CO 80246
937.461.0743

FREDDIE L. MALICOAT - ENGINEER
MO# E-16897

ISSUED FOR BID
NOT FOR CONSTRUCTION

ISSUANCE SCHEDULE

NUMBER	DESCRIPTION	DATE
1	BID ADD #2	06-13-24
2	BID ADD #4	06-21-24

Kirksville Regional Airport

KIRKSVILLE REGIONAL AIRPORT
TERMINAL BUILDING
27161 DAVID HALL TRAIL
KIRKSVILLE, MO, 63501

PROJECT NO: MODOT 24-028A-1
DATE ISSUED: 05-30-24

DESIGNED BY: FLM
DRAWN BY: JDB
CHECKED BY: FLM

SHEET NAME:
PANEL SCHEDULES & ELECTRICAL RISER

SHEET NO:
E-103 2

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