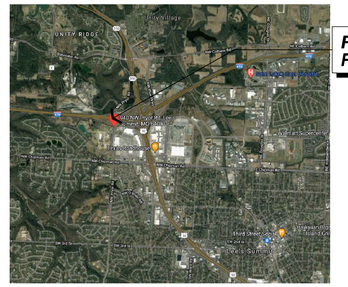

RESPONSIBILITY MATRIX

ITEM	PURCHASED BY:		INSTALLED BY:		LL SCOPE	TENANT SCOPE	STATUS / NOTES
	PET PEOPLE	G.C.	PET PEOPLE	G.C.			
OBTAIN ALL APPLICABLE PERMITS, C OF O		●		●		●	
PERFORM HVAC INSPECTION		●		●		●	
EXISTING SANITARY LINES TO BE SCOPED		●		●		●	
UTILITY FEES (CONNECTION/START UP FEES)		●		●		●	
SEPARATE UTILITIES (ELECTRIC, GAS, WATER)					●	●	
MINIMUM 200 AMP 120/208V ELECTRICAL SERVICE		●			●		
INCOMING GAS SERVICE AND METER		●				●	METER BY GC
1 1/2" MINIMUM INCOMING WATER SERVICE, 40 PSI		●		●		●	METER BY GC
WATER SERVICE BACKFLOW PREVENTER		●		●		●	
DEDICATED 4" SANITARY LINE WITH EXTERIOR TIE-IN		●		●	●		EXISITNG
PLYWOOD TELEPHONE BOARD		●		●		●	
INCOMING TELEPHONE SERVICE		●		●		●	
EXTERIOR WALLS - PENETRATIONS		●		●		●	
TENANT'S EXTERIOR FRONT FACADE		●		●	●		EXISITNG
PAIR OF 36" WIDE RECEIVING/EGRESS DOORS		●		●	●	●	
FROST SLAB AT EXTERIOR DOORS		●		●	●	●	
AT-GRADE DELIVERY DOCK AREA		●		●		●	EXISITNG
STOREFRONT FRAMING AND GLAZING		●		●	●		EXISITNG
PAIR 36" WIDE ALUMINUM/GLASS ENTRY DOORS		●		●			EXISITNG
FACADE SIGNAGE	●			●		●	
CONSTRUCTION OF DEMISING WALLS		●		●	●		
12" HIGH CLEAR ZONE THROUGHOUT SALES AREA		●		●			
INTERIOR DEMOLITION		●		●		●	
EXPOSED, PAINTED ROOF DECK		●		●		●	
INTERIOR CONCRETE FLOOR SLAB		●		●		●	
VESTIBULE (IF REQUIRED BY CODE)		●		●			AIR CURTAIN
GYPSUM BOARD ON PERIMETER SALES WALL		●		●		●	
INTERIOR PARTITIONS		●		●		●	DOG WASH BY TENANT
ALL INTERIOR FINISHES PER TENANT'S PLANS		●		●		●	
INTERIOR DOORS WITH TENANT REQUIRED HARDWARE		●		●		●	DOG WASH BY TENANT
RESTROOM: GRAB BARS/ MIRROR		●		●		●	
RESTROOM: SOAP/ PT/ TP DISPENSER/ MOP HOLDER	●			●		●	
SUPPLY CABINETRY/CASEWORK IN STOCKROOM	●			●		●	
FIRE EXTINGUISHERS		●		●		●	
DRINKING FOUNTAIN	●		●		●		EXISITNG
STORE FIXTURES AND MERCHANDISING HARDWARE	●		●			●	
2X4 EXPOSED FURRING FOR STORE FIXTURE ANCHORING		●		●		●	
CASH WRAP MILLWORK AND HARDWARE	●			●			
HIGH EFFICIENCY HVAC UNITS WITH DUCT SMOKE DETECTORS		●		●	●		
ROOF CURBS AND/OR CURB ADAPTORS FOR ROOF TOP UNITS		●		●	●		
HVAC - INTERIOR DISTRIBUTION DUCTWORK		●		●	●	●	
THERMOSTATS PER TENANT'S PLANS		●		●		●	
AIR BALANCE OF HVAC SYSTEM		●		●		●	
PLUMBING (BRANCH LINES)		●		●		●	
PLUMBING FIXTURES (INCLUDING TANKLESS/HOT WATER TANK)		●		●		●	
SPRINKLER SYSTEM						●	MODIFICATIONS
FIRE ALARM SYSTEM/MONITORING		●		●		●	
REST ROOM FIXTURES		●		●	●		EXISITNG
DOG WASH SINKS	●			●		●	
DOG WASH DRAINS		●		●		●	
MOP SINK		●		●		●	
ELECTRICAL PANELS	●			●		●	
ALL INTERIOR ELEC. DISTRIBUTION, DISTRIBUTION BOXES, ETC.		●		●		●	
OVERHEAD STRIP LIGHTS	●			●		●	
LAY IN CEILING LIGHTS	●			●		●	
ACCENT TRACK LIGHTS	●			●		●	
PENDANT LIGHTS & REGISTERS	●			●		●	
IN-FIXTURE LIGHTS	●			●		●	
ELECTRICAL/ACCESS PANEL FOR FACADE SIGNAGE		●		●		●	
EXTERIOR BUILDING-MOUNTED LIGHT FIXTURES					●		
EMERGENCY, EXIT AND MISCELLANEOUS LIGHT FIXTURES	●			●		●	
DATA CONDUIT (FOR REGISTER SYSTEM) WITH PULL STRINGS		●		●		●	
TELEPHONES	●		●			●	
DATA LINES FOR REGISTER SYSTEM	●		●			●	
CONDUIT AND JUNCTION BOXES FOR LOW VOLTAGE WIRING		●		●		●	

CONTACTS

ARCHITECT
ONYX CREATIVE
25001 EMERY ROAD, SUITE 400
CLEVELAND, OH 44128
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soguinn@OnyxCreative.com

MEP ENGINEERS
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25001 EMERY ROAD, SUITE 410
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216.223.3290
pfitzgerald@bluestreak-consulting.com

TENANT
PET PEOPLE
6950 WORTHINGTON GALENA ROAD
WORTHINGTON, OH 43085
CONTACT: JUSTIN GRIMM
614.529.6736
JGrimm@petpeopleeast.com

*** ALL PROJECT BIDDING IS HANDLED DIRECTLY BY PETPEOPLE BY INVITED BID

PROJECT SUMMARY

THE PROJECT CONSISTS OF THE TENANT INTERIOR FIT-OUT FOR A PET PEOPLE RETAIL SPACE IN A WHITE BOX PREPARED BY THE LANDLORD.

THE WORK OF THIS PHASE INCLUDES APPROXIMATELY 4,339 SQ. FT. SPACE, INCLUDING BUT NOT LIMITED TO HVAC DISTRIBUTION, LIGHTING, DOG WASH, AND CEILINGS.

CODES

BUILDING CODE - 2018 KANSAS BUILDING CODE
MECHANICAL CODE - 2018 KANSAS MECHANICAL CODE
PLUMBING CODE - 2018 KANSAS PLUMBING CODE
ELECTRICAL CODE - 2017 NATIONAL ELECTRIC CODE
ENERGY CONSERVATION CODE - 2018 IECC

CODE SUMMARY

CRITERIA	REQUIREMENTS	KBC 2018 CHAPTER #
TYPE OF CONSTRUCTION	IIB, FULLY SPRINKLERED	KBC SECTION 602
NUMBER OF FLOORS	1	
USE AND OCCUPANCY CLASSIFICATION	M	KBC SECTION 302
OCCUPANT LOAD CALCULATIONS M: 4,339 SF / 60 = 69 OCCUPANTS GROSS FLOOR AREA / OCCUPANTS	4,339 SQ FT / 73 OCCUPANTS	KBC TABLE 1004.1.2
EGRESS REQUIREMENTS (PER AREA)		KBC SECTION 1005.1
SALES AREA EGRESS WIDTH REQUIRED 73 OCCUPANTS x 0.20" PER OCCUPANT = EGRESS WIDTH PROVIDED: 1 PAIR DOORS @ 70" CLEAR + 1 DOOR @ 42" CLEAR TOTAL EGRESS WIDTH PROVIDED:	14.6" 112" PROVIDED (COMPLY)	KBC SECTION 1005.1
EXITS REQUIRED / PROVIDED	2 / 2	KBC TABLE 1021.2(2)
PLUMBING CALCULATIONS		
PLUMBING FIXTURES	1 TOILET / 1 LAV	KBC SECTION 2902.2.3
DRINKING FOUNTAINS REQUIRED = 1 PER 1000 OCCUPANTS	1 WATER BUBBLER	KBC 2902.1
SERVICE SINK REQUIRED = 1	1	

GENERAL NOTES

1. THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, AIA A-201, 2007 IS APPLICABLE TO THE PROJECT AND INCLUDED HERE-IN BY REFERENCE.
2. DO NOT SCALE DRAWINGS. REQUEST CLARIFICATION FROM THE ARCHITECT TO RESOLVE DISCREPANCIES OR TO SUPPLY ADDITIONAL INFORMATION.
3. WORK IS TO BE PERFORMED IN ACCORDANCE WITH APPLICABLE CODES, CONDITIONS STATED ON THE PERMIT DOCUMENTS, LOCAL ORDINANCES, THE U.S. DEPARTMENT OF JUSTICE 2010 ADA STANDARDS, AND THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION (AHJ).
4. WOOD NOT CLASSIFIED AS INTERIOR FINISH MATERIAL SHALL BE FIRE RETARDANT TREATED. USE AN EXTERIOR GRADE FRT PRODUCT IN EXTERIOR WALL CONSTRUCTION, ROOF RELATED CONSTRUCTION AND FLASHING CONDITIONS.
5. WHERE EXISTING STRUCTURAL STEEL IS PROTECTED WITH A FIREPROOFING MATERIAL, PROTECT DURING DEMOLITION, ALTERATION AND CONSTRUCTION. PATCH AND REPAIR ANY MISSING OR DAMAGED FIREPROOFING TO MAINTAIN PROTECTION OF THE STRUCTURE.
6. AT PENETRATIONS THROUGH FIRE RATED ASSEMBLIES, PROVIDE PROTECTION MEETING THE REQUIREMENTS OF ASTM E-814 AND BEARING THE APPROPRIATE U.L. LABEL FOR THE CONDITION.
7. DESIGN & SELECTION OF SUPPORTS, BRACES, ANCHORS, ATTACHMENTS AND RELATED FASTENERS, UNLESS SHOWN ON THE DRAWINGS OR IN THE SPECIFICATIONS, IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR, UTILIZING INDUSTRY STANDARD MATERIALS AND METHODS SUITABLE TO THE CONDITION.
8. WALL AND CEILING MOUNTED ITEMS, INCLUDING BUT NOT LIMITED TO REGISTERS, DIFFUSERS, GRILLES, SPEAKERS, CLEAN-OUTS AND COVER PLATES, WHETHER FACTORY PRE-FINISHED OR NOT, WHICH DO NOT MATCH THE ADJACENT WALL OR CEILING COLOR SHALL BE FIELD PAINTED, UNLESS OTHERWISE NOTED. COLOR AND FINISH TO BE APPROVED BY THE ARCHITECT.
9. COMPLY WITH SPECIAL WORKING CONDITIONS RELATING TO THE PROJECT, INCLUDING BUT NOT LIMITED TO REQUIREMENTS FOR TEMPORARY PROTECTION, TRASH MANAGEMENT, NOISE, LIGHT, DUST AND POLLUTION CONTROL, AND LIMITATIONS ON WORKING HOURS.
10. ALL CONTRACTORS AND SUBS ARE TO RECEIVE AND REVIEW THE ENTIRE CONSTRUCTION SET PRIOR TO CONSTRUCTION AND VERIFY THEY ARE WORKING FROM THE APPROVED PERMIT SET AND/OR LATEST REVISION.
11. VERIFY ALL FIRE ALARM WORK WITH LLD PRIOR TO COMMENCING WORK.
12. SUBMITTALS: THE CG TO PROVIDE COVER SHEET WITH GC REVIEW STAMP AND ROOM FOR ARCHITECT/ENGINEER STAMP.
13. SUBSTITUTIONS: ALL SUBSTITUTIONS SHALL BE SUBMITTED INDEPENDENTLY AND SEPARATE FROM OTHER SUBMITTALS WITH A "REQUEST FOR SUBSTITUTION" LETTER. THE SUBMITTAL MUST INCLUDE THE ORIGINAL DESIGN CUT SHEETS ALONG WITH THE SUBSTITUTIONS CUT SHEETS BOTH HIGHLIGHTED TO SHOW COMPLIANCE.

PetPeople

TENANT IMPROVEMENTS

SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7,
LEE'S SUMMIT, MO 64081

DRAWING INDEX

		REVISIONS			
ARCHITECTURAL		04/09/2019	04/17/2019	-	-
CS1.0	COVER SHEET				
A0.10	SPECIFICATIONS				
A0.11	SPECIFICATIONS				
A0.12	SPECIFICATIONS				
A0.13	SPECIFICATIONS				
A0.14	SPECIFICATIONS				
D1.0	DEMOLITION PLAN	△1			
A1.0	FLOOR PLAN, WALL TYPES	△1			
A2.0	ENLARGED PLAN, ELEVATIONS & DETAILS	△1			
A3.0	REFLECTED CEILING PLAN				
A4.0	INTERIOR ELEVATIONS				
A4.1	INTERIOR/EXTERIOR ELEVATIONS				
A5.0	SCHEDULES AND DETAILS				
A6.0	FIXTURE PLAN/ LIFE SAFETY PLAN				
MECHANICAL					
M1.0	MECHANICAL PLAN				
M2.0	MECHANICAL DETAILS & SCHEDULES				
MP1.0	MECHANICAL & PLUMBING SPECIFICATIONS				
MP1.1	MECHANICAL & PLUMBING SPECIFICATIONS				
PLUMBING					
P1.0	PLUMBING PLAN, DETAILS	△1			
P2.0	ISOMETRIC AND SCHEDULES	△1			
ELECTRICAL					
E1.0	LIGHTING PLAN				
E1.1	LIGHTING SCHEDULE				
E2.0	POWER PLAN	△1			
E2.1	EQUIPMENT SCHEDULES				
E3.0	ELECTRICAL SCHEDULES LEGEND &DETAILS				
E4.0	ELECTRICAL SPECIFICATIONS				
E4.1	ELECTRICAL SPECIFICATIONS				
E4.2	ELECTRICAL SPECIFICATIONS				

LOCATION MAP

SITE REFERENCE PLAN

onyx | creative
25001 Emery Road, Suite 400
Cleveland, Ohio 44128
216.223.3200 onyxcreative.com

FRED MARCULIS
A-2012004044

8/11/21

PetPeople

SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.:	18894
Drawn By:	SK

Date	Issue
07/19/2021	Bid/ Permit
07/31/2021	△1 Revision 1

CS1.0

COVER SHEET

SECTION 00 7200 – GENERAL CONDITIONS

FORM OF GENERAL CONDITIONS

AIA Document A201, General Conditions of the Contract for Construction, 2007 Edition.

SECTION 01 2000 – PRICE AND PAYMENT PROCEDURES

1.01 SCHEDULE OF VALUES

A. Submit a printed schedule on AIA Form G703 – Application and Certificate for Payment Continuation Sheet. Contractor's standard form or electronic media printout will be considered.

1.02 APPLICATIONS FOR PROGRESS PAYMENTS

A. Form: AIA G702 Application and Certificate for Payment and AIA G703 – Continuation Sheet including continuation sheets when required.

1.03 MODIFICATION PROCEDURES

A. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions as specified.

1.04 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.

B. Application for Final Payment will not be considered until the following have been accomplished:
   1. All closeout procedures specified.
   2. Final waivers of lien shall be submitted.

SECTION 01 3000 – ADMINISTRATIVE REQUIREMENTS

1.02 PROJECT COORDINATION

A. Provide for mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities. During construction, coordinate use of site and facilities.

B. Establish procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.

C. Coordinate the use of temporary utilities and construction facilities.

D. Coordinate field engineering and layout work.

F. Make the submittals to Architect, where required by the Contract Documents, through the General Contractor.
   1. Allow 10 business days for Architect's review.

2.01 PROJECT MEETINGS

A. Schedule and administer meetings throughout progress of the Work.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings. Distribute meeting minutes to Owner and Architect.

2.02 CONSTRUCTION PROGRESS SCHEDULE

A. Prepare detailed construction schedule.

2.03 PROGRESS PHOTOGRAPHS

A. Submit photographs with each application for payment, taken not more than 3 days prior to submission of application for payment.

2.04 REQUESTS FOR INFORMATION (RFI)

A. A standard RFI form shall be utilized, and an electronic version of the RFI form is available from the architect.

B. Response to an RFI is not authorization for a change in Contract Sum or a change in Contract Time. If either are affected, indicate on the RFI or attached documentation, and proceed in accordance with provisions of Section 01 2000 for Modification Procedures.

2.05 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
   1. Product data, Shop drawings, Samples for selection, Samples for verification.

B. Samples will be reviewed only for aesthetic, color, or finish selection.

2.06 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data, Certificates, Test reports, Inspection reports, Manufacturer's instructions, Manufacturer's field reports.

B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

2.07 NUMBER OF COPIES OF SUBMITTALS

A. Documents for Review: Submit one copy electronically in.pdf file format.

B. Documents for Information: Submit one copy electronically in.pdf format.

C. Samples: Submit the number specified in individual specification sections, but not less than 3; one of which will be retained by Architect.

2.08 SUBMITTAL PROCEDURES

A. Transmit electronic submittals via e-mail. Include in the e-mail identification of the attachments as a submittal for review or for information. Do not include questions, comments, information or attachments pertaining to other than the submittal being sent in any submittal e-mail.
   1. MAXIMUM 8MB ATTACHMENT SIZE.
   2. Scans are to be of suitable resolution so as to be legible in all respects, but not less than 200 x 200 DPI
   3. Information originally in color is to be scanned and submitted in color.

B. Transmit samples and other submittals that cannot be converted to electronic format with the Contractor's standard transmittal form.

C. The Architect and the architect's consultants will not accept submittals from subcontractors and suppliers

D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
   1. Submittals not bearing the contractor's approval will be returned with no action taken.

E. Make submittals that require field verification or field measurements only when progress of the work is complete to the point where verification and measurements can be performed and such information is included on the submittal.

F. For each submittal for review, allow 10 days for response.

G. Clearly identify variations from Contract Documents on the submittal.

H. Identify Product or system limitations which may be detrimental to successful performance of the completed Work.

I. When revised for resubmission, identify all changes made since previous submission.

J. Submittals not requested in the specifications will not be recognized or processed, and may be returned or discarded at the Architect's option.

SECTION 01 4000 – QUALITY REQUIREMENTS

1.01 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

1.02 TESTING AND INSPECTION AGENCIES

A. Owner will employ services of an independent testing agency to perform certain code required special testing and inspection.

B. Contractor shall employ and pay for services of an independent testing agency to perform other specified testing and inspection.

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have Work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances except where industry standard tolerances are more restrictive. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

3.03 TESTING AND INSPECTION

A. See individual specification sections for testing and inspection required.

B. Testing Agency Duties:
   1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   2. Perform specified sampling and testing of products in accordance with specified standards.
   3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   4. Promptly notify Architect and Contractor of observed irregularities or non-conformance of Work or products.
   5. Perform additional tests and inspections required by Architect.
   6. Submit reports of all tests/inspections specified.

C. Limits on Testing/Inspection Agency Authority:
   1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency may not approve or accept any portion of the Work.
   3. Agency has no authority to stop the Work.

D. Contractor Responsibilities:
   1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
   2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
   3. Provide testing and inspection agency sufficient notice prior to expected time for operations requiring testing/inspection services.

E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency.

F. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.

3.05 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.

3.06 CORRECTION

A. Replace Work or portions of the Work not conforming to specified requirements.

SECTION 01 5000 – TEMPORARY FACILITIES, CONTROLS & SIGNS

1.01 TEMPORARY UTILITIES

A. Provide and pay for electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.

B. Provide, maintain, and pay for telecommunications services including internet connection to field office, through duration of project.

1.02 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways for public rights-of-way and to maintain safe public access to and egress from existing building.

C. Provide protection for plants designated to remain. Replace damaged plants.

1.03 FENCING

A. Commercial grade chain link fence. Provide 6 foot high.

1.04 EXTERIOR ENCLOSURES

A. Provide temporary weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.
   1. When the project site or portions there-of is to be occupied during construction, provide temporary insulated weather tight closure.

1.05 INTERIOR ENCLOSURES

A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.

B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces, unless otherwise indicated on the drawings. Maximum flame spread rating of 25 in accordance with ASTM E84.

1.06 SECURITY

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

1.07 VEHICULAR ACCESS AND PARKING

A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.

B. Coordinate access and haul routes with governing authorities and Owner.

C. Provide and maintain access to fire hydrants.

D. Provide means of removing mud from vehicle wheels before entering streets.

E. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.08 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash from site periodically.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.09 FIELD OFFICES

A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack and drawing display table.

B. Provide space for Project meetings, with table and chairs to accommodate 10 persons.

1.10 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.

B. Clean and repair damage caused by installation or use of temporary work.

C. Restore existing facilities used during construction to original condition.

D. Restore new permanent facilities used during construction to specified condition.

1.11 PROJECT IDENTIFICATION SIGN

A. One painted sign, 48 sq ft area, bottom 6 feet above ground.

B. Content:
   1. Project title, logo and name of Owner as indicated on Contract Documents.
   2. Names and titles of Architect and Consultants.
   3. Name of Prime Contractor.

SECTION 01 6000 – PRODUCT REQUIREMENTS

2.01 PRODUCTS

A. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

B. Provide new products unless specifically required or permitted by the Contract Documents.

2.02 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

D. Specifications are, in general, written to be non-proprietary, however; where specific products are required, for example a certain size, color, texture, configuration or other characteristic, manufacturer and product information are provided on the drawings in the form of notes or schedules as appropriate.
   1. Substitutions for products so indicated will be considered in accordance with "Substitution Procedures" of this specification Section.

2.03 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections. Deliver and place in location as directed; obtain receipt prior to final payment.

3.01 SUBSTITUTION PROCEDURES

A. A request for substitution constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
   2. Will provide the same warranty for the substitution as for the specified product.
   3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.
   5. Will reimburse Owner and Architect for review or redesign services associated with substitution.

B. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without prior written request, or when acceptance will require revision to the Contract Documents.

C. Substitution Submittal Procedure:
   1. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
   2. The Architect will notify Contractor in writing of decision to accept or reject request.

3.02 OWNER-SUPPLIED PRODUCTS

A. Owner's Responsibilities:
   1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
   2. Arrange and pay for product delivery to site.
   3. Submit claims for transportation damage and replace damaged, defective, or deficient items.
   4. Arrange for manufacturers' warranties, inspections, and service.

B. Contractor's Responsibilities:
   1. Review Owner reviewed shop drawings, product data, and samples.
   2. Receive and unload products at site; inspect for completeness or damage and report damaged, defective, or deficient items to Owner.
   3. Handle, store, install and finish products.
   4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

3.04 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Prevent contact with material that may cause corrosion, discoloration, or staining.

SECTION 01 7000 – EXECUTION REQUIREMENTS

1.01 QUALIFICATIONS

A. For demolition work, employ a firm specializing in the type of work required. Minimum of 5 years of experience.

B. For survey work, employ a land surveyor registered in state where project is located.

C. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in state where project is located.

D. For design of temporary shoring and bracing, employ a Professional Engineer experienced in design of this type of work and licensed in state where project is located.

1.02 PROJECT CONDITIONS

A. Comply with Safeguards During Construction requirements as outlined in the International Building Code, Chapter 33, edition as adopted at the project location.

B. For demolition work comply with ANSI A10.6.

C. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

D. Protect site from puddling or running water.

E. Protect areas not undergoing alteration as specified for protection of installed work.

F. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

G. Dust Control: Execute work by methods to minimize raising dust from demolition or construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.

H. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
   1. Minimize amount of bare soil exposed at one time.
   2. Provide temporary measures such as berms, dikes, and drains, to manage water flow.
   3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
   4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

I. Noise Control: Provide methods, means, and facilities to minimize noise produced by demolition or construction operations. Comply with local requirements for noise control.

J. Pest and Insect Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

K. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

L. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by demolition or construction operations.

1.03 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Notify affected utility companies and comply with their requirements.

C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of work of separate sections.

G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

3.04 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Do not scale drawings. Request clarifications from the Architect.

C. Promptly notify Architect of any discrepancies discovered.

D. Contractor shall locate and protect survey control and reference points.

E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

F. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.

G. Utilize recognized engineering survey practices.

H. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
   2. Grid or axis for structures.
   3. Building foundation, column locations, ground floor elevations.

3.05 GENERAL INSTALLATION REQUIREMENTS

A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.

B. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

F. Make neat transitions between different surfaces, maintaining texture and appearance.

G. Do not install products that are defective, including warped, bowed, dented, chipped, cracked or broken members, and members with damaged finishes.

3.07 CUTTING AND PATCHING

A. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Provide openings for penetration of mechanical, electrical, and other services.
   4. Match work that has been cut to adjacent work.
   5. Repair areas adjacent to cuts to required condition.
   6. Repair new work damaged by subsequent work.
   7. Remove samples of installed work for testing when requested.
   8. Remove and replace defective and non-conforming work.

B. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

C. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements; employ skilled and experienced installer to perform cutting for other sight exposed surfaces.

D. Examine areas to be cut or core drilled for presence of concealed utilities and structural elements including piping, electrical distribution, reinforcing steel and post-tensioning cables. Utilize x-ray equipment where necessary.

E. Cut rigid materials using masonry saw or core drill.

F. Restore work with new products in accordance with requirements of Contract Documents.

G. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material to maintain fire rating.

I. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.
   4. When finish cannot be matched, refinish entire surface to nearest intersections.

3.08 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.09 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

F. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.10 SYSTEM STARTUP

A. Coordinate schedule for start-up of various equipment and systems.

B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.

C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

D. Verify that wiring and support components for equipment are complete and tested.

E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

3.11 DEMONSTRATION AND INSTRUCTION

A. Demonstrate operation and maintenance of products to Owner's personnel prior to date of Substantial Completion.

B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.

C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.

E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

3.12 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.13 FINAL CLEANING

A. Execute final cleaning prior to Substantial Completion. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.

B. Use cleaning materials that are nonhazardous.

C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

F. Replace filters of operating equipment.

G. Clean debris from roofs, gutters, downspouts, and drainage systems.

H. Clean site; sweep paved areas, rake clean landscaped surfaces.

I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.14 CLOSEOUT PROCEDURES

A. In addition to the requirements of AIA A201, General Conditions of the Contract for Construction, comply with the following:
   1. Make submittals that are required by governing or other authorities. Provide copies to Owner.
   2. Comply with requirements of Section 01780, Closeout Submittals.
   3. Notify Architect when work is considered ready for Substantial Completion.
   4. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for review.
   5. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Owner-occupied areas.
   6. Complete items of work determined by final inspection.

3.15 MAINTENANCE

A. Provide service and maintenance of components indicated in specification sections.

B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.

C. Furnish service and maintenance of components indicated in specification sections.

D. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

E. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.

F. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

SECTION 01 7800 – CLOSEOUT SUBMITTALS

1.01 SUBMITTALS

A. Project Record Documents: Submit documents to Owner when submitting final application for payment.

B. Operation and Maintenance Data: Submit two sets of final documents in final form.

C. Warranties and Bonds: Submit prior to final Application for Payment.

D. Certificate of Occupancy: Submit to owner when requesting Substantial Completion inspection

3.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work: including but not limited to, Drawings, Specifications, Addenda, Change Orders, and reviewed submittals.

B. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction.

3.02 OPERATION AND MAINTENANCE DATA

A. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.
   2. Information for re-ordering custom mixed or manufactured products.
   3. Manufacturer's instructions for Care and Maintenance.

E. Moisture protection and weather-exposed products; Provide manufacturer recommendations for inspections, maintenance, and repair.

F. For Each Item of Equipment and Each System, provide the manufacturer's installation, operation and maintenance manuals. Include test and balancing reports.

3.03 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.

SECTION 03 3000 – CAST-IN-PLACE CONCRETE

1.01 SUBMITTALS

A. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions. For curing compounds, provide data on method of removal in the event of incompatibility with floor covering adhesives.

B. Mix Design: Submit proposed concrete mix design.

1.02 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.

B. Follow recommendations of ACI 305R when concreting during hot weather.

C. Follow recommendations of ACI 306R when concreting during cold weather.

2.01 FORMWORK

A. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance.
   2. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
   3. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT

A. Reinforcing Steel: ASTM A615/A615M Grade 60 (420).
   1. Type: Deformed billet-steel bars.
   2. Finish: Unfinished, unless otherwise indicated.

B. Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain type.
   1. Form: Flat Sheets.
   2. Mesh Size: 6 x 6.
   3. Wire Gage: W 1.4 x W 1.4.

C. Reinforcement Accessories:
   1. Tie Wire: Annealed, minimum 16 gage.
   2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

onyx | creative
25001 Emery Road, Suite 400
Cleveland, Ohio 44128
216.223.3200 onyxcreative.com

8/11/21

PetPeople

SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.:	19894
Drawn By:	SO
Date	Issue
07/19/2021	Bid/ Permit

A0.10

SPECIFICATIONS

2.03 CONCRETE MATERIALS
- A. Cement: ASTM C150, Type I – Normal Portland type.
  - 1. Acquire all cement for entire project from same source.
- B. Fine and Coarse Aggregates: ASTM C 33.
  - 1. Acquire all aggregates for entire project from same source.
- C. Water: Clean and not detrimental to concrete.
- D. Fiber Reinforcement: Alkali–resistant polypropylene complying with ASTM C1116/C1116M.
  - 1. Fiber Length: 1.5 inch, nominal.

2.04 ADMIXTURES
- A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
- B. Air Entrainment Admixture: ASTM C260/C260M.
- C. High Range Water Reducing Admixture: ASTM C494/C494M Type F.
- D. Accelerating Admixture: ASTM C494/C494M Type C.
- E. Retarding Admixture: ASTM C494/C494M Type B.

2.05 ACCESSORY MATERIALS
- A. Underslab Vapor Retarder: Multi–layer, fabric–, cord–, grid–, or aluminum–reinforced polyethylene or equivalent, complying with ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. The use of single ply polyethylene is prohibited.
  - 1. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations in vapor retarder.
- B. Non–Shrink Cementitious Grout: Premixed compound consisting of non–metallic aggregate, cement, water reducing and plasticizing agents.
  - 1. Minimum Compressive Strength at 48 Hours: 2,400 psi.
  - 2. Minimum Compressive Strength at 28 Days: 7,000 psi.

2.06 BONDING AND JOINTING PRODUCTS
- A. Latex Bonding Agent: Non–redispersable acrylic latex, complying with ASTM C1059 Type II.
- B. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.

2.07 CURING MATERIALS
- A. Curing Compound, Naturally Dissipating: Clear, water–based, liquid membrane–forming compound, that dissipates within 3 to 5 weeks; complying with ASTM C309.

2.08 CONCRETE MIX DESIGN
- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
- B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
  - 1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.
- C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.
- D. Fiber Reinforcement: Add to mix at rate of 1.5 pounds per cubic yard, or as recommended by manufacturer for specific project conditions.
- E. Normal Weight Concrete:
  - 1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: As scheduled.
  - 2. Cement Content: Minimum 540 lbs/cubic yd.
  - 3. Total Air Content: 4 percent, determined in accordance with ASTM C173/C173M.
    - a. 5% minimum to 7% maximum for exterior concrete.
  - 4. Maximum Slump: 3 inches before water reducing admixture.

2.09 MIXING
- A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685. Mix each batch not less than 1–1/2 minutes and not more than 5 minutes.
- B. Transit Mixers: Comply with ASTM C94/C94M.

3.01 EXAMINATION
- A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION
- A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
- B. Verify that forms are clean before applying release agent.
- C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
- D. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.
  - 1. Use latex bonding agent only for non–load–bearing applications.
- E. Dowel new concrete to existing concrete. Drill 6 inch deep holes into existing concrete, insert 12 inch long #4 steel dowels, and install with adhesive anchor system per manufacturers recommendations. Space dowels 24" o.c., 12" o.c. for slabs greater than 4 inches thick.
- F. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS
- A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.
- B. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.
  - 1. Locate reinforcement in top third of slab with 3/4 inch minimum cover.
  - 2. Lap reinforcement one wire space plus 2 inches minimum.
- C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.04 PLACING CONCRETE
- A. Place concrete in accordance with ACI 304R.
- B. Place concrete for floor slabs in accordance with ACI 302.1R.
- C. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- D. Ensure reinforcement, inserts, waterstops, and embedded parts will not be disturbed during concrete placement.
- E. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high–pressure water jetting.
- F. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.05 SLAB JOINTING
- A. Locate joints as indicated on the drawings.
- B. Anchor joint fillers and devices to prevent movement during concrete placement.
- C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
- D. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 1 to 4 hours after placing with an early–enty dry–cut saw; use 3/16 inch thick blade and cut 1 inch deep but not less than one quarter (1/4) the depth of the slab.

3.06 FLOOR FLATNESS AND LEVELNESS TOLERANCES
- A. Maximum Variation of Surface Flatness for interior floor slabs: 1/8 inch in 10 ft., unless indicated otherwise on drawings.
- B. Correct the slab surface if tolerances are less than specified.
- C. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re–measure corrected areas by the same process.

3.07 CONCRETE FINISHING
- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
- C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
  - 1. Grout Cleaned Finish: Wet areas to be cleaned and apply grout mixture by brush or spray; scrub immediately to remove excess grout. After drying, rub vigorously with clean burlap, and keep moist for 36 hours.
- D. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
  - 1. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI 302.1R; thin floor coverings include carpeting, resilient flooring, seamless flooring, thin set quarry tile, and thin set ceramic tile.
  - 2. Other Surfaces to Be Left Exposed: "Steel trowel" as described in ACI 302.1R, minimizing burnish marks and other appearance defects.
- E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.

3.08 CURING AND PROTECTION
- A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Surfaces Not in Contact with Forms, use one or a combination of the following methods:
  - 1. Slabs and Floors To Receive Adhesive–Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to flooring manufacturer's satisfaction.
  - 2. Curing Compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.09 FIELD QUALITY CONTROL
- A. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.
- B. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.
- C. Compressive Strength Tests: ASTM C39/C39M. For each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cu yd or less of each class of concrete placed.
- D. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
- E. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.10 DEFECTIVE CONCRETE
- A. Defective Concrete: Repair or replace concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

3.11 SCHEDULE – CONCRETE TYPES AND FINISHES
- A. Foundations: 3,000 pounds per square inch 28 day concrete.
- B. Slab on Grade: 4,000 psi 28 day concrete, fiber reinforced, steel trowel finish.
- C. Light Pole Supports: 4,000 psi 28 day concrete, grout cleaned finish.

SECTION 06 1000 – ROUGH CARPENTRY

1.01 SUBMITTALS
- A. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.02 DELIVERY, STORAGE, AND HANDLING
- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.

2.01 GENERAL REQUIREMENTS
- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
  - 1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
  - 2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
- B. Lumber fabricated from old growth timber is not permitted.

2.02 DIMENSION LUMBER
- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S–dry or MC19.
- C. Miscellaneous Blocking, Nailers, and Furring. Lumber: S4S, No. 2 or Standard Grade. Boards: Standard or No. 3.

2.03 CONSTRUCTION PANELS
- A. Roof Sheathing: Any PS 2 type, rated Structural I Sheathing. Bond Classification: Exterior. Span Rating: 60. Performance Category: 3/4 PERF CAT.
- B. Wall Sheathing: Any PS 2 type. Bond Classification: Exterior. Grade: Structural I Sheathing. Span Rating: 24. Performance Category: 5/8 PERF CAT.
- C. Wall Sheathing: Glass mat faced gypsum, ASTM C1177/C1177M, square long edges, 5/8 inch. At Assemblies Indicated with Fire–Rating: Use type required by indicated tested assembly.
- D. Insulated Wall Sheathing: Extruded polystyrene foam plastic, ASTM C 578, Type IV; tongue and groove long edges; 3/4 inch thick, unless noted otherwise.
- E. Communications and Electrical Room Mounting Boards: PS 1 A–D plywood; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

2.04 ACCESSORIES
- A. Fasteners and Anchors: Metal and Finish: Hot–dipped galvanized steel per ASTM A 153/A 153M for exterior, roof related and preservative–treated wood locations, unfinished steel elsewhere.

2.05 FACTORY WOOD TREATMENT
- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 – Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
  - 1. Fire–Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
  - 2. Preservative–Treated Wood: Provide lumber and plywood marked or stamped by an ALSC–accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.
- B. Fire Retardant Treatment:
  - 1. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread rating of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
    - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
    - b. Do not use treated wood in direct contact with the ground.
  - 2. Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread rating of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
    - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
    - b. Treat rough carpentry items as indicated.
    - c. Do not use treated wood in applications exposed to weather or where the wood may become wet.
- C. Preservative Treatment:
  - 1. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative to 0.25 lb/cu ft retention.
    - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
    - b. Treat lumber in contact with roofing, flashing, or waterproofing.
    - c. Treat lumber in contact with masonry or concrete.
    - d. Treat lumber less than 18 inches above grade.
      - 1) Treat lumber in other locations as indicated.
  - 2. Preservative Pressure Treatment of Plywood Above Grade: AWPA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative to 0.25 lb/cu ft retention.
    - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
    - b. Treat plywood in contact with roofing, flashing, or waterproofing.
    - c. Treat plywood in contact with masonry or concrete.
    - d. Treat plywood less than 18 inches above grade.
    - e. Treat plywood in other locations as indicated.

3.01 INSTALLATION – GENERAL
- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.02 BLOCKING, NAILERS, AND SUPPORTS
- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.
- C. In walls, provide blocking attached to studs as backing and support for wall–mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- D. Where ceiling–mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- E. Specifically, provide the following non–structural framing and blocking:
  - 1. Handrails.
  - 2. Grab bars.
  - 3. Toilet room accessories.

3.03 ROOF–RELATED CARPENTRY
- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

3.04 INSTALLATION OF CONSTRUCTION PANELS
- A. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
  - 1. At long edges use sheathing clips where joints occur between roof framing members.
  - 2. Screw panels to framing; staples are not permitted.
- B. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails, screws, or staples.
- C. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
  - 1. At fire–rated walls, install board over wall board indicated as part of the fire–rated assembly.
  - 2. Where boards are indicated as full floor–to–ceiling height, install with long edge of board parallel to studs.
  - 3. Install adjacent boards without gaps.

3.05 SITE APPLIED WOOD TREATMENT
- A. Apply preservative treatment compatible with factory applied treatment at site–sawn cuts, complying with manufacturer's instructions.
- B. Allow preservative to dry prior to erecting members.

3.06 TOLERANCES
- A. Variation from Plane (Other than Floors): 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

SECTION 06 2000 – FINISHED CARPENTRY

1.01 SECTION INCLUDES
- A. Finish carpentry items.
- B. Wood door frames, glazed frames.
- C. Wood standing and running trim.
- D. Plastic laminate panels.

1.02 SUBMITTALS
- A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories. Provide the information required by AWI/AWMAC/WI Architectural Woodwork Standards.
- B. Samples: Submit two samples of wood trim 6 inch long.

1.03 QUALITY ASSURANCE
- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of experience.

2.01 FINISH CARPENTRY ITEMS
- A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI Architectural Woodwork Standards for Custom Grade.
- B. Surface Burning Characteristics: Provide materials having fire and smoke properties as required by applicable code.

2.02 SHEET MATERIALS
- A. Particleboard: ANSI A208.1; composed of wood chips, sawdust, or flakes of medium density, made with waterproof resin binders; of grade to suit application; sanded faces.
- B. Medium–Density Fiberboard (MDF): ANSI A208.2, Grade 130.

2.03 PLASTIC LAMINATE MATERIALS
- A. Plastic Laminate: As indicated on drawings.
- B. Laminate Adhesive: Type recommended by laminate manufacturer to suit application; not containing formaldehyde or other volatile organic compounds.

2.04 FASTENINGS
- A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.
- B. Fasteners: Of size and type to suit application; use corrosion resistant fasteners for exterior locations.

2.05 ACCESSORIES
- A. Lumber for Shimming and Blocking: Softwood lumber of any appropriate species.
- B. Primer: Alkyd primer sealer.
- C. Wood Filler: Solvent base, tinted to match surface finish color.

2.06 FABRICATION
- A. Shop assemble work for delivery to site, permitting passage through building openings.
- B. Cap exposed plastic laminate finish edges with material of same finish and pattern.
- C. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.
- D. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut–outs.

2.07 SHOP FINISHING
- A. Sand work smooth and set exposed nails and screws.
- B. Apply wood filler in exposed nail and screw indentations.
- C. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.
- D. Finish work in accordance with AWI/AWMAC/WI Architectural Woodwork Standards, Section 5 – Finishing for Grade specified and as follows:
  - 1. Transparent:
    - a. System – 12, Polyurethane, Water–based.
    - b. Stain: As indicated on drawings.
    - c. Sheen: As indicated on drawings.
  - 2. Opaque:
    - a. System – 4, Latex Acrylic, Water–based.
    - b. Color: As indicated on drawings.
    - c. Sheen: As indicated on drawings.
- E. Back prime woodwork items to be field finished, prior to installation.

3.01 EXAMINATION
- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.02 INSTALLATION
- A. Install work in accordance with AWI/AWMAC/WI Architectural Woodwork Standards requirements for grade indicated.
- B. Set and secure materials and components in place, plumb and level.
- C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.
- D. Install trim with appropriate mechanical fasteners.
- E. Install panels with concealed fasteners.

3.03 PREPARATION FOR SITE FINISHING
- A. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.
- B. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

3.04 TOLERANCES
- A. Maximum Variation from True Position: 1/16 inch.
- B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

SECTION 06 4100 – CASEWORK

1.01 SECTION INCLUDES
- A. Specially fabricated cabinet units.
- B. Countertops.
- C. Cabinet hardware.
- D. Preparation for installing utilities.

1.02 SUBMITTALS
- A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories. Provide the information required by AWI/AWMAC/WI Architectural Woodwork Standards.
- B. Product Data: Provide data for hardware accessories.

1.03 QUALITY ASSURANCE
- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of experience.

1.04 FIELD CONDITIONS
- A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

2.01 CABINETS
- A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI//AWMAC/WI Architectural Woodwork Standards for Custom Grade.
- B. Plastic Laminate Faced Cabinets: Custom grade.
- C. Cabinets:
  - 1. Finish – Exposed Exterior Surfaces: Decorative laminate.
  - 2. Door and Drawer Front Edge Profiles: Self–Edge banding with material of same finish and pattern.
  - 3. Casework Construction Type: Type A – Frameless.
  - 4. Interface Style for Cabinet and Door: Style 1 – Overlay; flush overlay.
  - 5. Adjustable Shelf Loading: 50 lbs. per sq. ft..

2.02 LAMINATE MATERIALS
- A. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.
- B. Provide specific types as indicated.
  - 1. Horizontal Surfaces: HGL, 0.039 inch nominal thickness, colors as scheduled, finish as scheduled.
  - 2. Vertical Surfaces: VGS, 0.028 inch nominal thickness, colors as scheduled, finish as scheduled.
  - 3. Cabinet Liner: CLS, 0.020 inch nominal thickness, colors as scheduled, finish as scheduled.
  - 4. Laminate Backer: BKL, 0.020 inch nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.

2.03 COUNTERTOPS
- A. Plastic Laminate Countertops: Medium density fiberboard substrate covered with HPDL, Self–Edge banding with material of same finish and pattern.
- B. Wall–Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings, finished to match.

2.04 ACCESSORIES
- A. Adhesive: Type recommended by AWI/AWMAC to suit application.
- B. Fasteners: Size and type to suit application.
- C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome–plated finish in concealed locations and stainless steel or chrome–plated finish in exposed locations.
- D. Concealed Joint Fasteners: Threaded steel.
- E. Grommets: Standard plastic, painted metal, or rubber grommets for cut–outs, in color to match adjacent surface.

2.05 HARDWARE
- A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
- B. Drawer and Door Pulls: If not specified in drawings then provide "U" shaped wire pull, aluminum with satin finish, 4 inch centers.
- C. Drawer Slides: Type: Full extension.
- D. Hinges: European style concealed self–closing type, steel with satin finish.

2.06 FABRICATION
- A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- D. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut–outs. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
- E. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on–site dimensions. Seal cut edges.

3.01 EXAMINATION
- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough–in associated with work of this section.

3.02 INSTALLATION
- A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
- B. Use fixture attachments in concealed locations for wall mounted components.
- C. Use concealed joint fasteners to align and secure adjoining cabinet units.
- D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
- E. Secure cabinets to floor using appropriate angles and anchorages.
- F. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.
- G. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- H. Attach plastic laminate countertops using screws with minimum penetration into substrate board of 5/8 inch.
- I. Seal joint between back/end splashes and vertical surfaces.

3.03 ADJUSTING
- A. Adjust installed work.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING
- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

SECTION 07 2100 – BOARD AND BATT INSULATION

1.01 SECTION INCLUDES
- A. Board insulation at perimeter foundation wall, underside of floor slabs, and as indicated on drawings.
- B. Batt insulation in exterior wall, ceiling, and roof construction.

1.02 SUBMITTALS
- A. Provide data on product characteristics, performance criteria, and product limitations.

1.03 FIELD CONDITIONS
- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

2.01 FOAM BOARD INSULATION MATERIALS
- A. Extruded Polystyrene Board Insulation: ASTM C578, Type X; Extruded polystyrene board with either natural skin or cut cell surfaces; with the following characteristics:
  - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
  - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.

2.02 BATT INSULATION MATERIALS
- A. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
  - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
  - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
  - 3. Combustibility: Non–combustible, when tested in accordance with ASTM E136.
  - 4. Formaldehyde Content: Zero.
  - 5. Facing: Unfaced.
    - a. In Climate Zones 4c and above; where a separate vapor retarder is being used.
    - b. In Climate Zones 1, 2, 3, 4a & 4b; where no vapor retarder is required.
  - 6. Facing: Asphalt treated Kraft paper, one side.
    - a. In Climate Zones 4c and above; where a vapor retarder is required.
    - b. Facing can not be exposed.

2.03 ACCESSORIES
- A. Sheet Vapor Retarder: Polyamide film with variable vapor permeability based on ambient humidity. Permeance of 1 perm or less by the dry cup method, increasing to 10 perms by the wet cup method. Flame spread rating of 25 or less, when tested in accordance with ASTM E84.
- B. Tape: As recommended by manufacturer.
- C. Insulation Fasteners: Impaling clip of unfinished steel with washer retainer and clips, to be adhered to surface to receive insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.
- D. Adhesive: Type recommended by insulation manufacturer for application.

3.01 EXAMINATION
- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER
- A. Install boards vertically on foundation perimeter.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BOARD INSTALLATION AT EXTERIOR WALLS
- A. Install boards vertically on walls between z furring.
  - 1. Butt edges and ends tightly to adjacent boards and to protrusions.
- B. Extend boards over expansion joints, unbonded to wall on one side of joint.
- C. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.04 BOARD INSTALLATION UNDER CONCRETE SLABS
- A. Place perimeter insulation under slabs on grade after base for slab has been compacted.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
- C. Prevent insulation from being displaced or damaged while placing vapor retarder and placing slab.

3.05 BATT INSTALLATION
- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall, roof, and ceiling spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. Install with factory applied vapor retarder membrane facing warm side of wall assembly. Lap ends and side flanges of membrane over framing members.
- F. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.
- G. Place Sheet Vapor Retarder on warm side of insulation; lap and seal sheet retarder joints over member face.
- H. Tape seal tears or cuts in vapor retarder.
- I. Extend vapor retarder membrane tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane. Tape seal in place.

SECTION 07 9005 – JOINT SEALERS

1.01 SUBMITTALS
- A. Product Data: Provide data indicating sealant performance criteria, substrate preparation, limitations, and color availability.

1.02 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years documented experience and approved by manufacturer.

1.03 FIELD CONDITIONS
- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.04 WARRANTY
- A. Correct defective work within a five year period after Date of Substantial Completion.
- B. Warranty: Include coverage for installed sealants and accessories which fail to achieve weathertight seal, exhibit loss of adhesion or cohesion, or do not cure.

2.01 SEALANTS
- A. Sealants and Primers – General: Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
- B. General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 50, Uses M, O, and A; single or multi– component.
  - 1. Color: Match adjacent finished surfaces.
  - 2. Applications: Use for:
    - a. Control, expansion, and soft joints in masonry.
    - b. Joints between concrete and other materials.
    - c. Joints between metal frames and other materials.
    - d. Other exterior joints for which no other sealant is indicated.
- C. Exterior Expansion Joint Sealer: Precompressed foam sealer; urethane with water–repellent;
  - 1. Face color: Standard colors matching finished surfaces.
  - 2. Size as required to provide weathertight seal when installed.
  - 3. Applications: Use for:
    - a. Exterior wall expansion joints.
- D. Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, nondrying, nonskinning, noncuring.
  - 1. Applications: Use for:
    - a. Concealed sealant bead in sheet metal work.
    - b. Concealed sealant bead in siding overlaps.
    - c. Conditions as indicated on drawings and specifications.
- E. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, Type OP, Grade NF single component, paintable.
  - 1. Applications: Use for:
    - a. Interior wall and ceiling control joints.
    - b. Joints between door and window frames and wall surfaces.
    - c. Other interior joints for which no other type of sealant is indicated.
- F. Bathtub/Tile Sealant: Clear Silicone; ASTM C 920, Uses I, M and A; single component, mildew resistant.
  - 1. Applications: Use for:
    - a. Joints between plumbing fixtures and floor and wall surfaces.
    - b. Joints between kitchen and bath countertops and wall surfaces.
- G. Acoustical Sealant for Concealed Locations:
  - 1. Applications: Use for concealed locations only:
    - a. Sealant bead between top stud runner and structure and between bottom stud track and floor, where an STC rating is indicated.
- H. Interior Floor Joint Sealant: Polyurethane, self–leveling; ASTM C920, Grade P, Class 25, Uses T, M and A; single component.
  - 1. Approved by manufacturer for wide joints up to 1–1/2 inches.
  - 2. Color: Match adjacent finished surfaces.
  - 3. Applications: Use for:
    - a. Expansion joints in floors.

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PetPeople
SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.: 18894
Drawn By: SO

Date	Issue
07/19/2021	Bid/ Permit

A0.11
SPECIFICATIONS

I. Concrete Paving Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Class 50, Uses T, I, M and A; single component.
1. Color: Color as selected.
2. Applications: Use for:
a. Joints in sidewalks and vehicular paving.

2.02 ACCESSORIES
A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.
D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

3.01 EXAMINATION
A. Verify that substrate surfaces and joint openings are ready to receive work.
B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION
A. Remove loose materials and foreign matter that could impair adhesion of sealant.
B. Clean and prime joints in accordance with manufacturer's instructions.
C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
D. Protect elements surrounding the work of this section from damage or disfigurement.

3.03 INSTALLATION
A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
B. Perform installation in accordance with ASTM C1193.
C. Perform acoustical sealant application work in accordance with ASTM C919.
D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
E. Install bond breaker where joint backing is not used.
F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
G. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
H. Tool joints concave.
I. Precompressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch below adjoining surface.

SECTION 08 1113 – HOLLOW METAL DOORS AND FRAMES

1.01 SUBMITTALS
A. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.
B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.

1.02 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years experience.

1.03 DELIVERY, STORAGE, AND HANDLING
A. Store in accordance with NAAMM HMMA 840.
B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.

2.01 DOORS AND FRAMES
A. Requirements for All Doors and Frames:
1. Accessibility: Comply with ANSI/ICC A117.1.
2. Door Edge Profile: Beveled on both edges.
3. Door Texture: Smooth faces.
4. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
5. Hardware Preparation: In accordance with BHMA A156.115, with reinforcement welded in place, in addition to other requirements specified in door grade standard.
6. Galvanizing for exterior and wet locations: All components hot-dipped zinc-iron alloy-coated (galvannealed), A60/ZF180.
7. Finish: Factory primed, for field finishing.
B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with all the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.02 STEEL DOORS
A. Exterior Doors:
1. Grade: ANSI A250.8 Level 3, physical performance Level A, Model 1, full flush.
2. Core: Polystyrene foam. Insulating Value: U-value of 0.37 max, when tested in accordance with ASTM C1363.
3. Top Closures for Outswinging Doors: Flush with top of faces and edges.
4. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A60/ZF180 coating.
5. Weatherstripping: Separate, see Section 08 7100.
B. Interior Doors, Non-Fire-Rated: Grade: ANSI A250.8 Level 2, physical performance Level B, Model 1, full flush, Thickness: 1-3/4 inches.
C. Interior Doors, Fire-Rated: Grade: ANSI A250.8 Level 2, physical performance Level B, Model 1, full flush. Fire Rating: As indicated on Door and Frame Schedule, tested in accordance with UL 10C ("positive pressure"). Attach fire rating label to each fire rated unit.

2.03 STEEL FRAMES
A. General:
1. Comply with the requirements of grade specified for corresponding door, ANSI A250.8 Level 3 Doors: 16 gage frames. Frames for Wood Doors: Comply with frame requirements specified in ANSI A250.8 for Level 2, 16 gage.
2. Finish: Factory primed, for field finishing.
3. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
4. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high to fill opening without cutting masonry units, unless noted otherwise on drawings.
5. Frames Wider than 48 Inches: Reinforce with steel channel fitted tightly into frame head, flush with top.
B. Exterior Door Frames: Face welded, seamless with joints filled. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A60/ZF180 coating. Weatherstripping: Separate, see Section 08 7100.
C. Interior Door Frames, Non-Fire-Rated: Knock-down type.
D. Interior Door Frames, Fire-Rated: Knock-down type. Fire Rating: Same as door, labeled.

2.04 ACCESSORY MATERIALS
A. Louvers: Roll formed steel with overlapping frame; finish same as door components; factory-installed.
1. In Fire-Rated Doors: UL-listed fusible link louver, same rating as door.
2. Style: Standard straight slat blade.
3. Louver Free Area: 50 percent.
4. Fasteners: Concealed fasteners.
B. Glazing: As specified in Section 08.
C. Removable Stops: Formed sheet steel, mitered corners; prepared for countersink style tamper proof screws.
D. Astragals for Double Doors: Specified in Section 08. Exterior Doors: 14GA Galvanized Steel, Flat. Fire-Rated Doors: Steel, shape as required to accomplish fire rating.
E. Grout for Frames: Portland cement grout of maximum 4-inch slump for hand troweling; thinner pumpable grout is prohibited.
F. Silencers: Resilient rubber or vinyl, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.
G. Temporary Frame Spreaders: Provide for all factory- or shop-assembled frames.

2.05 FINISH MATERIALS
A. Primer: Rust-inhibiting, complying with ANSI A250.10, door manufacturer's standard.
B. Bituminous Coating: Asphalt emulsion or other high-build, water-resistant, resilient coating.

3.01 EXAMINATION
A. Verify existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.

3.02 PREPARATION
A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.03 INSTALLATION
A. Install in accordance with the requirements of the specified door grade standard and NAAMM HMMA 840.
B. In addition, install fire rated units in accordance with NFPA 80.
C. Coordinate frame anchor placement with wall construction.
D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
E. Coordinate installation of hardware.
F. Coordinate installation of electrical connections to electrical hardware items.
G. Touch up damaged factory finishes.
H. Adjust for smooth and balanced door movement.

3.04 TOLERANCES
A. Clearances Between Door and Frame: As specified in ANSI A250.8.
B. Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

SECTION 08 3100 – ACCESS DOORS & PANELS

1.01 SUBMITTALS
A. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.

2.01 ACCESS DOOR AND PANEL APPLICATIONS
A. Walls, Unless Otherwise Indicated:
1. Material: Steel.
2. Size: As indicated on the drawings or as necessary to allow access to concealed items.
3. Standard duty, hinged door.
4. Tool-operated spring or cam lock; no handle.
5. In Gypsum Board: Drywall bead frame with door surface flush with wall surface.
B. Walls in Wet Areas and Exterior:
1. Material: Steel, hot-dipped zinc or zinc-aluminum-alloy coated.
2. Size: As indicated on the drawings or as necessary to allow access to concealed items.
3. Standard duty, hinged door.
4. Tool-operated spring or cam lock; no handle.
5. In Gypsum Board: Drywall bead frame with door surface flush with wall surface.
6. In Masonry, Tile, Concrete, EIFS or other surfaces: Surface mounted frame with door surface flush with frame surface.
C. Ceilings, Unless Otherwise Indicated: Same type as for walls.
1. Material: Steel.
2. Material: Steel, hot-dipped zinc or zinc-aluminum-alloy coated, for use in wet locations and exterior.
3. Size: As indicated on the drawings or as necessary to allow access to concealed items.
4. Standard duty, hinged door.
5. Tool-operated spring or cam lock; no handle.

2.02 WALL AND CEILING UNITS
A. Access Doors: Factory fabricated door and frame units, fully assembled units with corner joints welded, filled, and ground flush; square and without rack or warp; coordinate requirements with assemblies units are to be installed in.
1. Door Style: Single thickness with rolled or turned in edges.
2. Steel Finish: Primed.
3. Primed Finish: Polyester powder coat; manufacturer's standard color.
4. Hardware:
a. Hinges for Non-Fire-Rated Units: Continuous piano hinge.
b. Lock: Screw driver slot for quarter turn cam lock unless otherwise indicated.

3.01 EXAMINATION
A. Verify that rough openings are correctly sized and located.

3.02 INSTALLATION
A. Install units in accordance with manufacturer's instructions.
B. Install frames plumb and level in openings. Secure rigidly in place.
C. Position units to provide convenient access to the concealed work requiring access.

SECTION 08 4313 – METAL-FRAMED STOREFRONTS

1.01 ADMINISTRATIVE REQUIREMENTS
A. Coordinate with installation of other components that comprise the exterior enclosure.

1.02 SUBMITTALS
A. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware, internal drainage details.
B. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related Work, expansion and contraction joint location and details, and field welding required.

1.03 QUALITY ASSURANCE
A. Manufacturer and Installer Qualifications: Company specializing in manufacturing aluminum glazing systems with minimum three years of experience.

1.04 DELIVERY, STORAGE, AND HANDLING
A. Handle products of this section in accordance with AAMA CW-10.
B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.05 FIELD CONDITIONS
A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

1.06 WARRANTY
A. Provide two year manufacturer warranty against defects in material and workmanship
B. Provide five year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

2.01 STOREFRONT
A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
1. Glazing Rabbet: For 1 inch insulating glazing.
2. Glazing Rabbet: For 1/4 inch monolithic glazing.
3. Glazing Position: Centered (front to back).
4. Vertical Mullion Dimensions: 2 inches wide by 4-1/2 inches deep.
5. Finish: **Class I natural anodized.**
Superior performance organic coating. Color: Clear anodized.
a. Factory finish all surfaces that will be exposed in completed assemblies.
b. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
6. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
7. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
8. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
9. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
10. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
11. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
B. Performance Requirements:
1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
a. Design Wind Loads: Comply with requirements of ASCE 7.
b. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
2. Water Penetration Resistance: No uncontrolled water on interior face, when tested in accordance with ASTM E331 at pressure differential of 8.00 lbf/sq ft.
3. Air Leakage: Maximum of 0.06 cu ft/min/sq ft of wall area, when tested in accordance with ASTM E283 at 6.27 pounds per square foot pressure differential across assembly.

2.02 COMPONENTS
A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
1. Framing members for interior applications need not be thermally broken.
2. Provide a compensating head receptor to allow vertical deflection at the head without deforming other framing components.
3. Glazing stops: Flush.
B. Glazing: As specified in Section 08.
C. Swing Doors: Glazed aluminum.
1. Thickness: 1-3/4 inches.
2. Top Rail: 4 inches wide.
3. Vertical Stiles: 4-1/2 inches wide.
4. Bottom Rail: 10 inches wide.
5. Glazing Stops: Square.
6. Finish: Same as storefront.

2.03 MATERIALS
A. Extruded Aluminum: ASTM B221 (ASTM B221M).
B. Sheet Aluminum: ASTM B209 (ASTM B209M).
C. Fasteners: Stainless steel.
D. Exposed Flashings: 0.050 inch thick aluminum sheet; finish to match framing members.
E. Perimeter Sealant: As specified in Section 07.
F. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.

2.04 FINISHES
A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating or AAMA 612 clear anodic coating with electrolytically deposited organic seal; not less than 0.7 mils thick.
B. Superior Performance Organic Coating System: AAMA 2605 multiple coat, thermally cured polyvinylidene fluoride system.
C. Color: As shown on the drawings.
D. Touch-Up Materials: As recommended by coating manufacturer for field application.

2.05 HARDWARE
A. Door Hardware: As indicated on drawings.

2.06 FABRICATION
A. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
B. Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
C. Prepare components to receive anchor devices. Fabricate anchors.
D. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
E. Arrange fasteners and attachments to conceal from view.
F. Reinforce components internally for door hardware.
G. Reinforce framing members for imposed loads.
H. Finishing: Apply factory finish to all surfaces that will be exposed in completed assemblies. Touch-up surfaces cut during fabrication so that no natural aluminum is visible in completed assemblies, including joint edges.

3.01 EXAMINATION
A. Verify dimensions, tolerances, and method of attachment with other work.
B. Verify that wall openings and adjoining air and vapor seal materials are ready to receive work of this section.

3.02 INSTALLATION
A. Install wall system in accordance with manufacturer's instructions.
B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
C. Provide alignment attachments and shims to permanently fasten system to building structure.
D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
E. Provide thermal isolation where components penetrate or disrupt building insulation.
F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
H. Coordinate attachment and seal of perimeter air and vapor barrier materials.
I. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
J. Set thresholds in bed of mastic and secure.
K. Install hardware using templates provided.
L. Install perimeter sealant in accordance with Section 07.
M. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES
A. Maximum Variation from Plumb: 0.06 inches every 3 ft non-cumulative or 1/16 inches per 10 ft, whichever is less.
B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

SECTION 08 7100 – DOOR HARDWARE

1.01 ADMINISTRATIVE REQUIREMENTS
A. Coordinate the manufacture, fabrication, and installation of products onto which door hardware will be installed.
B. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.
C. Convey Owner's keying requirements to manufacturers.

1.02 SUBMITTALS
A. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project.
B. Hardware Schedule: Detailed listing of each item of hardware to be installed on each door. Use door numbering scheme as included in the Contract Documents. Identify electrically operated items and include power requirements.
C. Keying Schedule: Submit for approval of Owner.
D. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.03 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of experience.
B. Hardware Supplier Personnel: Employ an Architectural Hardware Consultant (AHC) to assist in the work of this section.

1.04 DELIVERY, STORAGE, AND HANDLING
A. Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

1.05 WARRANTY
A. Grade 1: Provide 10 year warranty for door closers.

2.01 DOOR HARDWARE – GENERAL
A. Provide all hardware specified or required to make doors fully functional, compliant with applicable codes, and secure to the extent indicated.
B. Provide all items of a single type of the same model by the same manufacturer.
C. Provide products that comply with the following:
1. Applicable provisions of federal, state, and local codes.
2. ADA Standards for Accessible Design.
3. ANSI/ICC A117.1, American National Standard for Accessible and Usable Buildings and Facilities.
4. Applicable provisions of NFPA 101, Life Safety Code.
5. Fire-Rated Doors: NFPA 80.
6. All Hardware on Fire-Rated Doors: Listed and classified by UL as suitable for the purpose specified and indicated.
7. Hardware for Smoke and Draft Control Doors: Provide hardware that enables door assembly to comply with air leakage requirements of the applicable code.
8. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.
D. Function: Lock and latch function numbers and descriptions of manufactures series as as shown on the drawings.
E. Electrically Operated and/or Controlled Hardware: Provide all power supplies, power transfer hinges, relays, and interfaces required for proper operation; provide wiring between hardware and control components and to building power connection.
F. Finishes: Identified in schedule.

2.02 HINGES
A. Hinges: Provide hinges on every swinging door.
1. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
2. Provide ball-bearing hinges at All doors unless otherwise indicated.
3. Provide hinges in the quantities indicated.
4. Provide non-removable pins on exterior outswinging doors.
5. Where electrified hardware is mounted in door leaf, provide power transfer hinges.
B. Butt Hinges: Comply with BHMA A156.1 and A156.7; heavy weight, unless otherwise indicated. Provide hinge width required to clear surrounding trim.
C. Quantity of Hinges Per Door:
1. Doors From 60 inches High up to 90 inches High: Three hinges.
2. Doors 90 inches High up to 120 inches High: Four hinges.

2.03 PUSH/PULLS
A. Push/Pulls: Comply with BHMA A156.6. On solid doors, provide matching push plate and pull plate on opposite faces.

2.04 LOCKS AND LATCHES
A. Locks: Provide a lock for every door, unless specifically indicated as not requiring locking.
1. Hardware Schedule indicates locking functions required for each door.
2. Trim: Provide lever handle or pull trim on outside of all locks unless specifically stated to have no outside trim.
3. Lock Cylinders: Provide key access on outside of all locks unless specifically stated to have no locking or no outside trim.
B. Lock Cylinders: Manufacturer's standard tumbler type, seven-pin interchangeable core. Provide cams and/or tailpieces as required for locking devices required.
C. Keying: System as directed by Owner.
1. Include construction keying.
2. Coordinate to existing keying system where one already exists.
3. When providing keying information, comply with DHI Handbook "Keying systems and nomenclature".

2.05 CYLINDRICAL LOCKSETS
A. Locking Functions: As defined in BHMA A156.2, and as follows:
1. Passage: No locking, always free entry and exit.
2. Privacy: F76, emergency tool unlocks.
3. Office: F82 Grade 1, key not required to lock, unlocks upon exit.
4. Store Room: F86, key required to lock, may not be left unlocked.

2.06 EXIT DEVICES
A. Locking Functions: Functions as defined in BHMA A156.3.

2.07 CLOSERS
A. Closers: Complying with BHMA A156.4.
1. Provide surface-mounted, door-mounted closers unless otherwise indicated.
2. Provide a door closer on every exterior door.
3. Provide a door closer on every fire- and smoke-rated door. Spring hinges are not an acceptable self-closing device unless specifically so indicated.
4. On pairs of swinging doors, if an overlapping astragal is present, provide coordinator to ensure the leaves close in proper order.
5. At corridors, locate door-mounted closer on room side of door.
6. At outswinging exterior doors, mount closer in inside of door.

2.08 STOPS AND HOLDERS
A. Stops: Complying with BHMA A156.8; provide a stop for every swinging door, unless otherwise indicated. Provide wall stops, unless otherwise indicated.

2.09 GASKETING AND THRESHOLDS
A. Gaskets: Complying with BHMA A156.22.
1. On each door in smoke partition, provide smoke gaskets; top, sides, and meeting stile of pairs. If fire/smoke partitions are not indicated on drawings, provide smoke gaskets on each door identified as a "smoke door" and 20-minute rated fire doors.
2. On each exterior door, provide weatherstripping gaskets, unless otherwise indicated; top, sides, and meeting stiles of pairs.
a. Where exterior door is also required to have fire or smoke rating, provide gaskets functioning as both smoke and weather seals.
3. On each exterior door, provide door bottom sweep, unless otherwise indicated.
B. Thresholds:
1. At each exterior door, provide a threshold unless otherwise indicated.
2. Field cut threshold to frame for tight fit.
C. Fasteners At Exterior Locations: Non-corroding.

2.10 PROTECTION PLATES AND ARCHITECTURAL TRIM
A. Drip Guard: Provide projecting drip guard over all exterior doors unless they are under a projecting roof or canopy.

2.11 KEY CONTROLS
A. Fire Department Lock Box: Heavy-duty, surface mounted, solid stainless-steel box with hinged door and interior gasket seal; single drill resistant lock with dust covers and tamper alarm.
1. Capacity: Holds 2 keys.
2. Finish: Manufacturer's standard black.

3.01 EXAMINATION
A. Verify that doors and frames are ready to receive work; labeled, fire-rated doors and frames are present and properly installed, and dimensions are as instructed by the manufacturer.

3.02 INSTALLATION
A. Install hardware in accordance with manufacturer's instructions and applicable codes.
B. Use templates provided by hardware item manufacturer.
C. Do not install surface mounted items until finishes applied to substrate are complete.
D. Install hardware on fire-rated doors and frames in accordance with code and NFPA 80.
E. Mounting heights for hardware from finished floor to center line of hardware item:
1. For steel doors and frames: Comply with DHI "Recommended Locations for Architectural Hardware for Steel Doors and Frames."
2. For wood doors: Comply with DHI "Recommended Locations for Architectural Hardware for Wood Flush Doors."
F. Adjust hardware for smooth operation.
G. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.
H. Adjust door closers for full door closure and to meet accessibility provisions of ANSI A117.1

SECTION 08 8000 – GLAZING

1.01 SUBMITTALS
A. Product Data on Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
B. Product Data on Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.

1.02 QUALITY ASSURANCE
A. Manufacturer Qualifications for sealed insulating glass units: Company specializing in performing the work of this section with minimum five years experience.

1.03 WARRANTY
A. Sealed Insulating Glass Units: Provide a ten (10) year warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.
B. Laminated Glass: Provide a five (5) year warranty to include coverage for delamination, including replacement of failed units.

2.01 GLAZING TYPES
A. Sealed Insulating Glass Units: Vision glazing.
1. Application(s): All exterior glazing unless otherwise indicated.
2. Outboard Lite: Annealed float glass, 1/4 inch thick, minimum.
a. Tint: Clear.
b. Coating: Low-E type, on #2 surface.
3. Inboard Lite: Annealed float glass, 1/4 inch thick, minimum.
a. Tint: Clear.
4. Total Thickness: 1 inch.
5. Total Visible Light Transmittance: 70 percent, nominal.
6. Total Solar Heat Gain Coefficient: 40 percent, nominal.
B. Sealed Insulating Glass Units: Safety glazing:
1. Applications: Provide this type of glazing in the following locations:
a. Glazed sidelights and panels next to doors.
b. Other locations required by applicable federal, state, and local codes and regulations.
c. Other locations indicated on the drawings.
2. Type: Same as other vision glazing, including Low-E coating, except use fully tempered float or laminated safety glass for both outboard and inboard lites.
C. Single Vision Glazing:
1. Applications: All interior glazing unless otherwise indicated.
2. Type: Annealed float glass.
3. Tint: Clear.
4. Thickness: 1/4 inch.
D. Single Safety Glazing:
1. Applications: Provide this type of glazing in the following locations:
a. Glazed lites in doors, except fire doors.
b. Glazed sidelights to doors, except in fire-rated walls and partitions.
c. Other locations required by applicable federal, state, and local codes and regulations.
d. Other locations indicated on the drawings.
2. Type: fully tempered float or laminated safety glass as specified.
3. Tint: Clear.
4. Thickness: 1/4 inch.

2.02 EXTERIOR GLAZING ASSEMBLIES
A. Structural Design Criteria: Select type and thickness to withstand dead loads and wind loads acting normal to plane of glass at design pressures calculated in accordance with ASCE 7.
1. Use the procedure specified in ASTM E1300 to determine glass type and thickness.
2. Limit glass deflection to 1/200 or flexure limit of glass, whichever is less, with full recovery of glazing materials.
3. Thicknesses listed are minimum.
B. Air and Vapor Seals: Provide completed assemblies that maintain continuity of building enclosure vapor retarder and air barrier:
1. In conjunction with vapor retarder and joint sealer materials described in other sections.
2. To maintain a continuous air barrier and vapor retarder throughout the glazed assembly from glass pane to heel bead of glazing sealant.

2.03 GLASS MATERIALS
A. Float Glass: All glazing is to be float glass unless otherwise indicated.
1. Annealed Type: ASTM C1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select).
2. Heat-Strengthened and Fully Tempered Types: ASTM C1048.
a. Tempered glass: Comply with CPSC 16 CFR 1201 for Category II
3. Thicknesses: As indicated; for exterior glazing comply with specified requirements for wind load design regardless of specified thickness.
B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
1. Laminated Safety Glass: Comply with 16 CFR 1201 test requirements for Category II.
2. Plastic Interlayer: 0.060 inch thick, minimum.
3. Where fully tempered is specified or required, provide glass that has been tempered by the tong-less horizontal method.

2.04 SEALED INSULATING GLASS UNITS
A. Sealed Insulating Glass Units: Types as indicated.
1. Locations: Exterior, except as otherwise indicated.
2. Durability: Certified by an independent testing agency to comply with ASTM E2190.
3. Edge Spacers: Aluminum, bent and soldered corners.
4. Edge Seal: Glass to elastomer with supplementary silicone sealant.
5. Purge interpane space with dry air.

2.05 GLAZING ACCESSORIES
A. Setting Blocks: Neoprene, 80 to 90 Shore A durometer hardness, ASTM C864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness, ASTM C 864 Option I. Minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.
C. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option I; black color.

3.01 EXAMINATION
A. Verify that openings for glazing are correctly sized and within tolerance.
B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

3.02 PREPARATION
A. Clean contact surfaces with solvent and wipe dry.
B. Install sealants in accordance with ASTM C1193 and GANA Sealant Manual.
C. Install sealant in accordance with manufacturer's instructions.

3.03 GLAZING METHODS
A. INSTALLATION – EXTERIOR/INTERIOR DRY METHOD (GASKET GLAZING)
1. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners, unless otherwise indicated by manufacturer.
2. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
3. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

SECTION 09 2116 – GYPSUM BOARD ASSEMBLIES

1.01 SUBMITTALS
A. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.
B. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

1.02 QUALITY ASSURANCE
A. Installer Qualifications: Company specializing in performing gypsum board application and finishing, with minimum three years of experience.

2.01 GYPSUM BOARD ASSEMBLIES
A. Provide completed assemblies complying with ASTM C840 and GA-216.
B. Fire Rated Assemblies: Provide completed assemblies with UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL Fire Resistance Directory.

2.02 METAL FRAMING MATERIALS
A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf. The use of equivalent gauge stud sizing criteria is prohibited.
B. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
C. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI North American Specification for the Design of Cold-Formed Steel Structural Members.

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8/11/21

PetPeople
SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.:	18894
Drawn By:	SO
Date	Issue
07/19/2021	Bid/ Permit

A0.12

SPECIFICATIONS

2. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot dipped galvanized coating.

D. Sheet Metal Backing: 0.043 inch thick, galvanized, 6" wide.

2.03 BOARD MATERIALS

A. Gypsum Wallboard: Paper–faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Use for vertical surfaces, unless otherwise indicated.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
a. Mold–resistant board is required whenever board is being installed before the building is enclosed and conditioned.
3. At Assemblies Indicated with Fire–Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
4. Thickness: Vertical Surfaces: 5/8 inch unless otherwise indicated or required by tested assembly.

B. Backing Board For Wet Areas:
1. Application: Surfaces behind tile in wet areas including tub and shower surrounds, shower ceilings, and janitor closet.
2. Glass Mat Faced Board: Coated glass mat water–resistant gypsum backing panel as defined in ASTM C1178/C1178M. Fire–Resistant Type: Type X core, thickness 5/8 inch.

C. Backing Board For Non–Wet Areas: Water–resistant gypsum backing board as defined in ASTM C1396/C1396M; sizes to minimum joints in place; ends square cut.
1. Application: Vertical surfaces behind thinset tile, except in wet areas.
2. Type X Thickness: 5/8 inch.
3. Edges: Tapered.

D. Ceiling Board: Special sag–resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Ceilings, unless otherwise indicated.
2. Thickness: 1/2 inch, unless otherwise indicated.
3. Edges: Tapered.

E. Exterior Sheathing Board: Sizes to minimize joints in place; ends square cut.
1. Application: Exterior sheathing, unless otherwise indicated.
2. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
3. Regular Board Thickness: 5/8 inch unless otherwise indicated.
4. Edges: Square, for vertical application.

F. Exterior Soffit Board: Exterior gypsum soffit board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Ceilings and soffits in protected exterior areas, unless otherwise indicated.
2. At Assemblies Indicated with Fire–Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X.
3. Regular Type Thickness: 1/2 inch, unless otherwise indicated.
4. Edges: Tapered.

2.04 ACCESSORIES

A. Water–Resistive Barrier: As specified in Section 07 2500.

B. Finishing Accessories: ASTM C1047, galvanized steel, rolled zinc, or rigid plastic, unless otherwise indicated.
1. Types: As detailed or required for finished appearance.
2. Special Shapes: In addition to conventional cornerbead and control joints, provide U–bead and L–bead at exposed panel edges.

C. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.
1. Tape: 2 inch wide, coated glass fiber tape for joints and corners, at wet locations and with mold–resisistant board.
2. Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
3. Ready–mixed vinyl–based joint compound.
4. Powder–type vinyl–based joint compound.
5. Chemical hardening type compound.

D. High Build Drywall Surfacer: Vinyl acrylic latex–based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.

E. Screws for Attachment to Steel Members Less Than 0.03 inch In Thickness, to Wood Members, and to Gypsum Board: ASTM C1002; self–piercing tapping type; cadmium–plated for exterior locations.

F. Screws for Attachment to Steel Members From 0.033 to 0.112 Inch in Thickness: ASTM C954; steel drill screws for application of gypsum board to loadbearing steel studs.

G. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

H. Exterior Soffit Vents: One piece, perforated, ASTM B 221 6063 T5 alloy aluminum, with edge suitable for direct application to gypsum board and manufactured especially for soffit application. Provide continuous vent.

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.

B. Suspended Ceilings and Soffits: Space framing and furring members as permitted by standard.
1. Laterally brace entire suspension system.
2. Install bracing as required at exterior locations to resist wind uplift.

C. Studs: Space studs as indicated.
1. Extend partition framing to height indicated on drawings.
2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
3. Partitions Penetrating Ceiling, not Terminating at Structure: Brace top track securely to structure at 48 inches on center, unless otherwise indicated.
4. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.

D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.

E. Standard Wall Furring: Install at concrete and masonry walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches on center.
1. Orientation: Vertical.
2. Spacing: As indicated.

F. Blocking: Use sheet metal backing secured to studs. Provide blocking for support of wall cabinets, toilet accessories, hardware, opening frames, and other wall mounted items requiring secure attachment.
1. Use wood blocking secured to studs for plumbing fixtures, toilet partitions, grab bars, handrails and other items indicated on the drawings to be supported with wood blocking.

3.03 BOARD INSTALLATION

A. Comply with ASTM C 840 and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single–Layer Non–Rated: Install gypsum board perpendicular to framing, with ends and edges occurring over firm bearing.
1. Exception: Tapered edges to receive joint treatment at right angles to framing.

C. Double–Layer Non–Rated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.

D. Fire–Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.

E. Exterior Sheathing: Comply with ASTM C1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing.

F. Exterior Soffits: Install exterior soffit board perpendicular to framing, with staggered end joints over framing members or other solid backing.

G. Cementitious Backing Board: Install over steel framing members where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

H. Installation on Metal Framing: Use screws for attachment of all gypsum board.

I. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA–226.

J. Moisture Protection: Treat cut edges and holes in moisture resistant gypsum board and exterior gypsum soffit board with sealant.

3.04 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as follows:
1. Space in accordance with ASTM C840 and as indicated.
2. Not more than 30 feet apart on walls and ceilings over 50 feet long.
3. At exterior soffits, not more than 30 feet apart in both directions.
4. Where partition, wall or ceiling traverses a construction joint (expansion, seismic, or building control element) in the base building structure.
5. Where floor supported partition adjoins ceiling supported structures.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials and as indicated.

D. Exterior Soffit Vents: Install according to manufacturer's written instructions and in locations shown on the drawings. Provide vent area indicated.

3.05 JOINT TREATMENT

A. Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, bedded and finished with chemical hardening type joint compound.

B. Paper Faced Gypsum Board: Use paper joint tape, bedded with ready–mixed vinyl or powder–type vinyl for interior applications, and chemical hardening type for exterior or wet locations, and finished with matching joint compound.

C. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
2. Level 5: Walls and ceilings to receive semi–gloss or gloss paint finish and other areas specifically indicated.
3. Level 3: Walls to receive textured wall finish.
4. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
5. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.

D. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
1. Feather coats of joint compound so that camber is maximum 1/32 inch.

E. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark–free finish.

F. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.06 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

SECTION 09 3000 – TILE

1.01 ADMINISTRATIVE REQUIREMENTS – Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

1.02 SUBMITTALS

A. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

B. Samples: Mount tile and apply grout on two plywood panels, minimum 18 x 18 inches in size illustrating pattern, color variations, and grout joint size variations.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 6000 – Product Requirements, for additional provisions.
2. Extra Tile: 2 percent of each size, color, and surface finish combination, but not less than 10 sq. ft. of each type.

2.01 TILE

A. Tile: ANSI A137.1 and as scheduled in the drawings.

2.02 TRIM AND ACCESSORIES

A. Tile Trim: Provide tile shapes in sizes coordinated with field tile unless otherwise indicated.
1. Applications: Use in the following locations:
a. Open Edges: Bullnose.
b. Inside Corners: Jointed.
c. Floor to Wall Joints: Straight base.
2. Manufacturer: Same as for tile.

B. Non–tile Trim: Finish, style and dimensions to suit application unless otherwise indicated, for setting using tile mortar or adhesive.
1. Applications: Use in the following locations, whether indicated or not:
a. Open edges of wall tile.
b. Open edges of floor tile.
c. Transition between floor finishes of different heights.
d. Expansion and control joints, floor and wall.

2.03 SETTING MATERIALS

A. Provide setting materials made by the same manufacturer as grout.

B. Latex–Portland Cement Mortar Bond Coat: ANSI A118.4.

2.04 GROUTS

A. Standard Grout: Polymer modified cement grout, sanded or unsanded, as specified in ANSI A118.7.
1. Colors: As shown on the drawings.

2.05 THIN–SET ACCESSORY MATERIALS

A. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; not intended as waterproofing.
1. Thickness: 20 mils, maximum.
2. Crack Resistance: No failure at 1/8 inch gap, minimum.

B. Waterproofing Membrane: Specifically designed for bonding to cementitious substrate under thick mortar bed or thin–set tile; complying with ANSI A118.10.
1. Type: Fluid–applied.

C. Coated Glass Mat Backer Board: ASTM C1178/C1178M, with coated inorganic fiberglass mat on both surfaces and integral acrylic coating vapor retarder.

D. Mesh Tape: 2–inch wide self–adhesive fiberglass mesh tape.

E. Trowelable Leveling and Patching Compounds: Latex–modified, portland cement–based product provided by manufacturer of tile–setting materials.

3.01 EXAMINATION

A. Verify that subsurface and preparations by others are in accordance with ANSI A108.01

B. Verify that sub–floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

C. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust–free, and are ready to receive tile.

D. Verify that sub–floor surfaces are dust–free and free of substances that could impair bonding of setting materials to sub–floor surfaces.

E. Verify that concrete sub–floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.

F. Verify that required floor–mounted utilities are in correct location.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

E. Install tile backer board in strict accordance with manufacturer's instructions, using corrosion–resistant bugle head drywall screws. Bed fiberglass self–adhesive tape at all joints and corners with material used to set tiles.

3.03 INSTALLATION – GENERAL

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and TCA Handbook recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square and external angles bullnosed.

F. Install non–ceramic trim in accordance with manufacturer's instructions.
1. Install tile expansion joints at 16 to 20 foot intervals, unless otherwise noted.

G. Sound tile after setting. Replace hollow sounding units.

H. Keep expansion joints free of adhesive or grout.

I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

J. Grout tile joints. Use standard grout unless otherwise indicated.

K. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3.04 INSTALLATION – FLOORS – THIN–SET METHODS

A. Over interior concrete substrates, install in accordance with The Tile Council of North America Handbook Method F113, with Latex Portland Cement Mortar, with standard grout, unless otherwise indicated.
1. Where waterproofing membrane is indicated, install in accordance with The Tile Council of North America Handbook Method F122.
2. Where crack suppression membrane is required by this section, install in accordance with TCNA Handbook Method F125.

3.05 INSTALLATION – WALL TILE

A. Over exterior Concrete and Masonry – Previously coated or otherwise unsuitable for direct application: Metal Lath and Two–coat application; TCNA W201.

B. Over exterior Concrete and Masonry – Suitable for direct application: Direct application; TCNA W202E.

C. Over exterior Framed Walls: Wall sheathing, weather barrier, cementitious backer board, and direct application; TCNA W244E.

D. Over coated glass mat backer board on studs, install in accordance with The Tile Council of North America Handbook Method W245.

E. Over gypsum wallboard on wood or metal studs install in accordance with The Tile Council of North America Handbook Method W243, thin–set with latex–Portland cement mortar.

3.06 CLEANING & PROTECTION

A. Clean tile and grout surfaces.

B. Do not permit traffic over finished floor surface until mortar and grout have adequately cured.

SECTION 09 5100 – ACOUSTICAL CEILINGS

1.01 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.

B. Do not install acoustical units until after interior wet work is dry.

1.02 SUBMITTALS

A. Product Data: Provide data on suspension system components and acoustical units.

B. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 – Product Requirements, for additional provisions.
2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.03 QUALITY ASSURANCE

A. Fire–Resistive Assemblies: Complete assembly listed and classified by UL for the fire resistance indicated.

B. Installer Qualifications: Company specializing in the installation of the products specified in this section with minimum three years experience.

1.04 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

2.01 ACOUSTICAL UNITS

A. Acoustical Units – General: ASTM E 1264, Class A. Refer to drawings for products. Units for Installation in Fire–Rated Suspension System: Listed and classified for the fire–resistive assembly the suspension system is a part of.

2.02 SUSPENSION SYSTEM(S)

A. Manufacturers: Same as for acoustical units or acceptable by the acoustical unit manufacturer.

B. Suspension Systems – General: Complying with ASTM C635/C635M; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.

2.03 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Perimeter Moldings: Same material and finish as grid.

C. Touch–up Paint: Type and color to match acoustical and grid units.

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION – SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

C. Lay out system to a balanced grid design with edge units no less than 50 percent of acoustical unit size, unless otherwise indicated on drawings.

D. Install after major above–ceiling work is complete. Coordinate the location of hangers with other work.

E. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

I. Do not eccentrically load system or induce rotation of runners.

J. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions. Use longest practical lengths. Overlap and rivet corners.

3.03 INSTALLATION – ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install units after above–ceiling work is complete.

E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

F. Cutting Acoustical Units: Make field cut edges of same profile as factory edges. Double cut and field paint exposed reveal edges.

G. Where round obstructions occur, provide preformed closures to match perimeter molding.

H. For rated ceiling assemblies, install hold–down clips on each panel to retain panels tight to grid system; comply with fire rating requirements.

I. Install hold–down clips on panels in entrance vestibules, within 20 ft of an exterior door, and where indicated.

3.04 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

SECTION 09 6500 – RESILIENT FLOORING

1.01 SUBMITTALS

A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

B. Certification: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of sub–floor is acceptable.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 6000 – Product Requirements, for additional provisions.
2. Extra Flooring Material: 12 square feet of each type and color.
3. Extra Wall Base: Eight linear feet of each type and color.

1.02 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

2.01 TILE FLOORING

A. Vinyl Composition Tile: Homogeneous, with color extending throughout thickness, and:
1. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
2. Size: 12 x 12 inch.
3. Thickness: 0.125 inch.
4. Pattern & Color: as indicated on the drawings.

2.02 RESILIENT BASE

A. Resilient Base: ASTM F1861, Type TV, vinyl, thermoplastic; top set style and color as scheduled on the drawings, and as follows:
1. Height, Color, and Finish: As scheduled on the drawings.
2. Thickness: 0.125 inch thick.
3. Length: Roll.
4. Accessories: Premolded external corners.

2.03 ACCESSORIES

A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.

B. Primers, Adhesives, and Seaming Materials: Waterproof; types recommended by flooring manufacturer.
1. Provide only products having lower VOC content than allowed by local regulation.

C. Moldings, Transition and Edge Strips: As scheduled on the drawings.

D. Sealer and Polish: Types recommended by flooring manufacturer.

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust–free, and are ready to receive resilient base.

C. Cementitious Sub–floor Surfaces: Verify that substrates are dry enough and ready for resilient flooring installation by testing for moisture and pH.
1. Test in accordance with ASTM F710, including but not limited to Moisture Vapor Emission and pH.
2. Test Internal Relative Humidity in accordance with ASTM F2170 Procedure A.
3. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

D. Verify that required floor–mounted utilities are in correct location.

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers and in accordance with ASTM F710.

B. Remove sub–floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub–floor filler to achieve smooth, flat, hard surface.

C. Prohibit traffic until filler is cured.

D. Clean substrate.

E. Apply primer as required to prevent "bleed–through" or interference with adhesion by substances that cannot be removed.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of sub–floor conditions.

B. Install in accordance with manufacturer's instructions.

C. Spread only enough adhesive to permit installation of materials before initial set.

D. Fit joints tightly.

E. Set flooring in place, press with heavy roller to attain full adhesion.

F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.

G. Install edge strips or vinyl transition trims at unprotected or exposed edges, where flooring terminates or abuts other floor finishes, and where indicated.

H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

I. Install flooring in recessed floor access covers, maintaining floor pattern.

3.04 TILE FLOORING

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless manufacturer's instructions say otherwise.

3.05 RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.

B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.

C. Install base on solid backing. Bond tightly to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean, seal and polish in accordance with manufacturer's instructions.

3.07 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

SECTION 09 9000 – PAINTING AND COATING

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints, stains, varnishes, and other coatings.

C. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory–finished and unless otherwise indicated, including the following:
1. Exposed surfaces of steel lintels and ledge angles.
2. Prime surfaces to receive wall coverings.
3. Mechanical and Electrical:
a. In finished areas, paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
b. In finished areas, paint shop–primed items.
c. On the roof and outdoors, paint all equipment that is exposed to weather or to view, except that which is factory–finished.

D. Do Not Paint or Finish the Following Items:
1. Items fully factory–finished unless specifically so indicated; materials and products having factory–applied primers are not considered factory finished.
2. Items indicated to receive other finishes.
3. Items indicated to remain unfinished.
4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
5. Floors, unless specifically so indicated.
6. Glass.
7. Concealed pipes, ducts, and conduits.

1.02 DEFINITIONS

A. Conform to ASTM D16 for interpretation of terms used in this section.

1.03 SUBMITTALS

A. Product Data: Provide complete list of all products to be used, with the following information for each:
1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
2. MPI product number (e.g. MPI #47).
3. Cross–reference to specified paint system(s) product is to be used in; include description of each system.

B. Samples: Submit three paper "draw down" samples, 8–1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
1. Where sheen is specified, submit samples in only that sheen.
2. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens definitely not required.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. Extra Paint and Coatings: 1 gallon of each color and type; store where directed.
2. Label each container with color, type, texture, and room locations in addition to the manufacturer's label.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Provide lighting level of 80 ft candles measured mid–height at substrate surface.

2.01 MANUFACTURERS

A. Provide all paint and coating products from the same manufacturer to the greatest extent possible.

B. Primer Sealers: Same manufacturer as top coats.

C. Block Fillers: Same manufacturer as top coats.

D. Substitutions: See Section 01 6000 – Product Requirements.

2.02 PAINTS AND COATINGS – GENERAL

A. Paints and Coatings: Ready mixed, unless intended to be a field–catalyzed coating.
1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
2. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
4. Supply each coating material in quantity required to complete entire project's work from a single production run.
5. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.

B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

C. Volatile Organic Compound (VOC) Content:
1. Provide coatings that comply with the most stringent requirements specified in the following:
a. 40 CFR 59, Subpart D––National Volatile Organic Compound Emission Standards for Architectural Coatings.
2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

D. Flammability: Comply with applicable code for surface burning characteristics.

E. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

F. Colors: As indicated on drawings

2.03 PAINT SYSTEMS – EXTERIOR

A. All Exterior Concrete and Masonry Surfaces Indicated to be Painted, Unless Otherwise Indicated: Including concrete, concrete masonry, and cement board.
1. Preparation as specified by manufacturer.
2. Two top coats and one coat primer recommended by manufacturer.
3. Top Coat(s): MPI Exterior Latex (MPI # 10, 11, 15, 119, 214).
4. Primer On Concrete and Concrete Masonry: One heavy coat latex block filler (100 percent acrylic) squeegeed into pores.

B. Wood, Opaque, Latex, 3 Coat:
1. One coat of latex primer sealer.
2. Semi–gloss: Two coats of latex enamel; MPI # 11.

C. Gypsum Board and Plaster, Opaque, Latex, 3 Coat:
1. One coat of latex primer sealer.
2. Flat: Two coats of latex; MPI # 10.

D. Ferrous Metals, Unprimed, Latex, 3 Coat:
1. One coat of latex primer.
2. Semi–gloss: Two coats of latex enamel; MPI # 163.

E. Ferrous Metals, Primed, Latex, 2 Coat:
1. Touch–up with rust–inhibitive primer recommended by top coat manufacturer.
2. Semi–gloss: Two coats of latex enamel; MPI # 163.

F. Galvanized Metals, Latex, 3 Coat:
1. One coat galvanize primer.
2. Semi–gloss: Two coats of latex enamel; MPI # 163.

2.04 PAINT SYSTEMS – INTERIOR

A. All Interior Surfaces Indicated to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry, brick, wood, plaster, uncoated steel, shop primed steel, and galvanized steel.
1. Two top coats and one coat primer.
2. Primer(s): As recommended by manufacturer of top coats.

B. Medium Duty Door/Trim: Metals & wood.
1. Medium duty applications include doors, door frames, railings, handrails, guardrails, and balustrades
2. Two top coats and one coat primer.
3. Top Coat(s): MPI High Performance Architectural Interior Latex; MPI #139,140, 141.
4. Semi–Gloss: MPI gloss level 5; use this sheen, unless noted otherwise.
5. Primer(s): As recommended by manufacturer of top coats.

C. Dry Fall: Metals; exposed structure and overhead–mounted services, including shop primed steel deck, structural steel, metal fabrications, galvanized ducts, galvanized conduit, and galvanized piping.
1. Shop primer by others.
2. One top coat.
3. Top Coat: MPI Latex Dry Fall; MPI #118, 155, 226.
4. Flat: MPI gloss level 1; use this sheen, unless noted otherwise.

D. Transparent Finish on Wood, Unless Otherwise Indicated:
1. Stain: MPI Semi–Transparent Stain for Wood; MPI #90.
2. Top Coat(s): MPI Clear Water Based Varnish; MPI #128, 129, 130.
3. Satin: MPI gloss level 4; use this sheen, unless noted otherwise.

E. Wood, Opaque, Latex, 3 Coat:
1. One coat of latex primer sealer.
2. Semi–gloss: Two coats of latex enamel; MPI # 54.

F. Concrete/Masonry, Opaque, Latex, 3 Coat:
1. One coat of block filler.
2. Flat: Two coats of latex enamel; MPI # 53.

G. Ferrous Metals, Unprimed, Latex, 3 Coat:
1. One coat of latex primer.
2. Semi–gloss: Two coats of latex enamel; MPI # 153.

H. Ferrous Metals, Primed, Latex, 2 Coat:
1. Touch–up with latex primer.
2. Semi–gloss: Two coats of latex enamel; MPI # 153.

I. Galvanized Metals, Latex, 3 Coat:
1. One coat galvanize primer.
2. Semi–gloss: Two coats of latex enamel; MPI # 153.

J. Gypsum Board/Plaster, Latex, 3 Coat:
1. One coat of latex primer sealer.
2. Eggshell: Two coats of latex enamel; MPI # 52.

K. Fabrics/Insulation Jackets, Alkyd, 3 Coat:
1. One coat of latex primer sealer.
2. Flat: Two coats of alkyd enamel; MPI # 49.

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SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.: 19894
Drawn By: SO
Date: 07/19/2021
Issue: Bid/ Permit

A0.13

SPECIFICATIONS

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required to achieve the finishes specified whether specifically indicated or not; commercial quality.
B. Patching Material: Latex filler.
C. Fastener Head Cover Material: Latex filler.

3.01 EXAMINATION

A. Do not begin application of coatings until substrates have been properly prepared.
B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
D. Test shop-applied primer for compatibility with subsequent cover materials.
E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Gypsum Wallboard: 12 percent.
   2. Plaster and Stucco: 12 percent.
   3. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
   4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
   5. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to coating application.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
C. Remove or repair existing coatings that exhibit surface defects.
D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
E. Seal surfaces that might cause bleed through or staining of topcoat.
F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
G. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
H. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.
I. Plaster Surfaces to be Painted: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
J. Insulated Coverings to be Painted: Remove dirt, grease, and oil from canvas and cotton.
K. Aluminum Surfaces to be Painted: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
L. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
M. Corroded Steel and Iron Surfaces to be Painted: Prepare using at least SSPC-PC 2 (hand tool cleaning) or SSPC-SP 3 (power tool cleaning) followed by SSPC-SP 1 (solvent cleaning).
N. Uncorroded Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.
O. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
P. Interior Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
Q. Interior Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.
R. Exterior Wood Surfaces to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after prime coat has been applied. Back prime concealed surfaces before installation.
S. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.
T. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
B. Exterior Wood to Receive Opaque Finish: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 4 weeks.
C. Apply products in accordance with manufacturer's instructions.
D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
E. Apply each coat to uniform appearance.
F. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.
G. Sand wood and metal surfaces lightly between coats to achieve required finish.
H. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
I. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
J. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

SECTION 10 4400 – FIRE EXTINGUISHERS

1.01 REFERENCE STANDARDS

A. NFPA 10 – Standard for Portable Fire Extinguishers; 2013.
B. UL (FPED) – Fire Protection Equipment Directory; Underwriters Laboratories Inc.; current edition.

1.02 SUBMITTALS

A. Shop Drawings: Indicate cabinet physical dimensions, wall bracket mounted measurements, and location.
B. Product Data: Provide color and finish and extinguisher type and capacity.

1.03 FIELD CONDITIONS

A. Do not install extinguishers when ambient temperature may cause freezing of extinguisher ingredients.

2.01 FIRE EXTINGUISHERS

A. Fire Extinguishers – General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
   1. Provide extinguishers labeled by UL for the purpose specified and indicated.
B. Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gage.
   1. Class: 4A-80B:C.
   2. Size: 10 pound.
   3. Finish: Baked polyester powder coat, red color.

2.02 ACCESSORIES

A. Extinguisher Brackets: Formed steel, chrome-plated.
B. Graphic Identification: Fire Extinguisher.

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

A. Supply and install **2** fire extinguishers.
B. Final location shall be directed by the authority having jurisdiction.
C. Install in accordance with manufacturer's instructions and secure rigidly in place.
D. Place extinguishers on wall brackets, unless noted otherwise.

END OF SECTION

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PetPeople
SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.: 18894
Drawn By: SO

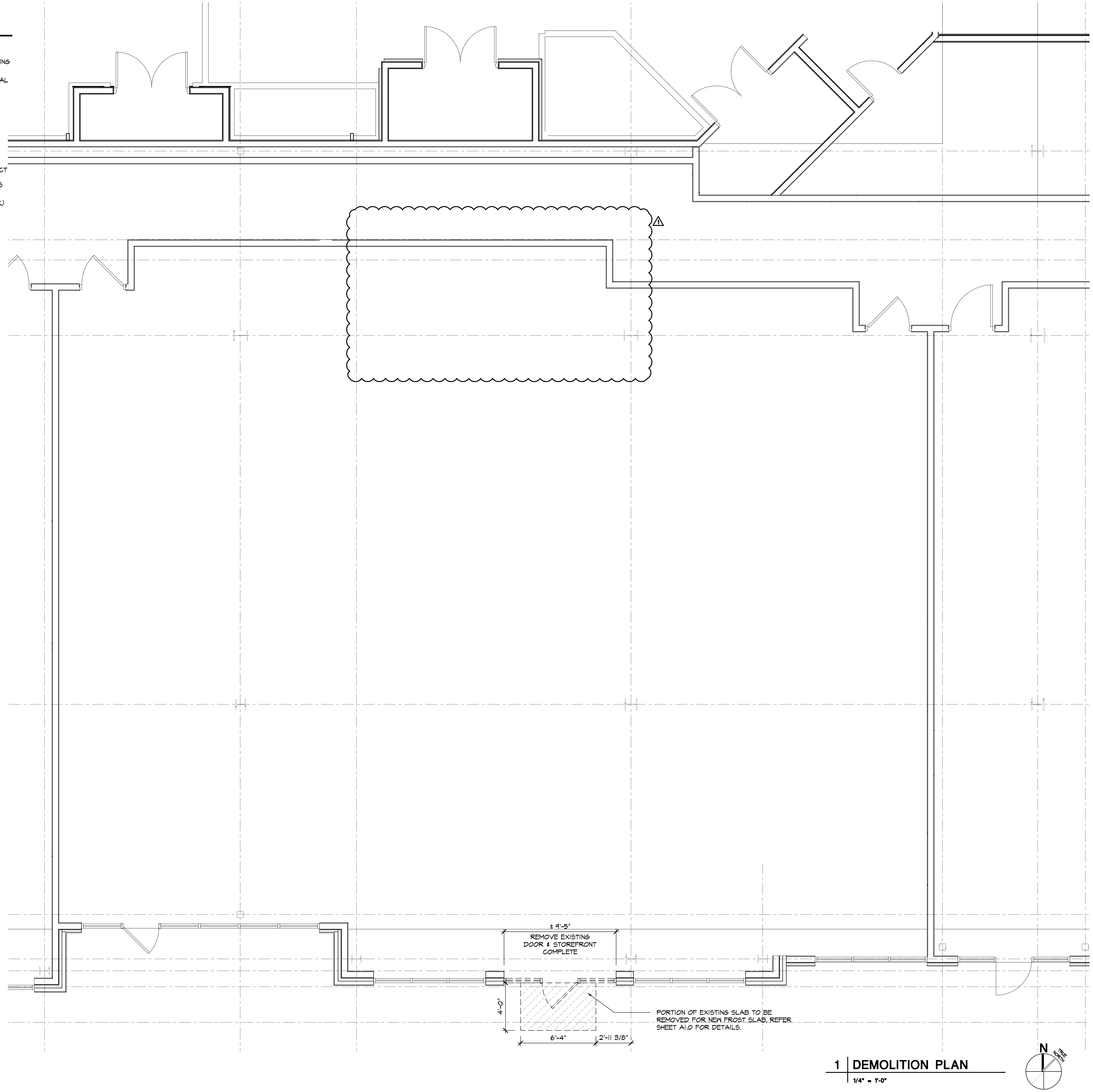
Date	Issue
07/19/2021	Bid/ Permit

A0.14

SPECIFICATIONS

GENERAL DEMOLITION NOTES:

1. THIS DEMOLITION PLAN IS FOR REFERENCE ONLY. THE EXISTING CONDITIONS ARE BASED ON FIELD OBSERVATIONS. CONTRACTOR IS TO VERIFY EXISTING CONDITIONS PRIOR TO THE START OF WORK.
2. REMOVE EXISTING CONSTRUCTION WHERE INDICATED AND AS REQUIRED TO FACILITATE NEW WORK (EXISTING CONSTRUCTION TO BE REMOVED SHOWN DASHED).
3. PROVIDE TEMPORARY SUPPORTS, SHORING AND BRACING AS REQUIRED TO PROTECT EXISTING STRUCTURAL ITEMS REMAINING IN PLACE. VERIFY AND COORDINATE EXISTING UTILITIES TO BE REMOVED AND/OR RELOCATED.
4. PATCH/REPAIR ALL AREAS WHERE DEMOLITION OCCURS TO MATCH EXISTING ADJACENT. PREP FOR NEW CONSTRUCTION AND FINISHES.
5. REMOVE ALL EXISTING WALL, EQUIPMENT, FIXTURES AND WALL FINISHES COMPLETELY IN AREA SHOWN DASHED.
6. REFER TO PLUMBING, MECHANICAL, AND ELECTRICAL SHEETS FOR ADDITIONAL DEMOLITION.
7. ALL DEMOLITION DEBRIS SHALL BE DISPOSED OF PROPERLY AND COMPLETELY. CLEAN AND PREP FOR NEW CONSTRUCTION.
8. VERIFICATION OF LANDLORD'S CONDITIONS AND REQUIREMENTS FOR WORKING ON PREMISES WITH RESPECT TO ADJACENT OCCUPIED TENANT AREAS AND COMMON MALL AREAS, PRIOR TO START OF WORK. ALL WORK BY G.C. SHALL BE PERFORMED IN STRICT COMPLIANCE WITH LANDLORD'S RULES AND REGULATIONS TO PROVIDE MINIMUM DISRUPTION AND DISTURBANCE.
9. PLANNING, SCHEDULING AND COORDINATION OF ALL REMOVALS AND DEMOLITION (AS WELL AS NEW WORK) TO AVOID INTERRUPTION TO ELECTRICAL, HVAC, PLUMBING, AND FIRE PROTECTION SERVICES.
10. PROVISIONS FOR MAINTAINING SECURITY TO THE SPACE PER LANDLORD AND/OR TENANT DIRECTION.



1 | DEMOLITION PLAN
1/4" = 1'-0"

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8/11/21

PetPeople
SUMMIT AT WEST PRYOR
940 NW PRYOR RD. SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.:	18894
Drawn By:	XX
Date	Issue
07/19/2021	Bid/ Permit
07/31/2021	1 Revision 1

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DEMOLITION PLAN

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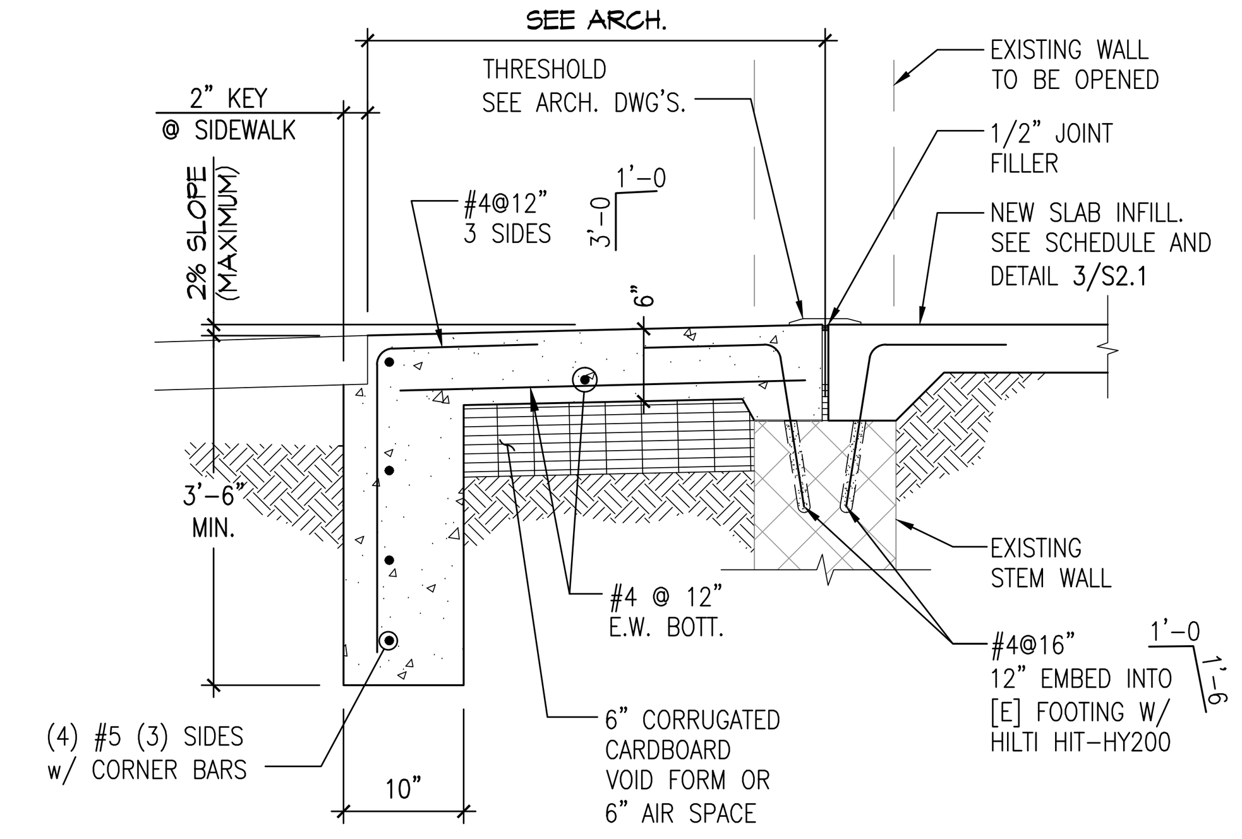
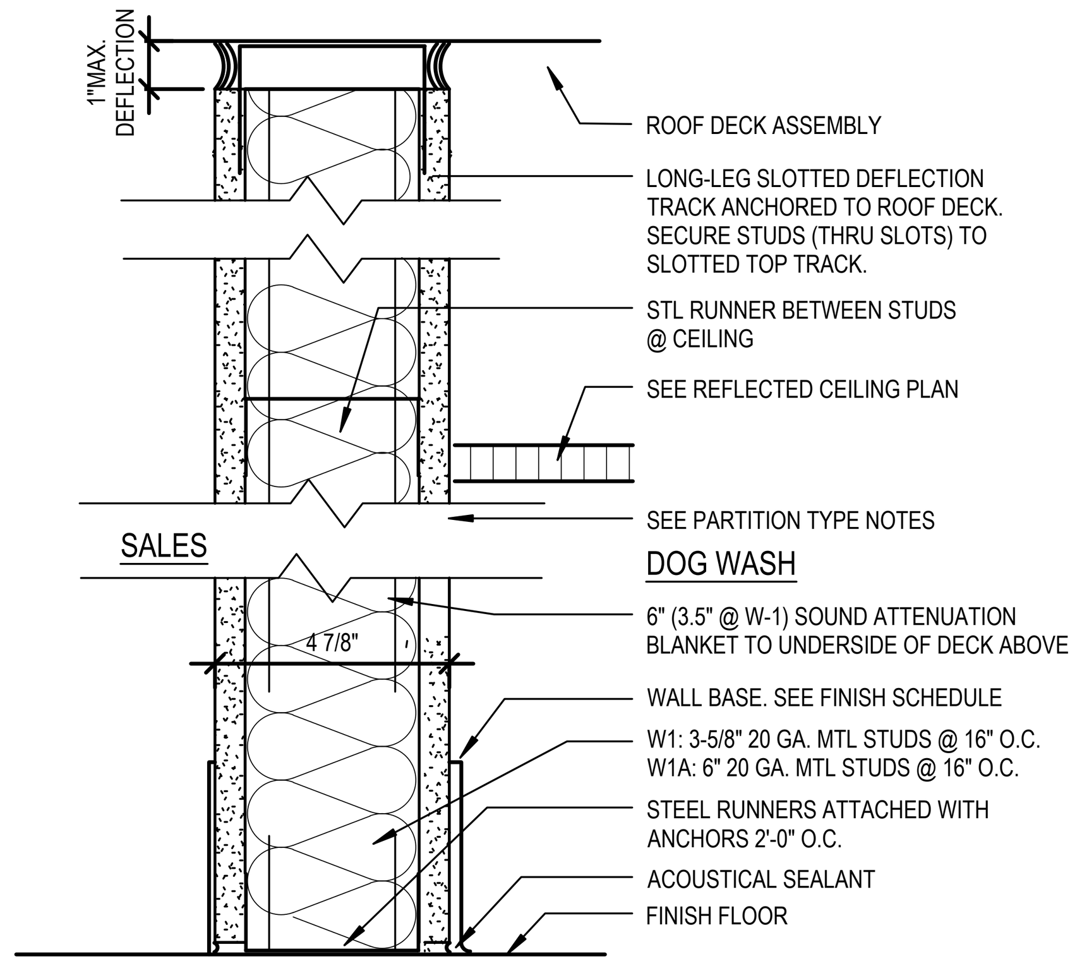
Drawn By:Saloni Kumbkarni

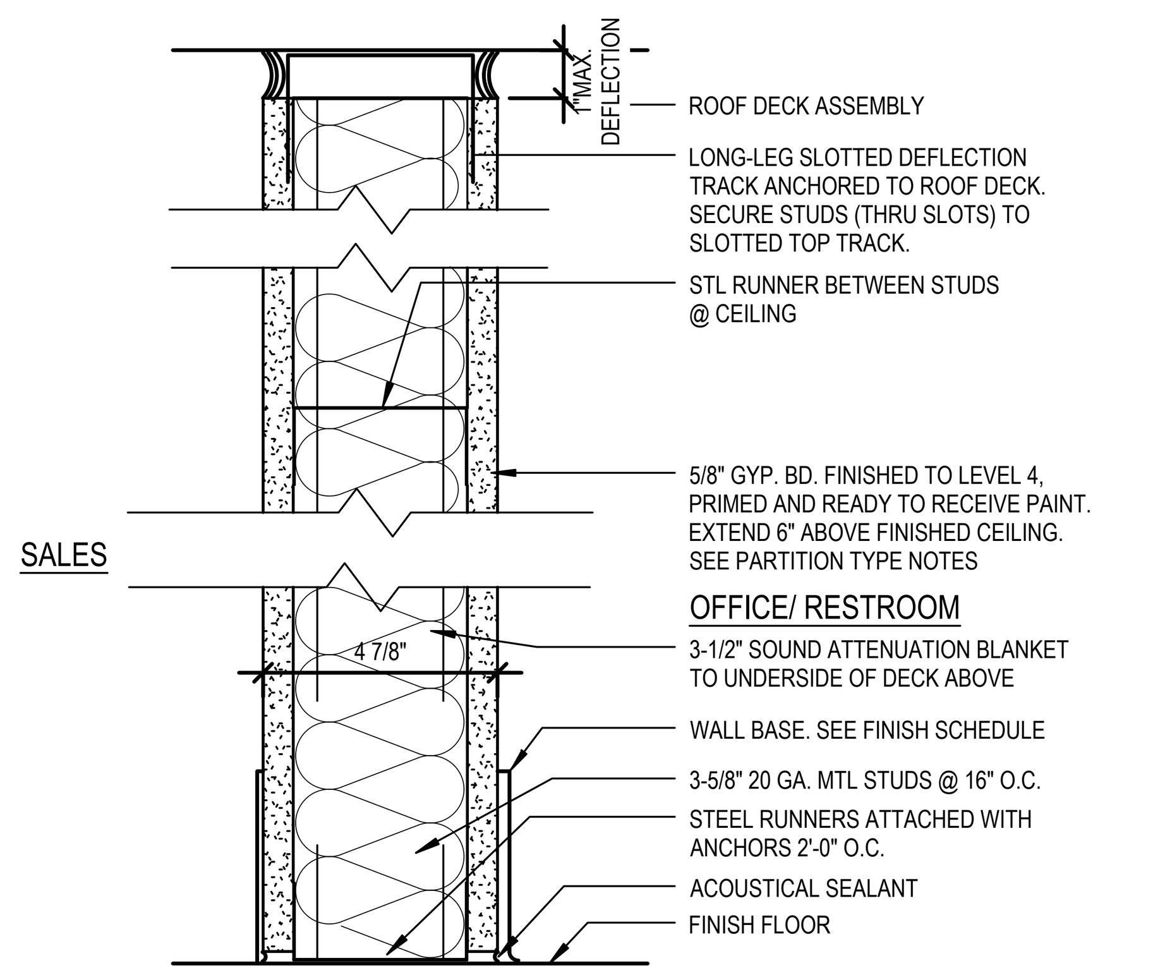


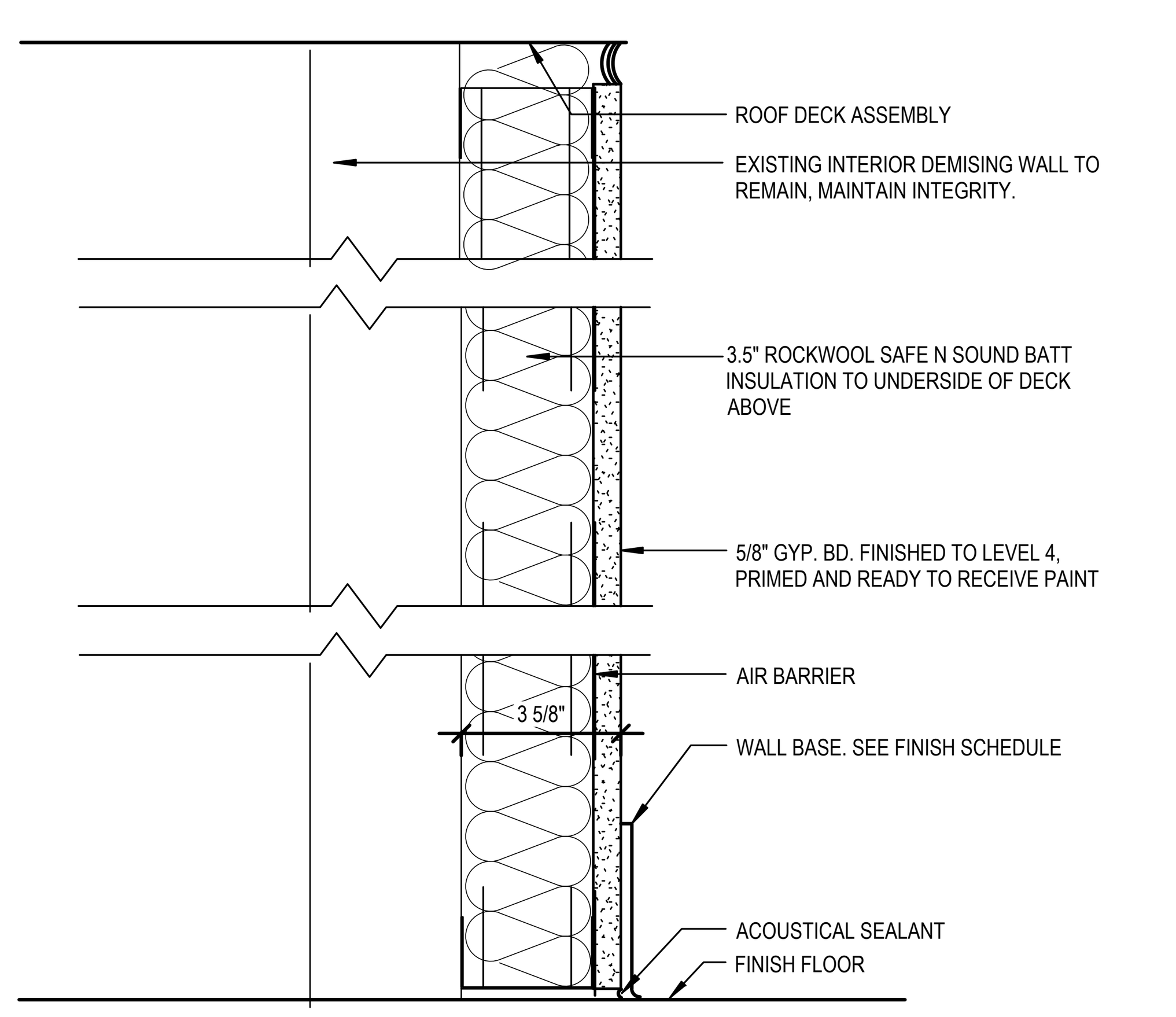
NOTE: ALL REINF. BAR IN FROST SLAB TO BE EPOXY COATED

GENERAL PLAN NOTES

1. GYPSUM BOARD SHALL EXTEND FROM FLOOR TO UNDERSIDE OF ROOF DECK. GYPSUM BD. SHALL BE TAPED, SANDED, AND READY TO RECEIVE PAINT.
2. CONCRETE SLAB MUST BE SMOOTH AND LEVEL (TO 1/8" OVER 10'-0" SPANS) AND READY TO ACCEPT TENANT FINISHES. NO CRACKS VOIDS OR HOLES WILL BE ACCEPTED.
3. DOWEL NEW SLAB INTO EXISTING AT ALL TRANSITIONS. REFER TO CONCRETE SLAB INFILL DETAIL.
4. LEVEL TOLERANCE SHOULD NOT EXCEED 1/8" DEVIATION OVER 10'-0" SPAN. ANY CRACKS, VOIDS OR DEPRESSIONS SHOULD BE FILLED WITH ARDEX MATERIAL. INSTALLATION OF ARDEX MATERIAL MUST BE BY A FACTORY-TRAINED APPLICATOR, SUCH AS AN ARDEX LEVEL MASTER ELITE INSTALLER, USING MIXING EQUIPMENT AND TOOLS APPROVED BY THE MANUFACTURER. PLEASE CONTACT DANIELLE HUNSICKER OF ARDEX AT (724) 203-5066 FOR ASSISTANCE OR LOCAL REP.
5. ALL CODE REQUIRED FIRE STOPPING AT DEMISING WALL IS TO BE PROVIDED.
6. PROVIDE BLOCKING IN WALLS FOR ALL WALL HUNG ACCESSORIES.
7. G.C. TO VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF CONSTRUCTION. PATCH AND REPAIR EXISTING FINISHES AS REQUIRED.

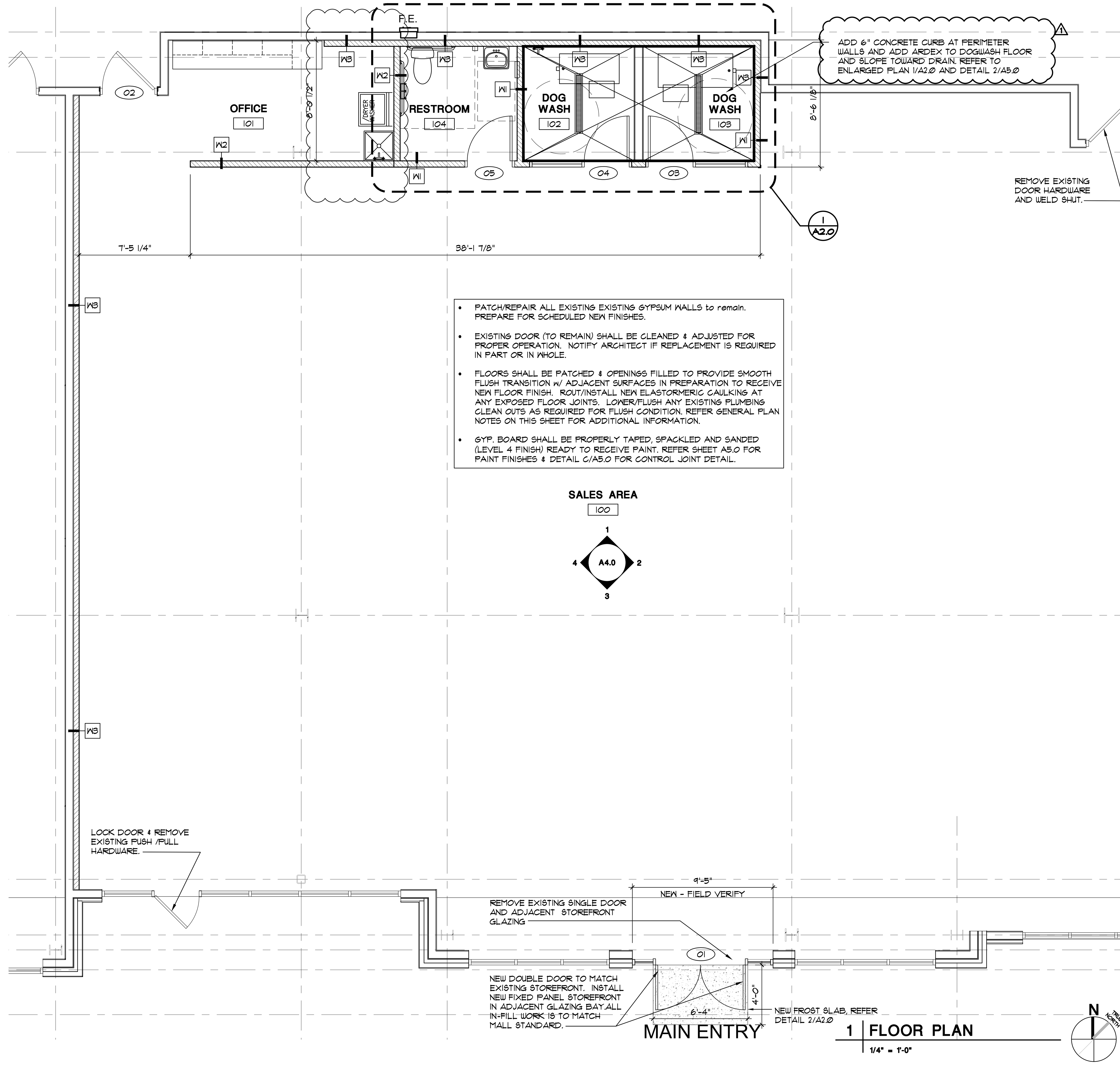






PARTITION NOTES

1. PROVIDE MOISTURE RESISTANT GYPSUM BOARD @ RESTROOMS, DRINKING FOUNTAINS, MOP SINK AND DOG WASH AREA ON SALES SIDE OF WALL.
2. PROVIDE 5/8" THICK CEMENT BOARD BEHIND WALL TILE.
3. INSTALL CONTROL JOINTS PER DETAIL ON A5.0



- PATCH/REPAIR ALL EXISTING EXISTING GYPSUM WALLS to remain. PREPARE FOR SCHEDULED NEW FINISHES.
- EXISTING DOOR (TO REMAIN) SHALL BE CLEANED & ADJUSTED FOR PROPER OPERATION. NOTIFY ARCHITECT IF REPLACEMENT IS REQUIRED IN PART OR IN WHOLE.
- FLOORS SHALL BE PATCHED & OPENINGS FILLED TO PROVIDE SMOOTH FLUSH TRANSITION w/ ADJACENT SURFACES IN PREPARATION TO RECEIVE NEW FLOOR FINISH. ROUT/INSTALL NEW ELASTORMERIC CAULKING AT ANY EXPOSED FLOOR JOINTS. LOWER/FLUSH ANY EXISTING PLUMBING CLEAN OUTS AS REQUIRED FOR FLUSH CONDITION. REFER GENERAL PLAN NOTES ON THIS SHEET FOR ADDITIONAL INFORMATION.
- GYP. BOARD SHALL BE PROPERLY TAPED, SPACKLED AND SANDED (LEVEL 4 FINISH) READY TO RECEIVE PAINT. REFER SHEET A5.0 FOR PAINT FINISHES & DETAIL C/A5.0 FOR CONTROL JOINT DETAIL.

1 FLOOR PLAN
1/4" = 1'-0"

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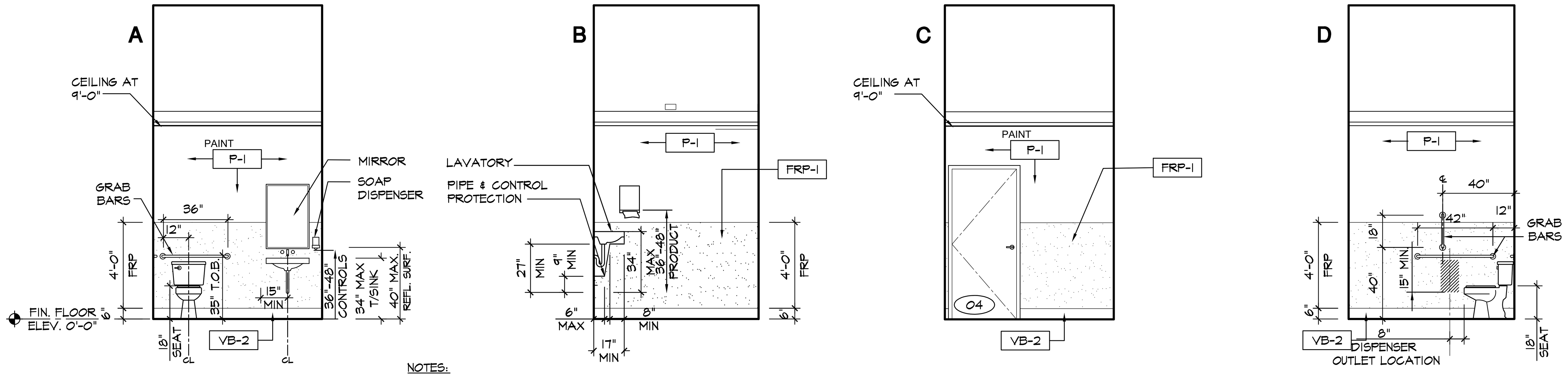
8/11/21

PetPeople
SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.:	18894
Drawn By:	SO
Date	Issue
07/19/2021	Bid/ Permit
07/31/2021	1 Revision 1

A1.0

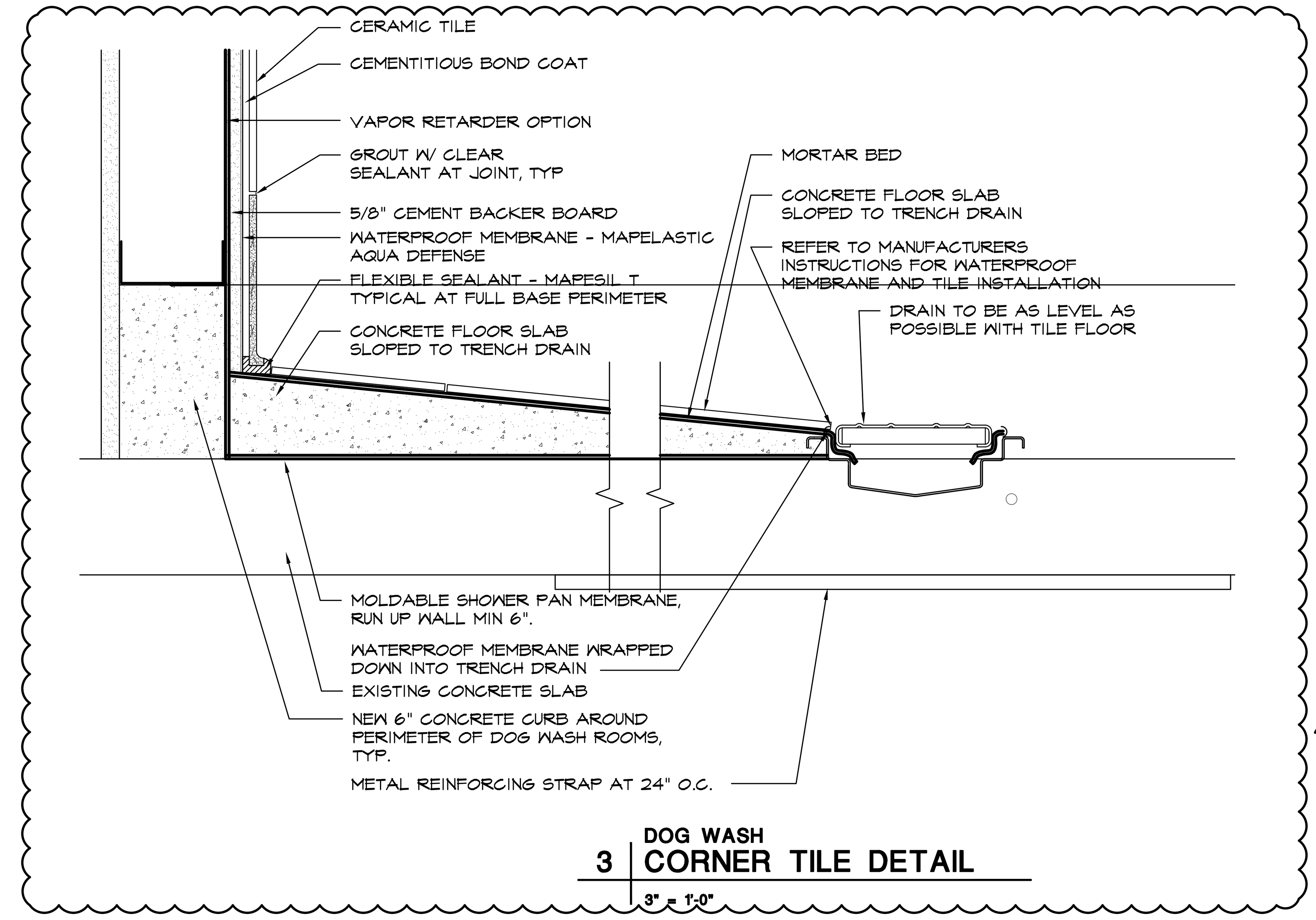
FLOOR PLAN



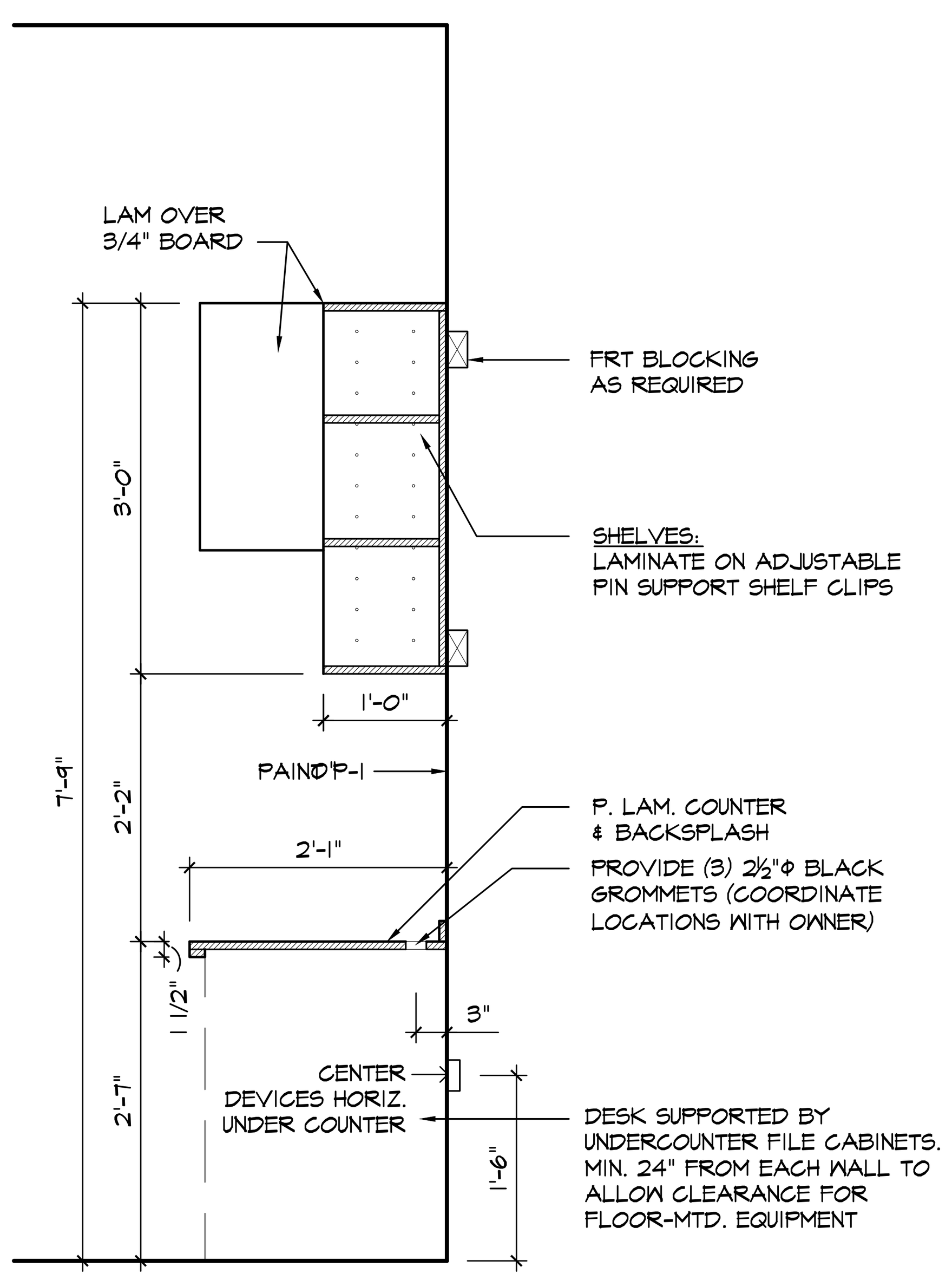
NOTES:

1. EXPOSED PIPING & CONTROLS UNDER LAVATORY TO BE PROTECTED w/ "LAV GUARD-2" UNDERSINK PIPE COVERS BY 'TRUEBRO' (OR APPROVED EQUAL) PER ADA 606.5/ANSI A117.1-606.6
2. ALL LAVATORY APPURTENANCES ARE TO BE INSTALLED PER ADA/ANSI A117.1 REQUIREMENTS

7 | TOILET ROOM
TYP. INTERIOR ELEVATION
1/4" = 1'-0"



3 | DOG WASH
CORNER TILE DETAIL
3" = 1'-0"



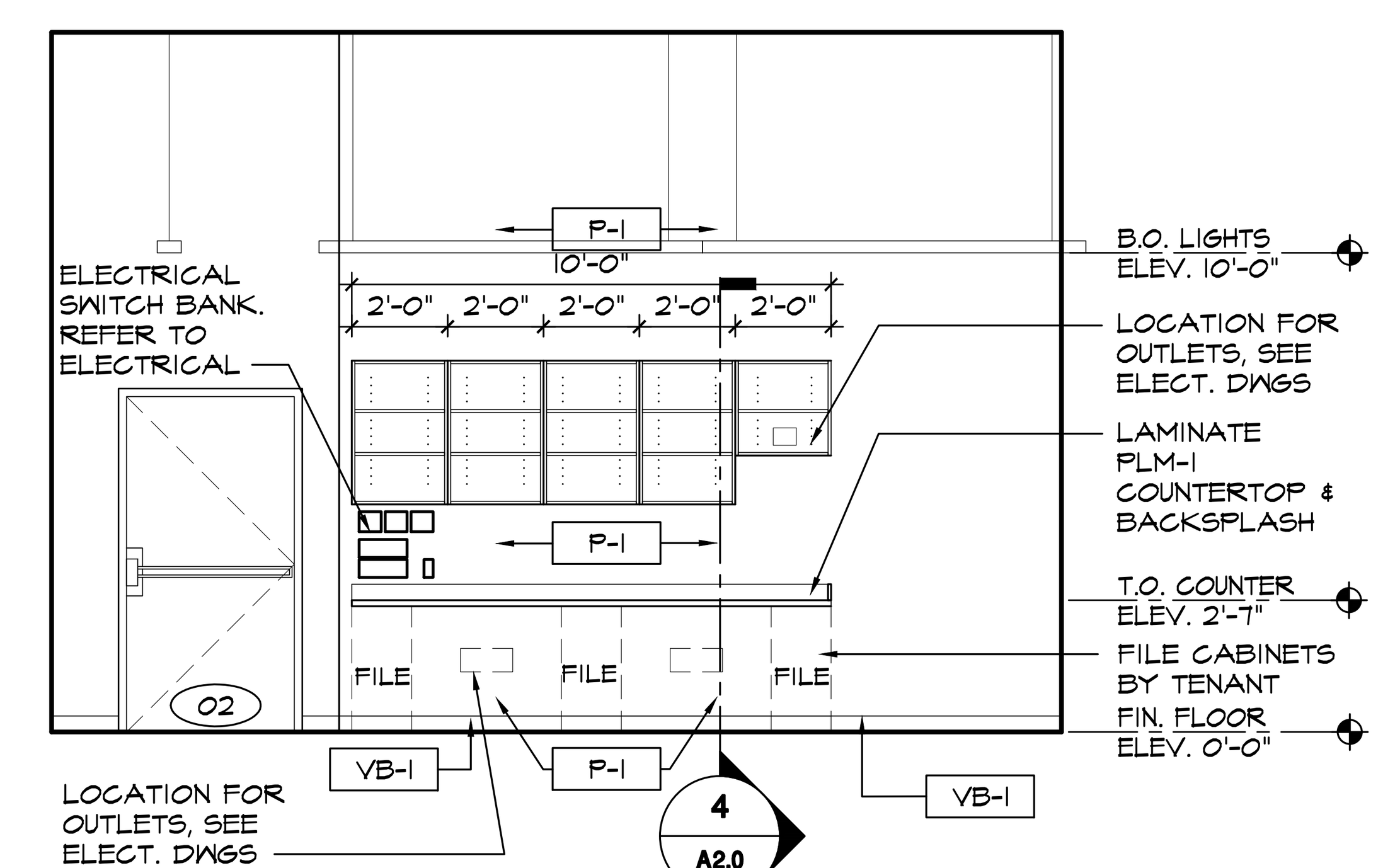
4 | OFFICE
MILLWORK SECTION
3/4" = 1'-0"

ACCESSORY SCHEDULE (X)

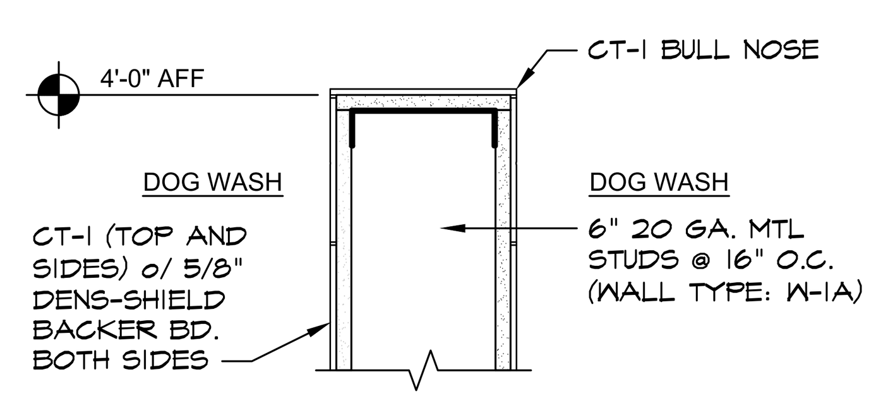
	DESCRIPTION	MANUFACTURER	NUMBER	MOUNTING HT (A.F.F.)	NOTE
1	PAPER TOWEL DISPENSER	BY TENANT	-	40" TO TOWEL	SURFACE MOUNTED
2	TOILET PAPER HOLDER	BY TENANT	-	-	
3	MIRROR	BOBRICK	B-1658	40" TO BOTTOM OF REFLECTIVE SURFACE	2'-0" x 3'-0" X¼" PLATE GLASS MIRROR
4	SOAP DISPENSER	BY TENANT	-		
5	CANE DETECTION RAIL	BUY RAILINGS	1833		

RESTROOM FIXTURE GENERAL NOTES:

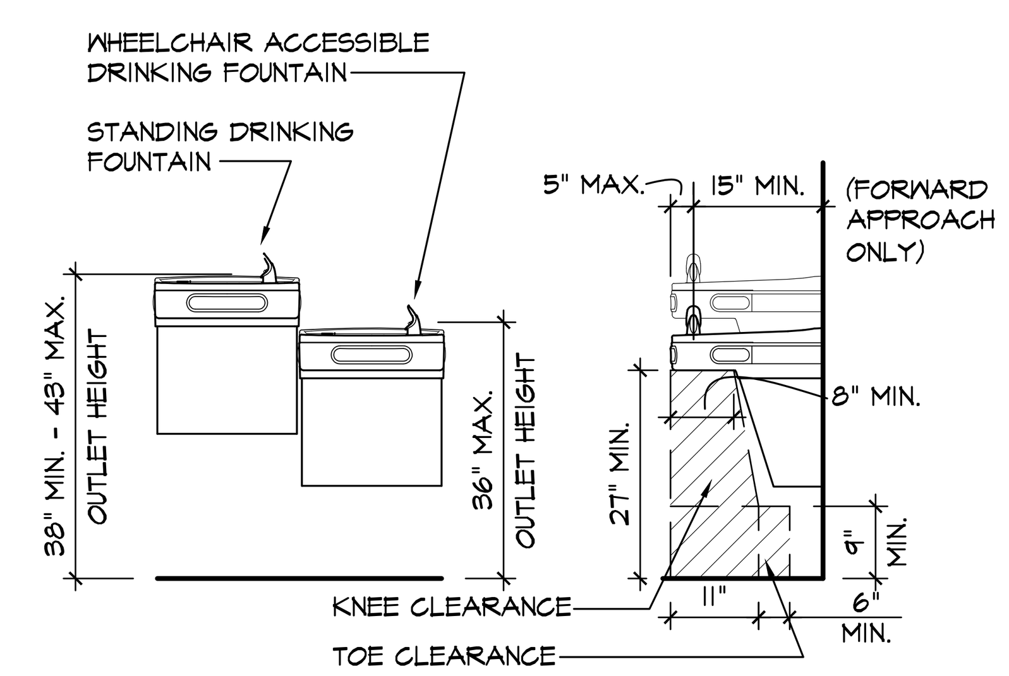
1. REFER TO PLANS AND ELEVATIONS FOR LOCATION OF FIXTURES
2. REFER TO PLUMBING PLANS AND SPECIFICATIONS FOR COMPLETE FIXTURE INFORMATION
3. MOUNT ACCESSORY w/ HIGHEST OPERABLE COMPONENT NO HIGHER THAN THE HEIGHT INDICATED
4. LAVATORY APPURTENANCES ARE TO BE INSTALLED PER ADAAG/ANSI A117.1 GUIDELINES AND IN ACCORDANCE w/ MANUFACTURER'S RECOMMENDATIONS. COORDINATE WORK w/ ALL RELATED TRADES.



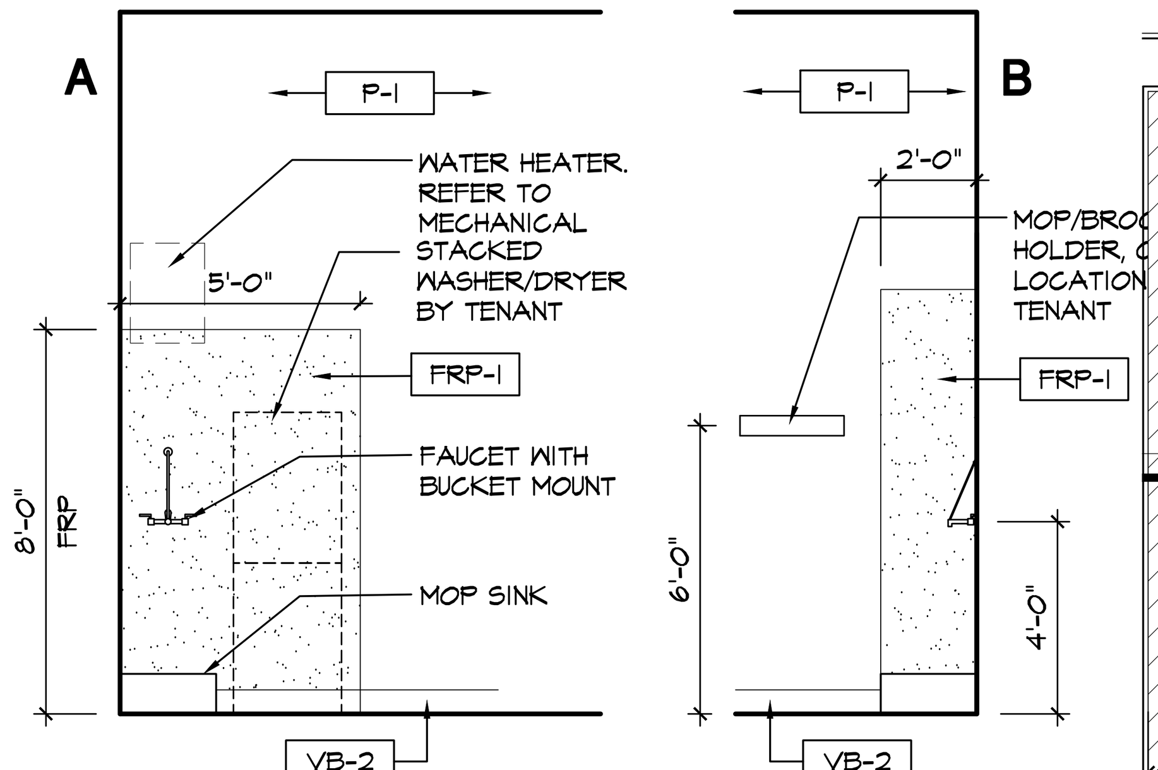
2 | OFFICE
INTERIOR ELEVATION
1/4" = 1'-0"



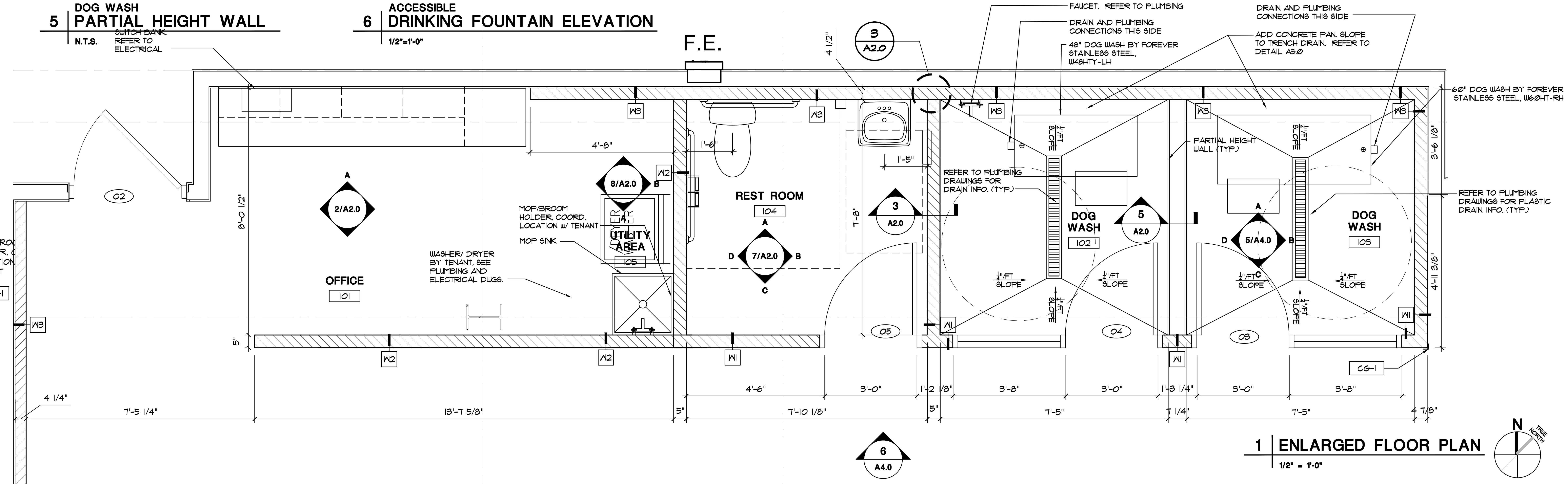
5 | DOG WASH
PARTIAL HEIGHT WALL
N.T.S.



6 | ACCESSIBLE
DRINKING FOUNTAIN ELEVATION
1/2"=1'-0"



8 | UTILITY AREA
TYP. INTERIOR ELEVATION
1/4" = 1'-0"



1 | ENLARGED FLOOR PLAN
1/2" = 1'-0"

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PetPeople
SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.:		18894
Drawn By:		SO
Date	Issue	
07/19/2021	Bid/ Permit	
07/31/2021	△ Revision 1	

A2.0

ENLARGED PLAN/
ELEVATIONS

Job Path: \\Master\AA STANDARDS\CAD STANDARDS\TEMPLATE\Master Template.dwt
Drawn By: C.F. Marks

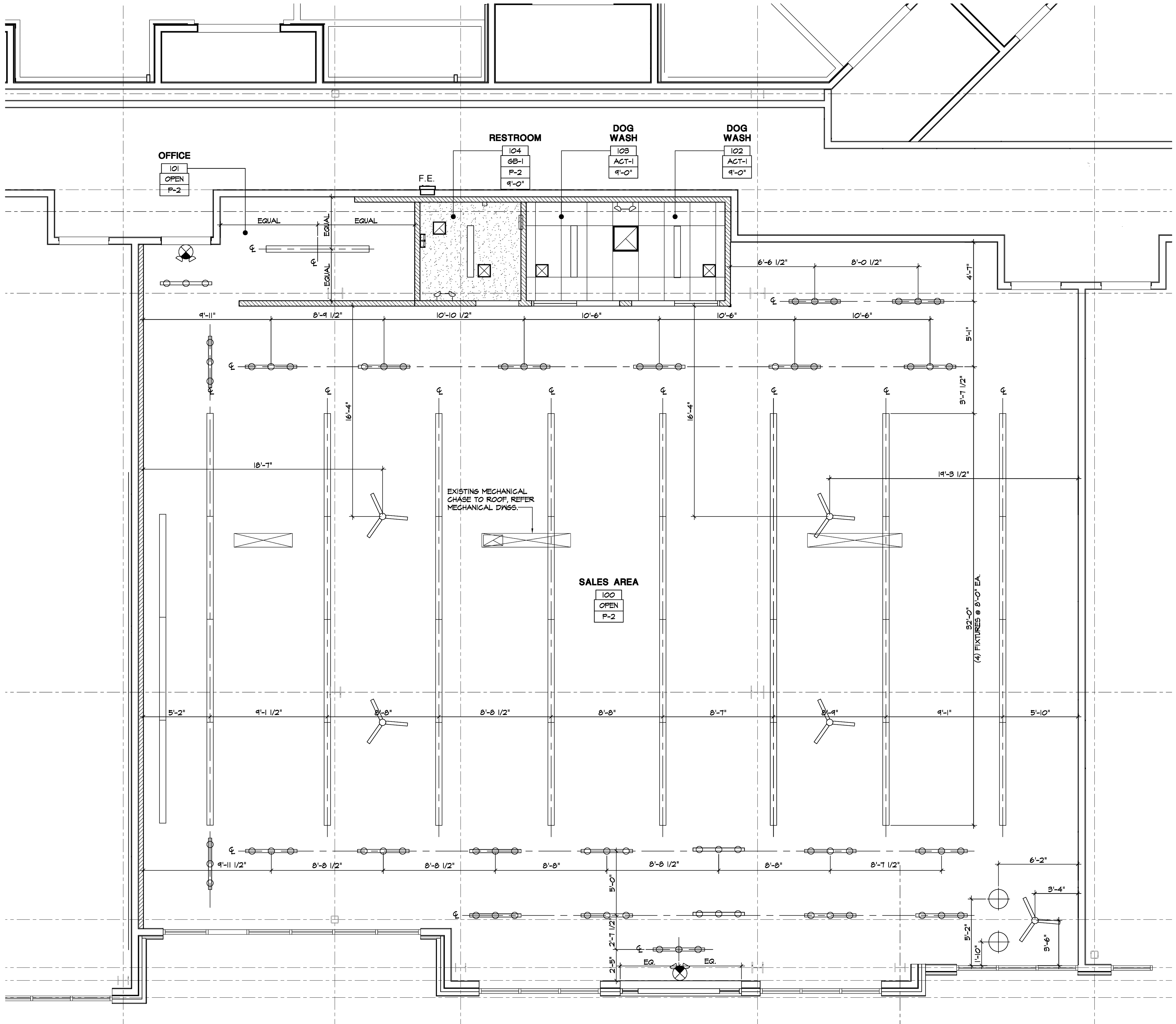
CEILING LEGEND

	PENDANT LIGHT
	4' STRIP LIGHT
	8' STRIP LIGHT
	4' ENCLOSED STRIP LIGHT (DOG WASH)
	4' TRACK WITH 3 HEADS
	CEILING FAN
	SUSPENSION CEILING SYSTEM
	EXHAUST FAN
	RETURN AIR GRILLE: REFER TO MECHANICAL DRAWINGS
	SUPPLY AIR DIFFUSER: REFER TO MECHANICAL DRAWINGS

NOTE:
REFER TO LIGHT FIXTURE SCHEDULE ON SHEET E1.0 FOR COMPLETE FIXTURE DESCRIPTIONS.

CEILING NOTES

1. PAINT ALL GYPSUM BOARD CEILINGS, EXPOSED DECK STRUCTURE, CONDUIT, PIPING, DUCTWORK AND SOFFITS P-2, UNLESS OTHERWISE NOTED; FACE OF RETURNS TO MATCH THE UNDERSIDE. NO COLOR TO CHANGE AT AN OUTSIDE CORNER.
2. PAINT ALL DIFFUSER AND OTHER EXPOSED MECHANICAL COMPONENTS TO MATCH CEILING IN WHICH THEY OCCUR.
3. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION ABOUT PENDANTS AND OTHER DECORATIVE LIGHTING.
4. OUTLETS, SWITCHES AND DEVICES TO MATCH THE MATERIAL IN WHICH THEY OCCUR.
5. ALL CEILING TILES TO BE CENTERED IN ROOM, CENTER LIGHT FIXTURES IN ROOMS WITH ACOUSTIC TILE UNLESS NOTED OTHERWISE.
6. SEE MEP DRAWINGS FOR ADDITIONAL CEILING INFORMATION.
7. ALIGN GYP. BD. SOFFIT AT STOREFRONT WITH HEADER.
8. COORDINATE FINAL CASHWRAP PENDANT LIGHTING WITH TENANT.



1 | REFLECTED CEILING PLAN
1/4" = 1'-0"

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07/19/2021	Bid/ Permit

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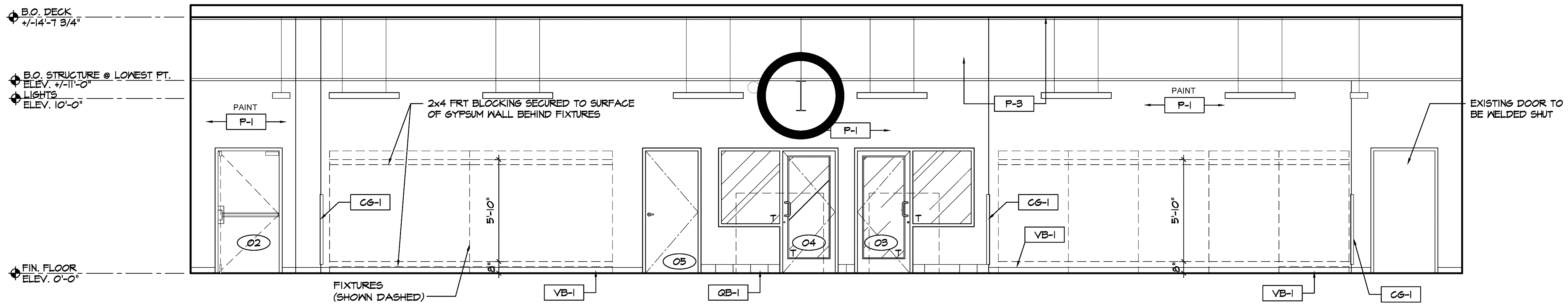
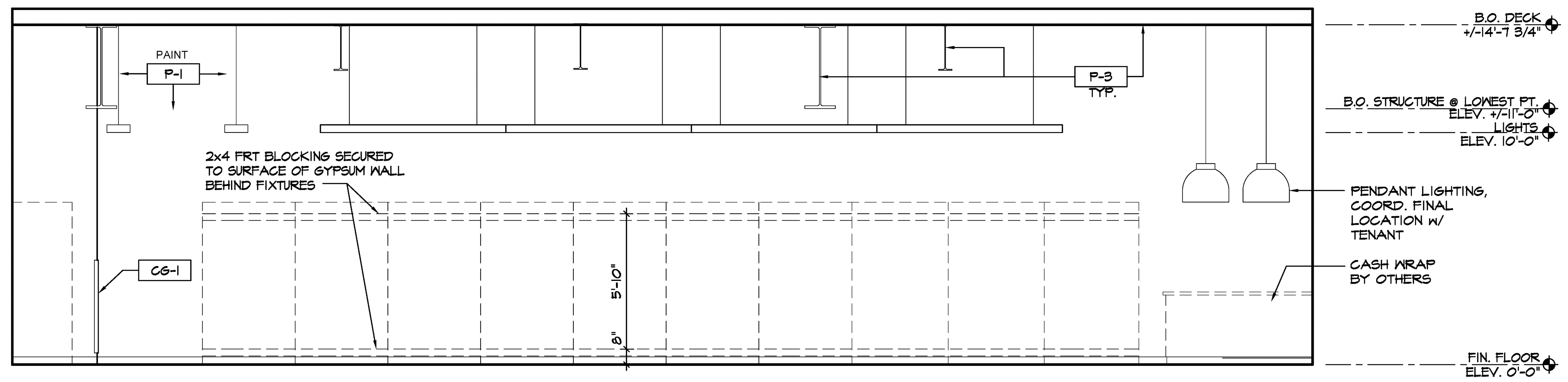
REFLECTED CEILING PLAN



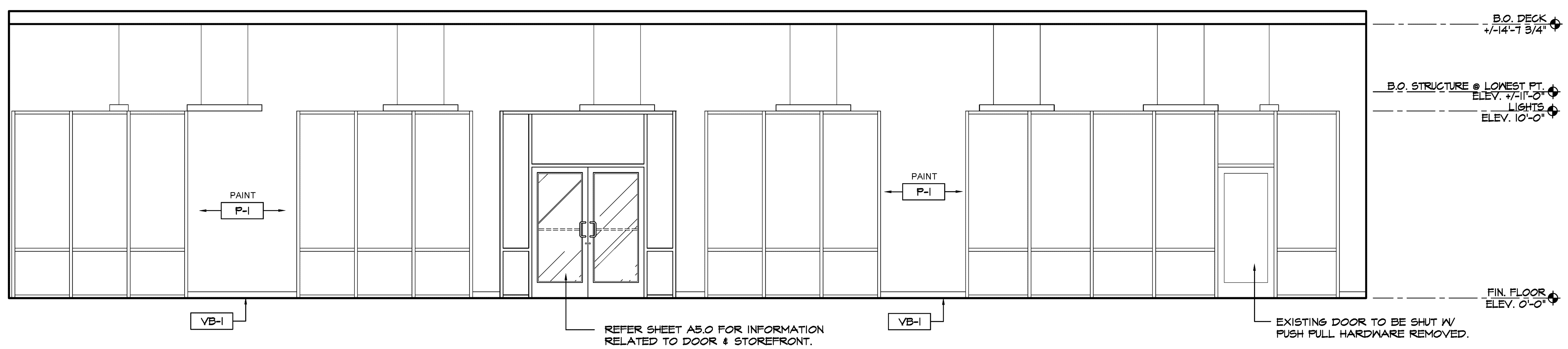
1 | INTERIOR ELEVATION

1/4" = 1'-0"



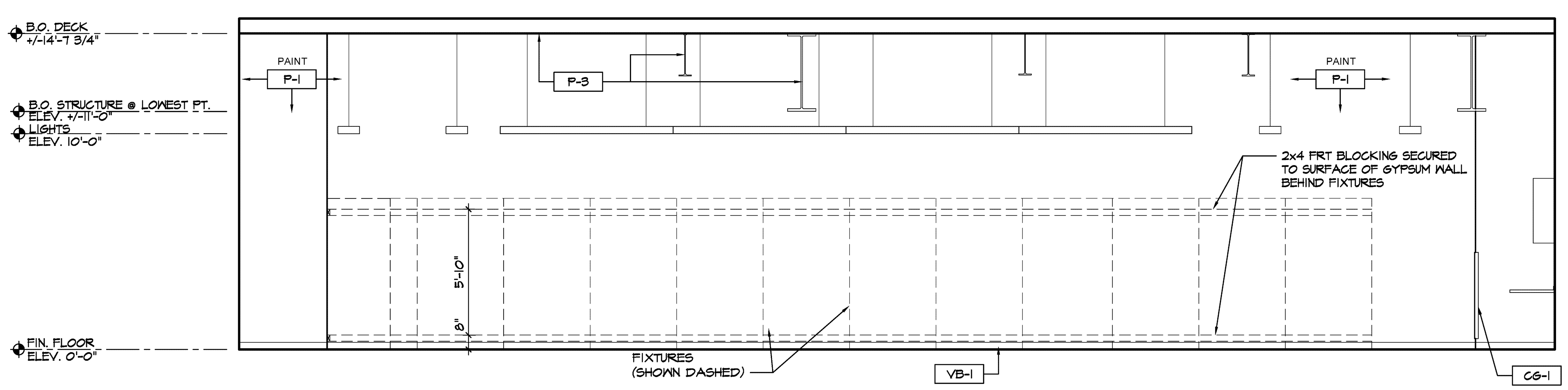
2 | INTERIOR ELEVATION

1/4" = 1'-0"



3 | INTERIOR ELEVATION

1/4" = 1'-0"



4 | INTERIOR ELEVATION

1/4" = 1'-0"

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Date	Issue
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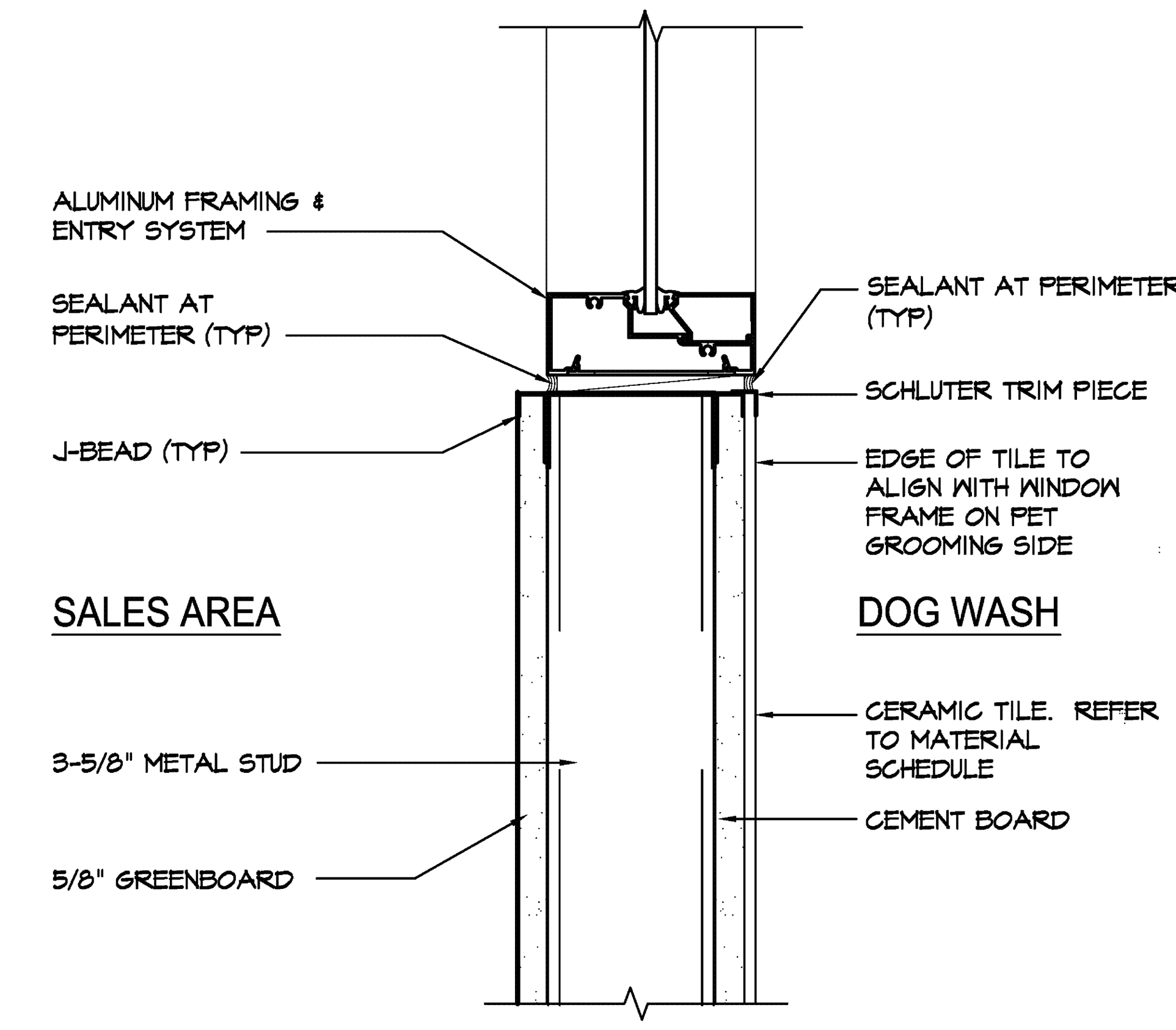
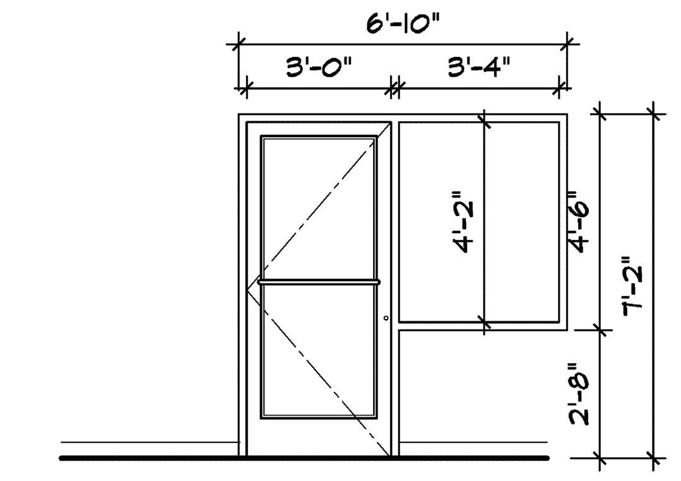
A4.0

INTERIOR ELEVATIONS

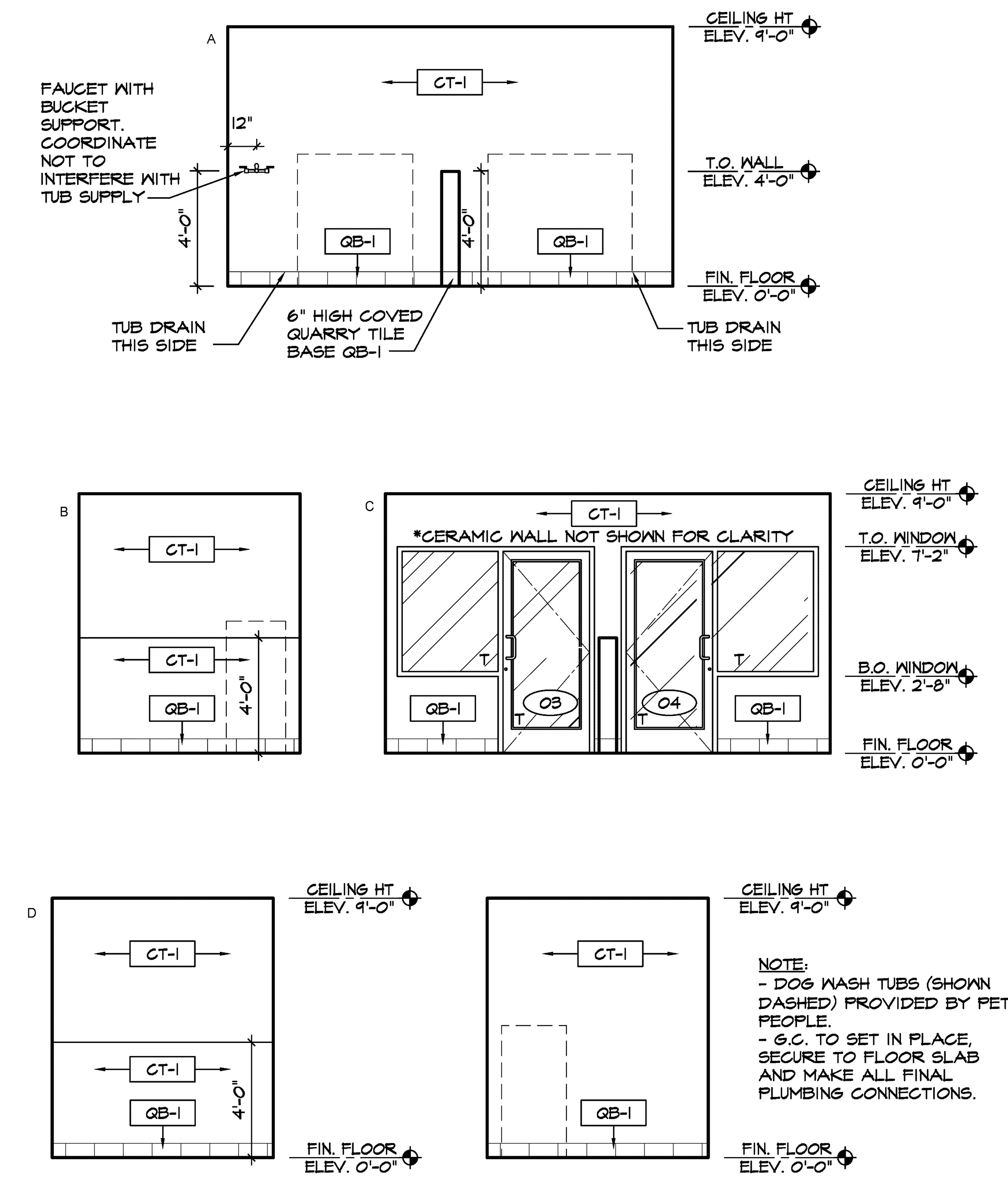
4 | STOREFRONT
EXTERIOR ELEVATION
1/4" = 1'-0"



3 | DOG WASH
TYP. SILL DETAIL
1/4" = 1'-0"



2 | DOG WASH
TYP. INTERIOR ELEVATION
1/4" = 1'-0"



1 | DOG WASH
TYP. INTERIOR ELEVATION
1/4" = 1'-0"

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8/11/21

PetPeople
SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.:	18894
Drawn By:	XXX
Date	Issue
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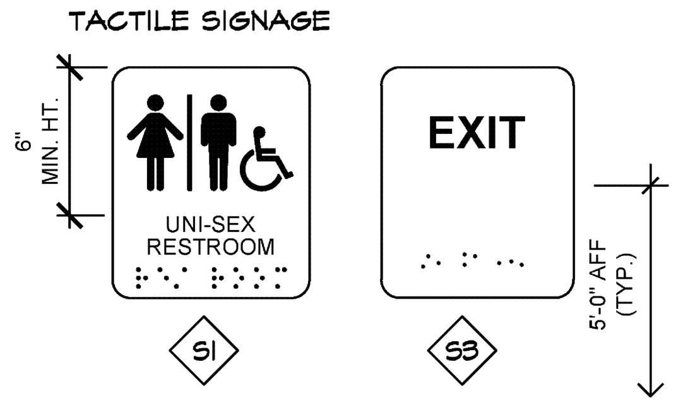
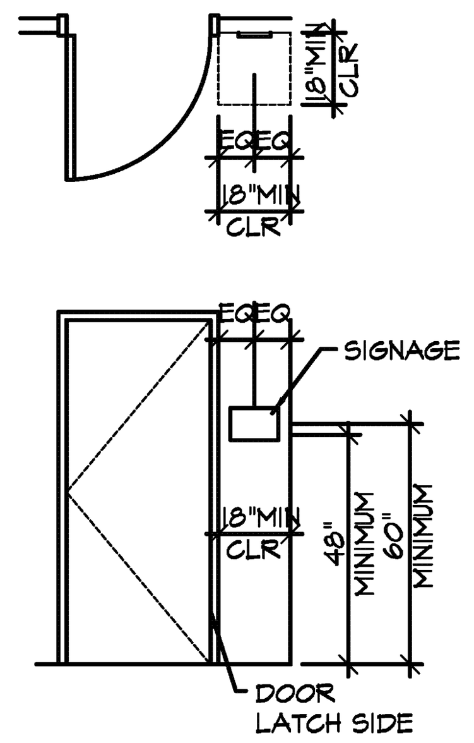
A4.1

INTERIOR/EXTERIOR ELEVATIONS

TACTILE SIGNAGE



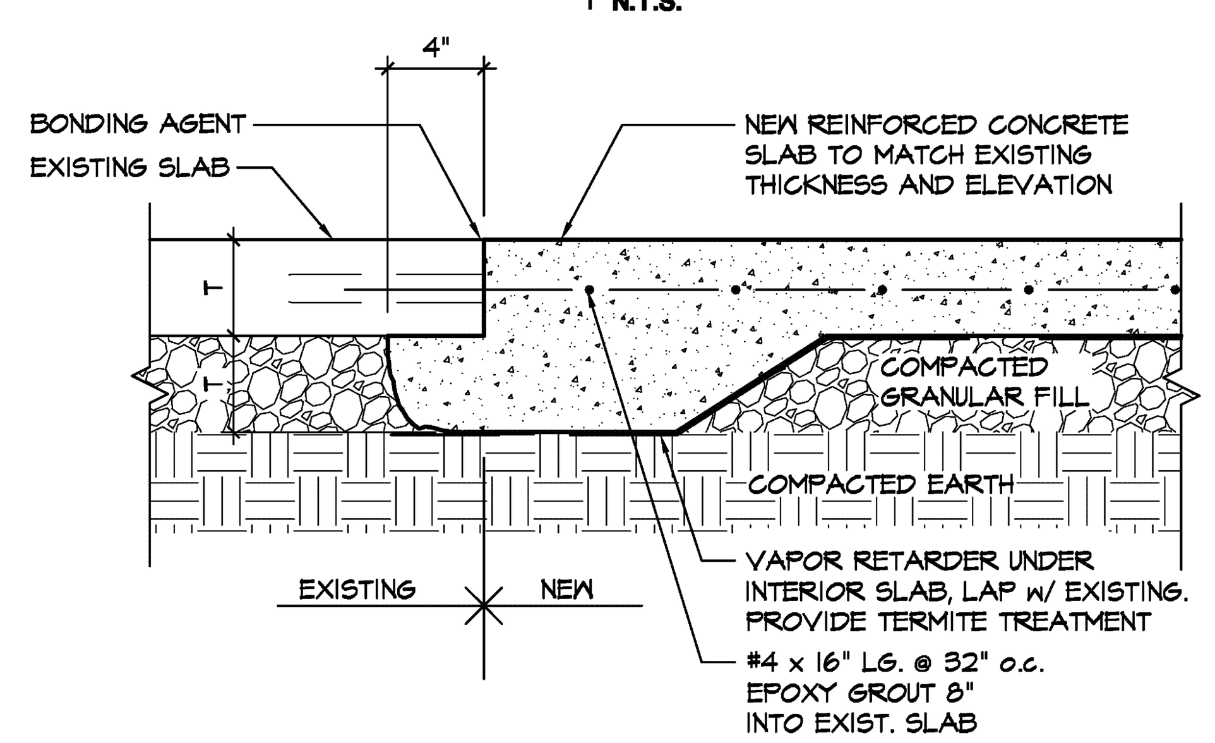


SIGNS SHALL CONFORM WITH APPLICABLE CODES

CHARACTERS SHALL BE RAISED 1/32 IN. MINIMUM ABOVE THEIR BACKGROUND.
CHARACTERS SHALL BE UPPERCASE AND SANS SERIF.
CHARACTERS SHALL BE ACCOMPANIED BY GRADE II BRAILLE.
RAISED CHARACTERS SHALL BE AT LEAST 5/8 IN. HIGH, BUT NO HIGHER THAN 2 IN.
PICTOGRAMS SHALL BE ACCOMPANIED BY THE EQUIVALENT VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM.
CHARACTERS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH.
CHARACTERS SHALL CONTRAST WITH THEIR BACKGROUND.
SIGNS SHALL BE MOUNTED TO THE LATCH SIDE OF THE DOOR AND HAVE A MOUNTING HEIGHT OF 60 IN. ABOVE THE FINISH FLOOR TO THE CENTERLINE OF THE SIGN.

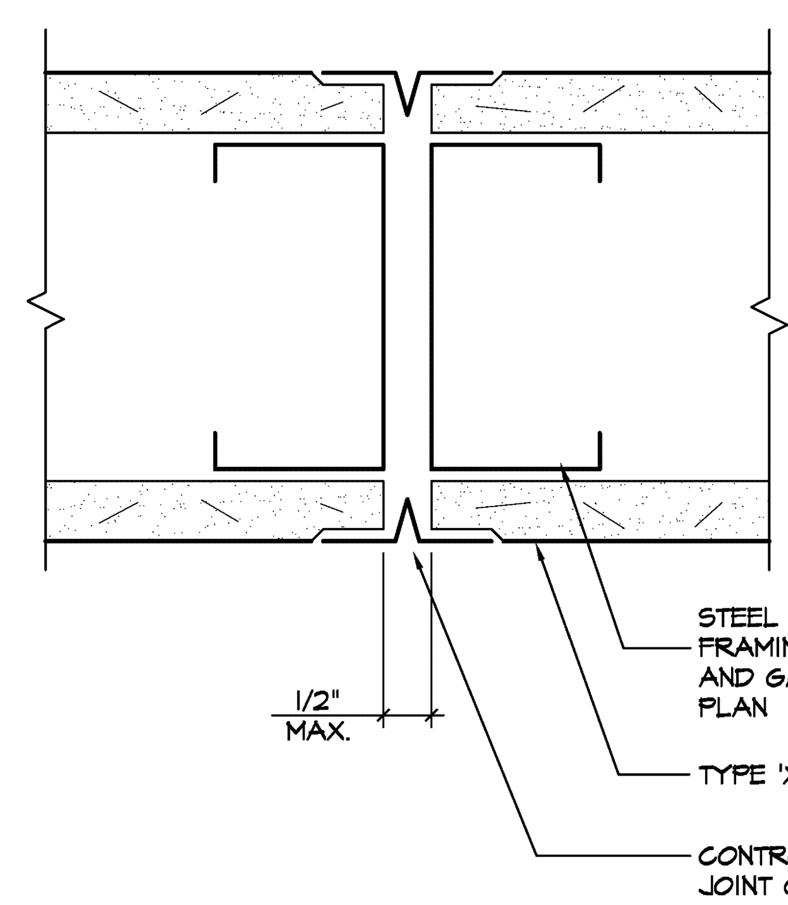
A | TACTILE SIGNAGE

N.T.S.



B | CONCRETE SLAB INFILL

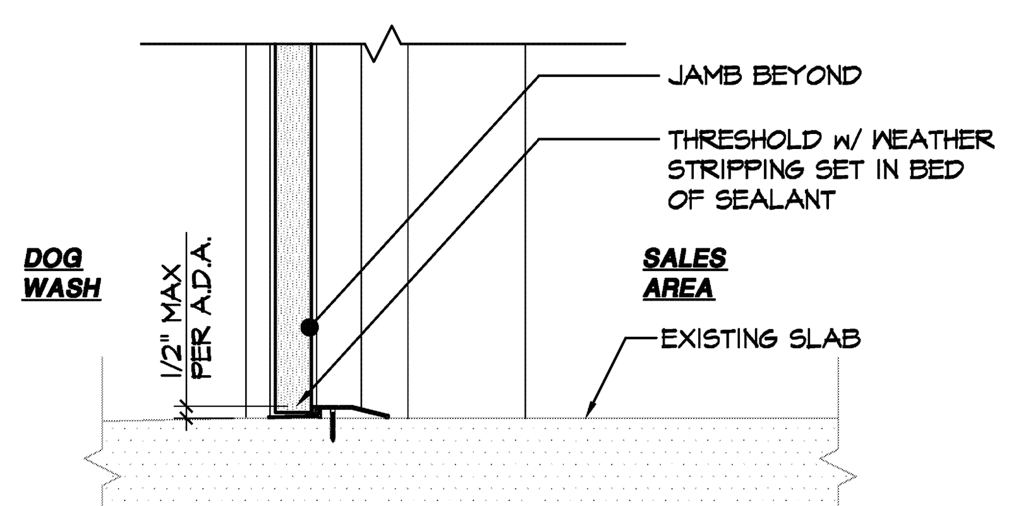
1-1/2"=1'-0"



PROVIDE CONTROL JOINTS IN WALLS OVER 30'-0" LONG AT 30'-0" MAX. O.C. - TYP.

C | GYP. BD. CONTROL JOINT

HALF FULL



D | THRESHOLD DETAIL

1-1/2"=1'-0"

TOILET ROOM ACCESSORY SCHEDULE

	DESCRIPTION	MANUFACTURER	NUMBER	MOUNTING HT (A.F.F.)	NOTE
1	PAPER TOWEL DISPENSER	BY TENANT	-	40" TO TOWEL	SURFACE MOUNTED
2	TOILET PAPER HOLDER	BY TENANT	-	-	
3	MIRROR	BOBRICK	B-1658	40" TO BOTTOM OF REFLECTIVE SURFACE	2'-0"x3'-0"x¼" PLATE GLASS MIRROR
4	SOAP DISPENSER	BY TENANT	-		
5	CANE DETECTION RAIL	BUY RAILINGS	1833		
6	HORIZONTAL GRAB BARS	BOBRICK	B-6806x36" B-6806x42"	35" TO TOP	SATIN STAINLESS STEEL FINISH AND CONCEALED FASTENERS
7	VERTICAL GRAB BAR	BOBRICK	B-6806X18"	40" TO BOTTOM	SATIN STAINLESS STEEL FINISH AND CONCEALED FASTENERS

RESTROOM FIXTURE GENERAL NOTES:

1. REFER TO PLANS AND ELEVATIONS FOR LOCATION OF FIXTURES
2. REFER TO PLUMBING PLANS AND SPECIFICATIONS FOR COMPLETE FIXTURE INFORMATION
3. PROVIDE BLOCKING IN WALLS FOR SUPPORT OF LISTED ACCESSORIES
4. MOUNT ACCESSORY w/ HIGHEST OPERABLE COMPONENT NO HIGHER THAN THE HEIGHT INDICATED
5. LAVATORY APPURTENANCES ARE TO BE INSTALLED PER ADA/ANSI A117.1 GUIDELINES AND IN ACCORDANCE w/ MANUFACTURER'S RECOMMENDATIONS. COORDINATE WORK w/ ALL RELATED TRADES.
6. EXPOSED PIPING & CONTROLS UNDER LAVATORY TO BE PROTECTED w/ "LAV GUARD-2" UNDERSINK PIPE COVERS 'TRUEBRO' (OR APPROVED EQUAL) PER 2010 ADA STANDARDS & ANSI A117.1-606.6

CODE COMPLIANCE PER FIXTURE

WATER CLOSET PER ADA 604/ANSI 117.1-604

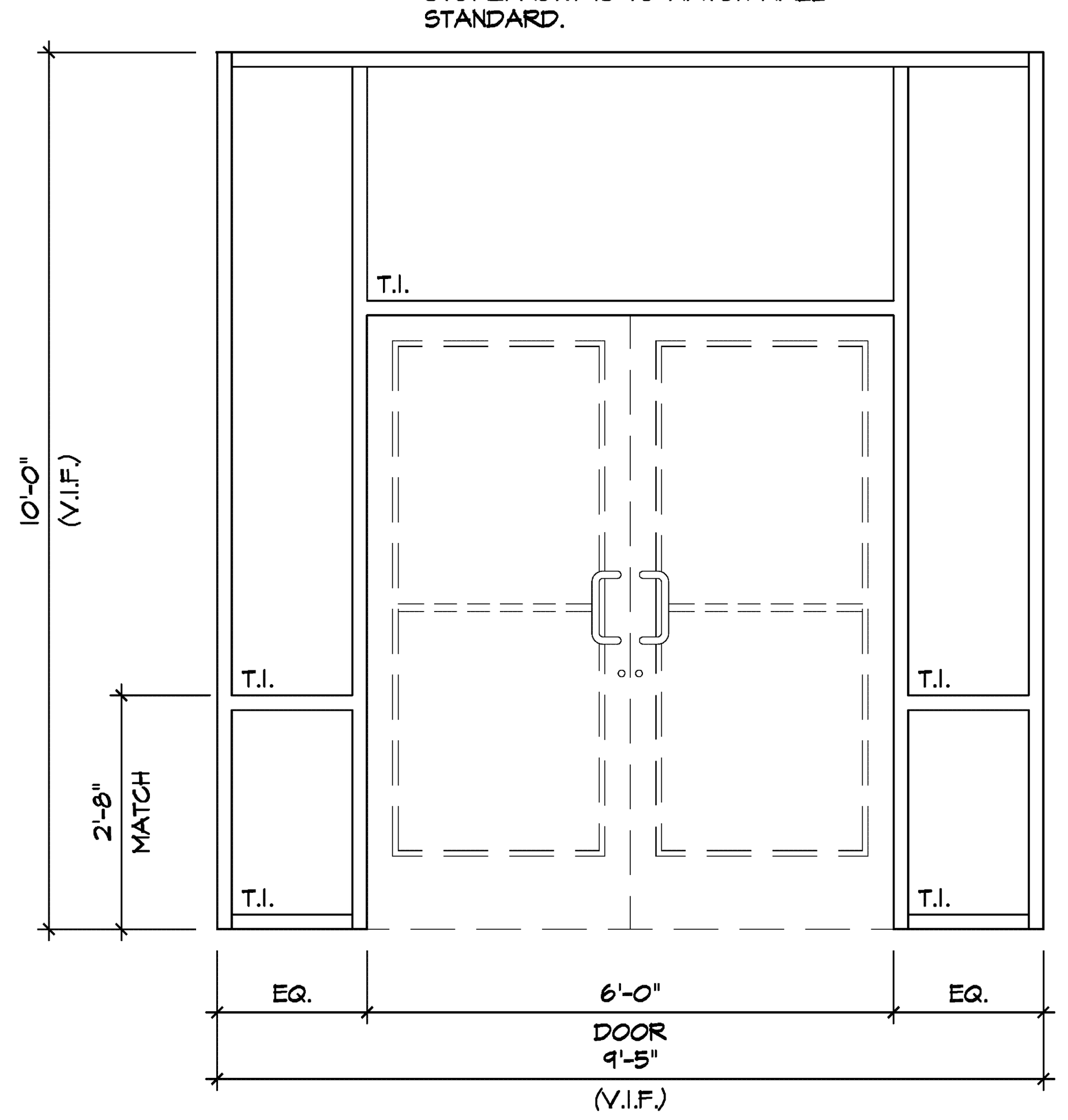
LAVATORY PER ADA 606/ANSI 117.1-606

GRAB BARS PER ADA 609/ANSI A117.1-609

IN-FILL STOREFRONT ELEVATION

T.I. SYMBOL DENOTES TEMPERED, INSULATED GLASS.

STOREFRONT IS TO MATCH MALL STANDARD.



FINISH MATERIAL SCHEDULE

MATERIAL	SYMBOL	DESCRIPTION	NUMBER	COLOR	MANUFACTURER	COMMENTS / CONTACT
~~QUARRY TILE~~	~~QTF-1~~	~~6"x6" QUARRY NATURALS~~	~~AO_N46_661P~~	~~SHADOW GRAY~~	~~AMERICAN OLEAN~~	
QUARRY BASE TILE	QB-1	6"H QUARRY NATURALS	-	SHADOW GRAY	AMERICAN OLEAN	6" HIGH COVED BASE
QUARRY TILE GROUT	G-1	FLOOR GROUT	104	TIMBERWOLF	MAPEI	WITH GROUT BOOST FOR WATERPROOFING. APPLY SEALER FOLLOWING CONSTRUCTION
CERAMIC TILE	CT-1	6"x6" CERAMIC TILE (GLOSS)	0091	CERAMIC BISCUIT	AMERICAN OLEAN	STACK SOLDIER COURSE W/ BULLNOSE TRIM TO MATCH.. REVEALS TO BE ALIGNED
CERAMIC TILE GROUT	G-2	WALL GROUT	06	HARVEST	MAPEI	WITH GROUT BOOST FOR WATERPROOFING. APPLY SEALER FOLLOWING CONSTRUCTION
VINYL TILE	VCT-1	12"x12" VINYL TILE	51804	EARTH STONE GREIGE	ARMSTRONG	
VINYL BASE	VB-1	4" STRAIGHT BASE	80	FAWN	JOHNSONITE	
COVE BASE	VB-2	6" COVE BASE		FAWN	JOHNSONITE	
~~LUXURY VINYL TILE~~	~~LVT-1~~	~~PLANK~~	~~X-3096~~	~~TK~~	~~TANDUS I CENTIVA~~	
FIBER-REINFORCED PLASTIC	FRP-1	FRP PANELS, PEBBLED SURFACE	P100	WHITE	MARLITE	PROVIDE APPROPRIATE TRIM FOR MOUNTING AND FINISHING. CLASS III/C FIRE RATING PER ASTM-84 FLAME AND SMOKE
PAINT	P-1	LATEX PAINT	SW6148	WOOL SKEIN	SHERWIN WILLIAMS	
	P-2	LATEX PAINT/ DRYFALL	SW7007	CEILING WHITE	SHERWIN WILLIAMS	
	~~P-3~~	~~LATEX PAINT/ DRYFALL~~	~~SW6993~~	~~BLACK OF NIGHT~~	~~SHERWIN WILLIAMS~~	
PLASTIC LAMINATE	PLM-1	PLASTIC LAMINATE	4847-38	MISSION SMOKE	WILSONART	
SEALED CONCRETE	SC-1	SEALED CONCRETE	-	-		BY TENANT
SEALED CONCRETE	SCT-1	SEALED CONCRETE WITH SLIP RESISTANT TEXTURE FINISH	-	-		ADD WATERPROOF SEALANT
ACOUSTIC CEILING TILE	ACT-1	24"x48" ACOUSTIC CEILING TILE		WHITE	USG GRID:DXL ACC SUSPENSION SYSTEM (FLAT WHITE 050) MAIN TEE: DXL24, 12', CROSS TEE:1-1/2" DXL 424, PANELS: (DOG WASH) SHEET ROCK BLEND, CLIMA PLUS LAY IN AC. CEILING PANELS w/ FIRECODE	
	ACT-2	24"x48" ACOUSTIC CEILING TILE	78575HRC	ECLIPSE	USG	WHITE SQUARE EDGE
CORNER GUARDS	CG-1	2"x2"X48"	16 GA.SATIN FINISH	STAINLESS STEEL	-	ADHESIVE APPLIED. ALL OUTSIDE CORNERS, TYP

NOTE: ALL DOORS, DOOR FRAMES AND WOOD TRIM TO HAVE SEMI-GLOSS FINISH, WALLS TO HAVE EGGSHELL FINISH, AND CEILINGS TO HAVE FLAT FINISH

ROOM FINISH SCHEDULE

ROOM NAME	FLOOR	WALLS	BASE	CEILING	CEILING HEIGHT	COMMENTS
100 - SALES	SC-1	P-1	VB-1	P-2	OPEN CEILING	PAINT DECK INCLUDING ALL STRUCTURE AND CONDUITS AND DEVICES
101 - OFFICE/UTILITY	SC-1	P-1	VB-1	P-2	OPEN CEILING	PAINT DECK INCLUDING ALL STRUCTURE AND CONDUITS AND DEVICES
102 - DOG WASH 103 - DOG WASH	SCT-1	CT-1	QB-1	ACT-1	9'-0"	ALL WALLS TILED FLOOR TO CEILING. ROUGH TEXTURE FLOORING. APPLY 2 COATS SEALANT.
104 - TOILET	VCT-1	P-1	VB-2	GB-1/P-2	9'-0"	

DOOR & FRAME SCHEDULE

NO.	DOORS				FRAMES			
	TYPE	DESCRIPTION	SIZE	FINISH	MATERIAL	FINISH	HARDWARE	COMMENTS
01	A	ALUMINUM/ GLASS	PR.3'-0" x 7'-0"		ALUMINUM		1, 3, 4, 8, 11, 15, 17,	
02	D	HM - EXISTING TO REMAIN	EX. 3'-6" x 7'-0"	PAINTED P-1 INTERIOR AND PAINT TO MATCH ADJACENT ON EXTERIOR			1, 7, 11, 13, 16, 17	PROVIDE NEW HARDWARE
03	C	WOOD SOLID CORE	3'-0" x 7'-0"	P-1		P-1	1, 6, 7, 10, 13, 22	
04	C	WOOD SOLID CORE	3'-0" x 7'-0"	P-1		P-1	1, 6, 7, 10, 13, 22	
05	C	WOOD SOLID CORE	3'-0" x 7'-0"	P-1	HM	P-1	1, 7, 13, 20	

HARDWARE SCHEDULE

1. (3) HINGES, 4 1/2, STD WT, ECBB1100 4 1/2 x 4 1/2, US26D, HAGER
2. PASSAGE LOCKSET WITH LEVER HANDLES
3. PUSH/ PULL SET, 151Vx34W-CTC, US32D, HAGER
4. RIM EXIT DEVICE V4009BN x 36 x 94 (DOUBLE DOOR)
5. RIM EXIT DEVICE 4701 RIM 36 x 1-3/4 ALM, HAGER
6. PRIVACY LOCKSET - 2540 x 2-3/4 SC x WTN x ASA US26D HAGER
7. CLOSER, SC71 x RW/PA, 689, PARALLEL ARM, FALCON
8. CLOSER, 5300 x MLT x 1-6 x 5303 x FC, PARALLEL ARM, ALM, HAGER
9. THUMBTURN DEAD LOCK, 3118, CLASSROOM, US26D, HAGER
10. WALL STOP, 236W, US32D, HAGER
11. WEATHER STRIPPING, 726 18' CHAR, HAGER
12. ASTRAGAL 835S x USP, HAGER
13. SILENCER 307D GREY, HAGER
14. THRESHOLD, 425 x MILL, NAT
15. THRESHOLD, 520SN x MIL, HAGER
16. THRESHOLD 412S x MIL, HAGER
17. DOOR SWEEP 750SN CLR HAGER
18. DRIP CAP, 810S x MIL, HAGER
19. FLOOR HOLDER AND STOP, 268F, US26D, HAGER
20. KEYPAD LOCKSET, L102X, 626, SIMPLEX
21. STOREROOM LOCKET WITH LEVER - 3480 X 2-3/4 SC X WTN X ASA US26D HAGER
22. ROOM IDENTIFICATION SIGN

HARDWARE NOTES:

① HARDWARE SCHEDULES BY REFERENCE TO A MANUFACTURER IS FOR THE PURPOSE OF ESTABLISHING MINIMUM REQUIREMENTS.

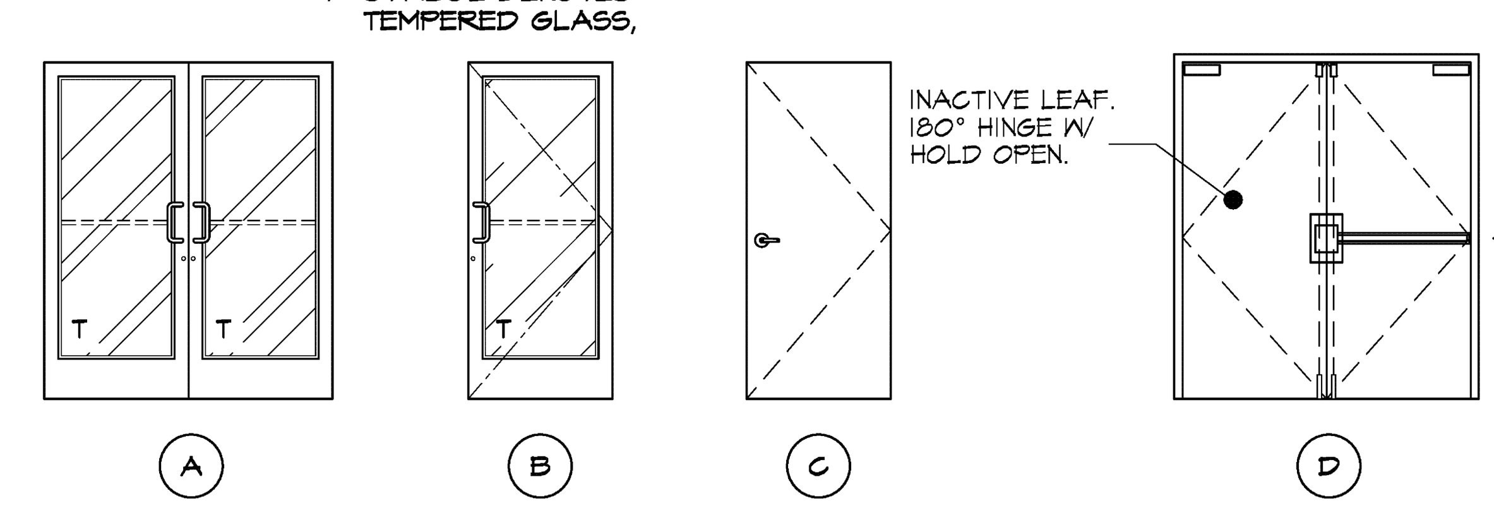
② ALL HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING TO OPERATE.

MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED FIVE (5) POUNDS, PUSH & PULL.

③

DOOR TYPES

T- SYMBOL DENOTES TEMPERED GLASS,



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8/11/21

PetPeople
SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

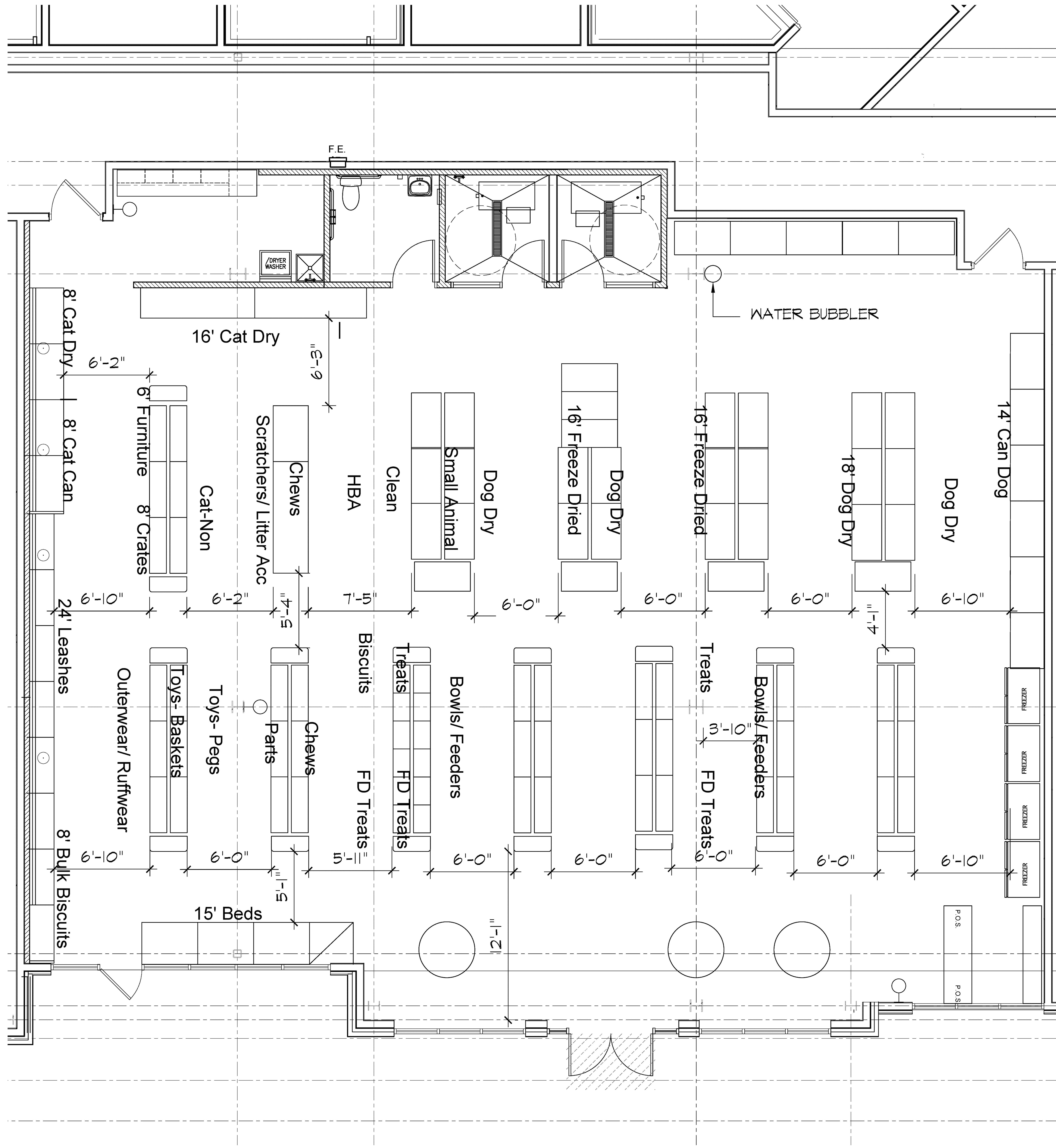
Project No.:	18894
Drawn By:	XXX
Date	Issue
07/19/2021	Bid/ Permit

A5.0

SCHEDULES AND DETAILS

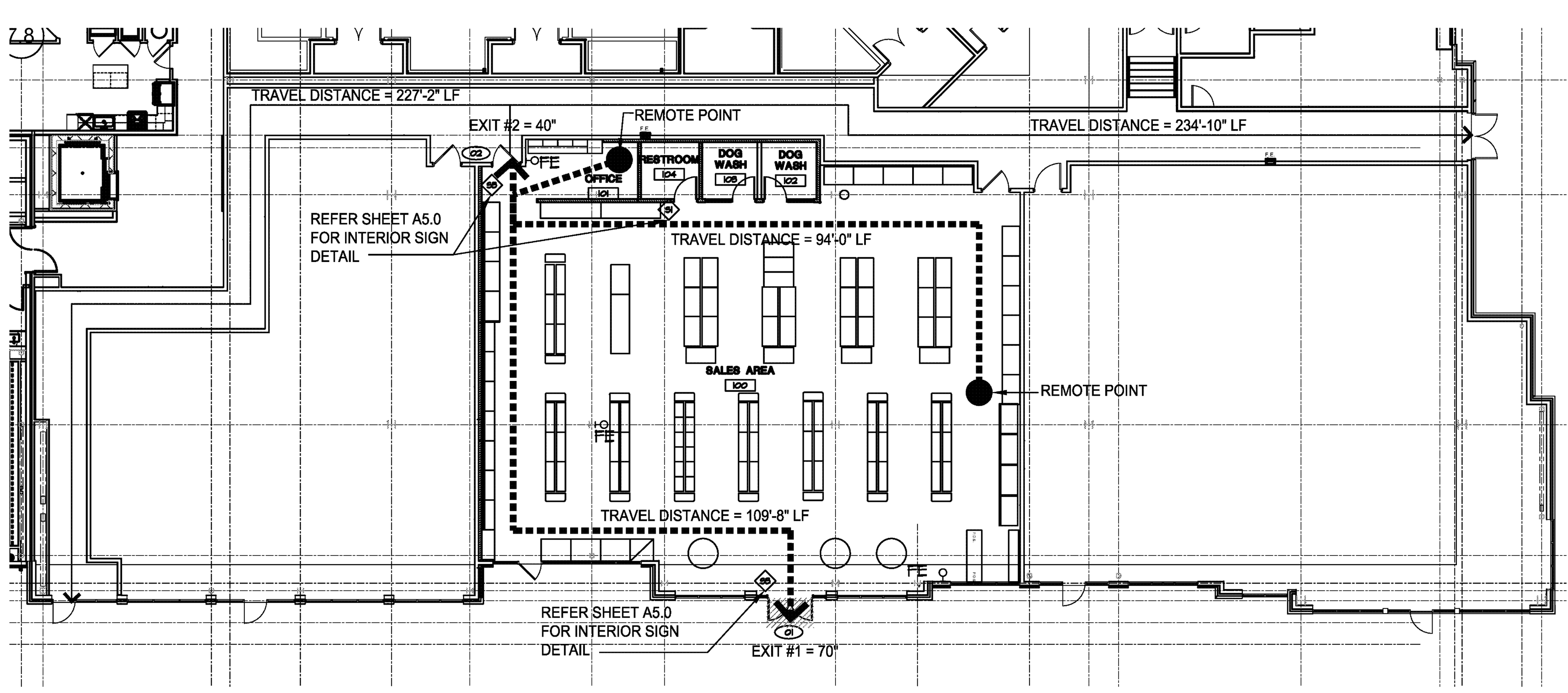
GENERAL PLAN NOTES

1. FIRE EXTINGUISHERS (FE ON PLAN) ARE LIGHT HAZARD AND PLACED IN AREAS ACCESSIBLE TO OCCUPANTS. CONFIRM LOCATIONS WITH FIRE MARSHALL PRIOR TO INSTALL. SHALL SUPPLY AND INSTALL 2AC FIRE EXTINGUISHERS. COVERAGE PER EACH EXTINGUISHER SHALL NOT EXCEED 75' IN ANY DIRECTION. ADDITIONALLY, TENANT SPACE SHALL HAVE AT LEAST (3) FIRE EXTINGUISHERS: ONE SHALL BE IN THE SALES AREA, ONE SHALL BE IN THE CASH REGISTER AREA AND ONE SHALL BE IN THE WORKROOM AREA. EXTINGUISHERS MUST BE WALL MOUNTED, IN PLAIN VIEW, AND BE AT LEAST 18" FROM THE FLOOR BUT NO HIGHER THAN 40" FROM THE FLOOR TO THE TOP OF THE EXTINGUISHER.
2. REFER TO SHEET A5.0 FOR TACTILE SIGNS SHOWN ON LIFE SAFETY PLAN.



1 | FIXTURE PLAN

1/4" = 1'-0"



2 | LIFE SAFETY

N.T.S.

Job Path:H:\Master\HA STANDARDS\CAD STANDARDS\TEMPLATE\Master Template.dwt
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STATE OF MISSOURI
FRED MARGULIS
NUMBER A-2012004044
ARCHITECT
8/11/21

PetPeople
SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

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A6.0

FIXTURE/ LIFE SAFETY PLAN

CODED NOTES

1. MOUNT REMOTE TEMPERATURE SENSOR AT 54" ABOVE FINISHED FLOOR. COORDINATE MOUNTING LOCATION OF TEMPERATURE SENSOR WITH TENANT AND ARCHITECT PRIOR TO ROUGH-IN.
2. MOUNT 7-DAY PROGRAMMABLE THERMOSTATS FOR (E)AHU'S AT 48" AFF ON WALL IN MANAGER'S OFFICE. THERMOSTAT SHALL BE TOTALINE P374-2200 OR EQUIVALENT WITH 2-STAGE ELECTRIC HEAT CONTROL CAPABILITY AND LOCKOUT FUNCTION SET AT 71°F UNLESS DIRECTED OTHERWISE BY OWNER. COORDINATE WITH REMOTE TEMPERATURE SENSORS AS NOTED ON PLAN. ALL CONTROL WIRING SHALL BE IN CONDUIT PER N.E.C.
3. RELOCATE EXISTING AHU TO LOCATION SHOWN ON PLAN.
4. UNDERCUT DOOR 1".
5. (E)18"x10" EXHAUST DUCT IN CHASE TO ROOF WITH (E) FIRE DAMPER.
6. DUCTWORK TO BE INSTALLED AS HIGH AS POSSIBLE. CONTRACTOR TO COORDINATE DUCTWORK WITH LIGHTING LAYOUT AND REFLECTED CEILING PLAN. TYPICAL.
7. INSTANTANEOUS HOT WATER HEATER INTAKE/EXHAUST LOCATED IN CHASE, REFER TO PLUMBING DRAWINGS.
8. DRYER VENT LOCATED IN CHASE, REFER TO DETAIL 2/P2.0. TERMINATE AT ROOF PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE DRYER VENT FAN PER DETAIL 2/P2.0.
9. MANUAL VOLUME DAMPER. TYPICAL
10. MOUNT SUPPLY AND EXHAUST GRILLES IN OFFICE AREA BELOW OA DUCT.
11. PROVIDE ACCESS PANEL IN GYP CEILING FOR ACCESS TO EF-2. COORDINATE WITH LIGHT FIXTURES.
12. RETURN AIR DUCT FULL SIZE OF AHU CONNECTION, LINE WITH 1" ACOUSTICAL LINER.
13. EXISTING CONDENSING UNIT LINE SETS AND WIRING UP TO ROOF LOCATED IN CHASE.
14. 2-POSITION MOTOR OPERATED DAMPER INTERLOCKED WITH AHU. DAMPER SHALL CLOSE WHEN UNIT IS NOT RUNNING.
15. 2-POSITION MOTOR OPERATED DAMPER INTERLOCKED WITH AHU'S. DAMPER SHALL CLOSE WHEN NONE OF THE AHU'S ARE RUNNING.
16. RETURN AIR DUCT MOUNTED SMOKE DETECTOR. INTERLOCK WIRING BETWEEN FIRE ALARM SYSTEM RELAY AND AIR HANDLER UNIT SHUTDOWN. CONTACT SHALL BE PROVIDED BY MECHANICAL CONTRACTOR. ALL OTHER WIRING BY FIRE ALARM CONTRACTOR. UPON DETECTION OF SMOKE, AIR HANDLER UNIT SHALL SHUT DOWN UPON SIGNAL FROM FIRE ALARM SYSTEM. THE CONTRACTOR SHALL VERIFY THE COMPATIBLE TYPE OF DETECTION DEVICE TO USE WITH THE BUILDING OPERATIONS MANAGER.
17. DISCHARGE 1-1/4" CONDENSATE LINE TO MOP BASIN WITH 6" AIR GAP.

EXISTING CONDENSATE CONNECTION (FULL SIZE OF EQUIPMENT CONNECTION) TO REMAIN FOR EACH AHU. MOUNT CONDENSATE PIPING AS HIGH AS POSSIBLE. PROVIDE CLEANOUT PLUGS IN ALL 90° TURNS.

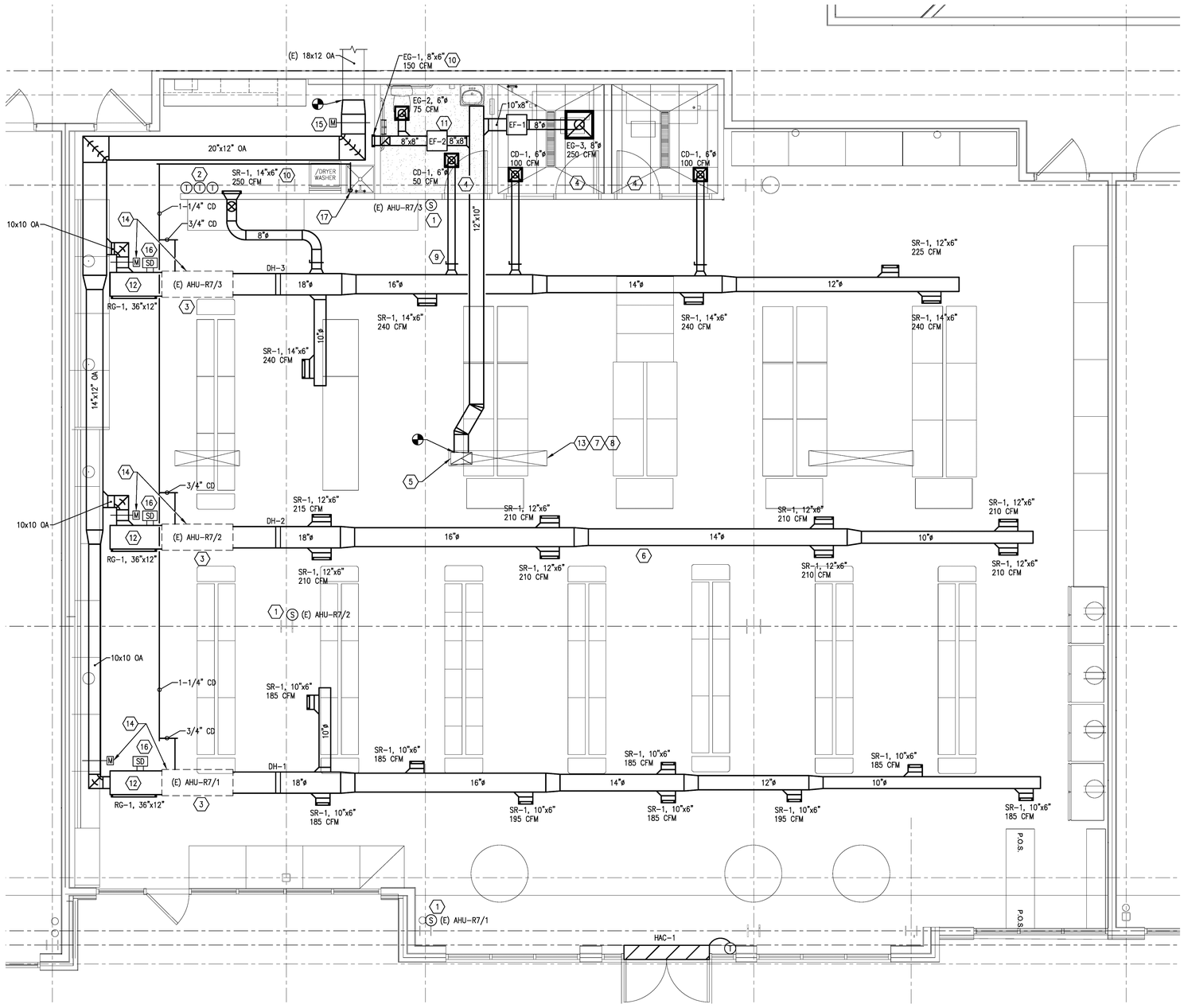
ALL EXPOSED SUPPLY DUCTWORK IN SALES FLOOR SHALL BE ROUND INSULATED DOUBLE WALL. ALL EXPOSED RECTANGULAR OA DUCTWORK SHALL HAVE 1" INTERNAL LINING. EXPOSED DUCTWORK AND GRILLES SHALL BE PAINTABLE, COORDINATE COLOR WITH ARCHITECT/OWNER.

EXISTING CORRESPONDING CONDENSING UNITS (CU-R7/1, CU-R7/2, CU-R7/3) LOCATED ON ROOF, REFER TO SHELL DRAWINGS FOR LOCATION.

MECHANICAL GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT TO INSTALL A COMPLETE AND OPERATIONAL HEATING AND COOLING SYSTEM.
2. CONTRACTOR SHALL PROVIDE ALL REQUIRED HVAC PERMITS.
3. THE CONTRACTOR SHALL COMPLY WITH NFPA-90A AND ALL APPLICABLE CODES.
4. ALL HVAC WORK TO BE PERFORMED SHALL BE IN COMPLIANCE WITH ALL STATE AND LOCAL CODES.
5. FLEXIBLE DUCT SHALL COMPLY WITH SMACNA, ALL LOCAL CODES, U.L. RATING, AND NOT EXCEED FIVE FEET IN LENGTH, SHEET METAL DUCT, WHERE REQUIRED BY LOCAL CODES, SHALL BE LINED WITH 1" MATT FACED DUCTLINER IN THE FIRST 10 (TEN) FEET OF THE RETURN AND SUPPLY DUCT STARTING FROM THE HVAC UNIT. AFTER THE FIRST 10 (TEN) FEET THE USE OF 1" DUCT WRAP SHALL BE ACCEPTABLE WORK MATERIAL TO BE VERIFIED WITH CEILING ACCESSIBILITY RATING.
6. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SWITCHES, DISCONNECTS, AND CONTROL WIRING.
7. ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS, ALLOW FOR DUCT INSULATION.
8. THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE THAT SHALL WARRANT ALL WORKMANSHIP AND MATERIALS FOR ONE (1) YEAR FROM THE FINAL WORK ACCEPTANCE BY THE OWNER AND A FIVE YEAR WARRANTY ON THE COMPRESSOR.
9. FILTERS SHALL BE OF THE DISPOSABLE TYPE AND SHALL BE MERV-8, PROVIDE TWO SETS, ONE DURING CONSTRUCTION AND ONE FOR USE AFTER OCCUPANCY.
10. CONTRACTORS SHALL INSTALL ALL NECESSARY OFFSETS, BENDS, AND TRANSITIONS REQUIRED TO PROVIDE A COMPLETE SYSTEM AT NO ADDITIONAL COST TO THE OWNER.
11. COORDINATE LOCATION OF ALL CEILING DIFFUSERS, GRILLES AND REGISTERS IN THE FIELD WITH THE ELECTRICIAN TO PREVENT CONFLICT WITH LIGHTS AND ARCHITECTURAL ELEMENTS.
12. ALL WORK OF THIS TRADE SHALL BE COORDINATED WITH ALL OTHER TRADES TO AVOID ANY INTERFERENCES THAT MAY DELAY PROGRESS DURING CONSTRUCTION.
13. THE MECHANICAL CONTRACTOR SHALL TEST AND BALANCE TO THE AIR QUANTITIES ON THE PLAN AND PROVIDE A T&B REPORT.
14. CONTRACTOR SHALL INSTALL A THERMOSTAT IN ACCORDANCE WITH THERMOSTAT SPECS.
15. CONTRACTOR SHALL INSTALL MANUAL BALANCING DAMPERS AT ALL SUPPLY AIR BRANCH DUCTWORK RUN OUTS.
16. CONTRACTOR SHALL INSTALL TURNING VANES AT ALL DUCTWORK TEES AND 90 DEGREE ELBOWS.
17. CONTRACTOR SHALL INSTALL A DUCT-TYPE MOUNTED SMOKE DETECTOR FOR UNIT SHUTDOWN IN THE RETURN AIR DUCTWORK PLENUM AT AIR HANDLER UNITS. THE CONTRACTOR SHALL VERIFY THE COMPATIBLE TYPE OF DETECTION DEVICE TO USE WITH THE BUILDING OPERATIONS MANAGER.
18. ALL SHEET METAL DUCTWORK SHALL COMPLY WITH SMACNA STANDARDS. ALL DUCTWORK JOINTS SHALL BE TAPED AND SEALED.
19. CONTRACTOR SHALL PROVIDE EQUIPMENT OF THE SCHEDULED CAPACITIES DESIGNED.

EXISTING AHU AND DUCT HEATER CONTROL SEQUENCE:
STAGE 1 HEATING (EXISTING AIR HANDLING UNIT) SHALL BE ENABLED WHEN THE ZONE TEMPERATURE DROPS 1.5 DEGREE (ADJUSTABLE) BELOW SETPOINT. STAGE 2 (ELECTRIC DUCT HEATER) HEATING SHALL BE ENABLED WHEN THE ZONE TEMPERATURE DROPS 3 DEGREES (ADJUSTABLE) BELOW SETPOINT.



MECHANICAL PLAN
1/4" = 1'-0"

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Drawn By:	AEU
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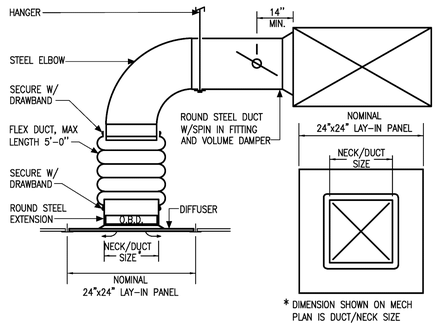
M1.0

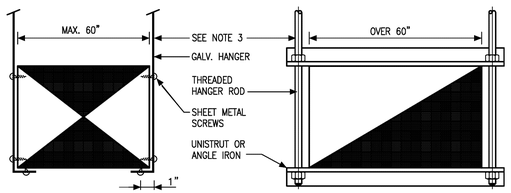
MECHANICAL PLAN

XREF-AttachCity_M0.dwg
XREF-AttachCity_M1.dwg
Job Path:\CLIENT\Pet People\19894 Kansas City, MO\700 19894 KansasCity_M0_M1.dwg
Drawn By:Andrew Uptmoh



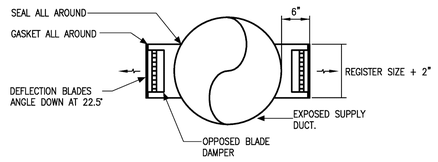
* DIMENSION SHOWN ON MECH PLAN IS DUCT/NECK SIZE

3 | LAY-IN DIFFUSER/GRILLE DETAIL
N.T.S.



NOTES:
1. ON DUCTS OVER 48" WIDE, BOTTOM SHALL BE BRACED BY ANGLE. FOR CROSS SECTION AREA MORE THAN 8 SQ FT, DUCT SHALL BE BRACED BY ANGLES ON ALL FOUR SIDES.
2. CUTTING AND PATCHING SHALL BE LIMITED TO A MINIMUM AS REQUIRED FOR PROPER INSTALLATION.
3. SUPPORTS SHALL BE SPACED AND SIZED AS PER SMACNA.

2 | DUCT HANGER SUPPORT
N.T.S.



1 | SUPPLY REGISTER MOUNTING DETAIL
N.T.S.

MECHANICAL SYMBOL/ABBREVIATION LEGEND

SYMBOL	DESCRIPTION	ABBREVIATION	DESCRIPTION
(H)	HUMIDISTAT	AD	ACCESS DOOR
(S)	TEMPERATURE SENSOR	AL	ACOUSTICAL LINING
(T)	THERMOSTAT	CC	COOLING COIL
RTS	REMOTE TEST SWITCH	CD	CONDENSATE DRAIN
SD	DUCT SMOKE DETECTOR	DDC	DIRECT DIGITAL CONTROL
	END OF CONTRACT, CONNECT TO EXISTING	(E)	EXISTING
F	FIRE DAMPER	EG	EXHAUST GRILLE
S	SMOKE DAMPER	EAT	ENTERING AIR TEMPERATURE
M	MOTORIZED DAMPER	EF	EXHAUST FAN
	VOLUME DAMPER	ETR	EXISTING TO REMAIN
	CEILING DIFFUSER	FD	FIRE DAMPER
	RETURN GRILLE	FPC	FIRE PROTECTION CONTRACTOR
	EXHAUST GRILLE	GC	GENERAL CONTRACTOR
	AIRFLOW DIRECTION	LAT	LEAVING AIR TEMPERATURE
	LOUVERED DOOR	MCA	MINIMUM CIRCUIT AMPACITY
	UNDERCUT DOOR	MOD	MOTOR OPERATED DAMPER
		MOCP	MAXIMUM OVERLOAD PROTECTION
		OA	OUTSIDE AIR
		RA	RETURN AIR
		RG	RETURN GRILLE
		SA	SUPPLY AIR
		SR	SUPPLY REGISTER
		VD	MANUAL VOLUME DAMPER
		TG	TRANSFER GRILLE

SUPPLY UP DOWN | RETURN/O.A. UP DOWN | EXHAUST UP DOWN

TURNING VANES

*SOME SYMBOLS OR ABBREVIATIONS MAY NOT BE USED ON THIS PROJECT

REGISTERS, DIFFUSERS, AND GRILLES

MARK	MANUFACTURER	MODEL	MATERIAL	SIZE	MAX NC	NOTES
CD-1	TITUS	TMS-AA	ALUMINUM	12"x12"	25	1,2,3,4,5
RG-1	TITUS	350FL	ALUMINUM	SEE PLAN	25	4,5
SR-1	TITUS	301FL	ALUMINUM	SEE PLAN	25	1,4,5
EG-1	TITUS	350FL	ALUMINUM	SEE PLAN	25	1,3,4,5
EG-2	TITUS	350FL	ALUMINUM	12"x12"	25	2,3,4,5
EG-3	TITUS	350FL	ALUMINUM	24"x24"	25	2,3,4,5

NOTES:
1. INTEGRAL OPPOSED BLADE DAMPER
2. PROVIDE SQUARE TO ROUND NECK TRANSITIONS WHERE ROUND DUCTS SERVE SQUARE NECK DIFFUSERS OR GRILLES.
3. PROVIDE VOLUME DAMPER IN BRANCH DUCT RUNOUT WHERE CEILING IS ACCESSIBLE. O.B. DAMPER BEHIND GRILLE OR DIFFUSER IS REQUIRED WHERE DUCT BRANCH IS INACCESSIBLE.
4. PAINT INTERIOR OF DUCTWORK BEHIND GRILLES AND DIFFUSERS FLAT BLACK IF VISIBLE THROUGH DEVICE.
5. CONTRACTOR SHALL CONFIRM EXACT LOCATION OF GRILLES WITH GENERAL CONTRACTOR, TENANT, & ARCHITECT PRIOR TO ANY WORK. GRILLES SHALL BE WHITE.

EXHAUST FAN SCHEDULE

MARK	AREA SERVED	MANUFACTURER	MODEL	TOTAL CFM	E.S.P. "WG	MOTOR HP	POWER V/PH	SONES	WEIGHT LBS	NOTES
EF-1	DOG WASH ROOMS	COOK	90SQN17D (VF)	250	0.5	1/8	115/1	6.5	70	1,3
EF-2	RESTROOM AND MOP SINK	COOK	90SQN17D (VF)	225	0.5	1/8	115/1	6.2	70	1,2

NOTES:
1. PROVIDE WITH EC MOTOR, DISCONNECT, FAN SPEED CONTROLLER, INTEGRAL BACKDRAFT DAMPER, VIBRATION ISOLATION
2. FAN SHALL RUN DURING OCCUPIED HOURS
3. INTERLOCK FAN WITH LIGHT SWITCH IN DOG WASH ROOMS

VENTILATION SCHEDULE based on 2018 IMC

Zone Identification	Occupancy Category	Zone Floor Area Az (ft2)	Area Outdoor Airflow Rate Ra (CFM/ft2)	Occupant Density (#/1000ft2)	Zone Population Pz (People)	People Outdoor Airflow Rate Rp (CFM/person)	Zone Air Effectiveness EZ	Zone Outdoor Airflow Rate Voz (CFM)	Actual Provided Outdoor Airflow (CFM)	Mechanical Unit	Exhaust Rate (CFM/ft2 or per fixture)	Required Exhaust Airflow (CFM)	Actual Provided Exhaust Airflow (CFM)	Exhaust Fan
Sales Floor	Sales	3800	0.12	15	57	7.5	0.80	1104	1162	AHUs	0	0	0	-
Office	Office Space	150	0.06	-	2	5	0.80	24	64	AHUs	1	150	150	EF-2
Restroom	Toilets - Public	60	0	0	0	0	0.80	0	13	AHUs	70	70	75	EF-2
Dog Wash	Pet Shops (Animal areas)	120	0.18	-	2	7.5	0.80	46	51	AHUs	0.9	108	250	EF-1

HEATED AIR CURTAIN SCHEDULE

MARK	MANUFACTURER	MODEL	TOTAL kW	CFM	MOUNT	MOTOR HP	MCA	MOCP	POWER V/PH	NOTES
HAC-1	BERNER	CLC08-1072E	8.0	2,010	DOOR	1/5	40.2	60	208/1	1-6

NOTES:
1. N. WHITE FINISH
2. PROVIDE REMOTE THERMOSTAT
3. PROVIDE WITH REMOTE DOOR SWITCH AND BASIC CONTROLS PACKAGE
4. DISCONNECT SWITCH
5. PROVIDE CONTACTS ON EACH DOOR LEAF FOR DOUBLE DOORS.
6. NO SUBSTITUTIONS ALLOWED.

ELECTRIC DUCT HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	CFM	DUCT SIZE	HEATING KW	POWER V/PH	STAGES	NOTES
DH-1,2,3	INDEECO	QUZ	1685	16"x16"	13	208/3	1	1-3

NOTES:
1. PROVIDE WITH DUCT DISCHARGE TEMPERATURE SENSOR, REFER TO CONTROL SEQUENCE ON M1.0.
2. PROVIDE SQUARE TO ROUND ADAPTERS FROM MANUFACTURER TO MOUNT HEATER IN AN 18"ø DUCT.
3. SCR HEATER

EXISTING SPLIT SYSTEM SCHEDULE

AIR HANDLER UNIT													CONDENSING UNIT					SINGLE POINT POWER			
MARK	MANUFACTURER	MODEL	TONS	NET SENS. MBH	NET TOTAL MBH	HEAT KW	EAT DB/WB	AMB TEMP	TOTAL CFM	O.A. CFM	E.S.P. "WC	H.P.	WEIGHT (LBS)	MARK	MANUFACTURER	MODEL	SEER	WEIGHT (LBS)	POWER V/PH	MCA	MOCP	NOTES
(E) AHU-R7/1, (E) AHU-R7/2, (E) AHU-R7/3	LENNOX	CBA25UH-060	5	39.4	56.5	15	80°F/67°F	95°F	1685	430	0.5	1.0	300	(E) CU-R7/1, (E) CU-R7/2, (E) CU-R7/3	LENNOX	ML14XC1-060-230	14.25	300	208/1	75	80	1-2

NOTES:
1. EXISTING SYSTEM TO REMAIN WITH ECM MULTI SPEED CONSTANT TORQUE DRIVE.
2. PROVIDE WALL MOUNTED THERMOSTAT AND TEMPERATURE SENSOR PER PLAN.

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PetPeople
SUMMIT AT WEST PRYOR
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LEE'S SUMMIT (KANSAS CITY), MO

Project No.: 19894
Drawn By: AEU

Date	Issue
07/19/2021	Bid/ Permit

M2.0

MECHANICAL SCHEDULES AND DETAILS

NOTE:
USE OF COMBUSTIBLE MATERIALS IS NOT ALLOWED IN ANY AREA THAT IS A RETURN AIR PLENUM. MATERIALS USED IN PLENUMS SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25, AND SMOKE DEVELOPED RATING NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84. ALL EXPOSED WIRING IN PLENUMS SHALL BE PLENUM RATED. FIELD VERIFY IF ANY NEW ITEMS ARE BEING INSTALLED IN A PLENUM AND VERIFY THAT THIS CRITERIA IS MET.

GAS PIPE SIZING
NATURAL GAS PIPING IS SIZED BASED ON SCHEDULE 40 METALLIC PIPE, LESS THAN 2 PSI INLET PRESSURE, 0.3" W.C. PRESSURE DROP, 0.6 SPECIFIC GRAVITY. THE 2018 INTERNATIONAL FUEL GAS CODE TABLE 402.4(1) IS USED FOR SIZING. METER LOCATED APPROXIMATELY 175' AWAY ON LONGEST RUN. PLUS 25% FOR FITTINGS FOR A TOTAL DERIVED LENGTH OF 219', 250' USED FOR SIZING WITH A GAS LOAD OF 200 CFH.

CONTRACTOR SHALL CONTACT ENGINEER IF EXISTING GAS SERVICE IS OTHER THAN LOW PRESSURE.

ALL SANITARY PIPING BELOW FLOOR SHALL BE CAST IRON.

SPRINKLER SYSTEM SHALL BE RE-DESIGNED FOR TENANT LAYOUT AND IS THE RESPONSIBILITY OF THE SPRINKLER CONTRACTOR.

CODED NOTES

1. CONNECT TO EXISTING DOMESTIC WATER LINE. FIELD VERIFY EXISTING LOCATION PRIOR TO BID. PROVIDE 1-1/2" SUBMETER DOWNSTREAM OF EXISTING SPACE SHUT-OFF VALVE.
2. CONNECT TO EXISTING 4" SANITARY STACK. FIELD VERIFY EXACT LOCATION, SIZE AND DIRECTION OF FLOW PRIOR TO BID.
3. PROVIDE SANITARY STUB-IN CONNECTION WITH ESCUTCHEON. TRAP AND FINAL CONNECTION TO BE COMPLETED WHEN WT-1 & 2 ARE INSTALLED. PROVIDE 1/4 TURN STAINLESS STEEL ANGLE STOPS AND WALL ESCUTCHEONS ON DOMESTIC WATER CONNECTIONS. STAINLESS STEEL FLEX SUPPLY HOSES PROVIDED WITH WT-1 AND WT-2.
4. MOUNT 36" AFF, COORDINATE WITH OWNER.
5. PLUMBING ACCESS PANEL. ROUTE 3/4" CW & THW IN WALL TO WT-2. ROUTE 3/4" CW & THW TO WT-1 AND HF-1 WITH 3/4" CW & THW TO EACH. COORDINATE LOCATIONS OF FAUCETS WITH ARCHITECTURAL PLANS AND OWNER. SEE PLUMBING ACCESS PANEL DETAIL ON P2.0 FOR DETAILS.
6. SEE SANITARY AND WATER ISOMETRIC ON P2.0 FOR ADDITIONAL LINE SIZES FOR TENANT LAYOUT.
7. COORDINATE EXACT INSTALLATION AND MOUNTING HEIGHT WITH ELECTRICAL CONTRACTOR PRIOR TO ROUGH-IN OR INSTALLATION.
8. EXTEND AND CONNECT GAS LINE INTO EXISTING VALVED AND CAPPED CONNECTION PROVIDED BY LANDLORD. VERIFY EXACT LOCATION IN FIELD. PAINT GAS PIPING, COORDINATE COLOR WITH AUTHORITY HAVING JURISDICTION.
9. LOCATION OF CHASE TO BE UTILIZED FOR IWH-1 VENT/INTAKE PIPING REFER TO WATER HEATER SCHEDULE ON P2.0.
10. LOCATION OF CHASE TO BE UTILIZED FOR DRYER VENT, REFER TO DETAIL 2/P2.0.
11. TO LINT INTERCEPTOR MOUNTED ON FLOOR BELOW WATER HEATER. PROVIDE SUPPORTS AS REQUIRED TO MEET PIPING CLEARANCES. INTERCEPTOR MODEL ZURN #Z1185, 30 GPM FLOW RATE, 2" INLET & OUTLET. SEE RISER DIAGRAM.
12. FROM LINT INTERCEPTOR, SEE RISER DIAGRAM.

PLUMBING GENERAL NOTES:

A. PLUMBING CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATIONS AND SIZES OF ALL UTILITIES, INCLUDING THE DEPTHS OF ALL BELOW GRADE SANITARY SEWERS, PRIOR TO START OF WORK. THIS DRAWING IS NOT INTENDED TO INDICATE ALL EXISTING UTILITIES.

B. CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING BID AND FIELD VERIFY EXISTING CONDITIONS TO ENSURE THAT THE WORK REPRESENTED ON THE DRAWINGS AND IN THESE SPECIFICATIONS CAN BE INSTALLED AS INDICATED. CONTRACTOR SHALL TAKE ALL INTERFERENCES INTO CONSIDERATION. IDENTIFY POTENTIAL INTERFERENCES WITH NEW WORK AND REPORT TO ARCHITECT IMMEDIATELY. PROVIDE ALL NECESSARY OFFSETS TO SUIT FIELD CONDITIONS AS REQUIRED.

C. CONTRACTOR SHALL VERIFY AND COORDINATE ALL UTILITY CONNECTION POINTS, INCLUDING SIZES AND INVERTS WITH EXISTING FIELD CONDITION PRIOR TO START OF WORK.

D. MAKE ALL UTILITY CONNECTIONS AND INSTALLATIONS IN FULL ACCORDANCE WITH ALL UTILITY REGULATIONS. PROVIDE ALL ADDITIONAL APPURTENANCES AS REQUIRED BY UTILITY COMPANY. THE COMPLETED INSTALLATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE INDUSTRY STANDARDS OF GOOD PRACTICE AND SAFETY, AND THE MANUFACTURER'S STRICTEST RECOMMENDATIONS FOR EQUIPMENT AND PRODUCT APPLICATION AND INSTALLATION.

E. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS RELATED TO THE INSTALLATION OF THE WORK.

F. ALL WORK SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, LAWS, ACTS AND ALL AUTHORITIES HAVING JURISDICTION AND LANDLORD'S CRITERIA.

G. MAINTAIN ALL MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES FOR ALL FIXTURES AND EQUIPMENT. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF PLUMBING FIXTURES.

H. ALL HORIZONTAL FIRE PROTECTION SPRINKLER PIPING AND ALL ABOVE GRADE EXPOSED HORIZONTAL PIPING IS TO BE INSTALLED AS HIGH AS POSSIBLE. SPRINKLER CONTRACTOR SHALL COORDINATE SPRINKLER SYSTEM WITH DUCTWORK AND LIGHTS. ALL COSTS ASSOCIATED WITH RAISING SPRINKLER PIPING WHERE THE ARCHITECTURAL DESIGN CAN NOT BE ACCOMPLISHED SHALL BE THE RESPONSIBILITY OF THE SPRINKLER CONTRACTOR.

I. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE CONTRACT DOCUMENTS BEFORE COMMENCING ANY WORK.

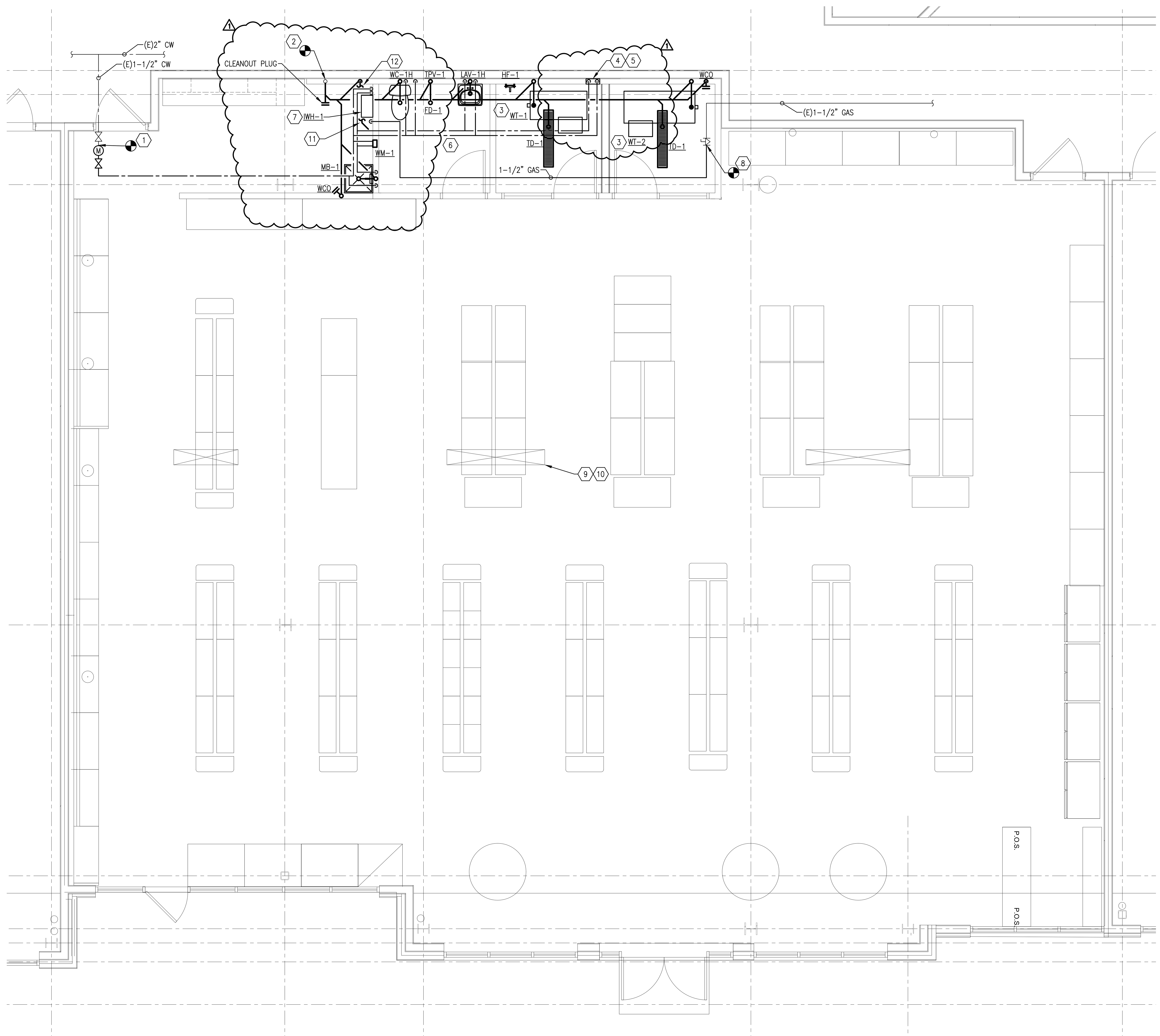
J. SLEEVE AND SEAL ALL PIPE PENETRATIONS OF WALLS AND FLOORS. APPLY INTUMESCENT FIRE SAFING COMPOUND AT PENETRATIONS OF FIRE-RATED WALLS AND FLOORS, MAINTAINING INTEGRITY AND RATING OF FIRE SEPARATION. SLEEVES THROUGH FLOORS SHALL EXTEND 2" ABOVE FLOOR, BE GROUTED INTO PLACE AND WATERPROOFED. PIPING THROUGH EXTERIOR WALLS SHALL BE SLEEVED AND SEALED WEATHER TIGHT.

K. ALL DOMESTIC COLD AND HOT WATER PIPING TO BE INSULATED WITH RIGID FIBERGLASS INSULATION WITH TYPE 'ASJ' JACKET. COLD WATER PIPES TO HAVE 1/2" THICK INSULATION. HOT WATER PIPES TO HAVE 1" THICK INSULATION.

L. WHEN SUBMITTING SHOP DRAWINGS FOR PLUMBING FIXTURES, PLUMBING CONTRACTOR TO PROVIDE SEPARATE WATER CLOSET FIXTURE CUTS SHOWING FLUSH HANDLES ON APPROPRIATE SIDES OF TANK FOR ADA ACCESS.

M. PVC PIPING IS NOT ALLOWED.

N. SPRINKLER HEADS WHICH OCCUR IN DRYWALL, METAL AND ACOUSTIC CEILINGS ARE TO BE CONCEALED AND CUSTOM COLORED TO MATCH CEILING COLOR.



PLUMBING PLAN
1/4" = 1'-0"

XREF-KansasCity MO.dwg
XTB KansasCity MO.dwg
Job Path:J:\CLIENT\Pet People\18894 Kansas City, MO\800 18894 KansasCity MO P1.0.dwg
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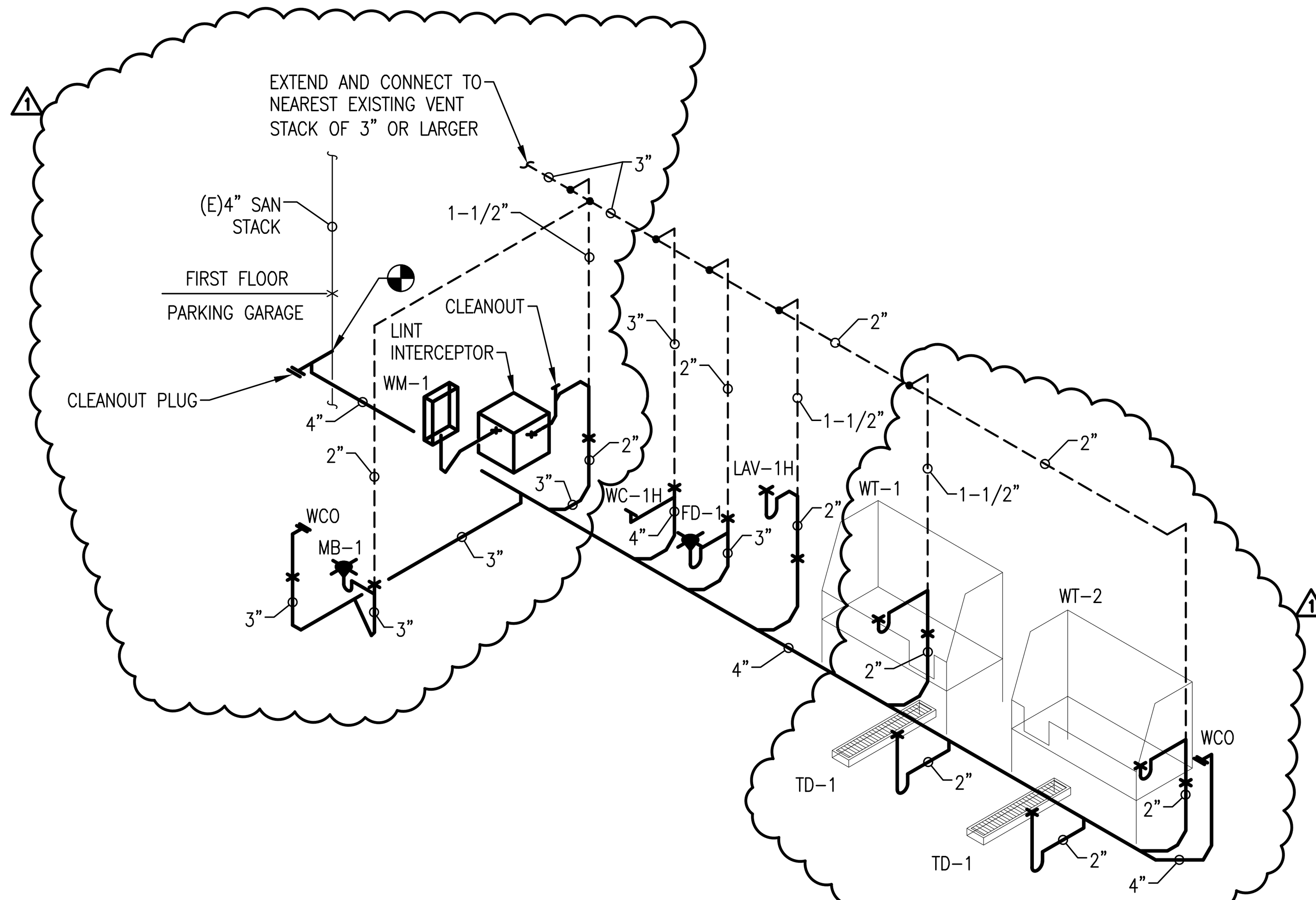
8.11.21

PetPeople
SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

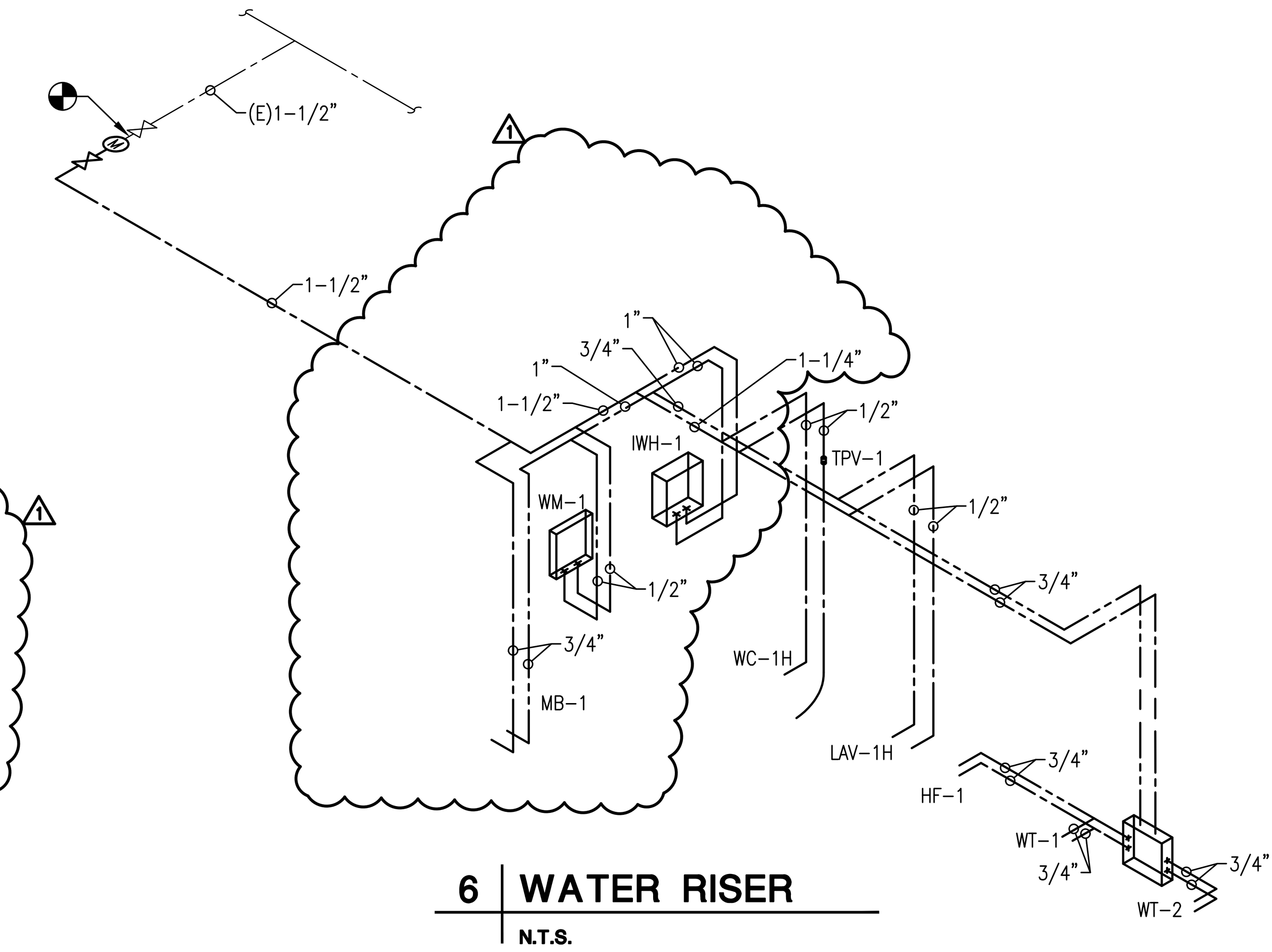
Project No.:	18894
Drawn By:	AEU
Date	Issue
07/19/2021	Bid/ Permit
07/31/2021	1 Revision 1

P1.0

PLUMBING PLAN



7 SANITARY RISER
N.T.S.



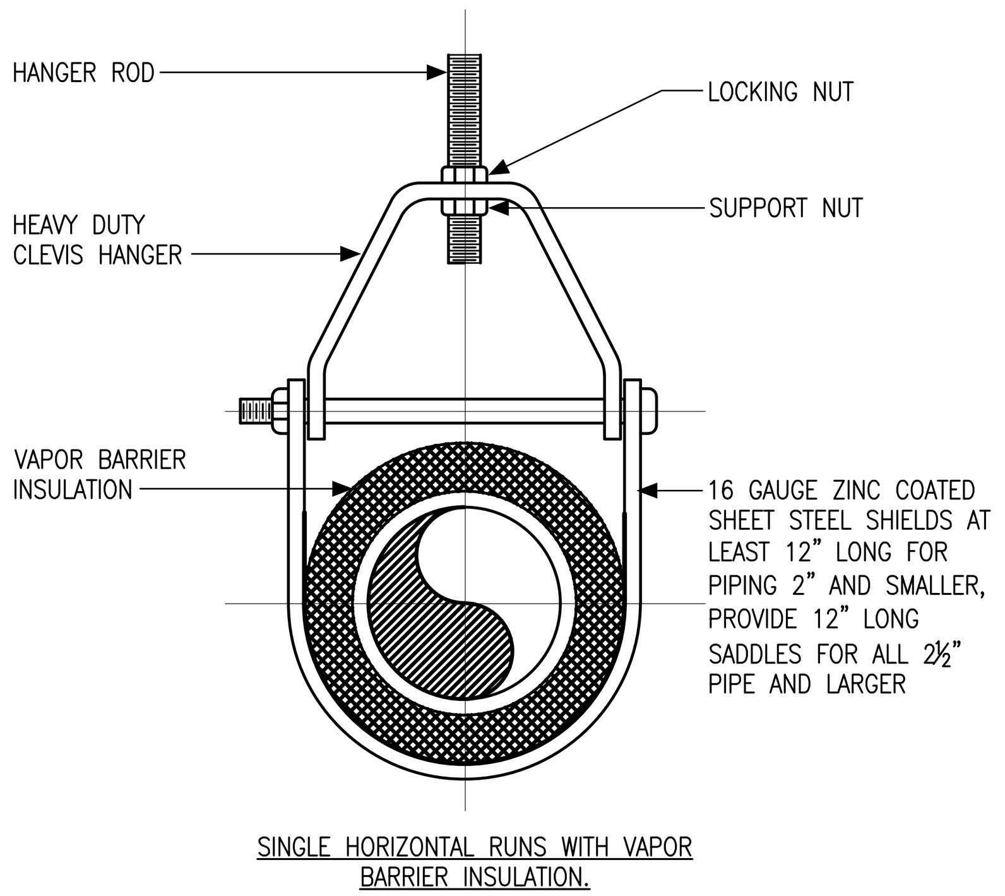
6 WATER RISER
N.T.S.

PLUMBING SYMBOLS/ABBREVIATION LEGEND

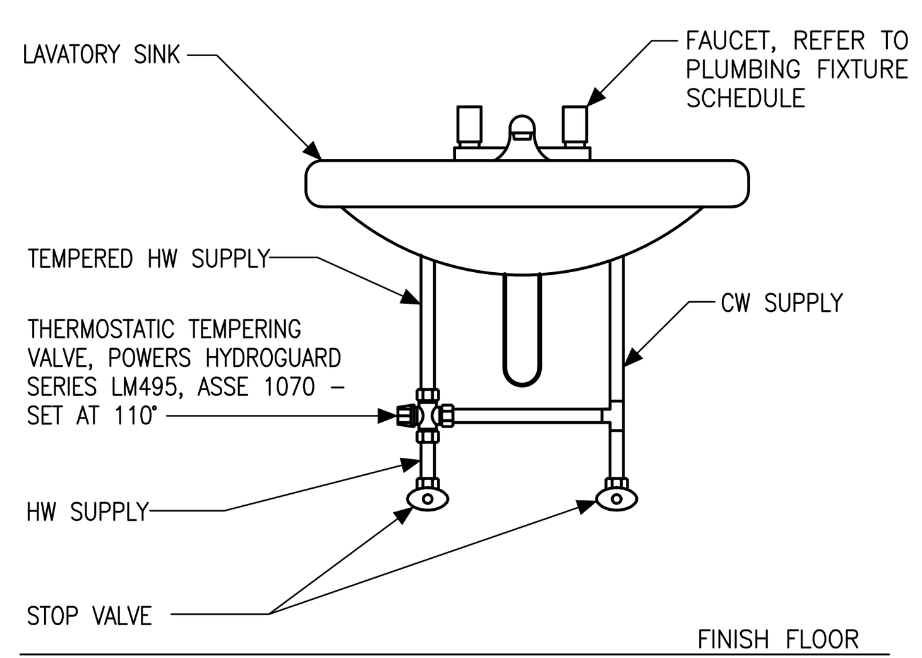
SYMBOL	DESCRIPTION
	DOMESTIC HOT WATER
	DOMESTIC COLD WATER
	SANITARY VENT
	SANITARY SEWER
	NATURAL GAS
	SHUT OFF VALVE
	UNION
	END OF CONTRACT, CONNECT TO EXISTING
	GAS SHUT OFF VALVE
	WATER METER
	PIPE DROP
	PIPE RISE
	PIPE CONNECTION FROM BOTTOM
	PIPE CAP
	PIPE BREAK

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS MAY APPLY

ABBREVIATION	DESCRIPTION
AD	ACCESS DOOR
A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
C.T.E.	CONNECT TO EXISTING
DS	DOWNSPOUT
(E)	EXISTING
FCO	FLOOR CLEANOUT
FD-?	FLOOR DRAIN
FPC	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
LAV-?	LAVATORY
PC	PLUMBING CONTRACTOR
SAN	SANITARY
WCO	WALL CLEANOUT
WC-?	WATER CLOSET

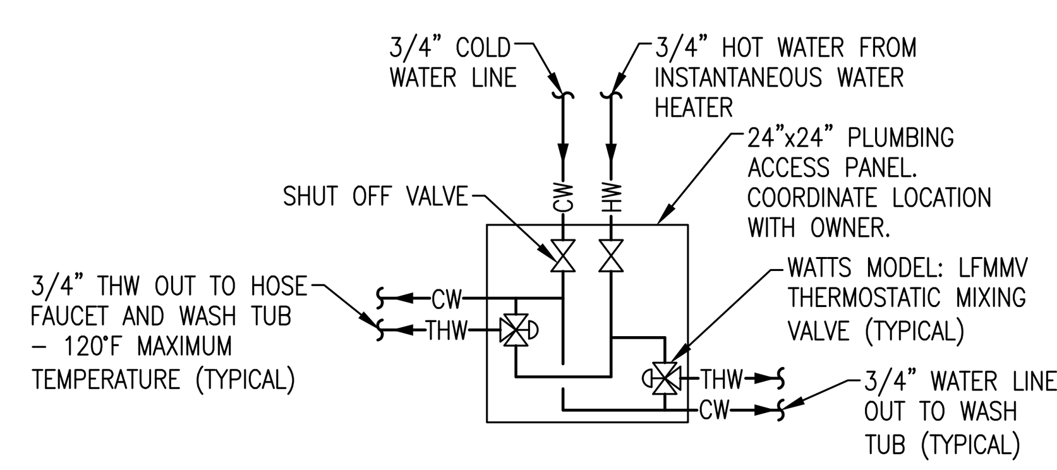


5 CLEVIS HANGER DETAIL
N.T.S.



NOTE:
INSULATE ALL EXPOSED WASTE AND SUPPLY PIPING UNDER LAVATORIES WITH THE HANDI-LAV GUARD INSULATION KIT BY TRUEBRO OR EQUAL.

4 LAVATORY TEMPERING VALVE DETAIL
N.T.S.

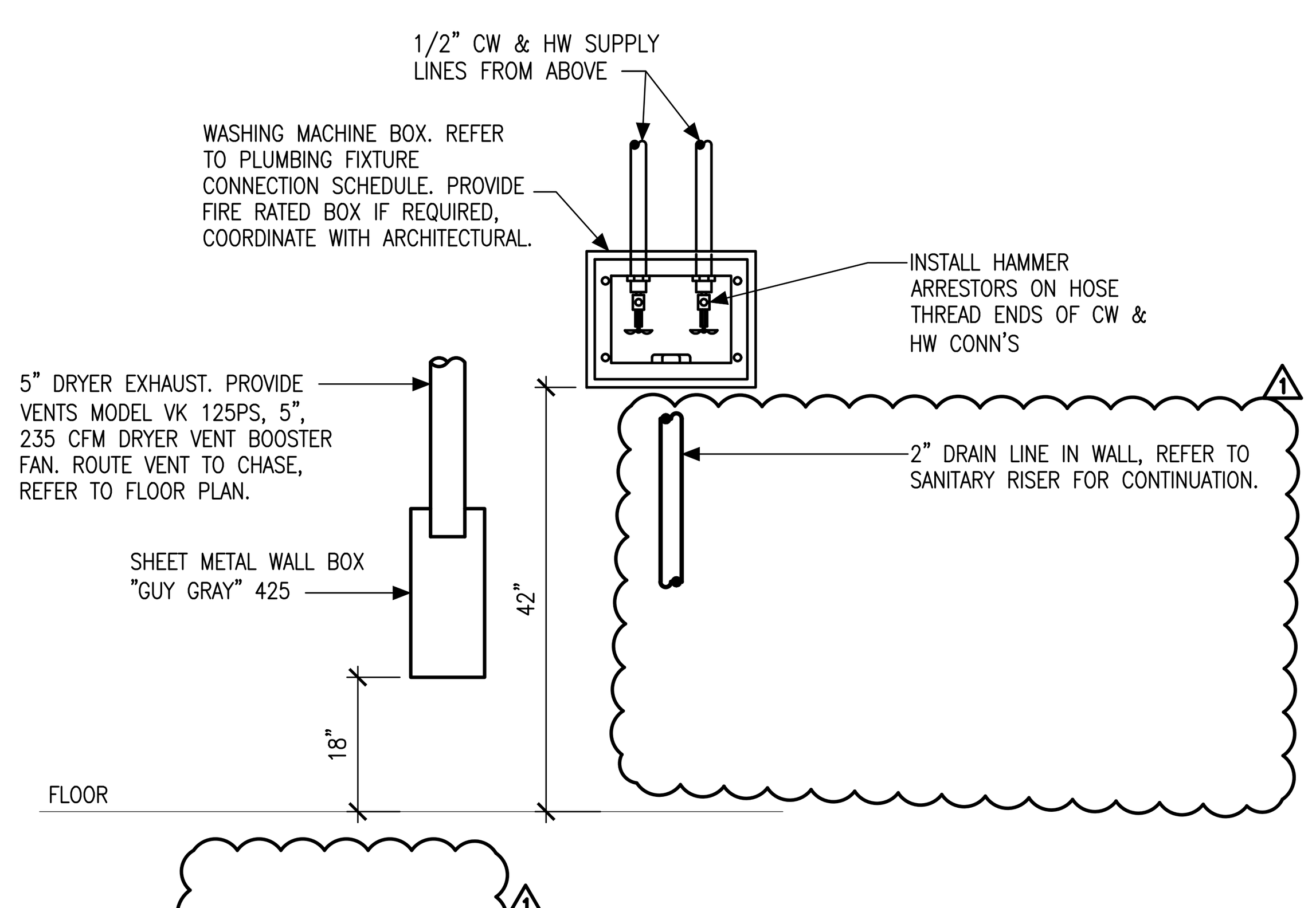


3 PLUMBING ACCESS DETAIL
N.T.S.

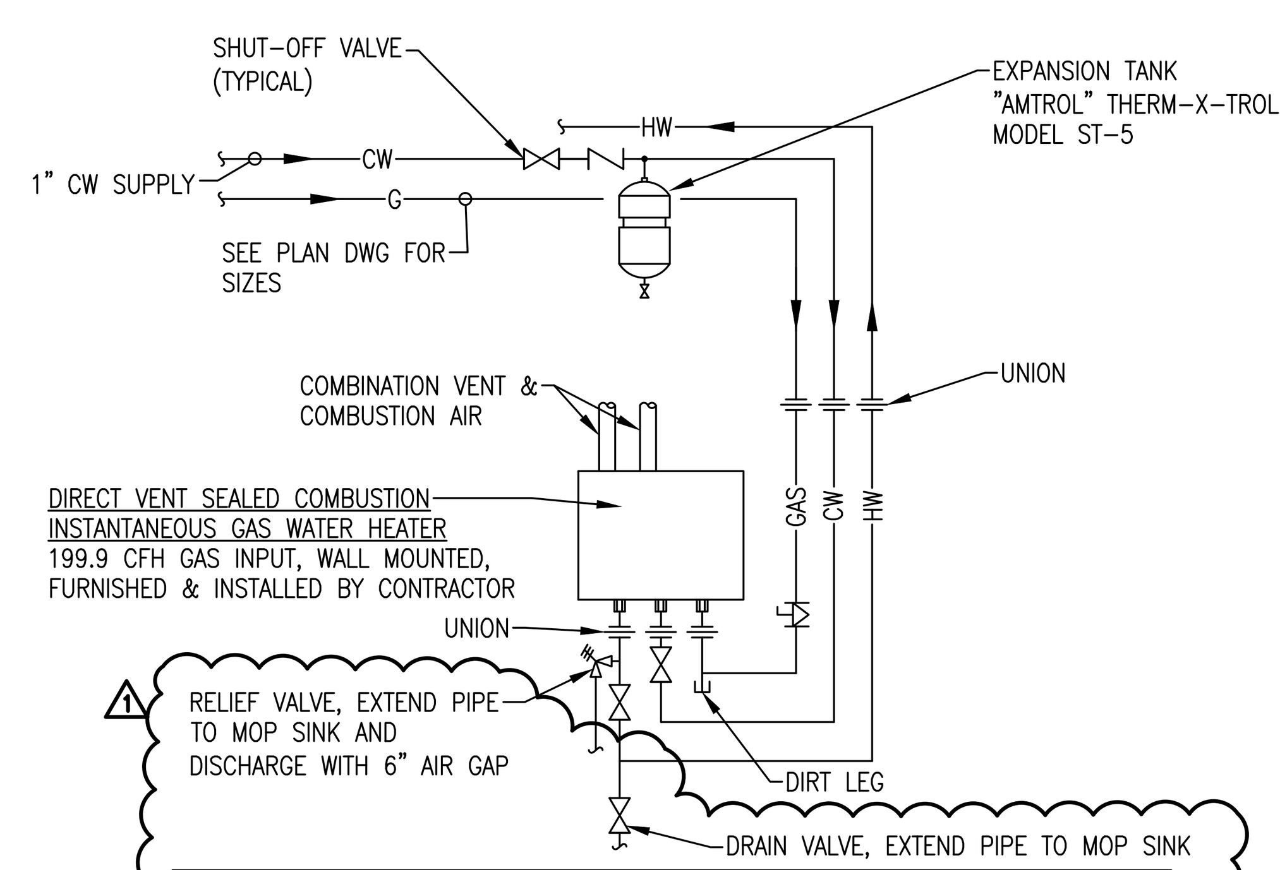
INSTANTANEOUS WATER HEATER SCHEDULE

MARK	MANUFACTURER	MODEL NO.	GPM @ 45° RISE MAX	BTUH INPUT	VOLTAGE	WATER/GAS CONNECTIONS	NOTES
IWH-1	RHEEM	RTGH-95DVLN-2	8.5	199,900	120/1/60	3/4"	1,2

NOTES:
1. PROVIDE WITH CONCENTRIC VENT KIT FOR TERMINATION ON ROOF. ROUTE INTAKE AND VENT PIPING UP CHASE TO ROOF, VERIFY CLEARANCE REQUIREMENTS FROM EXISTING VENT/FLUE PIPING ON ROOF. SIZE PIPING PER MANUFACTURER'S RECOMMENDATIONS FOR REQUIRED LENGTH.
2. NO SUBSTITUTIONS



2 WASHER SUPPLY & DRAIN CABINET DETAIL
N.T.S.



NOTE:
1. WATER HEATER INSTALLATION TO COMPLY WITH STATE CODES AND LOCAL AUTHORITIES.

1 INSTANTANEOUS GAS WATER HEATER DETAIL
N.T.S.

PLUMBING FIXTURE CONNECTION SCHEDULE

MARK	ITEM	MAKE	NAME	MODEL	TRIM	TRAP	STOPS	CONNECTIONS WASTE	VENT	HW	CW	REMARKS
LAV-1H	LAVATORY	AMERICAN STANDARD	LUCERNE	0355.012 4" CENTERS	MONTERREY (0.5 GPM)	NOTE #3	NOTE #4	1-1/2"	1-1/2"	1/2"	1/2"	WITH FLOOR MOUNTED CONCEALED ARM WALL CARRIER, FAUCET TO BE 5500.175 WITH WRIST HANDLES, SEE NOTES #7 & #9
WC-1H	WATER CLOSET	KOHLER	HIGHLINE 1.28 GPF	K-3999	–	INTEGRAL	3/8" ANGLE	4"	2"	–	1/2"	FLOOR MOUNTED, FLUSH TANK, WITH K-4731-C-O OPEN FRONT ELONGATED SEAT WITH CHECK HINGE. REFER TO NOTES #7 & #8. COLOR SHALL BE WHITE. PROVIDE WITH TANK COVER LOCKS.
MB-1	JANITOR'S SINK	FLORESTONE	TERRAZZO 24x24x12	MODEL #91	CENTRAL BRASS	3"	1/2" VALVES	3"	1-1/2"	3/4"	3/4"	SERVICE SINK FAUCET TO BE CENTRAL BRASS #0054-YELSRC-Q REFER TO NOTE #6
FD-1	FLOOR DRAIN	WATTS	SQUARE FLOOR DRAIN	MODEL # FD-100-M	NICKEL BRONZE	3"	–	3"	1-1/2"	–	–	PROVIDE 6"x6" FLOOR DRAIN.
TD-1	TRENCH DRAIN	NOBLE COMPANY	FREESTYLE LINEAR DRAIN		PYRAMID STRAINER	2"	–	2"	1-1/2"	–	–	PVC CHANNEL, 316 SS GRATE, PROVIDE WITH 2" BOTTOM DISCHARGE, AND PRE-STRAINER.
WT-1	PET WASH TUB	FOREVER STAINLESS STEEL	48" WASH TUB	W48HT-LH	STAINLESS STEEL	1-1/2"	–	1-1/2"	1-1/2"	3/4"	3/4"	PROVIDE WITH PERFORATED HAIR CATCHING DRAIN SYSTEM (LH). PROVIDE WITH QUALITY FIXTURE PACKAGE.
WT-2	PET WASH TUB	FOREVER STAINLESS STEEL	60" WASH TUB	W60HTY-RH	STAINLESS STEEL	1-1/2"	–	1-1/2"	1-1/2"	3/4"	3/4"	PROVIDE WITH PERFORATED HAIR CATCHING DRAIN SYSTEM (RH). PROVIDE WITH QUALITY FIXTURE PACKAGE.
WM-1	WASHING MACHINE BOX	SIOUX CHIEF	OXBOX	696-G230	ABS	–	–	2"	1-1/2"	1/2"	1/2"	OWNER TO PROVIDE WASHING MACHINE. WASTE AND VENT SIZES REFER TO WASHING MACHINE.
WCO	WALL CLEAN OUT	J.R. SMITH	–	4402 SERIES	STAINLESS STEEL	–	–	–	–	–	–	CAST IRON BODY
HF-1	HOSE FAUCET	CENTRAL BRASS	SERVICE FAUCET	0054-YELSRC-Q	–	–	1/2" VALVES	–	–	3/4"	3/4"	PROVIDE 20' HOSE AND NOZZLE, SEE NOTE 9.
TPV-1	TRAP PRIMER	PRECISION PRODUCTS	–	P2-500	–	–	–	–	–	–	1/2"	PRESSURE ACTIVATED TRAP PRIMER, BRASS CONSTRUCTION, ADJUSTMENT FOR VARIABLE PRESSURES, INSTALL TRAP PRIMER A MINIMUM OF 12' ABOVE THE TRAP BEING SERVED, PROVIDE AIR GAP FITTING WITH 1/2" MALE NPT INLET FITTING AND 1/2" FEMALE OUTLET FITTING, ONE TRAP APPLICATION

NOTES:
1. INSTALL SERVICE, SHUTOFF & CHECK VALVES, COCKS, STOPS, AIR CUSHIONS, VACUUM BREAKERS, AND SAFETY DEVICES WHERE REQUIRED BY CODE, SPECIFICATIONS, OR DRAWINGS.
2. ALL FIXTURES IN WHITE UNLESS NOTED.
3. EXPOSED P-TRAPS TO BE 17 GA. CHROME PLATE WITH CLEANOUT AND ESCUTCHEON PLATE.
4. STOPS TO BE CHROME PLATED 1/2" ANGLE VALVE WITH CHROME PLATED 12" LONG, 1/2" O.D. FLEXIBLE RISER AND ESCUTCHEON PLATE.
5. ALL DRAINS AND WATER SUPPLY PIPING TO LAVATORIES TO BE INSULATED WITH 'HANDI LAV-GUARD' INSULATION KIT BY TRUEBRO.
6. WITH FLORESTONE HOSE AND BRACKET, MOP HOOK, BUMPER GUARD AND 12" HIGH STAINLESS STEEL WALL GUARD. SINK TO BE MOUNTED FLUSH WITH WALLS AND SILICONE SEALANT APPLIED WHERE SINK MEETS WALL.
7. AN 'H' AT THE FIXTURE DESIGNATION INDICATES A HANDICAPPED FIXTURE.
8. FLUSH HANDLES FOR ADA FIXTURES SHALL BE MOUNTED ON WIDE SIDE OF TOILET AREA.
9. INSTALL WATTS LFUSG-B TEMPERING VALVE. SET AT 110°.

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P2.0

PLUMBING SCHEDULES AND DETAILS

15001

GENERAL INFORMATION

A. GENERAL
1. CONFORM TO ALL GENERAL AND SPECIAL CONDITIONS OF CONTRACT AS SPECIFIED BY ARCHITECT, TENANT AND OWNER.
2. SPECIFICATIONS ARE APPLICABLE TO ALL CONTRACTORS AND SUBCONTRACTORS FOR MECHANICAL AND ELECTRICAL SYSTEMS
3. CONTRACTOR SHALL COMPLY WITH OWNER'S STANDARDS, FACILITY SPECIFICATIONS, RULES AND REGULATIONS. ALL OWNER'S CRITERIA SHALL BE COMPLIED WITH AND INCLUDED IN THIS BID. CHECK OTHER PLANS AND SPECIFICATIONS AND FULLY COORDINATE WITH OTHER TRADES AND ARCHITECT'S REQUIREMENTS.
4. VISIT SITE, CHECK FACILITIES AND CONDITIONS, AND VERIFY ALL UTILITY COMPANY REQUIREMENTS AND CONNECTION POINTS IN FIELD PRIOR TO STARTING WORK. TAKE ALL ITEMS INTO CONSIDERATION IN BID.
5. SYSTEMS ARE TO BE COMPLETE AND WORKABLE IN ALL RESPECTS, PLACED IN OPERATION AND PROPERLY ADJUSTED.
6. EACH CONTRACTOR SHALL PROVIDE FOR HIS OWN CLEAN-UP, REMOVAL AND LEGAL DISPOSAL OF ALL RUBBISH DAILY.
7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, AND SEQUENCES OF CONSTRUCTION AND THE SAFETY OF WORKMEN. COMPLY WITH ALL OSHA REGULATIONS.
8. NO PIPING, DUCTWORK, CONTROLS, ETC., SHALL BE INSTALLED OR ROUTED ABOVE ELECTRICAL PANELS AND EQUIPMENT OR THROUGH ELEVATOR ROOMS OR SHAFTS.
9. THE MECHANICAL AND ELECTRICAL CONTRACTORS SHALL COORDINATE THE ELECTRICAL CHARACTERISTICS OF ALL MECHANICAL EQUIPMENT PRIOR TO ORDERING OF EQUIPMENT. NO ADDITIONAL PAYMENT WILL BE MADE FOR LACK OF CONTRACTOR COORDINATION OF ELECTRICAL CHARACTERISTICS.
10. ALL MECHANICAL AND ELECTRICAL SYSTEM COMPONENTS SHALL BE ROUTED TIGHT TO UNDERSIDE OF STRUCTURE AND THROUGH JOISTS OR TRUSSES WHERE POSSIBLE. COORDINATE INSTALLATION TO PRESERVE HEADROOM, EQUIPMENT ACCESS, AND ARCHITECTURAL CLEARANCES FOR FINISHES, INCLUDING CEILING HEIGHTS. COORDINATE WITH ALL OTHER TRADES AND DO NOT CONFLICT WITH THE ARCHITECTURAL REQUIREMENTS FOR THE FINISHED CONSTRUCTION. PROVIDE OFFSETS WHERE REQUIRED TO COORDINATE WITH OTHER TRADES.
11. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF ALL GRILLES AND DIFFUSERS.
12. OPERATION AND MAINTENANCE MANUALS:
THREE (3) BOUND SETS OF THE OPERATION AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE CONSTRUCTION REPRESENTATIVE AT TURNOVER, AND ARE REQUIRED FOR FINAL ACCEPTANCE.
13. AS BUILT DRAWINGS:
THE HVAC SUBCONTRACTOR SHALL PROGRESSIVELY RECORD ALL HVAC DRAWING CHANGES WHICH SHALL BE AVAILABLE AT ALL TIMES FOR REVIEW BY THE CONSTRUCTION REPRESENTATIVE. AN AUTOCAD COPY OF THE FINAL AS-BUILT DRAWINGS SHALL BE PROVIDED TO THE CONSTRUCTION REPRESENTATIVE AT TURNOVER. THIS AUTOCAD AS-BUILT IS REQUIRED FOR FINAL ACCEPTANCE OF THE PROJECT.

B. CODES, STANDARDS AND REGULATIONS
1. CONFORM TO ALL APPLICABLE CODES, GOVERNMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS, AND NATIONAL ELECTRICAL CODE.
2. OBTAIN PERMITS AND PAY ALL FEES. ARRANGE FOR ALL REQUIRED INSPECTIONS AND APPROVALS.

C. RELATED WORK SPECIFIED ELSEWHERE
1. OPENINGS AND CHASES, WHEN SHOWN ON ARCHITECTURAL DRAWINGS.

D. DRAWINGS
1. THE SYSTEMS AS SHOWN ON THE CONTRACT DRAWINGS ARE DIAGRAMMATIC.
2. THE INTENT IS FOR COMPLETE AND WORKABLE SYSTEMS. THE DRAWINGS AND THESE NOTES ARE TO BE USED TOGETHER AS A BASIS OF SHOWING AND/OR DESCRIBING THE SYSTEM REQUIREMENTS FOR THE FACILITY
3. VERIFY ALL DIMENSIONS AND CLEARANCES BY FIELD MEASUREMENT AND CHECK FOR INTERFERENCES PRIOR TO STARTING WORK.

E. BASE EQUIPMENT AND MATERIALS AND SUBSTITUTIONS
1. ALL EQUIPMENT AND MATERIALS SHALL BE NEW, FREE OF DEFECTS AND U.L. LABELED.
2. SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT, FIXTURES, ETC., INCLUDING ALL ACCESSORIES TO BE FURNISHED. BASE BID MANUFACTURERS AND MODELS ARE INCLUDED IN SPECIFICATIONS OR LISTED IN SCHEDULE ON DRAWING. ANY OTHER MANUFACTURER OR MODEL IS A SUBSTITUTION.
3. SUBSTITUTIONS ARE SUBJECT TO THE APPROVAL OF THE OWNER AND SHALL BE LISTED ON THE FORM OF PROPOSAL FOR THE OWNER'S CONSIDERATION PRIOR TO CONTRACT AWARD. IF SUBSTITUTION IS SUBMITTED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO EVALUATE IT AND CERTIFY THAT THE SUBSTITUTION IS EQUIVALENT IN ALL RESPECTS TO THE BASE SPECIFICATIONS.
4. IF SUBSTITUTIONS ARE APPROVED, NOTIFY ALL OTHER CONTRACTORS, SUBCONTRACTORS OR TRADES AFFECTED BY SUBSTITUTION AND FULLY COORDINATE. ANY COSTS RESULTING FROM SUBSTITUTION, WHETHER BY CONTRACTOR OR OTHERS, SHALL BE RESPONSIBILITY OF AND PAID FOR BY SUBSTITUTING CONTRACTOR.
5. ALL EQUIPMENT SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO CHECK AND CONFORM TO THESE REQUIREMENTS PRIOR TO STARTING WORK.

F. CHECK, TEST, START, ADJUST, BALANCE AND INSTRUCTIONS
1. AFTER INSTALLATION, CHECK ALL EQUIPMENT, AND PERFORM START UP IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
2. ALL PIPING SHALL BE TESTED AND FREE OF LEAKS.
3. BALANCE ALL SYSTEMS, CALIBRATE CONTROLS, CHECK FOR PROPER OPERATING SEQUENCE UNDER ALL CONDITIONS, AND MAKE ALL NECESSARY ADJUSTMENTS.
4. ALL WIRING SHALL BE FULLY TESTED AND MADE FREE OF GROUNDS AND SHORT CIRCUITS.
5. INSTRUCT OWNER IN OPERATION OF SYSTEMS AND SUBMIT OPERATING AND MAINTENANCE MANUAL ON ALL EQUIPMENT AND SYSTEMS.
6. PROVIDE ENGRAVED LABELS AND IDENTIFICATION TAGS FOR ALL PIPING SYSTEMS, VALVES AND EQUIPMENT.
7. PROVIDE TYPED PANEL DIRECTORIES AND ENGRAVED LABELS FOR ALL PANELS AND EQUIPMENT.

G. CUTTING, PATCHING AND DRILLING
1. ALL CUTTING AND CHASING OF THE BUILDING CONSTRUCTION REQUIRED FOR THIS WORK SHALL BE BY THIS CONTRACTOR UNLESS SHOWN ON ARCHITECTURAL DRAWINGS AND CONFIRMED AS TO SIZE AND LOCATION PRIOR TO NEW CONSTRUCTION. CUTTING SHALL BE IN A NEAT AND WORKMANLIKE MANNER.
2. NEATLY SAW CUT ALL RECTANGULAR OPENINGS, SET SLEEVE THROUGH OPENING, AND FINISH PATCH OR PROVIDE TRIM FLANGE AROUND OPENING.
3. NEATLY SAW CUT FLOORS FOR SEWER INSTALLATION AND PATCH FLOOR TO MATCH EXISTING, INCLUDING FLOOR COVERING.
4. CORE DRILL AND SLEEVE ALL ROUND OPENINGS.
5. CUT AND PATCH EXISTING BUILDING WALLS AS REQUIRED FOR DUCT INSTALLATION. PROVIDE STEEL LINTEL ABOVE OPENING WIDER THAN 10". SEE STRUCTURAL DRAWINGS FOR SIZES. PROVIDE ESCUTCHEONS OR 2" WIDE SHEET METAL FLANGES AROUND ALL EXPOSED PENETRATIONS.
6. DO NOT CUT ANY STRUCTURAL COMPONENTS WITHOUT ARCHITECT'S APPROVAL.
7. PATCH AND FINISH TO MATCH ADJACENT AREAS THAT HAVE BEEN CUT, DAMAGED OR MODIFIED TO INSTALL EQUIPMENT FOR THIS PROJECT.
8. CUTTING OF ROOF, INSTALLATION OF CURBS, AND PATCHING OF ROOF SHALL BE BY A CERTIFIED ROOFING CONTRACTOR, APPROVED BY BUILDING OWNER, AND PAID FOR BY THIS CONTRACTOR.
9. FIRE STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER, USING UL LISTED FIRE RATED MATERIALS.
10. ALL CONTRACTORS SHALL CONFIRM WITH OWNER, PRIOR TO BID, TIMES AVAILABLE FOR NOISE PRODUCING WORK SUCH AS CUTTING AND CORE DRILLING OF FLOORS, WALLS, ETC., AS WELL AS TIMES FOR WORK WHICH REQUIRE ACCESS INTO ADJOINING AREAS. INCLUDE ANY PREMIUM TIME REQUIRED IN BID.

H. WARRANTY
1. FULLY WARRANT ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE.
2. EXTEND ALL MANUFACTURER'S WARRANTIES TO OWNER, INCLUDING FIVE (5) YEAR COMPRESSOR AND TEN (10) YEAR HEAT EXCHANGER EXTENDED WARRANTY ON HVAC EQUIPMENT.
3. REPAIR OR REPLACE WITHOUT CHARGE TO THE OWNER ALL ITEMS FOUND DEFECTIVE DURING THE WARRANTY PERIOD.

SECTION 15075

MECHANICAL IDENTIFICATION

PART 1 GENERAL
1.01 SECTION INCLUDES
A. NAMEPLATES.
B. TAGS.
C. PIPE MARKERS.
PART 2 PRODUCTS
2.01 IDENTIFICATION APPLICATIONS
A. AIR HANDLING UNITS: NAMEPLATES.
B. DAMPERS: CEILING TACKS, WHERE LOCATED ABOVE LAY-IN CEILING.
C. PIPING: PIPE MARKERS.
D. SMALL-SIZED EQUIPMENT: TAGS.
E. TANKS: NAMEPLATES.
F. THERMOSTATS: NAMEPLATES.
G. VALVES: TAGS AND CEILING TACKS WHERE LOCATED ABOVE LAY-IN CEILING.
H. WATER TREATMENT DEVICES: NAMEPLATES.
2.02 NAMEPLATES
A. DESCRIPTION: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED LETTERS.
1. LETTER COLOR: WHITE.
2. LETTER HEIGHT: 1/4 INCH.
3. BACKGROUND COLOR: BLACK.
2.03 TAGS
A. PLASTIC TAGS: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED BLACK LETTERS ON LIGHT CONTRASTING BACKGROUND COLOR. TAG SIZE MINIMUM 1-1/2 INCH DIAMETER.
B. METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE MINIMUM 1-1/2 INCH DIAMETER WITH SMOOTH EDGES.
2.04 PIPE MARKERS
A. PLASTIC PIPE MARKERS: FACTORY FABRICATED, FLEXIBLE, SEMI- RIGID PLASTIC, PREFORMED TO FIT AROUND PIPE OR PIPE COVERING; MINIMUM INFORMATION INDICATING FLOW DIRECTION ARROW AND IDENTIFICATION OF FLUID BEING CONVEYED.
B. PLASTIC TAPE PIPE MARKERS: FLEXIBLE, VINYL FILM TAPE WITH PRESSURE SENSITIVE ADHESIVE BACKING AND PRINTED MARKINGS.
C. UNDERGROUND PLASTIC PIPE MARKERS: BRIGHT COLORED CONTINUOUSLY PRINTED PLASTIC RIBBON TAPE, MINIMUM 6 INCHES WIDE BY 4 MIL THICK, MANUFACTURED FOR DIRECT BURIAL SERVICE.
D. COLOR CODE AS FOLLOWS:
1. POTABLE, COOLING, BOILER, FEED, OTHER WATER: GREEN WITH WHITE LETTERS.
2. FIRE QUENCHING FLUIDS: RED WITH WHITE LETTERS.
2.05 CEILING TACKS
A. DESCRIPTION: STEEL WITH 3/4 INCH DIAMETER COLOR CODED HEAD.
PART 3 EXECUTION
3.01 PREPARATION
A. DEGREASE AND CLEAN SURFACES TO RECEIVE ADHESIVE FOR IDENTIFICATION MATERIALS.
B. PREPARE SURFACES IN ACCORDANCE WITH SECTION 09900 FOR STENCIL PAINTING.
3.02 INSTALLATION
A. INSTALL PLASTIC NAMEPLATES WITH CORROSIVE-RESISTANT MECHANICAL FASTENERS, OR ADHESIVE. APPLY WITH SUFFICIENT ADHESIVE TO ENSURE PERMANENT ADHESION AND SEAL WITH CLEAR LACQUER.
B. INSTALL TAGS WITH CORROSION RESISTANT CHAIN.
C. INSTALL PLASTIC PIPE MARKERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
D. INSTALL UNDERGROUND PLASTIC PIPE MARKERS 6 TO 8 INCHES BELOW FINISHED GRADE, DIRECTLY ABOVE BURIED PIPE.
E. USE TAGS ON PIPING 3/4 INCH DIAMETER AND SMALLER.
1. IDENTIFY SERVICE, FLOW DIRECTION, AND PRESSURE.
2. INSTALL IN CLEAR VIEW AND ALIGN WITH AXIS OF PIPING.
3. LOCATE IDENTIFICATION NOT TO EXCEED 20 FEET ON STRAIGHT RUNS INCLUDING RISERS AND DROPS, ADJACENT TO EACH VALVE AND TEE, AT EACH SIDE OF PENETRATION OF STRUCTURE OR ENCLOSURE, AND AT EACH OBSTRUCTION.
G. LOCATE CEILING TACKS TO LOCATE VALVES OR DAMPERS ABOVE LAY-IN PANEL CEILINGS. LOCATE IN CORNER OF PANEL CLOSEST TO EQUIPMENT.

SECTION 15082

PIPING INSULATION

PART 1 GENERAL
1.01 SECTION INCLUDES
A. PIPING INSULATION.
B. JACKETS AND ACCESSORIES.
1.02 RELATED REQUIREMENTS
PART 2 PRODUCTS
2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION
A. SURFACE BURNING CHARACTERISTICS: FLAME SPREAD/SMOKE DEVELOPED INDEX OF 25/50, MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM E 84, NFPA 255, OR UL 723.
2.02 GLASS FIBER (THICKNESS SHALL PROVIDE R VALUE REQUIRED BY GOVERNING ENERGY CONSERVATION CODE FOR SPECIFIC APPLICATION)
A. INSULATION: RIGID MOLDED, NONCOMBUSTIBLE.
1. 'K' VALUE: 0.24 AT 75 DEGREES F.
2. MAXIMUM SERVICE TEMPERATURE: 850 DEGREES F.
3. MAXIMUM MOISTURE ABSORPTION: 0.2 PERCENT BY VOLUME.
B. VAPOR BARRIER JACKET: WHITE KRAFT PAPER WITH GLASS FIBER YARN, BONDED TO ALUMINIZED FILM; MOISTURE VAPOR TRANSMISSION WHEN TESTED IN ACCORDANCE WITH 0.02 PERM-INCHES.
2.03 JACKETS
A. PVC PLASTIC.
1. JACKET: ONE PIECE MOLDED TYPE FITTING COVERS AND SHEET MATERIAL, OFF-WHITE COLOR.
a. MINIMUM SERVICE TEMPERATURE: 0 DEGREES F.
b. MAXIMUM SERVICE TEMPERATURE: 150 DEGREES F.
c. MOISTURE VAPOR PERMEABILITY: 0.002 PERM INCH, MAXIMUM.
d. THICKNESS: 10 MIL.
e. CONNECTIONS: BRUSH ON WELDING ADHESIVE.
PART 3 EXECUTION
3.01 EXAMINATION
C. VERIFY THAT PIPING HAS BEEN TESTED BEFORE APPLYING INSULATION MATERIALS.
D. VERIFY THAT SURFACES ARE CLEAN AND DRY, WITH FOREIGN MATERIAL REMOVED.
3.02 INSTALLATION
A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. INSTALL IN ACCORDANCE WITH NAIMA NATIONAL INSULATION STANDARDS.
C. EXPOSED PIPING: LOCATE INSULATION AND COVER SEAMS IN LEAST VISIBLE LOCATIONS.
D. INSULATED PIPES CONVEYING FLUIDS BELOW AMBIENT TEMPERATURE: INSULATE ENTIRE SYSTEM INCLUDING FITTINGS, VALVES, UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, PUMP BODIES, AND EXPANSION JOINTS.
E. GLASS FIBER INSULATED PIPES CONVEYING FLUIDS BELOW AMBIENT TEMPERATURE:
1. PROVIDE VAPOR BARRIER JACKETS, FACTORY-APPLIED OR FIELD-APPLIED. SECURE WITH SELF-SEALING LONGITUDINAL LAPS AND BUTT STRIPS WITH PRESSURE SENSITIVE ADHESIVE. SECURE WITH OUTWARD CLINCH EXPANDING STAPLES AND VAPOR BARRIER MASTIC.
2. INSULATE FITTINGS, JOINTS, AND VALVES WITH MOLDED INSULATION OF LIKE MATERIAL AND THICKNESS AS ADJACENT PIPE. FINISH WITH GLASS CLOTH AND VAPOR BARRIER ADHESIVE OR PVC FITTING COVERS.
F. FOR HOT PIPING CONVEYING FLUIDS 140 DEGREES F OR LESS, DO NOT INSULATE FLANGES AND UNIONS AT EQUIPMENT, BUT BEVEL AND SEAL ENDS OF INSULATION.
G. GLASS FIBER INSULATED PIPES CONVEYING FLUIDS ABOVE AMBIENT TEMPERATURE:
1. PROVIDE STANDARD JACKETS, WITH OR WITHOUT VAPOR BARRIER, FACTORY-APPLIED OR FIELD-APPLIED. SECURE WITH SELF-SEALING LONGITUDINAL LAPS AND BUTT STRIPS WITH PRESSURE SENSITIVE ADHESIVE. SECURE WITH OUTWARD CLINCH EXPANDING STAPLES.
2. INSULATE FITTINGS, JOINTS, AND VALVES WITH INSULATION OF LIKE MATERIAL AND THICKNESS AS ADJOINING PIPE. FINISH WITH GLASS CLOTH AND ADHESIVE OR PVC FITTING COVERS.
H. INSERTS AND SHIELDS:
1. APPLICATION: PIPING 1-1/2 INCHES DIAMETER OR LARGER.
2. SHIELDS: GALVANIZED STEEL BETWEEN PIPE HANGERS OR PIPE HANGER ROLLS AND INSERTS.
3. INSERT LOCATION: BETWEEN SUPPORT SHIELD AND PIPING AND UNDER THE FINISH JACKET.
4. INSERT CONFIGURATION: MINIMUM 6 INCHES LONG, OF SAME THICKNESS AND CONTOUR AS ADJOINING INSULATION; MAY BE FACTORY FABRICATED.
5. INSERT MATERIAL: HYDROUS CALCIUM SILICATE INSULATION OR OTHER HEAVY DENSITY INSULATING MATERIAL SUITABLE FOR THE PLANNED TEMPERATURE RANGE.
I. CONTINUE INSULATION THROUGH WALLS, SLEEVES, PIPE HANGERS, AND OTHER PIPE PENETRATIONS. FINISH AT SUPPORTS, PROTRUSIONS, AND INTERRUPTIONS. AT FIRE SEPARATIONS.
J. PIPE EXPOSED IN MECHANICAL EQUIPMENT ROOMS OR FINISHED SPACES (LESS THAN 10 FEET ABOVE FINISHED FLOOR) WHERE SUBJECT TO DAMAGE: FINISH WITH PVC JACKET AND FITTING COVERS.
K. BURIED PIPING: PROVIDE FACTORY FABRICATED ASSEMBLY WITH INNER ALL-PURPOSE SERVICE JACKET WITH SELF-SEALING LAP, AND ASPHALT IMPREGNATED OPEN MESH GLASS FABRIC, WITH ONE MIL THICK ALUMINUM FOIL SANDWICHED BETWEEN THREE LAYERS OF BITUMINOUS COMPOUND; OUTER SURFACE FACED WITH A POLYESTER FILM.
3.03 SCHEDULES
A. PLUMBING SYSTEMS:
1. DOMESTIC HOT AND COLD WATER SUPPLY:
a. GLASS FIBER INSULATION:
1) PIPE SIZE RANGE: 1/2-3 INCH.
2) THICKNESS: 1/2 INCH FOR COLD WATER, 1 INCH FOR HOT WATER
2. PLUMBING VENTS WITHIN 10 FEET OF THE EXTERIOR:

SECTION 15086

DUCT INSULATION

PART 1 GENERAL
1.01 SECTION INCLUDES
A. DUCT INSULATION.
B. DUCT LINER.
1.02 SUBMITTALS
A. PRODUCT DATA: PROVIDE PRODUCT DESCRIPTION, THERMAL CHARACTERISTICS, LIST OF MATERIALS AND THICKNESS FOR EACH SERVICE, AND LOCATIONS.
B. MANUFACTURER'S INSTRUCTIONS: INDICATE INSTALLATION PROCEDURES NECESSARY TO ENSURE ACCEPTABLE WORKMANSHIP AND THAT INSTALLATION STANDARDS WILL BE ACHIEVED.
1.03 QUALITY ASSURANCE
A. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS OF THE TYPE SPECIFIED IN THIS SECTION WITH NOT LESS THAN THREE YEARS OF DOCUMENTED EXPERIENCE.
1.04 DELIVERY, STORAGE, AND HANDLING
A. ACCEPT MATERIALS ON SITE IN ORIGINAL FACTORY PACKAGING, LABELED WITH MANUFACTURER'S IDENTIFICATION, INCLUDING PRODUCT DENSITY AND THICKNESS.
B. PROTECT INSULATION FROM WEATHER AND CONSTRUCTION TRAFFIC, DIRT, WATER, CHEMICAL, AND MECHANICAL DAMAGE, BY STORING IN ORIGINAL WRAPPING.
1.05 FIELD CONDITIONS
A. MAINTAIN AMBIENT TEMPERATURES AND CONDITIONS REQUIRED BY MANUFACTURERS OF ADHESIVES, MASTICS, AND INSULATION CEMENTS.
B. MAINTAIN TEMPERATURE DURING AND AFTER INSTALLATION FOR MINIMUM PERIOD OF 24 HOURS.
PART 2 PRODUCTS
2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION
A. SURFACE BURNING CHARACTERISTICS: FLAME SPREAD/SMOKE DEVELOPED INDEX OF 25/50, MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM E 84, NFPA 255, OR UL 723.
2.02 GLASS FIBER, FLEXIBLE (THICKNESS SHALL PROVIDE R VALUE REQUIRED BY GOVERNING ENERGY CONSERVATION CODE FOR SPECIFIC APPLICATION)
A. INSULATION: FLEXIBLE, NONCOMBUSTIBLE BLANKET.
1. 'K' VALUE: 0.36 AT 75 DEGREES F.
2. MAXIMUM SERVICE TEMPERATURE: 450 DEGREES F.
3. MAXIMUM WATER VAPOR SORPTION: 5.0 PERCENT BY WEIGHT.
B. VAPOR BARRIER JACKET:
1. KRAFT PAPER WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM.
2. MOISTURE VAPOR PERMEABILITY: 0.02 PERM INCH.
3. SECURE WITH PRESSURE SENSITIVE TAPE.
C. VAPOR BARRIER TAPE:
1. KRAFT PAPER REINFORCED WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM, WITH PRESSURE SENSITIVE RUBBER BASED ADHESIVE.
D. TIE WIRE: ANNEALED STEEL, 16 GAGE.
2.03 DUCT LINER
A. INSULATION:
1. INCOMBUSTIBLE GLASS FIBER; FLEXIBLE BLANKET, RIGID BOARD, AND PREFORMED ROUND LINER BOARD; IMPREGNATED SURFACE AND EDGES COATED WITH POLY VINYL ACETATE POLYMER, OR ACRYLIC POLYMER SHOWN TO BE FUNGUS AND BACTERIA RESISTANT.
2. APPARENT THERMAL CONDUCTIVITY: MAXIMUM OF 0.31 AT 75 DEGREES F.
3. SERVICE TEMPERATURE: UP TO 250 DEGREES F.
4. RATED VELOCITY ON COATED AIR SIDE FOR AIR EROSION: 5,000 FPM, MINIMUM.
5. MINIMUM NOISE REDUCTION COEFFICIENTS:
a. 1 INCH THICKNESS: 0.45.
B. ADHESIVE: WATERPROOF, FIRE-RETARDANT TYPE.
C. LINER FASTENERS: GALVANIZED STEEL, SELF-ADHESIVE PAD, IMPACT APPLIED, OR WELDED WITH INTEGRAL, OR PRESS-ON HEAD.
PART 3 EXECUTION
3.01 EXAMINATION
A. VERIFY THAT DUCTS HAVE BEEN TESTED BEFORE APPLYING INSULATION MATERIALS.
B. VERIFY THAT SURFACES ARE CLEAN, FOREIGN MATERIAL REMOVED, AND DRY.
3.02 INSTALLATION
A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. INSTALL IN ACCORDANCE WITH NAIMA NATIONAL INSULATION STANDARDS.
C. INSULATED DUCTS CONVEYING AIR BELOW AMBIENT TEMPERATURE:
1. PROVIDE INSULATION WITH VAPOR BARRIER JACKETS.
2. FINISH WITH TAPE AND VAPOR BARRIER JACKET.
3. CONTINUE INSULATION THROUGH WALLS, SLEEVES, HANGERS, AND OTHER DUCT PENETRATIONS.
4. INSULATE ENTIRE SYSTEM INCLUDING FITTINGS, JOINTS, FLANGES, FIRE DAMPERS, FLEXIBLE CONNECTIONS, AND EXPANSION JOINTS.
D. EXTERNAL DUCT INSULATION APPLICATION:
1. SECURE INSULATION WITH VAPOR BARRIER WITH WIRES AND SEAL JACKET JOINTS WITH VAPOR BARRIER ADHESIVE OR TAPE TO MATCH JACKET.
2. SECURE INSULATION WITHOUT VAPOR BARRIER WITH STAPLES, TAPE, OR WIRES.
3. INSTALL WITHOUT SAG ON UNDERSIDE OF DUCT. USE ADHESIVE OR MECHANICAL FASTENERS WHERE NECESSARY TO PREVENT SAGGING. LIFT DUCT OFF TRAPEZE HANGERS AND INSERT SPACERS.
4. SEAL VAPOR BARRIER PENETRATIONS BY MECHANICAL FASTENERS WITH VAPOR BARRIER ADHESIVE.
5. STOP AND POINT INSULATION AROUND ACCESS DOORS AND DAMPER OPERATORS TO ALLOW OPERATION WITHOUT DISTURBING WRAPPING.
E. DUCT AND PLENUM LINER APPLICATION:
1. ADHERE INSULATION WITH ADHESIVE FOR 90 PERCENT COVERAGE.
2. SECURE INSULATION WITH MECHANICAL LINER FASTENERS. REFER TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE FOR SPACING.
3. SEAL AND SMOOTH JOINTS. SEAL AND COAT TRANSVERSE JOINTS.
4. SEAL LINER SURFACE PENETRATIONS AND EDGES WITH ADHESIVE.
5. DUCT DIMENSIONS INDICATED ARE NET INSIDE DIMENSIONS REQUIRED FOR AIR FLOW. INCREASE DUCT SIZE TO ALLOW FOR INSULATION THICKNESS.
3.03 SCHEDULES
A. SUPPLY AIR DUCT AND TO SIDE OF DIFFUSERS:
1. RIGID GLASS FIBER DUCT LINER: 1 INCHES THICK WITHIN 10 FEET OF AC UNITS.
2. FLEXIBLE GLASS FIBER DUCT WRAP INSULATION: 1-1/2 INCHES THICK ON ALL OTHER.
B. RETURN AIR DUCT:
1. RIGID GLASS FIBER DUCT LINER: 1 INCHES THICK WITHIN 10 FEET OF AC UNITS.

SECTION 15145

PLUMBING PIPING

PART 1 GENERAL
1.01 SECTION INCLUDES
A. PIPE, PIPE FITTINGS, VALVES, AND CONNECTIONS FOR PIPING SYSTEMS.
1. SANITARY SEWER AND VENT.
2. DOMESTIC WATER.
3. NATURAL GAS.
1.02 SUBMITTALS
A. PROJECT RECORD DOCUMENTS: RECORD ACTUAL LOCATIONS OF VALVES.
1.03 QUALITY ASSURANCE
1. PERFORM WORK IN ACCORDANCE WITH CURRENT LOCAL GOVERNING PLUMBING CODE
2. MAINTAIN ONE COPY ON PROJECT SITE.
B. VALVES: MANUFACTURER'S NAME AND PRESSURE RATING MARKED ON VALVE BODY.
C. WELDING MATERIALS AND PROCEDURES: CONFORM TO ASME (BPV IX) AND APPLICABLE STATE LABOR REGULATIONS.
D. WELDER QUALIFICATIONS: CERTIFIED IN ACCORDANCE WITH ASME (BPV IX).
E. IDENTIFY PIPE WITH MARKING INCLUDING SIZE, ASTM MATERIAL CLASSIFICATION, ASTM SPECIFICATION, POTABLE WATER CERTIFICATION, WATER PRESSURE RATING.
1.04 REGULATORY REQUIREMENTS
A. PERFORM WORK IN ACCORDANCE WITH CURRENT LOCAL GOVERNING PLUMBING CODE.
1.05 DELIVERY, STORAGE, AND HANDLING
A. ACCEPT VALVES ON SITE IN SHIPPING CONTAINERS WITH LABELING IN PLACE. INSPECT FOR DAMAGE.
B. PROVIDE TEMPORARY PROTECTIVE COATING ON CAST IRON AND STEEL VALVES.
C. PROVIDE TEMPORARY END CAPS AND CLOSURES ON PIPING AND FITTINGS. MAINTAIN IN PLACE UNTIL INSTALLATION.
D. PROTECT PIPING SYSTEMS FROM ENTRY OF FOREIGN MATERIALS BY TEMPORARY COVERS, COMPLETING SECTIONS OF THE WORK, AND ISOLATING PARTS OF COMPLETED SYSTEM.
1.06 FIELD CONDITIONS
A. DO NOT INSTALL UNDERGROUND PIPING WHEN BEDDING IS WET OR FROZEN.
PART 2 PRODUCTS
2.01 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET OF BUILDING
A. CAST IRON PIPE: HUB AND SPIGOT
1. FITTINGS: CAST IRON.
2. JOINTS: COMPRESSION GASKETS CONFORMING TO ASTM 564
B. PVC-DWV PLASTIC ASTM D-2665 WITH ASTM D-2665 DWV SOLVENT WELD SOCKET FITTINGS.
2.02 SANITARY SEWER AND VENT PIPING, ABOVE GRADE
A. CAST IRON PIPE: HUBLESS, SERVICE WEIGHT.
1. FITTINGS: CAST IRON.
2. JOINTS: NEOPRENE GASKETS AND STAINLESS STEEL CLAMP-AND-SHIELD ASSEMBLIES.
2.03 WATER PIPING, ABOVE GRADE
A. COPPER TUBE: TYPE L (B), DRAWN (H).
1. FITTINGS: CAST COPPER ALLOY OR WROUGHT COPPER AND BRONZE.
2. JOINTS: ALLOY SN95 SOLDER.
2.04 NATURAL GAS PIPING, ABOVE GRADE
A. STEEL PIPE: SCHEDULE 40 BLACK.
1. FITTINGS: MALLEABLE IRON, OR WROUGHT STEEL WELDING TYPE.
2. JOINTS: NFPA 54, THREADED OR WELDED.
2.05 FLANGES, UNIONS, AND COUPLINGS
A. UNIONS FOR PIPE SIZES 3 INCHES AND UNDER:
1. FERROUS PIPE: CLASS 150 MALLEABLE IRON THREADED UNIONS.
2. COPPER TUBE AND PIPE: CLASS 150 BRONZE UNIONS WITH SOLDERED JOINTS.
B. FLANGES FOR PIPE SIZE OVER 3 INCH OR LARGER:
1. FERROUS PIPE: CLASS 150 MALLEABLE IRON THREADED OR FORGED STEEL SLIP-ON FLANGES; PREFORMED NEOPRENE GASKETS.
2. COPPER TUBE AND PIPE: CLASS 150 SLIP-ON BRONZE FLANGES; PREFORMED NEOPRENE GASKETS.
2.06 BALL VALVES
A. UP TO AND INCLUDING 2 INCHES
1. BRONZE, TWO PIECE BODY, CHROME PLATED, BRASS BALL, TEFLON SEATS AND TOPPING BOX RING, LEVER HANDLES AND BALANCING STOPS, SOLDER OR THREADED ENDS WITH UNION.
2.07 GATE VALVES
A. UP TO AND INCLUDING 3 INCHES:
1. MSS SP-80, CLASS 125, BRONZE BODY, BRONZE TRIM, RISING STEM, HANDWHEEL, INSIDE SCREW, SOLID WEDGE DISC, SOLDER ENDS.
B. 2 INCHES AND LARGER:
1. MSS SP-70, CLASS 125, IRON BODY, BRONZE TRIM, OUTSIDE SCREW AND YOKE, HANDWHEEL, SOLID WEDGE DISC, FLANGED ENDS. PROVIDE CHAIN-WHEEL OPERATORS FOR VALVES 6 INCHES AND LARGER MOUNTED OVER 8 FEET ABOVE FLOOR.
PART 3 EXECUTION
3.01 EXAMINATION
A. VERIFY THAT EXCAVATIONS ARE TO REQUIRED GRADE, DRY, AND NOT OVER-EXCAVATED.
3.02 PREPARATION
A. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN END FERROUS PIPE.
B. REMOVE SCALE AND DIRT, ON INSIDE AND OUTSIDE, BEFORE ASSEMBLY.
C. PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES OR UNIONS.
3.03 INSTALLATION
A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, STATE AND LOCAL PLUMBING CODES.
B. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.
C. ROUTE PIPING IN ORDERLY MANNER AND MAINTAIN GRADIENT. ROUTE PARALLEL AND PERPENDICULAR TO WALLS.
D. INSTALL PIPING TO MAINTAIN HEADROOM, CONSERVE SPACE, AND NOT INTERFERE WITH USE OF SPACE.
E. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.
F. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.
G. PROVIDE CLEARANCE IN HANGERS AND FROM STRUCTURE AND OTHER EQUIPMENT FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.
H. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED. COORDINATE SIZE AND LOCATION OF ACCESS DOORS WITH ARCHITECTURAL DRAWINGS/SPECIFICATIONS.
I. ESTABLISH ELEVATIONS OF BURIED PIPING OUTSIDE THE BUILDING TO ENSURE IT IS BELOW SITES FROST LINE.
J. INSTALL VENT PIPING PENETRATING ROOFED AREAS TO MAINTAIN INTEGRITY OF ROOF ASSEMBLY.
K. PROVIDE SUPPORT FOR UTILITY METERS IN ACCORDANCE WITH REQUIREMENTS OF UTILITY COMPANIES.
L. INSTALL BELL AND SPIGOT PIPE WITH BELL END UPSTREAM.
M. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED.
N. INSTALL WATER PIPING TO ASME B31.9.
O. PVC PIPE: MAKE SOLVENT-WELDED JOINTS IN ACCORDANCE WITH ASTM D 2855. (DO NOT INSTALL IN RETURN AIR PLENUMS.)
P. SLEEVE PIPES PASSING THROUGH PARTITIONS, WALLS AND FLOORS.
Q. INSERTS:
1. PROVIDE INSERTS FOR PLACEMENT IN CONCRETE FORMWORK.
2. PROVIDE INSERTS FOR SUSPENDING HANGERS FROM REINFORCED CONCRETE SLABS AND SIDES OF REINFORCED CONCRETE BEAMS.
3. PROVIDE HOOKED ROD TO CONCRETE REINFORCEMENT SECTION FOR INSERTS CARRYING PIPE OVER 4 INCHES.
4. WHERE CONCRETE SLABS FORM FINISHED CEILING, LOCATE INSERTS FLUSH WITH SLAB SURFACE.
5. WHERE INSERTS ARE OMITTED, DRILL THROUGH CONCRETE SLAB FROM BELOW AND PROVIDE THROUGH-BOLT WITH RECESSED SQUARE STEEL PLATE AND NUT ABOVE SLAB.
R. PIPE HANGERS AND SUPPORTS:
1. INSTALL IN ACCORDANCE WITH ASME B31.9.
2. SUPPORT HORIZONTAL PIPING AS PER PIPE MANUFACTURES RECOMMENDATIONS OR AS SCHEDULED WHICH EVER IS MORE STRINGENT.
3. INSTALL HANGERS TO PROVIDE MINIMUM 1/2 INCH SPACE BETWEEN FINISHED COVERING AND ADJACENT WORK.
4. PLACE HANGERS WITHIN 12 INCHES OF EACH HORIZONTAL ELBOW.
5. USE HANGERS WITH 1-1/2 INCH MINIMUM VERTICAL ADJUSTMENT. DESIGN HANGERS FOR PIPE MOVEMENT WITHOUT DISENGAGEMENT OF SUPPORTED PIPE.
6. SUPPORT VERTICAL PIPING AT EVERY FLOOR. SUPPORT RISER PIPING INDEPENDENTLY OF CONNECTED HORIZONTAL PIPING.
7. WHERE SEVERAL PIPES CAN BE INSTALLED IN PARALLEL AND AT SAME ELEVATION, PROVIDE MULTIPLE OR TRAPEZE HANGERS.
8. PROVIDE COPPER PLATED HANGERS AND SUPPORTS FOR COPPER PIPING.
9. PRIME COAT EXPOSED STEEL HANGERS AND SUPPORTS. REFER TO SECTION 09900. HANGERS AND SUPPORTS LOCATED IN CRAWL SPACES, PIPE SHAFTS, AND SUSPENDED CEILING SPACES ARE NOT CONSIDERED EXPOSED.
10.SUPPORT CAST IRON DRAINAGE PIPING AT EVERY JOINT.
3.04 APPLICATION
A. USE GROOVED MECHANICAL COUPLINGS AND FASTENERS ONLY IN ACCESSIBLE LOCATIONS.
B. INSTALL UNIONS DOWNSTREAM OF VALVES AND AT EQUIPMENT OR APPARATUS CONNECTIONS.
C. INSTALL BALL VALVES FOR SHUT-OFF AND TO ISOLATE EQUIPMENT, PART OF SYSTEMS, OR VERTICAL RISERS.
D. INSTALL BALL VALVES FOR THROTTLING, BYPASS, OR MANUAL FLOW CONTROL SERVICES.
E. PROVIDE UL LISTED BALL VALVES IN NATURAL GAS SYSTEMS.
3.05 TOLERANCES
A. DRAINAGE PIPING: ESTABLISH INVERT ELEVATIONS WITHIN 1/2 INCH VERTICALLY OF LOCATION INDICATED AND SLOPE TO DRAIN AT MINIMUM OF 1/8 INCH PER FOOT SLOPE.
B. WATER PIPING: SLOPE AT MINIMUM OF 1/32 INCH PER FOOT AND ARRANGE TO DRAIN AT LOW POINTS.
3.06 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM
A. DISINFECT WATER DISTRIBUTION SYSTEM AFTER INSTALLATION. ONE GALLON 5% CHLOROX PER 300 GALLONS SYSTEM VOLUME OR DISINFECT AS PROVIDED UNDER AWWA STANDARD C651-85 WITH 24 HOUR APPLICATION TIME PERIOD.
B. PRIOR TO STARTING WORK, VERIFY SYSTEM IS COMPLETE, FLUSHED AND CLEAN.
3.07 SERVICE CONNECTIONS
A. PROVIDE NEW SANITARY SEWER SERVICES. BEFORE COMMENCING WORK CHECK INVERT ELEVATIONS REQUIRED FOR SEWER CONNECTIONS, CONFIRM INVERTS AND ENSURE THAT THESE CAN BE PROPERLY CONNECTED WITH SLOPE FOR DRAINAGE AND COVER TO AVOID FREEZING.
3.08 SCHEDULES
A. PIPE HANGER SPACING:
1. METAL PIPING:
a. PIPE SIZE: 1/2 INCHES TO 1-1/4 INCHES:
1) MAXIMUM HANGER SPACING: 6.5 FT.
2) HANGER ROD DIAMETER: 3/8 INCHES.
b. PIPE SIZE: 1-1/2 INCHES TO 2 INCHES:
1) MAXIMUM HANGER SPACING: 10 FT.
2) HANGER ROD DIAMETER: 3/8 INCH.
c. PIPE SIZE: 2-1/2 INCHES TO 3 INCHES:
1) MAXIMUM HANGER SPACING: 10 FT.
2) HANGER ROD DIAMETER: 1/2 INCH.
d. PIPE SIZE: 4 INCHES TO 6 INCHES:
1) MAXIMUM HANGER SPACING: 10 FT.
2) HANGER ROD DIAMETER: 5/8 INCH.
2. PLASTIC PIPING:
f. ALL SIZES:
1) MAXIMUM HANGER SPACING: 6 FT.
2) HANGER ROD DIAMETER: 3/8 INCH.

SECTION 15146

PLUMBING SPECIALTIES

PART 1 GENERAL
1.01 SECTION INCLUDES
A. FLOOR DRAINS.
B. CLEANOUTS.
C. WATER HAMMER ARRESTORS.
D. INTERCEPTORS.
E. THERMOSTATIC MIXING VALVES.
F. WASH MACHINE UTILITY BOXES
PART 2 PRODUCTS
2.01 DRAINS
A. FLOOR DRAIN (FD-?):
1. LACQUERED CAST IRON TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WEEP HOLES, REVERSIBLE CLAMPING COLLAR, ROUND, ADJUSTABLE NICKEL-BRONZE STRAINER AND TRAP PRIMER CONNECTION.
2.02 CLEANOUTS
A. CLEANOUTS AT INTERIOR FINISHED FLOOR AREAS:
1. LACQUERED CAST IRON BODY WITH ANCHOR FLANGE, REVERSIBLE CLAMPING COLLAR, THREADED TOP ASSEMBLY, AND ROUND GASKETED SCORED COVER IN SERVICE AREAS AND ROUND GASKETED DEPRESSED COVER TO ACCEPT FLOOR FINISH IN FINISHED FLOOR AREAS.
B. CLEANOUTS AT INTERIOR FINISHED WALL AREAS:
1. LINE TYPE WITH LACQUERED CAST IRON BODY AND ROUND EPOXY COATED GASKETED COVER, AND ROUND STAINLESS STEEL ACCESS COVER SECURED WITH MACHINE SCREW.
2.03 INTERCEPTORS
A. GREASE INTERCEPTORS:
1. CONSTRUCTION:
a. MATERIAL: EPOXY COATED FABRICATED STEEL.
b. ROUGH-IN: ON FLOOR.
c. ACCESSORIES: MULTI-WEIR BAFFLE ASSEMBLY, INTEGRAL DEEP SEAL TRAP, REMOVABLE INTEGRAL FLOW CONTROL, SEDIMENT BUCKET.
d. COVER: STEEL, EPOXY COATED, NON-SKID WITH GASKET, SECURING HANDLE, AND ENZYME INJECTION PORT, RECESSED FOR FLOOR FINISH.
2. UNIT RATING: SEE DRAWINGS FOR CAPACITY.
2.04 MIXING VALVES
A. THERMOSTATIC MIXING VALVES:
1. VALVE: CHROME PLATED CAST BRASS BODY, STAINLESS STEEL OR COPPER ALLOY BELLOWS, INTEGRAL TEMPERATURE ADJUSTMENT.
2. CAPACITY: SEE DRAWINGS FOR CAPACITIES
3. ACCESSORIES:
a. CHECK VALVE ON INLETS.
b. VOLUME CONTROL SHUT-OFF VALVE ON OUTLET.
c. STEM THERMOMETER ON OUTLET.
d. STRAINER STOP CHECKS ON INLETS.
PART 3 EXECUTION
3.01 INSTALLATION
A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. EXTEND CLEANOUTS TO FINISHED FLOOR OR WALL SURFACE. LUBRICATE THREADED CLEANOUT PLUGS WITH MIXTURE OF GRAPHITE AND LINSEED OIL. ENSURE CLEARANCE AT

XTB KansasCity_MO.dwg
Job Path:\CLIENTS\Pet People\16894 Kansas City, MO\60 16894 KansasCity MO MP1.0.dwg
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8.11.21

PetPeople
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LEE'S SUMMIT (KANSAS CITY), MO

Project No.: 16894
Drawn By: AEU

Date	Issue
07/19/2021	Bid/ Permit

MP1.0

MECHANICAL AND
PLUMBING
SPECIFICATIONS

CLEANOUT FOR RODDING OF DRAINAGE SYSTEM.

C. INSTALL FLOOR CLEANOUTS AT ELEVATION TO ACCOMMODATE FINISHED FLOOR.

D. INSTALL APPROVED POTABLE WATER PROTECTION DEVICES ON PLUMBING LINES WHERE CONTAMINATION OF DOMESTIC WATER MAY OCCUR; ON BOILER FEED WATER LINES, JANITOR ROOMS, FIRE SPRINKLER SYSTEMS, PREMISE ISOLATION, IRRIGATION SYSTEMS, FLUSH VALVES, INTERIOR AND EXTERIOR HOSE BIBBS.

E. INSTALL WATER HAMMER ARRESTORS COMPLETE WITH ACCESSIBLE ISOLATION VALVE ON HOT AND COLD WATER SUPPLY PIPING TO ALL FIXTURES WITH QUICK CLOSING FITTINGS.

SECTION 15300

FIRE PROTECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. SYSTEM DESIGN, INSTALLATION, AND CERTIFICATION.

PART 2 PRODUCTS

2.01 SPRINKLER SYSTEM

A. SPRINKLER SYSTEM: SUBCONTRACT SPRINKLER WORK TO A LICENSED SPRINKLER TRADE.

B. SPRINKLER SYSTEM: (PROVIDE COVERAGE FOR ENTIRE BUILDING) TOTALLY SEPARATE SPRINKLER COVERAGE. SYSTEM SHALL BE DESIGNED, INSTALLED AS REQUIRED TO SECURE THE BEST POSSIBLE INSURANCE RATES ON BUILDING CONTENTS.

C. SPRINKLER SYSTEMS: CONFORM SYSTEM TO NFPA AND PARTICULARLY THE RESPECTIVE CHAPTERS OF NFPA 13 AS DEFINED, MODIFIED, AND APPROVED BY THE TENANT AND LANDLORD'S INSURANCE UNDERWRITER, THE LANDLORD AND AUTHORITY HAVING JURISDICTION.

D. WATER SUPPLY: DETERMINE VOLUME AND PRESSURE FROM CURRENT WATER FLOW TEST DATA.

E. INTERFACE SYSTEM WITH BUILDING CONTROL SYSTEM.

F. PROVIDE FIRE DEPARTMENT CONNECTIONS AS REQUIRED BY LOCAL FIRE MARSHALL.

G. SUBMIT FINAL HEAD LAYOUT FOR APPROVAL. OBTAIN STAMPED APPROVAL BY THE AUTHORITY HAVING JURISDICTION AND ALL RESPECTIVE UNDERWRITERS OF (4) FOUR SETS OF THE FINAL SPRINKLER DESIGN DRAWINGS.

H. STORAGE CABINET FOR SPARE SPRINKLERS AND TOOLS: STEEL, LOCATED ADJACENT TO ALARM VALVE.

2.02 SPRINKLERS

A. SUSPENDED CEILING TYPE: WHITE SEMI-RECESSED PENDENT TYPE WITH MATCHING PUSH ON ESCUTCHEON PLATE.
1. RESPONSE TYPE: QUICK.
2. COVERAGE TYPE: STANDARD OR EXTENDED.
3. FINISH: WHITE ENAMEL.
4. ESCUTCHEON PLATE FINISH: WHITE ENAMEL.
5. FUSIBLE LINK: GLASS BULB LINK TYPE TEMPERATURE RATED FOR SPECIFIC AREA HAZARD.

B. EXPOSED AREA TYPE: UPRIGHT TYPE.
1. RESPONSE TYPE: QUICK.
2. COVERAGE TYPE: STANDARD.
3. FINISH: ROUGH BRASS.
4. FUSIBLE LINK: GLASS BULB LINK TYPE TEMPERATURE RATED FOR SPECIFIC AREA HAZARD.

C. SIDEWALL TYPE: WHITE SEMI-RECESSED HORIZONTAL SIDEWALL TYPE WITH MATCHING PUSH ON ESCUTCHEON PLATE.
1. RESPONSE TYPE: QUICK.
2. COVERAGE TYPE: STANDARD.
3. FINISH: WHITE ENAMEL.
4. ESCUTCHEON PLATE FINISH: WHITE ENAMEL.
5. FUSIBLE LINK: GLASS BULB LINK TYPE TEMPERATURE RATED FOR SPECIFIC AREA HAZARD.

D. DRY SPRINKLERS: CONCEALED PENDENT TYPE WITH MATCHING PUSH ON ESTUCHEON PLATE IN FINISHED CEILINGS AND ROUGH BRASS UPRIGHT TYPE IN UNFINISHED AREAS.
1. RESPONSE TYPE: QUICK.
2. FINISH: CHROME.
3. COVER PLATE FINISH: CHROME.
4. FUSIBLE LINK: GLASS BULB LINK TYPE TEMPERATURE RATED FOR SPECIFIC AREA HAZARD.

E. GUARDS: FINISH TO MATCH SPRINKLER FINISH.

PART 3 EXECUTION

3.01 INSTALLATION

A. INSTALL IN ACCORDANCE WITH ADOPTED LOCALITY NFPA DESIGN AND INSTALLATION STANDARDS.

B. INSTALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

C. PLACE PIPE RUNS TO MINIMIZE OBSTRUCTION TO OTHER WORK. RUN INSIDE STRUCTURE SUPPORTING STEEL WHERE POSSIBLE.

D. PLACE PIPING IN CONCEALED SPACES AS HIGH AS POSSIBLE ABOVE FINISHED CEILINGS.

E. APPLY MASKING TAPE OR PAPER COVER TO ENSURE CONCEALED SPRINKLERS, COVER PLATES, AND SPRINKLER ESCUTCHEONS DO NOT RECEIVE FIELD PAINT FINISH. REMOVE AFTER PAINTING. REPLACE PAINTED SPRINKLERS.

F. FLUSH ENTIRE PIPING SYSTEM OF FOREIGN MATTER.

G. INSTALL GUARDS ON SPRINKLERS WHERE REQUIRED.

H. HYDROSTATICALLY TEST ENTIRE SYSTEM.

I. REQUIRED TEST BE WITNESSED BY FIRE MARSHAL.

SECTION 15410

PLUMBING FIXTURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. WATER CLOSETS.

B. LAVATORIES.

C. SINKS.

D. SERVICE SINKS/MOP BASINS.

PART 2 PRODUCTS

A. SEE FIXTURE SCHEDULE ON DRAWINGS.

PART 3 EXECUTION

3.01 EXAMINATION

A. VERIFY THAT WALLS AND FLOOR FINISHES ARE PREPARED AND READY FOR INSTALLATION OF FIXTURES.

B. VERIFY THAT ELECTRIC POWER IS AVAILABLE AND OF THE CORRECT CHARACTERISTICS.

C. CONFIRM THAT MILLWORK IS CONSTRUCTED WITH ADEQUATE PROVISION FOR THE INSTALLATION OF COUNTER TOP LAVATORIES AND SINKS.

3.02 PREPARATION

A. ROUGH-IN FIXTURE PIPING CONNECTIONS IN ACCORDANCE WITH MINIMUM SIZES INDICATED IN FIXTURE ROUGH-IN SCHEDULE FOR PARTICULAR FIXTURES.

3.03 INSTALLATION

A. INSTALL EACH FIXTURE WITH TRAP, EASILY REMOVABLE FOR SERVICING AND CLEANING.

B. PROVIDE CHROME PLATED RIGID OR FLEXIBLE SUPPLIES TO FIXTURES WITH LOOSE KEY STOPS, REDUCERS, AND ESCUTCHEONS.

C. INSTALL COMPONENTS LEVEL AND PLUMB.

D. INSTALL AND SECURE FIXTURES IN PLACE WITH WALL SUPPORTS AND BOLTS.

E. SEAL FIXTURES TO WALL AND FLOOR SURFACES WITH SEALANT.

F. SOLIDLY ATTACH WATER CLOSETS TO FLOOR WITH LAG SCREWS. LEAD FLASHING IS NOT INTENDED HOLD FIXTURE IN PLACE.

3.04 INTERFACE WITH WORK OF OTHER SECTIONS

A. REVIEW MILLWORK SHOP DRAWINGS. CONFIRM LOCATION AND SIZE OF FIXTURES AND OPENINGS BEFORE ROUGH-IN AND INSTALLATION.

3.05 ADJUSTING

A. ADJUST STOPS OR VALVES FOR INTENDED WATER FLOW RATE TO FIXTURES WITHOUT SPLASHING, NOISE, OR OVERFLOW.

3.06 CLEANING

A. CLEAN PLUMBING FIXTURES AND EQUIPMENT.

3.07 PROTECTION

A. PROTECT INSTALLED PRODUCTS FROM DAMAGE DUE TO SUBSEQUENT CONSTRUCTION OPERATIONS.

B. DO NOT PERMIT USE OF FIXTURES BY CONSTRUCTION PERSONNEL.

C. REPAIR OR REPLACE DAMAGED PRODUCTS BEFORE DATE OF SUBSTANTIAL COMPLETION.

SECTION 15430

PLUMBING EQUIPMENT

PART 1 PRODUCTS

1.01 WATER HEATER MANUFACTURERS, AS SCHEDULED ON DRAWINGS OR APPROVED EQUAL.

PART 3 EXECUTION

2.01 INSTALLATION

A. INSTALL PLUMBING EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, AS REQUIRED BY CODE, AND COMPLYING WITH CONDITIONS OF CERTIFICATION, IF ANY.

B. COORDINATE WITH PLUMBING PIPING AND RELATED FUEL PIPING WORK TO ACHIEVE OPERATING SYSTEM.

SECTION 15762

TERMINAL HEAT TRANSFER UNITS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. ELECTRIC HEATERS.

PART 2 PRODUCTS

2.01 ELECTRIC HEATERS

A. MANUFACTURERS, AS SCHEDULED ON DRAWINGS OR APPROVED EQUAL.

B. ASSEMBLY: UL LISTED AND LABELED ASSEMBLY

C. CONTROL: PROVIDE THERMAL OVERLOAD.

D. ELECTRICAL CHARACTERISTICS: AS SCHEDULED ON DRAWINGS.

PART 3 EXECUTION

3.01 INSTALLATION

A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. INSTALL EQUIPMENT EXPOSED TO FINISHED AREAS AFTER WALLS AND CEILING ARE FINISHED AND PAINTED. DO NOT DAMAGE EQUIPMENT OR FINISHES.

C. INSTALL ELECTRIC HEATING EQUIPMENT INCLUDING DEVICES FURNISHED BY MANUFACTURER BUT NOT FACTORY-MOUNTED. FURNISH COPY OF MANUFACTURER'S WIRING DIAGRAM SUBMITTAL. INSTALL ELECTRICAL WIRING IN ACCORDANCE WITH MANUFACTURER'S SUBMITTALS AND SECTION 16155.

3.02 CLEANING

A. AFTER CONSTRUCTION IS COMPLETED, INCLUDING PAINTING, CLEAN EXPOSED SURFACES OF UNITS. VACUUM CLEAN COILS.

SECTION 15810

DUCTWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. METAL DUCTWORK.

B. NONMETAL DUCTWORK.

C. CASING AND PLENUMS.

D. DUCT CLEANING.

PART 2 PRODUCTS

2.01 DUCT ASSEMBLIES

A. ALL DUCTS: GALVANIZED STEEL, UNLESS OTHERWISE INDICATED.

B. LOW PRESSURE SUPPLY: 2 INCH W.G. PRESSURE CLASS, GALVANIZED STEEL.

C. RETURN AND RELIEF: 2 INCH W.G. PRESSURE CLASS, GALVANIZED STEEL.

D. GENERAL EXHAUST: 2 INCH W.G. PRESSURE CLASS, GALVANIZED STEEL.

E. OUTSIDE AIR INTAKE: 2 INCH W.G. PRESSURE CLASS, GALVANIZED STEEL.

2.02 MATERIALS

A. GALVANIZED STEEL FOR DUCTS: HOT-DIPPED GALVANIZED STEEL SHEET, ASTM A 653/A 653M FS TYPE B, WITH G60/Z180 COATING.

B. ALUMINUM FOR DUCTS: ASTM B 209 (ASTM B 209M); ALUMINUM SHEET, ALLOY 3003-H14. ALUMINUM CONNECTORS AND BAR STOCK: ALLOY 6061-T651 OR OF EQUIVALENT STRENGTH.

C. STAINLESS STEEL FOR DUCTS: ASTM A 240/A 240M, TYPE 304.

D. JOINT SEALERS AND SEALANTS: NON-HARDENING, WATER RESISTANT, MILDEW AND MOLD RESISTANT.
1. TYPE: HEAVY MASTIC OR LIQUID USED ALONE OR WITH TAPE, SUITABLE FOR JOINT CONFIGURATION AND COMPATIBLE WITH SUBSTRATES, AND RECOMMENDED BY MANUFACTURER FOR PRESSURE CLASS OF DUCTS.
2. VOC CONTENT: NOT MORE THAN 250 G/L, EXCLUDING WATER.
3. SURFACE BURNING CHARACTERISTICS: FLAME SPREAD OF ZERO, SMOKE DEVELOPED OF ZERO, WHEN TESTED IN ACCORDANCE WITH ASTM E 84.

E. HANGER ROD: ASTM A 36/A 36M; STEEL, GALVANIZED; THREADED BOTH ENDS, THREADED ONE END, OR CONTINUOUSLY THREADED.

2.03 DUCTWORK FABRICATION

A. FABRICATE AND SUPPORT IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE, AND AS INDICATED.

B. NO VARIATION OF DUCT CONFIGURATION OR SIZE PERMITTED EXCEPT BY WRITTEN PERMISSION. SIZE ROUND DUCT INSTALLED IN PLACE OF RECTANGULAR DUCTS IN ACCORDANCE WITH ASHRAE HANDBOOK – FUNDAMENTALS.

C. DUCT SYSTEMS HAVE BEEN DESIGNED FOR METAL DUCT. FIBROUS GLASS DUCT MAY NOT BE SUBSTITUTED FOR METAL DUCT.

D. PROVIDE DUCT MATERIAL, GAGES, REINFORCING, AND SEALING FOR OPERATING PRESSURES INDICATED.

E. CONSTRUCT T'S, BENDS, AND ELBOWS WITH RADIUS OF NOT LESS THAN 1-1/2 TIMES WIDTH OF DUCT ON CENTERLINE. WHERE NOT POSSIBLE, RECTANGULAR ELBOWS MUST BE USED. IN RECTANGULAR ELBOWS PROVIDE AIR FOIL TURNING VANES OF PERFORATED METAL WITH GLASS FIBER INSULATION.

F. PROVIDE TURNING VANES OF PERFORATED METAL WITH GLASS FIBER INSULATION WHEN ACOUSTICAL LINING IS INDICATED.

G. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE WHEREVER POSSIBLE; MAXIMUM 30 DEGREES DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM.

H. FABRICATE CONTINUOUSLY WELDED ROUND AND OVAL DUCT FITTINGS IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE.

2.04 MANUFACTURED DUCTWORK AND FITTINGS

A. DOUBLE WALL INSULATED ROUND DUCTS: ROUND SPIRAL LOCKSEAM DUCT WITH GALVANIZED STEEL OUTER WALL, PERFORATED GALVANIZED STEEL INNER WALL; FITTING WITH SOLID INNER WALL.
1. MANUFACTURE IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE.
2. INSULATION:
a. THICKNESS: 1 INCH.

B. FLEXIBLE DUCTS: BLACK POLYMER FILM SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE.
1. UL LABELED.
2. INSULATION: FIBERGLASS INSULATION WITH POLYETHYLENE VAPOR BARRIER FILM.
3. PRESSURE RATING: 10 INCHES WG POSITIVE AND 0.5 INCHES WG NEGATIVE.
4. MAXIMUM VELOCITY: 4000 FPM.
5. TEMPERATURE RANGE: -20 DEGREES F TO 175 DEGREES F.

2.05 CASINGS

A. FABRICATE CASINGS IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE, AND CONSTRUCT FOR OPERATING PRESSURES INDICATED.

B. MOUNT FLOOR MOUNTED CASINGS ON 4 INCH HIGH CONCRETE CURBS. AT FLOOR, RIVET PANELS ON 8 INCH CENTERS TO ANGLES. WHERE FLOORS ARE ACOUSTICALLY INSULATED, PROVIDE LINER OF 18 GAGE GALVANIZED EXPANDED METAL MESH SUPPORTED AT 12 INCH CENTERS, TURNED UP 12 INCHES AT SIDES WITH SHEET METAL SHIELDS.

C. REINFORCE DOOR FRAMES WITH STEEL ANGLES TIED TO HORIZONTAL AND VERTICAL PLENUM SUPPORTING ANGLES. INSTALL HINGED ACCESS DOORS WHERE INDICATED OR REQUIRED FOR ACCESS TO EQUIPMENT FOR CLEANING AND INSPECTION.

PART 3 EXECUTION

3.01 INSTALLATION

A. INSTALL, SUPPORT, AND SEAL DUCTS IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE.

B. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

C. DURING CONSTRUCTION PROVIDE TEMPORARY CLOSURES OF METAL OR TAPED POLYETHYLENE ON OPEN DUCTWORK TO PREVENT CONSTRUCTION DUST FROM ENTERING DUCTWORK SYSTEM.

D. FLEXIBLE DUCTS: CONNECT TO METAL DUCTS WITH ADHESIVE AND MANUFACTURER'S PLASTIC DRAW BANDS.

E. DUCT SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS. FOR LINED DUCTS, MAINTAIN SIZES INSIDE LINING.

F. LOCATE DUCTS WITH SUFFICIENT SPACE AROUND EQUIPMENT TO ALLOW NORMAL OPERATING AND MAINTENANCE ACTIVITIES.

G. USE CRIMP JOINTS WITH OR WITHOUT BEAD FOR JOINING ROUND DUCT SIZES 8 INCH AND SMALLER WITH CRIMP IN DIRECTION OF AIR FLOW.

H. USE DOUBLE NUTS AND LOCK WASHERS ON THREADED ROD SUPPORTS.

I. DO NOT USE FLEXIBLE DUCT TO CHANGE DIRECTION.

J. CONNECT DIFFUSERS OR LIGHT TROFFER BOOTS TO LOW PRESSURE DUCTS DIRECTLY OR WITH 5 FEET MAXIMUM LENGTH OF FLEXIBLE DUCT HELD IN PLACE WITH MANUFACTURER'S PLASTIC DRAW BAND.

3.02 CLEANING

A. CLEAN DUCT SYSTEM AND FORCE AIR AT HIGH VELOCITY THROUGH DUCT TO REMOVE ACCUMULATED DUST. TO OBTAIN SUFFICIENT AIR, CLEAN HALF THE SYSTEM AT A TIME. PROTECT EQUIPMENT THAT COULD BE HARMED BY EXCESSIVE DIRT WITH TEMPORARY FILTERS, OR BYPASS DURING CLEANING.

B. CLEAN EXISTING DUCTWORK WHERE REUSED, USING THE LATEST NADCA STANDARDS FOR EXISTING DUCTWORK.

SECTION 15820

DUCT ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. AIR TURNING DEVICES/EXTRACTORS.

B. DUCT ACCESS DOORS.

C. FLEXIBLE DUCT CONNECTIONS.

D. VOLUME CONTROL DAMPERS.

1.02 DELIVERY, STORAGE, AND HANDLING

A. PROTECT DAMPERS FROM DAMAGE TO OPERATING LINKAGES AND BLADES.

PART 2 PRODUCTS

2.01 AIR TURNING DEVICES/EXTRACTORS

A. MULTI-BLADE DEVICE WITH BLADES ALIGNED IN SHORT DIMENSION; STEEL CONSTRUCTION; WITH INDIVIDUALLY ADJUSTABLE BLADES, MOUNTING STRAPS.

2.02 DUCT ACCESS DOORS

A. FABRICATE IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE, AND AS INDICATED.

B. ACCESS DOORS WITH SHEET METAL SCREW FASTENERS ARE NOT ACCEPTABLE.

2.03 FLEXIBLE DUCT CONNECTIONS

A. FABRICATE IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE, AND AS INDICATED.

B. FLEXIBLE DUCT CONNECTIONS: FABRIC CRIMPED INTO METAL EDGING STRIP.
1. FABRIC: UL LISTED FIRE-RETARDANT NEOPRENE COATED WOVEN GLASS FIBER FABRIC TO NFPA 90A, MINIMUM DENSITY 30 OZ PER SQ YD.
a. NET FABRIC WIDTH: APPROXIMATELY 2 INCHES WIDE.
2. METAL: 3 INCHES WIDE, 24 GAGE THICK GALVANIZED STEEL.

C. LEADED VINYL SHEET: MINIMUM 0.55 INCH THICK, 0.87 LBS PER SQ FT, 10 DB ATTENUATION IN 10 TO 10,000 HZ RANGE.

D. MAXIMUM INSTALLED LENGTH: 14 INCH.

2.04 VOLUME CONTROL DAMPERS

A. FABRICATE IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE, AND AS INDICATED.

B. SINGLE BLADE DAMPERS: FABRICATE FOR DUCT SIZES UP TO 6 X 30 INCH.
1. FABRICATE FOR DUCT SIZES UP TO 6 X 30 INCH.
2. BLADE: 24 GAGE, MINIMUM.

C. MULTI-BLADE DAMPER: FABRICATE OF OPPOSED BLADE PATTERN WITH MAXIMUM BLADE SIZES 8 X 72 INCH. ASSEMBLE CENTER AND EDGE CRIMPED BLADES IN PRIME COATED OR GALVANIZED CHANNEL FRAME WITH SUITABLE HARDWARE.
1. BLADE: 18 GAGE, MINIMUM.

D. END BEARINGS: EXCEPT IN ROUND DUCTS 12 INCHES AND SMALLER, PROVIDE END BEARINGS. ON MULTIPLE BLADE DAMPERS, PROVIDE OIL-IMPREGNATED NYLON OR SINTERED BRONZE BEARINGS.

E. QUADRANTS:
1. PROVIDE LOCKING, INDICATING QUADRANT REGULATORS ON SINGLE AND MULTI-BLADE DAMPERS.
2. ON INSULATED DUCTS MOUNT QUADRANT REGULATORS ON STAND-OFF MOUNTING BRACKETS, BASES, OR ADAPTERS.
3. WHERE ROD LENGTHS EXCEED 30 INCHES PROVIDE REGULATOR AT BOTH ENDS.

PART 3 EXECUTION

3.01 INSTALLATION

A. INSTALL ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, AND FOLLOW SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE.

B. PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AND ELSEWHERE AS INDICATED. PROVIDE MINIMUM 8 X 8 INCH SIZE FOR HAND ACCESS, SIZE FOR SHOULDER ACCESS, AND AS INDICATED. PROVIDE 4 X 4 INCH FOR BALANCING DAMPERS ONLY. REVIEW LOCATIONS PRIOR TO FABRICATION.

C. PROVIDE DUCT TEST HOLES WHERE INDICATED AND REQUIRED FOR TESTING AND BALANCING PURPOSES.

D. AT FANS AND MOTORIZED EQUIPMENT ASSOCIATED WITH DUCTS, PROVIDE FLEXIBLE DUCT CONNECTIONS IMMEDIATELY ADJACENT TO THE EQUIPMENT.

E. AT EQUIPMENT SUPPORTED BY VIBRATION ISOLATORS, PROVIDE FLEXIBLE DUCT CONNECTIONS IMMEDIATELY ADJACENT TO THE EQUIPMENT;

F. FOR FANS DEVELOPING STATIC PRESSURES OF 5.0 INCHES AND OVER, COVER FLEXIBLE CONNECTIONS WITH LEADED VINYL SHEET, HELD IN PLACE WITH METAL STRAPS.

G. PROVIDE BALANCING DAMPERS AT POINTS ON SUPPLY, RETURN, AND EXHAUST SYSTEMS WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AS REQUIRED FOR AIR BALANCING. INSTALL MINIMUM 2 DUCT WIDTHS FROM DUCT TAKE-OFF.

H. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFF TO DIFFUSERS, GRILLES, AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE, OR REGISTER ASSEMBLY.

SECTION 15850

AIR DISTRIBUTION DEVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. DIFFUSERS.

B. REGISTERS/GRILLES.

PART 2 PRODUCTS

2.01 MANUFACTURERS, AS SCHEDULED ON DRAWINGS OR APPROVED EQUAL.

2.02 RECTANGULAR CEILING DIFFUSERS

A. TYPE: SQUARE, STAMPED, MULTI-CORE DIFFUSER TO DISCHARGE AIR IN 360 DEGREE PATTERN WITH SECTORIZING BAFFLES WHERE INDICATED.

B. FRAME: SURFACE MOUNT TYPE. IN PLASTER CEILINGS, PROVIDE PLASTER FRAME AND CEILING FRAME. PROVIDE FLANGED FRAME FOR SUSPENDED LAYIN CEILINGS

C. FABRICATION: STEEL WITH BAKED ENAMEL FINISH.

D. COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.

E. ACCESSORIES: ROUND TO SQUARE ADAPTORS, RADIAL OPPOSED BLADE DAMPER AND MULTI-LOUVERED EQUALIZING GRID WITH DAMPER ADJUSTABLE FROM DIFFUSER FACE.

2.03 CEILING SUPPLY REGISTERS/GRILLES

A. TYPE: STREAMLINED AND INDIVIDUALLY ADJUSTABLE CURVED BLADES TO DISCHARGE AIR ALONG FACE OF GRILLE, ONE-WAY DEFLECTION.

B. FRAME: 1-1/4 INCH MARGIN WITH COUNTERSUNK SCREW MOUNTING AND GASKET.

C. FABRICATION: ALUMINUM EXTRUSIONS WITH FACTORY ENAMEL FINISH.

D. COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.

E. DAMPER: INTEGRAL, GANG-OPERATED, OPPOSED BLADE TYPE WITH REMOVABLE KEY OPERATOR, OPERABLE FROM FACE.

2.04 CEILING EXHAUST AND RETURN REGISTERS/GRILLES

A. TYPE: STREAMLINED BLADES, 3/4 INCH MINIMUM DEPTH, 3/4 INCH MAXIMUM SPACING, WITH BLADES SET AT 45 DEGREES, VERTICAL FACE.

B. FRAME: 1-1/4 INCH MARGIN WITH COUNTERSUNK SCREW MOUNTING.

C. FABRICATION: STEEL WITH 20 GAGE MINIMUM FRAMES AND 22 GAGE MINIMUM BLADES, STEEL AND ALUMINUM WITH 20 GAGE MINIMUM FRAME, OR ALUMINUM EXTRUSIONS, WITH FACTORY BAKED ENAMEL FINISH.

D. COLOR: TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE.

E. DAMPER: INTEGRAL, GANG-OPERATED, OPPOSED BLADE TYPE WITH REMOVABLE KEY OPERATOR, OPERABLE FROM FACE WHERE NOT INDIVIDUALLY CONNECTED TO EXHAUST FANS.

PART 3 EXECUTION

3.01 INSTALLATION

A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. CHECK LOCATION OF OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY, AND LIGHTING ARRANGEMENT.

C. INSTALL DIFFUSERS TO DUCTWORK WITH AIR TIGHT CONNECTION.

D. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFF TO DIFFUSERS, AND GRILLES AND REGISTERS, DESPITE WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, OR GRILLE AND REGISTER ASSEMBLY.

E. PAINT DUCTWORK VISIBLE BEHIND AIR OUTLETS AND INLETS MATTE BLACK.

SECTION 15940

HVAC SEQUENCE OF OPERATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. THIS SECTION DEFINES THE MANNER AND METHOD BY WHICH CONTROLS FUNCTION. REQUIREMENTS FOR EACH TYPE OF CONTROL SYSTEM OPERATION ARE SPECIFIED. EQUIPMENT, DEVICES, AND SYSTEM COMPONENTS REQUIRED FOR CONTROL SYSTEMS ARE SPECIFIED IN OTHER SECTIONS.

1.02 SUBMITTALS

A. SEQUENCE OF OPERATION DOCUMENTATION: SUBMIT WRITTEN SEQUENCE OF OPERATION FOR ENTIRE HVAC SYSTEM AND EACH PIECE OF EQUIPMENT.
1. PREFACE: 1 OR 2 PARAGRAPH OVERVIEW NARRATIVE OF THE SYSTEM DESCRIBING ITS PURPOSE, COMPONENTS AND FUNCTION.
2. STATE EACH SEQUENCE IN SMALL SEGMENTS AND GIVE EACH SEGMENT A UNIQUE NUMBER FOR REFERENCING IN FUNCTIONAL TEST PROCEDURES; PROVIDE A COMPLETE DESCRIPTION REGARDLESS OF THE COMPLETENESS AND CLARITY OF THE SEQUENCES SPECIFIED IN THE CONTRACT DOCUMENTS.
3. INCLUDE AT LEAST THE FOLLOWING SEQUENCES:
a. START-UP.
b. WARM-UP MODE.
c. NORMAL OPERATING MODE.
d. UNOCCUPIED MODE.
e. SHUTDOWN.
f. CAPACITY CONTROL SEQUENCES AND EQUIPMENT STAGING.
g. TEMPERATURE AND PRESSURE CONTROL, SUCH AS SETBACKS, SETUPS, RESETS, ETC.
h. DETAILED SEQUENCES FOR ALL CONTROL STRATEGIES, SUCH AS ECONOMIZER CONTROL, OPTIMUM START/STOP, STAGING, OPTIMIZATION, DEMAND LIMITING, ETC.
i. EFFECTS OF POWER OR EQUIPMENT FAILURE WITH ALL STANDBY COMPONENT FUNCTIONS.
j. SEQUENCES FOR ALL ALARMS AND EMERGENCY SHUT DOWNS.
k. SEASONAL OPERATIONAL DIFFERENCES AND RECOMMENDATIONS.
l. INTERACTIONS AND INTERLOCKS WITH OTHER SYSTEMS.
4. INCLUDE INITIAL AND RECOMMENDED VALUES FOR ALL ADJUSTABLE SETTINGS, SETPOINTS AND PARAMETERS THAT ARE TYPICALLY SET OR ADJUSTED BY OPERATING STAFF; AND ANY OTHER CONTROL SETTINGS OR FIXED VALUES, DELAYS, ETC. THAT WILL BE USEFUL DURING TESTING AND OPERATING THE EQUIPMENT.
5. FOR PACKAGED CONTROLLED EQUIPMENT, INCLUDE MANUFACTURER'S FURNISHED SEQUENCE OF OPERATION AMPLIFIED AS REQUIRED TO DESCRIBE THE RELATIONSHIP BETWEEN THE PACKAGED CONTROLS AND THE CONTROL SYSTEM, INDICATING WHICH POINTS ARE ADJUSTABLE CONTROL POINTS AND WHICH POINTS ARE ONLY MONITORED.

B. CONTROL SYSTEM DIAGRAMS: SUBMIT GRAPHIC SCHEMATIC OF THE CONTROL SYSTEM SHOWING EACH CONTROL COMPONENT AND EACH COMPONENT CONTROLLED, MONITORED, OR ENABLED.
1. LABEL WITH SETTINGS, ADJUSTABLE RANGE OF CONTROL AND LIMITS.
2. INCLUDE FLOW DIAGRAMS FOR EACH CONTROL SYSTEM, GRAPHICALLY DEPICTING CONTROL LOGIC.
3. INCLUDE THE SYSTEM AND COMPONENT LAYOUT OF ALL EQUIPMENT THAT THE CONTROL SYSTEM MONITORS, ENABLES OR CONTROLS, EVEN IF THE EQUIPMENT IS PRIMARILY CONTROLLED BY PACKAGED OR INTEGRAL CONTROLS.
4. INCLUDE ALL MONITORING, CONTROL AND VIRTUAL POINTS SPECIFIED IN ELSEWHERE.
5. INCLUDE A KEY TO ALL ABBREVIATIONS.

C. POINTS LIST: SUBMIT LIST OF ALL CONTROL POINTS INDICATING AT LEAST THE FOLLOWING FOR EACH POINT.
1. NAME OF CONTROLLED SYSTEM.
2. POINT ABBREVIATION.
3. POINT DESCRIPTION; SUCH AS DRY BULB TEMPERATURE, AIRFLOW, ETC.
4. DISPLAY UNIT.
5. CONTROL POINT OR SETPOINT (YES / NO); I.E. A POINT THAT CONTROLS EQUIPMENT AND CAN HAVE ITS SETPOINT CHANGED.
6. MONITORING POINT (YES / NO); I.E. A POINT THAT DOES NOT CONTROL OR CONTRIBUTE TO THE CONTROL OF EQUIPMENT BUT IS USED FOR OPERATION, MAINTENANCE, OR PERFORMANCE VERIFICATION.
7. INTERMEDIATE POINT (YES / NO); I.E. A POINT WHOSE VALUE IS USED TO MAKE A CALCULATION WHICH THEN CONTROLS EQUIPMENT, SUCH AS SPACE TEMPERATURES THAT ARE AVERAGED TO A VIRTUAL POINT TO CONTROL RESET.
8. CALCULATED POINT (YES / NO); I.E. A "VIRTUAL" POINT GENERATED FROM CALCULATIONS OF OTHER POINT VALUES.

D. PROJECT RECORD DOCUMENTS: RECORD ACTUAL LOCATIONS OF COMPONENTS AND SETPOINTS OF CONTROLS, INCLUDING CHANGES TO SEQUENCES MADE AFTER SUBMISSION OF SHOP DRAWINGS.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 SPLIT SYSTEM AIR CONDITIONING SYSTEMS

A. TIME SCHEDULE: START AND STOP SUPPLY FANS. DETERMINE FAN STATUS THROUGH AUXILIARY CONTACTORS IN MOTOR STARTER. IF FAN FAILS TO START AS COMMANDED, SIGNAL ALARM.

B. SAFETY DEVICES:
1. FREEZE PROTECTION: STOP FANS AND CLOSE OUTSIDE AIR DAMPERS IF TEMPERATURE BEFORE SUPPLY FAN IS BELOW 37 DEGREES F; SIGNAL ALARM.
2. HIGH TEMPERATURE PROTECTION: STOP FANS AND CLOSE OUTSIDE DAMPERS IF TEMPERATURE IN RETURN AIR IS ABOVE 300 DEGREES F; SIGNAL ALARM.
3. SMOKE DETECTOR: STOP FANS, CLOSE OUTSIDE DAMPERS, AND CLOSE SMOKE DAMPERS IF SMOKE IS DETECTED; SIGNAL ALARM.

C. OUTSIDE, RETURN, AND RELIEF DAMPERS:
1. WHEN SUPPLY FAN IS NOT RUNNING, OUTSIDE AND RELIEF DAMPERS ARE CLOSED AND RETURN DAMPER IS OPEN.
2. WHEN SUPPLY FAN IS RUNNING, DAMPERS ARE CONTROLLED AND OPERATE WITH OUTSIDE AND RELIEF DAMPERS OPENING, AND RETURN DAMPER CLOSING.
3. FOR COOLING AND OUTSIDE AIR TEMPERATURES BELOW 55 DEGREES F, MODULATE DAMPERS TO MAINTAIN MIXED AIR TEMPERATURE OF 55 DEGREES F OR HIGHER.
4. FOR COOLING AND OUTSIDE AIR TEMPERATURES ABOVE 55 DEGREES F COMPARE RETURN AND OUTSIDE AIR TEMPERATURES. IF RETURN AIR TEMPERATURE IS LOWER, DRIVE OUTSIDE DAMPER TO MINIMUM, CLOSE RELIEF DAMPER, AND OPEN RETURN DAMPER.
5. FOR OUTSIDE AIR TEMPERATURES ABOVE 79 DEGREES F, DRIVE OUTSIDE DAMPER TO MINIMUM AND OPEN RETURN DAMPER.
6. FOR OCCUPIED HEATING, DRIVE OUTSIDE DAMPER TO MINIMUM AND OPEN RETURN DAMPER.
7. FOR UNOCCUPIED HEATING, DRIVE OUTSIDE AIR DAMPER CLOSED AND RETURN AIR DAMPER TO FULLY OPEN.
8. FOR UNOCCUPIED COOLING, OUTSIDE AIR DAMPER SHALL CLOSE AND RETURN AIR DAMPER SHALL OPEN. SYSTEM SHALL MAINTAIN NIGHT SETBACK TEMPERATURE.

SECTION 15950

TESTING, ADJUSTING, AND BALANCING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. TESTING, ADJUSTMENT, AND BALANCING OF AIR SYSTEMS.

B. TESTING, ADJUSTMENT, AND BALANCING OF REFRIGERATING SYSTEMS.

C. MEASUREMENT OF FINAL OPERATING CONDITION OF HVAC SYSTEMS.

1.02 SUBMITTALS

A. TAB PLAN: SUBMIT A WRITTEN PLAN INDICATING THE TESTING, ADJUSTING, AND BALANCING STANDARD TO BE FOLLOWED AND THE SPECIFIC APPROACH FOR EACH SYSTEM AND COMPONENT.
1. INCLUDE CERTIFICATION THAT THE PLAN DEVELOPER HAS REVIEWED THE CONTRACT DOCUMENTS, THE EQUIPMENT AND SYSTEMS, AND THE CONTROL SYSTEM WITH THE ARCHITECT AND OTHER INSTALLERS TO SUFFICIENTLY UNDERSTAND THE DESIGN INTENT FOR EACH SYSTEM.
2. INCLUDE AT LEAST THE FOLLOWING IN THE PLAN:
a. LIST OF ALL AIR FLOW, WATER FLOW, SOUND LEVEL, SYSTEM CAPACITY AND EFFICIENCY MEASUREMENTS TO BE PERFORMED AND A DESCRIPTION OF SPECIFIC TEST PROCEDURES, PARAMETERS, FORMULAS TO BE USED.
b. COPY OF FIELD CHECKOUT SHEETS AND LOGS TO BE USED, LISTING EACH PIECE OF EQUIPMENT TO BE TESTED, ADJUSTED AND BALANCED WITH THE DATA CELLS TO BE GATHERED FOR EACH.
c. DISCUSSION OF WHAT NOTATIONS AND MARKINGS WILL BE MADE ON THE DUCT AND PIPING DRAWINGS DURING THE PROCESS.
d. FINAL TEST REPORT FORMS TO BE USED.
e. PROCEDURES FOR FORMAL DEFICIENCY REPORTS, INCLUDING SCOPE, FREQUENCY AND DISTRIBUTION.

C. FINAL REPORT: INDICATE DEFICIENCIES IN SYSTEMS THAT WOULD PREVENT PROPER TESTING, ADJUSTING, AND BALANCING OF SYSTEMS AND EQUIPMENT TO ACHIEVE SPECIFIED PERFORMANCE.
1. REVISE TAB PLAN TO REFLECT ACTUAL PROCEDURES AND SUBMIT AS PART OF FINAL REPORT.
2. SUBMIT DRAFT COPIES OF REPORT FOR REVIEW PRIOR TO FINAL ACCEPTANCE OF PROJECT. PROVIDE FINAL COPIES FOR ARCHITECT AND FOR INCLUSION IN OPERATING AND MAINTENANCE MANUALS.
3. INCLUDE ACTUAL INSTRUMENT LIST, WITH MANUFACTURER NAME, SERIAL NUMBER, AND DATE OF CALIBRATION.
4. FORM OF TEST REPORTS: WHERE THE TAB STANDARD BEING FOLLOWED RECOMMENDS A REPORT FORMAT USE THAT; OTHERWISE, FOLLOW ASHRAE STD 111.
5. UNITS OF MEASURE: REPORT DATA IN I-P (INCH-POUND) UNITS.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. PERFORM TOTAL SYSTEM BALANCE IN ACCORDANCE WITH ONE OF THE FOLLOWING:
1. AABC MN-1, AABC NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE.
2. NEBB PROCEDURAL STANDARDS FOR TESTING ADJUSTING BALANCING OF ENVIRONMENTAL SYSTEMS.

B. BEGIN WORK AFTER COMPLETION OF SYSTEMS TO BE TESTED, ADJUSTED, OR BALANCED AND COMPLETE WORK PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT.

C. WHERE HVAC SYSTEMS AND/OR COMPONENTS INTERFACE WITH LIFE SAFETY SYSTEMS, INCLUDING FIRE AND SMOKE DETECTION, ALARM, AND CONTROL, COORDINATE SCHEDULING, TESTING AND INSPECTION PROCEDURES WITH THE AUTHORITIES HAVING JURISDICTION.

D. TAB AGENCY QUALIFICATIONS:
1. COMPANY SPECIALIZING IN THE TESTING, ADJUSTING, AND BALANCING OF SYSTEMS SPECIFIED IN THIS SECTION.

E. TAB SUPERVISOR AND TECHNICIAN QUALIFICATIONS: CERTIFIED BY SAME ORGANIZATION AS TAB AGENCY.

3.02 AIR SYSTEM PROCEDURE

A. PRIOR TO COMMENCING WITH THE BALANCING WORK THE BALANCING CONTRACTOR SHALL INSPECT THE DUCTWORK INSTALLATION TO DETERMINE IF ALL REQUIRED BALANCING DAMPERS AND ACCESS DOOR PANELS HAVE BEEN INSTALLED. DO NOT USE OUTLET OBD FOR BALANCING.

B. PRIOR TO SCHEDULING THE EOC, THE HVAC SUBCONTRACTOR SHALL VERIFY THAT; THE SHIPPING BLOCKS HAVE BEEN REMOVED, ALL OF THE AIR CONDITIONING UNITS ARE OPERATIONAL, DUCTWORK, GAS PIPING, CONDENSATE PIPING, POWER WIRING AND CONTROL WIRING HAVE BEEN INSTALLED.

C. THE HVAC SUBCONTRACTOR SHALL PROVIDE AT THEIR COST A QUALIFIED SERVICE TECHNICIAN TO BE PRESENT DURING THE EQUIPMENT OPERATION CHECK.

D. ANY AND ALL DEFECTS IN THE AIR CONDITIONING UNITS, INSTALLATION AND SYSTEM OPERATION SHALL BE CORRECTED BY THE HVAC SUBCONTRACTOR WITHIN 30 DAYS AFTER THE DISTRIBUTION OF THE EOC REPORT. FAILURE TO IDENTIFY A DEFECT DURING THE EOC DOES NOT RELIEVE THE HVAC SUB-CONTRACTOR OF THE RESPONSIBILITY TO CORRECT SUBSEQUENTLY IDENTIFIED DEFECTS.

E. ALL EQUIPMENT, INSTALLATION, DESIGN AND OPERATION DEFECTS DISCOVERED DURING THE INSTALLATION, CHECK, BALANCE AND OPERATION OF THE HVAC SYSTEM THAT REQUIRE A CHANGE IN THE DESIGN AND SPECIFICATION OF THE HVAC SYSTEM OR ITS COMPONENTS MUST BE PROPERLY INCORPORATED BY CHANGE ORDER IN THE PROJECT CONSTRUCTION DOCUMENTS.

F. BALANCE ALL FANS AIRFLOW WITHIN +10%/-5% OF DESIGN. REPLACE FAN DRIVE IF REQUIRED TO OBTAIN THE DESIGN CAPACITY.

G. BALANCE OUTLETS AS FOLLOWS:
SMALL AREAS WITH 1 OR 2 OUTLETS: +/-5% OF DESIGN
LARGE AREAS WITH 3 OR MORE OUTLETS: +/-10% OF DESIGN

H. REPORT IN WRITING ALL DEFICIENCIES AND PROBLEMS DISCOVERED, AS WELL AS COMPLETED BALANCING REPORT TO: THE HVAC SUBCONTRACTOR PRIOR TO COMPLETING THE BALANCING WORK. THIS REPORT SHOULD INCLUDE THE "CAUSE" AND SUGGESTED "SOLUTION", IF KNOWN.

I. THE AIR CONDITIONING UNITS SHALL BE BALANCED IN THE MINIMUM OUTSIDE AIR MODE. THE OUTSIDE AIR DAMPER "% MINIMUM OPEN POSITION" AND THE "METHOD" USED SHALL BE INCLUDED IN THE BALANCING REPORT. ALSO MEASURE AND REPORT THE FAN OPERATING DATA FOR UNITS WITH ECONOMIZERS IN THE 100% OUTSIDE AIR MODE.

J. CORRECTION OF DEFECTS: REQUIRED WITHIN 30 DAYS OF THE DISTRIBUTION OF THE BALANCING REPORT,

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RICE
8.11.21

PetPeople
SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.: 18894
Drawn By: AEU

Date	Issue
07/19/2021	Bid/ Permit

MP1.1

MECHANICAL AND
PLUMBING
SPECIFICATIONS

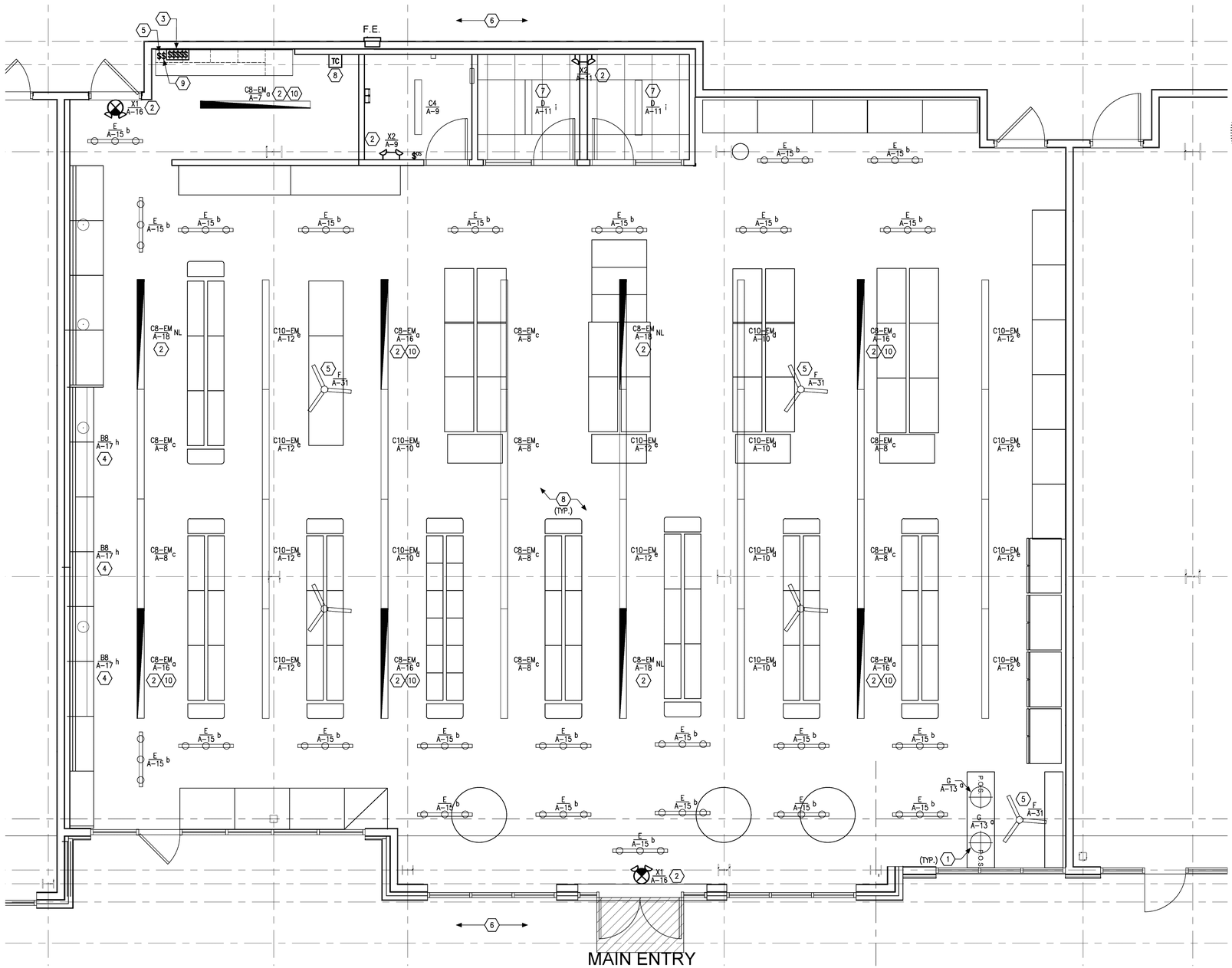
XTB KansasCity MO.dwg
Job Path:J:\CLIENT\Pet People\18894 Kansas City, MO\860 18894 KansasCity MO MP1.0.dwg
Drawn By:Andrew Udovich

GENERAL NOTES:

1. ALL DEVICES, EQUIPMENT, FIXTURES, ETC. MUST BE GROUNDED BY USE OF A PROPERLY SIZED GROUNDING CONDUCTOR. MECHANICAL/ELECTRICAL BONDS OF THE METALLIC RACEWAY SYSTEM SHALL ALSO BE MAINTAINED.
2. BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED A LIMIT OF 3%.
3. CIRCUITS MAY BE COMBINED IN CONDUIT PROVIDED WIRE IS PROPERLY DERATED AND CONDUIT SIZED PER CODE. UNDER NO CIRCUMSTANCES SHALL MORE THAN NINE (9) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT.
4. ALL CONDUITS SHALL CONTAIN A GROUND WIRE SIZED PER NEC TABLE #250-122. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR VOLTAGE DROP, THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONATELY (ACCORDING TO CIRCULAR MIL AREA) FROM THE SIZE REQUIRED BY NEC TABLE #250-122.
5. EXPOSED CONDUITS, WHERE PERMITTED, SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO BUILDING STRUCTURAL MEMBERS.
6. ALL DEVICE COVER PLATES SHALL BE WHITE UNLESS NOTED OTHERWISE.
7. PROVIDE FUNCTIONAL TESTING FOR LIGHTING CONTROLS AND ALL REQUIRED REPORTING AND DOCUMENTATION PER ENERGY CODE REQUIREMENTS.

(X) KEYED NOTE SCHEDULE

1. PENDANT FIXTURES AT CASHWRAPS SHALL BE INSTALLED AFTER THE FIXTURING AND ALIGNED OVER THE FIXTURING AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
2. PROVIDE UN-SWITCHED HOT WIRE AROUND ALL CONTROLS, EXIT SIGNS, EMERGENCY, AND NL FIXTURES FOR PROPER OPERATION.
3. PROVIDE SWITCHES GANGED TOGETHER FOR CONTROL OF GENERAL LIGHTING THROUGHOUT STORE. SEE SWITCH BANK DETAIL ON E1.1. REFER TO ELEVATION 2/E2.1.
4. LIGHTING FIXTURE SHALL BE INSTALELD IN FIXTURING AFTER THE FIXTURING HAS BEEN INSTALLED AND AS DIRECTED BY OWNER'S REPRESENTATIVE. POWER FROM RECEPTACLE SHOWN ON E2.0
5. INSTALL FAN CONTROLLER IN OFFICE. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN. CONTROLLER PROVIDED BY LIGHTING VENDOR. REFER TO ELEVATION 2/E2.1.
6. ALL EXTERIOR NORMAL/EMERGENCY LIGHTING ARE EXISTING TO REMAIN, CIRCUITED TO LANDLORD'S PANEL CONTROLS, UNLESS OTHERWISE NOTED.
7. PROVIDE 4' ENCLOSED/GASKETED LED STRIP FIXTURE IN DOG WASH AREA INSTALL FIXTURES TO MAINTAIN WATER RESISTANCE OF CEILING.
8. ALL LIGHTING TO BE CONTROLLED BY TIMECLOCK. REFER TO TIMECLOCK DETAIL ON E1.1.
9. LOCATE MOMENTARY OVERRIDE SWITCH NEAR SWITCH BANK. REFER TO ELEVATION 2/E2.1.
10. EMERGENCY FIXTURE TO BE WIRED FOR SWITCHED OPERATION.



1 | FLOOR PLAN
1/4" = 1'-0"

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STATE OF MISSOURI * PETER J. FITZGERALD * NUMBER PE 2007027535 * PROFESSIONAL ENGINEER
8/11/21

PetPeople

SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.:	19894
Drawn By:	XXX
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E1.0

FLOOR PLAN

LIGHT FIXTURE SCHEDULE

MARK	SYMBOL	MANUFACTURER CATALOG NO.	MOUNTING	LAMPS	FIXTURE WATTS	VOLTAGE	DESCRIPTION	NOTES
B4		LITHONIA ZL1D-L48	FIXTURE	42W LED	42	120/277	4' LED STRIP LIGHT, WITHOUT HOUSING	
B8		LITHONIA ZL1D-L96	FIXTURE	83W LED	83	120/277	8' LED STRIP LIGHT, WITHOUT HOUSING	
C8		LITHONIA ZL1D-L96	SUSPENDED	60W LED	60	120/277	8' LED STRIP LIGHT	
C8-EM		LITHONIA ZL1D-L96 W/ PS750L	SUSPENDED	60W LED	60	120/277	8' LED STRIP LIGHT W/ BATTERY BACKUP	
C4		LITHONIA ZL1D-L48	SUSPENDED	33W LED	33	120/277	4' LED STRIP LIGHT	
D		H.E. WILLIAMS 96-4-L62/840-HIAFR-DVR-UNV	SUSPENDED	73W LED	73	120/277	4' ENCLOSED/GASKETED LED STRIP LIGHT	
E		JUNO T272L4KNSL (HEAD) T4SL (TRACK)	SUSPENDED	(3) 15W LED HEAD	45	120	4' TRACK WITH 3 LED HEADS	
G		SLV LIGHT 7165340U	SUSPENDED	13W LED	13W	120	LED PENDANT	
X		EMERGILITE ELXN400-RN-AD	PENDANT	LED	–	120/277	LED EXIT SIGN	
X1		EMERGILITE ELXN400R-2LEDRAD	SURFACE	LED	–	120/277	LED EXIT SIGN/EMERGENCY COMBO	
X2		EMERGILITE EL-2LEDR-AD	SURFACE	LED	–	120/277	LED SURFACE MOUNTED BATTERY UNIT	
X3		EMERGILITE EF44DLEDWP	SURFACE	LED	–	6V	REMOTE TWIN LED HEAD EMERGENCY LIGHT	

NOTES:
1. ALL LIGHT FIXTURES ARE PURCHASED BY PET PEOPLE THROUGH THEIR NATIONAL ACCOUNT VENDOR-MARS ELECTRIC. THE CONTRACTOR SHALL INSTALL PROVIDED LIGHTING AS SHOWN ON THE DESIGN DOCUMENTS.
2. MARS ELECTRIC WILL ALSO SUPPLY NECESSARY PANELBOARDS, TIME CLOCK, CONTACTOR AND HANGERS FOR LIGHT FIXTURES, VERIFY WITH PHIL HARRELL FOR EXACT QUANITIES.

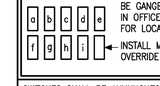
FOR ALL LIGHTING CONTACT:
PHIL HARRELL-MARS ELECTRIC
29260 CLEMENS RD.
WESTLAKE, OHIO 44145
OFFICE 440.892.6767 CELL 216.470.3592
EMAIL pharrell@mars-electric.com

FIXTURE TAG

TYPE / CIRCUIT / X
- TYPE → FIXTURE TYPE
- CIRCUIT → SWITCH
- X → CIRCUIT IN PANEL (UNLESS NOTED OTHERWISE)

'NL' INDICATES FIXTURE TO BE WIRED AS NITE LIGHT.

SWITCH BANK



ALL SWITCHES ARE TO BE GANGED TOGETHER IN OFFICE. SEE PLAN FOR LOCATION.

INSTALL MOMENTARY OVERRIDE SWITCH

SWITCHES SHALL BE ANNUNCIATOR TYPE WITH 'LED INDICATOR' PER CODE

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PetPeople

SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.:	19884
Drawn By:	XXX
Date	Issue
07/19/2021	Bid/ Permit

E1.1

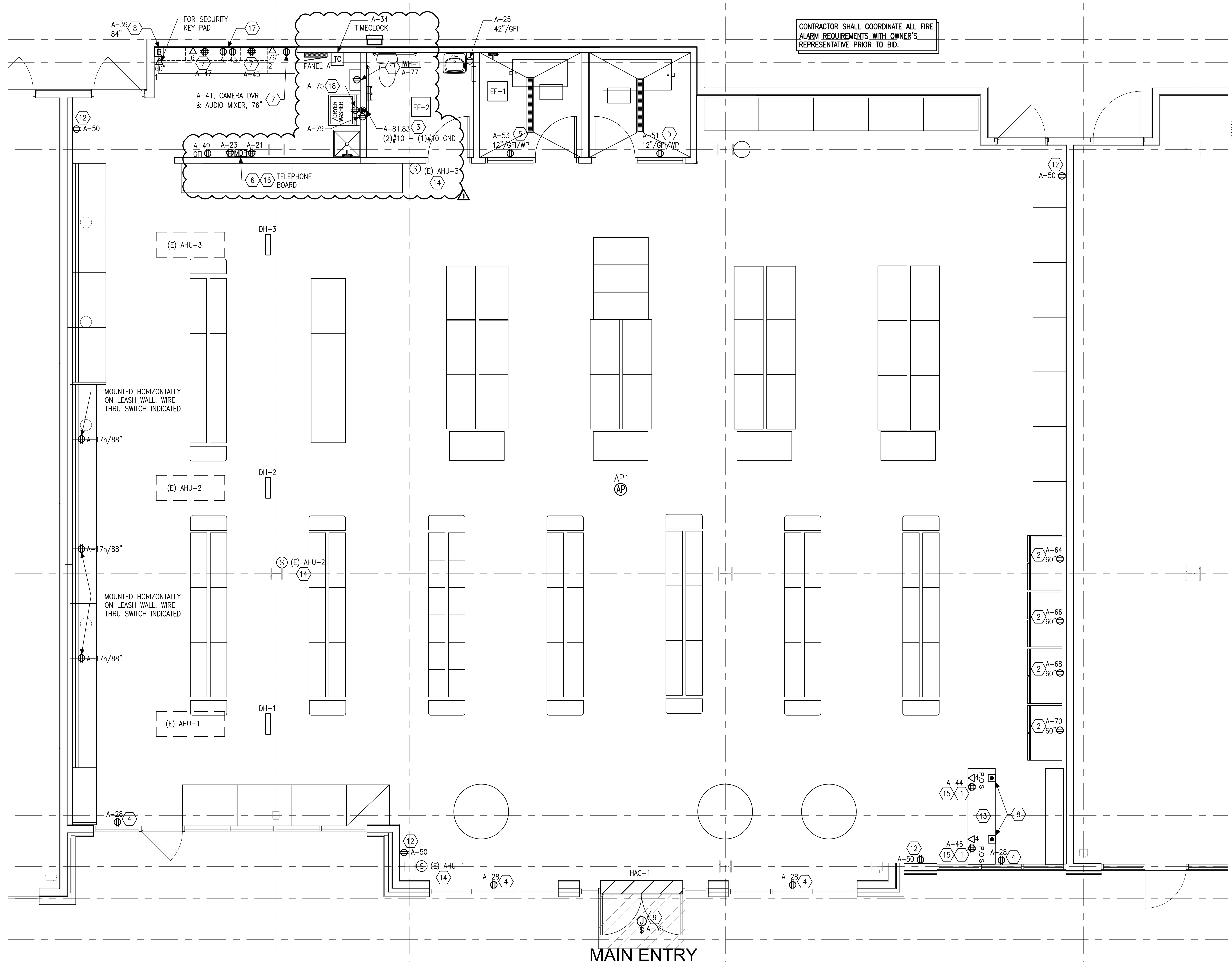
FLOOR PLAN

GENERAL NOTES:

1. ALL DEVICES, EQUIPMENT, FIXTURES, ETC. MUST BE GROUNDED BY USE OF A PROPERLY SIZED GROUNDING CONDUCTOR. MECHANICAL/ELECTRICAL BONDS OF THE METALLIC RACEWAY SYSTEM SHALL ALSO BE MAINTAINED.
2. BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED A LIMIT OF 3%.
3. CIRCUITS MAY BE COMBINED IN CONDUIT PROVIDED WIRE IS PROPERLY DERATED AND CONDUIT SIZED PER CODE. UNDER NO CIRCUMSTANCES SHALL MORE THAN NINE (9) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT.
4. ALL CONDUITS SHALL CONTAIN A GROUND WIRE SIZED PER NEC TABLE #250-122. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR VOLTAGE DROP, THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONATELY (ACCORDING TO CIRCULAR MIL AREA) FROM THE SIZE REQUIRED BY NEC TABLE #250-122.
5. EXPOSED CONDUITS, WHERE PERMITTED, SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO BUILDING STRUCTURAL MEMBERS.
6. ALL DEVICE COVER PLATES SHALL BE WHITE UNLESS NOTED OTHERWISE.

(X) KEYED NOTE SCHEDULE

1. (4) CAT5 PULLED TO EACH SIDE OF CASH WRAP, TOTAL OF (8) TO THE FRONT. COORDINATE ELECTRICAL/COMMUNICATION DROPS FOR CASHWRAP FIXTURING WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
2. PROVIDE NEMA 5/15P RECEPTACLE FOR FREEZER MOUNTED AT 60" AFF.
3. COORDINATE RECEPTACLE REQUIREMENTS FOR DRYER WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
4. MOUNT RECEPTACLE FOR SHOW WINDOWS WITHIN 18" OF THE TOP OF THE WINDOW.
5. VERIFY RECEPTACLE LOCATION WITH OWNER PRIOR TO ROUGH-IN
6. PHONE BOARD SHALL BE AT LEAST 4 FEET X 4 FEET. 24 PORT PATCH PANEL TO BE MOUNTED ON THE PHONE BOARD AND PROVIDED BY LOW VOLTAGE SUBCONTRACTOR. 66 BLOCK OR VOIP MODEM TO BE MOUNTED ON THE PHONE BOARD AND PROVIDED BY INTERNET SERVICE PROVIDER. COORDINATE ALL REQUIREMENTS WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
7. COORDINATE ELECTRICAL/COMMUNICATION DROPS FOR OFFICE FIXTURING WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
8. PROVIDE (2) BUTTONS AT CASHWRAPS TO ACTIVATE BELL IN STOCKROOM. COORDINATE WITH OWNER REPRESENTATIVE FOR LOCATIONS OF BUTTONS.
9. PROVIDED JUNCTION BOX, CONDUIT AND WIRE FOR SIGNAGE. COORDINATE WITH PET PEOPLE AND SIGN VENDOR.
10. REFER TO EQUIPMENT CONNECTION SCHEDULE THIS SHEET.
11. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
12. GENERAL PURPOSE RECEPTACLE. REFER TO OPEN WALL PLAN A4.0 FOR EXACT LOCATIONS OF RECEPTACLES.
13. PROVIDE 3/4" CONDUIT WITH PULL STRING FROM BACKROOM TO THE CASHWRAP FOR TENANT BURGLAR ALARM. CONFIRM LOCATIONS WITH TENANT REPRESENTATIVE PRIOR TO ROUGH-IN.
14. MOUNT REMOTE TEMPERATURE SENSOR AT 54" ABOVE FINISHED FLOOR. COORDINATE MOUNTING LOCATION OF TEMPERATURE SENSOR WITH TENANT AND ARCHITECT PRIOR TO ROUGH-IN.
15. POWER AND DATA TO BE STUBBED UP UNDER BASE AND MOUNTED ON SIDEWALL OF CABINETRY. COORDINATE WITH OWNER REPRESENTATIVE FOR EXACT LOCATIONS.
16. 2" CONDUIT WITH PULLWIRE FOR TELEPHONE STUBBED INTO TENANT SPACE IN SHELL. EXTEND CONDUIT AND PROVIDE PHONE CABLE. COORDINATE ALL REQUIREMENTS WITH LOCAL PHONE COMPANY.
17. PROVIDE RECEPTACLES IN OFFICE PER ELEVATION 2/E2.1.
18. PROVIDE RECEPTACLE FOR DRYER VENT BOOSTER FAN. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.



1 | FLOOR PLAN
1/4" = 1'-0"

N

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PetPeople
SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.:	18894
Drawn By:	XXX

Date	Issue
07/19/2021	Bid/ Permit
07/31/2021	1 Revision 1

E2.0

FLOOR PLAN

ELECTRICAL SYMBOL LEGEND

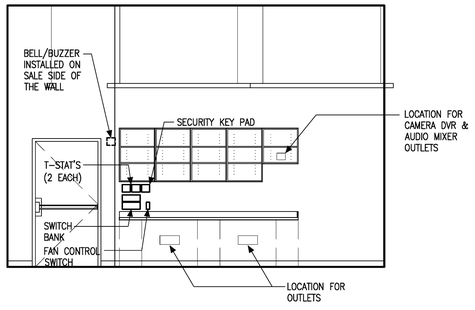
SYMBOL	DESCRIPTION	MTG. HGT. (U.N.O.)
$	LIGHT SWITCH	48"
$OS	OCCUPANCY SENSOR	48"
OS	OCCUPANCY SENSOR	CEILING
⊕ / ⊕ / ⊕	SINGLE / DUPLEX / DOUBLE DUPLEX RECEPTACLE	18"
⊕GFI / ⊕GFI / ⊕GFI	RECEPTACLE WITH GROUND FAULT PROTECTION	18"
⊕WP / ⊕WP / ⊕WP	WEATHER RESISTANT RECEPTACLE WITH WEATHERPROOF IN-USE COVER	18"
⊕WR / ⊕WR / ⊕WR	WEATHER RESISTANT RECEPTACLE	
J	JUNCTION BOX	60"
T	THERMOSTAT LOCATION, PROVIDE BOX WITH 1/2" CONDUIT TO CEILING SPACE	
AP	DATA ACCESS POINT	
▼	TELEPHONE JACK, PROVIDE BOX WITH 1/2" CONDUIT TO CEILING SPACE	18"
▽	DATA JACK, PROVIDE BOX WITH 3/4" CONDUIT TO CEILING SPACE	18"
▼▽	COMBO DATA/TELE JACK, PROVIDE BOX WITH 3/4" CONDUIT TO CEILING SPACE	
◉	BUTTON	
B	BELL/BUZZER	
TC	TIME CLOCK	
	PANELBOARD	
	MOTOR	
	NON-FUSED DISCONNECT	

EQUIPMENT SCHEDULE

MARK	DESCRIPTION	FEEDER	DISCONNECT	CIRCUIT	REMARKS
AHU-1	AIR HANDLING UNIT	2#4 + 1#8 GND. - 1"	100A N.F.	A-74,76	1,5,6,8,9
AHU-2	AIR HANDLING UNIT	2#4 + 1#8 GND. - 1"	100A N.F.	A-78,80	1,5,6,8,9
AHU-3	AIR HANDLING UNIT	2#4 + 1#8 GND. - 1"	100A N.F.	A-82,84	1,5,6,8,9
CU-1	CONDENSING UNIT	2#4 + 1#8 GND. - 1"	100A N.F.	A-74,76	1,3,5,6,8,9
CU-2	CONDENSING UNIT	2#4 + 1#8 GND. - 1"	100A N.F.	A-78,80	1,3,5,6,8,9
CU-3	CONDENSING UNIT	2#4 + 1#8 GND. - 1"	100A N.F.	A-82,84	1,3,5,6,8,9
DH-1	DUCT HEATER	3#8 + 1#10 GND. - 3/4"	60A N.F.	A-56,58,60	1,2,6
DH-2	DUCT HEATER	3#8 + 1#10 GND. - 3/4"	60A N.F.	A-61,63,65	1,2,6
DH-3	DUCT HEATER	3#8 + 1#10 GND. - 3/4"	60A N.F.	A-67,69,71	1,2,6
HAC-1	HEATED AIR CURTAIN	2#6 + 1#10 GND. - 3/4"	60A N.F.	A-55,57	1,2,6
EF-1	EXHAUST FAN	2#12 + 1#12 GND. - 3/4"	TOGGLE	A-11	1,5,6,7
EF-2	EXHAUST FAN	2#12 + 1#12 GND. - 3/4"	TOGGLE	A-9	1,5,6,7
IWH-1	INSTANT WATER HEATER	2#12 + 1#12 GND. - 3/4"	PLUG	A-77	1,6,7

NOTES:

1. THE E.C. SHALL VERIFY ALL EQUIPMENT SPECIFICATIONS (VOLTAGE, OVERCURRENT PROTECTION, FUSE SIZES, ETC.) WITH M.C. PRIOR TO PLACING PURCHASE ORDER FOR DISTRIBUTION EQUIPMENT AND ROUGH-IN. THE E.C. SHALL ALSO BE RESPONSIBLE FOR PROVIDING ALL CONNECTIONS, DEVICES, SAFETY SWITCHES, ETC. LISTED ON THIS SCHEDULE UNLESS NOTED ON THIS SCHEDULE AS BEING PROVIDED BY OTHERS.
2. UNIT PROVIDED WITH INTEGRAL STARTER AND/OR DISCONNECT SWITCH. E.C. SHALL BRANCH TO FINAL CONNECTION VIA LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT.
3. ROUTE CONDUIT THRU EQUIPMENT CURB OR PROVIDE SEPARATE ROOT CONDUIT BOOT. COORDINATE WITH M.C.
4. CONNECT TO LOCAL LIGHTING CIRCUIT FOR FAN SERVICE.
5. MULTIPLE ITEMS ARE CONNECTED TO THE SAME CIRCUIT.
6. ALL CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS, OR SHAFTS SHALL BE SEALED IN ACCORDANCE WITH WALL TYPE AS SHOWN ON SHEET A1.0.
7. EQUIPMENT MUST BE HARD WIRED THRU JUNCTION BOX
8. EQUIPMENT LOCATED ON ROOF. REFER TO MECHANICAL ROOF PLAN FOR EXACT LOCATION.
9. EQUIPMENT UTILIZES A SINGLE POINT CONNECTION FOR AIR HANDLING UNIT AND CONDENSING UNIT.



2 OFFICE
INTERIOR ELEVATION
1/4" = 1'-0"

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STATE OF MISSOURI · PETER J. FITZGERALD · NUMBER PE-2007027530 · PROFESSIONAL ENGINEER
8/11/21

PetPeople

SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.:	19894
Drawn By:	XXX
Date	Issue
07/19/2021	Bid/ Permit

E2.1

FLOOR PLAN

PANEL: A				MAIN:	400A MAIN CIRCUIT BREAKER		VOLTAGE:	120/208	
				PHASE:	3	WIRE: 4	BUS AMPS:	400	AIC: 42,000
MOUNTING:	RECESSED	LOCATION:	OFFICE	FEED THRU LUGS:	NO		ISOLATED GROUND BUS:		NO

CKT	NOTE	BKR	LOAD DESCRIPTION	KVA	A#	B#	C#	KVA	LOAD DESCRIPTION	BKR	NOTE	CKT
1		20/1	SPARE	0.0	0.0			0.0	SPARE	20/1		2
3		20/1	SPARE	0.0		0.0		0.0	SPARE	20/1		4
5		20/1	SPARE	0.0			0.0	0.0	SPARE	20/1		6
7		20/1	LTS- OFFICE	0.1	0.6			0.5	LTS- SALES AREA	20/1		8
9		20/1	LTS- RESTROOMS/EXH. FAN	0.2		0.7		0.5	LTS- SALES AREA	20/1		10
11		20/1	LTS- DOGWASH FAN/LTG	0.4			0.9	0.5	LTS- SALES AREA	20/1		12
13		20/1	LTS- CASHWRAP	0.1	0.1			0.0	SPARE	20/1		14
15		20/1	LTS- TRACK	1.2		1.6		0.4	LTS- EM LIGHTING	20/1	L	16
17		20/1	LTS- DISPLAY	0.3			0.5	0.2	LTS- NL LIGHTING	20/1	L	18
19		20/1	SPARE	0.0	0.0			0.0	SPARE	20/1		20
21		20/1	RCPT- TELEPHONE	0.4		0.4		0.0	SPARE	20/1		22
23		20/1	RCPT- TELEPHONE	0.4			0.4	0.0	SPARE	20/1		24
25		20/1	RCPT- RESTROOM	0.2	0.2			0.0	SPARE	20/1		26
27		20/1	SPARE	0.0		0.8		0.8	RCPT- SHOW WINDOW	20/1		28
29		20/1	SPARE	0.0			0.0	0.0	SPARE	20/1		30
31		20/1	EQ- CEILING FANS	0.4	0.4			0.0	SPARE	20/1		32
33		20/1	SPARE	0.0		0.1		0.1	TIMECLOCK	20/1		34
35		20/1	SPARE	0.0			1.2	1.2	SIGN - FRONT	20/1		36
37		20/1	SPARE	0.0	0.0			0.0	SPARE	20/1		38
39		20/1	BELL/BUZZER	0.2		0.2		0.0	SPARE	20/1		40
41		20/1	RCPT- AV EQUIPMENT	0.4			0.4	0.0	SPARE	20/1		42
43		20/1	RCPT- OFFICE	0.4	0.8			0.4	RCPT- POS	20/1		44
45		20/1	RCPT- OFFICE	0.4		0.8		0.4	RCPT- POS	20/1		46
47		20/1	RCPT- OFFICE	0.4			0.4	0.0	SPARE	20/1		48
49		20/1	RCPT- UTILITY RM	0.2	1.0			0.8	RCPT- GENERAL PURPOSE	20/1		50
51		20/1	RCPT- DOG WASH	0.2		0.2		0.0	SPARE	20/1		52
53		20/1	RCPT- DOG WASH	0.2			0.2	0.0	SPARE	20/1		54
55		60/2	HAC-1	4.2	8.5			4.3	DH-1	45/3		56
57				4.2		8.5		4.3				58
59		20/1	SPARE	0.0			4.3	4.3				60
61		45/3	DH-2	4.3	4.3			0.0	SPARE	20/1		62
63				4.3		5.2		0.9	RCPT- FREEZER	20/1		64
65				4.3			5.2	0.9	RCPT- FREEZER	20/1		66
67		45/3	DH-3	4.3	5.2			0.9	RCPT- FREEZER	15/1		68
69				4.3		5.2		0.9	RCPT- FREEZER	15/1		70
71				4.3			4.3	0.0	SPARE	15/1		72
73		20/1	SPARE	0.0	7.8			7.8	CU-1/AHU-1	80/2		74
75		20/1	BOOSTER FAN	0.2		8.0		7.8				76
77		20/1	IWH-1	0.2			8.0	7.8	CU-2/AHU-2	80/2		78
79	GFI	20/1	RCPT- WASHER	1.2	9.0			7.8				80
81	GFI	30/2	RCPT- DRYER	2.5		10.3		7.8	CU-3/AHU-3	80/2		82
83				2.5			10.3	7.8				84

NOTES:
L HANDLE LOCK
GFI GROUND FAULT INTERRUPTING
AFI ARC FAULT INTERRUPTING
CD CONTINUOUS DUTY
H HACR RATED

TOTAL KVA PER PHASE:	37.9	42.0	36.1
TOTAL KVA:	116.0		
TOTAL AMPS:	322.0		

SERVICE SUMMARY

PANEL	LIGHTING	RECEPTACLE	MOTOR	HVAC	KITCHEN.	MISC.
A	5.6	15.6	–	93.9	–	0.9
TOTAL	5.6	15.6	–	93.9	–	0.9

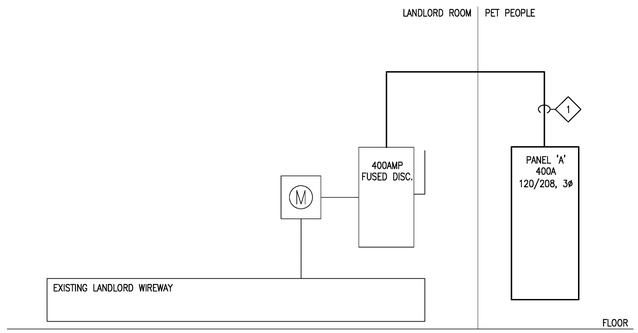
LOAD	CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD
LIGHTING	5.6	125%	7.0
RECEPTACLE	15.6	SEE NOTES	12.8
MOTOR	–	SEE NOTES	–
HVAC	93.9	100%	93.9
KITCHEN	–	65%	–
MISC.	0.9	100%	0.9
TOTAL	116.0		114.6

NOTES

RECEPTACLE:
FIRST 10.0 KVA @ 100% + REMAINDER @ 50%

MOTOR:
PLUS ADDITIONAL 25% OF LARGEST MOTOR.

DEMAND LOAD:	318 AMPS
SERVICE SIZE:	400 AMPS



1 ONE-LINE DIAGRAM

N.T.S.

FEEDER SCHEDULE

X

1. 4" 4#600 + 1#3 GND.

ONE LINE DIAGRAM NOTES:

1. COORDINATE ALL WORK WITH POWER COMPANY REQUIREMENTS PRIOR TO BIDDING & INCLUDE THE COST OF ALL ASSOCIATED LABOR, MATERIALS, & CHARGES IN BID.
2. VERIFY THE AVAILABLE FAULT CURRENT WITH THE UTILITY COMPANY PRIOR TO BIDDING AND PROVIDE EQUIPMENT RATED ACCORDINGLY. SUBMIT FAULT CURRENT CALCULATIONS WITH SHOP DRAWING SUBMITTAL.
3. PROVIDE FULL LENGTH VERTICAL BUSSING IN ALL SWITCHBOARDS, DISTRIBUTION PANELS & PANELBOARDS.
4. PROVIDE FULL SIZE HORIZONTAL BUSSING IN ALL SWITCHBOARDS.
5. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE.
6. ALL INTERIOR WALL-MOUNTED EQUIPMENT SHALL BE MOUNTED ON 3/4" FIRE RATED BACKBOARD.
7. ALL FLOOR-MOUNTED EQUIPMENT SHALL BE MOUNTED ON 4" HIGH CONCRETE HOUSEKEEPING PAD.
8. COORDINATE SPACE W/ ALL OTHER TRADES TO MAINTAIN ALL CODE-REQUIRED CLEARANCES.
9. REFER TO ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

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STATE OF MISSOURI PETER J. FITZGERALD NUMBER PE-2007027530 PROFESSIONAL ENGINEER
8/11/21

PetPeople

SUMMIT AT WEST PRYOR
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LEE'S SUMMIT (KANSAS CITY), MO

Project No.:	19894
Drawn By:	XXX
Date	Issue
07/19/2021	Bid/ Permit

E3.0

FLOOR PLAN

SECTION 26 0519
LOW–VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

A. Provide products that comply with requirements of NFPA 70.
B. Provide products listed, classified, and labeled as suitable for the purpose intended.
C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
D. Conductor Material:
1. Provide copper conductors except where aluminum conductors are specifically indicated or permitted for substitution. Conductor sizes indicated are based on copper unless specifically indicated as aluminum. Conductors designated with the abbreviation "AL" indicate aluminum.
a. Substitution of aluminum conductors for copper is permitted, when approved by Owner and authority having jurisdiction, only for the following:
1) Services: Copper conductors size 1/0 AWG and larger.
b. Where aluminum conductors are substituted for copper, comply with the following:
1) Size aluminum conductors to provide, when compared to copper sizes indicated, equivalent or greater ampacity and equivalent or less voltage drop.
2) Increase size of raceways, boxes, wiring gutters, enclosures, etc. as required to accommodate aluminum conductors.
3) Provide aluminum equipment grounding conductor sized according to NFPA 70.
4) Equip electrical distribution equipment with compression lugs for terminating aluminum conductors.
2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
3. Tinned Copper Conductors: Comply with ASTM B33.
E. Minimum Conductor Size:
1. Branch Circuits: 12 AWG.
a. Exceptions:
1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
3) 20 A, 277 V circuits longer than 150 feet: 10 AWG, for voltage drop.
2. Control Circuits: 14 AWG.
F. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
G. Conductor Color Coding:
1. Color code conductors as called for within the NEC or otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.

3.02 INSTALLATION

A. Circuiting Requirements:
1. Unless dimensioned, circuit routing indicated is diagrammatic.
2. When circuit destination is indicated without specific routing, determine exact routing required.
3. Arrange circuiting to minimize splices.
4. Maintain separation of Class 1, Class 2, and Class 3 remote–control, signaling, and power–limited circuits in accordance with NFPA 70.
5. Maintain separation of wiring for emergency systems in accordance with NFPA 70.
6. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among up to three single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.
B. Installation in Raceway:
1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
2. Pull all conductors and cables together into raceway at same time.
3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
C. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
D. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
1. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conductors and cables to lay on ceiling tiles.
2. Installation in Vertical Raceways: Provide supports where vertical rise exceeds permissible limits.
E. Install conductors with a minimum of 12 inches of slack at each outlet.
F. Where conductors are installed in enclosures for future termination by others, provide a minimum of 5 feet of slack.
G. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
H. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

SECTION 26 0521 MANUFACTURED WIRING ASSEMBLIES

PART 2 PRODUCTS

1.01 MATERIALS

A. Manufactured Wiring Assemblies – General: Factory assembled cable assemblies with appropriate connector on each end.
1. Lengths and circuit configurations as indicated.
2. Voltage: 120 volts.
B. Accessories: Furnish manufacturer's standard accessories, including cable extenders, distribution tees, and switching assemblies.

SECTION 26 0526
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 PRODUCTS

1.01 GROUNDING AND BONDING REQUIREMENTS

A. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
B. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
C. Grounding Electrode System:
1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
2. Metal Underground Water Pipe(s):
3. Metal In–Ground Support Structure:
a. Provide connection to metal in–ground support structure that is in direct contact with earth in accordance with NFPA 70.
4. Concrete–Encased Electrode:
5. Ground Ring:
6. Ground Rod Electrode(s):
a. Space electrodes not less than 10 feet from each other and any other ground electrode.
7. Ground Bar: Provide ground bar, separate from service equipment enclosure, for common connection point of grounding electrode system bonding jumpers as permitted in NFPA 70. Connect grounding electrode conductor provided for service–supplied system grounding to this ground bar.
D. Separately Derived System Grounding:
1. Separately derived systems include, but are not limited to:
a. Transformers (except autotransformers such as buck–boost transformers).
b. Uninterruptible power supplies (UPS), when configured as separately derived systems.
c. Generators, when neutral is switched in the transfer switch.
2. Provide grounding electrode conductor to connect derived system grounded conductor to nearest effectively grounded metal building frame. Unless otherwise indicated, make connection at neutral (grounded) bus in source enclosure.
3. Provide bonding jumper to connect derived system grounded conductor to nearest metal building frame and nearest metal water piping in the area served by the derived system, where not already used as a grounding electrode for the derived system. Make connection at same location as grounding electrode conductor connection.
4. Provide system bonding jumper to connect system grounded conductor to equipment ground bus. Make connection at same location as grounding electrode conductor connection. Do not make any other connections between neutral (grounded) conductors and ground on load side of separately derived system disconnect.
5. Where the source and first disconnecting means are in separate enclosures, provide supply–side bonding jumper between source and first disconnecting means.
E. Bonding and Equipment Grounding:
1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non–current–carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
4. Provide bonding for interior metal piping systems in accordance with NFPA 70. This includes, but is not limited to:
a. Metal water piping where not already effectively bonded to metal underground water pipe used as grounding electrode.
b. Metal gas piping.
F. Isolated Ground System:
1. Where isolated ground receptacles or other isolated ground connections are indicated, provide separate isolated/insulated equipment grounding conductors.
G. Communications Systems Grounding and Bonding:
1. Provide intersystem bonding termination at service equipment or metering equipment enclosure and at disconnecting means for any additional buildings or structures in accordance with NFPA 70.

1.02 GROUNDING AND BONDING COMPONENTS

A. General Requirements:
1. Provide products listed, classified, and labeled as suitable for the purpose intended.
2. Provide products listed and labeled as complying with UL 467 where applicable.
B. Connectors for Grounding and Bonding:
1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
C. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.

SECTION 26 0529
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 PRODUCTS

1.01 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:
1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
2. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
B. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
C. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.
D. Metal Channel (Strut) Framing Systems: Factory–fabricated continuous–slot metal channel (strut) and associated fittings, accessories, and hardware required for field–assembly of supports.
E. Hanger Rods: Threaded zinc–plated steel unless otherwise indicated.
F. Anchors and Fasteners:
1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.

PART 2 EXECUTION

2.01 INSTALLATION

A. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
B. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.
C. Unless specifically indicated or approved by Architect, do not provide support from roof deck.
D. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.

SECTION 26 0533.13
CONDUIT FOR ELECTRICAL SYSTEMS

PART 2 PRODUCTS

1.01 CONDUIT APPLICATIONS

A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.
B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.
C. Underground:
1. Use galvanized steel rigid metal conduit, PVC–coated galvanized steel rigid metal conduit, or rigid PVC conduit.
D. Concealed: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or electrical metallic tubing (EMT).
E. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or electrical metallic tubing (EMT).
F. Exposed, Exterior: Use galvanized steel rigid metal conduit or intermediate metal conduit (IMC).
G. Connections to Luminaires Above Accessible Ceilings: Use flexible metal conduit.
1. Maximum Length: 6 feet.
H. Connections to Vibrating Equipment:
1. Dry Locations: Use flexible metal conduit.
2. Damp, Wet, or Corrosive Locations: Use liquidtight flexible metal conduit.
3. Maximum Length: 6 feet unless otherwise indicated.

1.02 CONDUIT REQUIREMENTS

A. Existing Work: Where existing conduits are indicated to be reused, they may be reused only where they comply with specified requirements, are free from corrosion, and integrity is verified by pulling a mandrel through them.
B. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.
C. Provide products listed, classified, and labeled as suitable for the purpose intended.
D. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

PART 2 EXECUTION

2.01 INSTALLATION

A. Conduit Routing:
1. Conceal all conduits unless specifically indicated to be exposed.
2. Conduits in the following areas may be exposed, unless otherwise indicated:
a. Electrical rooms.
b. Mechanical equipment rooms.
c. Within joists in areas with no ceiling.
3. Conduits installed underground or embedded in concrete may be routed in the shortest possible manner unless otherwise indicated. Route all other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
B. Conduit Support:
1. Secure and support conduits in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
C. Connections and Terminations:
1. Use suitable adapters where required to transition from one type of conduit to another.
2. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
3. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
D. Penetrations:
1. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
2. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
3. Make penetrations for roof–mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals.
4. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
E. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation.
F. Provide grounding and bonding in accordance with Section 26 0526.

SECTION 26 0533.16
BOXES FOR ELECTRICAL SYSTEMS

PART 2 PRODUCTS

1.01 BOXES

A. General Requirements:
1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
3. Provide products listed, classified, and labeled as suitable for the purpose intended.
4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
1. Use raised covers suitable for the type of wall construction and device configuration where required.
2. Use shallow boxes where required by the type of wall construction.
3. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
4. Boxes for Ganged Devices: Use multigang boxes of single–piece construction. Do not use field–connected gangable boxes unless specifically indicated or permitted.
5. Minimum Box Size, Unless Otherwise Indicated:
a. Wiring Devices (Other Than Communications Systems Outlets): 4 inch square by 1–1/2 inch deep (100 by 38 mm) trade size.
C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
2. NEMA 250 Environment Type, Unless Otherwise Indicated:
3. Junction and Pull Boxes Larger Than 100 cubic inches:
a. Provide screw–cover or hinged–cover enclosures unless otherwise indicated.
D. Floor Boxes:
1. Description: Floor boxes compatible with floor box service fittings provided in accordance with Section 26 2726; with partitions to separate multiple services; furnished with all components, adapters, and trims required for complete installation.

PART 1 EXECUTION

2.01 INSTALLATION

A. Box Locations:
1. Locate boxes to be accessible. Provide access panels in accordance with Section 08 3100 as required where approved by the Architect.
2. Do not install flush–mounted boxes on opposite sides of walls back–to–back. Provide minimum 6 inches horizontal separation unless otherwise indicated.
3. Fire Resistance Rated Walls: Install flush–mounted boxes such that the required fire resistance will not be reduced.
B. Install boxes plumb and level.
C. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
D. Close unused box openings.
E. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.

26 0533.23
SURFACE RACEWAYS FOR ELECTRICAL SYSTEMS

PART 2 PRODUCTS

1.01 RACEWAY REQUIREMENTS

A. Provide all components, fittings, supports, and accessories required for a complete raceway system.
B. Provide products listed, classified, and labeled as suitable for the purpose intended.
C. Do not use raceways for applications other than as permitted by NFPA 70 and product listing.

1.02 WIREWAYS

A. Description: Lay–in wireways and wiring troughs with removable covers; listed and labeled as complying with UL 870.
B. Where wireway size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

PART 3 EXECUTION

2.01 INSTALLATION

A. Arrange wireways and associated raceway connections to comply with NFPA 70, including but not limited to requirements for deflected conductors and wireways used as pullboxes. Increase size of wireway where necessary.
B. Close unused raceway openings.

SECTION 26 0553
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 PRODUCTS

1.01 IDENTIFICATION REQUIREMENTS

A. Identification for Equipment:
1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
2. Service Equipment:
a. Use identification nameplate to identify each service disconnecting means.
b. For buildings or structures supplied by more than one service, or any combination of branch circuits, feeders, and services, use identification nameplate or means of identification acceptable to authority having jurisdiction at each service disconnecting means to identify all other services, feeders, and branch circuits supplying that building or structure. Verify format and descriptions with authority having jurisdiction.
3. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70 including but not limited to the following.
a. Service equipment.
b. Industrial control panels.
c. Motor control centers.
d. Elevator control panels.
e. Industrial machinery.
B. Identification for Conductors and Cables:
1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.

1.02 IDENTIFICATION NAMEPLATES AND LABELS

A. Identification Labels:
1. Materials: Use self–adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
2. Text: Use factory pre–printed or machine–printed text. Do not use handwritten text unless otherwise indicated.

1.03 UNDERGROUND WARNING TAPE

A. Materials: Use non–detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.
B. Exception: Use foil–backed detectable type tape where required by serving utility or where directed by Owner.

SECTION 26 0583
WIRING CONNECTIONS

PART 1 PRODUCTS

1.01 MATERIALS

A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
1. Colors: Comply with NEMA WD 1.
2. Cord Construction: NFPA 70, Type SJO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.

1.02 EQUIPMENT CONNECTIONS

A. As indicated in equipment schedules on drawings or as indicated on plans.:

PART 2 EXECUTION

2.01 ELECTRICAL CONNECTIONS

A. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.
B. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
C. Provide receptacle outlet to accommodate connection with attachment plug.
D. Provide cord and cap where field–supplied attachment plug is required.
E. Install suitable strain–relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
F. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
G. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.
H. Coolers and Freezers: Cut and seal conduit openings in freezer and cooler walls, floor, and ceilings.

SECTION 26 0914
ELECTRICAL SENSING AND MEASUREMENT

PART 1 PRODUCTS

1.01 POWER METERS

A. Watt–Hour Meters and Wattmeters: ANSI C12.1; three phase induction type with two stators, each with current and potential coil, rated 5 amperes and 120 volts at 60 Hertz. Meter suitable for connection to 3 and 4 wire circuits. Include potential indicating lamps; adjustments for light and full load, phase balance, and power factor; four dial clock register; integral demand indicator; ratchets to prevent reverse rotation; removable meter with draw–out test plug; semi–flush mounted case with matching cover.
B. Impulse–Totalizing Demand Meter: ANSI C12.1; suitable for use with switchboard watt–hour meter, including two circuit totalizing relay; cyclometer; four dial totalizing kilowatt–hour register; positive chart drive mechanism; capillary pen holding minimum one–month ink supply; and a roll chart with minimum 31–day capacity. Indicate and record five minute integrated demand of the totalized system.

1.02 METERING TRANSFORMERS

C. A. Current Transformers: IEEE C57.13; 5 ampere secondary, wound type, with single secondary winding and secondary shorting device, primary/secondary ratio as required, burden and accuracy consistent with connected metering and relay devices, 60 Hertz.

SECTION 26 0919
ENCLOSED CONTACTORS

PART 2 PRODUCTS

1.01 GENERAL PURPOSE CONTACTORS

A. Description: NEMA ICS 2, AC general purpose magnetic contactor.

1.02 LIGHTING CONTACTORS

A. Description: NEMA ICS 2, magnetic lighting contactor.
B. Configuration: Electrically held.
C. Coil operating voltage: 120 volts, 60 Hertz.
D. Poles: As required to match circuit configuration and control function.
E. Contact Rating: Match branch circuit overcurrent protection, considering derating for continuous loads.
F. Enclosure: NEMA ICS 6, Type 1.

SECTION 26 0923
LIGHTING CONTROL DEVICES

PART 1 PRODUCTS

1.01 LIGHTING CONTROL DEVICES – GENERAL REQUIREMENTS

A. Provide products listed, classified, and labeled as suitable for the purpose intended.

1.02 OCCUPANCY SENSORS

A. All Occupancy Sensors:
1. Description: Factory–assembled commercial specification grade devices for indoor use capable of sensing both major motion, such as walking, and minor motion, such as small desktop level movements, according to published coverage areas, for automatic control of load indicated.
2. Sensor Technology:
a. Passive Infrared (PIR) Occupancy Sensors: Designed to detect occupancy by sensing movement of thermal energy between zones.
b. Ultrasonic Occupancy Sensors: Designed to detect occupancy by sensing frequency shifts in emitted and reflected inaudible sound waves.
c. Passive Infrared/Ultrasonic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and ultrasonic technologies.
d. Passive Infrared/Acoustic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and audible sound sensing technologies.
3. Provide LED to visually indicate motion detection with separate color LEDs for each sensor type in dual technology units.
4. Operation: Unless otherwise indicated, occupancy sensor to turn load on when occupant presence is detected and to turn load off when no occupant presence is detected during an adjustable turn–off delay time interval.
5. Compatibility (Non–Dimming Sensors): Suitable for controlling incandescent lighting, low–voltage lighting with electronic and magnetic transformers, fluorescent lighting with electronic and magnetic ballasts, and fractional motor loads, with no minimum load requirements.
B. Wall Switch Occupancy Sensors:
1. All Wall Switch Occupancy Sensors:
a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated manual control capability, and no leakage current to load in off mode.
b. Manual–Off Override Control: When used to turn off load while in automatic–on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed–off time interval.
C. Ceiling Mounted Occupancy Sensors:
1. All Ceiling Mounted Occupancy Sensors:
a. Description: Low profile occupancy sensors designed for ceiling installation.
D. Directional Occupancy Sensors:
1. All Directional Occupancy Sensors: Designed for wall or ceiling mounting, with integral swivel for field adjustment of motion detection coverage.
E. Luminaire Mounted Occupancy Sensors: Designed for direct luminaire installation and control, suitable for use with specified luminaires.
1. High Bay Luminaire Mounted Occupancy Sensors: Passive infrared (PIR) type with a field of view of 360 degrees unless otherwise indicated.
F. Power Packs for Low Voltage Occupancy Sensors:
1. Description: Plenum rated, self–contained low voltage class 2 transformer and relay compatible with specified low voltage occupancy sensors for switching of line voltage loads.
2. Provide quantity and configuration of power and slave packs with all associated wiring and accessories as required to control the load indicated on drawings.

1.03 TIME SWITCHES

A. Digital Electronic Time Switches:
1. Description: Factory–assembled solid state programmable controller with LCD display, listed and labeled as complying with UL 916 or UL 917.
2. Schedule Capacity: Not less than 16 programmable on/off operations.
3. Provide automatic daylight savings time and leap year compensation.
4. Provide power outage backup to retain programming and maintain clock.
5. Manual override: Capable of overriding current schedule both permanently and temporarily until next scheduled event.

1.04 OUTDOOR PHOTO CONTROLS

A. Stem–Mounted Outdoor Photo Controls:
1. Description: Direct–wired photo control unit with threaded conduit mounting stem and field–adjustable swivel base, listed and labeled as complying with UL 773A.
B. Button Type Outdoor Photo Controls
1. Description: Direct–wired photo control unit complying with ANSI C136.24 with weatherproof gasketed wall plate where required or indicated, listed and labeled as complying with UL 773A.

1.05 DAYLIGHTING CONTROLS

A. System Description: Control system consisting of photo sensors and compatible control modules and power packs, contactors, or relays as required for automatic control of load indicated according to available natural light; capable of integrating with occupancy sensors and manual override controls.

PART 2 EXECUTION

2.01 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of lighting control devices provided under this section.
B. Install lighting control devices in accordance with manufacturer's instructions.
C. Outdoor Photo Control Locations:
1. Where possible, locate outdoor photo controls with photo sensor facing north. If north facing photo sensor is not possible, install with photo sensor facing east, west, or down.
2. Locate outdoor photo controls so that photo sensors do not face artificial light sources, including light sources controlled by the photo control itself.

2.02 FIELD QUALITY CONTROL

A. Test occupancy sensors to verify proper operation, including time delays and ambient light thresholds where applicable. Verify optimal coverage for entire room or area. Record test results in written report to be included with submittals.
B. Test time switches to verify proper operation.
C. Test outdoor photo controls to verify proper operation, including time delays where applicable.
D. Test daylighting controls to verify proper operation, including light level measurements and time delays where applicable. Record test results in written report to be included with submittals.
E. Correct wiring deficiencies and replace damaged or defective lighting control devices.

2.03 ADJUSTING

A. Adjust occupancy sensor settings to minimize undesired activations while optimizing energy savings, and to achieve desired function as indicated or as directed by Architect.
B. Adjust position of directional occupancy sensors and outdoor motion sensors to achieve optimal coverage as required.
C. Where indicated or as directed by Architect, install factory masking material or adjust integral blinders on passive infrared (PIR) and dual technology occupancy sensor lenses to block undesired motion detection.
D. Adjust time switch settings to achieve desired operation schedule as indicated or as directed by Architect. Record settings in written report to be included with submittals.
E. Adjust daylighting controls under optimum lighting conditions after all room finishes, furniture, and window treatments have been installed to achieve desired operation as indicated or as directed by Architect. Record settings in written report to be included with submittals. Readjust controls calibrated prior to installation of final room finishes, furniture, and window treatments that do not function properly as determined by Architect.

SECTION 26 2100
LOW–VOLTAGE ELECTRICAL SERVICE ENTRANCE

PART 1 PRODUCTS

1.01 ELECTRICAL SERVICE REQUIREMENTS

A. Provide new electrical service consisting of all required conduits, conductors, equipment, metering provisions, supports, accessories, etc. as necessary for connection between Utility Company point of supply and service entrance equipment.
a. Products Furnished by Contractor: Comply with Utility Company requirements.

SECTION 26 2413
SWITCHBOARDS

PART 1 PRODUCTS

1.01 MANUFACTURERS

A. Switchboards:
1. ABB/GE; www.geindustrial.com/#sle.
2. Eaton Corporation; www.eaton.com/#sle.
3. Schneider Electric; Square D Products: www.schneider–electric.us/#sle.
4. Siemens Industry, Inc: www.usa.siemens.com/#sle.

1.02 SWITCHBOARDS

A. Provide switchboards consisting of all required components, control power transformers, instrumentation and control wiring, accessories, etc. as necessary for a complete operating system.
B. Main Devices: Configure for top or bottom incoming feed as indicated or as required for the installation. Provide separate pull section and/or top–mounted pullbox as indicated or as required to facilitate installation of incoming feed.
C. Bussing: Sized in accordance with UL 891 temperature rise requirements.
1. Through bus (horizontal cross bus) to be fully rated through full length of switchboard (non–tapered). Tapered bus is not permitted.
2. Provide solidly bonded equipment ground bus through full length of switchboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
3. Phase and Neutral Bus Material: Aluminum.
4. Ground Bus Material: Aluminum.
D. Conductor Terminations: Suitable for use with the conductors to be installed.
E. Future Provisions:
1. Prepare designated spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.
F. Instrument Transformers:
1. Comply with IEEE C57.13.
2. Select suitable ratio, burden, and accuracy as required for connected devices.
3. Current Transformers: Connect secondaries to shorting terminal blocks.
4. Potential Transformers: Include primary and secondary fuses with disconnecting means.

PART 2 EXECUTION

2.01 INSTALLATION

A. Arrange equipment to provide required clearances and maintenance access, including accommodations for any drawout devices.
B. Where switchboard is indicated to be mounted with inaccessible side against wall, provide minimum clearance of 1/2 inch between switchboard and wall.

Job Path:H:\Master\HA STANDARDS\CAD STANDARDS\TEMPLATE\Master Template.dwt
Drawn By:C.F. Mierke

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PetPeople
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LEE'S SUMMIT (KANSAS CITY), MO

Project No.:		18894
Drawn By:		XXX
Date	Issue	
07/19/2021	Bid/ Permit	

E4.0

FLOOR PLAN

C. Unless otherwise indicated, mount switchboards on properly sized 4 inch high concrete pad constructed in accordance with Section 03 3000.

a. Provide filler plates to cover unused spaces in switchboards.

SECTION 26 2416 PANELBOARDS

PART 1 PRODUCTS

1.01 MANUFACTURERS

A. ABB/GE; www.geindustrial.com/#sle.

B. Eaton Corporation; www.eaton.com/#sle.

C. Schneider Electric; Square D Products; www.schneider-electric.us/#sle.

D. Siemens Industry, Inc; www.usa.siemens.com/#sle.

1.02 PANELBOARDS – GENERAL REQUIREMENTS

A. Short Circuit Current Rating:

1. Provide panelboards with listed short circuit current rating as indicated on the drawings.
2. Listed series ratings are acceptable, except where not permitted by motor contribution according to NFPA 70.
3. Label equipment utilizing series ratings as required by NFPA 70.

B. Panelboards Used for Service Entrance: Listed and labeled as suitable for use as service equipment according to UL 869A.

C. Mains: Configure for top or bottom incoming feed as indicated or as required for the installation.

D. Bussing: Sized in accordance with UL 67 temperature rise requirements.

1. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
2. Provide separate isolated/insulated ground bus where indicated or where isolated grounding conductors are provided.

E. Conductor Terminations: Suitable for use with the conductors to be installed.

F. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.

1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
2. Boxes: Galvanized steel unless otherwise indicated.
   a. Provide wiring gutters sized to accommodate the conductors to be installed.
3. Lockable Doors: All locks keyed alike unless otherwise indicated.

G. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.

H. Multi-Section Panelboards: Provide enclosures of the same height, with feed-through lugs or sub-feed lugs and feeders as indicated or as required to interconnect sections.

I. Load centers are not acceptable.

J. Provide the following features and accessories where indicated or where required to complete installation:

1. Feed-through lugs.
2. Sub-feed lugs.

1.03 OVERCURRENT PROTECTIVE DEVICES

A. Molded Case Circuit Breakers:

1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
2. Interrupting Capacity:
   a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated.
   b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
3. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.
4. Provide the following circuit breaker types where indicated:
   a. Ground Fault Circuit Interrupter (GFCI) Circuit Breakers: Listed as complying with UL 943, class A for protection of personnel.
   b. Ground Fault Equipment Protection Circuit Breakers: Designed to trip at 30 mA for protection of equipment.
   c. Arc-Fault Circuit Interrupter (AFCI) Circuit Breakers: Combination type listed as complying with UL 1699.
   d. 100 Percent Rated Circuit Breakers: Listed for application within the panelboard where installed at 100 percent of the continuous current rating.
   e. Current Limiting Circuit Breakers: Without using fusible elements, designed to limit the let-through energy to a value less than the energy of a one-half cycle wave of the symmetrical prospective current when operating within its current limiting range.
5. Do not use tandem circuit breakers.
6. Do not use handle ties in lieu of multi-pole circuit breakers.
7. Provide multi-pole circuit breakers for multi-wire branch circuits as required by NFPA 70.
8. Provide the following features and accessories where indicated or where required to complete installation:
   a. Shunt Trip: Provide coil voltage as required for connection to indicated trip actuator.
   b. Handle Pad-Lock Provision: For locking circuit breaker handle in OFF position.

PART 2 EXECUTION

2.01 INSTALLATION

A. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

B. Mount panelboards such that the highest position of any operating handle for circuit breakers or switches does not exceed 79 inches above the floor or working platform.

C. Provide minimum of six spare 1 inch trade size conduits out of each flush-mounted panelboard stubbed into accessible space above ceiling and below floor.

D. Install all field-installed branch devices, components, and accessories.

E. Provide filler plates to cover unused spaces in panelboards.

F. Provide circuit breaker lock-on devices to prevent unauthorized personnel from de-energizing essential loads where indicated. Also provide for the following:

1. Emergency and night lighting circuits.
2. Fire detection and alarm circuits.
3. Communications equipment circuits.
4. Intrusion detection and access control system circuits.
   c. Video surveillance system circuits.

SECTION 26 2513 LOW-VOLTAGE BUSWAYS

PART 1 PRODUCTS

1.01 BUSWAY SYSTEM

A. Provide new busway system consisting of all required components, fittings, devices, supports, accessories, etc. as necessary for a complete operating system.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Description: Prefabricated sectionalized enclosed bus assemblies and associated fittings and devices; listed and labeled as complying with UL 857.

D. Busway General Requirements:

1. Busway Type: Totally enclosed, non-ventilated; suitable for installation in any mounting orientation the busway is designed for (e.g horizontal flatwise, horizontal edgewise, vertical) without derating.
2. Temperature Rise: Not exceeding 55 degrees C, when operating at continuous rated current in an ambient temperature of 104 degrees F.
3. Busbars and stabs to be suitably plated at all electrical contact points.
4. Busbar Insulation: NEMA Class B, rated 266 degrees F.
5. Housing: Steel or aluminum, with manufacturer's standard finish unless otherwise indicated.
6. Single-Bolt Type Joints:
   a. Use torque-indicating bolts with visual indication that proper torque has been applied.
   b. Bolts to be at ground potential to allow adjustment without requiring de-energizing of busway.
   c. Designed such that tightening of joints only requires access to one side of busway.
   d. Allow for length adjustment of plus/minus 0.125 inch.

E. Short Circuit Current Rating:

1. Provide busway system and associated components with listed short circuit current rating not less than the available fault current at the installed location as determined by short circuit study performed in accordance with Section 26 0573.
2. Listed series ratings are acceptable, except where not permitted by motor contribution according to NFPA 70.
3. Label equipment utilizing series ratings as required by NFPA 70.

1.02 FEEDER BUSWAY

A. General Requirements:

1. Outdoor Feeder Busway: Weatherproof, NEMA 250 Type 3R, with sealed joint covers and drain holes with removable plugs.
2. Indoor Feeder Busway: Standard (not splash resistant), with IEC 60529 rating of IP 40.

B. Feeder Busway:

1. Voltage: As indicated on the drawings.
2. Ampere Rating: As indicated on the drawings.
3. Configuration: 3 phase, 3-wire (without neutral), with 50 percent capacity integral housing ground.
4. Busbar Material: Copper.

1.03 PLUG-IN BUSWAY

A. General Requirements:

1. Provide cover at each unused plug-in opening.
2. Provide means for mechanical support and alignment of plug-in units.
3. IEC 60529 Protection Rating: Standard (not splash resistant), with rating of IP 40.

B. Plug-In Busway:

1. Voltage: As indicated on the drawings.
2. Ampere Rating: As indicated on the drawings.
3. Configuration: 3 phase, 3-wire (without neutral), with 50 percent integral housing ground.
4. Busbar Material: Copper.
5. Plug-In Opening Spacing: 24 inches (610 mm) nominal between openings (openings on two sides).

1.04 PLUG-IN UNITS FOR PLUG-IN BUSWAY

A. Description: Plug-in units suitable for use with installed busway; types, ratings, configurations, and features as indicated on the drawings.

B. General Requirements:

1. Designed to make positive ground connection prior to phase/neutral connections when installed.
2. Where splash resistant busway is specified, provide splash resistant plug-in units with minimum IEC 60529 rating of IP 54 unless otherwise indicated.

C. Fusible Switch Plug-In Units:

1. Description: Quick-make, quick-break enclosed switch complying with NEMA KS 1 where applicable.
2. Provide hook stick operable handle with means for locking in the OFF position.
3. Provide safety interlock to prevent opening the cover with the unit in the ON position with capability of overriding interlock for testing purposes.
4. Provide mechanical interlock for plug-in units up to 250 A to prevent installation or removal with the unit in the ON position.
5. Horsepower Rating: Suitable for connected load.
6. Minimum Short Circuit Ratings:
   a. Switches Protected by Class R, Class J, or Class T Fuses: 100,000 rms symmetrical amperes.
7. Provide with switch blade contact position that is visible when the cover is open.
8. Fuse Clips: As required to accept fuses indicated.
   a. Where NEMA Class R fuses are installed, provide rejection feature to prevent installation of fuses other than Class R.
9. Conductor Terminations: Suitable for use with the conductors to be installed.
10. Provide insulated 100 percent capacity solid neutral assembly where a neutral connection is required, with a suitable lug for terminating each neutral conductor.
11. Provide solidly bonded equipment ground bus with suitable lug for terminating equipment grounding conductor.
12. Conductor Terminations:
   a. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.

SECTION 26 2726 WIRING DEVICES

PART 1 PRODUCTS

1.01 WIRING DEVICE APPLICATIONS

A. Provide wiring devices suitable for intended use and with ratings adequate for load served.

B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.

C. Provide weather resistant GFCI receptacles with specified weatherproof covers for receptacles installed outdoors or in damp or wet locations.

D. Provide tamper resistant receptacles for receptacles installed in dwelling units.

E. Provide GFCI protection for receptacles installed within 6 feet of sinks.

F. Provide GFCI protection for receptacles installed in kitchens.

G. Provide GFCI protection for receptacles serving electric drinking fountains.

H. Provide isolated ground receptacles for receptacles serving computers and electronic cash registers.

1.02 WALL SWITCHES

A. Wall Switches – General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable, FS W-S-896; types as indicated on the drawings.

1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.

B. Standard Wall Switches: Commercial specification grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

C. Momentary Contact Wall Switches: Commercial specification grade, 20 A, 120/277 V with toggle type three position switch actuator and momentary contacts; single pole double throw, off with switch actuator in center position.

1.03 WALL DIMMERS

A. Wall Dimmers – General Requirements: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 1472; types and ratings suitable for load controlled as indicated on the drawings.

B. Provide accessory wall switches to match dimmer appearance when installed adjacent to each other.

1.04 FAN SPEED CONTROLLERS

A. Description: 120 V AC, solid-state, full-range variable speed, slide control type with separate on/off switch, with integral radio frequency interference filtering, fan noise elimination circuitry, power failure preset memory, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 1917.

1.05 RECEPTACLES

A. Receptacles – General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.

1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.

B. Convenience Receptacles:

1. Standard Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
2. Isolated Ground Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R, with ground contacts isolated from mounting strap; isolated ground triangle mark on device face; single or duplex as indicated on the drawings.
3. Weather Resistant Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations; single or duplex as indicated on the drawings.
4. Tamper Resistant Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R, listed and labeled as tamper resistant type; single or duplex as indicated on the drawings.

C. GFCI Receptacles:

1. GFCI Receptacles – General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.

1.06 WALL PLATES

A. Wall Plates: Comply with UL 514D.

1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.

B. Weatherproof Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.

1.07 FLOOR BOX SERVICE FITTINGS

A. Description: Service fittings compatible with floor boxes provided under Section 26 0533.16 with components, adapters, and trims required for complete installation.

1.08 POKE-THROUGH ASSEMBLIES

A. Description: Assembly comprising floor service fitting, poke-through component, fire stops and smoke barriers, and junction box for conduit termination; fire rating listed to match fire rating of floor and suitable for floor thickness where installed.

PART 2 EXECUTION

2.01 EXAMINATION

A. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.

2.02 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

2.03 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of wiring devices provided under this section.

1. Where multiple receptacles, wall switches, or wall dimmers are installed at the same location and at the same mounting height, gang devices together under a common wall plate.
2. Locate wall switches on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.

B. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.

C. For isolated ground receptacles, connect wiring device grounding terminal only to identified branch circuit isolated equipment grounding conductor. Do not connect grounding terminal to outlet box or normal branch circuit equipment grounding conductor.

D. Provide GFCI receptacles with integral GFCI protection at each location indicated. Do not use feed-through wiring to protect downstream devices.

E. Do not share neutral conductor on branch circuits utilizing wall dimmers.

F. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.

G. G. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

SECTION 26 2813 FUSES

PART 1 PRODUCTS

1.01 APPLICATIONS

A. Service Entrance:

1. Fusible Switches up to 600 Amperes: Class RK1, time-delay.
2. Fusible Switches Larger Than 600 Amperes: Class L, time-delay.

B. Feeders:

1. Fusible Switches up to 600 Amperes: Class RK1, time-delay.
2. Fusible Switches Larger Than 600 Amperes: Class L, time-delay.

C. General Purpose Branch Circuits: Class RK1, time-delay.

Section 26 2816.13 Enclosed Circuit Breakers

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 26 0526 – Grounding and Bonding for Electrical Systems.

B. Section 26 0529 – Hangers and Supports for Electrical Systems.

C. Section 26 0553 – Identification for Electrical Systems: Identification products and requirements.

D. Section 26 0573 – Power System Studies: Additional criteria for the selection and adjustment of equipment and associated protective devices specified in this section.

1.02 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate work with other trades. Avoid placement of ductwork, piping, equipment, or other potential obstructions within dedicated equipment spaces and within working clearances for electrical equipment required by NFPA 70.
2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
3. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.03 SUBMITTALS

A. See Section 01 3000 – Administrative Requirements, for submittal procedures.

1.04 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.

B. Handle carefully in accordance with manufacturer's written instructions to avoid damage to enclosed circuit breaker internal components, enclosure, and finish.

1.06 FIELD CONDITIONS

A. Maintain ambient temperature between 23 degrees F and 104 degrees F during and after installation of enclosed circuit breakers.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Eaton Corporation; www.eaton.com/#sle.

B. Schneider Electric; Square D Products; www.schneider-electric.us/#sle.

C. Substitutions: See Section 01 6000 – Product Requirements.

D. Source Limitations: Furnish enclosed circuit breakers and associated components produced by the same manufacturer as the other electrical distribution equipment used for this project and obtained from a single supplier.

2.02 ENCLOSED CIRCUIT BREAKERS

A. Description: Units consisting of molded case circuit breakers individually mounted in enclosures.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:

1. Altitude: Less than 6,600 feet.
2. Ambient Temperature: Between 23 degrees F and 104 degrees F.

D. Short Circuit Current Rating:

1. Provide enclosed circuit breakers with listed short circuit current rating not less than the available fault current at the installed location as determined by short circuit study performed in accordance with Section 26 0573.
2. Listed series ratings are acceptable except where not permitted by motor contribution according to NFPA 70.
3. Label equipment utilizing series ratings as required by NFPA 70.

E. Enclosed Circuit Breakers Used for Service Entrance: Listed and labeled as suitable for use as service equipment according to UL 869A.

F. Conductor Terminations: Suitable for use with the conductors to be installed.

G. Provide thermal magnetic circuit breakers unless otherwise indicated.

H. Provide solidly bonded equipment ground bus in each enclosed circuit breaker, with a suitable lug for terminating each equipment grounding conductor.

I. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.

1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:

J. Provide externally operable handle with means for locking in the OFF position.

K. Ground Fault Protection: Where ground-fault protection is indicated, provide system listed and labeled as complying with UL 1053.

1. Where electronic circuit breakers equipped with integral ground fault protection are used, provide separate neutral current sensor where applicable.
2. Where accessory ground fault sensing and relaying equipment is used, equip companion circuit breakers with ground-fault shunt trips.
   a. Use zero sequence ground fault detection method unless otherwise indicated.
   b. Provide test panel and field-adjustable ground fault pick-up and delay settings.

2.03 MOLDED CASE CIRCUIT BREAKERS

A. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.

B. Interrupting Capacity:

1. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated.
2. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
3. Series Rated Systems: Provide circuit breakers listed in combination with upstream devices to provide interrupting rating not less than the short circuit current rating indicated.

C. Conductor Terminations:

1. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.

D. Thermal Magnetic Circuit Breakers: For each pole, furnish thermal inverse time tripping element for overload protection and magnetic instantaneous tripping element for short circuit protection.

E. Electronic Trip Circuit Breakers: Furnish solid state, microprocessor-based, true rms sensing trip units.

1. Provide the following field-adjustable trip response settings:
   a. Ground fault pickup and delay where ground fault protection is indicated.

F. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.

G. Provide the following circuit breaker types where indicated:

1. Ground Fault Circuit Interrupter (GFCI) Circuit Breakers: Listed as complying with UL 943, class A for protection of personnel.
2. Ground Fault Equipment Protection Circuit Breakers: Designed to trip at 30 mA for protection of equipment.
3. Current Limiting Circuit Breakers: Without using fusible elements, designed to limit the let-through energy to a value less than the energy of a one-half cycle wave of the symmetrical prospective current when operating within its current limiting range.

H. Provide the following features and accessories where indicated or where required to complete installation:

1. Shunt Trip: Provide coil voltage as required for connection to indicated trip actuator.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that the ratings of the enclosed circuit breakers are consistent with the indicated requirements.

B. Verify that mounting surfaces are ready to receive enclosed circuit breakers.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

D. Provide required support and attachment in accordance with Section 26 0529.

E. Install enclosed circuit breakers plumb.

F. Install flush-mounted enclosed circuit breakers so that trims fit completely flush to wall with no gaps and rough opening completely covered.

G. Except where indicated to be mounted adjacent to the equipment they supply, mount enclosed circuit breakers such that the highest position of the operating handle does not exceed 79 inches above the floor or working platform.

H. Provide grounding and bonding in accordance with Section 26 0526.

I. Where accessories are not self-powered, provide control power source as indicated or as required to complete installation.

J. Set field-adjustable ground fault protection pickup and time delay settings as indicated.

3.03 FIELD QUALITY CONTROL

A. Ground Fault Protection Systems: Test in accordance with manufacturer's instructions as required by NFPA 70.

B. Test GFCI circuit breakers to verify proper operation.

C. Test shunt trips to verify proper operation.

D. Correct deficiencies and replace damaged or defective enclosed circuit breakers.

3.04 ADJUSTING

A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

SECTION 26 2816.16 ENCLOSED SWITCHES

PART 1 PRODUCTS

1.01 ENCLOSED SAFETY SWITCHES

A. Description: Quick-make, quick-break enclosed safety switches listed and labeled as complying with UL 98; heavy duty; ratings, configurations, and features as indicated on the drawings.

B. Enclosed Safety Switches Used for Service Entrance: Listed and labeled as suitable for use as service equipment according to UL 869A.

C. Provide safety interlock to prevent opening the cover with the switch in the ON position with capability of overriding interlock for testing purposes.

SECTION 26 5100 INTERIOR LIGHTING

PART 1 GENERAL

1.01 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate the installation of luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.
2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
3. Coordinate the placement of exit signs with furniture, equipment, signage or other potential obstructions to visibility installed under other sections or by others.
4. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.02 SUBMITTALS

A. Shop Drawings:

1. Provide photometric calculations and comparitive pricing where luminaires are proposed for substitution upon request.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.

PART 2 PRODUCTS

2.01 LUMINAIRE TYPES

A. Furnish products as indicated in luminaire schedule included on the drawings.

B. Substitutions: Equivalent products, except where individual luminaire types are designated with substitutions not permitted. Submit comparitive pricing with all fixture substitutions..

2.02 LUMINAIRES

A. Manufacturers:

1. Acuity Brands, Inc: www.acuitybrands.com/#sle.
2. Cooper Lighting, a division of Cooper Industries: www.cooperindustries.com/#sle.
3. Hubbell Lighting, Inc: www.hubbelllighting.com/#sle.
4. Philips Lighting North America Corporation; www.lightingproducts.philips.com/#sle.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.

D. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.

E. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

F. Hazardous (Classified) Location Luminaires: Listed and labeled as complying with UL 844 for the classification of the installed location.

G. LED Luminaires:

1. Tested in accordance with IES LM-79 and IES LM-80.

H. Track Lighting Systems: Provide track compatible with specified track heads, with all connectors, power feed fittings, dead ends, hangers and canopies as necessary to complete installation.

I. Luminaires Mounted in Continuous Rows: Provide quantity of units required for length indicated, with all accessories required for joining and aligning.

2.03 EMERGENCY LIGHTING UNITS

A. Manufacturers:

1. Acuity Brands, Inc: www.acuitybrands.com/#sle.
2. Cooper Lighting, a division of Cooper Industries; www.cooperindustries.com/#sle.
3. Hubbell Lighting, Inc: www.hubbelllighting.com/#sle.
4. Substitutions: See Section 01 6000 – Product Requirements.

B. Description: Emergency lighting units complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.

C. Operation: Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes of rated emergency illumination, and automatically recharges battery upon restoration of normal power source.

D. Battery:

1. Sealed maintenance-free lead calcium unless otherwise indicated.
2. Size battery to supply all connected lamps, including emergency remote heads where indicated.

E. Diagnostics: Provide power status indicator light and accessible integral test switch to manually activate emergency operation.

F. Provide low-voltage disconnect to prevent battery damage from deep discharge.

G. Self-Diagnostics: Provide units that self-monitor functionality and automatically perform testing required by NFPA 101 where indicated; provide indicator light(s) to report test and diagnostic status.

2.04 EXIT SIGNS

A. Manufacturers – Powered and Self-Luminous Signs:

1. Acuity Brands, Inc; www.acuitybrands.com/#sle.
2. Cooper Lighting, a division of Cooper Industries; www.cooperindustries.com/#sle.
3. Hubbell Lighting, Inc; www.hubbelllighting.com/#sle.

B. Description: Internally illuminated exit signs with LEDs unless otherwise indicated; complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.

1. Number of Faces: Single or double as indicated or as required for the installed location.
2. Directional Arrows: As indicated or as required for the installed location.

C. Self-Powered Exit Signs:

1. Operation: Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes of rated emergency illumination, and automatically recharges battery upon restoration of normal power source.
2. Battery: Sealed maintenance-free nickel cadmium unless otherwise indicated.
3. Diagnostics: Provide power status indicator light and accessible integral test switch to manually activate emergency operation.
4. Provide low-voltage disconnect to prevent battery damage from deep discharge.
5. Self-Diagnostics: Provide units that self-monitor functionality and automatically perform testing required by NFPA 101 where indicated; provide indicator light(s) to report test and diagnostic status.

D. Accessories:

1. Provide compatible accessory high impact polycarbonate vandal shields where indicated.
2. Provide compatible accessory wire guards where indicated.

2.05 BALLASTS AND DRIVERS

A. Manufacturers:

1. General Electric Company/GE Lighting: www.gelighting.com/#sle.
2. Lutron Electronics Company, Inc; www.lutron.com/#sle.
3. OSRAM Sylvania, Inc; www.osram.us/ds/#sle.
4. Philips Lighting North America Corporation; www.usa.lighting.philips.com/#sle.
5. Where a specific manufacturer or model is indicated elsewhere in the luminaire schedule or on the drawings, substitutions are not permitted unless explicitly indicated.

B. Ballasts/Drivers – General Requirements:

1. Provide ballasts containing no polychlorinated biphenyls (PCBs).
2. Minimum Efficiency/Efficacy: Provide ballasts complying with all current applicable federal and state ballast efficiency/efficacy standards.

C. Dimmable LED Drivers:

1. Dimming Range: Continuous dimming from 100 percent to five percent relative light output unless dimming capability to lower level is indicated, without flicker.
2. Control Compatibility: Fully compatible with the dimming controls to be installed.

2.06 LAMPS

A. Manufacturers:

1. General Electric Company/GE Lighting; www.gelighting.com/#sle.
2. Osram Sylvania; www.sylvania.com/#sle.
3. Substitutions: See Section 01 6000 – Product Requirements.
4. Manufacturer Limitations: Where possible, provide lamps produced by a single manufacturer.
5. Where a specific manufacturer or model is indicated elsewhere in the luminaire schedule or on the drawings, substitutions are not permitted unless explicitly indicated.

B. Lamps – General Requirements:

1. Unless explicitly excluded, provide new, compatible, operable lamps in each luminaire.
2. Verify compatibility of specified lamps with luminaires to be installed. Where lamps are not specified, provide lamps per luminaire manufacturer's recommendations.
3. Minimum Efficiency: Provide lamps complying with all current applicable federal and state lamp efficiency standards.
4. Color Temperature Consistency: Unless otherwise indicated, for each type of lamp furnish products which are consistent in perceived color temperature. Replace lamps that are determined by the Architect to be inconsistent in perceived color temperature.

2.07 LED RETROFIT LUMINAIRE CONVERSION KITS

A. Description: Light-emitting diode (LED) retrofit luminaire conversion kits, including but not limited to LED lamps and arrays, control modules, drivers, power supplies, wiring, lampholders, brackets, wire connectors, reflectors, and diffusers, intended for replacement of existing light sources in existing luminaires; listed as complying with UL 1598C; suitable for installation in luminaire to be converted.

PART 3 EXECUTION

3.01 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of luminaires provided under this section.

B. Install products in accordance with manufacturer's instructions.

C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) and NECA 502 (industrial lighting).

D. Provide required support and attachment in accordance with Section 26 0529.

E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.

F. Suspended Ceiling Mounted Luminaires:

1. Do not use ceiling tiles to bear weight of luminaires.
2. Do not use ceiling support system to bear weight of luminaires unless ceiling support system is certified as suitable to do so.

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PROFESSIONAL ENGINEER
8/11/21

PetPeople

SUMMIT AT WEST PRYOR
940 NW PRYOR RD, SPACE 7
LEE'S SUMMIT (KANSAS CITY), MO

Project No.:	18894
Drawn By:	XXX
Date	Issue
07/19/2021	Bid/ Permit

E4.1

FLOOR PLAN

3. Secure lay–in luminaires to ceiling support channels using listed safety clips at four corners.
4. See appropriate Division 9 section where suspended grid ceiling is specified for additional requirements.

G. Recessed Luminaires:
1. Install trims tight to mounting surface with no visible light leakage.
2. Non–IC Rated Luminaires: Maintain required separation from insulation and combustible materials according to listing.
3. Luminaires Recessed in Fire–Rated Ceilings: Install using accessories and firestopping materials to meet regulatory requirements for fire rating.

H. Suspended Luminaires:
1. Unless otherwise indicated, specified mounting heights are to bottom of luminaire.
2. Install using the suspension method indicated, with support lengths and accessories as required for specified mounting height.
3. Provide minimum of two supports for each luminaire equal to or exceeding 4 feet nominal length, with no more than 4 feet between supports.
4. Install canopies tight to mounting surface.
5. Unless otherwise indicated, support pendants from swivel hangers.

I. Wall–Mounted Luminaires: Unless otherwise indicated, specified mounting heights are to center of luminaire.

J. Install accessories furnished with each luminaire.

K. Bond products and metal accessories to branch circuit equipment grounding conductor.

L. Emergency Lighting Units:
1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.
2. Install lock–on device on branch circuit breaker serving units.

M. Exit Signs:
1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.
2. Install lock–on device on branch circuit breaker serving units.

N. Remote Ballasts: Install in accessible location as indicated or as required to complete installation, using conductors per manufacturer's recommendations not exceeding manufacturer's recommended maximum conductor length to luminaire.

O. Identify luminaires connected to emergency power system in accordance with Section 26 0553.

P. Install lamps in each luminaire.

3.02 ADJUSTING

A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.

B. Aim and position adjustable emergency lighting unit lamps to achieve optimum illumination of egress path as required or as directed by Architect or authority having jurisdiction.

C. Exit Signs with Field–Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Architect or authority having jurisdiction.

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FLOOR PLAN