

Sundance Plaza Bldg. B
 Project Start Date: 12/18/2017
 Project End Date: 12/22/2017
 Project Location: 255 Anglers Drive, Steamboat Springs, CO 80477
 Project No: 12/22/2017-11-3002-AM
 By: DWIGHT E. CRANFORD
 Date: 12/22/2017 11:30:22 AM
 Project Name: Sundance Plaza Bldg. B
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 Project Location: 255 Anglers Drive, Steamboat Springs, CO 80477

Land Title Guarantee Company

R C R B D
RECORD SET

Abbreviations	
Ø	diameter
A	ampere
AVC	air conditioning
AV	audio/visual
ADA	Americans with Disabilities Act
AF	above finished floor
alt	alternate
amp	ampere
approx	approximately
C	conduit
CKT	circuit
cg	ceiling
cl	clear
const	construction
d	depth/ deep
dia	diameter
djm	dimension
DN	down
DW	dishwasher
E	existing (device or fixture to remain)
Elev	elevator
eq	equal
EW	electric water cooler
EWV	electric water heater
F.D	floor drain
F.E	fire extinguisher
FIA	fire alarm
FHC	fire extinguisher cabinet
FEC	fire hose connection
fin	finish or finished
ga	gauge
gyp	gypsum board
h	height/ high
H.C	hollow core
H.M	hollow metal
HVAC	heating, ventilating, air conditioning
I.F	inside face
IT	information technology
Jan	janitor(s) / janitorial
J-Box	junction box
L	length/ long
mfd	manufactured
mil	millimeter
mm	millimeter
min	minimum or minute (per context)
mm	millimeter
mw	microwave
N	new (device or fixture)
NIC	not in contract
nom	nominal
NTS	not to scale
O.C	on center
O.H	opposite hand
Occ	occupants
oz	ounces
P.Lam	plastic laminate
R	relocated (device or fixture)
RO	rough opening
Re	refer to
reqd	required
R/A	return air
RM	room
RSF	Rentable Square Feet
S.C	solid core
S.M	surface mounted
S.St	stainless steel
S/A	supply air
SDT	static dissipative tile
SF	square feet
sim	similar
sq yd	square yard
std	standard
T.O	throughout
TBD	to be determined
th	thickness/ thick
typ	typical
U.L	Underwriters Laboratory
UNO	unless noted otherwise
USF	Usable Square Feet
V	volt
VCT	vinyl composition tile
VIF	verify in field
w	width/ wide
W.S	work station
w/	with
WC	wallcovering
WF	water fountain

General Notes

- GENERAL STANDARDS:** All work defined herein shall be constructed in accordance with the approved drawings and specifications and shall be in compliance with all applicable codes, ordinances, and regulations. Work performed in the shop or on-site shall be performed by mechanics, craftsmen and workers skilled and experienced in the fabrication and installation of the work involved. The work shall be performed in accordance with the best established practices of the industry standard for the trade involved.
- FEES AND PERMITS:** The General Contractor shall obtain all licenses and permits required by the agencies, not withstanding licenses and permits that may be required by respective subcontractors. The cost of said licenses and permits shall be incurred by that contractor responsible for the procurement of same.
- DRAWINGS AND SPECIFICATIONS:** The General Contractor shall maintain a complete and current set of project documents, drawings and specifications on the job site at all times and shall include all approved shop drawings and submittals. The General Contractor shall be responsible for distribution of adequate copies of all drawings and specifications to all applicable trades. Upon completion of the work, the General Contractor shall submit one complete set of red-lined drawings to TPS indicating any and all changes, omissions, or modifications made.
- ENGINEERED DRAWINGS:** Refer to structural, mechanical, electrical and plumbing drawings (when provided) for detailed design of the structural, mechanical, electrical, and plumbing systems. Portions of this work may be shown on the architectural drawings for reference to, and in coordination with, other work.
 - When indicated on the drawings, the General Contractor shall provide engineering drawings on a design/build basis for mechanical systems, electrical systems, and plumbing. Provide one copy of all drawings to TPS for review prior to construction.
 - The General Contractor is responsible for required permits and approvals necessary for the work as described above. Precedence: the architectural drawings shall provide the engineered drawings (if provided) relative to device and fixture locations.
- OMISSIONS AND DISCREPANCIES:** The General Contractor shall field verify all conditions and dimensions shown on the drawings, and shall notify TPS of any discrepancies, omissions or conflicts prior to commencing with construction.
- MATERIALS:** Unless otherwise specified, all materials shall be new, unused, and in compliance with the specifications set forth in these documents. All materials used throughout the project shall be of the same brand name and quality for consistency. All materials must meet the ASTM and ANSI standards and be in compliance with all applicable codes, ordinances and regulations. Unless authorized in writing by the owner or its representative, no existing fixture, device or component shall be removed from adjacent areas or buildings to facilitate this project.
- MATERIAL INVENTORY:** Upon award of the construction contract, and when building materials are stocked and made available for the project, coordinate with the Building Representative for purchase of materials. All materials shall be bid as new. Do not assume use of materials from building stock.
- SUBMITTALS/DEVIATIONS:** No substitutions, variations and deviations from these documents shall be permitted without prior approval of TPS, the Building and/or Tenant's Representative. Application for any substitutions and/or variations shall be submitted to TPS by the General Contractor for approval. Application shall be made in writing accompanied with product specifications and/or samples. Five complete sets of submittals are required.
- SHOP DRAWINGS:** When requested on the drawings, the General Contractor shall prepare, review, approve and submit shop drawings to TPS. The General Contractor shall check and coordinate all product data and samples and verify all materials, field measurements and related field construction criteria contained in such submittal conforms to the requirements of the work, and the contract documents. Five complete sets of submittals are required.
- SUBCONTRACTORS:** The General Contractor shall coordinate and review the work of all subcontractors, trades and suppliers, and to make known all requirements of the contract documents, and to assure that all parties are fully aware of the requirements, regardless of whether the requirements occur in the contract documents, which might affect the work of that party. Subcontractors shall conform to the following:
 - Subcontractors shall coordinate all installations, schedules, locations, decisions, sizes, and resolve all conflicts and interferences of their trade with other trades.
 - Subcontractors shall be responsible for coordinating routes of water, sprinkler, mechanical and electrical services.
 - Light fixtures, fittings, diffusers, ducts, sprinkler heads, etc. as depicted on the drawings, both above and below the ceiling, which conflict with any existing services shall be reworked immediately when it becomes apparent that a conflict will prevail. All costs incurred by the General Contractor or other subcontractors for failure to report conflicts immediately shall be borne by the contractor.
- TENANT VENDORS:** The General Contractor shall be responsible for coordinating with the Tenant and the Tenant's vendors for scheduling and providing access to the space for the Tenant's movable partition systems, communications/ data processing systems, security systems, and audio/ video systems.
- INSPECTIONS:** The General Contractor shall permit and facilitate inspection, by the owner and the architect or their representatives, during the course of construction.
- TENANT RESPONSIBILITIES:** Unless specified otherwise in the contract documents, the following items are not a part of these drawings and if so desired shall be provided by the Tenant.
 - Furnishings, files and accessories
 - Portable or movable office partitions
 - Racks, bins, prefabricated shelving systems
 - Coffee makers, microwaves, refrigerators, vending machines
 - Copy/fax equipment and computer equipment
 - Security systems, sound systems, intercom systems
 - Telephone equipment including wiring/cabling
 - Clocks, time clocks
 - Connection of all equipment, furnishings and panels
 - Moving or relocation of Tenant's furnishings, fixtures, and equipment
 - Schedule and coordination of Tenant's vendors
- PROTECTION:** The General Contractor shall protect the work, adjacent space/property, common areas, public utilities, and the public, and shall be responsible for any damage or injury due to neglect. Protection shall include but not be limited to the following:
 - Draw window coverings and wrap or bag with plastic for dust protection.
 - Provide plywood or masonite floor protection with tape sealed joints completely along routes used for delivery and removal of materials.
 - Provide and/or use protective pads at designated freight elevator cab walls and around openings.
 - When necessary, x-ray the floor slab to confirm locations of objects embedded in the concrete prior to making any penetrations in the slab.
- DAMAGES:** Should the General Contractor or any associated subcontractor cause damage to any adjacent fixture or structure while completing or cleaning current construction, that contractor or subcontractor shall be responsible for repair or replacement of said damaged fixture or structure.
- INSURANCE:** The General Contractor shall purchase and maintain certificates of insurance with respect to workers compensation, public liability and property damage for the limits as required by law. The certificates shall name the client and Tenant Planning Services, Inc. as additional insured. The General Contractor and subcontractors performing work on-site shall conform to the Landlord's insurance requirements.
- GUARANTEE/WARRANTY:** The General Contractor shall enforce a specific and unconditional warranty on all materials, workmanship, equipment, fixtures and sub-assemblies subject to normal use and maintenance for a period not to exceed one (1) year from date of substantial completion. Said warranty shall not be exclusive of implied or specific warranties enforced by manufacturers and/or suppliers of aforementioned materials, equipment, fixtures and/or sub-assemblies.
- SECURITY:** The General Contractor shall be responsible for securing and controlling access to the job site during construction and for disconnecting power and lighting when not in use.
- INTERRUPTION OF SERVICES:** All work requiring dangerous, toxic, or noisy operations and installations which might affect the operation of the existing tenants shall be performed during non-business hours. Coordinate with Building Management.
- HAZARDOUS MATERIALS:** TPS has no knowledge of, and shall not be held liable for, any asbestos or other hazardous materials on the project site. Prior to commencing with the work on-site, it shall be the responsibility of the General Contractor to inspect and make a good faith effort to identify the presence of asbestos, toxic or other hazardous materials. Should hazardous materials be discovered at any time before or during construction, stop the work immediately and report to the Building Management for further instructions before proceeding.
- BUILDING RULES AND REGULATIONS:** The General Contractor shall be responsible for consulting with the Building Representative for rules and regulations governing the building and pertaining to deliveries, removal of materials and debris, use of building facilities, noise restrictions, protection of existing conditions, hours of operation, building access, etc.

Definitions

- Approve:** where used in conjunction with TPS's or its consultant's response to submittals, requests, applications, inquiries, reports and claims by the contractor, the meaning of the term 'approve' will be held to the impositions of TPS's responsibilities and duties as specified in the general conditions and supplementary conditions. In no case will 'approved' by TPS be interpreted as an assurance to the contractor that the requirements of the contract documents have been fulfilled.
- Furnish:** except as otherwise defined in greater detail, the term 'furnish' is used to mean to supply and deliver to the project site, ready for unloading, unpacking, assembly and installation, etc. as applicable in each instance.
- Install:** except as otherwise defined in greater detail, the term 'install' is used to describe operations at the project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finish, curing protection, cleaning and similar operations, as applicable in each instance.
- Provide:** except as otherwise defined in greater detail, the term 'provide' means to furnish and install, complete and ready for the intended use as applicable in each instance.
- Products:** defined as products which must be substantially cut, shaped, worked, mixed, furnished, refined otherwise fabricated, processed, installed or applied to form units of work.
- Equipment:** defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including connections (wiring, piping, etc.).
- Typical:** 'typical' or 'typ' means identical for all similar conditions.
- Similar:** 'similar' or 'sim' means comparable to characteristics for the condition noted. Verify dimensions and orientation on plan.
- As required:** 'as required' means as required by regulatory requirements, by referenced standards, by existing conditions, by generally accepted construction practice, or by the contract documents.
- Align:** 'align' means accurately locate finish faces of materials in same plane.
- Relocate:** means to reuse a particular device, fixture, or item in a new location.
- Remove:** to continue unchanged.
- Reused:** to use again especially in a new way or in a new location.

Project Alternates

22. **CLEANING:** The General Contractor shall clean the job site and adjoining areas during construction and upon completion. Cleaning includes, but is not limited to, vacuuming carpet, wet mopping floor tile and other resilient flooring, cleaning all glass, including interior side of exterior glazing, dusting and wiping clean all lint and soiled areas on doors, millwork window coverings, baseboards, etc., removing all construction debris, scraps, materials and equipment, and water seal marble, granite and ceramic tile and grout.

23. **FIRE RESISTIVE STANDARDS:** Conform to the following:

- Materials and assemblies required to be fire resistive shall bear a label affixed to the product indicating fire resistive rating and testing agency with approved test certification number.
- All blocking and nailer strips used in connection with fire resistive partitions shall be fire retardant wood as defined by the Building Code.
- All concealed wood shall be treated with an approved fire retardant.
- Fire ratings of existing materials and/or systems which may become damaged or obscured due to the work shall be maintained with a fire rating equal to or greater than the existing rating.
- Fire-rated partitions and floor/ceilings shall be sealed in accordance with a U.L. listed "fire stop" compatible with the material and fire rating required.
- Flame-spread minimum ratings for flame spread shall be as follows:
 - 23.6.1. Enclosed vertical exits: Class I (0-25 F.S.I.)
 - 23.6.2. Other exit ways: Class II (26-75 F.S.I.)
 - 23.6.3. Rooms or areas: Class III (76-200 F.S.I.)

24. **ARCHITECTURAL WOODWORK:** Provide architectural woodwork as specified on the drawings. The "quality standards" of the architectural woodwork institute shall apply and hereby made a part of this document. All pre-fabricated work shall be economy grade. All other work shall be custom grade as defined by the quality standards of the AIA, unless noted otherwise.

25. **SURFACE PREPARATION:** Inspect existing conditions of all floor and wall surfaces for fill holes, cracks, and other damages and make repairs. Grind and/or fill imperfections. The General Contractor shall provide budget for floor prep as required. The General Contractor shall provide RH on moisture testing for any concrete locations less than one year old and for all slab on grade (regardless of age) locations.

26. **CLEARANCES:** The General Contractor shall verify ceiling height and clearances above ceiling to the underside of structure above for installation of ductwork and diffusers, conduits and junction boxes, fire sprinkler pipes and heads, and light fixtures. All work shall be coordinated by all trades to avoid interference with methods of installation. Notify TPS of conflicts immediately and prior to commencing with construction.

27. **FIRE SPRINKLER SYSTEM:** In buildings equipped with fire sprinkler systems, furnish all labor, materials, fixtures, trim, equipment and services necessary for the installation of a complete and properly functioning fire sprinkler system. All work shall conform to the following:

- Relocate and/or add fire sprinkler heads as required for new conditions as shown on the drawings.
- Rework and/or add to existing pipes, fittings, hangers and support as necessary for new sprinkler head locations.
- Design standards, materials and workmanship shall be comparable with existing conditions.
- Install new sprinkler head locations in the center of the ceiling grid or section and symmetrical throughout rooms and open areas.

28. **FIRE EXTINGUISHERS:** Provide portable, wall mounted fire extinguishers every 75' of exit travel distance throughout limit of construction or as required by the local fire department or life safety department. Portable fire extinguishers shall comply with uniform fire code standard 10-1.

29. **PLUMBING SYSTEM:** Furnish all labor, materials, fixtures, trim, equipment and services necessary for the installation of a complete and properly functioning plumbing system. All work shall conform to the following:

- Refer to drawings for specific information pertaining to materials, fixtures, etc. scheduled as new and not contained herein.
- Re-use existing plumbing piping and/or fixtures and components where possible. Inspect and confirm existing conditions are within specifications.
- New materials shall be compatible with existing conditions, where possible.
- Provide fixtures with all anchors, supports, traps and trim, for a complete installation.
- Provide stop valves on all hot and cold water connections to fixtures.
- Caulk around all fixtures with silicone based caulking compound.
- Install all fixtures level and square with surrounding walls, floors and ceilings.
- Install escutcheons for all pipes exposed to view passing through walls, floors and ceilings.
- Provide templates or cut-outs of fixtures to the millwork subcontractor for cutting of openings.
- All materials and workmanship shall be in compliance with state and local codes and ordinances, and the Americans with Disabilities Act (ADA).

30. **HVAC SYSTEM:** Furnish all labor, materials, fixtures, trim, equipment and services necessary for the installation of a complete and properly functioning HVAC system. All work shall conform to the following:

- Standards, all standards and specifications established in the base building construction documents, or as evidenced in the existing conditions of construction shall govern, unless noted otherwise. All work shall be coordinated with the building maintenance manager. Refer to base building construction documents and specifications and existing conditions of system for equipment or materials not specified on the engineered drawings or contained herein. All materials and workmanship shall be in compliance with ASHRAE and SMACNA, state and local codes and ordinances, and the Americans with Disabilities Act (ADA).
- Repairs and replacement: the contractor shall verify proper operation of existing ductwork for breaks and leaks. In the event that the contractor has observed system failure or defects, notify the Owner's construction manager immediately for further direction. For bid purposes, it shall be assumed that all HVAC equipment and associated ductwork and components are in proper operating condition. Repairs or replacement of materials and workmanship shall be performed as a separate portion of the work.
- Abandoned equipment: all abandoned HVAC equipment and components within the area of construction shall be removed and all duct connections patched, capped and/or sealed.
- Fire dampers shall be installed in all ducts which penetrate fire resistive partitions (one-hour rated and above). Fire dampers shall be 100% free area design.
- Return air plenums: allow for transfer of air above Tenant demising partitions and spaces continuously and unobstructed to the building system return air shaft. Refer to engineered drawings (if provided) and detailed drawings for wall construction and opening size. During construction, the contractor shall place temporary filters over openings to the return air shaft. Remove filters upon completion of construction. Coordinate this work with the building maintenance manager.
- Thermostats: locate thermostats so as not to interfere with the occupants' furnishings and systems, avoiding locations in the middle of walls, in traffic areas, in file/supply rooms, etc.
- Air testing, adjusting, and balancing: adjust and balance terminal units, diffusers, dampers and registers to provide design condition air flow or to the air quantities shown on the drawings (if provided). Balance work shall be performed in accordance with NEBB standards by a certified contractor. Submit a balancing report to TPS. Calibrate and adjust all thermostats.

31. **FIRE/SMOKE ALARM SYSTEMS:** In buildings equipped with fire and/or smoke alarm systems, furnish all labor, materials, fixtures, trim, equipment and services necessary for the installation of a complete and properly functioning fire/smoke alarm system. All work shall conform to the following:

- Relocate and/or add fire alarms, smoke or heat detectors, strobe alarms, pull stations, remote indicator lights and other components of the system as required for new conditions of the space.
- Rework systems to be compatible with existing design standards and conditions.
- Locations and specifications of alarms shall comply with the Americans with Disabilities Act (ADA).

32. **ELECTRICAL SYSTEM:** Furnish all labor, materials, fixtures, trim, equipment and services necessary for the installation of a complete and properly functioning electrical system. All work shall conform to the following:

- Standards, all standards and specifications established in the base building construction documents, or as evidenced in the existing conditions of construction shall govern, unless noted otherwise. All work shall be coordinated with the building maintenance manager. Refer to base building construction documents and specifications and existing conditions of system for equipment or materials not specified on the engineered drawings or contained herein.
- All materials and workmanship shall be in compliance with the national electric code (NEC), state and local codes and ordinances, and the Americans with Disabilities Act (ADA).
- Repairs and replacement: the contractor shall verify proper operation of existing panels and switch-gear. In the event that the contractor has observed system failure or defects, notify the Owner's construction manager immediately for further direction. For bid purposes, it shall be assumed that all equipment and associated components are in proper operating condition. Repairs or replacement of materials and workmanship shall be performed as a separate portion of the work.
- Panel: provide new typed panel circuit directory for each panel affected.

Dimensional Conventions

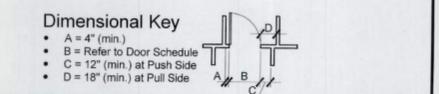
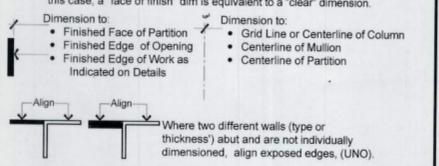
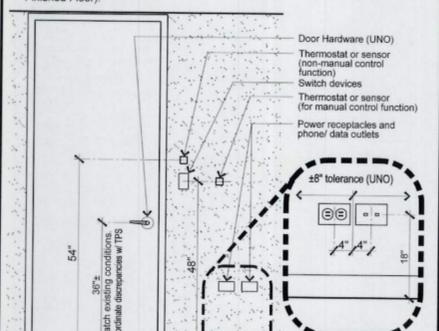
- Except where directed to place items of the work at the "approximate location shown", do not scale drawings for dimensional information. All elements of the drawings may not be drawn to exact scale. All dimensions required are shown, or may be derived from those shown on the floor plans, detail plans, elevations, sections, details, schedules, and specifications. See notes on this sheet and symbols on the "Architectural Symbols" drawing for dimensions conventions used on this project.
- Do not scale drawings, dimensions shall govern, details shall govern over plans and elevations. Large scale plans shall govern over small scale plans. Large scale details shall govern over small scale details. If unable to locate dimensions for any item of work, consult the Architect prior to construction.
- All heights are dimensioned from top of existing slab unless noted "AFF". (Above Finished Floor).

- Refer to drawings for specific information pertaining to materials, fixtures, etc. scheduled as new and not contained herein.
- Re-use existing plumbing piping and/or fixtures and components where possible. Inspect and confirm existing conditions are within specifications.
- New materials shall be compatible with existing conditions, where possible.
- Provide fixtures with all anchors, supports, traps and trim, for a complete installation.
- Provide stop valves on all hot and cold water connections to fixtures.
- Caulk around all fixtures with silicone based caulking compound.
- Install all fixtures level and square with surrounding walls, floors and ceilings.
- Install escutcheons for all pipes exposed to view passing through walls, floors and ceilings.
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- All materials and workmanship shall be in compliance with state and local codes and ordinances, and the Americans with Disabilities Act (ADA).

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- Thermostats: locate thermostats so as not to interfere with the occupants' furnishings and systems, avoiding locations in the middle of walls, in traffic areas, in file/supply rooms, etc.
- Air testing, adjusting, and balancing: adjust and balance terminal units, diffusers, dampers and registers to provide design condition air flow or to the air quantities shown on the drawings (if provided). Balance work shall be performed in accordance with NEBB standards by a certified contractor. Submit a balancing report to TPS. Calibrate and adjust all thermostats.

- Relocate and/or add fire alarms, smoke or heat detectors, strobe alarms, pull stations, remote indicator lights and other components of the system as required for new conditions of the space.
- Rework systems to be compatible with existing design standards and conditions.
- Locations and specifications of alarms shall comply with the Americans with Disabilities Act (ADA).

- Standards, all standards and specifications established in the base building construction documents, or as evidenced in the existing conditions of construction shall govern, unless noted otherwise. All work shall be coordinated with the building maintenance manager. Refer to base building construction documents and specifications and existing conditions of system for equipment or materials not specified on the engineered drawings or contained herein.
- All materials and workmanship shall be in compliance with the national electric code (NEC), state and local codes and ordinances, and the Americans with Disabilities Act (ADA).
- Repairs and replacement: the contractor shall verify proper operation of existing panels and switch-gear. In the event that the contractor has observed system failure or defects, notify the Owner's construction manager immediately for further direction. For bid purposes, it shall be assumed that all equipment and associated components are in proper operating condition. Repairs or replacement of materials and workmanship shall be performed as a separate portion of the work.
- Panel: provide new typed panel circuit directory for each panel affected.



Codes and Regulations

Building Profile	
NFPA 72	City/County: Steamboat Springs/ Routt County
Fire District	Steamboat Springs Fire Rescue
Construction Classification	Type V-B
Building Height / Levels	1 Story
Fire Protection	none
Use and Occupancy	
Occupant Name	Land Title Guarantee Company
Occupancy Use	General Business Office
Occupancy Classification	Business Group B
Tenant Area	
(approx.) Usable SF:	2,430
Applicable Codes	
2011 NEC (National Electrical Code)	
2009 IBC (International Building Code) w/ Amendments	
2009 IECC (International Energy Conservation Code) w/ Amendments	
2009 IFC (International Fire Code) w/ Amendments	
2009 IMC (International Mechanical Code) w/ Amendments	
2009 IPC (International Plumbing Code) w/ Amendments	

Occupancy Load Analysis

Suite	Function Per Table 1004.1.1	Floor Area (USF)	Floor Area (SF/Occ)	Number of Occupants
Business		1816	+100 gross =	19
Accessory Storage		96	+300 gross =	1
Assembly (tables and chairs)		518	+ 15 =	35
			(net)	
			2430	TOTAL: 55

Means of Egress

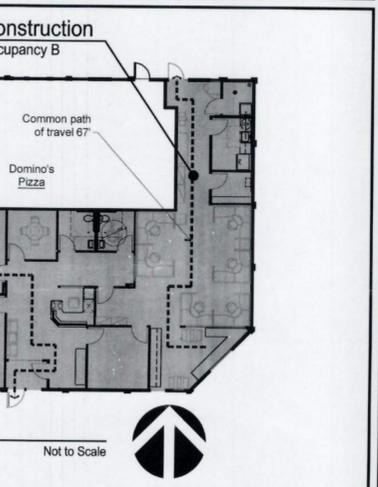
Required	Provided
Egress Width:	min: 34' 68'
Number of Exits:	min: 2 2
Common Path of Travel:	max: 75' 67'
Exit Access Travel Distance:	max: 200' 67'

Minimum Plumbing Fixtures

	Min Required	Provided	
Drinking Fountains	1	1	sink in kitchen
Service Sinks	1	1	
Male Lavatories	1	1	
Male Water Closets	1	1	
Female Lavatories	1	1	
Female Water Closets	1	1	

Drawing List

A0	Cover Sheet
D1	Demolition Plan
A1	Construction Plan Typical Partition Sections Door Schedule
A2	Reflected Ceiling Plan Power and Communications Plan
A3	Millwork & Finish Treatment Plan Finish Treatment Schedule Enlarged Reception Desk Plan
A4	Exterior Elevations Interior Elevations Plan Details Glazing Details
A5	Millwork Elevations Millwork Sections
M1.0	Mechanical Specifications & Legend
M1.1	Mechanical Schedules & Diagrams
M1.2	Mechanical Schedules & Diagrams
M2.0	Mechanical Plans
M3.0	Roof Mechanical Plans
P1.0	Plumbing Specifications & Legend
P1.1	Plumbing Schedules & Diagrams
P2.0	Plumbing Plans
P3.0	Roof Plumbing Plans
E1.0	Electrical Specifications & Legend
E1.1	One-line Diagram
E2.0	Electrical Plan
S1	Structural Plans



Project Team

Designer/ Space Planner
 Tenant Planning Services
 1660 Lincoln Street, Suite 100
 Denver, Colorado 80264
 Contact: Chuck Nichols / Dwight Eitzen
 Phone: 303.861.4800 / 107 / 114
 Fax: 303.861.1621
 email: chuck@tps.design
 dwight@tps.design

Building Representative
 Nordic Spirit / Alpen Glow Ventures
 P.O. Box 880618
 Steamboat Springs, Colorado 80488
 Contact: Bob Larson
 Phone: 970.846.6899
 email: boblarson@springsps.com

Tenant Representative
 Land Title Guarantee Company
 3033 East First Avenue, Suite 600
 Denver, Colorado 80206
 Contact: Erik Anderson / Chris Urban
 Phone: 303.947.3659 / 720.281.3441
 email: eanderson@ltgc.com / curban@ltgc.com

Mechanical Engineer
 MEP Engineering
 6402 South Troy Circle
 Centennial, Colorado 80111
 Contact: Mitchell Sawin, P.E.
 Phone: 303.936.1633
 email: Mitchell@meep-eng.com

Electrical Engineer
 MEP Engineering
 6402 South Troy Circle
 Centennial, Colorado 80111
 Contact: Mitchell Sawin, P.E.
 Phone: 303.936.1633
 email: Mitchell@meep-eng.com

Structural Engineer
 Littlehorn Engineering & Surveying, LLC
 Contact: John J. Littlehorn, P.E.
 Phone: 970.879.5112
 email: design@johnlittlehorn.com

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Sundance Plaza Bldg. B
 255 Anglers Drive
 Steamboat Springs, CO 80477
Suite B



Land Title Guarantee Company

Dates of Record
 Project Start Date: 19 Oct 2017

Issued On	Issued For
06 Dec 2017	Tenant Review & Approval
	Construction

R C R B D
RECORD SET
ELECTRICAL

Approvals

Final For Construction
 Preliminary
 Not Used By Contractor

Construction Document Approval

Construction work shall not proceed until the Owner and the intended occupant have given approval to these Construction Documents. Approval by these parties shall be interpreted as approval of the drawings for content, scope of work, and all dimensions regarded by either party as being necessary to their operations, use of the space, furnishings, equipment installation, and any agreements between the Owner and the intended occupant.

Construction and/or initiation of construction authorized by the Owner from these Construction Documents, shall be interpreted by the Designer as approval in full of these Construction Documents by both the Owner and intended occupant.

Approved - No Exceptions Taken
 Approved As Noted
 Approved As Noted - Resubmit
 Revise And Resubmit

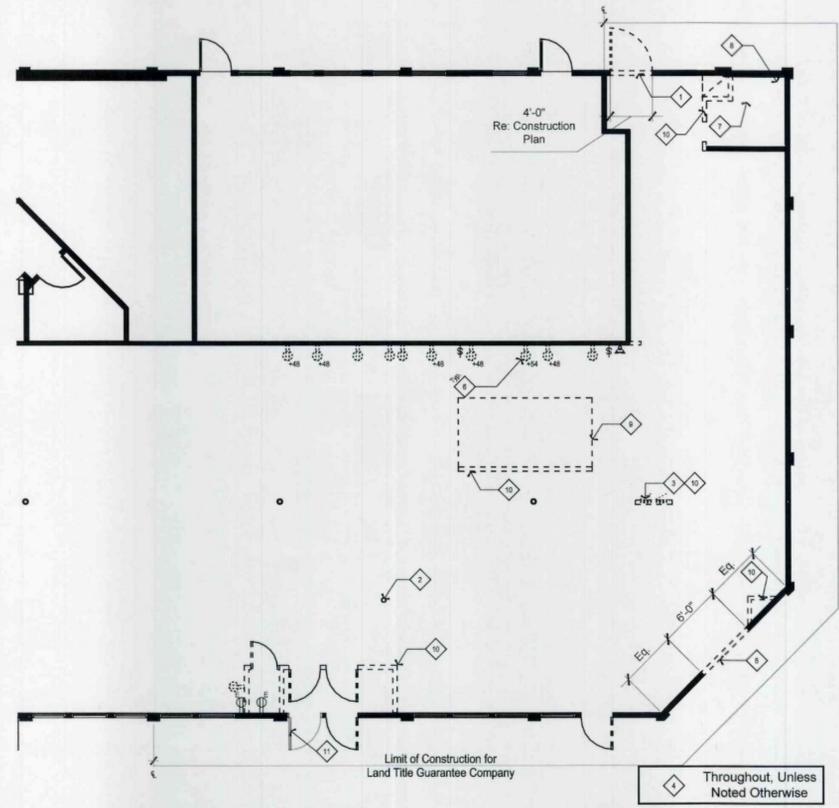
Signature _____ Date _____

1 Proximity Plan
 Level One
 Not to Scale

North

A0

- Sheet D1 Plan Notes**
- Refer to General Notes** for additional requirements.
 - GENERAL DEMOLITION:** Demolish and remove all partitions, materials, and debris as shown on the drawings or specified otherwise herein. Removal as described shall be accomplished without storing excessive quantities of any material, rubbish, dirt, debris or waste of any kind within this demised area of construction or adjacent areas.
 - FINISH TREATMENTS** scheduled to be removed are as follows: carpet, resilient flooring, base trim, wall treatments.
 - DISPOSAL:** All existing equipment, materials and fixtures not scheduled for re-use shall remain the property of the Owner. Coordinate with the Building Representative and comply with all regulations and/or requirements pertaining to removal, salvage and storage of materials demolished as scheduled.
 - RE-USE:** Investigate condition of all materials scheduled for demolition and not re-used on this project. Document characteristics of each material or component and submit inventory statement to Building Representative. Include characteristics such as type, color, size, quantity, physical condition and make/model number, if possible.
 - CLEAN AND REPAIR:** Verify condition of all materials scheduled for demolition and re-use where possible. Clean and/or repair materials as needed.
 - PREPARATION:** Unless otherwise specified, remove all existing wall coverings, floor coverings and baseboard throughout and prepare existing surfaces for new finish treatments as scheduled. The Demolition Contractor shall scrape existing adhesives to a smooth condition. Refer to finish plans and/or schedules.
 - PATCHING:** Remove all unused sleeves through the floor slab and fill/patch all penetrations.
 - ELECTRICAL DEMOLITION:** Existing electrical and communications/ data wiring within partitions, raceways or above the ceiling and not scheduled for re-use shall be removed entirely, including hangers, supports, terminals, conduit and junctions from source to point of termination. Maintain circuit and/or transmission continuity to remaining devices, where necessary.
 - PIPES AND CONDUITS:** All pipes and conduit in partitions scheduled for demolition shall be removed entirely when not scheduled for re-use.
 - ABANDONED APPARATUS:** Abandoned electrical circuits, fixtures and devices discovered by the contractor and not scheduled for re-use shall be reported to the Building Representative for further direction.
 - TELEPHONE/DATA REMOVAL:** Unless otherwise indicated on the drawings, remove all existing telephone equipment and/or components not currently in use.



1 Demolition Plan
 Scale: 1/8" = 1'-0"
 North

**RCRBD
 RECORD SET**

- Sheet Keyed Notes**
- ◇ Cut opening in partition for new door and sidelite. Refer to Construction Plan
 - ◇ REMOVE Floor safe and patch floor to match adjacent flooring.
 - ◇ REMOVE ELEC. PANEL. Remove existing electrical panel and replace with new as shown. Refer to Electrical Engineering Drawings.
 - ◇ REMOVE FLOORCOVERING AND BASE THROUGHOUT and prepare to receive the specified finish treatments. The Demolition Contractor shall remove and dispose of all existing floorcoverings and scrape floors smooth from old adhesives and floor patch.
 - ◇ Cut and remove existing exterior W24 for new window. Refer to Construction Plan for exact size.
 - ◇ Where fixtures/ devices are shown to be removed/ demolished at interior partitions to remain, remove J-box and conduit. Patch partition and prepare for paint.
 - ◇ Existing floor drain to remain. Refer to Plumbing plans.
 - ◇ Existing water service to remain. Refer to Plumbing plans.
 - ◇ Remove existing vent hood and air handling unit. See Mechanical Engineering Drawings.
 - ◇ DEMO EXISTING items shown dashed and/or shaded. Partitions, door and/or glazing assemblies, electrical devices, and/or millwork to be demolished/removed (typ.). Return all millwork/fixtures and door/glazing assemblies, not re-used in this Limit of Construction, to Building Management. Patch/repair partitions as necessary.
 - ◇ Existing storefront door to be used for updated entry. See Construction Plan.
- Symbol Legend**
- Wall Mounted Fixtures/ Devices**
- ⊕ Duplex electrical receptacle & face plate
 - ⊕ Symbols shown shaded and/or dashed indicate devices to be removed/ demolished
 - "E" Existing fixture/ device to remain.
- Refer to Engineering Drawings for complete specifications*

- Demolition Legend**
- DEMO EXISTING.** Partitions, door assemblies, electrical devices and/or millwork to be demolished/ removed (typ.). Return all millwork/ fixtures and/or door assemblies, not re-used in this limit of construction, to Building Management. Patch partitions and prepare to receive the scheduled finish treatments.
- EXISTING PARTITION TO REMAIN.

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**Sundance Plaza
 Bldg. B**
 255 Anglers Drive
 Steamboat Springs, CO 80477
Suite B



Land Title Guarantee Company

Dates of Record
 Project Start Date: 19 Oct 2017

Issued On	Issued For
05 Dec. 2017	Tenant Review & Approval, and Construction

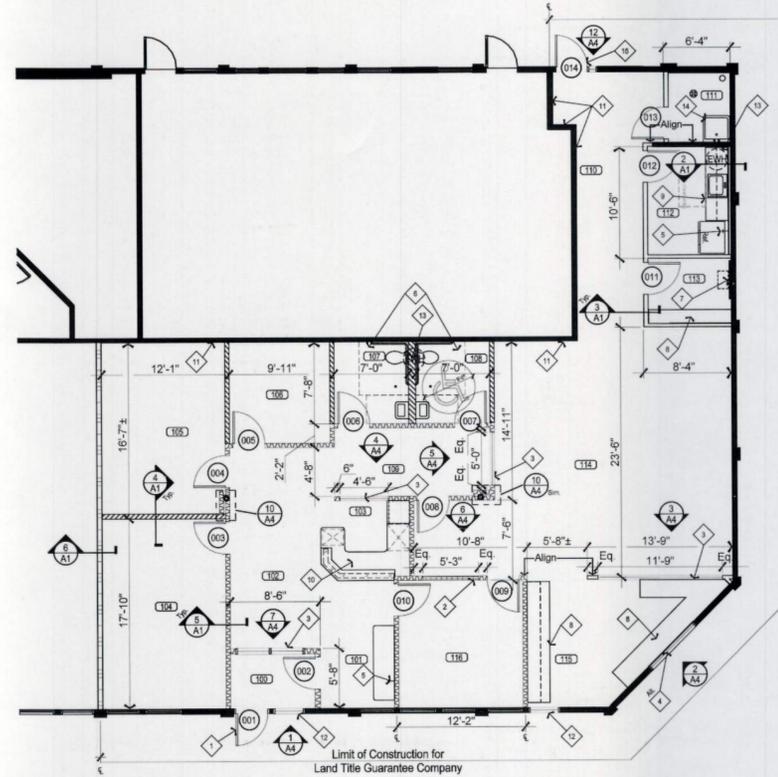
Sheet	Demolition Plan			
Contents	Proj No	Designed by	Drafted by	Checked by
202100	CN	AC	DE	CN

Project start date: 19 Oct 2017
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Sundance Plaza Bldg. B • Land Title Guarantee Company

Sheet A1 Plan Notes

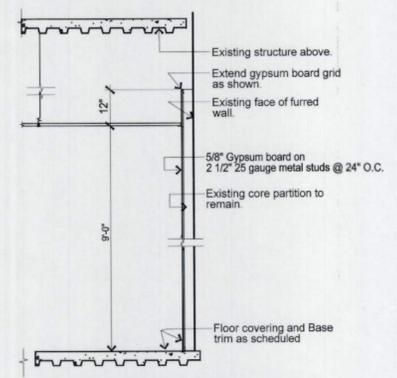
1. Refer to General Notes for additional requirements.
2. **DOOR ASSEMBLIES:**
 - 2.1. All assemblies shown on the drawings and not referenced to the Door Schedule are existing to remain (unless noted otherwise).
 - 2.2. Inspect, make repairs to, and clean ALL existing assemblies and components to like new conditions. Re-use existing door assemblies and/or components where possible.
 - 2.3. Provide new door assemblies and/or components as specified on the drawings. Door frames shall be securely fastened in place and the entire assembly shall be installed plumb and square with maximum diagonal distortion of 1/8". Undercut doors as needed for specified floor coverings.
3. **INSULATION and ATTENUATION:** Provide insulation or sound attenuation in walls and above suspended ceiling if indicated on the drawings. Specifications shall conform to the following:
 - 3.1. Sound attenuation in walls shall be unfaced fiberglass, 16" to 24" wide to correspond with stud width.
 - 3.2. Thermal insulation in walls shall be Kraft faced fiberglass, 16" to 24" wide, with R-13 thermal value.
 - 3.3. Sound attenuation in ceilings shall be foil faced fiberglass, 24" wide, acceptable for use in return air plenums.
4. **BACKING/BLOCKING:** Provide solid wood blocking in partitions for plumbing fixtures, door stops, wall mounted equipment (including televisions), millwork, etc., and as indicated on the drawings. Plywood backing may be used for shelving. Framing material for blocking, nailers, etc. shall be Western Douglas Fir or Hemlock.
5. **PARTITIONS:** Conform to the following:
 - 5.1. Partitions shall be erected plumb and true.
 - 5.2. Drywall partitions and joints shall be taped and finished smooth and prepared for specified finish treatment. Coat vertical joints from floor to ceiling for additional substrate to the base trim.
 - 5.3. Skim coat existing partitions as needed.
 - 5.4. All exposed corners shall be fitted with metal corner bead and top of walls at underside of suspended ceilings shall be straight and true.
 - 5.5. Provide "kickers" or metal stud support from the top of the partition to the underside of structure above for long runs and at all jambs of openings for door assemblies and at any glazed opening within 36" of the strike side of swinging doors.
6. **EXISTING LIFE SAFETY SYSTEMS:** Modify (fire alarm/smoke detection) on a DESIGN-BUILD basis. Conform to these drawings and documents and as required for obtaining a building permit. Refer to General Notes.



1 Construction Plan Scale: 1/8" = 1'-0"



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RECORD SET



2 Section: Partition Typical Furring Partition Scale: 1/2" = 1'-0"

Wall Legend

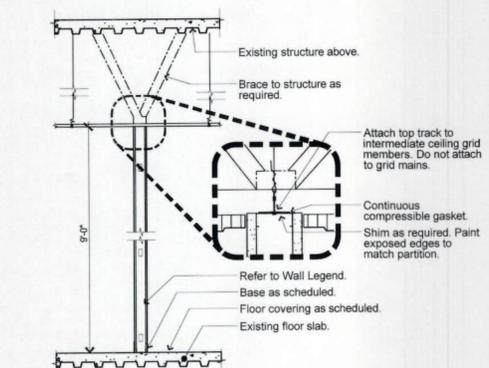
EXISTING PARTITION TO REMAIN	NEW STANDARD INTERIOR PARTITION	NEW SOUND ATTENUATED PARTITION	NEW SOUND ATTENUATED PARTITION	NEW DEMISING PARTITION	NEW FURRED PARTITION
Re: 3/A1	Re: 4/A1	Re: 5/A1	Re: 6/A1	Re: 6/A1	Re: 2/A1
25 gauge 3-5/8" metal studs at 24" o.c. with 5/8" gypsum board each side floor to finished ceiling.	25 gauge 3-5/8" metal studs at 24" o.c. with 5/8" gypsum board each side and 3-5/8" fiberglass sound attenuation batts floor to finished ceiling. Provide two layers 5/8" gypsum board at closing room side.	25 gauge 3-5/8" metal studs at 24" o.c. with 5/8" gypsum board each side and 3-5/8" fiberglass sound attenuation batts floor to finished ceiling. Provide gypsum board 6" above finished ceiling.	25 gauge 3-5/8" metal studs at 24" o.c. with 5/8" gypsum board each side and 3-5/8" fiberglass sound attenuation batts floor to finished ceiling. Provide gypsum board 6" above finished ceiling.	20 gauge 3-5/8" metal studs at 24" o.c. floor to structure above with 5/8" gypsum board floor to structure above (allow for return air transfer) and 3-5/8" fiberglass sound attenuation batts floor to finished ceiling height.	5/8" gypsum board one side of 20 Gauge, 2 1/2" metal studs at 24" o.c.

Match existing construction. Field verify existing construction for extent of work and verify match to these partition types.

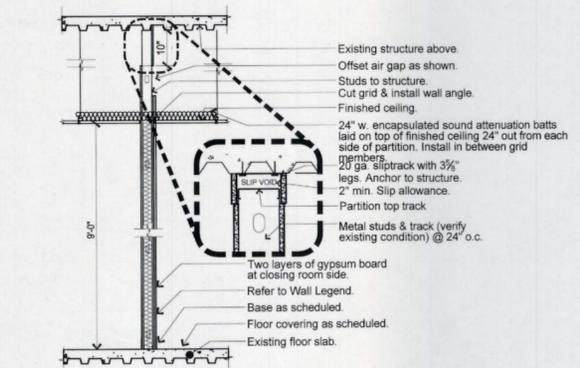
Room Schedule

100	Vestibule	109	Hall
101	Coffee Bar	110	Hall
102	Receiving	111	Janitor's Closet
103	Reception	112	Break Room
104	Closing Rm. #1	113	Server / Storage
105	Closing Rm. #2	114	Open Office
106	Closing Rm. #3	115	Workroom
107	Restroom	116	Office
108	Restroom		

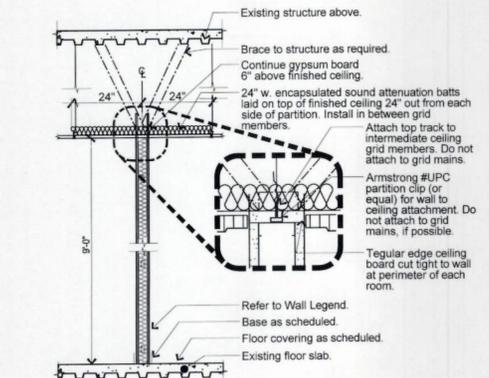
- Sheet Keyed Notes**
- EXISTING Entry door to remain. New window to replace adjacent door. See Elevations for details.
 - NEW CLERESTORY WINDOW Assembly. Provide new clerestory glazing assembly in wrapped gypsum board opening. Refer to detail drawings.
 - NEW INTERIOR window assembly at interior wall. Refer to details.
 - ALTERNATE A: NEW EXTERIOR WINDOW at exterior wall. Refer to details.
 - NEW WATER SUPPLY. Refer to Plumbing Drawings.
 - NEW BARRIER FREE UNISEX RESTROOM. Refer to Enlarged Plan and Plumbing Drawings.
 - NEW BACKBOARD. Provide 48" x 48" x 3/4" A/D plywood board for telephone equipment. Mount bottom of board at 48" AFF. Paint to match wall at Server / Storage, 113.
 - NEW MILLWORK. Refer to Millwork Plan.
 - NEW MILLWORK & PLUMBING fixtures. Refer to Millwork Plan & Details and Plumbing Drawings.
 - NEW BUILT-IN DESK. Refer to Millwork Plan and Detail Drawings.
 - Add 1/2" gyp. board layer to underside of structure.
 - New storefront window. Infill existing opening as necessary for new window assembly. See sheet A4 for more details.
 - NEW hot water heater located in ceiling. See Plumbing Drawings.
 - NEW utility sink. See Plumbing Drawings.
 - NEW Storefront and sidelite. See A4 for details.



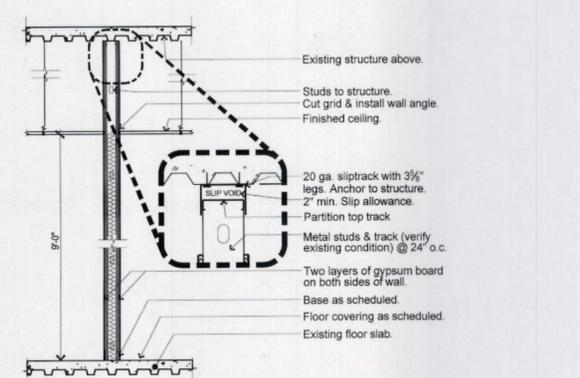
3 Section: Partition Typical Standard Interior Partition Scale: 1/2" = 1'-0"



4 Section: Partition Sound Attenuating Partition at Closing Scale: 1/2" = 1'-0"



5 Section: Partition Typical Sound Attenuating Partition Scale: 1/2" = 1'-0"



6 Section: Partition Typical Demising Partition Scale: 1/2" = 1'-0"

Door Schedule 1

Mark	State*	Type	DOOR			FRAME		HARDWARE		Remarks	Mark		
			Leaf Size	Material	Finish	FRR ³	Material	Finish	FRR ³			Latch Func.	Additional Components
001	E	SL	3'-0" x 8'-0" x 2"	Storefront	Existing	None	Aluminum	Prefinished	None	2	Bf, Ci, Ga	Match Existing Finishes, Hardware	001
002	N	Fre	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	1	Ci, Pu	--	002
003	N	Fre	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	1	--	Graphic Option	003
004	N	Fre	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	1	--	Graphic Option	004
005	N	Fre	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	1	--	Graphic Option	005
006	N	Fl	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	3	--	--	006
006	N	Fl	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	3	--	--	006
007	N	Fl	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	3	--	--	007
007	N	Fl	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	3	--	--	007
008	N	Fre	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	1	--	--	008
009	N	Fl	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	2	--	--	009
010	N	Fl	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	2	--	--	010
011	N	Fl	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	3	--	Undercut Door 1"	011
012	N	Fl	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	1	--	--	012
013	N	Fl	3'-0" x 8'-0" x 1 3/4"	S.C. Wood	Stained	None	H.M.	Painted	None	1	--	--	013
014	N	St	3'-0" x 7'-0" x 1 3/4"	Metal	Painted	None	Aluminum	Prefinished	None	2	Bf, Ci, Ga	Lever	014

¹ The General Contractor shall field verify that all door and hardware specifications match Building Standards (unless noted otherwise) and coordinate ANY AND ALL discrepancies directly with the TPS representative (as indicated on the cover sheet Project Team list) prior to proceeding. This includes, but is not limited to, species, stain, finish, style, function, part, product numbers, and design specifications as well as extent of inclusions / exclusions to component lists and the like.

² State: E = Existing to remain. Assure proper working condition. N = Provide New OR Relocate salvaged Door, Frame or Hardware if available. Determine available components in field.

³ Rating: Minimum Fire-resistive Rating (per UL) required in minutes.

Door, Frame, and Hardware Specifications	Latch Function Legend	Additional Hardware Components Legend
Wood Doors: Wood veneer interior doors shall be 1 1/2" thick, 5-ply particle board core complying with CS 236, Type I, Density C, Class 1, and with AWI standard PC-5 construction, NWWDA 1 S. 1.6 Type II adhesive, solid core, flush slab style. Door Frames: Entry/Exit: Aluminum Interior: Hollow Metal (Painted) Hardware: Hardware shall meet Building Standard specifications, with 0/1/2/3/4/5 finish. Standard hardware to be included with every door in the Door Schedule shall include: - Latches: Lever Handle at interior and exterior (UNO), with 1" minimum throws. - Hinges - Dust Proof Strike Plate - Silencers - Wall or Door Stop The General Contractor shall provide separate cost to label all keys (locksets). Coordinate with Tenant and Building Management on labeling numbers.	Hardware shall meet Building Standard specifications. 1 Passage 2 Keyed Lock 3 Privacy Door Types Type "Fl" Standard Flush Swinging Door Type "Fre" French Swinging Door Type "St" Storefront Swinging Door And Transom Option: 3M Mountain scape film furnished by Tenant and installed by Signworks. Contact Debbie Jones for additional information at dsjgnworks@comcast.net.	Hardware shall meet Building Standard specifications and finish. Bf Door Bottom Sweep, Fixed Ct Closer, Automatic Door (1 per leaf) Ga Gasketing Pu Push / Pull hardware

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Land Title Guarantee Company

Dates of Record
Project Start Date: 19 Oct 2017
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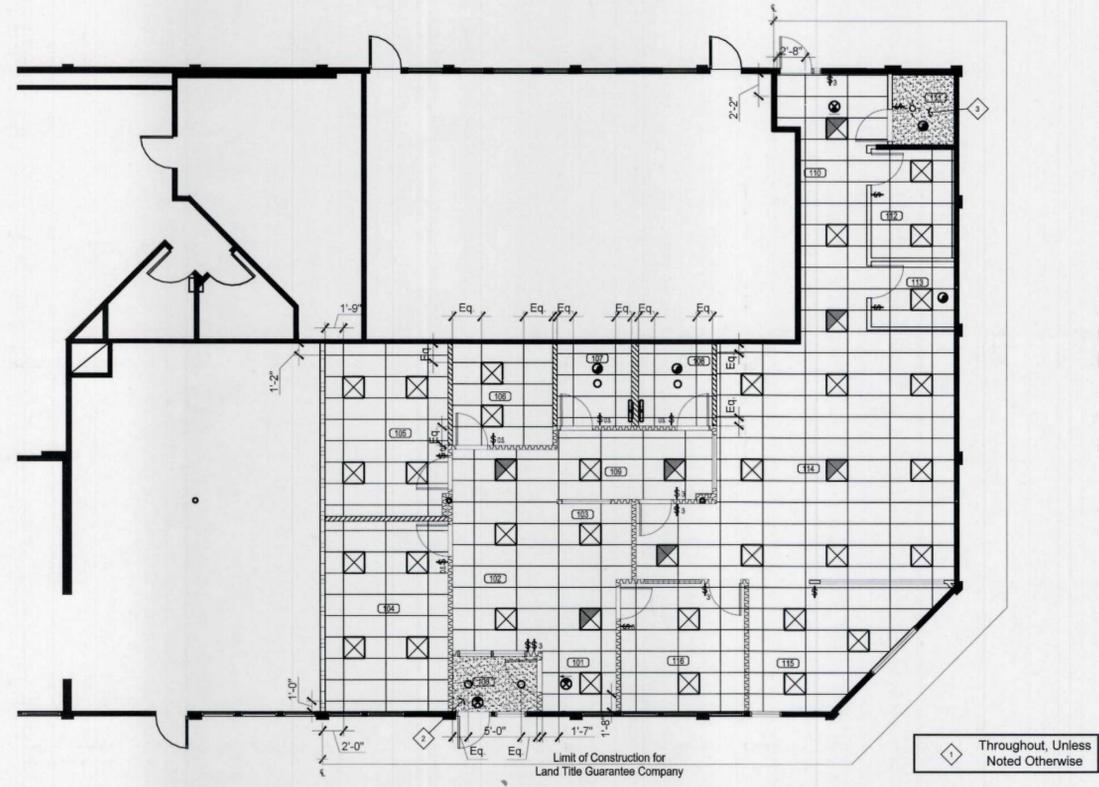
Room Schedule	
100	Vestibule
101	Coffee Bar
102	Receiving
103	Reception
104	Closing Rm. #1
105	Closing Rm. #2
106	Closing Rm. #3
107	Restroom
108	Restroom
109	Hall
110	Hall
111	Janitor's Closet
112	Break Room
113	Server / Storage
114	Open Office
115	Workroom
116	Office

- Sheet Keyed Notes**
- ◆ NEW SUSPENDED CEILING. Provide grid and acoustical tile system throughout Limit of Construction (UNO). Refer to Sheet Plan Notes for specifications and installation height. Refer to plan for "Start" location.
 - ◆ Provide NEW CEILING at 9'-0" AFF. 3 1/2" 20 gauge metal stud @ 16" O.C. with one layer of 5/8" gypsum board.
 - ◆ Existing gyp. board ceiling. Rework ceiling to match new condition.
 - ◆ NEW SYSTEMS FURNITURE WORKSTATIONS. Tenant shall furnish and install systems furniture workstations. Electrical Contractor shall provide final hardwired electrical connections.
 - ◆ Provide NEW WALL JUNCTION BOXES in partition for power/communications connection to Tenant furnished and installed systems furniture. Coordinate with Tenant's vendor prior to rough-in for final locations. Electrical Contractor shall perform final electrical connection.
 - ◆ NEW TV SUPPORT BRACKET. Furnish and install an adjustable wall mounted television support bracket (include backing in partition as necessary, refer to Sheet Plan Note 4/A1. Install Tenant furnished flat screen television. Coordinate specifications, requirements, and exact location with Tenant.

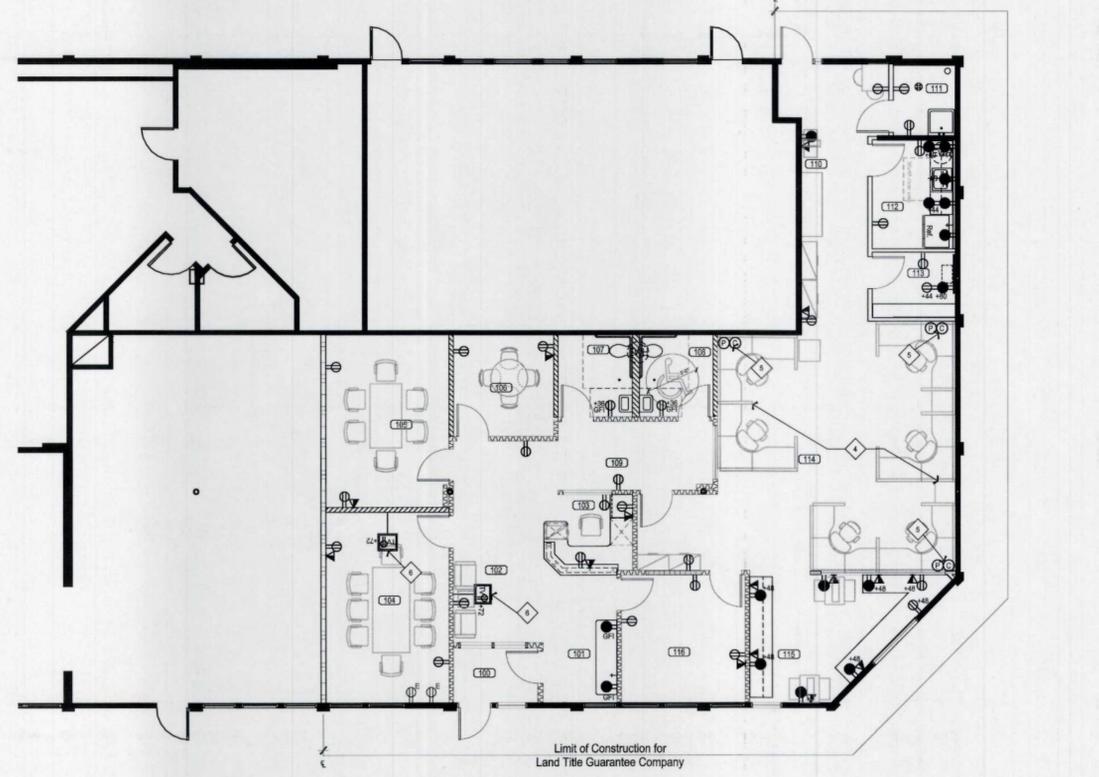
- Symbol Legend**
- Ceiling Mounted Fixtures/ Devices**
- ☒ New 2 x 2 LED light fixture Spec: Lithonia FSL
 - Recessed LED 6" diameter horizontal downlight fixture
 - ⊕ Building Standard exit sign (UNO). Green letters on white face. Battery backup. Shade indicates face(s) and arrows (if any) indicate direction.
 - ⊖ Vanity fixture
 - ⊙ Exhaust fan assembly
- Wall Mounted Fixtures/ Devices**
- ⊕ Building Standard single pole switch Special function switches.
 - "D" = dimmable switch and ballast
 - "3" = three-way operation
 - "O.C." = occupancy sensor
 - ⊕ Duplex electrical receptacle & face plate
 - ⊕ Quadplex electrical receptacle & faceplate
 - ⊕ Duplex electrical receptacle & face plate on dedicated circuit
 - ⊕ Flush, in-partition double-gang J-box for systems furniture interface. **Where indicated as new:** Coordinate conduit requirements and final location with Tenant's furniture vendor prior to rough-in. Electrical contractor to make final electrical connections.
 - "P" = power
 - "C" = communications
 - "J" = empty junction box with pull string
 - ▽ Combination telephony/ data outlet rough-in (3/4"Ø conduit) with double gang J-box and single gang plaster ring with pull string to above finished ceiling
 - ⊕ Recessed "clock type" double gang junction box with duplex receptacle and data outlet for television connection. Coordinate with Tenant's Vendor for required specifications.
 - ⊖ Electrical panel
 - 1 Water line
 - "E" Existing fixture/ device to remain.
 - "N" New fixture/ device to be installed at this location.
- Refer to Engineering Drawings for complete specifications

RCRBD
RECORD SET

- Sheet A2 Plan Notes**
- Refer to General Notes for additional requirements.
 - PROVIDE NEW SUSPENDED CEILING SYSTEM throughout as follows:
 - Suspended grid system shall be 4" x 2" pattern, 1" nominal width, Optima series, white baked on enamel finish, as manufactured by Armstrong.
 - Ceiling tile shall be 4" x 2" x 3/4" thick, second look, lay-in Optima tegular edge with NRC 95, white, as manufactured by Armstrong.
 - Installation of grid system shall be in complete accordance with the manufacturer's specifications utilizing the layout as indicated on the drawings above in accordance with ASTM C635, "standard specification per metal suspension system for acoustical tile and lay-in panels-intermediate duty."
 - Install all grid members level and true and suspend from the structure above in accordance with ASTM C635, "standard specification per metal suspension system for acoustical tile and lay-in panels-intermediate duty."
 - Installation of tiles shall be continuous over walls. Refer to drawings for specific requirements.
 - All tiles shall be seated tight, level and true within the grid system.
 - The suspended ceiling system shall conform to requirements set forth by U.L.
 - CEILING HEIGHT: 9'-0" AFF (UNO). Refer to construction details for ceiling construction and interface with partitions.
 - FIXTURES AND DEVICES. Provide and/or relocate light fixtures, switches, and controls indicated on the drawings.
 - Refer to Symbols Legend for fixture type and/or specification.
 - Install and support fixtures from the structure in accordance with the code.
 - Install all new light fixtures, sprinkler heads, diffusers, speakers, detectors, alarms, etc. in the center of the ceiling board or section and symmetrical throughout rooms and open areas, unless noted otherwise.
 - The contractor shall field verify all proposed locations of light fixtures prior to commencing construction and shall notify TPS of any discrepancies and/or conflicts with existing installations.
 - Existing fixtures scheduled to remain or be re-used shall be inspected and reworked, if necessary. Fixtures shall be cleaned, including lenses and lamps. Defective ballasts and other components shall be replaced. Match existing conditions.
 - All light fixtures, exit signs, and switch devices shown throughout are new (unless noted otherwise).
 "E" indicates existing fixtures/device to remain
 "R" indicates relocated fixture or device
 - LIGHTING DIMENSIONS: Unless noted otherwise, all light fixtures and devices are dimensioned to the centerline of the fixture.
 - PROVIDE ELECTRICAL POWER AND COMMUNICATIONS OUTLETS, receptacles and devices indicated on the drawings.
 - Refer to symbols legend for device type and/or specification.
 - Install in locations as shown on the drawings.
 - All power and communications receptacles provided for general purposes shall be installed at 18" from the finished floor to the center of the device (unless noted otherwise).
 - All outlets not otherwise, all electrical power and communications outlets, receptacles and devices are dimensioned to the centerline of the device or pair of devices.
 - Confirm all box locations with Tenant prior to wiring.
 - All rectangular outlet boxes shall be installed with the long side in the horizontal position, except above counters and cabinets, or otherwise shown on the drawings.
 - All rectangular switch and control boxes for lighting and other devices shall be installed with the long side in the vertical position, recessed flush with the wall surface and at 48" above finished floor to the center of the control unit (unless noted otherwise).
 - Outlets shall not be installed back to back in sound insulated partition.
 - All outlets indicated to be installed in existing partitions or furred partitions or columns shall be cut-in or recessed flush with wall surface. Furr and/or remove sheathing, if necessary.
 - All electrical power and communications outlets, receptacles and devices shown throughout are new (unless noted otherwise).
 "E" indicates existing fixtures/device to remain
 "R" indicates relocated fixture or device
 - NEW WIRING DEVICES shall be specification grade, 15 amp. For general application, 20 amp. or greater for dedicated circuits and as required by circuit load. Provide smooth nylon cover plates for all outlets and devices. Color: match existing
 - COMMUNICATION/ DATA OUTLETS shall conform to the following:
 - Communication/data outlets shall consist of an opening in the sheathing with a single gang plaster ring and pullwire with plastic bushing up through wall to the ceiling plenum.
 - When inaccessible by the method described above or when indicated on the drawings, include one (1) 3/4" conduit (min.) and 2" deep single gang box for outlet.
 - Where communications/data outlets are located in low height partitions or mounted in floors, a maximum of three (3) outlets shall be fed from one (1) 3/4" conduit.
 - All communication/data cables, plates, jacks, and final connections shall be provided under a separate contract by the Tenant. All materials shall be installed in compliance with all codes and ordinances and these documents. Cables and fittings installed above the ceiling in the return air plenum shall be rated and labeled for use in plenums. Cables shall be supported from the structure, independent of other support hangers.

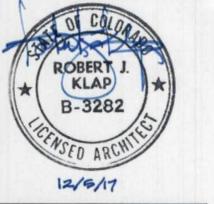


1 Reflected Ceiling Plan
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 North

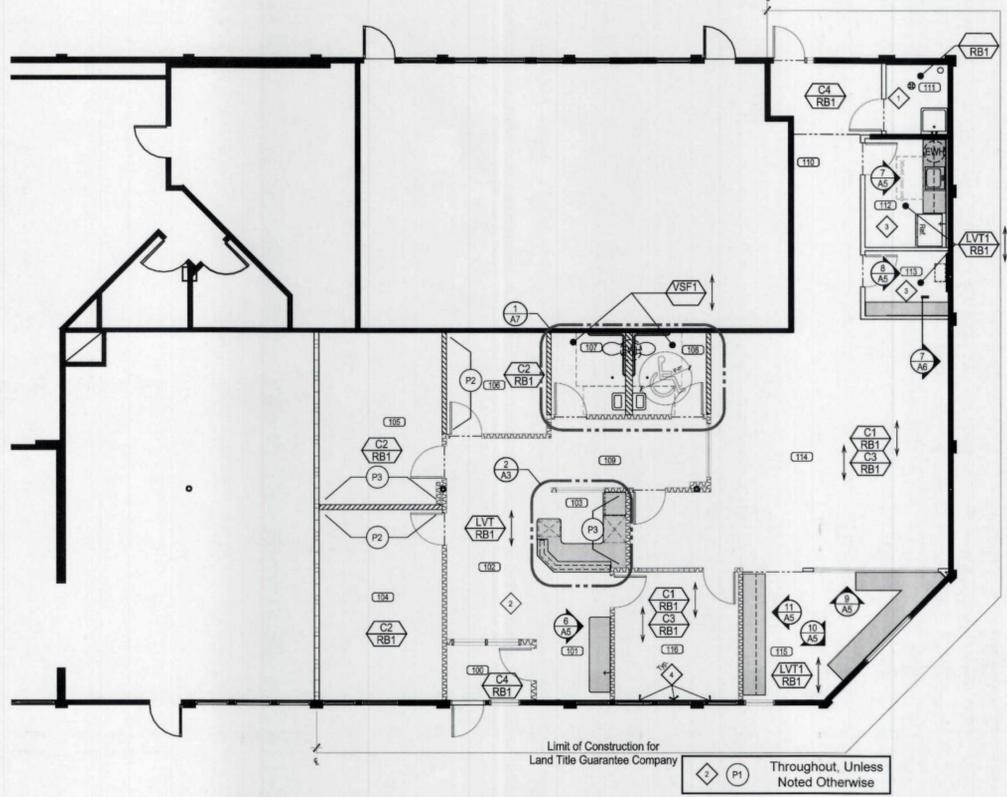


2 Power & Communications Plan
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 North

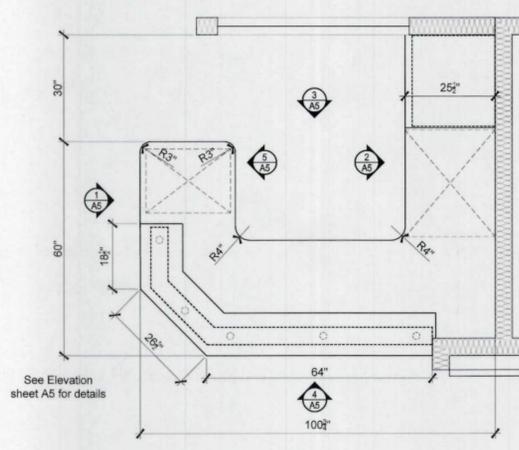
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 by: Doughty, E. P. (C22) - land title/202100.00.LTGC Steamboat (Sundance)/Drawings/Construction documents/202100c.dwg



- General Notes** Finish Treatment Schedule
- GENERAL FINISH TREATMENT NOTES**
 - Coordination: finish treatment subcontractors and installers shall coordinate with other trades for applications affecting other tradework, especially millwork, etc.
 - Unless noted otherwise, all floor coverings, baseboard, and floor preparation shall be the responsibility of the General Contractor, including removal of existing materials.
 - Installation: all finish treatments shall be installed or applied in strict accordance with the manufacturer's written specifications and the drawings.
 - Protection: protect all surfaces, doors, hardware, outlet plates, etc. From spills, splatters and overspray of paint, drywall compound, adhesive and other materials.
 - Preparation: field measure each space to receive finish treatment as a basis of supplying, cutting and seaming material. Do not scale the drawings or calculate sizes from dimensions shown.
 - Surfaces: all surfaces shall be properly prepared prior to installation of material including but not limited to priming of walls to receive paint, sizing of walls to receive wall covering, patching/filling holes and depressions, etc.
 - Surface texture: unless noted otherwise, all drywall finish shall be smooth.
 - CARPET INSTALLATION:** carpet installation shall comply with the workmanship guidelines as published by the American Carpet Institute (latest edition), and in strict accordance with the manufacturer's written specifications, and shall also conform to the following:
 - Where carpet seams occur in doorways, locate seam beneath center of door slab.
 - Furnish and install resilient type reducer strip (saddle) where resilient floor coverings abut carpet. See drawing for color.
 - Coordinate installation for uniformity where dye-lot variations may occur in material.
 - WALLCOVERING INSTALLATION:** wall covering shall be installed or applied in complete accordance with the manufacturer's written specifications and shall also conform to the following:
 - Wrap all device cover plates with wall covering only on walls scheduled to receive wall covering (match wall finish).
 - Furnish and install "J" metal polished aluminum edge cap (mudded in) at corners where wall coverings terminate and ends are exposed.
 - PAINT:** paint shall be installed or applied in strict accordance with the manufacturer's written specifications and as recommended by "The Modern Guide To Painting Specifications" (latest edition) and shall also conform to the following:
 - Surfaces scheduled for painting shall receive no less than two coats of paint (3.0 mil, min. Thickness).
 - All materials shall be evenly applied avoiding runs, sags, flashing or splothing. All coats shall be allowed to dry thoroughly prior to application of succeeding coats. Where necessary, provide masking to avoid inadvertent applications.
 - Unpainted gypsum board and drywall shall be primed prior to painting. The primer may be tinted with the paint color only as recommended by the paint manufacturer.
 - At the completion of the job and after installation of the floor covering, touch-up paint all areas as required. Blend paint touch-up in with existing for a consistent and uniform appearance.
 - WINDOW COVERINGS:** unless noted otherwise, window coverings shall be the responsibility of the General Contractor and shall conform to the following:
 - When specified on the drawings as new or for replacement, provide new window coverings as specified.
 - When specified on the drawings for re-use of existing window coverings, the General Contractor shall inspect existing conditions of material and operation and make necessary repairs or replace to match existing. Replace window coverings if missing. Upon completion of job, clean material, hardware and housings thoroughly, including both sides of window covering material.



1 Millwork & Finish Treatment Plan
 Scale: 1/8" = 1'-0"
 North



2 Reception Desk Enlarged Plan
 At Reception 103
 Scale: 1/2" = 1'-0"

RCRBD
RECORD SET

Room Schedule

100	Vestibule	109	Hall
101	Coffee Bar	110	Hall
102	Receiving	111	Janitor's Closet
103	Reception	112	Break Room
104	Closing Rm. #1	113	Server / Storage
105	Closing Rm. #2	114	Open Office
106	Closing Rm. #3	115	Workroom
107	Restroom	116	Office
108	Restroom		

- Sheet Keyed Notes**
- EXISTING FLOORCOVERING to remain in this area.
 - Provide NEW CARPET 'C1' with base trim 'RB1' throughout Limit of Construction (UNO).
 - Provide NEW 'LVT1' with covered base trim where shown. Include vinyl reducer strip at flooring transitions.
 - NEW WINDOW SHADING SYSTEM. Provide manual, chain-operated window shading system at exterior glazing assemblies. Specification: MechoShade Thermo Veil Dense Basket Weave, 1500 Series (3% open), Color: 1513 Grey.

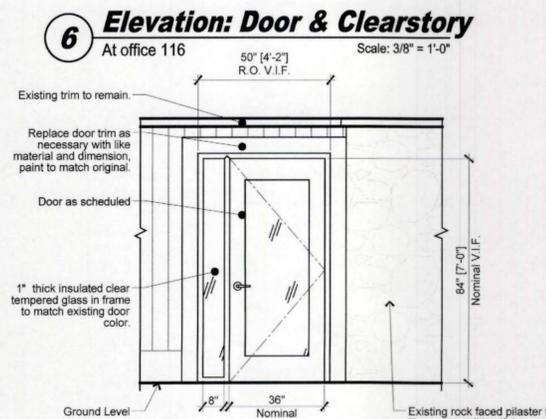
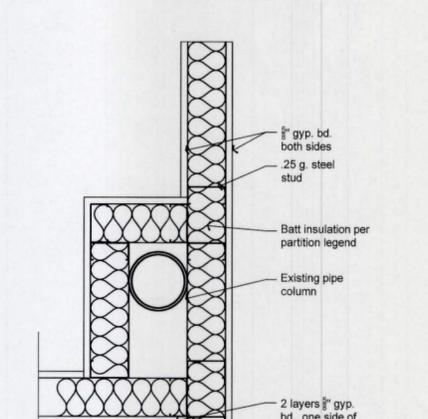
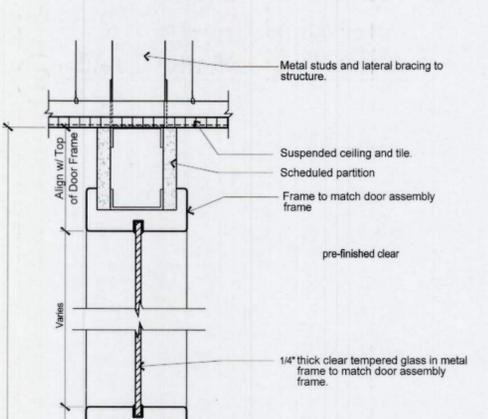
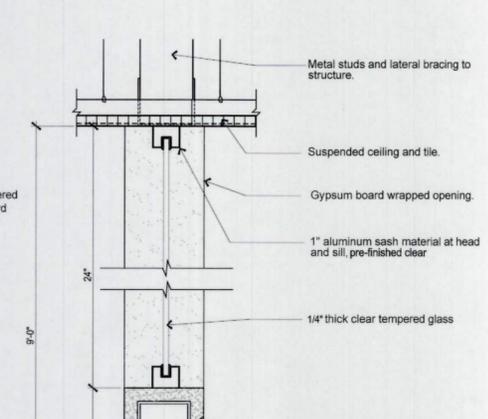
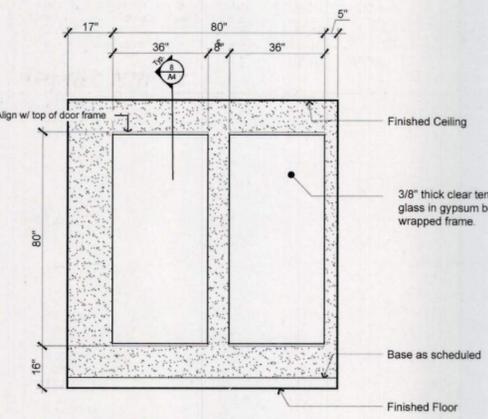
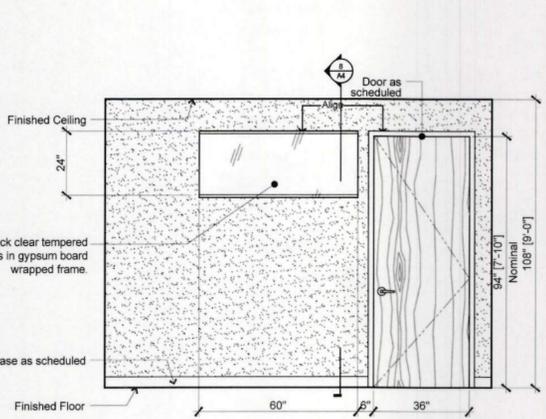
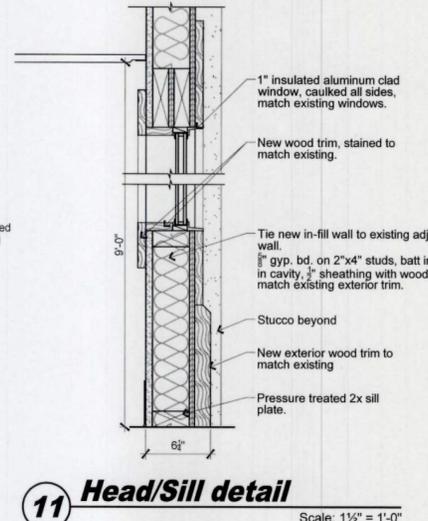
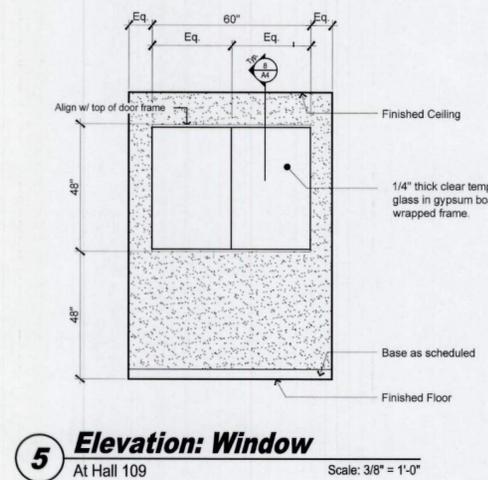
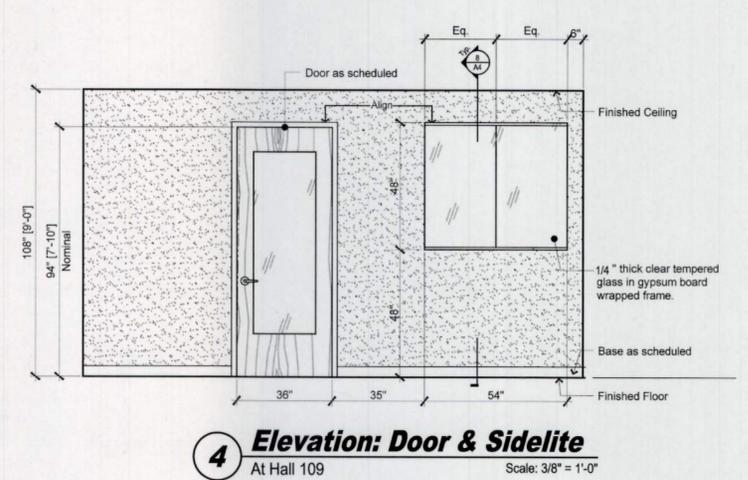
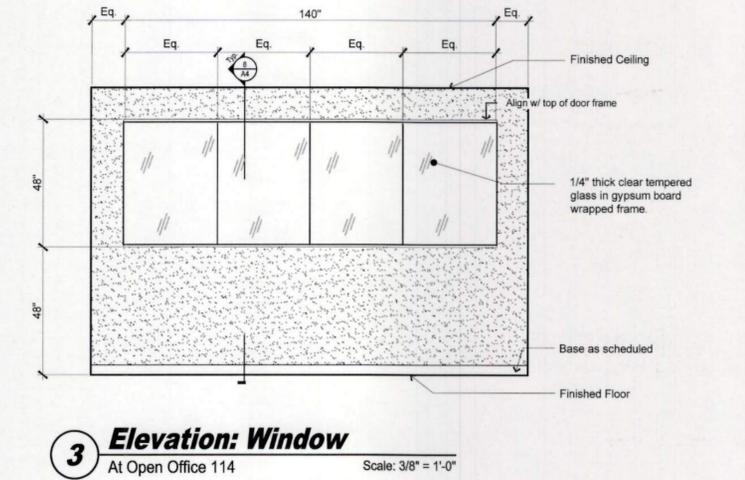
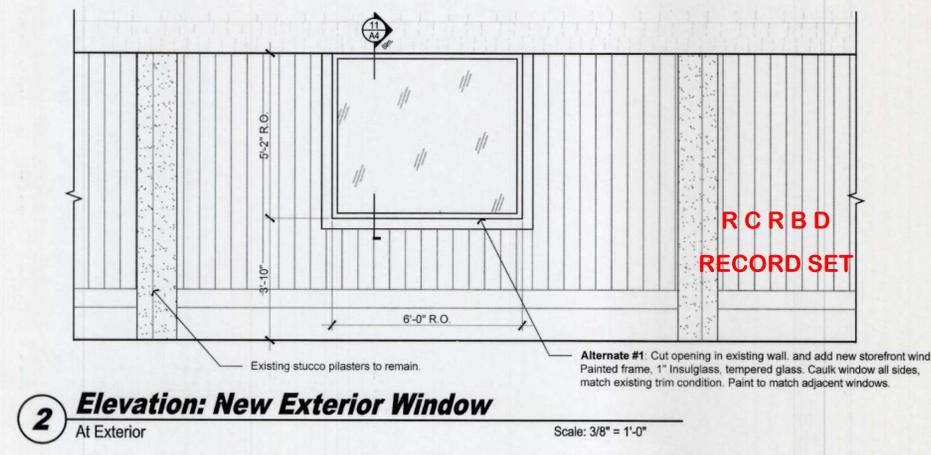
- Sheet A3 Plan Notes**
- Refer to General Notes for additional requirements.
 - REMOVE ALL EXISTING FINISH TREATMENTS including carpet, VCT, baseboard, and wall treatment and provide new finish treatments as specified throughout lease space (unless noted otherwise).
 - COMMON AREA FINISH TREATMENTS: Rework and/or add new finish treatments as necessary at all common areas of the building where construction occurs. All materials and workmanship shall match existing conditions (unless noted otherwise).
 - FURNISH AND INSTALL NEW WINDOW COVERINGS at exterior glazing throughout. Specification: Mecho Systems - Thermo Veil dense basket weave 1500 series (3% open). Color: 1513 Grey Marvel.
 - PROVIDE 1/8" POLISHED ALUMINUM MUD-IN TYPE EDGE CAP at all corners where wall coverings terminate and the corners and ends of walls.

Finish Treatment Schedule NOTE: all surfaces must be clean, dull, and dry before coatings are applied. All product is assumed to be NEW, unless noted otherwise.

Material	Manufacturer	Style/Line	Color	MARK	Remarks/Comments	
Wallcovering	Sherwin-Williams	ProMar 200 Zero VOC Primer	White	(Not Shown)	Primer for all new exposed gypsum board surfaces.	
		B66W1	White		Primer for new steel, galvanized or aluminum substrate	
Interior Paint	Sherwin-Williams	ProMar 200 Zero VOC Interior Latex Eg-Shel B20-2600 Series	7036 Accessible Beige	P1	Provide two (2) coats (minimum) at all new surfaces. • P1: Paint all exposed gypsum board surfaces throughout Limit of Construction (UNO).	
			7503 Sticks & Stones	P2	• P2 & P3: Accent paints where indicated.	
		7665 Wall Street	P3			
		B34 Series ProClassic Semigloss	7036 Accessible Beige	P4	Paint for hollow metal steel door frames and restroom gyp. bd. partitions.	
		Flat	7004 Snowbound	P5	Ceiling and soffit locations.	
Porcelain Wall Tile	Stile Squared	Pulpis 6"x12"	Moca Glossy	WT1	At Restrooms: New wall tile.	
			Pulpis 3"x6"	Moca Glossy	WT2	At Restrooms: New bullnose accent trim piece. Refer to details.
Millwork	Wilsonart	Matte Finish	4944-38 Casual Linen	PL1	Countertops and Splashes, UNO	
	Nevamar	Polished Velvet	WT0003 Valencia Teak	PL2	At noted vertical surfaces, UNO. Plastic laminate pattern shall run vertically on all surfaces, UNO. Confirm with Tenant Planning Services.	
Quartz	Cambria	Cambrian Collection	Canterbury	QZ1	3cm quartz countertop.	
Floorcovering	Carpet	Patcraft	Z6474 Intrinsic	00765 Rock Scissors Paper	C1	At Open Office Area: Provide carpet tile, provide 80% random pattern. Installation method: Monolithic. Glue down direct.
	Carpet	Patcraft	Z6476 Liquid Modular	00765 Rock Scissors Paper	C2	At Closing Rooms: Provide new carpet tile. Glue down direct. Installation method: Monolithic.
	Carpet	Patcraft	I0146 Linea	46427 Slate	C3	At Open Office Area: Provide accent carpet tile, provide 20% random pattern. Glue down direct.
	Walk Off Carpet	Shaw Contract	ST032 Bon Jour Tile	31751 Black Chocolate	C4	Install 1/2 turn.
Luxury Vinyl Tile	Shaw Contract Group	Uncommon Ground	Adirondack	LVT1	New 6"x48" LVT where indicated. Refer to Finish Treatment Plan for direction.	
Vinyl Sheet Flooring	Johnsonite	Accent Concrete	25000 Cool Grey	VST1	At Restrooms: Provide vinyl sheet flooring. Include water tight sealing at walls & hot welded seams. Continuous cove trim to 6" AFF with stainless steel Schluter trim.	
Base Trim	Johnsonite	---	167 Fudge	RB1	Provide rubber base throughout Limit of Construction, UNO.	

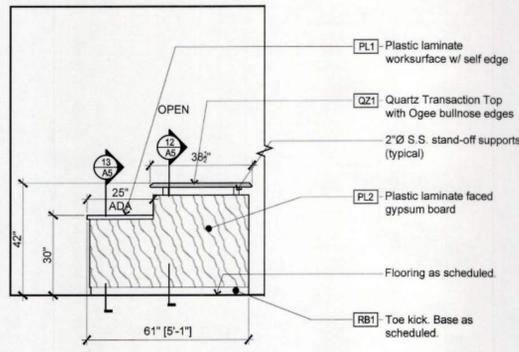
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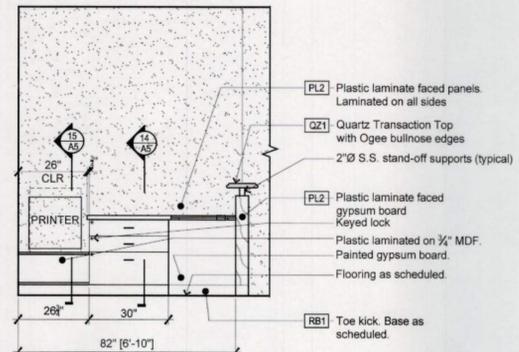


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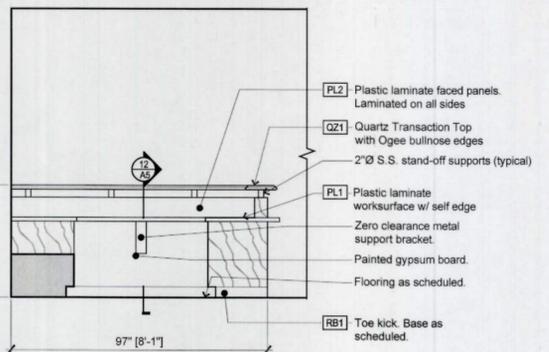
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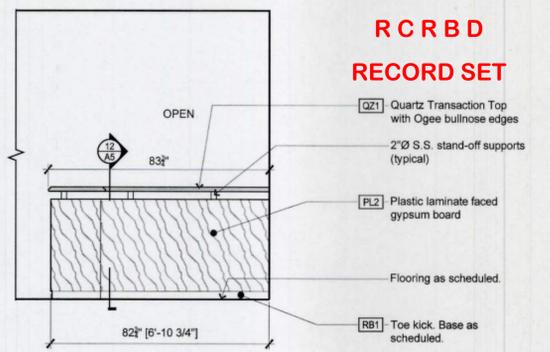
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 At Reception Desk Scale: 3/8" = 1'-0"



2 Elevation: Millwork
 At Reception Desk Scale: 3/8" = 1'-0"

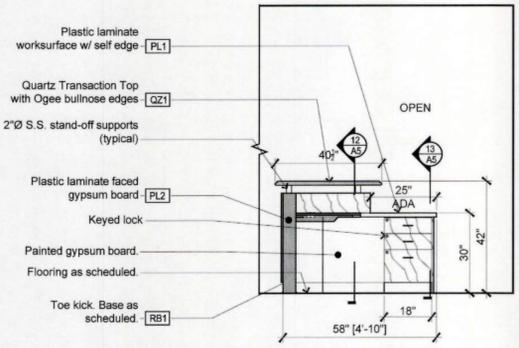


3 Elevation: Millwork
 At Reception Desk Scale: 3/8" = 1'-0"

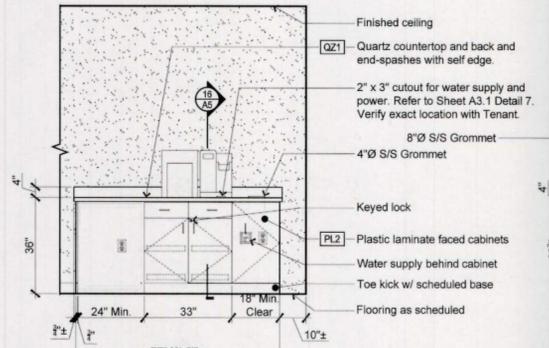


4 Elevation: Millwork
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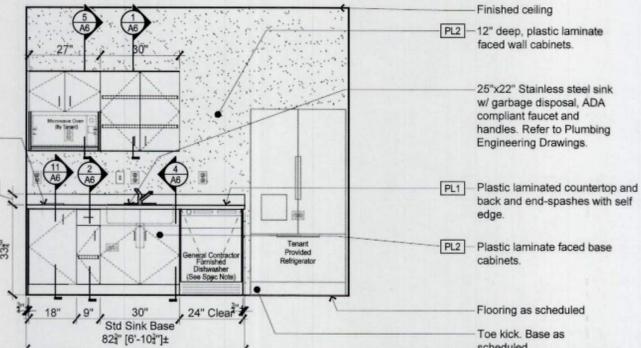
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5 Elevation: Millwork
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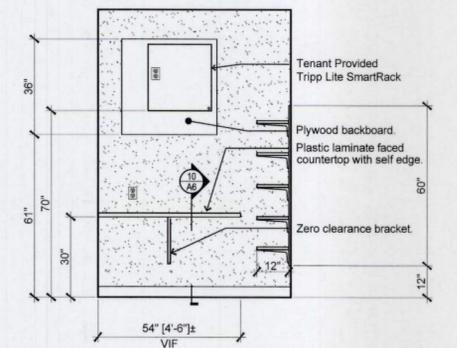


6 Elevation: Millwork
 At Coffee Bar 101 Scale: 3/8" = 1'-0"

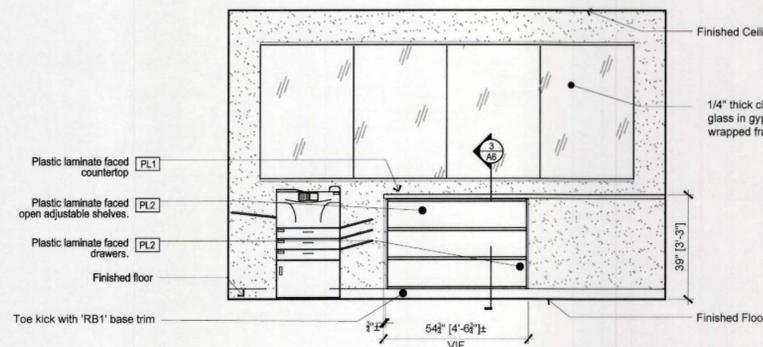


7 Elevation: Millwork
 At Break Room 112 Scale: 3/8" = 1'-0"

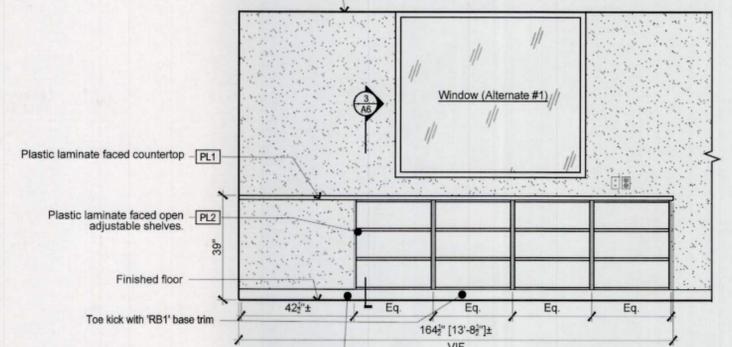
Dishwasher specification: Dishwasher shall be built-in type, 24" w, five cycle operation, sound insulated, with energy saving drying option, standard racks w/ flatware storage to fit under ADA height countertop. Front panel color: TBD



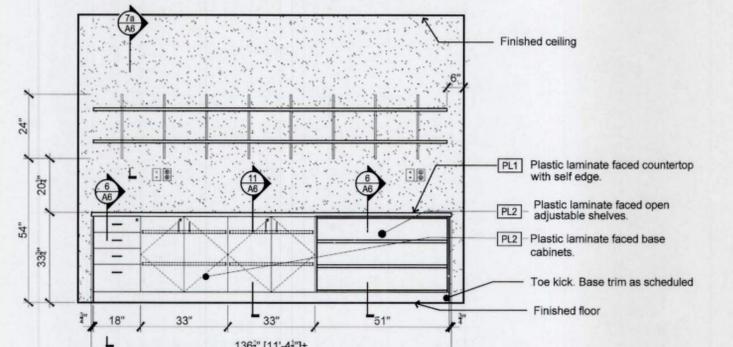
8 Elevation: Millwork
 At Server / Storage Scale: 3/8" = 1'-0"



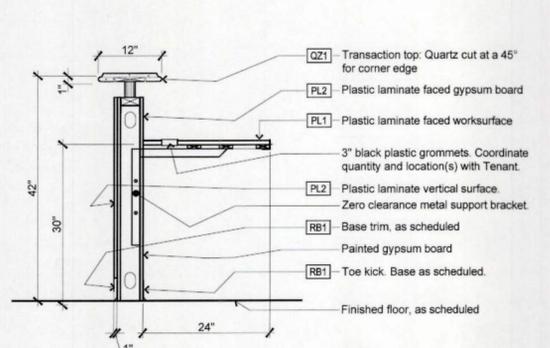
9 Elevation: Millwork
 At Work Room 115 Scale: 3/8" = 1'-0"



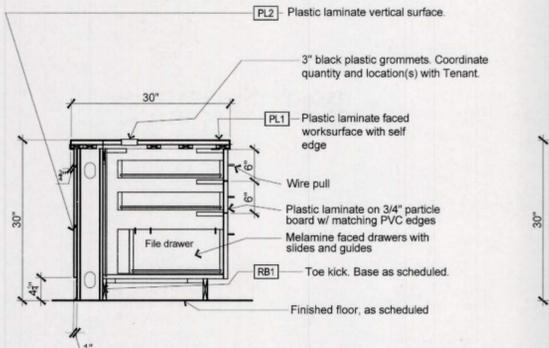
10 Elevation: Millwork
 At Work Room 115 Scale: 3/8" = 1'-0"



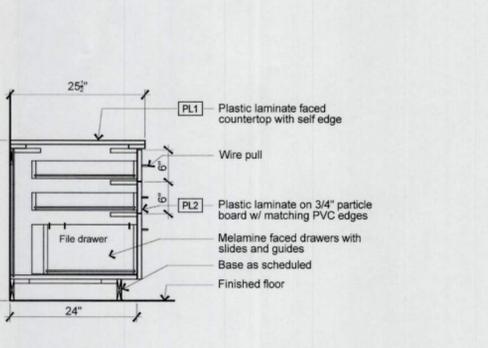
11 Elevation: Millwork
 At Work Room 115 Scale: 3/8" = 1'-0"



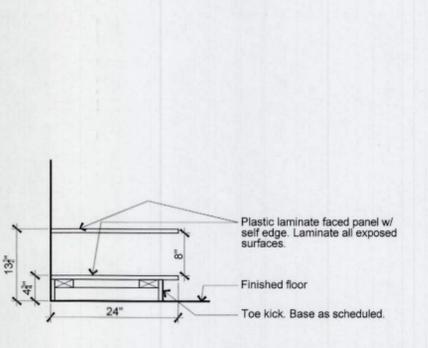
12 Section: Millwork
 Transaction @ Reception Desk Scale: 3/4" = 1'-0"



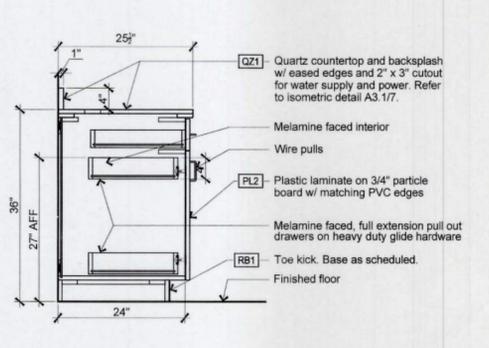
13 Section: Millwork
 ADA Work Surface @ Reception Desk Scale: 3/4" = 1'-0"



14 Section: Millwork
 Drawer Ped Scale: 3/4" = 1'-0"



15 Section: Millwork
 Printer platform @ Reception Desk Scale: 3/4" = 1'-0"

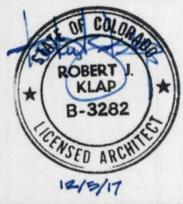


16 Section: Millwork
 Base Cabinet @ Coffee Bar 101 Scale: 3/4" = 1'-0"



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Bldg. B
 255 Anglers Drive
 Steamboat Springs, CO 80477
Suite B



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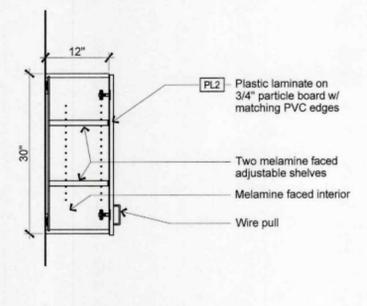
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Millwork Sections

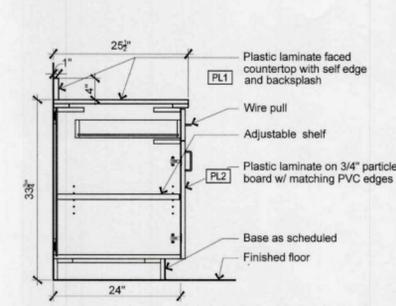
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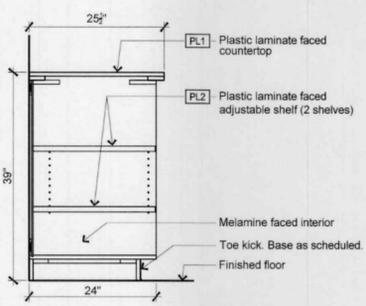
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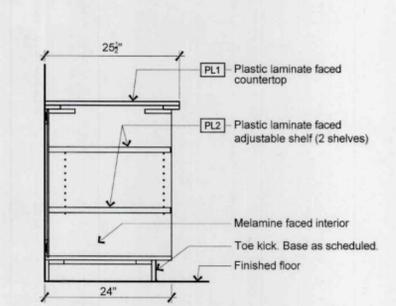
1 Section: Millwork
 Wall Cabinet Scale: 3/4" = 1'-0"



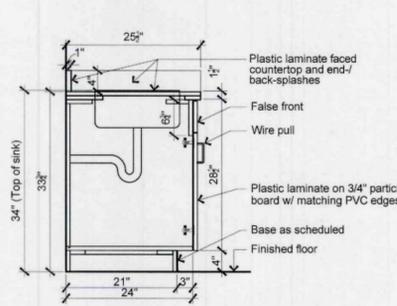
2 Section: Millwork
 Base @ Kitchen 112, Work Area 115 Scale: 3/4" = 1'-0"



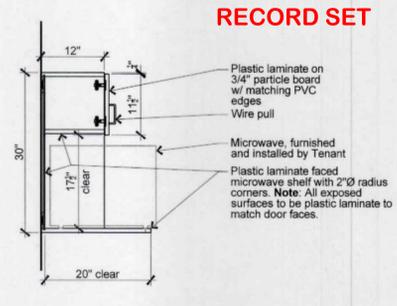
3 Section: Millwork
 Open Base @ Work Room Scale: 3/4" = 1'-0"



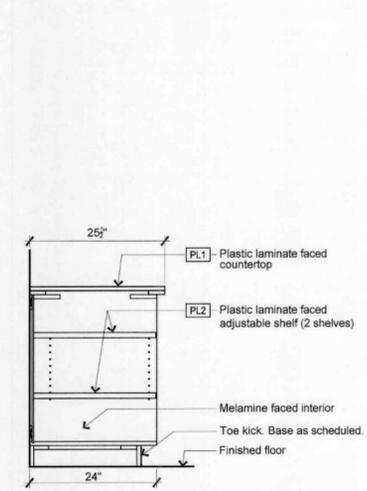
3a Section: Millwork
 Open Base @ Work Room Scale: 3/4" = 1'-0"



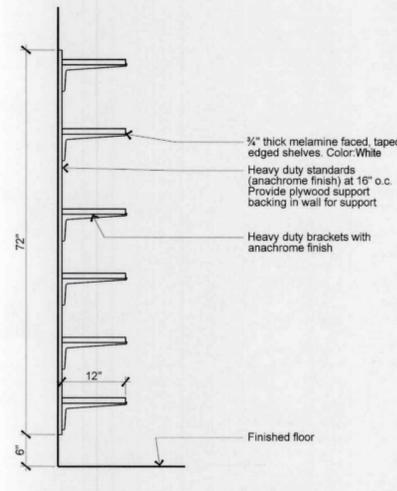
4 Section: Millwork
 Sink Base @ Break Room Scale: 3/4" = 1'-0"



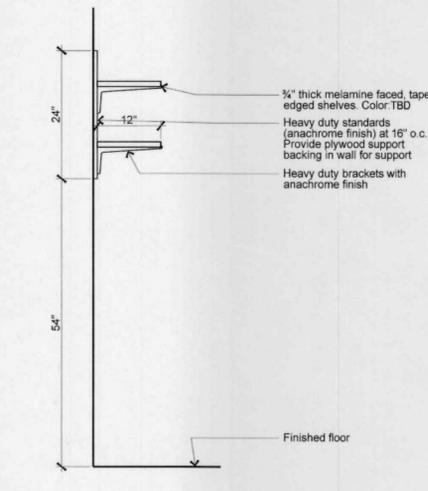
5 Section: Millwork
 Microwave shelf Scale: 3/4" = 1'-0"



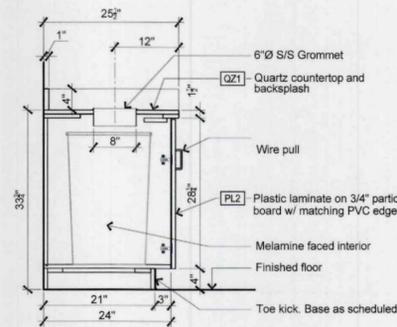
6 Section: Millwork
 Open Base @ Work Room Scale: 3/4" = 1'-0"



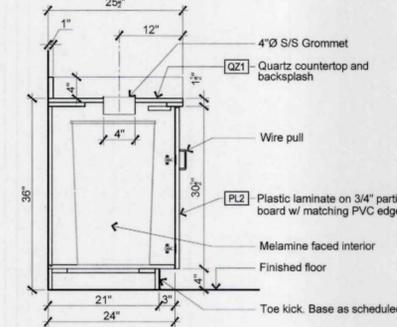
7 Section: Millwork
 Adjustable Shelves Scale: 3/4" = 1'-0"



7a Section: Millwork
 Adjustable Shelves Scale: 3/4" = 1'-0"



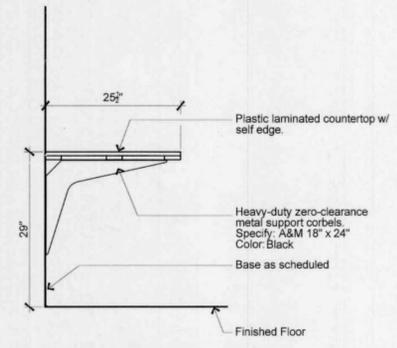
8 Section: Millwork
 Trash Cabinet @ Break Room Scale: 3/4" = 1'-0"



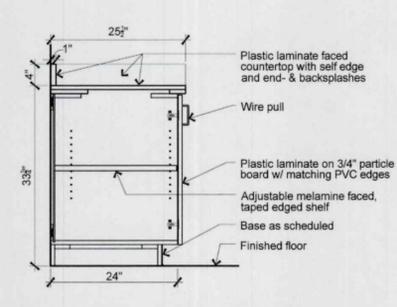
8a Section: Millwork
 Trash Cabinet @ Coffee Bar Scale: 3/4" = 1'-0"



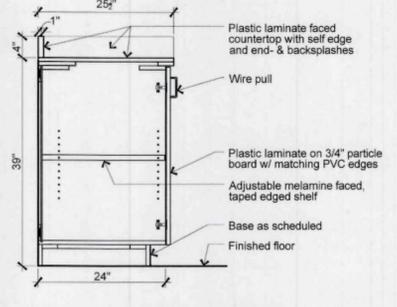
9 Isometric
 At Coffee Bar Scale: 1 1/2" = 1'-0"



10 Section: Millwork
 Work Surface @ IT/Server Room Scale: 3/4" = 1'-0"



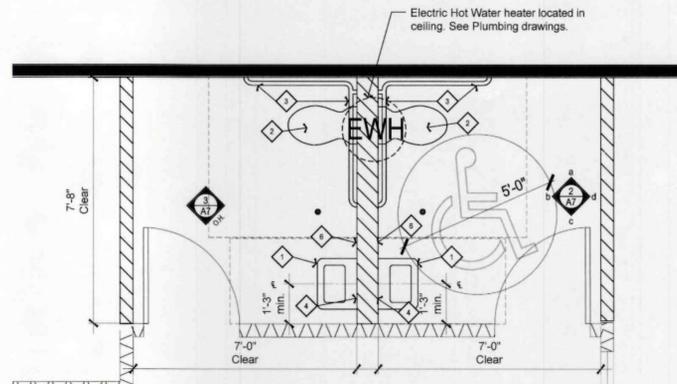
11 Section: Millwork
 Low Cabinet @ Work Room 115 Scale: 3/4" = 1'-0"



11a Section: Millwork
 High Cabinet @ Work Room 115 Scale: 3/4" = 1'-0"

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1 Enlarged Plan View
 At Restroom 107 & 108

Scale: 1/8" = 1'-0"



ICC / ANSI A117.1-2003 References

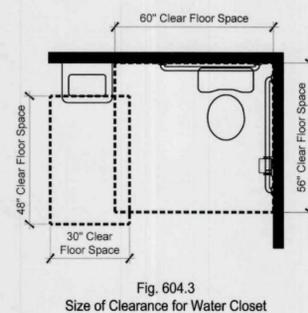


Fig. 604.3
 Size of Clearance for Water Closet

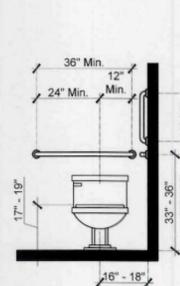


Fig. 604.4
 Water Closet Height

Fig. 604.5.2
 Rear Wall Grab Bar for Water Closet

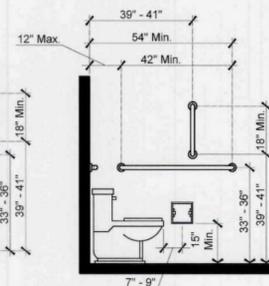
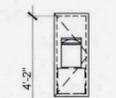


Fig. 604.5.1
 Side Wall Grab Bar for Water Closet

Fig. 604.7
 Dispenser Location Below Grab Bar



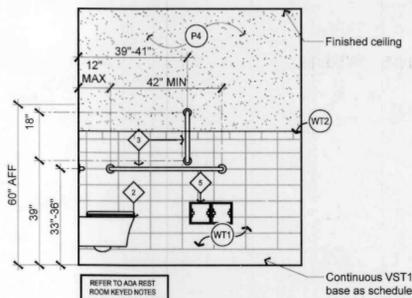
Towel Dispenser /
 Trash Receptacle

ADA Restroom Notes

- ◇ Wall hung vitreous china Lavatory with accessible faucet and handles. Refer to Plumbing Plans.
- ◇ NEW WHITE WALL-MOUNTED WATER CLOSET. Refer to Plumbing Drawings.
- ◇ NEW 18", 36" & 42" GRAB BAR. Provide Bobrick B-6806x18, 36, & 42 (or equal) stainless steel grab bar with concealed mounting.
- ◇ NEW MIRROR. Provide Bobrick B-165 2436 (or equal) framed mirror assembly.
- ◇ NEW DOUBLE-ROLL TOILET TISSUE DISPENSER. Provide Bobrick B-6977 (or equal) recessed unit. Coordinate with Tenant.
- ◇ NEW PAPER TOWEL DISPENSER/WASTE RECEPTACLE. Provide Bobrick B-3944 (or equal) recessed unit.

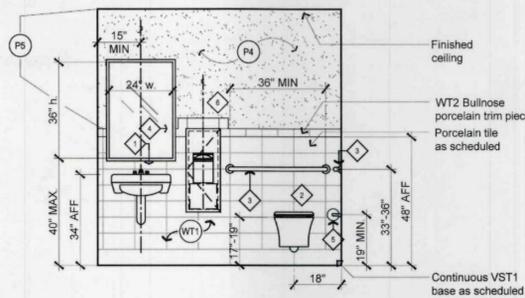
All restroom equipment shall be satin stainless steel finish.

**RCRBD
 RECORD SET**



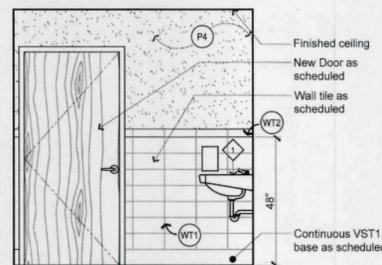
2a Elevation: Restroom
 At Restroom 107 & 108

Scale: 3/8" = 1'-0"



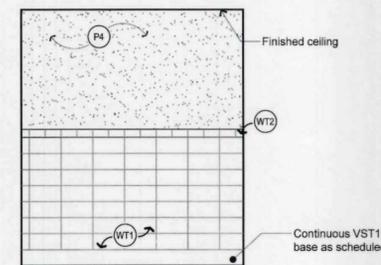
2b Elevation: Restroom
 At Restroom 107 & 108

Scale: 3/8" = 1'-0"



2c Elevation: Restroom
 At Restroom 107 & 108

Scale: 3/8" = 1'-0"



2d Elevation: Restroom
 At Restroom 107 & 108

Scale: 3/8" = 1'-0"

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**Sundance Plaza
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 255 Anglers Drive
 Steamboat Springs, CO 80477
Suite B



**Land Title Guarantee
 Company**

Dates of Record

Issued On	Issued For
05 Dec. 2017	Tenant Review & Approval, and Construction

Project #	Proj Mgr	Designed by	Drafted by	Checked by
202100	CN	AC	DE	CN



R C R B D
RECORD SET

MEP
ENGINEERING INC.
CLIENT CENTRIC CONSULTING

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Centennial, CO 80111 (F) 303.934.3299
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Land Title Guarantee
Company

Dates of Record
Project Start Date: 11/10/2017
Issued On: Issued For
12/05/2017 Construction Documents

Sheet
Contents
Project Name
Project Number
Sheet
Mark
MECHANICAL
SPECIFICATIONS
& LEGEND
17383
M1.0

DIVISION 230000 - MECHANICAL SPECIFICATIONS

BASIC MECHANICAL REQUIREMENTS

1. IF MANUFACTURER'S MATERIAL OR EQUIPMENT IS LISTED IN SCHEDULES OR ON DRAWINGS, IT IS TO BE PROVIDED FOR ESTABLISHMENT OF SIZE, CAPACITY, GRADE, AND QUALITY. IF OTHER ACCEPTABLE MANUFACTURERS ARE USED, COST OF ANY CHANGE IN CONSTRUCTION REQUIRED BY THEIR USE SHALL BE BORNE BY CONTRACTOR.

2. EQUIPMENT SHALL CONFORM TO STATE AND/OR LOCAL ENERGY CONSERVATION STANDARDS.

3. DRAWINGS ARE DIAGNOSTIC IN CHARACTER AND DO NOT NECESSARILY INDICATE EVERY REQUIRED PIPE, OFFSET, TRANSITION, ETC. ITEMS NOT SPECIFICALLY MENTIONED IN THE SPECIFICATION OR NOTED ON THE DRAWINGS, BUT WHICH ARE NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION, SHALL BE INCLUDED.

4. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY. WHATEVER IS CALLED FOR IN EITHER IS BINDING AS THOUGH CALLED FOR IN BOTH. IF THERE IS A CONFLICT IN THE CONTRACT DOCUMENTS, THE MORE DEMANDING AND COSTLY DESIGN SHALL BE SELECTED FOR BIDDING PURPOSES. THE CONTRACTOR SHALL IMMEDIATELY PRESENT THE CONFLICT FOUND IN THE CONTRACT DOCUMENTS TO THE ARCHITECT/ENGINEER FOR RESOLUTION. IF THE RESOLUTION FAVORS A LESS COSTLY DESIGN, THE CONTRACTOR WILL BE REQUIRED TO REIMBURSE THE DIFFERENCE IN COST.

5. BEFORE ANY WORK IS INSTALLED, DETERMINE THAT EQUIPMENT WILL PROPERLY FIT THE SPACE THAT REQUIRED CLEARANCES CAN BE MAINTAINED AND THAT EQUIPMENT CAN BE LOCATED WITHOUT INTERFERENCES BETWEEN SYSTEMS, WITH STRUCTURAL ELEMENTS, OR WITH THE WORK OF OTHER TRADES.

6. IF CONFLICTS ARE DISCOVERED IN CONTRACT DOCUMENTS AS WORK PROGRESSES, SUBMIT A SET OF DRAWINGS MARKED WITH RED PENCIL SHOWING RECOMMENDED MODIFICATIONS TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.

7. COOPERATE AND COORDINATE WORK WITH OTHER TRADES. COORDINATE GROUNDING AND GROUNDING SYSTEMS WITH OTHER TRADES.

8. ARRANGE AND PAY FOR ALL INSPECTIONS, PERMITS, LICENSES, CERTIFICATES, AND FEES REQUIRED IN CONNECTION WITH WORK.

9. SUBMITTALS AND SHOP DRAWINGS:
1. CONFORM TO REQUIREMENTS OF DIVISION 1 AND FOLLOWING PARAGRAPHS.
2. SUBMITTALS SHALL INCLUDE CATALOG CUT-SHEETS AND MANUFACTURER'S DATA SHEETS.

3. PRIOR TO ORDERING EQUIPMENT OR BEGINNING INSTALLATION WORK, ASSEMBLE, PREPARE, AND FURNISH SUBMITTALS AND SHOP DRAWINGS AS REQUIRED BY INDIVIDUAL SECTIONS OF SPECIFICATIONS.

4. CONTRACTOR SHALL THOROUGHLY CHECK SUBCONTRACTORS' OR VENDORS' SUBMITTALS AND SHOP DRAWINGS AND AFTER APPROVING THEM, SUBMIT THEM FOR REVIEW. SUBMITTALS AND SHOP DRAWINGS THAT DO NOT BEAR CONTRACTOR'S REVIEW STAMP WILL BE RETURNED NOT REVIEWED.

5. IF DISCREPANCIES BETWEEN SUBMITTALS, SHOP DRAWINGS, AND CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SUBMITTALS AND SHOP DRAWINGS ARE REVIEWED, REQUIREMENTS OF CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE. SUBMITTALS AND SHOP DRAWINGS WHICH ARE SUBMITTED, BUT WHICH ARE NOT REQUIRED BY CONTRACT DOCUMENTS, WILL BE RETURNED NOT REVIEWED.

6. SUBMITTALS AND SHOP DRAWINGS SHALL IDENTIFY SPECIFIC EQUIPMENT WITH NUMBERS OR LETTERS IDENTICAL TO THOSE LISTED OR SCHEDULED ON THE DRAWINGS OR SPECIFICATIONS.

7. RECORD DOCUMENTS:
1. KEEP IN GOOD ORDER DURING ENTIRE PERIOD OF CONSTRUCTION A CURRENT SET OF DOCUMENTS INDICATING CHANGES THAT HAVE BEEN MADE TO THE CONTRACT DOCUMENTS.

2. UPON COMPLETION OF WORK, SUBMIT THE COMPLETE SET OF RECORD DOCUMENTS TO THE ARCHITECT.

8. PROTECTION OF EQUIPMENT:
1. PROTECT MATERIALS AND EQUIPMENT FROM PHYSICAL DAMAGE, CONSTRUCTION DIRT, AND THE ELEMENTS FROM TIME OF SHIPMENT TO THE INSTALLATION IS ACCEPTED BY OWNER.

9. GUARANTEE:
1. GUARANTEE MATERIALS, WORKMANSHIP, AND OPERATION OF EQUIPMENT INSTALLED FOR PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF ENTIRE WORK. REPAIR OR REPLACE ANY PART OF WORK WHICH SHOWS DEFECT DURING THAT TIME.

2. BE RESPONSIBLE FOR DAMAGE TO PROPERTY OF OWNER OR TO WORK OF OTHER CONTRACTORS DURING CONSTRUCTION AND GUARANTEE PERIOD.

3. FURNISH EQUIPMENT WARRANTIES TO OWNER.

4. MECHANICAL EQUIPMENT WIRING AND CONNECTIONS:
1. VOLTAGE CHARACTERISTICS SHALL BE AS IN ELECTRICAL DIVISION OF SPECIFICATIONS AND ON ELECTRICAL DRAWINGS.

5. TEMPORARY FACILITIES:
1. USE OF EXISTING EQUIPMENT FOR TEMPORARY HEATING OR COOLING. DO NOT USE NEW OR EXISTING BUILDING EQUIPMENT WITHOUT WRITTEN PERMISSION FROM OWNER.

6. INSPECTIONS:
1. DO NOT COVER UP OR ENCLOSE WORK UNTIL INSPECTED, TESTED, AND APPROVED. ANY WORK ENCLOSED OR COVERED UP BEFORE SUCH APPROVAL SHALL BE UNCOVERED, TESTED, AND APPROVED.

7. ACCESS DOORS:
1. FURNISH HINGED STEEL ACCESS DOORS WITH CONCEALED LATCH, WHETHER SHOWN OR NOT, IN WALLS AND PLASTER OR GYPSUM BOARD CEILINGS FOR ACCESS TO CONCEALED VALVES, SHOCK ARRESTERS, AIR VENTS, MOTORS, FANS, BALANCING VALVES, OR OTHER OPERATING DEVICES REQUIRING ADJUSTMENT OR SERVICING.

2. ACCESS DOOR SHALL BE SIZE OF EQUIPMENT TO BE REMOVED OR 24" BY 24" IF USED FOR SERVICE ONLY.

8. SUPERVISION:
1. SUPERVISE WORK TO PROCEED IN PROPER SEQUENCE WITHOUT DELAY TO OTHER CONTRACTORS. KEEP SUPERVISOR ON PREMISES AT ALL TIMES TO ENSURE THAT INTENT OF DRAWINGS AND SPECIFICATIONS IS BEING FOLLOWED.

9. INSTALLATION:
1. WORKMANSHIP SHALL BE FIRST QUALITY. APPEARANCE OF WORK SHALL BE OF EQUAL IMPORTANCE TO ITS MECHANICAL OPERATION. LACK OF QUALITY WORKMANSHIP SHALL BE REASON FOR REJECTION OF SYSTEM IN PART OR IN WHOLE.

2. INSTALL SO THAT ALL VALVES AND EQUIPMENT CAN BE EASILY ACCESSED AND SERVICED BY ADEQUATE CLEARANCE, INSTALLATION OF ACCESS DOORS, UNIONS IN PIPES, OR OTHER METHODS.

3. COMPLETE INSTALLATION SHALL FUNCTION SMOOTHLY AND NOISELESSLY.

4. INSTALL EQUIPMENT AND MATERIALS PER MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODES OR REGULATIONS.

5. PLACE OR REPLACE ALL EQUIPMENT NAMEPLATES WHERE THEY CAN BE SEEN AND READ WITHOUT DIFFICULTY.

BASIC MECHANICAL REQUIREMENTS (CONTINUED)

OPERATION AND MAINTENANCE MANUALS:
1. PRIOR TO COMPLETION OF PROJECT SUBMIT OPERATION AND MAINTENANCE MANUALS FOR MECHANICAL EQUIPMENT WITH MOVING OR MOVABLE PARTS, INCLUDING STARTING, STOPPING, AND MAINTENANCE INSTRUCTIONS. THESE MANUALS SHALL BE IN ENGLISH, TYPEWRITTEN OR FROM FORM. INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT SHALL BE INDICATED BY A SEPARATE TAB.

2. INCLUDE TEST AND BALANCE REPORT.

3. INCLUDE STARTING, STOPPING, LUBRICATION, PREVENTATIVE MAINTENANCE SCHEDULE, AND ADJUSTMENT INFORMATION FOR EACH PIECE OF EQUIPMENT.

4. INCLUDE WARRANTIES AND WARRANTIES OF ALL EQUIPMENT.

PIPE AND PIPE FITTINGS:
A. COPPER REFRIGERANT TUBE: ASTM B280-05, SEAMLESS.
B. COPPER DRAINAGE TUBE (DWT): ASTM B306-06.

PIPE AND TUBE JOINTS AND FITTINGS:
A. COPPER AND BRASS PIPE FITTINGS: ASME B16.25, PRESSURE FITTINGS; ASME B16.24, DRAINAGE FITTINGS.

GENERAL:
A. COOLING COIL, CONDENSATE DRAIN PIPING: MAINTAIN PIPE SLOPE 1/8" DOWN PER LINEAR FOOT IN THE DIRECTION OF FLOW UNLESS OTHERWISE NOTED ON DRAWINGS.

B. MAKE CONNECTIONS TO EQUIPMENT WITH UNIONS OR FLANGES.

C. COOLING COIL, CONDENSATE DRAIN PIPING SHALL BE EQUAL TO OR LARGER THAN THE EXIT DIAMETER OF THE DRAIN PAN DRAIN CONNECTION.

D. FLUSH EACH PIPING SYSTEM AND PROVE CLEAN.

COPPER PIPE CONNECTIONS:
A. USE 15% SILVER BRAZING ALLOY AND SILVER BRAZING FLUX ON CONCEALED JOINTS.

REFRIGERANT COPPER PIPE CONNECTIONS:
A. 2-3/8" O.D. AND SMALLER: 1/8" TIN, 5% ANTIMONY LEAD-FREE SOLDER.
B. 3-1/8" O.D. AND LARGER, HOT GAS PIPING, BURIED PIPING: 15% SILVER BRAZING ALLOY.
C. CONTINUOUSLY PURGE PIPING WITH DRY NITROGEN DURING SILVER BRAZING PROCESS.

PIPE TESTING:
A. TEST ALL PIPING SYSTEMS, CORRECT LEAKS BY REMAKING JOINTS. REMOVE EQUIPMENT NOT ABLE TO WITHSTAND TEST PRESSURE FROM SYSTEM DURING TEST. CONSULT GOVERNING CODES FOR SPECIAL SYSTEM REQUIREMENTS.

B. TEST PIPING BEFORE BEING PERMANENTLY ENCLOSED.

C. OBTAIN CERTIFICATES OF APPROVAL, ACCEPTANCE, COMPLIANCE WITH REGULATIONS OF AGENCIES HAVING JURISDICTION. SUBMIT TO OWNER.

D. REFRIGERANT PIPING SYSTEM TEST: TEST WITH NITROGEN AT 300 PSIG ON HIGH SIDE OF SYSTEM AND AT 150 PSIG ON LOW SIDE. MAINTAIN PRESSURE FOR 4 HOURS. AFTER TEST, EVACUATE PIPING WITH VACUUM PUMP FOR MINIMUM 24 HOURS OR UNTIL SYSTEM HAS BEEN COMPLETELY EVACUATED.

SUPPORTS, ANCHORS, SEALS:
1. DUCT HANGERS AND SUPPORTS:
A. BALANCE BRACKETS.
B. FLASHING FOR MECHANICAL EQUIPMENT.
C. SLEEVING FOR MECHANICAL EQUIPMENT.

2. REFRIGERANT PIPING SYSTEM TEST: TEST WITH NITROGEN AT 300 PSIG ON HIGH SIDE OF SYSTEM AND AT 150 PSIG ON LOW SIDE. MAINTAIN PRESSURE FOR 4 HOURS. AFTER TEST, EVACUATE PIPING WITH VACUUM PUMP FOR MINIMUM 24 HOURS OR UNTIL SYSTEM HAS BEEN COMPLETELY EVACUATED.

3. MECHANICAL PIPING INSULATION SCHEDULE (BASED ON IECC 2015 C405):

Table with columns: SERVICE, PIPE SIZE, THICKNESS, CONDUCTIVITY (K-VALUE), and R-VALUE (IN/FT^2 IN).

4. MECHANICAL DUCT INSULATION SCHEDULE (BASED ON IECC 2015 C405):

Table with columns: SERVICE, WRAP, LINER.

5. WHERE THE DESIGN TEMPERATURE DIFFERENCE BETWEEN THE INTERIOR AND EXTERIOR OF THE DUCT IS NOT GREATER THAN 15 DEG F.

6. DUCTWORK:
1. LISTED UNDER UL-181 STANDARDS AS CLASS I AIR DUCT MATERIAL. MAXIMUM OPERATING PRESSURE 6" H2O. WORKING VELOCITY 4000 FPM. MATERIAL SHALL BE APPROVED BY AUTHORITY HAVING JURISDICTION.

2. INSULATED, ALUMINUM LAMINATE INNER CORE GALVANIZED STEEL HELIX, 10Y6, 1" THICK 3/4 LB. DENSITY FIBERGLASS INSULATION (MINIMUM R-6). METAL OR APPROVED METALLIZED POLYESTER OR SOLUBLE RESISTANT FOIL SCUM OUTER JACKET (MAXIMUM VAPOR TRANSMISSION RATE 0.05 PERMS).

3. SPIN-IN FITTING: FLARED INLET, MANUAL VOLUME DAMPER AND REGULATOR WHERE NOTED.

4. FABRICATION:
1. DUCT PRESSURE AND LEAKAGE CLASSIFICATIONS

Table: DUCTWORK PRESSURE CHART showing DUCTWORK, MIN. DUCT PRESSURE CLASSIFICATION (IN. HG.), and EQUIPMENT BASES.

2. EQUIPMENT BASES:
1. CONCRETE BASES FOR EQUIPMENT WILL BE PROVIDED BY OTHERS ONLY IF SHOWN ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. ALL OTHER BASES SHALL BE PROVIDED BY THIS CONTRACTOR.

2. ANCHORS:
A. USE ANCHORS FOR SUSPENDING HANGERS FROM REINFORCED CONCRETE SLABS, AND SIDES OF REINFORCED CONCRETE BEAMS.
B. REVIEW ANCHOR LOCATIONS, DEPTHS WITH ARCHITECT AND STRUCTURAL ENGINEER BEFORE INSTALLATION.
C. INSTALL PER MANUFACTURER'S DESIGN CRITERIA, INSTALLATION INSTRUCTIONS.

SUPPORTS, ANCHORS, SEALS (CONTINUED)

3. SLEEVES IN BEARING WALLS, WATERPROOF MEMBRANE FLOORS, JET AREAS SHALL BE STEEL PIPE OR CAST IRON PIPE OR SMALL BOND DUCTS AND PIPES. IS GAUGE GALVANIZED SHEET METAL FOR DUCTS. SLEEVES IN NON-BEARING WALLS, FLOORS, CEILING SHALL BE STEEL PIPE, CAST IRON PIPE, OR GALVANIZED SHEET METAL WITH LOCK-TYPE LONGITUDINAL SEAM.

4. WHERE DUCTS PENETRATE BEARING WALLS (INCLUDING FOUNDATIONS), FIRE RATED WALLS, PARTITIONS, FLOORS, PACK AND SEAL ENTIRE SPACE BETWEEN DUCT AND SLEEVES WITH DOWN CORING 3-4046 SILICONE RTV FOAM, OR 1" MINIMUM THICKNESS OF 3/4" FIRE BARBERS CP-20 GULF, OR 3/32" PUTTY ON EACH SIDE OF OPENING.

5. WHERE DUCT PENETRATIONS OCCUR IN NON-FIRE RATED FLOORS OR WALLS, PACK SPACE BETWEEN DUCT AND SLEEVES OR INSULATION INSERT AND SLEEVE ON EACH END WITH MINERAL WOOL OR OTHER NON-COMBUSTIBLE MATERIAL.

MECHANICAL IDENTIFICATION:
1. IDENTIFY EQUIPMENT WITH LAMINATED BLACK PLASTIC TAG WITH ENGRAVED WHITE CORE LETTERING. TAG SHALL INDICATE EQUIPMENT DUTY SUCH AS 'TURBINE', 'CONDENSING UNIT', AND EQUIPMENT DESIGNATION AS SHOWN ON DRAWINGS. TAGS SHALL HAVE MINIMUM THICKNESS OF 1/16" MINIMUM SIZE OF 1/2" X 1/4" WITH MOUNTING HOLES. SECURE TAGS TO EQUIPMENT BY MEANS OF SCREWS, BOLTS, CHAIN.

2. IDENTIFY EACH CONTROL TAG BY MEANS OF GUN TAG INDICATING CORRESPONDING UNIT WHICH IT CONTROLS. LOCATE TAG UNDER THE INSTRUMENT COVER.

INSULATION:
1. FURNISH AND INSTALL INSULATION FOR ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK SYSTEMS. INSULATION THICKNESS AND R-VALUE PER IECC. LINE LOW PRESSURE RECTANGULAR DUCTWORK. INSULATE OUTSIDE AIR DUCTS ON THE OUTSIDE. PROVIDE FOR 1" DUCT LINER FOR RECTANGULAR EXHAUST DUCTS FOR 15 FEET STARTING AT FAN.

2. FURNISH AND INSTALL INSULATION FOR ALL REFRIGERANT PIPING SYSTEMS. REFRIGERANT LIQUID AND INDOOR REFRIGERATED SUCTION PIPING, ALL SIZES 1" THICKNESS. REFRIGERANT PIPING OUTDOORS, ALL SIZES 3/4" THICKNESS.

3. MECHANICAL PIPING INSULATION SCHEDULE (BASED ON IECC 2015 C405):

Table with columns: SERVICE, PIPE SIZE, THICKNESS, CONDUCTIVITY (K-VALUE), and R-VALUE (IN/FT^2 IN).

4. MECHANICAL DUCT INSULATION SCHEDULE (BASED ON IECC 2015 C405):

Table with columns: SERVICE, WRAP, LINER.

5. WHERE THE DESIGN TEMPERATURE DIFFERENCE BETWEEN THE INTERIOR AND EXTERIOR OF THE DUCT IS NOT GREATER THAN 15 DEG F.

DUCTWORK:
1. LISTED UNDER UL-181 STANDARDS AS CLASS I AIR DUCT MATERIAL. MAXIMUM OPERATING PRESSURE 6" H2O. WORKING VELOCITY 4000 FPM. MATERIAL SHALL BE APPROVED BY AUTHORITY HAVING JURISDICTION.

2. INSULATED, ALUMINUM LAMINATE INNER CORE GALVANIZED STEEL HELIX, 10Y6, 1" THICK 3/4 LB. DENSITY FIBERGLASS INSULATION (MINIMUM R-6). METAL OR APPROVED METALLIZED POLYESTER OR SOLUBLE RESISTANT FOIL SCUM OUTER JACKET (MAXIMUM VAPOR TRANSMISSION RATE 0.05 PERMS).

3. SPIN-IN FITTING: FLARED INLET, MANUAL VOLUME DAMPER AND REGULATOR WHERE NOTED.

4. FABRICATION:
1. DUCT PRESSURE AND LEAKAGE CLASSIFICATIONS

Table: DUCTWORK PRESSURE CHART showing DUCTWORK, MIN. DUCT PRESSURE CLASSIFICATION (IN. HG.), and EQUIPMENT BASES.

2. EQUIPMENT BASES:
1. CONCRETE BASES FOR EQUIPMENT WILL BE PROVIDED BY OTHERS ONLY IF SHOWN ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. ALL OTHER BASES SHALL BE PROVIDED BY THIS CONTRACTOR.

2. ANCHORS:
A. USE ANCHORS FOR SUSPENDING HANGERS FROM REINFORCED CONCRETE SLABS, AND SIDES OF REINFORCED CONCRETE BEAMS.
B. REVIEW ANCHOR LOCATIONS, DEPTHS WITH ARCHITECT AND STRUCTURAL ENGINEER BEFORE INSTALLATION.
C. INSTALL PER MANUFACTURER'S DESIGN CRITERIA, INSTALLATION INSTRUCTIONS.

3. SUPPORT DUCTWORK IN ACCORDANCE WITH INTERNATIONAL MECHANICAL CODE, SHACMA, AND ASHRAE REQUIREMENTS AND RECOMMENDATIONS.

4. CONSTRUCT TEES, BONDS, ELBOWS WITH MINIMUM CENTER LINE RADII 1/2" TIMES HEIGHT OF DUCT. INTERSECTIONS AND WHERE RECTANGULAR ELBOWS USED, PROVIDE TURNING VANES.

5. INCREASE DUCT SIZES MAXIMUM 15 DEGREE DIVERGENCE. MAXIMUM DIVERGENCE: 20 DEGREE UPSTREAM OF EQUIPMENT, 30 DEGREE DOWNSTREAM.

6. RIGIDLY CONSTRUCT METAL DUCTS WITH JOINTS MECHANICALLY TIGHT, AIRTIGHT, BRACED AND STIFFENED.

7. SEAL ALL DUCTWORK (SEAMS, FASTENERS, OR GASKETS, AS APPLICABLE) PER THE INTERNATIONAL MECHANICAL CODE (IMC).

8. JOINTS IN RECTANGULAR DUCTWORK MAY BE MADE WITH DUCTMATE SYSTEM, NEXIS 4 BOLT DUCT CONNECTION SYSTEM, OR TDC.

9. WORK INCLUDES ACCESS DOOR, BALANCING DAMPER, FLEXIBLE CONNECTION AND TURNING VANES.

10. DUCT ACCESS DOORS SHALL BE UL LABELED. FABRICATE PER ASHRAE AND SHACMA. FURNISH MANUFACTURER'S SUBMITTAL DATA FOR ACCESS DOORS, BALANCING DAMPERS, FLEXIBLE CONNECTIONS AND TURNING VANES.

11. DUCT ACCESS DOOR SHALL BE RATED FOR SAME STATIC PRESSURE AS DUCTWORK AND SHALL BE FRAMED, HINGED, GASKETED TYPE WITH SASH LOCKS, FULLY INSULATED.

DUCTWORK (CONTINUED)

1. PROVIDE ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER. FILTERS, COILS, FANS, AUTOMATIC DAMPERS, FIRE OR COMBINATION FIRE/SMOKE DAMPERS, AND ELBOWS AS INDICATED. REVEN LOGS LOCATED WITH ARCHITECT PRIOR TO FABRICATION. PROVIDE 6" X 6" QUICK OPENING ACCESS DOORS FOR INSPECTION AT BALANCING DAMPERS AND TURNING VANES.

2. VOLUME DAMPER SHALL BE MULTIPLE OPPOSED BLADE TYPE, CLOSE FITTED IN DUCTS, SUITABLE FOR STATIC PRESSURE IN DUCTWORK AT INSTALLED LOCATION. DAMPERS 12" OR LESS IN HEIGHT SHALL HAVE SINGLE BLADE. DAMPER BLADES SHALL BE STAMPED 16 GAUGE GALVANIZED STEEL, MAXIMUM LENGTH 40". SHAFT SPACING SHALL NOT EXCEED 4". BLADES SHALL BE MOLDED SYNTHETIC. POSITIONING DEVICE SHALL BE LOCKING LEVER AND QUADRANT TYPE. TURNING VANES SHALL BE LOCKED TO QUADRANT WITH 1/4" TURNSCREW OR RING NUT, END OF SHAFT NOTICED PARALLEL TO DAMPER POSITION. CONTRACT DAMPERS SHALL BE LOCKED TO QUADRANT WITH END BEARINGS OR OTHER SEALING DEVICE. SUPPLY LOCKING TYPE HANDLES.

3. NOT ALL BALANCING DAMPERS REQUIRED FOR THE BALANCING WORK ARE SHOWN ON THE DRAWINGS. PROVIDE BALANCING DAMPERS AT POINTS ON LOW PRESSURE SUPPLY, RETURN, EXHAUST SYSTEMS WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AND AS REQUIRED FOR AIR BALANCING. COORDINATE WITH BALANCING CONTRACTOR AND PROVIDE ANY ADDITIONAL BALANCING DAMPERS REQUIRED. INSTALL DAMPERS IN ACCESSIBLE LOCATION.

4. FLEXIBLE CONNECTION SHALL BE NEOPRENE COATED, 30 OZ. FIBERGLASS FABRIC, 6" WIDE, TIGHTLY GRIPPED INTO METAL EDGING STRIP ATTACHED TO DUCTING AND EQUIPMENT BY SCREWS OR BOLTS AT 6" INTERVALS. FLENN RATED WHERE REQUIRED. FLEXIBLE CONNECTIONS EXPOSED TO WEATHER SHALL BE COATED WITH DOWPONT HYALON.

5. TURNING VANES SHALL BE INSTALLED IN SUPPLY, RETURN, AND EXHAUST OTHER ELBOWS. THEY SHALL BE FORMED SINGLE WALL, 20" MAXIMUM LENGTH OR DOUBLE WALL, GREATER THAN 20" LENGTH GALVANIZED STEEL BLADES. FOR METAL, DUCTWORK OTHER THAN STEEL, USE SAME TYPE MATERIAL AS DUCT. TURNING VANES INSTALLED IN UNEQUAL ELBOWS. ADJUSTABLE TYPE THAT REMAINS ALIGNED TO AIRSTREAM IN ALL POSITIONS.

6. ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL WITH INSULATION PER SPECIFICATIONS. FLEX DUCTS SHALL BE UL-181 LISTED, CLASS I, FACTORY PRE-INSULATED 1/2", WITH INNER LINER AND STEEL HELIX. FLEX DUCTS SHALL BE MINIMUM 5'-0" LONG.

7. STATIC FIRE DAMPER:
1. STATIC FIRE DAMPERS WITH CURTAIN STYLE BLADES MEETING REQUIREMENTS OF UL STANDARD 555 SIXTH EDITION, GALVANIZED STEEL OR PRIME COATED STEEL. PROVIDE REINFORCEMENT IN CORNERS TO PROVIDE MAXIMUM RESISTANCE TO RACKING.

2. FIRE RESISTANCE: DAMPERS SHALL HAVE A UL 555 FIRE RESISTANCE RATING OF 1-1/2 HOURS.

3. FIRE CLOSURE TEMPERATURE: EACH FIRE DAMPER SHALL BE EQUIPPED WITH A FACTORY INSTALLED HEAT RESPONSE DEVICE (FUSIBLE LINK) RATED TO CLOSE THE DAMPER WHEN TEMPERATURE AT THE DAMPER REACHES 165 F.

4. DIFFERENTIAL PRESSURE: DAMPERS SHALL HAVE A MINIMUM UL 555 DIFFERENTIAL PRESSURE RATING OF 4 INCHES H2O.

5. VELOCITY: DAMPERS SHALL HAVE A MINIMUM UL 555 VELOCITY RATING OF 3000 FPM.

6. LEAKAGE RATING: CLASS I DUCT STATIC PRESSURE EXCEEDS 2" H2O OR CLASS II (DUCT STATIC PRESSURE LESS THAN 2" H2O).

7. FIRE RESISTANCE: DAMPERS SHALL HAVE A UL 555 FIRE RESISTANCE RATING OF 1-1/2 HOURS.

8. FIRE CLOSURE TEMPERATURE: EACH COMBINATION FIRE SMOKE DAMPER SHALL BE EQUIPPED WITH A THERMOSTAT TO CLOSE THE DAMPER AT 165 F.

9. DIFFERENTIAL PRESSURE: DAMPERS SHALL HAVE A MINIMUM UL 555 DIFFERENTIAL PRESSURE RATING OF 4 INCHES H2O.

10. VELOCITY: DAMPERS SHALL HAVE A MINIMUM UL 555 VELOCITY RATINGS OF 3000 FPM.

11. OPERATING SHAF: 90 DEGREES BETWEEN CLOSED AND OPEN, SUITABLE FOR LINKING TO AND OPERATION BY DAMPER OPERATOR, WITH END SWITCH TO SIGNAL FULL OPEN POSITION.

12. ACTUATORS TYPE: ELECTRIC, 120 VOLT AC, 60 HZ, 2-POSITION, FAIL CLOSE. EXTERNAL MOUNTED.

13. PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER. FILTERS, COILS, FANS, AUTOMATIC DAMPERS, FIRE OR COMBINATION FIRE/SMOKE DAMPERS, AND ELBOWS AS INDICATED.

14. PROVIDE FIRE OR COMBINATION FIRE/SMOKE DAMPERS AT LOCATIONS SHOWN AND WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION.

TEMPERATURE CONTROL SYSTEMS:
1. ALL CONTROLS TO BE PROVIDED BY THE EQUIPMENT MANUFACTURER OR AN INDEPENDENT CONTROLS CONTRACTOR.

2. PROVIDE ALL CONTROLS FOR A COMPLETE OPERATIONAL SYSTEM. PROVIDE ALL INTERLOCKS TO EQUIPMENT AS INDICATED OR AS REQUIRED FOR PROPER OPERATION OF THE EQUIPMENT.

3. CONCEAL WIRING WITH BUILDING CONSTRUCTION EXCEPT IN MECHANICAL ROOMS AND AREAS WHERE OTHER CONDUIT AND PIPING ARE EXPOSED. INSTALL CONTROL WIRING SYSTEM IN CONDUIT WHERE EXPOSED OR SUBJECT TO DAMAGE. THE USE OF NIRMOLD SHALL NOT BE PERMITTED.

4. ALL CONTROL WIRING SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL TO BUILDING LINES WITH ADEQUATE SUPPORT. BOTH CONDUIT AND FLENN WIRING SHALL BE SUPPORTED FROM OR ANCHORED TO STRUCTURAL MEMBERS, CONDUIT OR FLENN WIRING SUPPORTED FROM OR ANCHORED TO PIPING, DUCT SUPPORTS, THE CEILING SUBSTRATION SYSTEM, OR THE ELECTRICAL CONDUITS IS NOT ACCEPTABLE.

5. UL FLENN RATED CABLE SHALL BE ALLOWABLE IN AIR PLenums AS APPROVED BY LOCAL CODES.

6. INSTALL SYSTEMS, COMPONENTS AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

7. THE CLOCKS REQUIRED TO COMPLETE THE TEMPERATURE CONTROL SEQUENCES SHALL BE 7-DAY, 24-HOUR ELECTRONIC TYPE. EQUIP THE CLOCKS WITH BATTERY BACKUP TO MAINTAIN PROGRAMMING IN CASE OF POWER FAILURE.

8. INSTRUCT OWNER'S PERSONNEL IN OPERATION AND MAINTENANCE OF ELECTRIC CONTROL SYSTEMS.

TESTING AND BALANCING

1. WORK INCLUDES TESTING AND BALANCING OF AIR AND WATER DISTRIBUTION SYSTEMS AND EQUIPMENT. TESTING AND BALANCING SHALL BE RESPONSIBILITY OF ONE FIRM. MINIMUM STANDARDS: CHAPTER 36, 2011 EDITION OF ASHRAE HVAC APPLICATIONS HANDBOOK.

2. CONTRACTOR SHALL PROVIDE TESTING, ADJUSTING, AND BALANCING OF ENVIRONMENTAL SYSTEMS. TESTING AND BALANCING WORK SHALL BE PRECISELY SUPERVISED AND RESULTS ATTESTED TO BY PROFESSIONAL ENGINEER WHO SHALL REPRESENT TESTING AND BALANCING FIRM IN PROGRESS MEETINGS AS REQUESTED, AND SHALL BE AVAILABLE FOR INTERPRETING MATERIAL IN BALANCE REPORT.

3. DO NOT BEGIN TESTING AND BALANCING WORK UNTIL SYSTEM HAS BEEN COMPLETED AND IS IN FULL WORKING ORDER. PUT SYSTEMS AND EQUIPMENT INTO FULL OPERATION AND CONTINUE OPERATION OF SAME DURING EACH WORKING DAY OF TESTING AND BALANCING. ASCERTAIN PRELIMINARY TAB REQUIREMENTS PRIOR TO COMMENCEMENT OF WORK. THROUGH REVIEW OF AVAILABLE DRAWINGS AND SPECIFICATIONS, MAKE VISUAL OBSERVATIONS AT SITE DURING CONSTRUCTION TO DETERMINE LOCATION AND SUITABILITY OF REQUIRED BALANCING DEVICES.

4. BEFORE BALANCE WORK IS STARTED, CHECK SYSTEM FOR DUCT LEAKAGE UNIMPEDED. PROBLEMS DISCOVERED AND CORRECTED PRIOR TO STARTING. EQUIPMENT START-UP STRAINERS, EQUIPMENT VIBRATION, PROPER OPERATION OF AUTOMATIC DAMPERS, VOLUME CONTROL DAMPERS AND AIR DEVICES OPEN, REPORT ANY DEFICIENCIES TO CONTRACTOR FOR CORRECTION OR RESOLUTION.

5. BALANCE AIR SYSTEMS WITH PATH PRESENTING GREATEST RESISTANCE TO THE FLOW, FULLY OPEN AND UNRESTRICTED. MAKE ALL NECESSARY SHEAVE AND IMPELLER REPLACEMENTS TO ACHIEVE ABOVE. DO NOT USE BALANCING DEVICES IN LIEU OF SHEAVE AND IMPELLER REPLACEMENT TO ACHIEVE DESIGN AIR FLOW.

6. ADJUST ALL AIR DEVICES FOR OPTIMUM DRAFT-FREE AIR DISTRIBUTION PATTERN. ADJUST LINEAR CEILING DIFFUSERS FOR HORIZONTAL DISCHARGE ALONG THE CEILING AND/OR VERTICAL DISCHARGE AT AN OUTSIDE WALL.

7. INSPECT TEMPERATURE CONTROL SYSTEM FOR PROPER SEQUENCE OF OPERATION AND APPROPRIATE CALIBRATION. REPORT ANY DEFICIENCIES TO CONTRACTOR.

8. BALANCE ALL AIR AND WATER FLOWS WITHIN JOB OF DESIGN. MEASURE AND RECORD QUANTITIES FOR EACH DEVICE, AIR HANDLING UNITS INCLUDING SUPPLY, RETURN, MIXED, OUTSIDE AIR, TEMPERATURES AND FAN DATA, INCLUDING CFM, STATIC PRESSURE, RPM, MOTOR RUNNING AND FULL LOAD AMPERAGE BEFORE AND AFTER FINAL BALANCE. SET AIR DIFFUSION PATTERNS TO MINIMIZE OBJECTIONABLE DRAFTS AND NOISE.

9. SUBMIT FINAL TESTING AND BALANCING REPORT PRIOR TO CONTRACTOR'S REQUEST FOR FINAL INSPECTION, SIGNED BY SUPERVISING ENGINEER AND AFFIXED WITH HIS CERTIFICATION.

10. PROVIDE TEST AND BALANCE REPORT TO INSPECTOR AT TIME OF HEATING FINAL INSPECTION.

11. SET UP AND CALIBRATE THERMOSTATS. SET THERMOSTAT AT 14 DEG. F +/- 2 DEG. F.

12. UPON COMPLETION OF WORK, SUBMIT DOCUMENTATION TO OWNER ITEMIZING AND DATING ALL PROBLEMS DISCOVERED AND REPORTED TO OWNER'S MAINTENANCE STAFF, AND TIME AND DESCRIPTION OF SOLUTION.

MECHANICAL LEGEND. NOT ALL ITEMS LISTED BELOW ARE USED ON THIS SET OF MECHANICAL DRAWINGS. Includes symbols for Double Line Ductwork, Control Devices and Dampers, and Single Line Ductwork. Includes abbreviations for equipment and materials.

1. COOPERATE AND COORDINATE WORK WITH OTHER TRADES. COORDINATE GROUNDING AND GROUNDING SYSTEMS WITH OTHER TRADES.

2. ARRANGE AND PAY FOR ALL INSPECTIONS, PERMITS, LICENSES, CERTIFICATES, AND FEES REQUIRED IN CONNECTION WITH WORK.

PACKAGED ROOFTOP HEATING AND COOLING UNIT SCHEDULE

SYMBOL	MANUFACTURER	MODEL	NOMINAL TONS	SUPPLY FAN DATA				EXHAUST FAN DATA				COIL DATA										ELECTRICAL										FILTER DATA		APPROX UNIT	APPROX OPER HT	REMARKS
				CFM TOTAL	CFM O.A.	ESP IN H.G.	APPROX RPM	HP	CFM TOTAL	ESP IN H.G.	ENTERING AIR TEMP DB	WB	LEAVING AIR TEMP DB	WB	MEH INPUT	MEH OUTPUT	MEH COOL TOTAL	NO STEPS	NO COMP	VOLT / PHASE	HCA	MOCP	EER	AIG RATING	IBC AVAILABLE	DATE CALCULATED	TYPE	EFF	DIR	HT	(LBS)					
				• 6" T30"	• 6" T30"	• 6" T30"			• 6" T30"	• 6" T30"	(F)	(F)	(F)	(F)	• 5 L	• 6" T30"	• 6" T30"																			
RTU-1	CARRIER	49LCP00B	1.5	3200	640	0.75	102	1.5	3200	3	HEATING	52.0	60	44.1	44.4	240	140	88	2	3	208/3	41	60	12.0	5K1	4150	11/20/2017	DISP	HEAVY 1	16x6x4-50	2800	1, 2, 3, 4, 5, 6, 7, 8				

REMARKS:

- ACCEPTABLE MANUFACTURERS INCLUDE: CARRIER, LENOX, HCGWAY, TRANE AND YORK.
- EXTERNAL STATIC PRESSURE DOES NOT INCLUDE LOSSES FOR UNIT CASING, FILTERS, OR COILS.
- COOLING COIL CAPACITY BASED ON ENTERING AIR TEMPERATURE SHOWN IN SCHEDULE AND 45 F AMBIENT AT CONDENSER.
- BURNER SHALL BE DESIGNED TO FIRE ON NATURAL GAS, 7" H.C.
- PROVIDE WITH 1/4" HIGH ROOF CURB.
- PROVIDE RTU WITH DUCT SMOKE DETECTOR MOUNTED IN RETURN DUCT, MECHANICAL CONTRACTOR SHALL PROVIDE INSTALLATION, ELECTRICAL CONTRACTOR SHALL PROVIDE DUCT SMOKE DETECTOR AND WIRING TO FACP.
- PROVIDE UNIT WITH MANUFACTURER FAULT DETECTION SYSTEM COMPLYING WITH IECC 409.2.4.1.
- PROVIDE UNIT WITH ECONOMIZER WITH POWERED EXHAUST AND STAND ALONE PROGRAMMABLE THERMOSTAT.

**R C R B D
RECORD SET**

SPECIFICATION: RTU-1

- UNIT SHALL INCLUDE COMPLETELY WEATHERPROOF PAINTED STEEL CABINET, FULLY INSULATED WITH 1" THICK, 3 LB. DENSITY FIBERGLASS INSULATION, REMOVABLE EXTERIOR PANELS, OUTSIDE AIR INTAKE HOOD WITH BIRDSCREEN, CONDENSER COIL HAIL GUARD.
- ROOF MOUNTING CURB: APPROVED BY NATIONAL ROOFING CONTRACTORS ASSOCIATION, HEIGHT AS DETAILED. FITCH ROOF CURB TO MATCH ROOF PITCH AND PROVIDE LEVEL INSTALLATION. UNIT BASE AND ROOF CURB SHALL MATE TO FORM WEATHERPROOF, GASKETED SEAL.
- EVAPORATOR FANS: CENTRIFUGAL TYPE WITH ADJUSTABLE BELT DRIVE.
- COMPRESSORS SHALL INCLUDE FUSIBLE RELIEF DEVICE, BUILT-IN THERMAL OVERLOAD AND LOW VOLTAGE PROTECTION. DUAL COMPRESSOR UNITS: SEPARATE AND INDEPENDENT REFRIGERANT AND CONTROL CIRCUITS. REFRIGERATION CONTROLS: COMPRESSOR CONTACTORS, CONDENSER AND EVAPORATOR FAN CONTACTORS, 24 VOLT TRANSFORMERS, HIGH AND LOW PRESSURE CUT OUTS, SOLENOID VALVES FOR FULL PUMP-DOWN, RESET RELAY TO PREVENT UNIT CYCLING ON OVERLOAD, ANTI-SHORT CYCLE TIMER. REFRIGERANT PIPING SHALL INCLUDE SERVICE VALVES, FILTER-DRIER, OPERATING CHARGE OF REFRIGERANT.
- GAS FIRED HEATING SECTION: ALUMINIZED STEEL HEAT EXCHANGER, COMBUSTION AIR BLOWER, AUTOMATIC ELECTRIC PILOT RE-IGNITION SYSTEM, TWO STAGE GAS VALVE, FAN AND LIMIT CONTROLS, PRESSURE REGULATOR, MANUAL PILOT VALVE, MAIN SHUT-OFF VALVE.
- ANGLE FILTER SECTION FILTERS: 2" THICK "PANEL" FILTERS.
- CONTROLS: HEATING-COOLING STAND ALONE PROGRAMMABLE THERMOSTAT WITH "HEAT-OFF-AUTO-COOL" SWITCH, "AUTO-ON" FAN SWITCH ECONOMIZER SYSTEM WITH POWERED EXHAUST.

SEQUENCE OF OPERATION: RTU-1

- A SMOKE DETECTOR LOCATED IN THE RETURN AIR DUCT SHALL STOP THE SUPPLY FAN IF IT SENSES SMOKE. COORDINATE WITH FIRE ALARM CONTRACTORS. INTERLOCK WITH FIRE ALARM SYSTEM.
- HARM-UP CYCLE: THE UNIT SHALL RUN IN THE HEATING MODE WITH THE OUTSIDE AIR DAMPER CLOSED. WHEN THE SET POINT IS ACHIEVED THE UNIT SHALL START THE OCCUPIED CYCLE.
- HEATING-OCCUPIED CYCLE: THE UNIT FAN SHALL RUN CONTINUOUSLY. ON DEMAND FOR HEATING, THE OUTDOOR AIR DAMPER SHALL BE IN THE MINIMUM POSITION AND THE GAS FIRED HEAT EXCHANGER SHALL STAGE ON AND OFF TO MAINTAIN SPACE TEMPERATURE AT THE THERMOSTAT SETPOINT.
- COOLING-OCCUPIED CYCLE: THE UNIT FAN SHALL RUN CONTINUOUSLY. ON DEMAND FOR COOLING, THE OUTSIDE AIR DAMPER SHALL OPEN TO THE MINIMUM POSITION THEN CYCLE ON THE ECONOMIZER CONTROL IN ACCORDANCE WITH A THERMOSTAT SENSING TEMPERATURE OF RETURN AIR TO THE UNIT. UPON A FURTHER RISE IN SPACE TEMPERATURE WITH THE OUTDOOR AIR DAMPER OPEN 100%, THE OUTDOOR AIR DAMPER SHALL RETURN TO THE MINIMUM POSITION AND THE COMPRESSORS SHALL CYCLE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE AT THE THERMOSTAT SETPOINT. POWER EXHAUST FAN SHALL MODULATE TO MAINTAIN BUILDING PRESSURIZATION OF +0.05 (ADJ.).
- HEATING-UNOCCUPIED CYCLE: UPON A DROP IN SPACE TEMPERATURE BELOW THE 5 DEGREE (ADJ) SETBACK TEMPERATURE, THE OUTDOOR AIR DAMPER SHALL BE CLOSED, THE SUPPLY FAN AND THE GAS FIRED HEAT EXCHANGER SHALL STAGE ON TO MAINTAIN SPACE TEMPERATURE. WHEN THE THERMOSTAT IS SATISFIED, THE UNIT SHALL SHUT-DOWN. POWER EXHAUST FAN SHALL MODULATE TO MAINTAIN BUILDING PRESSURIZATION OF +0.05 (ADJ.).
- COOLING-UNOCCUPIED CYCLE: UPON A RISE IN SPACE TEMPERATURE ABOVE THE 5 DEGREE (ADJ) SETUP TEMPERATURE, THE OUTDOOR AIR DAMPER SHALL BE CLOSED, THE SUPPLY FAN AND THE COMPRESSORS SHALL CYCLE AS REQUIRED TO MAINTAIN SPACE TEMPERATURE. WHEN THE THERMOSTAT IS SATISFIED, THE UNIT SHALL SHUT DOWN.
- UNOCCUPIED (NIGHT) CYCLE: THE UNIT FAN SHALL RUN BASED ON DEDICATED CENTRALLY LOCATED THERMOSTAT. NIGHT SETBACK TEMPERATURE TO BE 65 DEGREES F. GAS HEAT EXCHANGER AND COMPRESSOR TO CYCLE DURING RESPECTIVE HEATING AND COOLING MODES TO SATISFY SPACE TEMPERATURE. WHEN THE THERMOSTAT IS SATISFIED, FAN AND HEATING OR COOLING MODE COMPONENT SHALL STAGE OFF.

WALL HEATER, ELECTRIC - SCHEDULE

SYMBOL	MANUFACTURER	MODEL	ARRANGEMENT	AREA SERVED	RECESS DEPTH (IN)	WATTS	ELECTRICAL DATA		REMARKS
							FLA	VOLT/ PHASE	
WHE-1	BERKO	GF62224FM	RECESSED	110	4-3/8"	2200	10.6	208/1	1
WHE-2	BERKO	GF62224FM	RECESSED	111	4-3/8"	2200	10.6	208/1	1
WHE-3	BERKO	GF62224FM	RECESSED	100	4-3/8"	2200	10.6	208/1	1

REMARKS:

- ACCEPTABLE MANUFACTURERS INCLUDE BERKO, BRASCH, GIRONALOX, INDEGGO, MARKEK, G-HARK, SINGER AND TRANE.

ELECTRIC WALL HEATER SPECIFICATION:

- ELECTRIC RESISTANCE TYPE HEATING ELEMENT WITH SPIRALLY WOUND EXTENDED FINS, VISIBLE ADJUSTABLE THERMOSTAT, CONCEALED ELECTRICAL CONNECTIONS, LINE VOLTAGE DISCONNECT, ENCLOSED FAN MOTOR, HALL BOX.

ELECTRIC WALL HEATER SEQUENCE OF OPERATION:

- UNIT MOUNTED THERMOSTAT SHALL CYCLE ITS RESPECTIVE HEATING ELEMENT AND FAN TO MAINTAIN TEMPERATURE SETPOINT.

VENTILATION SUMMARY SCHEDULE (RTU-1)

ROOM NUMBER	ROOM NAME	OCCUPANCY CLASSIFICATION 2009 IMC, TABLE 409.3	AREA OF OCCUPANCY (SQFT)	OCCUPANCY LOAD (PER 1000 SF)	NUMBER OF PEOPLE	OUTDOOR AIR PER OCCUPANCY (CFM PER PERSON)	OUTDOOR AIR PER SQ. FT. (CFM)	EXHAUST RATE (CFM/SF)	ZONE AIR DISTRIBUTION EFFECTIVENESS	OUTDOOR AIR REQUIRED (CFM)	PRIMARY AIRFLOW (CFM)	PRIMARY OUTDOOR AIR FRACTION, Zp
10A/102A/103	COFFEE BAR/RECEIVING/ RECEPTION	OFFICES	305	5	2	5	0.06	---	0.8	36	200	0.18
104	CLOSING RM #1	OFFICES	208	5	11	5	0.06	---	0.8	55	500	0.17
105	CLOSING RM #2	OFFICES	181	5	10	5	0.06	---	0.8	71	450	0.17
106	CLOSING RM #3	OFFICES	90	5	5	5	0.06	---	0.8	36	250	0.15
107	HALL	PUBLIC SPACES	44	---	---	---	0.06	---	0.8	8	100	0.08
110	HALL	PUBLIC SPACES	174	---	---	---	0.06	---	0.8	14	100	0.14
112	BREAK ROOM	OFFICES	78	5	1	5	0.06	---	0.8	15	200	0.07
114	OPEN OFFICE	OFFICES	561	5	3	5	0.06	---	0.8	62	800	0.08
115	WORKROOM	OFFICES	160	5	1	5	0.06	---	0.8	14	300	0.06
116	OFFICE	OFFICES	140	5	1	5	0.06	---	0.8	17	300	0.06
SUMMARY												
	OA REQUIRED		361 CFM		MAX Zp		0.18			AREA TOTAL	2,005	
	OA PROVIDED		3,200 CFM		EVZ		1.00				160	
	OA PERCENTAGE		20 %		XS		0.20					
	OA PROVIDED		640 CFM									

THE AMOUNT OF OUTSIDE AIR PROVIDED EXCEEDS THE CODE REQUIRED MINIMUM.

NOTES:

- SCHEDULE BASED ON INTERNATIONAL MECHANICAL CODE, 2009 EDITION, CHAPTER 4 VENTILATION.
- CALCULATIONS REPRESENT ONLY AREAS WHERE WORK IS EXPECTED.
- ZONE AIR DISTRIBUTION EFFECTIVENESS DETERMINED USING TABLE 409.3.1.2.
- SYSTEM VENTILATION EFFICIENCY DETERMINED USING TABLE 409.3.2.3.2. INTERPOLATION UTILIZED.
- OCCUPANT DIVERSITY ASSUMED TO BE NEGLIGIBLE.

AIR DEVICE SCHEDULE

SYMBOL	TYPE	MANUFACTURER	MODEL	FRAME	MATERIAL	FINISH	DAMPER TYPE	ACCESSORIES	REMARKS
CD-1	CEILING DIFFUSER	PRICE	PDF	SURFACE	STEEL	WHITE POWDER COAT	OBD	NONE ROUND	PERFORATED PLATE IV REMOVABLE CORE, 4-WAY PATTERN UNLESS OTHERWISE SHOWN, 24" x 24" FACE, NECK SIZE PER PLANS
RG-1	RETURN GRILLE	PRICE	PDDR	LAY-IN	STEEL	WHITE POWDER COAT	NONE	NONE	24" x 24" FACE SIZE
RG-2	RETURN GRILLE	PRICE	PDDR	LAY-IN	STEEL	WHITE POWDER COAT	NONE	NONE	24" x 12" FACE SIZE

NOTES:

- EQUIPMENT SCHEDULE BASED ON PRICE. ACCEPTABLE MANUFACTURERS: CARNES, KRUGER, METAL-AIRE, PRICE/TITUS
- MAX NG RATING 30, PROVIDE NECESSARY FRAME AND TRIM FOR CEILING APPLICATION.

FAN SCHEDULE

SYMBOL	MANUFACTURER	MODEL	FAN TYPE	SERVICE	CFM	S.P. IN H.G.	ELECTRICAL DATA			DRIVE TYPE	DAMPER TYPE	SONES	HEIGHT (LBS)	REMARKS
							VOLT/ PHASE	RPM	WATTS					
EF-1	GREENECK	CSP-B10	CEILING	107	90	5/21	120/1	450	71	DIRECT	BD	2	11	1, 2, 3
EF-2	GREENECK	CSP-B10	CEILING	106	90	5/21	120/1	450	71	DIRECT	BD	2	11	1, 2, 3
EF-3	GREENECK	CSP-B10	CEILING	111	90	5/21	120/1	450	71	DIRECT	BD	2	11	1, 2, 3
TF-1	GREENECK	CSP-B10	CEILING	115	90	5/21	120/1	450	71	DIRECT	BD	2	11	1, 2, 3

REMARKS:

- EQUIPMENT SCHEDULE BASED ON GREENECK. ACCEPTABLE MANUFACTURERS INCLUDE: ACHE, CARNES, COOK, GREENECK, PENN, SOLER & PALAU AND THIN CITY.
- PROVIDE FAN WITH UNIT MOUNTED SPEED CONTROL SWITCH.
- PROVIDE WITH DISCHARGE DUCT COLLAR.
- PROVIDE WITH REVERSE ACTING THERMOSTAT.

SPECIFICATION (CEILING MOUNTED): EF-1, EF-2, EF-3 & TF-1

- HOUSING: ACOUSTICALLY INSULATED STEEL.
- FAN WHEEL: CENTRIFUGAL TYPE. FAN WHEEL AND MOTOR ASSEMBLY MOUNT ON VIBRATION ISOLATORS, TOTALLY REMOVABLE FROM HOUSING.
- FAN SHALL BE COMPLETE WITH INLET GRILLE, GRAVITY BACKDRAFT DAMPER, VARIABLE SPEED CONTROL.

SEQUENCE OF OPERATION (LIGHT SWITCH): EF-1, EF-2 & EF-3

- FAN TO BE INTERLOCKED WITH LIGHT SWITCH.

SEQUENCE OF OPERATION (REVERSE ACTING THERMOSTAT): TF-1

- FAN TO BE CONTROLLED WITH WALL MOUNTED REVERSE ACTING THERMOSTAT.

MEP PROJECT #17383



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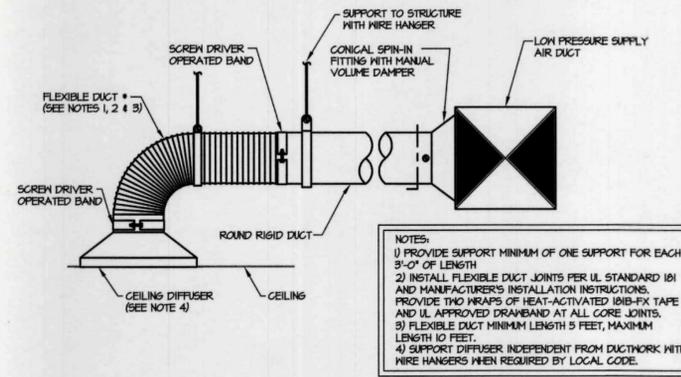
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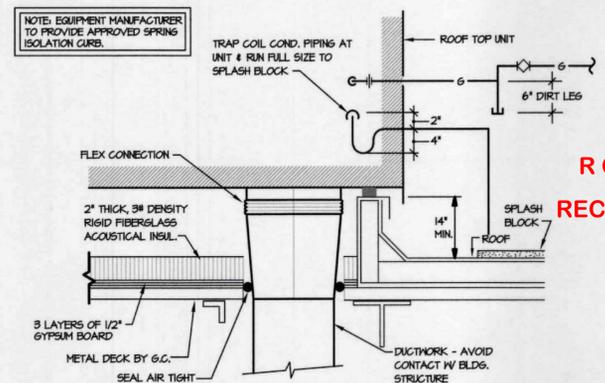
Land Title Guarantee Company

Dates of Record
Project Start Date: 11/10/2017
Issued On: Issued For:
12/05/2017 Construction Documents

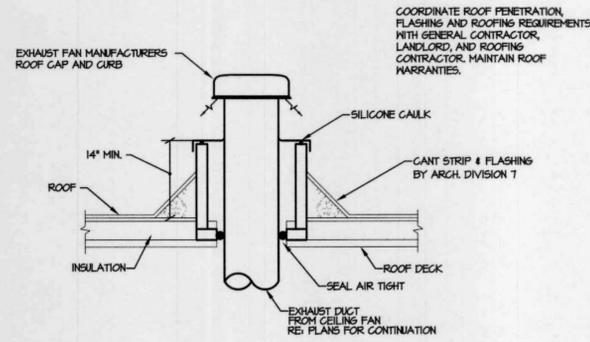


NOTES:
 1) PROVIDE SUPPORT MINIMUM OF ONE SUPPORT FOR EACH 3'-0" OF LENGTH
 2) INSTALL FLEXIBLE DUCT JOINTS PER UL STANDARD 181 AND MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE TWO WRAPS OF HEAT-ACTIVATED IRIG-FOX TAPE AND UL APPROVED DRAINAGE AT ALL JOINTS.
 3) FLEXIBLE DUCT MINIMUM LENGTH 5 FEET, MAXIMUM LENGTH 10 FEET.
 4) SUPPORT DIFFUSER INDEPENDENT FROM DUCTWORK WITH WIRE HANGERS WHEN REQUIRED BY LOCAL CODE.

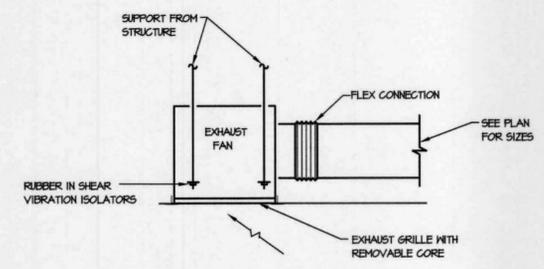
AIR DEVICE DIAGRAM
 NOT TO SCALE 23919.03



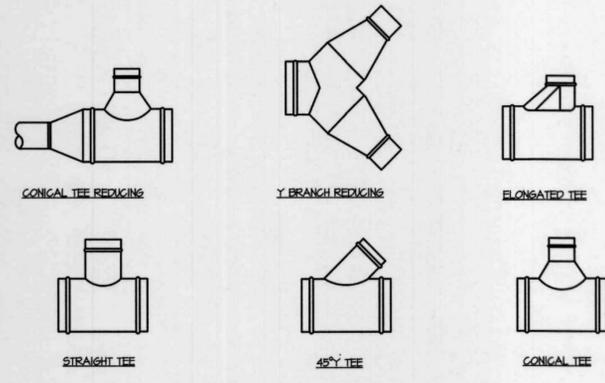
ROOFTOP UNIT INSTALLATION DIAGRAM
 NOT TO SCALE 238100.02



EXHAUST FAN DUCT THRU ROOF DIAGRAM
 NOT TO SCALE 238400.15

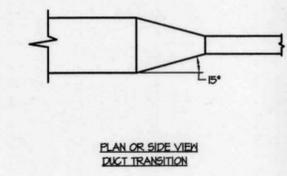


CEILING EXHAUST FAN DIAGRAM
 NOT TO SCALE 238400.05



ROUND DUCT BRANCH TAKE-OFF DIAGRAM
 NOT TO SCALE 239100.06

NOTE: UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.



DUCT TRANSITION DIAGRAM
 NOT TO SCALE 239100.07

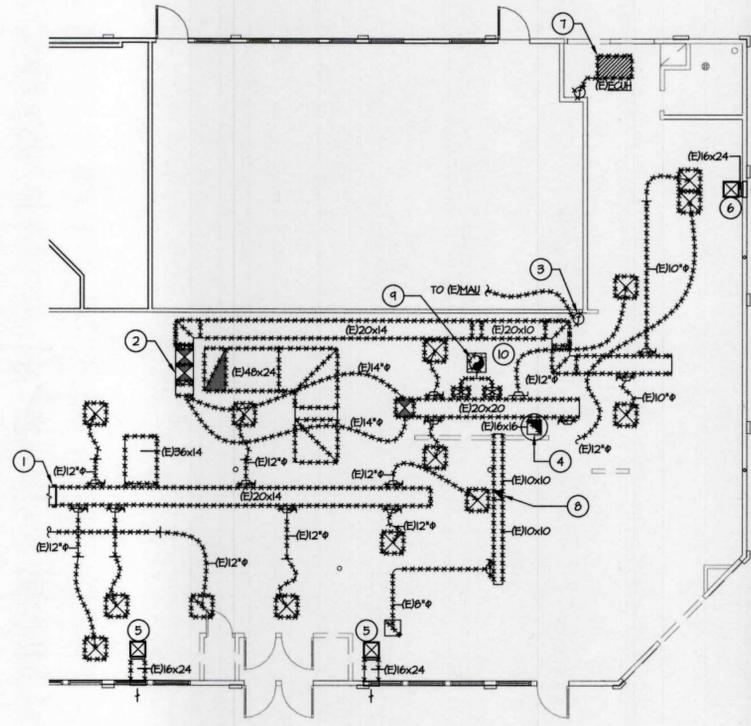




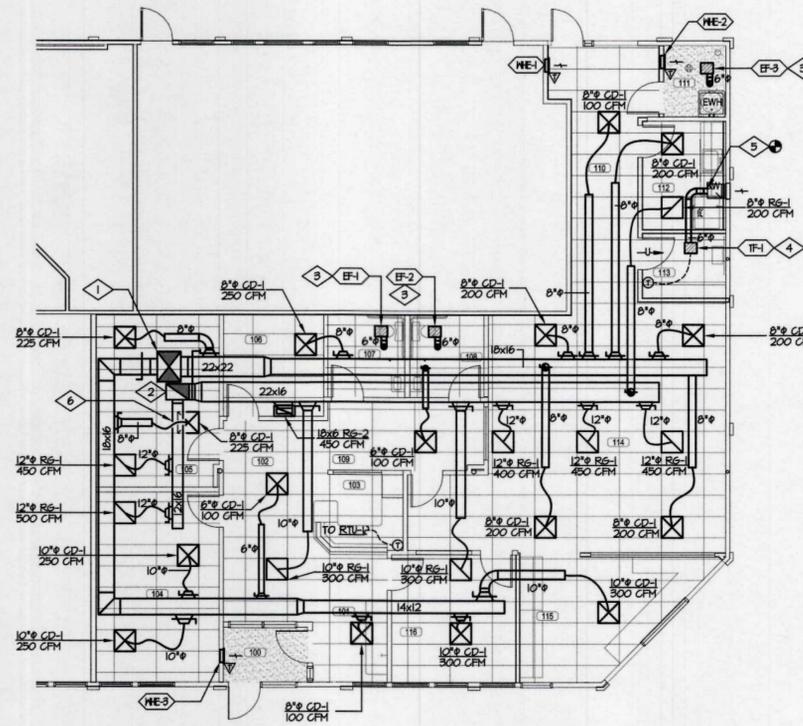
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RCRBD
RECORD SET



1ST FLOOR MECHANICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"



1ST FLOOR MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

- ALL EXISTING HVAC EQUIPMENT AND DEVICES TO REMAIN UNLESS NOTED OTHERWISE.
- COORDINATE REPLACEMENT/REPAIR OF CEILING AND WALLS WITH GENERAL CONTRACTOR. MATCH EXISTING BUILDING STANDARDS.
- COORDINATE DISPOSAL/RETURN TO BUILDING STOCK OF ALL DEMOLISHED HVAC MATERIALS WITH PROPERTY MANAGER.
- ANY UNUSED SPIN-IN FITTINGS SHALL BE CAPPED AND SEALED. CONTRACTOR SHALL INSPECT ALL EXISTING DUCTWORK AND REPAIR ANY AUDIBLE OR FELT LEAKS AS REQUIRED.
- REFERENCE HVAC PLANS FOR NEW LOCATIONS OF RELOCATED HVAC EQUIPMENT, ETC.
- CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES THAT MAY AFFECT THE HVAC SYSTEM.
- ALL DUCT DIMENSIONS SHOWN ARE SHEET METAL DIMENSIONS.

DRAWING NOTES

- REMOVE EXISTING DUCTWORK BACK TO AREA SHOWN AND CAP AIRTIGHT.
- REMOVE EXISTING DUCTWORK UP THRU ROOF FROM EDU-1.
- REMOVE EXISTING THERMOSTAT THAT CONTROLS EDU-1.
- REMOVE EXISTING EXHAUST AIR DUCTWORK AND ASSOCIATED FAN ON ROOF. (E) ROOF CURB TO REMAIN, CAP CURB WEATHER TIGHT.
- REMOVE RELIEF AIR DIFFUSER, ASSOCIATED DUCTWORK AND LOUVER. PATCH WALL TO MATCH EXISTING.
- REMOVE RELIEF AIR DIFFUSER AND PATCH DUCTWORK AIRTIGHT. LOUVER TO REMAIN.
- REMOVE (E) CABINET UNIT HEATER AND ASSOCIATED CONTROLS.
- REMOVE EXISTING EXHAUST AIR DUCTWORK AND GRILLES.
- REMOVE SA DUCTWORK DOWN TO HOOD AND ASSOCIATED SUPPLY FAN ON ROOF. (E) ROOF CURB TO REMAIN, CAP CURB WEATHER TIGHT.
- REMOVE EXISTING KITCHEN HOOD IN THIS AREA.

GENERAL NOTES

- ALL EQUIPMENT, GRDS AND MATERIALS ARE NEW EXCEPT WHEN AVAILABLE IN OWNERS' STOCK. CHECK OWNERS' STOCK PRIOR TO PRICING OR BID. COORDINATE WITH BUILDING ENGINEER.
- REFERENCE DIAGRAMS FOR INSTALLATION OF NEW AND RELOCATED HVAC EQUIPMENT AND DEVICES.
- PLANS ARE DIAGRAMMATIC. FIELD COORDINATE LOCATION OF NEW DUCTWORK, EQUIPMENT, ETC WITH STRUCTURE, LIGHTS, AND EXISTING HVAC.
- ALL DUCT DIMENSIONS SHOWN ARE SHEET METAL DIMENSIONS.
- NOT ALL DUCT TRANSITIONS AND OFFSETS ARE SHOWN. CONTRACTOR SHALL PROVIDE THE NECESSARY FITTING REQUIRED AND INSTALL ACCORDINGLY.
- COORDINATE NEW AND OR RELOCATED AIR DEVICE LOCATIONS WITH EXISTING SPRINKLER HEADS AND LIGHTING LAYOUT, FIELD VERIFY.
- COORDINATE THERMOSTAT LOCATIONS WITH FURNITURE LAYOUT, INSTALL ACCORDINGLY. VERIFY FURNITURE LAYOUT WITH ARCHITECTURAL DRAWINGS.
- CONTRACTOR SHALL PROVIDE NECESSARY CODE COMPLYING CLEARANCES FOR ALL EQUIPMENT INSTALLED.

DRAWING NOTES

- 21x34 SA DUCT DOWN THRU ROOF FROM EDU-1.
- 20x16 RA DUCT DOWN THRU ROOF FROM EDU-1. PROVIDE NECESSARY TRANSITION FROM 41x18 TO 20x16 IN CEILING SPACE.
- EXHAUST FAN MOUNTED IN CEILING. ROUTE EA DUCT IN CEILING SPACE UP THRU THE ROOF. TERMINATE WITH AN APPROVED WEATHER CAP A MIN. OF 10'-0" AWAY FROM EXISTING AIR INTAKES.
- EXHAUST FAN MOUNTED IN CEILING. ROUTE EA DUCT IN CEILING SPACE.
- CONNECT NEW 6" TO EXISTING 16x24 DUCT IN THIS AREA. FIELD VERIFY LOCATION.
- 6" SA FLEX DUCT ROUTED OVER 12x16 RA DUCT.

Room Schedule

100	Vestibule	109	Hall
101	Coffee Bar	110	Hall
102	Receiving	111	Janitor's Closet
103	Reception	112	Break Room
104	Closing Rm. #1	113	Server Storage
105	Closing Rm. #2	114	Open Office
106	Closing Rm. #3	115	Workroom
107	Restroom	116	Office
108	Restroom		

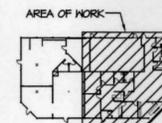
Sundance Plaza Bld. B
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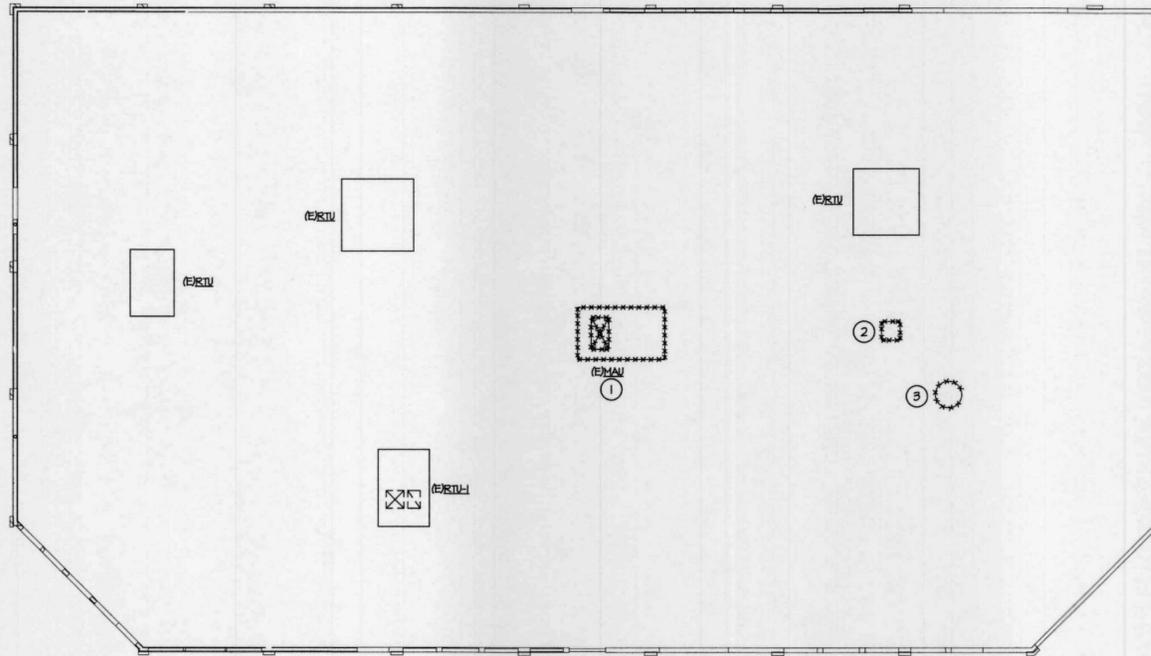


Land Title Guarantee Company

Dates of Record

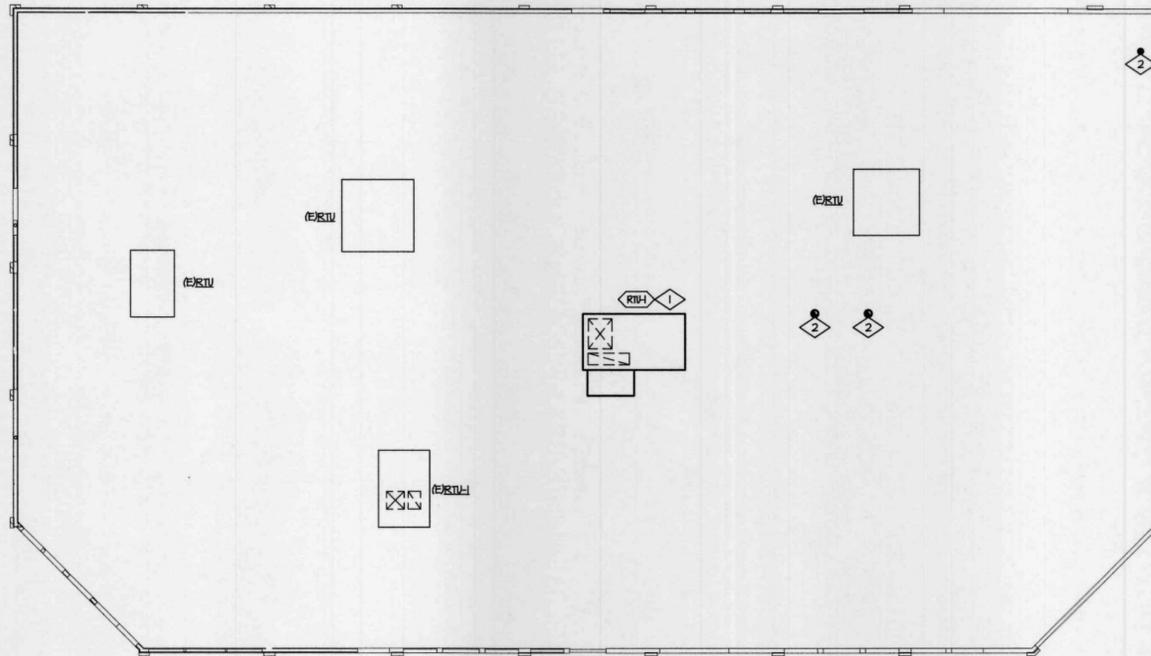
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ROOF MECHANICAL DEMOLITION PLAN

SCALE: 1/8" = 1'-0"



ROOF MECHANICAL PLAN

SCALE: 1/8" = 1'-0"

**RCRBD
RECORD SET**

GENERAL NOTES

1. ALL EXISTING HVAC EQUIPMENT AND DEVICES TO REMAIN UNLESS NOTED OTHERWISE.
2. COORDINATE REPLACEMENT/REPAIR OF CEILING AND WALLS WITH GENERAL CONTRACTOR. MATCH EXISTING BUILDING STANDARDS.
3. COORDINATE DISPOSAL/RETURN TO BUILDING STOCK OF ALL DEMOLISHED HVAC MATERIALS WITH PROPERTY MANAGER.
4. REFERENCE HVAC PLANS FOR NEW LOCATIONS OF RELOCATED HVAC EQUIPMENT, ETC.
5. CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES THAT MAY AFFECT THE HVAC SYSTEM.
6. ALL DUCT DIMENSIONS SHOWN ARE SHEET METAL DIMENSIONS.

DRAWING NOTES

1. REMOVE EXISTING MAKE UP AIR UNIT AND ASSOCIATED CURB.
2. REMOVE EXISTING SA FAN. EXISTING ROOF CURB TO REMAIN, CAP CURB WEATHER TIGHT.
3. REMOVE EXISTING EXHAUST AIR FAN. EXISTING ROOF CURB TO REMAIN, CAP CURB WEATHER TIGHT.

GENERAL NOTES

1. ALL EQUIPMENT, GRDS AND MATERIALS ARE NEW EXCEPT WHEN AVAILABLE IN OWNERS' STOCK. CHECK OWNERS' STOCK PRIOR TO PRICING OR BID. COORDINATE WITH BUILDING ENGINEER.
2. REFERENCE DIAGRAMS FOR INSTALLATION OF NEW AND RELOCATED HVAC EQUIPMENT AND DEVICES.
3. PLANS ARE DIAGNOSTIC. FIELD COORDINATE LOCATION OF NEW DUCTWORK, EQUIPMENT, ETC WITH STRUCTURE, LIGHTS, AND EXISTING HVAC.
4. ALL DUCT DIMENSIONS SHOWN ARE SHEET METAL DIMENSIONS.
5. NOT ALL DUCT TRANSITIONS AND OFFSETS ARE SHOWN. CONTRACTOR SHALL PROVIDE THE NECESSARY FITTINGS REQUIRED AND INSTALL ACCORDINGLY.
6. CONTRACTOR SHALL PROVIDE NECESSARY CODE COMPLYING CLEARANCES FOR ALL EQUIPMENT INSTALLED.

DRAWING NOTES

1. NEW RTU SEE DETAIL FOR INSTALLATION.
2. 6" EA DUCT FROM BELOW. TERMINATE WITH APPROVED WEATHER GAP MIN. 10'-0" FROM NEAREST INTAKE.



MEP PROJECT #17383



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**Land Title Guarantee
Company**

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Sheet Contents ROOF MECHANICAL PLANS
Project Team ISB/RRR
Project Number 17383
Sheet Mark **M3.0**

DIVISION 220000 - PLUMBING SPECIFICATIONS

BASIC MECHANICAL REQUIREMENTS

- QUALITY ASSURANCE**
- FURNISH MANUFACTURER'S MATERIAL OR EQUIPMENT IS LISTED IN SCHEDULES OR ON DRAWINGS, THEY ARE TYPES TO BE PROVIDED FOR ESTABLISHMENT OF SIZE, CAPACITY, GRADE, AND QUALITY. IF OTHER MANUFACTURERS ARE USED, COST OF ANY CHANGE IN CONSTRUCTION REQUIRED BY THEIR USE SHALL BE BORNE BY CONTRACTOR.
 - EQUIPMENT SHALL CONFORM TO STATE AND/OR LOCAL ENERGY CONSERVATION STANDARDS.
 - COMPLY WITH RULES AND REGULATIONS OF LOCAL UTILITY COMPANIES. INCLUDE COST OF VALVES, VALVE BOXES, METER BOXES, METERS, ACCESSORY EQUIPMENT REQUIRED FOR PROJECT.
- INTENT AND INTERPRETATIONS**
- IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO RESULT IN A COMPLETE MECHANICAL INSTALLATION IN COMPLETE ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND ORDINANCES.
 - DRAWINGS ARE DIAGNOSTIC IN CHARACTER AND DO NOT NECESSARILY INDICATE EVERY REQUIRED PIPE OFFSET, TRANSITION ETC. ITEMS NOT SPECIFICALLY MENTIONED IN THE SPECIFICATION OR NOTED ON THE DRAWINGS, BUT WHICH ARE NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION, SHALL BE INCLUDED.
 - DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY. WHATEVER IS CALLED FOR IN EITHER IS BINDING AS THOUGH CALLED FOR IN BOTH. IF THERE IS A CONFLICT IN THE CONTRACT DOCUMENTS, THE MORE DEMANDING AND COSTLY DESIGN SHALL BE SELECTED FOR BIDDING PURPOSES. THE CONTRACTOR SHALL IMMEDIATELY PRESENT THE CONFLICT FOUND IN THE CONTRACT DOCUMENTS TO THE ARCHITECT/ENGINEER FOR RESOLUTION. IF THE RESOLUTION FAVORS A LESS COSTLY DESIGN, THE CONTRACTOR WILL BE REQUIRED TO REIMBURSE THE DIFFERENCE IN COST.
 - DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS OR USED AS SHOP DRAWINGS. WHERE DIMENSIONS ARE REQUIRED FOR THESE PURPOSES OR HAVE TO BE MADE FROM FIELD MEASUREMENTS, TAKE THE NECESSARY MEASUREMENTS AND PREPARE THE DRAWINGS.
 - BEFORE ANY WORK IS INSTALLED, DETERMINE THAT EQUIPMENT WILL PROPERLY FIT THE SPACE. THAT REQUIRED CLEARANCES CAN BE MAINTAINED AND THAT EQUIPMENT CAN BE LOCATED WITHOUT INTERFERENCES BETWEEN SYSTEMS, WITH STRUCTURAL ELEMENTS, OR WITH THE WORK OF OTHER TRADES.
 - IF CONFLICTS ARE DISCOVERED IN CONTRACT DOCUMENTS AS WORK PROGRESSES, SUBMIT A SET OF DRAWINGS MARKED WITH RED PENCIL SHOWING RECOMMENDED MODIFICATIONS TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.
- JOB CONDITIONS**
- CONFER, COOPERATE, AND COORDINATE WORK WITH OTHER TRADES. COORDINATE CEILING CAVITY SPACE CAREFULLY WITH ALL TRADES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AS WELL AS COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT, UNLESS THE CONTRACT DOCUMENTS GIVE OTHER SPECIFIC INSTRUCTIONS CONCERNING THESE MATTERS.
- PERMITS AND FEES**
- ARRANGE AND PAY FOR ALL INSPECTIONS, PERMITS, LICENSES, CERTIFICATES, AND FEES REQUIRED IN CONNECTION WITH WORK.
- SUBMITTALS AND SHOP DRAWINGS**
- CONFORM TO REQUIREMENTS OF DIVISION I AND FOLLOWING PARAGRAPHS.
 - SUBMITTALS SHALL INCLUDE CATALOG CUT-SHEETS AND MANUFACTURER'S DATA SHEETS.
 - PRIOR TO ORDERING EQUIPMENT OR BEGINNING INSTALLATION WORK, ASSEMBLE, PREPARE, AND FURNISH SUBMITTALS AND SHOP DRAWINGS REQUIRED FOR PROJECT. FURNISH SUBMITTALS AND SHOP DRAWINGS AS REQUIRED BY INDIVIDUAL SECTIONS OF SPECIFICATIONS.
 - CONTRACTOR SHALL THOROUGHLY CHECK SUBCONTRACTORS' OR VENDORS' SUBMITTALS AND SHOP DRAWINGS AND, AFTER APPROVING THEM, SUBMIT THEM FOR REVIEW. SUBMITTALS AND SHOP DRAWINGS THAT DO NOT BEAR CONTRACTOR'S REVIEW STAMP WILL BE RETURNED NOT REVIEWED.
 - IF DISCREPANCIES BETWEEN SUBMITTALS, SHOP DRAWINGS, AND CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SUBMITTALS AND SHOP DRAWINGS ARE REVIEWED, REQUIREMENTS OF CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE. SUBMITTALS AND SHOP DRAWINGS WHICH ARE SUBMITTED, BUT WHICH ARE NOT REQUIRED BY CONTRACT DOCUMENTS, WILL BE RETURNED NOT REVIEWED.
 - SUBMITTALS AND SHOP DRAWINGS SHALL IDENTIFY SPECIFIC EQUIPMENT WITH NUMBERS OR LETTERS IDENTICAL TO THOSE LISTED OR SCHEDULED ON THE DRAWINGS OR SPECIFICATIONS.
- RECORD DOCUMENTS**
- KEEP IN GISTERY DURING ENTIRE PERIOD OF CONSTRUCTION A CURRENT SET OF DOCUMENTS INDICATING CHANGES THAT HAVE BEEN MADE TO THE CONTRACT DOCUMENTS.
 - UPON COMPLETION OF WORK, SUBMIT THE COMPLETE SET OF RECORD DOCUMENTS TO THE ARCHITECT.
- PROTECTION OF EQUIPMENT**
- PROTECT MATERIALS AND EQUIPMENT FROM PHYSICAL DAMAGE, CONSTRUCTION DIRT, AND THE ELEMENTS FROM THE TIME OF INSTALLATION IS ACCEPTED BY OWNER.
- GUARANTEE**
- GUARANTEE MATERIALS, WORKMANSHIP, AND OPERATION OF EQUIPMENT INSTALLED FOR PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE OF ENTIRE WORK. REPAIR OR REPLACE ANY PART OF WORK WHICH SHOWS DEFECT DURING THAT TIME.
 - BE RESPONSIBLE FOR DAMAGE TO PROPERTY OF OWNER OR TO WORK OF OTHER CONTRACTORS DURING CONSTRUCTION AND GUARANTEE PERIOD.
 - FURNISH EQUIPMENT WARRANTIES TO OWNER.
- MECHANICAL EQUIPMENT HIRING AND CONNECTIONS**
- VOLTAGE CHARACTERISTICS SHALL BE AS IN ELECTRICAL DIVISION OF SPECIFICATIONS AND ON ELECTRICAL DRAWINGS.
- TEMPORARY FACILITIES**
- USE OF EXISTING EQUIPMENT FOR TEMPORARY HEATING OR COOLING. DO NOT USE NEW OR EXISTING BUILDING EQUIPMENT WITHOUT WRITTEN PERMISSION FROM OWNER.
- INSPECTIONS**
- DO NOT COVER UP OR COVER OVER WORK UNTIL INSPECTED, TESTED, AND APPROVED. ANY WORK ENCLOSED OR COVERED UP BEFORE SUCH APPROVAL SHALL BE UNCOVERED, TESTED, AND APPROVED.
- ACCESS DOORS**
- FURNISH HINGED STEEL ACCESS DOORS WITH CONCEALED LATCH, WHETHER SHOWN OR NOT, IN WALLS AND PLASTER OR GYPSUM BOARD CEILING FOR ACCESS TO CONCEALED VALVES, SHOCK ARRESTERS, AIR VENTS, MOTORS, FANS, BALANCING VALVES, OR OTHER OPERATING DEVICES REQUIRING ADJUSTMENT OR SERVICING.
 - ACCESS DOOR SHALL BE SIZE OF EQUIPMENT TO BE REMOVED OR 24" BY 24" IF USED FOR SERVICE ONLY.
- INSTALLATION**
- WORKMANSHIP SHALL BE FIRST QUALITY. APPEARANCE OF WORK SHALL BE OF EQUAL IMPORTANCE TO ITS MECHANICAL OPERATION. LACK OF QUALITY WORKMANSHIP SHALL BE REASON FOR REJECTION OF SYSTEM IN PART OR IN WHOLE.
 - INSTALL SO THAT ALL VALVES AND EQUIPMENT CAN BE EASILY ACCESSED AND SERVICED BY ADEQUATE CLEARANCE. INSTALLATION OF ACCESS DOORS, UNIONS IN PIPING, OR OTHER METHODS.
 - COMPLETE INSTALLATION SHALL FUNCTION SMOOTHLY AND NOISELESSLY.
 - INSTALL EQUIPMENT AND MATERIALS PER MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODES OR REGULATIONS.
 - FLUSH OR REPLACE ALL EQUIPMENT MANIFOLDS WHERE THEY CAN BE SEEN AND READ WITHOUT DIFFICULTY.
 - FLUSH PIPES FREE OF FOREIGN SUBSTANCES BEFORE INSTALLING VALVES OR MAKING FINAL CONNECTIONS. CLEAN ALL PIPING AND EQUIPMENT.
- COMPLETION**
- CLEAN INSULATION COVERING, PIPES, EQUIPMENT, AND ACCESSORIES TO RECEIVE PRIME COAT OF PAINT. CLEAN EQUIPMENT RECEIVED WITH PRIME COAT TO RECEIVE FINAL COAT.
 - INSTRUCT OWNER IN OPERATION AND MAINTENANCE OF PLUMBING SYSTEMS. MINIMUM PARTICIPANTS SHALL INCLUDE PLUMBING CONTRACTOR AND CONTROLS CONTRACTOR REPRESENTATIVES.
 - AFTER TESTS AND ADJUSTMENTS HAVE BEEN MADE AND SYSTEMS PRODUCE SATISFACTORY FOR PERMANENT OPERATION, REFRESH DAMAGED FINISH AND LEAVE EVERYTHING IN PROPER WORKING ORDER AND APPEARANCE.
 - ON COMPLETION OF WORK, REMOVE TOOLS, SCAFFOLDING, DEBRIS, ETC., FROM GROUNDS AND LEAVE PREMISES CLEAN.
- OPERATION AND MAINTENANCE MANUALS**
- PRIOR TO COMPLETION OF PROJECT, SUBMIT THREE (3) SETS OF MAINTENANCE MANUALS COVERING OPERATION AND MAINTENANCE OF MECHANICAL EQUIPMENT WITH MOVING OR MOVABLE PARTS, INCLUDING PLUMBING SYSTEMS. INSTRUCTIONS SHALL BE IN PAMPHLET OR TYPEWRITTEN FORM IN THREE RING BINDERS. INSTRUCTIONS FOR EACH UNIT SHALL BE INDICATED BY SEPARATE TAB.
 - INCLUDE STARTING, STOPPING, LUBRICATION, PREVENTATIVE MAINTENANCE SCHEDULE, AND ADJUSTMENT INFORMATION FOR EACH PIECE OF EQUIPMENT.

PIPE AND PIPE FITTINGS

- QUALITY ASSURANCE**
- FURNISH MATERIALS AND LABOR SHALL CONFORM TO ASME CODE FOR PRESSURE PIPING AND APPLICABLE STATE LABOR REGULATIONS.
 - USE HELDERS FULLY QUALIFIED AND LICENSED BY STATE AUTHORITIES. FURNISH CERTIFICATION FROM APPROVED TESTING AGENCY OR NATIONAL CERTIFIED PIPE WELDING BUREAU THAT WELDERS PERFORMING WORK ARE CERTIFIED.
 - ALL PIPING MATERIALS SHALL COMPLY WITH LOCAL CODES.
- UNIONS AND COUPLINGS**
- 2" AND SMALLER. 125 PSI CAST IRON FOR THREADED FERROUS PIPING; BRONZE FOR COPPER OR BRASS PIPE, SOLDERED JOINTS.
 - 2-1/2" AND LARGER. 150 PSI FORGED STEEL FLANGES, RAISED FACE WITH WELDING NECK, FOR FERROUS PIPING; BRONZE FLANGES FOR COPPER OR BRASS PIPING. GASKETS FOR WATER PIPING TO 140 PSI EQUAL TO GARLOCK PREMIUM GRADE STYLE 22 RED RUBBER, 1/16" THICK. GASKETS FOR NATURAL GAS EQUAL TO GARLOCK BLUE-GARD STYLE 2000 SYNTHETIC FIBER WITH NITRILE BANDER, 1/16" THICK. GASKETS FOR CONCRETE AND WATER ABOVE 40 PSI AS MANUFACTURED BY FLEXITALLIC.
 - DIELECTRIC UNIONS AND FLANGES. EPSC OR EQUAL, HAVING PROPER GASKET MATERIAL FOR CONNECTION OF DISSIMILAR METALS. UNIONS, 2" AND SMALLER, DIELECTRICALLY GASKETED FLANGES, 2-1/2" AND LARGER, USE DIELECTRIC CONNECTIONS HEREIN. JOINING DISSIMILAR METALS IN OPEN DOMESTIC WATER SYSTEMS.
- EXECUTION**
- VERIFY LOCATIONS OF ALL AIR FLENUMS. ALL PIPING AND SUPPORT MATERIALS INSTALLED IN AIR FLENUMS SHALL BE FLENUM-RATED. DO NOT INSTALL SPECIFIED NON-FLENUM-RATED MATERIALS IN AIR FLENUMS. USE FLENUM-RATED OPTIONS.
 - ROUTE PIPING IN ORDERLY MANNER AND MAINTAIN PROPER SLOPE.
 - CONCEAL PIPING IN WALLS OR ABOVE CEILING UNLESS OTHERWISE NOTED.
 - MAINTAIN FOLLOWING PIPE SLOPES UNLESS OTHERWISE NOTED ON DRAWINGS:
 - COOLING COIL CONDENSATE DRAIN PIPING: 1/8" DOWN PER LINEAR FOOT IN THE DIRECTION OF FLOW.
 - SANITARY WASTE 2-1/2" AND SMALLER: 1/4" DOWN PER 1'-0" IN DIRECTION OF FLOW.
 - SANITARY WASTE 3" AND LARGER: 1/8" DOWN PER 1'-0" IN DIRECTION OF FLOW.
 - GREASE WASTE: 1/4" DOWN PER 1'-0" IN DIRECTION OF FLOW.
 - SANITARY VENT PIPING, ALL SIZES: GRADED AND CONNECTED AS TO DRIP BACK BY GRAVITY TO THE DRAINAGE PIPE IT SERVES.
 - STORM DRAIN PIPING, ALL SIZES: 1/8" DOWN PER 1'-0" IN DIRECTION OF FLOW.
 - INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE OR CONNECTED EQUIPMENT.
 - PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND FOR ACCESS TO VALVES, AIR VENTS, DRAINS, UNIONS.
 - INSTALL SAME TYPE PIPING MATERIAL SPECIFIED FOR INSIDE BUILDING TO 5'-0" OUTSIDE BUILDING.
 - MAKE CONNECTIONS TO EQUIPMENT WITH UNIONS OR FLANGES.
- STEEL PIPE CONNECTIONS**
- 2" AND SMALLER. THREADED, 2-1/2" AND LARGER - WELDED.
 - DO NOT USE MITERED AND WELDED ELBOWS IN LIEU OF FITTINGS.
 - DIE CUT THREADED JOINTS WITH FULL CUT STANDARD TAPER PIPE THREADS WITH 1/2" NIPER WASTE TEFLON PIPE JOINT SEALANT TAPE APPLIED TO MALE THREADS ONLY.
 - USE ONLY MALLEABLE IRON THREADED PIPE FITTINGS FOR GAS PIPING.
 - DO NOT WELD FITTINGS FOR WELDED STEEL PIPES. USE OXYACETYLENE OR ELECTRIC ARC PROCESS.
- CAST IRON PIPE CONNECTIONS**
- JOINTS FOR BEEL AND SPOUT PIPES. NEOPRENE GASKETING SYSTEM WITH "TY-SEAL" WATER SOLUBLE LUBRICANT.
 - JOINTS FOR PLAIN END PIPE ABOVE GRADE. STAINLESS STEEL BAND TYPE GASKET AND CLAMP MECHANICAL FASTENER.
 - USE UNLESS PIPING ABOVE GRADE ONLY.
- COPPER PIPE CONNECTIONS**
- 2-1/2" AND SMALLER. USE 95% SILVER BRAZING ALLOY AND SILVER BRAZING FLUX ON BEARING SURFACES. USE 95% TIN OR ANTIKOTE LEAD-FREE SOLDER AND ASTM B88-81 NON-CORROSIVE 51M LO FLUX ON JOINTS. APPLY FLUX ON CLEANED END OF PIPE INSIDE FITTINGS WITH SMOOTH EVEN COATS.
 - 3" AND LARGER. USE 95% SILVER BRAZING ALLOY AND SILVER BRAZING FLUX. APPLY FLUX ON CLEANED END OF PIPE AND INSIDE FITTINGS WITH SMOOTH EVEN COATS.

APPLICATION	OVERLAPS	MATERIAL
EQUIPMENT DRAINS AND OVERFLOWS		COPPER, TYPE M OR DRW, HARD DRAIN
SANITARY DRAIN AND VENT ABOVE SLAB-ON-GRADE		COPPER, TYPE DWV, HARD DRAIN, CAST IRON, SCHEDULE 40 PVC (PVC NOT ALLOWED IN ANY RETURN AIR FLENUM)
SANITARY DRAIN AND VENT BELOW SLAB-ON-GRADE INSIDE BUILDING		CAST IRON, SCHEDULE 40 PVC (PVC NOT ALLOWED IN ANY RETURN AIR FLENUM)
STORM DRAIN INSIDE BUILDING		CAST IRON, SCHEDULE 40 PVC (PVC NOT ALLOWED IN ANY RETURN AIR FLENUM)
DOMESTIC WATER UNBURIED		COPPER, TYPE L, HARD DRAIN
DOMESTIC WATER BURIED		CROSS-LINKED POLYETHYLENE (PEX) ASTM F877 FOR DOMESTIC HOT AND COLD WATER
DOMESTIC WATER EXPOSED AT FIXTURES		SEAMLESS BRASS PIPE, CHROME PLATED
GAS PIPING		SCHEDULE 40 BLACK STEEL

- CAST IRON PIPING AND FITTINGS**
- CAST IRON PIPING SHALL BEAR THE COLLECTIVE TRADEMARK OF THE CAST IRON PIPE INSTITUTE (CIPRI) AND LISTED BY NSF INTERNATIONAL.
 - UNLESS STANDARD DUTY CAST IRON PIPE AND FITTINGS SHALL CONFORM TO CIPRI 310 AND LISTED BY NSF INTERNATIONAL.
- UNDERGROUND PIPE INSTALLATION**
- PROTECT STEEL PIPE INSTALLED BELOW GRADE AND TO MINIMUM 6" ABOVE GRADE WITH FACTORY APPLIED COVERING, PRO-GO FELT AND PIPE LINE BUREAU NO. 4 DOUBLE WRAP OR X-TRIC-CLAD PLASTIC COATING. PROTECT FIELD JOINTS ON STEEL PIPE WITH TARECOAT COMPANY PRIME COAT AND ONE LAYER OF TARECOAT 400 HEAT APPLIED, 62 MIL TAPE PER MANUFACTURER'S RECOMMENDATIONS.
 - PROVIDE THRUST BLOCK AT ALL DIRECTION CHANGES ON PRESSURE PIPE.
 - BURY ALL OUTSIDE WATER PIPING MINIMUM 9'-0" BELOW GRADE TO TOP OF PIPE.
 - BURY ALL OUTSIDE GAS PIPING MINIMUM 1'-6" BELOW GRADE TO TOP OF PIPE.
- VALVES**
- FURNISH MANUFACTURER'S SUBMITTAL DATA FOR VALVES.
 - VALVES SHALL BE OF SAME MANUFACTURER WHERE POSSIBLE. VALVE SEATS AND MATERIALS SHALL BE SUITABLE FOR SERVICE INTENDED.
- ACCEPTABLE MANUFACTURERS**
- BALL VALVE: APOLLO, KITZ, NIBCO.
 - GAS VALVE: ZEDKOR.
- RATINGS**
- UNLESS OTHERWISE INDICATED, VALVES SHALL BE SUITABLE FOR 200 PSIG MGS AND 250 F.
- SHUTOFF VALVE**
- BALL VALVE, ALL SIZES. TWO-PIECE BRONZE OR FORGED BRASS BODY WITH PTFE SEATS. PRESSURE RATED TO 80 PSIF/60 MGS. FULL PORT. BLOW-OFF PROOF STEM AND POSITIVE SHUT-OFF. PACKING GLAND WITH PTFE PACKING. STEM EXTENSION WHERE INSTALLED, LOCKABLE HANDLE.
 - 2-1/2" AND LARGER. IRON BODY, BRONZE TRIM, SHING DISC, REMOVABLE DISC AND SEAT, FLANGED ENDS.
 - SPRING LOADED, SILENT TYPE, CAST IRON BODY WITH BUNA-N SEATS SUITABLE FOR 250F. WATER AND DISCS OF ALUMINUM, BRONZE, OR DUCTILE IRON SHAFT AND SPRINGS TYPE 316 STAINLESS STEEL.

VALVES (CONTINUED)

- GAS VALVE**
- IRON OR FORGED BRASS BODY INDOORS, BRONZE OR FORGED BRASS BODY OUTDOORS.
 - FORGED BRASS BALL VALVE. CERTIFIED TO CSA, ASME B16.33, AND UL FOR GAS PIPING SYSTEMS.
- DRAIN VALVE**
- BALL VALVE WITH NIPPLE CAP, HOSE THREAD.
- INSTALLATION**
- PROVIDE VALVES SUITABLE TO CONNECT TO ADJOINING PIPING AS SPECIFIED FOR PIPE JOINTS. USE PIPE SIZE VALVES.
 - 2" AND SMALLER. THREADED OR SOLDERED.
 - 2-1/2" AND LARGER. FLANGED.
 - SOLDER OR SCREW TO SOLDER ADAPTERS FOR COPPER TUBING.
 - PROVIDE DRAIN VALVES AT MAIN SHUT-OFF VALVES, LOW POINTS OF PIPING AND APPARATUS.
 - USE SPRING LOADED CHECK VALVES AT PUMPS AND WHERE INSTALLED IN VERTICAL POSITION.
- SUPPORTS, ANCHORS, SEALS**
- REFERENCE STANDARDS**
- PIPE SUPPORTS: ANSI B301, POWER PIPING.
- INSERTS**
- MALLEABLE IRON CASE, GALVANIZED STEEL SHELL, EXPANDER PLUS FOR THREADED CONNECTION WITH LATERAL ADJUSTMENT, TOP SLOT FOR REINFORCING RODS, LUGS FOR ATTACHING TO FORMS. USE INSERTS AND ANCHORS SUITABLE FOR TYPE OF STRUCTURAL CONDITIONS AND COMPONENTS.
- PIPE HANGERS AND SUPPORTS**
- HANGERS, PIPE SIZES TO 1-1/2", ADJUSTABLE STEEL RING (INSULATED PIPE) OR BAND (UNINSULATED PIPE).
 - HANGERS, HOT PIPE SIZES 2" TO 4" AND ALL COLD PIPE SIZES. ADJUSTABLE STEEL CLEVIS.
 - WALL SUPPORT, PIPE SIZES TO 3". CARBON STEEL HOOK.
 - WALL SUPPORT, PIPE SIZES 4" AND OVER. WELDED STEEL BRACKET AND PIPE STRAP. ADJUSTABLE STEEL YOKE PIPE ROLL OR ROLLER CHAIR FOR HOT PIPE SIZES 5" AND OVER.
 - VERTICAL SUPPORT: STEEL RISER CLAMP.
 - FLOOR SUPPORT, HOT PIPE SIZES TO 4" AND ALL COLD PIPE SIZES. CARBON STEEL ADJUSTABLE PIPE SADDLE, LOCKNUT NIPPLE, FLOOR FLANGE, CONCRETE PIEK OR STEEL SUPPORT SIZED FOR PIPE ELEVATION.
 - FOR PIPE SIZES 1-1/2" AND SMALLER, PROTECT INSULATED HORIZONTAL PIPE AT POINT OF SUPPORT BY 180 DEGREE 1/2" LONG SHEET METAL SHIELD. NO HANGER SHALL PENETRATE OR CROSS INSULATING MATERIAL.
 - FOR PIPE SIZES 2" AND LARGER, PROTECT INSULATED HORIZONTAL PIPE AT POINT OF SUPPORT BY 180 DEGREE 1/2" LONG GALVANIZED SHEET METAL SHIELD SURROUNDING 180 DEGREE INSERT OF HIGH DENSITY CALCIUM SULFATE INSULATION OF SAME THICKNESS AS ADJOINING PIPE INSULATION. ON COLD PIPING EXTEND INSULATION INSERT 1' BEYOND SHEET METAL SHIELD AT EACH END. OVERSIZE HANGERS TO ACCOMMODATE SHIELDED HANGERS. NO HANGER SHALL PENETRATE OR CROSS INSULATING MATERIAL. AT CONTRACTIONS OPERATING UNDER MANUFACTURER'S THERMAL HANGER SHIELDS WITH HEATHER, VAPOR BARRIER, EQUIVALENT TO VALVE ENGINEERED PRODUCTS PRO-SHIELD OR PRO-SHIELD 2" MAY BE UTILIZED. FOR EXTERIOR INSTALLATIONS USE WEATHER SHIELD WITH ALUMINUM JACKET.
 - PROVIDE COPPER PLATED HANGERS AND SUPPORTS FOR COPPER PIPING WHERE PIPING AND HANGER ARE IN DIRECT CONTACT WITH ONE ANOTHER.
- PIPE HANGER RODS**
- THREADED STEEL.
- PIPE HANGERS AND SUPPORTS**
- SUPPORT HORIZONTAL PIPING AS FOLLOWS:

NOMINAL PIPE SIZE	MAXIMUM HANGER SPACING			HANGER ROD DIAMETER
	STEEL	COPPER	SCHEDULE 40 PVC	
1-1/2" AND SMALLER	6'-0"	6'-0"	4'-0"	3/8"
2" TO 4"	10'-0"	10'-0"	4'-0"	3/8"
5" TO 8"	10'-0"	10'-0"	4'-0"	1/2"

- INSTALL HANGERS TO PROVIDE MINIMUM 1/2" CLEAR SPACE BETWEEN FINISHED COVERING AND ADJACENT WORK, EXCEPT WHERE LISTING FOR FIRE RATED CEILING REQUIRES 4" MINIMUM SEPARATION.
 - SUPPORT HORIZONTAL CAST IRON HUB AND SPOUT PIPE WITHIN 1'-0" OF EACH HUB AND WITH 9'-0" MAXIMUM SPACING BETWEEN HANGERS. EXCEPT THAT PIPE EXCEEDING 9'-0" IN LENGTH SHALL BE SUPPORTED AT INTERVALS NO GREATER THAN 10'-0". SUPPORT HORIZONTAL, NO-HUB CAST IRON PIPE RING AT EACH FITTING AND AT EACH LENGTH OF PIPE LESS THAN 4'-0" WITH AT LEAST ONE HANGER. SUPPORT HORIZONTAL NO-HUB PIPES LONGER THAN 4'-0" ON BOTH SIDES OF EACH JOINT.
 - PLACE HANGER WITHIN 1'-6" OF EACH ELBOW OR TEE.
 - SUPPORT VERTICAL PIPING AT EVERY FLOOR. SUPPORT VERTICAL SOIL PIPE AT EACH FLOOR AT HUB. SUPPORT NO-HUB PIPE SO HEIGHT IS CARRIED FROM PIPE TO SUPPORT AND NOT FROM JOINT TO SUPPORT. SUPPORT 2" AND SMALLER PIPES HEAVY BETWEEN FLOORS WITH RESTRAINTS ADEQUATE TO PREVENT PERPENDICULAR AXIAL MOVEMENT.
 - SUPPORT EACH BRANCH PIPE TO EQUIPMENT AT TAKE-OFF AND WITHIN 1/2" OF TERMINATION.
 - PROVIDE GALVANIZED STEEL INSULATION PROTECTION SADDLES AT ALL SUPPORT POINTS FOR INSULATED PIPES ON TRAPEZOID HANGERS.
 - ANCHOR ALL SUPPORTING LUGS OR GUIDES TO BUILDING STRUCTURE.
 - ANCHOR AND SUPPORT WATER CONNECTIONS TO PLUMBING FIXTURES. IN PIPE CHASES OR WALLS, TO FIXTURE CARRIERS OR WASTE AND VENT PIPING. SUPPORTS SHALL BE SIMILAR TO ADJUSTO-SPACER SYSTEM AS MANUFACTURED BY THOMAS INDUSTRIES. PLACE ADJUSTO-SPACERS EVERY 10'-0" ON VERTICAL PIPE AND EVERY 3'-0" ON HORIZONTAL PIPE. INSULATE PIPE AREA IN CONTACT WITH ADJUSTO-SPACERS WITH DUCT TAPE, FELT LINER, OR PLASTIC LINER MATERIAL.
- FLASHING AND SAFING**
- WHERE EXPOSED PIPING PASSES THROUGH WALLS, FLOORS, ROOFS, PROVIDE CHROME PLATED OR STAINLESS STEEL, ESCUTCHEON FOR PIPING.
 - FLASH AND COUNTERFLASH WHERE MECHANICAL EQUIPMENT PASSES THROUGH HEATHER-OR WATER-PROOFED WALLS, FLOORS, ROOFS.
 - PROVIDE PRE-MANUFACTURED PIPE BOOT FOR VENT AND/OR WASTE STACKS PASSING THROUGH ROOF. SECURE BOOT TO PIPE WITH STAINLESS STEEL BAND CLAMP OR OTHER CLAMPING DEVICE AS APPROVED BY ROOFING MANUFACTURER, RE ARCHITECT.
- SLEEVES**
- PROVIDE PIPE SLEEVES TO APPLICABLE TRADES WITH PRECISE ROUGH-IN LOCATIONS FOR PIPES PASSING THROUGH CONCRETE OR MASONRY CONSTRUCTION. UNLESS OTHERWISE INDICATED SLEEVES SHALL BE OF SIZE TO PROVIDE FROM 1/4" TO 1" CLEARANCE BETWEEN BARE PIPE AND SLEEVE. WHERE PIPE PASSES THROUGH CONCRETE FLOOR, EXTEND SLEEVE MINIMUM 1" ABOVE FINISHED FLOOR.
 - SLEEVES IN BEARING WALLS, WATERPROOF MEMBRANE FLOORS, NET AREAS SHALL BE STEEL PIPE OR CAST IRON PIPE. SLEEVES IN NON-BEARING WALLS, FLOORS, CEILING SHALL BE STEEL PIPE OR CAST IRON PIPE.
 - WHERE UNINSULATED PIPES PENETRATE BEARING WALLS (EXCLUDING FOUNDATIONS), PIPE RATED WALLS, PARTITIONS, FLOORS, PACK AND SEAL ENTIRE SPACE BETWEEN PIPE AND SLEEVE WITH 30M CORNING 1-5540 SILICONE RTV FOAM, OR IF MINIMUM THICKNESS OF 3M FIRE BARRIER, CP-25 CAULK, OR 303 PUTTY ON EACH SIDE OF OPENING.
 - ENCASE ALL INSULATED PIPES PENETRATING FIRE WALLS AND FLOORS IN 360 DEGREE METAL-SHEATHED INSULATION INSERTS AS MANUFACTURED BY VALVE ENGINEERED PRODUCTS. PACK AND SEAL SPACE BETWEEN SHIELD AND SLEEVE PER PRECEDING PARAGRAPH. EXTEND INSULATION INSERT ON ALL DOMESTIC WATER LINES 1' BEYOND SHEET METAL SHIELD.
 - PIPE TO SLEEVE CLOSURE FOR PIPES PENETRATING FOUNDATIONS, WATERPROOFING MEMBRANE FLOORS, NET AREAS SHALL BE "LINK-SEAL".

METERS AND GAUGES

- SUBMITTALS**
- FURNISH MANUFACTURER'S SUBMITTAL DATA FOR: THERMOMETERS, PRESSURE GAUGES, FLOW MEASURING DEVICES, TEST PLUGS.
- PORTABLE INSERTION TYPE THERMOMETERS**
- 3" SIZES, ACCURATE WITHIN 1% OVER DIAL RANGE, HERMETICALLY SEALED.
- CONSTANT READ THERMOMETERS**
- MERCURY FREE THERMOMETER, 1" ALUMINUM CASE, NON-TOXIC HEAT TRANSFER MEDIUM, TUBE, SEPARABLE ROCKET CONNECTION, EXTENSION NECK TO CLEAR INSULATION, SHVEL ANGLE STEM FULLY ADJUSTABLE, ACCURATE WITHIN 1% OVER DIAL RANGE.
- PORTABLE INSERTION TYPE PRESSURE GAUGES**
- 1/2" DIAL, PROOF-BRONZE OR BRONZE TUBE, STAINLESS STEEL MOVEMENT, ACCURATE WITHIN 1/2% OVER SCALE RANGE.
- CONSTANT READ PRESSURE GAUGES**
- 1/2" OR 3/4" DIAL, STANDARD BLACK CASE, BRASS PRESSURE SENSIBLER AND NEEDLE VALVE, ACCURATE WITHIN 1% OVER MIDDLE HALF OF SCALE RANGE, 28 OVER.
- FLOW MEASURING DEVICE**
- ORIFICE OR VELOCITY TYPE FACTORY ASSEMBLED WITH 800 PSIG RATED BALL VALVE AND 1/2" DIA. PROOF-BRONZE OR BRONZE TUBE, STAINLESS STEEL MOVEMENT, SCHRAEDER TYPE PRESSURE TEST PORTS AND CAPS WITH PORT EXTENSIONS. CHAINED METAL TAG INDICATING LOCATION, GPM, AND METER READING.
- INSTALLATION**
- POINT THERMOMETERS TO BE EASILY READ FROM FLOOR.
 - INSTALL FLOW MEASURING DEVICES PER MANUFACTURER'S RECOMMENDATIONS.
 - FURNISH METERING STATION WITH PERMANENT METAL TAG MARKED WITH STATION DESIGNATION, GPM, METER READING FOR GPM.
- MECHANICAL INSULATION**
- GENERAL**
- ADHESIVES AND INSULATION MATERIALS. COMPOSITE FIRE AND SMOKE HAZARD RATING HAVING 25 FOR FLAME SPREAD AND 50 FOR SMOKE DEVELOPED. ADHESIVES SHALL BE WATERPROOF.
- PIPE INSULATION**
- HEAVY DENSITY ONE-PIECE FIBERGLASS, FACTORY APPLIED VAPOR BARRIER JACKET, DOUBLE SURFACE ADHESIVE SELF-SEALING LAP, "C" FACTOR 0.25 AT 75 F MEAN TEMPERATURE. INSULATION EXPOSED TO WEATHER. PROTECT INSULATION WITH WEATHERPROOF METAL JACKET. JACKET SHALL BE FACTORY APPLIED ALUMINUM CORROSION RESISTANT. INSULATED VAPOR BARRIER AND 1/2" GROOVE WATERRESISTANT SEAL EACH JOINT WITH SNAP STRIPS CONTAINING PERMANENT PLASTIC SEALING COMPOUND. SECURE WITH 1/2" WIDE STAINLESS STEEL BANDS. INSULATE FITTINGS WITH INTERESTED SECTIONS OF SAME MATERIAL. SEAL JOINTS WITH SEALING COMPOUND AND REFORMED ALUMINUM BANDS.
- INSTALLATION**
- INSULATION SHALL BE CONTINUOUS THROUGH INSIDE WALLS. PACK AROUND PIPES WITH OVERPROOF SELF-SUPPORTING INSULATION MATERIAL FULLY SEALED.
 - FINISH INSULATION NEATLY AT HANGERS, SUPPORTS, OTHER PROTRUSIONS, AND WHERE THE INSULATION BREAKS FOR SERVICE OR ACCESS REQUIREMENTS.
 - DO NOT COVER PIPING UNTIL TESTED.
 - REMOVE AND REAPPLY INSULATION IF, IN OPINION OF ARCHITECT, IT HAS NOT BEEN INSTALLED IN FIRST CLASS WORKMANLIKE MANNER.
 - REPAIR SEPARATION OF JOINTS OR CRACKING OF INSULATION DUE TO THERMAL MOVEMENT OR POOR WORKMANSHIP.
- INSTALLATION OF PIPE INSULATION**
- SEAL LONGITUDINAL LAPS WITH VAPOR BARRIER ADHESIVE OR WITH FACTORY APPLIED DOUBLE SURFACE PRESSURE SENSIBLER ADHESIVE SYSTEM. SEAL END JOINTS WITH HUB BUT STRIPS SECURED WITH VAPOR BARRIER ADHESIVE. SEAL ALL SEAMS ON COLD WATER PIPING WITH BULKHEAD FOSTER 30-55 SEAL PAST MASTIC.
- INSTALLATION OF INSULATION ON FITTINGS AND VALVES**
- INSULATE FITTINGS AND VALVES WITH FIBREGLASS FOIL-FACED FIBERGLASS BLANKET AND 2550 U/L RATED PVC FITTINGS COVERS (ZEISTON OR EQUAL).
 - WHERE INSTALLATION OF PVC FITTINGS COVERS IS PROHIBITED BY LOCAL AUTHORITIES, INSULATE FITTINGS AND VALVES WITH HOLED FIBERGLASS FITTINGS OR FIRMLY COMPRESSED POLYURETHANE BLANKET. SECURE IN PLACE WITH 20 GAUGE CORROSION RESISTANT WIRE AND APPLY SMOOTHING COAT OF INSULATING GEMENT. FINISH WITH LAYER OF SAME GLOTH EMBEDDED BETWEEN TWO COATS OF VAPOR BARRIER MASTIC. LAP GLASS FABRIC 2" ONTO ADJACENT INSULATION.
- INSULATION ON FITTINGS AND VALVES SHALL BE SAME THICKNESS AS ON PIPE.**
- INSULATION SCHEDULE**

SERVICE	PIPE SIZE	THICKNESS
DOMESTIC COLD WATER	ALL	1"
DOMESTIC COLD WATER OUTDOORS	ALL	2"
DOMESTIC HOT WATER, DOMESTIC HOT WATER REGENERATION	1-1/2" AND SMALLER 2" AND LARGER	2"
ROOF DRAIN, OVERFLOW DRAIN PIPING (VERTICAL LEADER FROM DRAIN BONNS, AND ALL HORIZONTAL)	ALL	1/2"
ROOF DRAIN, OVERFLOW DRAIN BOWL	ALL	1"

- TESTING AND BALANCING**
- STATUS OF SYSTEMS**
- DO NOT BEGIN TESTING AND BALANCING WORK UNTIL SYSTEM HAS BEEN COMPLETED AND IS IN FULL WORKING ORDER.
 - PUT SYSTEMS AND EQUIPMENT INTO FULL OPERATION AND CONTINUE OPERATION OF SAME DURING EACH PORTION DAY OF TESTING AND BALANCING. ASCERTAIN PRELIMINARY TAG REQUIREMENTS PRIOR TO COMMENCEMENT OF WORK. THROUGH REVIEW OF AVAILABLE DRAWINGS AND SPECIFICATIONS. MAKE VISUAL OBSERVATIONS AT SITE DURING CONSTRUCTION TO DETERMINE LOCATION AND SUITABILITY OF REQUIRED BALANCING DEVICES.
- REQUIREMENTS OF WORK**
- DOMESTIC CIRCULATING HOT WATER
 - ADJUST MANUAL BALANCING VALVES IN SYSTEM SO ALL HOT WATER OUTLETS RECEIVE ADEQUATE SUPPLY OF HOT WATER.
 - WHEN BALANCING IS DONE, MARK VALVES IN BALANCED POSITION, SET LOCKING RINGS.
 - TEST PIPING BEFORE BEING PERMANENTLY ENCLOSED.
 - OBTAIN CERTIFICATES OF APPROVAL, ACCEPTANCE, COMPLIANCE WITH REGULATIONS OF AGENCIES HAVING JURISDICTION. SUBMIT TO OWNER.
- CHLORINATION OF DOMESTIC WATER LINE**
- STERILIZE DOMESTIC WATER SYSTEM AFTER PRESSURE TESTS HAVE BEEN COMPLETED. FLUSH ENTIRE SYSTEM INTRODUCE CHLORINE OR HYDROCHLORIC TO NOT LESS THAN 50 PPM RESIDUAL CHLORINE. LET STAND FOR 24 HOURS MINIMUM.
 - FLUSH SYSTEM WITH CLEAN WATER UNTIL CHLORINE CONTENT IS REDUCED TO 1 PPM AT POINT FURTHEST FROM WHERE CHLORINE HAS INTRODUCED.
- SYSTEM TESTS**
- HYDROSTATIC TEST - WATER PIPING (NEH PIPING ONLY). HAND PUMP SYSTEM TO GREATER 100 PSIG OR 200% OF OPERATING PRESSURE. MAINTAIN PRESSURE UNTIL SYSTEM HAS BEEN INSPECTED FOR LEAKS BUT NOT LESS THAN FOUR HOURS.
 - COMPRESSED AIR OR NITROGEN TEST FOR NATURAL GAS PIPING. SUBJECT PIPING SYSTEM TO REQUIRED GAS PRESSURE WITH OIL FREE AIR OR NITROGEN. SYSTEM SHALL MAINTAIN PRESSURE FOR DURATION OF SOAKY TEST. TEST OF EACH JOINT. TEST PRESSURE OF 100 PSIG FOR 4 HOURS OR TEST PRESSURE OF 60 PSIG OR ABOVE FOR 24 HOURS SHOWING NO PRESSURE DROP EXCEPT THAT CAUSED BY TEMPERATURE CHANGES. DO NOT USE FLAME OR OTHER LIQUID FOR TESTING. DO NOT REPAIR DEFECTS IN GAS PIPING OR FITTINGS REMOVE AND REPLACE WITH SOUND MATERIAL.
 - WASTE DRAIN, VENT PIPING. FILL SYSTEM WITH WATER TO POINT OF OVERFLOW BUT NOT LESS THAN 10'-0" HEAD. MAINTAIN WATER LEVEL FOR 4 HOURS.

PLUMBING LEGEND

NOT ALL ITEMS LISTED BELOW ARE USED ON THIS SET OF PLUMBING DRAWINGS

PLUMBING PIPING	PIPING SYMBOLS
GN DOMESTIC GOLD WATER	M WALL HYDRANT
HN DOMESTIC HOT WATER	HB HOSE BIBB
HVC DOMESTIC HOT WATER	BV BALL VALVE
HO DOMESTIC HOT WATER	CB CALIBRATED BALANCING VALVE
T TEMPERED WATER	GV GATE VALVE
TR TEMPERED WATER	CV CHECK VALVE
H SOIL OR WASTE	SB SOLENOID VALVE
GW GREASE WASTE	PR PRESSURE REDUCING VALVE
SDO SOFT DRIP OR OIL DRAIN	FLV FLOW VALVE
PH FORCE MAIN DRAINAGE	P PUMP
D DRAIN	AV ATMOSPHERIC VACUUM BREAKER
V SANITARY VENT	ST STRAINER
GV GREASE VENT	RV RELIEF VALVE
SD STORM DRAIN	NOZ NOZZLE
OD OVERFLOW STORM DRAIN	WH WATER HAMMER ARRESTER
F FIRE SPRINKLER	UN UNION
FDG FIRE DEPT. CONNECTION	R REDUCER
G NATURAL GAS	M METER
MPG NATURAL GAS	GA GAS METER
LPG PROPANE GAS	GA GAS METER
CA COMPRESSED AIR	GA GAS METER

DESCRIPTION

ARROW IN LINE INDICATES DIRECTION OF FLOW

INDICATES PIPE SLOPE DOWN

REMOVE EXISTING BOTTOM PIPE CONNECTION

PIPING UP

PIPING DOWN

FIXTURE TRAP OR DRAIN TRAP

PIPING CAP OR PLUG

BALL VALVE IN VERTICAL PIPE DROP

GATE VALVE IN VERTICAL PIPE DROP

EQUIPMENT DESIGNATION

ABBREVIATIONS

AFB ABOVE FINISHED FLOOR	FPE FINISHED FLOOR ELEVATION	NGC NOT IN CONTRACT
AFS ABOVE FINISHED GRADE	FPF FIRE PROOF CONTRACTOR	NOO NORMALLY OPEN
AP ACCESS PANEL	GC GENERAL CONTRACTOR	NIS NOT TO SCALE
BFP BACKFLOW PREVENTER	E ELEVATOR	SCO SURFACE CLEAN OUT
DNZ DOWNPOUT NOZZLE	LCO LINE CLEAN OUT	TYP TYPICAL
EXT EXISTING	HC MECHANICAL CONTRACTOR	VTR VENT THROUGH ROOF
EL ELECTRICAL CONTRACTOR	HC HANGERS	WCO WALL CLEAN OUT
EB ELEVATION	NI NEI	
FCO FLOOR CLEAN OUT	NC NORMALLY CLOSED	



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PLUMBING FIXTURE SCHEDULE											FIXTURE UNIT COUNT (2015 IPC)						
SYMBOL	TYPE	ADA	ACCESSORIES	FINISH	MANUFACTURER # MODEL NUMBER	FAUCET TRIM MANUFACTURER # MODEL NUMBER	ACCEPTABLE MANUFACTURERS	REMARKS	ROUGH IN CONNECTION SIZING				# OF FIXTURES	K.S.F.U. EACH	K.S.F.U. TOTAL	D.F.U. EACH	D.F.U. TOTAL
									WASTE (INCHES)	VENT (INCHES)	HOT (INCHES)	COLD (INCHES)					
BFP-1	ICE MACHINE/BEVERAGE DISPENSER DOUBLE CHECK BACK FLOW PREVENTER	N/A	ASSE 1032 CERTIFIED	STAINLESS STEEL	HATTS SD-2	--	APOLLO VALVES CONERAGO HILKINS	LEAD FREE, STAINLESS STEEL ASSEMBLY	--	--	--	1/4	1	--	--	--	--
BFP-2	DOUBLE CHECK BACK FLOW PREVENTER	N/A	ASSE 1012 CERTIFIED	STAINLESS STEEL	HATTS 4D	--	APOLLO VALVES CONERAGO HILKINS	LEAD FREE, STAINLESS STEEL ASSEMBLY	--	--	--	1/2	4	--	--	--	--
D-1	DISPOSER - 1/2 HP, 120-1-60 AUTOMATIC REVERSING STAINLESS STEEL ELEMENTS	N/A	MOTOR OVERLOAD PROTECTION, PLUG AND CORD	--	IN SINK ERATOR EVOLUTION COMPACT JR. SMITH 2005-AC05B	--	NATIONAL WASTE KING	1-YEAR WARRANTY	--	--	--	--	1	--	--	--	--
FD-1	FLOOR DRAIN - 5" ROUND TOP, ROUND CAST IRON BODY, FLASHING COLLAR, ADJUSTABLE STRAINER HEAD, SECURED GRATE	YES	2642 QUAD-CLOSE TRAP SEAL	NICKLE BRONZE	--	--	JOSEPH ZURN MIFAB	FOR FINISHED FLOOR AREAS	NOTED ON PLANS	2	--	--	3	--	--	2	6
L-1	LAVATORY - 20"x18" CONCEALED ARM WALL MOUNTED, 4" CENTERSET FAUCET WITH ONE HANDLE CONTROL & 4-3/4" SPOUT	YES	OFFSET GRID STRAINER TRUBRO TRAP COVER FLOOR MOUNTED CARRIER	VITREOUS CHINA CHROME FAUCETS	AMERICAN STD LUCERNE 355/312	DELTA 2529LF-HDF	ZURN TOTO KOHLER	0.5 GPM FLOW RATE	2	2	1/2	1/2	2	2	4	2	4
S-1	SINK - 22"x14" O.D. SINGLE COMPARTMENT, DELUXE SINGLE HANDLE FAUCET, METAL CONSTRUCTION & 4" SPOUT	YES	SIDE SPRAY FAUCET, OFFSET DRAIN OPENING FOR ADA COMPLIANCE, LEAD FREE	STAINLESS STEEL CHROME FAUCETS	ELKAY LRAD2214	DELTA 400LF-HDF	NATIONAL STANDARD	6-1/2" DEEP SINK, COORDINATE FAUCET HOLE CONFIGURATION WITH FAUCET	2	2	1/2	1/2	1	2	2	2	2
TMV-1	POINT OF USE THERMOSTATIC MIXING VALVE WITH HIGH TEMPERATURE LIMIT STOP, INTEGRAL CHECK VALVES	N/A	MINIMUM FLOW 0.5 GPM, MAXIMUM FLOW 1.6 GPM, LOCKING TEMPERATURE CONTROL	BRONZE	LEONARD #210-LF	--	LAVLER POWERS SYMONS	SET MAXIMUM TEMPERATURE TO 110° LEAD FREE ASSEMBLY	--	--	--	--	3	--	--	--	--
US-1	UTILITY SINK, FLOOR MOUNTED 20"x14"x8", STEEL LEGS THO HANDLE DECK MOUNTED FAUCET	NO	6" SHING SPOUT	FIBERGLASS CHROME FAUCETS	FIAT FL-1	DELTA 2135LF	ARCO FLORESTONE HILLIAMS	--	2	2	1/2	1/2	1	2	2	2	2
WB-1	ICE MACHINE, STEEL, RECESSED, 1/2" NPT BOTTOM INLET 1/4" COMPRESSION OUTLET	N/A	INTEGRAL HAMMER ARRESTER OPEN FRAME FACEPLATE	GALVANIZED STEEL	GUY GRAY BIMB5G15-HA	--	LSP PRODUCTS OATEY SIOUX CHIEF	FOR COMMERCIAL APPLICATIONS	--	--	--	1/2	1	--	--	--	--
WC-1	WATER CLOSET - FLOOR MOUNTED, TANK TYPE, 15" HIGH, 128 GPF, ELONGATED BOWL, 12" SIZING IN	NO	HEAVY DUTY SEAT, COLOR SHALL MATCH FIXTURE	VITREOUS CHINA	AMERICAN STD CADET PRO 25CA10X	N/A	ZURN TOTO KOHLER	COORDINATE TRIP LEVER LOCATION WITH ARCHITECTURAL DRAWINGS	4	2	--	1/2	2	5	10	4	8
WCO-1	HALL CLEANOUT TEE WITH COUNTERSINK PLUG STAINLESS STEEL COVER PLATE	N/A	--	NICKLE BRONZE	JOSEPH ZURN CO2410	--	JR. SMITH HADE, HATTS	--	--	--	--	--	3	--	--	--	--
NOTE: ALL CONNECTIONS TO POTABLE WATER SYSTEM SHALL CONFORM TO NSF/ANSI-61 AND NSF/ANSI-312 EFFECTIVE 01/04/2014.									TOTAL FIXTURE UNITS: (TOTAL GPM)		18 18.8		26				



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Land Title Guarantee
Company

Dates of Record
Project Start Date: 11/10/2017
Issued On: 12/05/2017
Issued For: Construction Documents

DOMESTIC EXPANSION TANK SCHEDULE								
SYMBOL	MODEL	CAPACITY (GAL)	DIAMETER (IN)	HEIGHT (IN)	OPERATING HEIGHT (LBS)	SYSTEM CONNECTION (IN)	ACCEPTANCE FACTOR	NOTES
DET-1	ST-5	2	8	18	21	3/4	0.4	1, 2

NOTES:
1. EQUIPMENT SCHEDULE BASED ON AMTROL.
2. ACCEPTABLE MANUFACTURERS INCLUDE: AMTROL, TAGO AND HATTS.

SPECIFICATION:
HYDRO-PNEUMATIC EXPANSION TANK, CONSTRUCTION IN ACCORDANCE WITH SECTION VII OF THE ASME BOILER AND PRESSURE VESSEL CODE. ALL WELDS SHALL CONFORM TO ASME. MAXIMUM OPERATING PRESSURE OF ISO PSIG. ALL INTERNAL COMPONENTS SHALL COMPLY WITH FDA REGULATIONS, SUITABLE FOR POTABLE WATER.

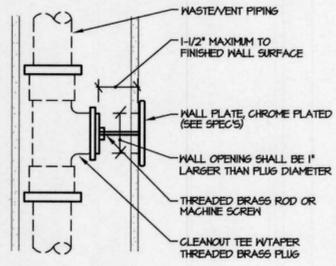
ELECTRIC DOMESTIC WATER HEATER SCHEDULE													
SYMBOL	MODEL	STORAGE TANK (GAL)	HATTS PER ELEMENT	NUMBER OF ELEMENTS	INLET WATER TEMP (F)	OUTLET WATER TEMP (F)	RECOVERY RATE (GPH)	ELEC.	FULL LOAD AMPS	DIAMETER (IN)	HEIGHT (IN)	OPERATING WEIGHT (LBS)	NOTES
BWH-1	DEL-6	6	2000	1	40	140	6	208-1	9.61	14-1/4	15-1/2	85	1, 2, 3
BWH-2	DEL-6	6	2000	1	40	140	6	208-1	9.61	14-1/4	15-1/2	85	1, 2, 3

NOTES:
1. EQUIPMENT SCHEDULE BASED ON A.O. SMITH.
2. ACCEPTABLE MANUFACTURERS INCLUDE: A.O. SMITH, BRADFORD WHITE, LOGHINVAR, RHEEM/RUUD, AND STATE.
3. WATER HEATER SHALL BE PROVIDED WITH MANUFACTURER SUPPLIED, INTEGRAL HEAT TRAP ON SUPPLY AND DISCHARGE CONNECTIONS.

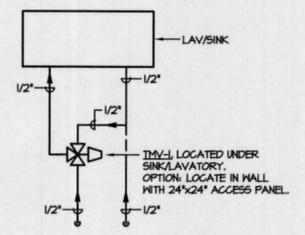
SPECIFICATION:
UL LISTED ELECTRIC WATER HEATER CONSTRUCTED FOR WORKING PRESSURE OF 150 PSIG, WITH MAGNESIUM ANODE ROD, GLASS, POLY OR EPOXY LINING ON INTERNAL SURFACES EXPOSED TO WATER. PROVIDE COMPLETE WITH HEATING ELEMENTS OF LOW WATT DENSITY WITH ZINC PLATED COPPER SHEATH, FACTORY WIRED CONTROLS WITH INDIVIDUAL THERMOSTAT FOR EACH ELEMENT; INSULATED TANK WITH VERMIN-PROOF GLASS FIBER OR FOAM INSULATION. OUTER STEEL JACKET WITH BAKED ENAMEL FINISH, BRASS DRAIN VALVE, 3/4" ASME T & P RELIEF VALVE, AND COLD WATER DIP TUBE. WATER HEATER SHALL BE LISTED AND LABELED BY MANUFACTURER FOR SPACE HEATING APPLICATIONS PER IMC SECTION 1002.2 AND IFSC SECTION 624.2.

TOTAL CONNECTED GAS LOAD SCHEDULE					
EQUIPMENT	QTY	INPUT EACH (BTUH @ SL)	INPUT TOTAL (MBH @ SL)	INLET PRESSURE	NOTES
EXISTING EQUIPMENT TO BE REMOVED					
(E) MAU	1	400	400	1" WC	REMOVED
(E) KITCHEN HOOD	1	--	--	1" WC	PREVIOUSLY REMOVED
(E) GAS WATER HEATER	1	--	--	1" WC	PREVIOUSLY REMOVED
TOTAL EXISTING TO BE REMOVED=		400			
EXISTING EQUIPMENT TO REMAIN					
(E) RTU	1	250	250	1" WC	REMAIN
TOTAL EXISTING TO REMAIN=		250			
NEW EQUIPMENT					
RTU-1	1	240	240	1" WC	1, 2, 3
TOTAL NEW LOAD=		240			
TOTAL EXISTING LOAD TO REMAIN=		250			
BUILDING TOTAL CONNECTED LOAD=		490			NEW AND EXISTING

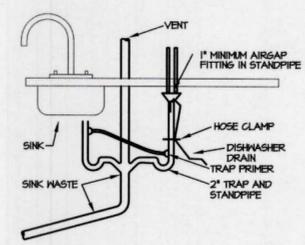
NOTES:
1. MODIFICATIONS TO GAS METER AND/OR SERVICE PIPING SHALL BE PERFORMED BY THE GAS COMPANY. SUBMIT REQUIRED GAS SERVICE APPLICATION TO GAS COMPANY IN A TIMELY MANNER TO MEET THE CONSTRUCTION SCHEDULE.
2. FARTHEST CONNECTED DEVICE DISTANCE BASED ON 100'.
3. PIPE SIZING BASED ON PRESSURE AT METER OUTLET OF 1 INCHES WATER COLUMN. CONTRACTOR TO FIELD VERIFY OUTLET PRESSURE PRIOR TO STARTING WORK.



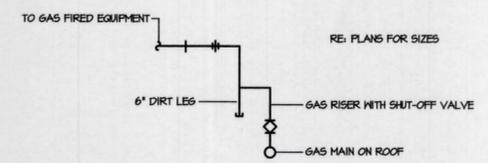
WALL CLEANOUT (WCO)
NOT TO SCALE 221814



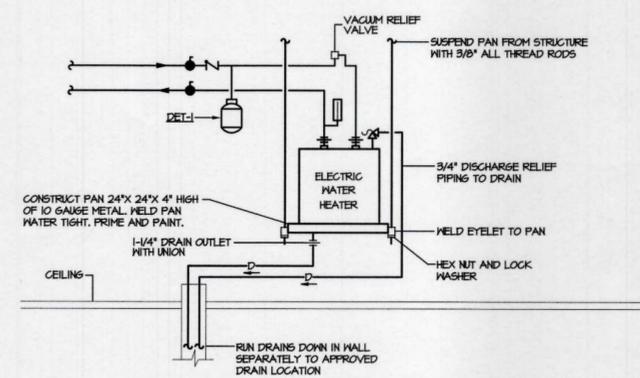
THERMOSTATIC MIXING VALVE DIAGRAM
NOT TO SCALE 221114



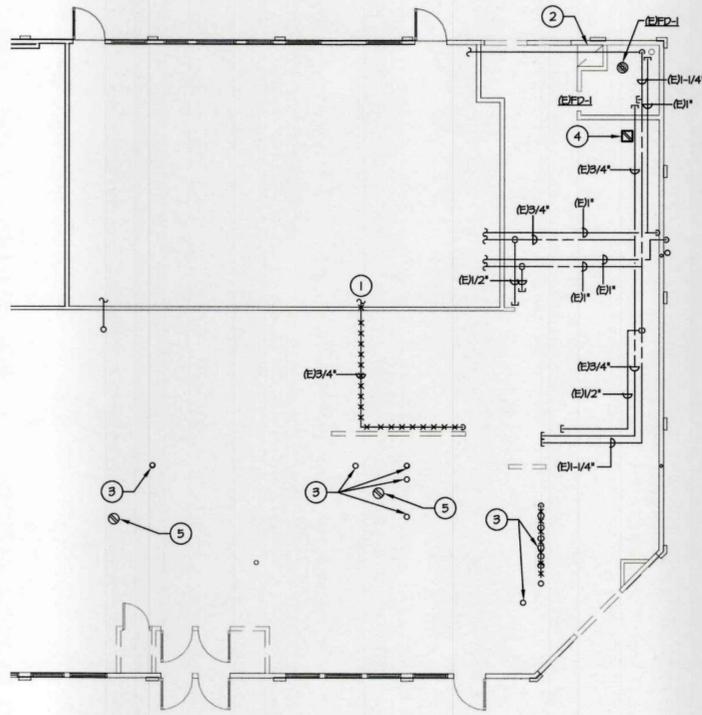
DISHWASHER STANDPIPE DIAGRAM
NOT TO SCALE 220800



ROOF EQUIPMENT GAS PIPING DIAGRAM
NOT TO SCALE 231123



ELECTRIC WATER HEATER DIAGRAM
NOT TO SCALE 223300



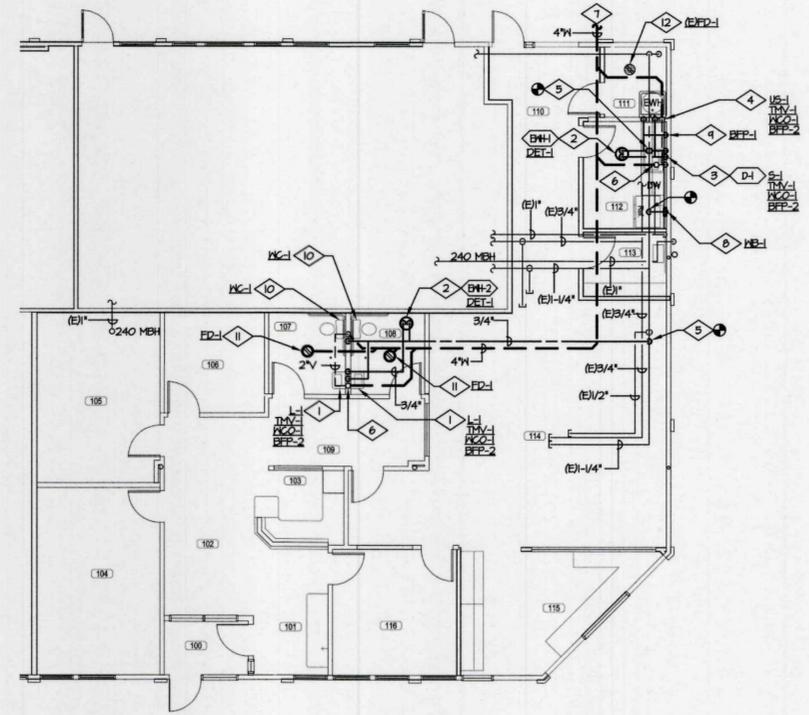
1ST FLOOR PLUMBING DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL CUTTING AND PATCHING WITH GENERAL CONTRACTOR.
- FIELD VERIFY ALL PLUMBING SYSTEMS, PIPE SIZES AND LOCATIONS PRIOR TO START OF ANY WORK.
- REFER TO SCHEDULES, DIAGRAMS AND ISOMETRIC DIAGRAMS FOR ALL PIPE SIZES NOT SHOWN ON PLAN. FIELD VERIFY EXISTING PIPE SIZES PRIOR TO BEGINNING WORK.
- CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ANY AND ALL SERVICE DOWNTIME WITH AFFECTED TENANTS) AND PROJECT MANAGER PRIOR TO INTERRUPTION OF SERVICE.
- COORDINATE SCHEDULE OF FLOOR PENETRATIONS AND WASTE PIPE INSTALLATION WITH TENANT BELOW AND BUILDING MANAGEMENT PRIOR TO BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL CONFIRM REQUIREMENTS FOR LOCATING STEEL REINFORCING PRIOR TO MAKING FLOOR PENETRATIONS. PERFORM FLOOR X-RAY AS REQUIRED.
- VERIFY THE CONTINUITY OF FIXTURE SERVICES TO REMAINING FIXTURES, PRIOR TO DEMOLITION OF PIPING.
- ALL FIXTURES AND PIPING ASSUMED TO BE NEW UNLESS OTHERWISE STATED.
- FIELD VERIFY LOCATION AND SLOPE OF ALL WASTE PIPING PRIOR TO WORK.
- REMOVE ALL EXISTING FLOOR DRAINS UNLESS OTHERWISE NOTED.

DRAWING NOTES

- REMOVE EXISTING GAS LINE BACK TO MAIN AND CAP IN THIS AREA. FIELD VERIFY LOCATION.
- REMOVE EXISTING MOP SINK AND ASSOCIATED PIPING. CAP WASTE PIPING IN SLAB.
- REMOVE EXISTING WASTE AND VENT PIPING. CAP WASTE IN SLAB.
- REMOVE EXISTING FLOOR SINK. CAP WASTE IN SLAB.
- REMOVE EXISTING FLOOR DRAIN. CAP WASTE IN SLAB.



1ST FLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

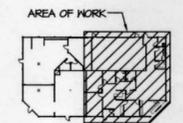
GENERAL NOTES

- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL CUTTING AND PATCHING WITH GENERAL CONTRACTOR.
- FIELD VERIFY ALL PLUMBING SYSTEMS, PIPE SIZES AND LOCATIONS PRIOR TO START OF ANY WORK.
- REFER TO SCHEDULES, DIAGRAMS AND ISOMETRIC DIAGRAMS FOR ALL PIPE SIZES NOT SHOWN ON PLAN. FIELD VERIFY EXISTING PIPE SIZES PRIOR TO BEGINNING WORK.
- CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ANY AND ALL SERVICE DOWNTIME WITH AFFECTED TENANTS) AND PROJECT MANAGER PRIOR TO INTERRUPTION OF SERVICE.
- COORDINATE SCHEDULE OF FLOOR PENETRATIONS AND WASTE PIPE INSTALLATION WITH TENANT BELOW AND BUILDING MANAGEMENT PRIOR TO BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL CONFIRM REQUIREMENTS FOR LOCATING STEEL REINFORCING PRIOR TO MAKING FLOOR PENETRATIONS. PERFORM FLOOR X-RAY AS REQUIRED.
- VERIFY THE CONTINUITY OF FIXTURE SERVICES TO REMAINING FIXTURES, PRIOR TO DEMOLITION OF PIPING.
- ALL FIXTURES AND PIPING ASSUMED TO BE NEW UNLESS OTHERWISE STATED.
- FIELD VERIFY LOCATION AND SLOPE OF ALL EXISTING WASTE PIPING PRIOR TO WORK.

10. All field attachment to structural joists shall be performed in a workman-like manner to insure that the joists are not damaged by such - no welding, shooting of pins or drilling of holes into joist or trusses for bolts without prior approval by an engineer.

DRAWING NOTES

- 3/4" CWMM 2"V DOWN IN WALL TO LAV GROUP. OFFSET 1/2" CWMM 2"V TO LAV. CONNECT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- MOUNT ELECTRIC WATER HEATER FROM STRUCTURE ABOVE CEILING, PER MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS. SEE DIAGRAM.
- 1/2" CWMM 2"V DOWN IN WALL TO SINK. OFFSET 1/2" FROM SINK AND CONNECT TO DISHWASHER PER MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS. AND CONNECT PER MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- 1/2" CWMM 2"V DOWN IN WALL TO UTILITY SINK AND CONNECT PER MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- CONNECT NEW 3/4" CW TO EXISTING 1-1/4" CW IN THIS AREA. FIELD VERIFY LOCATION.
- 3"V UP THRU ROOF.
- ROUTE 4"V TO NEAREST 4" OR GREATER WASTE PIPING. FIELD VERIFY SLOPE AND LOCATION BEFORE COMMENCING CONSTRUCTION.
- 1/2" CW DOWN IN WALL TO WALL BOX. CONNECT TO REFRIGERATOR PER MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- 1/4" CW DOWN TO COFFEE MAKER. DOUBLE CHECK BACKFLOW PREVENTER AND CONNECT PER MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- 3/4" CW 2"V DOWN IN WALL TO WATER CLOSET. CONNECT TO EQUIPMENT PER THE MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- 2" V TO FLOOR DRAIN. CONNECT PER THE MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- EXISTING FLOOR DRAIN TO REMAIN. FIELD VERIFY CONNECTION TO WASTE.



Room Schedule

100	Vestibule	109	Hall
101	Coffee Bar	110	Hall
102	Reception	111	Janitor's Closet
103	Reception	112	Break Room
104	Closing Rm. #1	113	Server Storage
105	Closing Rm. #2	114	Open Office
106	Closing Rm. #3	115	Workroom
107	Restroom	116	Office
108	Restroom		

**RCRBD
RECORD SET**

MEP PROJECT #17383

MEP
ENGINEERING INC.
CLIENT CENTRIC CONSULTING

6402 S. Troy Circle, Suite 100 (W) 303.936.1633
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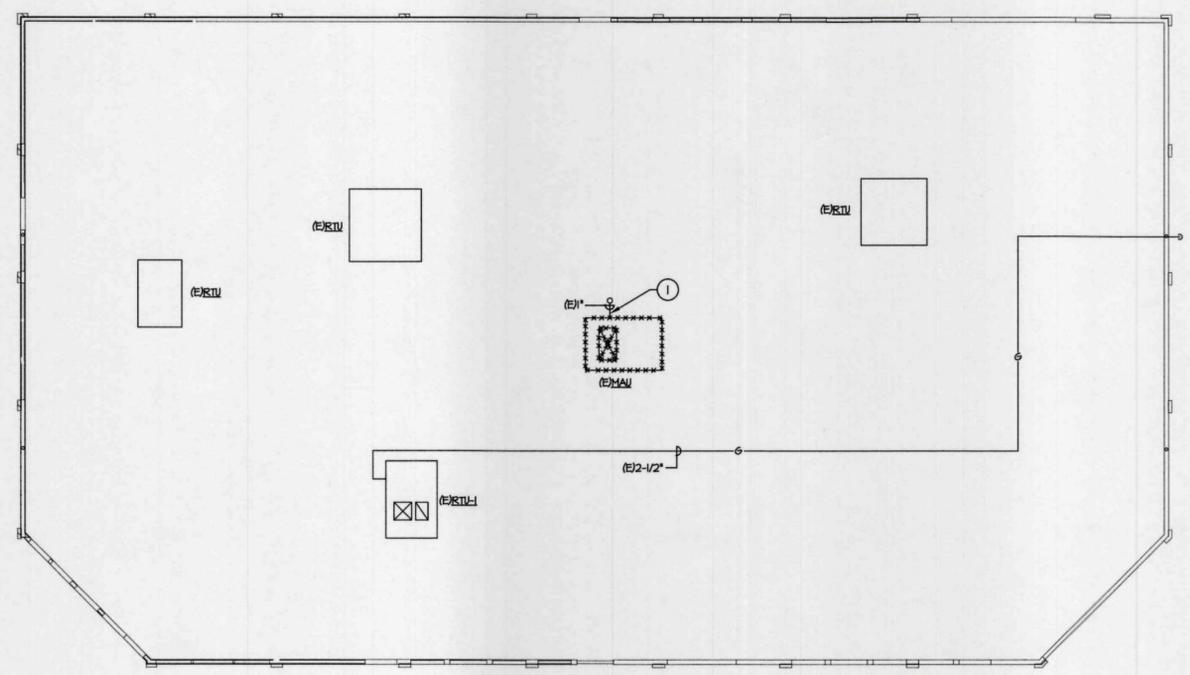


**Land Title Guarantee
Company**

Dates of Record
Project Start Date: 11/10/2017
Issued On: Issued For:
12/05/2017 Construction Documents



MEP
ENGINEERING INC.
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 **ROOF PLUMBING DEMOLITION PLAN**
SCALE: 1/8" = 1'-0"

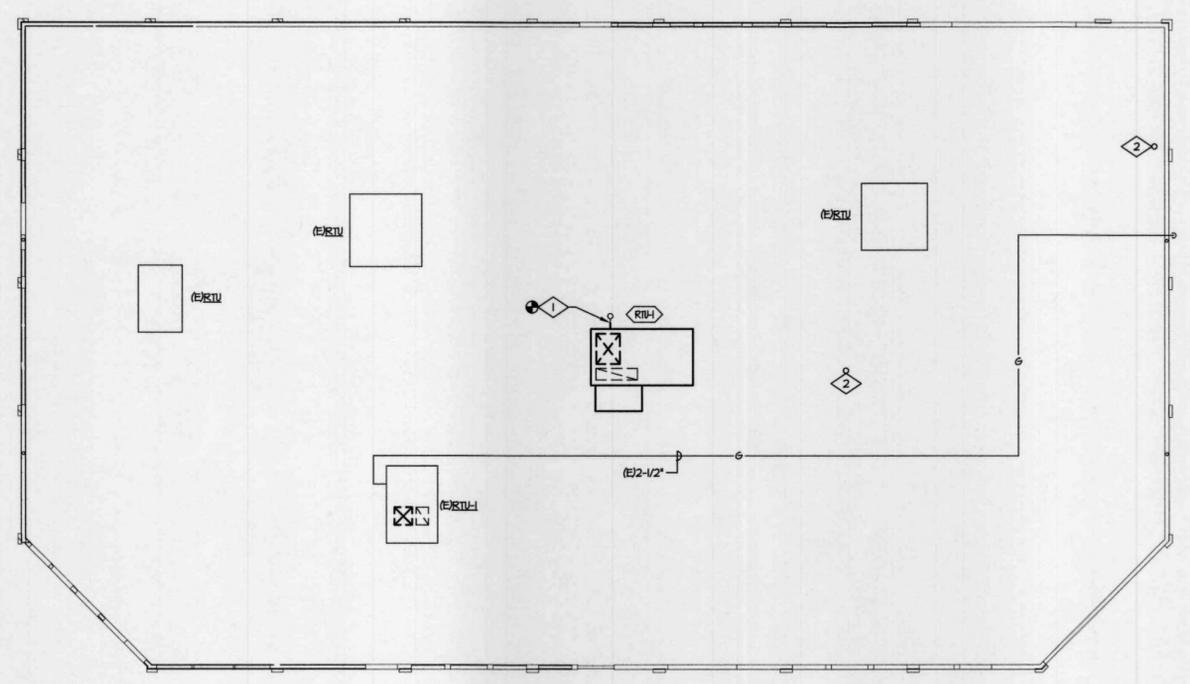
GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL CUTTING AND PATCHING WITH GENERAL CONTRACTOR.
2. FIELD VERIFY ALL PLUMBING SYSTEMS, PIPE SIZES AND LOCATIONS PRIOR TO START OF ANY WORK.
3. REFER TO SCHEDULES, DIAGRAMS AND ISOMETRIC DIAGRAMS FOR ALL PIPE SIZES NOT SHOWN ON PLAN. FIELD VERIFY EXISTING PIPE SIZES PRIOR TO BEGINNING WORK.
4. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ANY AND ALL SERVICE DOWNTIME WITH AFFECTED TENANT(S) AND PROJECT MANAGER PRIOR TO INTERRUPTION OF SERVICE.
5. COORDINATE SCHEDULE OF FLOOR PENETRATIONS AND WASTE PIPE INSTALLATION WITH TENANT BELOW AND BUILDING MANAGEMENT PRIOR TO BEGINNING CONSTRUCTION.
6. CONTRACTOR SHALL CONFIRM REQUIREMENTS FOR LOCATING STEEL REINFORCING PRIOR TO MAKING FLOOR PENETRATIONS. PERFORM FLOOR X-RAY AS REQUIRED.
7. VERIFY THE CONTINUITY OF FIXTURE SERVICES TO REMAINING FIXTURES, PRIOR TO DEMOLITION OF PIPING.

RCRBD
RECORD SET

 **DRAWING NOTES**

1. REMOVE EXISTING 1" GAS LINE TO (E)14U BACK TO ELBOW ON ROOF. PREPARE FOR FUTURE CONNECTION.



 **ROOF MECHANICAL PLAN**
SCALE: 1/8" = 1'-0"

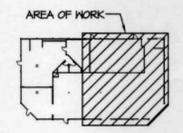
GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL CUTTING AND PATCHING WITH GENERAL CONTRACTOR.
2. FIELD VERIFY ALL PLUMBING SYSTEMS, PIPE SIZES AND LOCATIONS PRIOR TO START OF ANY WORK.
3. REFER TO SCHEDULES, DIAGRAMS AND ISOMETRIC DIAGRAMS FOR ALL PIPE SIZES NOT SHOWN ON PLAN. FIELD VERIFY EXISTING PIPE SIZES PRIOR TO BEGINNING WORK.
4. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ANY AND ALL SERVICE DOWNTIME WITH AFFECTED TENANT(S) AND PROJECT MANAGER PRIOR TO INTERRUPTION OF SERVICE.
5. CONTRACTOR SHALL CONFIRM REQUIREMENTS FOR LOCATING STEEL REINFORCING PRIOR TO MAKING FLOOR PENETRATIONS. PERFORM FLOOR X-RAY AS REQUIRED.
6. VERIFY THE CONTINUITY OF FIXTURE SERVICES TO REMAINING FIXTURES, PRIOR TO DEMOLITION OF PIPING.
7. ALL FIXTURES AND PIPING ASSUMED TO BE NEW UNLESS OTHERWISE STATED.

8. All field attachment to structural joists shall be performed in a workman-like manner to insure that the joists are not damaged by such - no welding, shooting of pins or drilling of holes into joist or trusses for bolts without prior approval by an engineer.

 **DRAWING NOTES**

1. CONNECT NEW 1" GAS LINE TO EXISTING 1" GAS LINE IN THIS AREA. FIELD VERIFY LOCATION.
2. 3" FROM BELOW. TERMINATE MIN. 10'-0" FROM AIR INTAKES.



Sundance Plaza Bld. B
255 Anglers Drive
Steamboat Springs, CO
80477
Suite B



Land Title Guarantee Company

Dates of Record
Project Start Date: 11/10/2017
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Issued For: Construction Documents

DIVISION 26 - ELECTRICAL SPECIFICATIONS

BASIC ELECTRICAL REQUIREMENTS

GENERAL

- 1. PRIOR TO SUBMITTING BIDS, THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING ELECTRICAL EQUIPMENT CONDITIONS AND DIFFICULTIES THAT WILL AFFECT EXECUTION OF THE WORK...

- 35. GUARANTEE ELECTRICAL INSTALLATION AND ALL WORK UNDER THIS DIVISION (EXCLUDING LAMPS) FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER AGAINST ALL EVIDENCE OF IMPROPER WORK OR FAILURE OR MALFUNCTION OF MATERIALS AND EQUIPMENT...

MATERIALS AND EQUIPMENT

- 1. WIRE AND CABLE SHALL BE MINIMUM NUMBER 12 AWG COPPER WITH THIN OR THIN INSULATION, NUMBER 10 AWG AND SMALLER WIRE EXCEPT FOR MOTOR CIRCUITS SHALL BE SOLID...

FEET FOR 120 VOLT, 20 AMP CIRCUITS AND 300 FEET FOR 277 VOLT, 20 AMP CIRCUITS. SIZE CONDUCTORS FOR MINIMUM VOLTAGE DROP ALLOWED PER THE NATIONAL ELECTRICAL CODE.

- 3. ELECTRICAL CONTRACTOR SHALL INCREASE SIZE OF SHARED NEUTRAL CONDUCTOR WITHIN FURNITURE SYSTEMS TO A #10 AWG CU CONDUCTOR. ELECTRICAL CONTRACTOR TO CONSIDER THE NEUTRAL CONDUCTOR AS A CURRENT CARRYING CONDUCTOR WHEN FEEDING ELECTRONIC LOADS.

- 4. DEVICES FOR DEDICATED EQUIPMENT, INCLUDING BUT NOT LIMITED TO, COMPUTERS, COPIERS, AND PRINTERS, WHICH ARE INDICATED AS SEMI-DEDICATED, DEDICATED, OR ISOLATED GROUND (IG) ON THE PLANS SHALL HAVE SEPARATE NEUTRAL AND GROUND CONDUCTORS RUN FROM THE BRANCH CIRCUIT PANEL BOARD.

- 5. NEUTRALS, RACEWAYS, AND NON-CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDED IN FULL ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. PROVIDE HARD WIRED GROUND CONNECTIONS TO ALL DEVICES AND SEPARATE INSULATED GROUND WIRE CONTINUOUS IN EACH CIRCUIT (#12 AWG CU MINIMUM "GREEN" TRACER GROUND).

- 6. ALL FLOOR AND WALL PENETRATIONS WHERE ELECTRICAL DEVICES AND RACEWAYS HAVE BEEN REMOVED MUST BE REPAIRED AND SEALED TO MAINTAIN THE REQUIRED FIRE RATINGS. CONDUITS PENETRATING FIRE RATED WALLS OR CEILINGS SHALL BE FIRE STOPPED WITH A U.L. LISTED FIRE STOPPING COMPOUND SEALANT TO MAINTAIN THE REQUIRED FIRE RATINGS. FIRE RATED FLOOR AND WALL PENETRATIONS IMMEDIATELY.

- 7. ELECTRICAL CONTRACTOR SHALL PROVIDE PRODUCT LITERATURE INFORMATION ON SITE FOR FIELD INSPECTOR REGARDING FIRE RATING OF FLOOR BOXES AND POKE THRU DEVICES.

- 8. ALL CONDUITS PENETRATING A ONE HOUR FIRE RATED WALL OR CEILING SHALL BE FIRE STOPPED WITH A U.L. LISTED FIRE STOPPING COMPOUND SEALANT.

- 9. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF LIGHTING FIXTURES IN MECHANICAL ROOMS/SPACES WITH MECHANICAL DUCT WORK INSTALLER PRIOR TO ROUGH-IN LOCATE BELOW DUCT WORK (8'-0" A.F.F. MIN) CENTERED IN ROOM AS MUCH AS POSSIBLE. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ALL MECHANICAL EQUIPMENT LOCATIONS AND REQUIREMENTS WITH MECHANICAL PLANS, MECHANICAL CONTRACTOR, AND ACTUAL MECHANICAL EQUIPMENT SUPPLIED. INCLUDE ALL REQUIRED OUTLETS, HEAVY DUTY DISCONNECT SWITCHES, FUSES, CONTROLS, CONTROL WIRING AND ALL CONNECTIONS IN THE ELECTRICAL BID.

- 10. COORDINATE ALL INTERCONNECTIONS TO AND BETWEEN NEW AND EXISTING SYSTEMS INCLUDING, BUT NOT LIMITED TO: POWER, LIGHTING, FIRE ALARM AND DETECTION, TELEPHONE AND INTERCOM.

- 11. COORDINATE LOCATIONS OF DEVICES WITH ARCHITECT PRIOR TO ROUGH-IN.

- 12. COORDINATE WITH MECHANICAL CONTRACTOR FOR LOCATIONS OF EQUIPMENT CONNECTIONS PRIOR TO ROUGH-IN.

- 13. VERIFY ALL SPECIFIC KITCHEN EQUIPMENT REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN. COORDINATION SHALL INCLUDE MOUNTING HEIGHTS, CONNECTION TYPE AND POWER REQUIREMENTS. ALL CONNECTIONS FOR KITCHEN EQUIPMENT SHALL BE IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS AND SUPPLIERS RECOMMENDATIONS.

- 14. VERIFY ALL SPECIFIC COMPUTER AND COMMUNICATIONS EQUIPMENT REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN. COORDINATION SHALL INCLUDE MOUNTING HEIGHTS, CONNECTION TYPE AND POWER REQUIREMENTS. ALL CONNECTIONS FOR COMPUTER AND COMMUNICATIONS EQUIPMENT SHALL BE IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS AND SUPPLIERS RECOMMENDATIONS.

- 15. ELECTRICAL CONTRACTOR SHALL FULLY FIELD COORDINATE THE TENANT'S COMMUNICATIONS SYSTEM INSTALLATION (DEVICES AND CABLING) WITH THE TENANT'S COMMUNICATIONS INSTALLING CONTRACTOR PRIOR TO ROUGH-IN AND PURCHASING OF MATERIALS, TYPICAL.

- 16. ALL NEW LIGHT SWITCHES, RECEPTACLE OUTLETS, TELEPHONE OUTLETS, FIRE ALARM DEVICES, AND COMMUNICATIONS DATA OUTLETS SHALL MEET THE REQUIREMENTS FOR AMERICANS WITH DISABILITIES (ADA) AND ANSI A117.1 REQUIREMENTS FOR MOUNTING HEIGHTS AND ORIENTATIONS. TYPICAL UNLESS OTHERWISE NOTED. RECEPTACLES SHALL BE A MINIMUM OF 18" A.F.F. AT BOTTOM OF DEVICE AND SWITCHES A MAXIMUM OF 48" A.F.F. AT TOP OF DEVICE, TYPICAL UNLESS OTHERWISE NOTED.

- 17. COORDINATE MOUNTING HEIGHTS AND LOCATIONS OF ALL ELECTRICAL DEVICES LOCATED WITHIN, ABOVE, OR NEAR MILLWORK WITH ARCHITECTURAL DRAWINGS, APPROVED "SHOP DRAWINGS", AND MILLWORK CONTRACTOR. MAINTAIN CONSISTENT MOUNTING PRACTICES FOR A UNIFORM APPEARANCE. VERIFY ALL OUTLET REQUIREMENTS PRIOR TO ROUGH-IN.

- 18. COORDINATE LOCATIONS OF FIRE SMOKE DAMPERS WITH DIVISION 23. DAMPERS CONTROL CIRCUITRY FROM THE FIRE ALARM CONTROL PANEL. CIRCUITS FOR DAMPER POWER IS INDICATED ON PANELBOARD SCHEDULES.

- 19. COORDINATE LOCATIONS OF MECHANICAL EQUIPMENT CONTROL PANELS WITH DIVISION 23. CIRCUITS FOR CONTROL PANEL POWER IS INDICATED ON PANELBOARD SCHEDULES.

- 20. COORDINATE WITH GENERAL CONTRACTOR FOR ROUTING OF ELECTRICAL COMPONENTS IN PRECAST AND CAST-IN-PLACE CONCRETE ARCHITECTURAL ELEMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR BUILDING MATERIALS AND FINISHES.

- 21. REMOVE CONDUCTORS AND CONDUIT BACK TO SOURCE FOR EQUIPMENT WHICH IS TO BE REMOVED UNLESS EXISTING WIRING AND CONDUIT CAN BE REMOVED TO ACCESSIBLE JUNCTION BOX AT CONTRACTORS OPTION TO FEED NEW EQUIPMENT. MAINTAIN CIRCUIT CONTINUITY OF REMAINING DEVICES AND EQUIPMENT. CONTRACTOR IS TO PHASE WORK TO MAINTAIN CONTINUITY OF CIRCUITS IN AREAS WHICH ARE IN ANOTHER PHASE.

- 22. EXTEND EXISTING CIRCUITRY TO RECONNECT TO RELOCATED ITEMS AS INDICATED OR UNLESS OTHERWISE NOTED.

- 23. PROVIDE BLANK COVER PLATES ON WALLS TO REMAIN FOR REMOVED OR RELOCATED DEVICES. COVER PLATES SHALL MATCH EXISTING.

- 24. ALL JUNCTION BOX COVERS SHALL BE INDUBLY LABELED WITH PANEL DESIGNATION AND BRANCH CIRCUIT NUMBER OF EACH WIRE WITHIN THE JUNCTION BOX.

- 25. CONDUIT SHALL BE CONCEALED WHERE LOCATED IN FINISHED AREAS, OR ON EXTERIOR OF BUILDING. CONDUITS IN UNFINISHED OR UTILITY AREAS MAY BE EXPOSED.

- 26. COORDINATE ROUTING OF EXPOSED CONDUITS WITH ARCHITECT PRIOR TO INSTALLATION. CONDUITS SHALL BE ROUTED PERPENDICULAR OR PARALLEL TO BUILDING LINES.

- 27. COORDINATE CORE DRILL LOCATIONS WITH BUILDING MANAGEMENT.

- 28. DO NOT DRILL OR SHOOT CONCRETE ANCHORS INTO THE BOTTOM OF CONCRETE STRUCTURAL TEES.

- 29. TELEPHONE AND DATA OUTLETS SHALL BE MOUNTED AT SAME HEIGHT AS ADJACENT RECEPTACLE OUTLETS UNLESS NOTED OTHERWISE. OUTLETS SHALL HAVE 1/2" INCH CONDUIT STUBBED TO CEILING SPACE WITH NYLON FULL STRING AND INSULATED THROAT FITTING.

- 30. "BACK-TO-BACK" OUTLETS IN SAME WALL, OR "THRU-WALL" TYPE BOXES ARE NOT PERMITTED. PROVIDE 12" (MINIMUM) LONG NIPPLE TO OFFSET ALL OUTLETS SHOWN ON OPPOSITE SIDES OF A COMMON WALL. OUTLET BOXES ON OPPOSITE SIDES OF FIRE RATED WALLS AND PARTITIONS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF AT LEAST 24 INCHES.

- 31. MINIMUM WORKING CLEARANCES PER THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE SHALL BE PROVIDED AROUND AND IN FRONT OF ALL ELECTRICAL EQUIPMENT.

- 32. ALL CIRCUIT BREAKER LUGS SHALL BE RATED FOR A MINIMUM OF 75 DEGREE CELSIUS.

- 33. MAINTAIN LIGHTING CIRCUIT AND SWITCHING CONTROL CONTINUITY IN ADJACENT VACANT AND NON-VACANT SUITES TO PROJECT.

- 34. MAINTAIN RECEPTACLE CIRCUIT CONTINUITY THROUGH WALLS WHICH ARE TO BE DEMOLISHED AND THROUGH RECEPTACLES WHICH ARE TO BE REMOVED.

- 35. COORDINATE CONTROL OF LUMINAIRES IN BUILDING COMMON CORRIDOR AREAS WITH BUILDING MANAGEMENT.

- 36. ALL NEW AND MODIFIED ELECTRICAL EQUIPMENT, SUCH AS SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, HETER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS THAT ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.

ELECTRICAL SYMBOLS LEGEND. Includes tables for CIRCUITS, POWER SYMBOLS, LIGHTING SYMBOLS, TELECOMMUNICATION SYMBOLS, LIGHTING CONTROL SYMBOLS, and ONE LINE DIAGRAM SYMBOLS. Each table lists symbols and their corresponding descriptions.



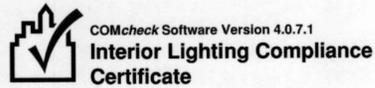
Sundance Plaza Bld. B
255 Anglers Drive
Steamboat Springs, CO 80477
Suite B



Land Title Guarantee
Company

Dates of Record
Project Start Date: 11/10/2017

RECORD SET
ELECTRICAL



Section 1: Project Information

Energy Code: 2009 IECC
 Project Title: Land Title Guarantee
 Project Type: Alteration
 Construction Site: 255 Anglers Dr, Steamboat Springs, CO 80477
 Owner/Agent:
 Designer/Contractor: Brian Clemens, MEP Engineering Inc, 8402 S. Troy Circle, Suite 100, Centennial, CO 80111

Section 2: Interior Lighting and Power Calculation

Area Category	Floor Area (ft ²)	Allowed Watts / ft ²	Allowed Watts (W x C)
Office	2412	1	2412
		Total Allowed Watts =	2412

Section 3: Interior Lighting Fixture Schedule

Fixture ID / Description / Lamp / Wattage Per Lamp / Ballast	A	B	C	D	E
	Lamps / Fixture	# of Fixtures	Watt.	(C x D)	
Office (2412 sq. ft.)					
LED 1: A: Other:	1	30	30	1170	
LED 2: B: Other:	1	4	21	84	
LED 3: C: Other:	1	2	20	40	
		Total Proposed Watts =	1294		

Section 4: Requirements Checklist

- Interior Lighting PASSED
- Lighting Wattage:**
- Total proposed watts must be less than or equal to total allowed watts.
- | Allowed Watts | Proposed Watts | Complies |
|---------------|----------------|----------|
| 2412 | 1294 | Passes |
- Controls, Switching, and Wiring:**
- Daylight zones under skylights more than 15 feet from the perimeter have lighting controls separate from daylight zones adjacent to vertical fenestration.
 - Daylight zones have individual lighting controls independent from that of the general area lighting.
- Exceptions:**
- Contiguous daylight zones spanning no more than two orientations are allowed to be controlled by a single controlling device.
 - Daylight spaces enclosed by walls or ceiling height partitions and containing two or fewer light fixtures are not required to have a separate switch for general area lighting.
- Independent controls for each space (switch/occupancy sensor).
- Project Title:** Land Title Guarantee
Data filename: S:\Projects\2017\17383\2_Design\ComCheck\17383.cck
Report date: 11/21/17
Page 1 of 2
- Exceptions:**
- Area designated as security or emergency areas that must be continuously illuminated.
 - Lighting in stairways or corridors that are elements of the means of egress.
- Master switch at entry to hotel/motel guest room.
 - Individual dwelling units separately metered.
 - Medical task lighting or art/history display lighting claimed to be exempt from compliance has a control device independent of the control of the nonemergency lighting.
 - Each space required to have a manual control also allows for reducing the connected lighting load by at least 50 percent by either controlling all luminaires, dual switching of alternate rows of luminaires, alternate luminaires, or alternate lamps, switching the middle lamp luminaires independently of other lamps, or switching each luminaire or each lamp.
- Exceptions:**
- Only one luminaire in space.
 - An occupant-sensing device controls the area.
 - The area is a corridor, storeroom, restroom, public lobby or sleeping unit.
 - Area that use less than 0.6 Watts/sq.ft.
- Automatic lighting shutoff control in buildings larger than 5,000 sq.ft.
- Exceptions:**
- Sleeping units, patient care areas, and spaces where automatic shutoff would endanger safety or security.
- Photocell/astrometrical time switch on exterior lights.
- Exceptions:**
- Lighting intended for 24 hour use.
- Tandem wired one-lamp and three-lamp ballasted luminaires (No single-lamp ballasts).
- Exceptions:**
- Electronic high-frequency ballasts: Luminaires on emergency circuits or with no available pair.

Section 5: Compliance Statement

Compliance Statement: The proposed lighting alteration project represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting alteration project has been designed to meet the 2009 IECC, Chapter 8, requirements in COMcheck Version 4.0.7.1 and to comply with the mandatory requirements in the Requirements Checklist.

Name: Title: Signature: Date:

Project Title: Land Title Guarantee
 Data filename: S:\Projects\2017\17383\2_Design\ComCheck\17383.cck
 Report date: 11/21/17
 Page 2 of 2

DESIGNATION	DESCRIPTION	VOLTAGE	PH	HP	kVA	FLA (MCA)	AIC (A)	Isc (A)	DATE	CONDUCTORS	CONDUIT	SWITCH	CB	FUSE SIZE/TYPE	REMARKS
EH-1	WATER HEATER	208	1		2.0					(3-#12, 1-#12 GND)	1/2"	5	20/2	N/A	
EH-2	WATER HEATER	208	1		2.0					(3-#12, 1-#12 GND)	1/2"	5	20/2	N/A	
EF-1	EXHAUST FAN	120	1		1.0					(2-#12, 1-#12 GND)	1/2"	5	20/1	N/A	1
EF-2	EXHAUST FAN	120	1		1.0					(2-#12, 1-#12 GND)	1/2"	5	20/1	N/A	1
EF-3	EXHAUST FAN	120	1		1.0					(2-#12, 1-#12 GND)	1/2"	5	20/1	N/A	1
TF-1	TRANSFER FAN	120	1		1.0					(2-#12, 1-#12 GND)	1/2"	5	20/1	N/A	2
HE-1	HALL HEATER	208	1		2.2					(2-#12, 1-#12 GND)	1/2"	5	20/1	N/A	
HE-2	HALL HEATER	208	1		2.2					(2-#12, 1-#12 GND)	1/2"	5	20/1	N/A	
HE-3	HALL HEATER	208	1		2.2					(2-#12, 1-#12 GND)	1/2"	5	20/1	N/A	
RTU-1	ROOFTOP UNIT	208	3			(4)	5,000	4,500	11/20/2017	PER ONE-LINE				PER MANUFACTURER	

1) FAN TO BE INTERLOCKED WITH LIGHTING CONTROLS.
 2) FAN CONTROLLED VIA REVERSE ACTING THERMOSTAT, PROVIDED BY MC, NRED AND INSTALLED BY EC.

LIGHTING FIXTURE SCHEDULE												
LUMINAIRE				LAMPS								
ID	MANUFACTURER	MODEL	CATALOG NUMBER	DESCRIPTION	VOLTAGE	DIMMING	MOUNTING	QTY.	TYPE	WATTS	LUMENS	COLOR TEMP./CRI
A	LITHONIA	BLT	2BLT2 3BL ADP MVOLT EZI LP835	RECESSED 2X2 LED TROFFER ACRYLIC LENS	UNV	0-10V	RECESSED	1	LED	30W	3300	3500K/82
AE			2BLT2 3BL ADP MVOLT EZI LP835 EL14L	WITH 90 MINUTE BATTERY PACK								
B	LITHONIA	LDN6	LDN6-35/15-L06-NR-L56-L20-EZIO	6" OPEN RECESSED DOWNLIGHT	120	0-10V	RECESSED	1	LED	21W	1500	3500K/80
C	PRUDENTIAL	HAL14	HAL14-LED35-50-2-NFA-YGH-5C-UNV-NH-ND	24" DECORATIVE LED VANITY	UNV	NONE	HALL MOUNTED	1	LED	20W	2100	3500K/84
X	LITHONIA	LRP	LRP-1H-6H-120/2T	EDGE-LIT LED EXIT SIGN	UNV	N/A	UNIVERSAL MOUNT	1	LED	1W	N/A	N/A

NOTE: ALL FIXTURE SELECTIONS TO BE APPROVED BY ARCHITECT AND TENANT REPRESENTATIVE PRIOR TO ORDER.

PANEL 'A'		NEW		VOLTAGE 120 / 208 V		3 Ø		4 W		
FLUSH		MAIN		MLO X						
SURFACE X		BUS 200A		FEED THRU		A.I.C. 25,000A				
TYPE	DESCRIPTION	BKR	CIR	LOAD (VA/Ø)		CIR		BKR	DESCRIPTION	TYPE
				A Ø	B Ø					
R	CONFERENCE RCPTS	20	1	1080	360			2	20	DISPOSAL
RH	MICROWAVE RCPTS EF-1/2	20	3	1042	180			4	20	MICROWAVE
R	RECEPTION RCPTS	20	5			1080	180	6	20	BRK ROOM
R	RECEPTION COFFEE BAR	20	7	180	1246			8	20	LIGHTING
R	RECEPTION COFFEE BAR	20	9			180	11	10	20	TF-1
R	GEN RCPTS	20	11			900	0	12	20	SPARE
R	FURNITURE FEED	20	13	360	0			14	20	SPARE
R	FURNITURE FEED	20	15			100	0	16	20	SPARE
R	FURNITURE FEED	20	17			360	1100	18	20	MHE-1
R	FURNITURE FEED	20	19	100	1100			20	20	SPARE
R	FURNITURE FEED	20	21			360	1100	22	20	MHE-2
R	FURNITURE FEED	20	23			100	1100	24	20	SPARE
R	HRKROOM RCPT	20	25	540	1100			25	20	MHE-3
R	HRKROOM RCPT	20	27			180	1100	28	20	SPARE
R	HRKROOM RCPT	20	29			180	1000	30	20	SPARE
R	TTB RCPT	20	31	180	1000			32	20	SPARE
RH	GEN RCPTS, EF-3	20	33			1381	1000	34	20	EH-2
R	COPIER	20	35			180	1000	36	20	SPARE
R	REFRIG	20	37	180	4800			38	60	RTU-1
R	COFFEE BAR	20	39			180	4800	40		SPARE
R	DISHWASHER	20	41			180	4800	42	30	SPARE
R	HRKROOM RCPT	20	43	180	180			44	20	ROOFTOP RECEPT
R	HRKROOM RCPT	20	45			180	0	46	20	SPARE
R	HRKROOM RCPT	20	47			180	0	48	20	SPARE
R	SPARE	20	49	0	0			50	20	SPARE
R	SPARE	20	51	0	0			52	20	SPARE
R	SPARE	20	53	0	0			54	20	SPARE
R	SPARE	20	55	0	0			56	20	SPARE
R	SPARE	20	57	0	0			58	20	SPARE
R	SPARE	20	59	0	0			60	20	SPARE

LOAD TYPE	CONNECTED KVA			TOTAL FACTOR	DEMAND KVA			TOTAL
	A Ø	B Ø	C Ø		A Ø	B Ø	C Ø	
LIGHTING/CONTINUOUS	1.2	0.0	0.0	1.2	1.25%	1.6	0.0	1.6
RECEPTACLE (10KVA OR LESS)	3.2	3.3	3.2	4.6	100%	3.2	3.3	3.2
RECEPTACLE (OVER 10KVA)	0.0	0.1	0.0	0.1	100%	0.0	0.1	0.1
HVAC/MOTOR	0.0	0.3	0.0	0.3	100%	0.0	0.3	0.3
MOTOR(LARGEST)	4.8	4.8	4.8	14.4	125%	6.0	6.0	18.0
KITCHEN EQUIPMENT	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0
MISCELLANEOUS	3.4	3.4	4.4	12.7	100%	3.4	3.4	12.7
TOTAL KVA	15.2	12.4	12.4	30.5		14.1	13.4	42.4
				TOTAL AMPERES	122.5	118.4	117.0	122.5

LEGEND: L = LIGHTING R = RECEPTACLE M = HVAC / MOTOR K = KITCHEN G = MISCELLANEOUS

PROVIDE COMMON HANDLE TIE PER NEC 200.7.

Isc CALCULATION - 3 PHASE

Point #1 - At The Utility Transformer

Isc = 26,000

Point #2 - At the Main Wrenway

$$F = [1.732 \times \text{length} \times \text{Isc(Prev)}] / [\# \text{ runs} \times \text{wire factor} \times \text{X voltage}]$$

$$F = 1.732 \times 50 \times 26,000 / 3 \times 12,443 \times 208$$

$$F = 0.281$$

$$M = 1/(1+F)$$

$$M = 0.781$$

$$\text{Isc} = \text{Isc(Prev)} \times M$$

$$\text{Isc} = 20,297$$

Point #3 - At the Panel 'A'

$$F = [1.732 \times \text{length} \times \text{Isc(Prev)}] / [\# \text{ runs} \times \text{wire factor} \times \text{X voltage}]$$

$$F = 1.732 \times 25 \times 20,297 / 1 \times 12,443 \times 208$$

$$F = 0.324$$

$$M = 1/(1+F)$$

$$M = 0.752$$

$$\text{Isc} = \text{Isc(Prev)} \times M$$

$$\text{Isc} = 15,213$$

Point #4 - At RTU-1

$$F = [1.732 \times \text{length} \times \text{Isc(Prev)}] / [\# \text{ runs} \times \text{wire factor} \times \text{X voltage}]$$

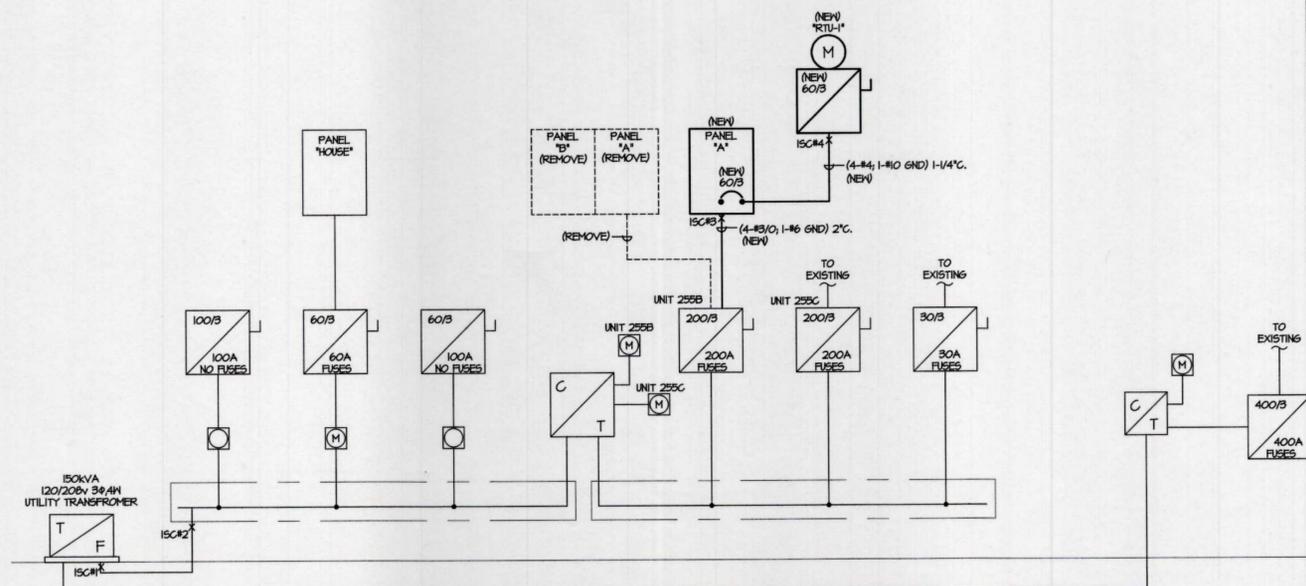
$$F = 1.732 \times 80 \times 15,213 / 1 \times 3,006 \times 208$$

$$F = 2.613$$

$$M = 1/(1+F)$$

$$M = 0.272$$

$$\text{Isc} = \text{Isc(Prev)} \times M$$

$$\text{Isc} = 4,158$$


PARTIAL EXISTING ONE-LINE DIAGRAM

SCALE: NONE
 NOTE: ALL ITEMS ARE EXISTING UNLESS OTHERWISE NOTED.
 ALL CONDUCTORS ARE COPPER UNLESS OTHERWISE NOTED.



Sundance Plaza Bld. B
 255 Anglers Drive
 Steamboat Springs, CO
 80477
 Suite B



Land Title Guarantee
Company

Dates of Record
 Project Start Date: 11/10/2017
 Issued On: Issued For:
 12/05/2017 Construction Documents

R C R B D
RECORD SET
ELECTRICAL

Sheet Contents ONE-LINE DIAGRAM
 Project Team SJJ/DGM
 Project Number 17383
 Sheet Mark **E1.1**



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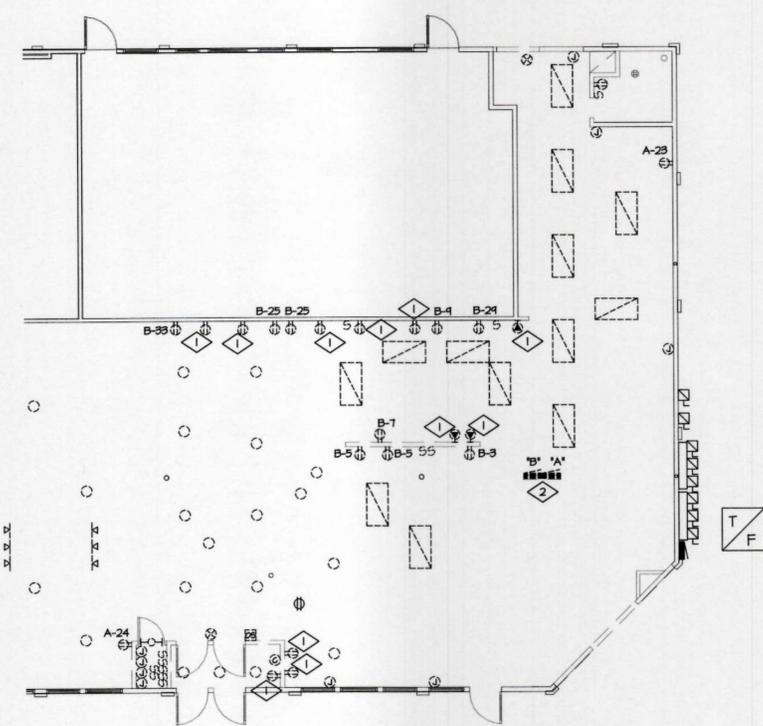


Land Title Guarantee Company

Dates of Record
Project Start Date: 11/10/2017
Issued On: 12/05/2017
Issued For: Construction Documents

R C R B D
RECORD SET
ELECTRICAL

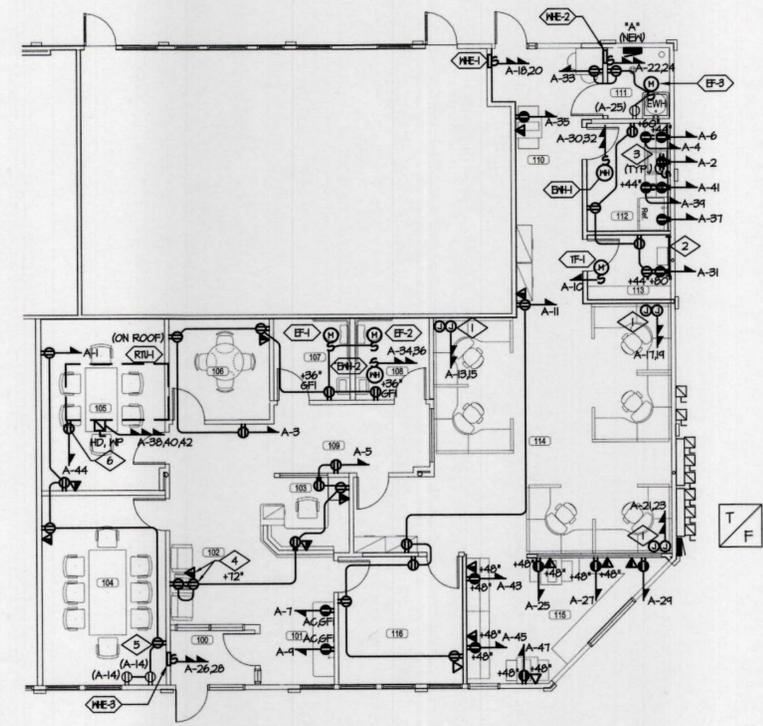
Sheet Contents: ELECTRICAL PLAN
Project Team: SJJ/DGM
Project Number: 17383
Sheet Mark: **E2.0**



1ST FLOOR DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

DRAWING NOTES - DEMOLITION

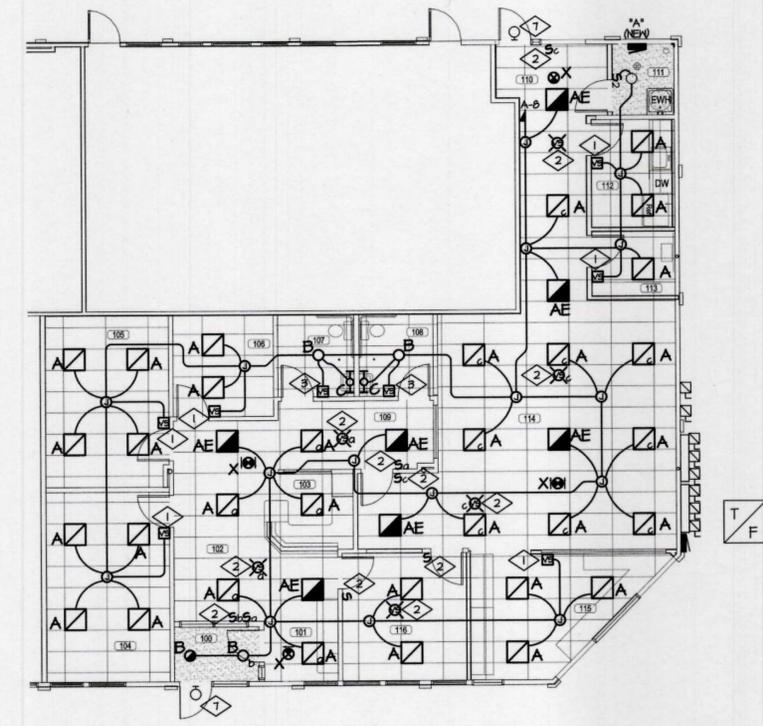
1. DEVICE COULD NOT BE TRACED DURING ELECTRICAL FIELD INVESTIGATION. REMOVE BACK TO NEAREST DEVICE TO REMAIN OR PANEL.
2. ELECTRICAL CONTRACTOR TO VERIFY WHAT CIRCUITS ARE CURRENTLY FEED OTHER SPACES OUTSIDE OF TENANT SPACE. ELECTRICAL CONTRACTOR TO COORDINATE WITH BUILDING OWNER IF ANY TEMPORARY POWER NEED TO BE PROVIDED TO OTHER SPACES AND RE-CIRCUIT AS NEEDED.



1ST FLOOR POWER PLAN
SCALE: 1/8" = 1'-0"

DRAWING NOTES - POWER

1. ELECTRICAL CONTRACTOR SHALL FULLY FIELD COORDINATE FURNITURE SYSTEM WORK STATION REQUIREMENTS AND EXACT LOCATIONS. PROVIDE TWO 4" SQUARE (DOUBLE GANG) JUNCTION BOXES MOUNTED FLUSH IN WALL FOR TENANT FINISHED FURNITURE SYSTEM. PROVIDE CONNECTION TO 4-CIRCUIT, 0-HIRE FURNITURE SYSTEM (4-#12 THIN NOTS, 1-#10 THIN SHARED NEUTRAL, 1-#12 THIN DEDICATED NEUTRAL AND 2-#12 GROUND) IN 3/4" CONDUIT. FOR TELEPHONE/DATA OUTLET PROVIDE TWO (2) 1" EMPTY CONDUITS STUBBED UP 6" INTO ACCESSIBLE CEILING SPACE FROM TELEPHONE/DATA JUNCTION BOX. PROVIDE PULL LINE IN ENTIRE LENGTH OF EACH CONDUIT AND PLASTIC BUSHINGS ON EACH CONDUIT END. TELEPHONE/DATA CABLING AND DEVICES SHALL BE PROVIDED BY TENANT'S COMMUNICATION SYSTEM VENDOR UNDER SEPARATE CONTRACT. ELECTRICAL CONTRACTOR SHALL PROVIDE FINAL ELECTRICAL POWER CONNECTION TO FURNITURE SYSTEM. COORDINATE EXACT LOCATIONS, CONDUIT ROUTING, AND REQUIREMENTS WITH ARCHITECTURAL PLANS, TENANT REPRESENTATIVE, FURNITURE SYSTEM SUPPLIER AND COMMUNICATIONS VENDOR PRIOR TO ROUGH-IN.
2. PROVIDE 48" X 48" X 3/4" PLYWOOD TELEPHONE BACKBOARD MOUNTED AT 48" AFF TO BOTTOM. SKIM COAT AND PAINT WITH FIRE-RESISTANT PAINT TO MATCH EXISTING WALL. ALSO PROVIDE (1) DEDICATED DUPLEX OUTLET MOUNTED AT 48" AFF. COORDINATE EXACT REQUIREMENTS WITH ARCHITECTURAL PLANS, TENANT REPRESENTATIVE, AND COMMUNICATIONS SYSTEM VENDOR. PROVIDE COPPER GROUND BAR WITH ONE (1) #6 CU GREEN INSULATED GROUNDING CONDUCTOR IN 1/2" CONDUIT TO NEAREST COLD WATER PIPE OR BUILDING STEEL ELECTRODE FOR EQUIPMENT GROUND.
3. ALL RECEPTACLES WITHIN 6" OF THE EDGE OF THE SINK TO HAVE GFI PROTECTION. IF RECEPTACLE IS NOT READILY ACCESSIBLE, PROVIDE ACCESSIBLE GFI RESET PUSHBUTTON.
4. VERIFY EXACT MOUNTING HEIGHT AND REQUIREMENTS WITH TENANT REPRESENTATIVE PRIOR TO ROUGH-IN.
5. RE-CIRCUIT EXISTING DEVICE AS SHOWN.
6. PROVIDE ROOFTOP RECEPTACLE IN ALUMINUM WEATHERPROOF WHILE-IN-USE COVER.



1ST FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

DRAWING NOTES - LIGHTING

1. PROVIDE WALL MOUNTED PASSIVE DUAL TECHNOLOGY WALL SWITCH SENSOR. SENSOR SWITCH *YESX PDT* (NH) OR EQUIVALENT.
2. PROVIDE CEILING MOUNTED, PASSIVE DUAL TECHNOLOGY, LOW VOLTAGE OCCUPANCY SENSOR. SENSOR SWITCH *OH PDD* WITH POWER PACKS (FP20) AS REQUIRED OR APPROVED EQUIVALENT. PROVIDE *WPD* LOW VOLTAGE SENSOR OVERRIDE SWITCHES AS SHOWN.
3. PROVIDE NEW 2-POLE WALL MOUNTED PASSIVE DUAL TECHNOLOGY WALL SWITCH SENSOR. SENSOR SWITCH *YESX PDT 2P* (NH) OR EQUIVALENT FOR LIGHTING AND EXHAUST FAN CONTROL.

GENERAL NOTES

1. EXISTING DEVICES, CIRCUITS, AND CONDUITS SHOWN TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY BACK TO NEAREST DEVICE TO REMAIN. MAINTAIN CIRCUIT CONTINUITY OF ALL EXISTING DEVICES TO REMAIN.
2. ELECTRICAL CONTRACTOR SHALL REMOVE ALL SPARE AND UN-USED CIRCUITS FOUND DURING CONSTRUCTION. PROVIDE UPDATED TYPED PANEL SCHEDULES.
3. DEMOLITION OR ABANDONING ANY ELECTRICAL AND COMMUNICATIONS CONDUIT, WIRING, CABLING, OR DEVICE MEANS TO REMOVE IN ITS ENTIRETY. REMOVE UNUSED CONDUITS FROM CEILING SPACES IN AREAS OF WORK. ABANDONED OUTLET JUNCTION BOXES ARE TO BE REMOVED AND COVERED WITH NEW GYPSUM BOARD. ABANDONED POKE THRU OUTLETS SHALL HAVE COVER PLATES AND BE FILLED WITH FIRE RATED FOAM SEALANT TO MAINTAIN FIRE RATING OF FLOOR. RETURN UNUSED ELECTRICAL EQUIPMENT AND LIGHT FIXTURES TO BUILDING MANAGEMENT FOR STORAGE AND/OR REMOVAL FROM SITE AS DIRECTED BY OWNERS.
4. ELECTRICAL CONTRACTOR TO LABEL ALL SWITCHES AND RECEPTACLES NEW AND EXISTING WITH CIRCUIT NUMBERS AND PANEL NAME. CIRCUIT NUMBERS AND PANEL NAMES SHALL BE CLEAR AND LEGIBLE ON COVER PLATES. ELECTRICAL CONTRACTOR SHALL COORDINATE COLOR OF COVER PLATES WITH BUILDING MANAGEMENT.
5. CONNECT ALL HALF SHADED LUMINAIRES, EXIT SIGNS, AND EMERGENCY EGRESS LUMINAIRES TO UNCONTROLLED LESS OF LOCAL LIGHTING CIRCUIT SERVING THIS AREA. PROVIDE NINETY MINUTE BATTERY PACK.
6. LOWER CASE LETTERS INDICATE SWITCH CONFIGURATIONS.
7. EXISTING EGRESS LIGHTING TO REMAIN.

Room Schedule

100	Vestibule	109	Hall
101	Coffee Bar	110	Hall
102	Receiving	111	Janitor's Closet
103	Reception	112	Break Room
104	Closing Rm. #1	113	Server Storage
105	Closing Rm. #2	114	Open Office
106	Closing Rm. #3	115	Workroom
107	Restroom	116	Office
108	Restroom		

