Houston First Corporation George R. Brown Convention Center Improvements And Garage

Vaughn Project No. 2062

December 4, 2015

Construction Manager's Supplemental Specifications

North Garage/Office – Houston First Tenant Build Out

Scope of Work:

Vaughn Construction is requesting a General Conditions/Fee Proposal(s) the Build Out of Houston First space in the North Garage/Office Located at the corner of Avenida De Las Americas and Rusk Street.

Scope Solicitation Includes - Tenant Build Out of Houston First space

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Section 1 – Notice to Respondents

Pursuant to Section 51.782, Texas Education Code, proposals are being solicited from Trade Contractors/Suppliers for the Buildout of Houston First space in the North Garage/Office

Proposals

Each respondent will be required to submit each of the following:

1. Proposal

Deadline:

No later than December 22, 2015 between 10:00 AM until 2:00 PM Central Time.

Format:

Refer to Section 9 for the required proposal form.

2. Technical Proposal

Deadline:

No later than December 22, 2015 between 10:00 AM until 2:00 PM Central Time.

Format:

Refer to Section 3 for the required format for the technical proposal.

3. Diversity Program of HUB Subcontracting Plan (HSP)

Deadline:

No later than December 22, 2015 between 10:00 AM until 2:00 PM Central Time.

Format:

Refer to Section 5 for the required format for the Diversity or HUB Subcontracting Plan.

Deliver each of these to:

GRBBids@VaughnConstruction.com

Late proposals will not be accepted.

Explanation to Respondents

No oral explanation in regard to the meaning of the Drawings, Specifications, or proposal process will be made and no oral instructions will be given before the award of a Subcontract and/or Purchase Order. Discrepancies, omissions, or doubts as to the meaning of drawings and specifications should be communicated in writing to Vaughn Construction for interpretation. Respondents should act promptly and allow sufficient time for a reply to reach them before the submission of their proposals. Any interpretation made will be in the form of an addendum. Receipt by the respondent of any addenda should be acknowledged on the proposal form.

Participation by Historically Underutilized Businesses

It is the policy of Houston First Corporation to actively seek the involvement of Historically Underutilized Businesses (minority-owned and women-owned businesses) in its construction projects as prime contractor, subcontractors, and materials suppliers. Further, state law requires each state agency, including the Houston First Corporation, to make a good faith effort to assist Historically Underutilized Businesses (HUBs). The current goal is to receive not less than 34% of the total value of each construction contract awarded.

Proposal Forms

Proposals shall be addressed to Vaughn Construction. Proposals must be submitted in the format furnished by Vaughn Construction in Section 9. Proposals that include conditional clauses, propose alterations or items not called for in the proposal, or contains other irregularities which in Vaughn Construction's opinion constitute a material qualification of the proposal may be rejected. Names of firms or joint ventures submitting proposals shall be the same on both proposal form and subsequently on performance and payment bonds submitted by the successful respondent.

Proposals may not be changed, amended, or modified after the same has been submitted or filed in response to this notice. A proposal may be withdrawn, however, and resubmitted any time prior to the deadline set for receipt of proposals.

Performance and Payment Bonds

The successful respondents may be required to furnish a payment bond and a performance bond, in either case on the applicable forms included as attachments to Section 4. The bonds must be issued by one or more corporate sureties qualified to do business in Texas and acceptable to Vaughn Construction.

Termination of Proposals

Proposals may not be withdrawn or terminated for a period of ninety (90) days subsequent to the opening date without consent of Vaughn Construction.

Prevailing Wage Rate Determination

Respondents are advised that the Texas Prevailing Wage Law will be administered in accordance with the policies and procedures set forth by Owner as further explained in the project manual.

Project Site

It is respondent's responsibility to visit the project site and become familiar with all site constraints that may impact its project or the work.

End of Section

Section 2 – Bid Package Subcontractor Solicitation:

Vaughn is Soliciting proposals from contractors for the following:

Builout of Houston First Tenant Space

End Section

Section 3 – Supplemental Information to Respondents

This document provides general information about the requirements for proposals and sets forth the selection criteria and procedures for implementation.

Contract Award Process

- A. The respondent selected for award of each subcontract/purchase order will be the respondent whose proposal is most advantageous to Vaughn Construction. Vaughn Construction is not bound to accept the lowest priced proposal if that proposal is not in the best interest of Vaughn Construction, as determined by Vaughn Construction.
- B. Proposals will be opened in a manner that does not disclose the contents of the proposals during the selection process to a person not employed by Vaughn Construction, the Architect, or the Owner. Proposals will be made public after the award of the contract or within seven (7) days after the date of final selection of proposals, whichever is later.
- C. Vaughn Construction, the Owner, and the Architect will evaluate proposals. The criteria for evaluation and selection of the successful respondent for this award will be based upon these three parts:
 - 1. Respondent's Cost Proposal: Refer to the Proposal form in Section 9.

Proposals must be based on the Contract Documents issued; no exceptions. Should a respondent have cost reduction suggestions for products or applications that are not listed within the Contract Documents, there is an appropriate space on the proposal form (Section 9) where this information may be noted.

- Respondent's Technical Proposal: Refer to Paragraph C.1.2 of this Section.
 - a. The qualifications and experience of Respondent's project team proposed to manage the project and durations of team.
 - b. Respondent's demonstrated experience in constructing similar projects.
 - c. Respondent's proposed project schedule supplemented with activities and manpower.
 - d. Respondent's ability to meet the Diversity Goals

Respondent's technical proposal will be an important factor in determining which proposal provides the best value to Vaughn Construction. Failure to respond could put Respondent at a significant disadvantage during the review process.

3. Respondent's documentation of a good faith effort to comply with the Diversity Program set forth by Houston First by submitting a complete Diversity Subcontracting Plan: Refer to Section 5.

Each respondent must submit a Diversity Plan Plan whether they intend to self-perform the work or subcontract any or part of the work. The Diversity Plan must be submitted within 24 hours following the deadline for the proposals. Refer to Section 5 for the necessary forms.

D. Within sixty (60) days after the date of opening the proposals, Vaughn Construction will evaluate and rank each proposal with respect to the selection criteria contained in this

document. Vaughn reserves the right to waive the technical proposal requirements for small work items. After opening and ranking the proposals, an award may be made on the basis of the proposals initially submitted, without discussion, clarification or modification, or, Vaughn Construction may discuss with selected respondents, offers for cost reduction and other elements of the respondent(s) proposals. If Vaughn Construction determines that it is unable to reach a Subcontract and/or Purchase Order satisfactory to Vaughn Construction, Vaughn Construction may reject any and all proposals.

Technical Proposal Format

- A. <u>Economy of Preparation</u> Technical proposals should be prepared simply and economically, providing a straightforward, concise description of the respondent's ability to meet the requirements for the proposal. Elaborate bindings, colored displays, promotional materials and so forth are not desired. Emphasis should be on completeness and clarity of content. Vague and equivocal statements will be viewed unfavorably.
- B. <u>Confidentiality</u> The respondent may designate any portion of its technical proposal, which contains trade secrets, or other proprietary data, which the respondent desires to remain confidential. If a respondent includes data that is not to be disclosed to the public for any purpose or used by Vaughn Construction except for evaluation purposes, the respondent shall:
 - 1. Mark the title page of the technical proposal with the following legend: "This proposal includes data that shall not be disclosed outside Vaughn Construction or Owner and shall not be duplicated, used, or disclosed in whole or in part for any purpose other than to evaluate this proposal."
 - 2. Mark each sheet of data it wishes to restrict with the following legend: "Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal."

Respondents should note that despite such restrictions, the disclosure of such restricted information may be required under applicable laws, including, without limitation, applicable freedom of information laws.

- C. <u>Format</u> Technical proposal to be submitted in the following format. Trade Contractors/Suppliers who wish to highlight their special capabilities, resources and technical abilities are welcome to enhance this form with any necessary attachments. Respond as follows:
 - 1. Respondent Firm
 - 1.1 Organization
 - 1.1.1 Give the legal name, address, and telephone number of Respondent.
 - 1.1.2 State whether Respondent is an individual, partnership, corporation, or a joint venture. If Respondent is a corporation, give state of incorporation.

- 1.1.3 Give number of years Respondent has been in business as a construction contractor.
- 1.2 Claims and Suits. (If the answer to any of the questions below is yes, attach details for each and every claim or suit.)
 - 1.2.1 Has Respondent ever failed to complete any work it was awarded?
 - 1.2.2 Are there any judgments, claims, arbitration proceedings, or suits pending or outstanding against Respondent or its officers?
 - 1.2.3 Has Respondent filed any lawsuits or requested arbitration with regard to construction contracts within the last five years?
- 2. Respondent's Project Team
 - 2.1 Give names, qualifications, and experience of Respondent's key personnel positions proposed for the project.
- 3. Respondent's Experience with Other Similar Projects
 - 3.1 Give references for Respondent's experience in constructing other similar projects. Provide references as follows:

Full Name and Title:

Firm Name:

Mailing address:

Telephone Number:

Email Address:

- 4. Respondent's Safety Program
 - 4.1 Give Respondent's primary insurance provider as follows:

Full Name:

Mailing Address:

Telephone Number:

- 4.2 Give Respondent's Experience Modifier Rate (EMR); Recordable Incident Rate (RIR); and Days Away, Restricted, Transferred (DART).
- 4.3 Summarize Respondent's safety program execution plan including a statement of commitment from senior management (1 page).
- 4.4 Attach Respondent's current certificate of insurance.
- 4.5 Describe the qualifications of Respondent's designated on site safety representative(s): i.e. full time safety professional, designated representative with other duties, etc.

5. Attach a proposed schedule for Respondent's scope of work. For scheduling purposes, 100% Construction Documents will be available on January 8, 2016 and Substantial Completion including Certificate of Occupancy/Compliance shall be no later than May 20, 2016. Resondent shall identify the latest date in which the Architect can deliver full Building Permit for the Tenant Build Out scope of work.

Acceptance of Evaluation Methodology

Submission of a proposal indicates Respondent's acceptance of the evaluation technique and Respondent's recognition that some subjective judgments must be made by Vaughn Construction during the evaluation. Vaughn Construction reserves the right to waive all formalities, including but not limited to failure to correctly complete the proposal form, and failure to propose on a complete scope of work. Vaughn Construction reserves the right to reject any and all proposals. Vaughn Construction reserves the right to accept the requirements of the Technical proposal at a later date. Trade Contractors/Suppliers may also submit the technical portion of their proposal up to 72 hours in advance of the deadline for cost proposals.

Question to Respondents

Respondents are requested to submit a complete answer to each of the questions listed in tecnical proposal format section. The answers to these questions will be the basis for Vaughn Construction's evaluation of the technical proposal and selection of the successful respondent.

Vaughn Construction Contact Information

Any inquiries or concerns regarding the specified proposal procedures or processes shall be directed to Vaughn Construction:

Attention: Andrew Thompson Telephone: (713) 984-4169

Email: <u>athompson@vaughnconstruction.com</u>

Vaughn Construction specifically requests that all contact and inquiries regarding proposal procedure or process be limited to the above-named individuals.

End of Section

NO. 09-0000

MASTER SUBCONTRACT TERMS AND CONDITIONS

BETWEEN

CONTRACTOR

AND

SUBCONTRACTOR

MASTER SUBCONTRACT TERMS AND CONDITIONS

Contractor: J.T. VAUGHN ENTERPRISES, INC.

f/k/a J. T. VAUGHN CONSTRUCTION COMPANY, INC.

and/or J. T. VAUGHN CONSTRUCTION, LLC

10355 Westpark Drive

Houston, Texas 77042-5312

713.243.8300

As stated in an individual Project Subcontract.

Subcontractor: RELIABLE SUBCONTRACTOR, INC.

111 Main Street

Anywhere, Texas 77070

919.781.0000

The Project: To be stipulated by Project Subcontract.

The Owner: To be stipulated by Project Subcontract.

"Contractor" or "Vaughn" and "Subcontractor" agree as set forth below.

Article 1

THE WORK

- 1.1 Contractor may from time to time enter into contracts for the performance of certain work for others, which work may consist of the furnishing of services or materials, or both. Contractor may from time to time desire to subcontract a portion of such work to Subcontractor. The terms and conditions hereof shall govern any services to be performed and/or materials and/or equipment to be furnished by Subcontractor to Contractor (the "Work"). All Work shall be pursuant to one or more Project Subcontracts executed by Contractor and Subcontractor, which Project Subcontract(s) shall identify the dollar amount and scope of the Work to be performed by Subcontractor and any project specific terms. Each Project Subcontract will incorporate these Master Subcontract Terms and Conditions by reference. All Work performed by Subcontractor for Contractor shall be done pursuant to these terms and conditions, whether or not a Project Subcontract has been issued or signed.
- 1.2 Subcontractor agrees to be bound to Contractor by all of the terms of the General Contract between Contractor and Owner including, but not limited to, the plans, specifications, general, supplementary and special conditions and any addenda or changes thereto (the "General Contract Documents") pursuant to which the Work being subcontracted to Subcontractor is to be performed. Subcontractor agrees to assume toward Contractor all of the obligations and responsibilities that Contractor by the General Contract Documents assumes toward Owner. Subcontractor shall perform any Work in accordance with the documents stipulated by the Project Subcontract for such Work. "Owner" shall mean the Owner and/or Construction Manager and/or Prime Contractor (whichever parties Contractor is obligated to), for purposes of these Master Subcontract Terms and Conditions. All of Subcontractor's obligations apply also to its sub-subcontractors, of every tier.
- 1.3 Contractor's contract with Owner and any other contract documents (excluding financial data) will be made available to Subcontractor upon its written request.
- 1.4 For each project, Subcontractor represents and warrants that it has closely reviewed the Contract Documents, including the Drawings and Specifications and the project site and is not aware of any material defect or error in such Documents. Subcontractor further represents that it will be able to

perform the Work in strict accordance with the Contract Documents including work that may be reasonably inferred to be required for the completion of the Work within the time required by Contractor and for the Subcontract Amount, and in accordance with all applicable laws and codes.

ARTICLE 2

TIME OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

- 2.1 Time is of the essence. The Work to be performed for each project shall begin as stipulated for each Project and in accordance with Contractor's schedule, as reasonably amended from time to time, and subject to authorized adjustments, shall be substantially complete as stipulated for each Project. Subcontractor has taken into account and made reasonable allowance for delays that should be reasonably anticipated or foreseeable.
- 2.2 The Subcontractor agrees to make any claim for extensions of time or for damages, delays, additional costs or otherwise to the Contractor in the same manner as provided in the General Contract Documents for like claims by the Contractor upon the Owner, provided, however, that any such claim must be submitted to Contractor in such time as will enable the Contractor to present such claims to the Owner for payment or recognition in accordance with the General Contract Documents. The Contractor will not be liable to the Subcontractor on any claim not timely or properly presented, nor shall Contractor be liable to the Subcontractor on any claim unless and until such claim is allowed and paid by the Owner.
- 2.3 In the event that Subcontractor's performance of the Work is delayed, obstructed, hindered or interfered with, for any reason and for any period of time, by acts or omissions of Owner, Contractor or other subcontractors, Subcontractor may request an extension of time for performance of the Work but shall only be entitled to any increase in the Subcontract price or to damages or additional compensation as a consequence of such delays, obstructions, hindrances or interference to the extent that the General Contract Documents entitle Contractor to compensation for same, and then only to the extent of any amounts that Contractor may, on behalf of Subcontractor, actually receive from Owner for such delays.
- 2.4 Subcontractor acknowledges that although the General Contract Documents with the Owner may stipulate a particular time of completion, Contractor may intend to construct the Project in less time. Subcontractor shall immediately commence Work upon notification from Contractor and supply sufficient, qualified and competent supervision and forces, adequate materials and equipment at all times as to not interfere with or delay the entire work, (or any of its parts) or any other trade.
- 2.5 Subcontractor shall notify Contractor in writing of any objection to any schedule or amendment within three (3) days after receipt, or its failure to object will constitute acceptance.

ARTICLE 3

THE SUBCONTRACT SUM

- 3.1 Contractor shall pay the Subcontractor for the diligent and proper performance of the Work, subject to additions and deductions by Change Order as provided in the Subcontract Documents, the sum ("Subcontract Amount") stipulated by the Project Subcontract defining such Work.
- 3.2 All sums tentatively earned by Subcontractor for the partial or complete performance of the Work and any balance of unearned Subcontract funds shall constitute a fund for the purpose of: (a) First, full completion of the Subcontract Work; (b) Second, payment of any backcharges or claims due Contractor from Subcontractor; and (c) Third, payment to the sub-subcontractors, laborers, material and service suppliers of Subcontractor who have valid and enforceable mechanic's lien claims or valid and enforceable bond claims (if the Project is bonded). Such tentative earnings shall not be due or payable to Subcontractor or anyone else claiming in Subcontractor's place and stead, including but not limited to a Trustee in bankruptcy, receiver or assignee of Subcontractor, until and unless such Subcontract Work is fully and satisfactorily completed and any amounts under a, b, or c above are fully paid and satisfied.

PROGRESS PAYMENTS

- 4.1 Applications for Payment shall be submitted monthly in accordance with the following procedure:
- 4.1.a. On the 25th day of each month, Subcontractor shall submit to the Contractor an itemized and detailed statement of materials provided and services rendered. Applications for Payment submitted more than three (3) days after the submission date in any month may be held by Contractor until the next submission date for processing. The time for submission of an estimate may be changed either by the Project Subcontract or a written directive from the Contractor.
- 4.1.b. Progress payments are due to Subcontractor not later than ten (10) days after progress payment is received by Contractor. The Contractor will pay the Subcontractor the approved portion of the Subcontractor's Payment Application, less retainage, provided that Contractor shall be entitled to withhold payments in order to leave a sufficient balance to cover all obligations of the Subcontractor for labor, materials, etc., previously furnished or to be furnished by the Subcontractor as required by Project Subcontract.
- 4.1.c. All progress payments and final payment to Subcontractor for any Work are contingent upon and subject to Owner's acceptance of such Work and Contractor's receipt of payment from Owner for such Work. Subcontractor agrees to accept the risk of non-payment if Contractor is not paid progress payments and/or final payment from Owner, unless caused by the default of Contractor or other subcontractors. Subcontractor further agrees that Owner's payment to Contractor of all progress payments and final payment for any Work performed by Subcontractor, shall be an express condition precedent to any obligation of General Contractor to make any progress payments, retainages, or final payment to Subcontractor unless such failure is caused by the default of Contractor or other subcontractors.
- 4.1.d. Final payment will be paid within ten (10) days of acceptance of and payment for the entire contract by the Owner but not before delivery of executed releases from the Subcontractor as required by the Contractor or Owner and any O & M manuals, Consent of Surety, Warranties and any similar items required by this agreement or Contractor's agreement with Owner.
- 4.1.e. Before issuance of the final payment, Subcontractor, if requested by Contractor, shall submit evidence satisfactory to Contractor that all payrolls, bills for materials and equipment, and all known indebtedness connected with the Subcontractor's Work have been satisfied. A Final Release must accompany each final application for payment in order for Subcontractor to be paid the final payment.
- 4.1.f. Title for all materials and work covered by estimates and/or requisitions for payment for which progress payments have been made shall pass to the Contractor (or the Owner, if the arrangements between the Contractor and Owner so provide). However, this provision shall not be considered as relieving the Subcontractor from the sole responsibility for all materials and Work upon which payments have been made, the restoration of any damaged Work or the maintaining of insurance thereon if required by other provisions of the General Contract Documents, nor shall it be considered as a waiver of the right of the Contractor or the Owner to require fulfillment of all the items of Subcontract.
- 4.2 The Subcontractor shall furnish the Contractor with such partial releases and waivers of lien from his sub-subcontractors, materialmen and creditors and himself as the Contractor may request from time to time on labor and/or materials and/or other claims, and final releases and waivers of lien at the time of final payment.

- 4.3 The Subcontractor agrees, covenants and creates this express trust that all monies received by it for the performance of Work on a project shall be used first for the purpose of paying for all labor and materials used in the performance of the Work on the Project (both past and present obligations) prior to any other use of such funds; and in making such payments the Subcontractor will specifically state, represent and warrant that the funds received by it and disbursed by Contractor have been used to satisfy all such past and present obligations for the Project under the Project Subcontract.
- 4.4 Acceptance of final payment by Subcontractor shall constitute a waiver of any and all claims Subcontractor may have against Contractor and Owner.
- 4.5 Subcontractor understands and agrees that, as further conditions precedent to Contractor's obligation to pay Subcontractor sums otherwise due under this Agreement, Subcontractor must execute and deliver to Contractor the following items: (a) payment and performance bonds in the Subcontract Amount executed by an approved surety, if required by the Project Subcontract; (b) standard insurance certificate form(s) confirming Subcontractor's required policies and coverages; (c) a partial or final waiver of liens and claims with each application for payment; and (d) bills and receipts from Subcontractor's lower-tier, subcontractors and suppliers for all expenses, including labor, material and overhead, and written releases from all parties that supplied labor, materials or equipment to Subcontractor that might assert claims against the Project.
- 4.6 Contractor's partial and/or final payment to Subcontractor shall not be evidence of the Subcontractor's partial or complete performance of the Work or this Agreement. Furthermore, Contractor's partial and/or final payment to Subcontractor shall not be construed as an acceptance or waiver of defective Work or improper materials and shall not relieve Subcontractor of its obligations pursuant to this Agreement.
- 4.7 Before paying any amount to Subcontractor, the Contractor is authorized to deduct (i) any obligations which Subcontractor owes to Contractor, (ii) costs necessary to complete and/or correct the Work to be performed under this Subcontract, (iii) any amounts Contractor deems necessary to reserve in order to protect Contractor or others against claims made regarding Subcontractor's Work or payments claimed due by sub-subcontractors or suppliers to Subcontractor, and (iv) any and all liabilities or claims, which Contractor has or may have against Subcontractor, arising under or relating to the Subcontract.

PERFORMANCE AND PAYMENT BONDS

- 5.1 If required by Contractor, Subcontractor shall furnish Contractor with a payment and/or performance bond, issued by a surety licensed to write surety bonds in Texas, listed in the Federal Register and satisfactory to Contractor. In the event that Contractor requires payment or performance bonds after execution of a Project Subcontract, the cost of such bond(s) will be added to the Work by appropriate Change Order or paid directly by Contractor.
- 5.2 All Performance and Payment Bonds shall be issued on Contractor's bond forms.
- 5.3 Payment of the initial bond premium may be, at Contractor's election, paid by Contractor directly to Subcontractor's bond agent or surety. Contractor will require written documentation of the amount of bond premium directly from Subcontractor's surety.
- 5.4 Subcontractor shall be solely responsible for increases and/or decreases in bond premium due to changes in work. Subcontractor is solely responsible for, including any additional costs, in applicable change orders.

INSURANCE

6.1 Subcontractor shall, at its own cost and expense, maintain in effect at all times during the full term of its Work, insurance coverage with limits not less than set forth below:

Type of Insurance

Limits of Liability

a. <u>Workers' Compensation</u>: Statutory Limits

Employer's Liability: Each Accident \$500,000
Disease-Policy Limit \$500,000

Disease-Each Employee 500,000

- Subcontractor shall maintain Workers' Compensation coverage for all of Subcontractor's workers, including temporary workers, and where any of the Work is sublet, the Subcontractor shall provide on behalf of or shall require sub-subcontractors similarly to provide Workers' Compensation Insurance for all the sub-subcontractor's workers. No "alternative" form of coverage will be accepted.
- 2. Where "leased employees" are utilized, Subcontractor shall require its leasing company to provide Workers' Compensation Insurance for said workers and such policy should be endorsed with Subcontractor's name under an Alternate Employer endorsement.
- 3. Where Subcontractor uses leased employees with Workers' Compensation Insurance provided by a leasing company, Subcontractor is strictly prohibited from subletting any of its Work without the express written agreement of Contractor.
- b. Commercial General Liability:

\$2,000,000 General Aggregate

\$1,000,000 CSL For Bodily Injury and

Property Damage

\$2,000,000 Products/Complete Operations

\$1,000,000 Personal Injury \$50,000 Fire Damage \$5,000 Medical Expense

Coverage provided shall include the following:

- 1. Premises/Operations;
- 2. Contractor's Protective for Subcontractor's liability arising out of the hire of subsubcontractors;
- 3. Contractual liability specifically in support of, but not limited to the indemnity provisions of the Contract Documents;
- 4. Personal Injury Liability with Employment and Contractual exclusions removed;
- 5. Broad Form Property Damage including Completed Operations;
- 6. Product/Completed Operations coverage shall be maintained for a period of two years following acceptance of Subcontractor's Work;
- 7. XCU
- 8. The General Aggregate Limit shall apply separately to each Project Subcontract on a per project basis; and
- 9. Subcontractor's coverage shall be Primary and Non-Contributory.

c. <u>Business Automobile Liability</u> \$1,000,000 CSL for Bodily Injury and

Property Damage

Coverage provided shall be written to cover all owned, hired and non-owned automobiles.

d. Umbrella (Excess) Liability

\$5,000,000 Each Occur./Aggregate

Coverage provided shall be as broad as the primary policies and limits shall be in addition to those provided by primary policies.

POLICIES a, b, c & d SHALL CONTAIN A WAIVER OF SUBROGATION IN FAVOR OF VAUGHN AND OWNER.

POLICIES b, c & d SHALL BE ENDORSED NAMING VAUGHN AND OWNER AS ADDITIONAL INSURED WITH REGARD TO ONGOING AND COMPLETED OPERATIONS AND SPECIFYING THAT IT WILL BE PRIMARY OVER ANY OTHER COLLECTIBLE INSURANCE.

THESE REQUIREMENTS APPLY TO ALL TIERS OF SUBCONTRACTORS.

ADDITIONAL INSURED ENDORSEMENT CG 2010 85 OR ITS EQUIVALENT IS REQUIRED.

e. <u>Professional Liability Insurance (Errors and Omissions)</u>

All Subcontractors with design responsibility shall provide the following additional coverage: Professional Liability Policy with Limited Contractual Liability Coverage in favor of Contractor and Owner and a deductible no greater than \$25,000 per claim. This insurance shall be maintained for not less than the duration of each project and five (5) years following completion of construction. Retroactive date of such policy must be on or before the date Subcontractor begins offering professional services. Insurer shall waive subrogation rights against Contractor and Owner and any other entity identified in the General Contract Documents. Limit of liability shall be not less than \$1,000,000 per claim (specific to each project only).

f. Asbestos, Lead, and/or Remediation Trades

- 1. Asbestos and/or Lead Liability: If the Work contemplates asbestos or lead abatement, Subcontractor shall provide such insurance coverage on an occurrence basis for claims arising out of abatement, removal, storage, transportation and disposal activities with a limit of liability not less than \$5,000,000 per occurrence.
- 2. Environmental Impairment Liability: If work contemplates handling or hauling other pollutants, Subcontractor will provide insurance to cover, among other things, claims arising out of all hazardous material and hazardous waste remediation, storage, transportation, and disposal. Such insurance shall be written on an occurrence basis with no sunset clause, or on a claims-made basis with a minimum five (5) year extended reporting period (tail) with limits of not less than \$5,000,000 each Occurrence (if written on an occurrence basis) or, \$5,000,000 each Claim (if written on a claims-made basis).
- 6.2 All Subcontractor's liability lines of insurance shall be written on an Occurrence (not Claims Made) basis. Carriers must be licensed to do business in the State of Texas and rated no less than "A" as shown in the most current issue of A.M. Best's Key Rating Guide and under forms of policies satisfactory to Contractor.
- 6.3 Subcontractor shall notify Contractor by certified mail within fifteen (15) days upon knowledge of possible claims/suits that might cause a reduction below seventy-five percent (75%) of any general aggregate limit of insurance.
- 6.4 Subcontractor shall provide to Contractor a certified copy of any and all polices upon request by Contractor. Renewal policies, necessary shall be delivered to Contractor within fifteen (15) days prior to expiration of the previous policy.

- 6.5 None of the requirements contained herein as to types, limits or Contractor's approval of insurance coverage to be maintained by Subcontractor are intended to and shall not in any manner limit, qualify or quantify the liabilities and obligations assumed by Subcontractor under this Agreement or otherwise provided by law.
- In the event of Subcontractor's failure to comply with these provisions, Contractor may without in any way compromising or waiving any right or remedy at law or in equity, on notice to Subcontractor, purchase insurance at Subcontractor's expense, provided that Contractor shall have no obligation to do so and if Contractor shall do so, Subcontractor shall not be relieved of or excused from the obligations to obtain and maintain such insurance amounts and coverage.
- 6.7 The Subcontractor shall maintain evidence of insurance coverage required by Certificate of Insurance issued by the insurance carrier(s) or their legal agent. Appropriate certificate with required coverages, limits, conditions as noted above must be furnished to Contractor prior to Subcontractor commencement of Work. New certificates shall be provided to Contractor prior to the current certificate(s) termination date. Lapsed coverage of insurance required by this Subcontract is an act of default.

Certificates alone are not acceptable. Each certificate must have the actual endorsements showing Contractor and Owner are additional insureds and have been provided a waiver of subrogation. Certificates at minimum shall specify:

- a. The Contractor as certificate holder with correct mailing address;
- b. Insured's name must match that on the Subcontract;
- c. Companies affording coverage and limits described herein, with signature of authorized representative of carriers;
- d. Producers of certificate with correct address and phone;
- e. Waiver of subrogation and additional insured requirements with actual endorsements attached;
- f. The Contractor will be notified in writing thirty (30) days prior to cancellation of or reduction in coverage or intent not to renew coverage and elimination of "endeavor to" under the cancellation clause; and
- g. State the Project name.
- 6.8 Insurance similar to that required of Subcontractor shall be provided by all sub-subcontractors (or provided by Subcontractors on behalf of sub-subcontractors) to cover their operations performed under any subcontract agreement. Subcontractors shall maintain certificates of insurance from all sub-subcontractors, enumerating among other things the Waivers in favor of and Additional Insured status of the Contractor as required herein and make such certificates available to Contractor upon request. The term "sub-subcontractor(s)" shall include sub-subcontractors of any tier.
- 6.9 The Subcontractor shall obtain insurance coverage(s) in sufficient amounts and form to cover its own tools and equipment from all risk including fire, lightning, wind, vandalism, theft or other perils. Any insurance policy covering Subcontractor or its sub-Subcontractors equipment against loss of any type shall include an endorsement waiving the insurer's right of subrogation against Contractor and Owner. If Subcontractor or its sub-Subcontractors choose not to insure, but to assume risk directly, it is expressly agreed that the Subcontractor and/or its sub-Subcontractors hereby waive any claim for damages or loss to such tools and equipment in favor of Contractor and Owner.
- 6.10 Subcontractor hereby releases and shall cause its sub-Subcontractors to release, Contractor and Owner from any and all claims or causes of action whatsoever which Subcontractor and/or its sub-Subcontractors might otherwise now or hereafter possess resulting in or from or in any way connected with any loss covered or which should have been covered by insurance, including the deductible and/or uninsured portion thereof, maintained and/or required to be maintained by Subcontractor and/or its sub-Subcontractors pursuant to this Agreement.

6.11 Subcontractor is responsible for its prorata share of any deductibles on any claim made against Contractor's and/or Owner's Builders Risk policies.

ARTICLE 7

CHANGES IN THE WORK

- 7.1 Subcontractor may be directed in writing by Contractor without invalidating the Subcontract, to make changes in the Work within the general scope of the Subcontract consisting of additions, deletions or other revisions, and the Subcontract Sum and the Contract Time may, if appropriate be adjusted accordingly. Subcontractor shall promptly submit to Contractor written copies of any claim for adjustment to the Subcontract Sum and Contract Time for the revised work in a manner consistent with the Subcontract Documents as directed by Contractor, and in no event later than Contractor is required to submit to Owner. Each Change Order shall confirm Subcontractor's agreement with the cumulative effect and impact of all previous Change Orders.
- 7.2 No alterations, increases or decreases shall be made in the Work as shown or described by the Subcontract Documents except on the written directive of Contractor, and when so made, the value of the work or materials added or deleted shall be computed and determined by Subcontractor, and is subject to the written approval and acceptance by Contractor. The amount so determined, if accepted shall be added to or deducted from the Subcontract Amount. Subcontractor shall have no claim for additional work, or changed work, or changed contract time, unless such work or extension has been done in pursuance of a written order from Contractor. Any extra work performed without such written order will be at Subcontractor's expense.
- 7.3 If Owner, Architect or Contractor disputes the validity or amount of a Change Order Request submitted by Subcontractor, but instructs Subcontractor to proceed with the Work pending resolution of the dispute, Subcontractor shall promptly commence such disputed Work, and keep daily accurate records of all costs incurred, as verified by Contractor. A complete cost backup, including all supporting documents from Subcontractor's vendors and sub-subcontractors of every tier and source documents for all other costs must be provided to Contractor. Claims for additional cost must be made as provided by the General Contract Documents.
- 7.4 If Contractor requests Subcontractor to submit pricing for changes, Subcontractor shall provide such pricing promptly, not later than three (3) working days of such request. Pricing shall be submitted in the manner and on forms required by Contractor and/or Owner. Subcontractor shall not submit for payment any changes until the change order is signed by Contractor and Subcontractor.

ARTICLE 8

SUBCONTRACTOR

8.1 Subcontractor agrees to furnish all labor, supervision, materials, equipment, scaffolds, tools, fees, licenses, permits, insurance, taxes (including without limitation all applicable federal and state taxes) and all other items incidental thereto or reasonably inferable therefrom required to perform the Work. Subcontractor agrees to perform and complete the Work in a workmanlike and expeditious manner, in strict conformity with the Contract Documents, with an adequate number of skilled and competent supervisors and workers, in strict compliance with all applicable regulations, laws, customs, codes and ordinances and pursuant to the requirements of Contractor. Subcontractor shall be responsible for unloading and hoisting all of its materials, supplies, tools, and equipment in order to ensure the timely completion of Subcontractor's Work. Contractor's hoisting facilities may be made available to Subcontractor during regular working hours, provided adequate facilities are available and Subcontractor has scheduled the use of the facilities with Contractor. Should the use of Contractor's hoisting facility not be available or adequate, Subcontractor shall provide at its expense, a hoisting facility to meet Subcontractor's requirements.

- 8.2 The Subcontractor is responsible for daily clean-up, removal and disposal of all debris associated with his Work. Unless otherwise stated in the project subcontract, Subcontractor may deposit its non-hazardous debris in dumpsters provided by Contractor. Subcontractor shall place no hazardous materials in such dumpsters. If Subcontractor fails to provide daily clean-up, Contractor may provide the labor and equipment for such clean-up and charge the Subcontractor for Contractor's costs. Prompt notice and proper documentation will be provided to Subcontractor. Subcontractor shall clean up to the satisfaction of the Contractor all dirt, grease, marks, etc., from walls, ceilings, floors, fixtures, etc. deposited or placed thereon as a result of the execution of Subcontractor's Work.
- 8.3 The Subcontractor represents and warrants to Contractor that it is sufficiently capitalized and financially solvent to perform the Work for the Project without necessity of securing any advancement of money or credit with the proceeds of this Subcontract. In the event this representation becomes untrue or changes, the Subcontractor shall immediately notify the Contractor of the change in its financial condition requiring securing any advancement of money or credit with the proceeds of this Subcontract. Subcontractor will not assign the Subcontract nor subcontract all or portions of the Subcontract without the written consent of Contractor. It is the intention of the parties that Subcontractor will not assign any amount due or to become due under the Subcontract.
- 8.4 Subcontractor shall cooperate with Contractor in scheduling and performing his Work to avoid conflict or interference with work of others. Subcontractor shall furnish periodic progress reports on the Work as mutually agreed, including information on the status of materials and equipment under the Subcontract, which may be in the course of preparation or manufacture.
- 8.5 The Subcontractor shall furnish promptly all samples, lists, drawings, cuts, schedules etc., required in connection with his Work, but the review and/or approval of same does not relieve Subcontractor of its responsibility of complying with the requirements of the General Contract Documents. All transportation costs for samples and drawings furnished by the Subcontractor shall be paid by Subcontractor.
- 8.6 Subcontractor shall sequence and coordinate its Work and perform its Work in a good and workman-like manner to protect the Project's interior from weather damage and water intrusion. In the event that water intrusion occurs due to Subcontractor's failure to carry out its obligations, Subcontractor shall be responsible for the cost to remedy all damages caused thereby, including but not limited to testing and remediation of mold. Subcontractor agrees to defend, indemnify, and hold harmless the Contractor and the Owner from and against all claims, demands, liabilities, losses, damages, and expenses, including property damage and personal injury to any and all persons caused by its failure to perform its Work as stated above.
- 8.7 Subcontractor agrees that all the Work shall be done to the final approval of the Owner. The Architect's decision in matters relating to artistic effect shall be final if consistent with the intent of the Subcontract Documents.
- 8.8 Subcontractor agrees that all personnel used for the Work shall be qualified by training and experience to perform their assigned tasks. At the request of Contractor, Subcontractor shall remove from the site any personnel deemed by Contractor to be incompetent, careless, unsafe, unqualified to perform the work assigned, uncooperative or otherwise unsatisfactory to Contractor. Subcontractor will remove any personnel from any project upon reasonable request of Contractor. No increase in Subcontractor's costs shall be allowed for substitution of personnel.
- 8.9.a. If Subcontractor at any time shall: (1) refuse or fail to supply adequate and competent supervision, or skilled workmen or materials of the proper quality or quantity; (2) fail in any respect to prosecute the Work with promptness and diligence; (3) fail to pay its suppliers, workers or subcontractors or other debts in a timely manner; (4) fail to promptly correct any defective work; (5) fail to provide proper insurance; (6) fail to give financial assurances or guarantees when requested by Contractor; (7) or otherwise breaches the Subcontract by failing in the performance of any warranty, covenant or agreement

on its part; or (8) delays the work of Contractor or other subcontractors, Contractor shall have the option, after twenty-four (24) hours written notice to Subcontractor, without prejudice to any other remedy Contractor may have, supplement Subcontractor's forces and provide any labor or materials deemed necessary by Contractor and to deduct the cost thereof from any money due or thereafter to become due by Contractor to Subcontractor or terminate the Project Subcontract. In addition, Contractor may terminate Subcontractor's right to proceed or continue with the Work. Contractor may enter upon the premises and take possession of all materials, equipment or appliances, of any kind whatsoever of Subcontractor and to employ any other person or persons to finish the Work and to provide the materials therefor. If Subcontractor is in default, Subcontractor shall not be entitled to receive any payment which might otherwise be due it until all of Subcontractor's obligations shall be performed and payment in full has been made by Owner to Contractor, at which time, if the unpaid balance of the amount to be paid under this Subcontract shall exceed the expenses incurred by Contractor in finishing Subcontractor's Work, plus any costs or damages sustained by Contractor by reason of such failure or lack of performance by Subcontractor, including attorney fees, such excess shall be paid by Contractor to Subcontractor. If such expenses, costs and damages exceed such unpaid balance, Subcontractor shall pay the difference to Contractor. If Subcontractor, for any reason, is in default on one project, Contractor shall have the right to offset and apply any amounts that might be owed by Contractor to Subcontractor on any other project, including any retainage amounts.

- 8.9.b. Contractor may at any time, at will and without cause, terminate any part or all of a Project Subcontract for any reason or no reason. Such termination for convenience shall be effective immediately by giving Subcontractor written notice. Subcontractor shall continue to prosecute any part of the Work not terminated. Subcontractor shall require a comparable termination for convenience provision in all lower-tier subcontracts and purchase orders. If Contractor terminates any part or all of the Work for convenience, Contractor shall incur no liability to Subcontractor because of such termination, except that Subcontractor may be entitled to payment for (i) Work properly executed in accordance with the Subcontract prior to the effective date of the termination and (ii) reasonable cancellation costs directly related to such termination; provided, however, Contractor must authorize such Work in advance and in writing, Owner must first pay Contractor all such sums, and Subcontractor must satisfy the other conditions precedent to payment described in the Subcontract. Subcontractor shall not be entitled to any special overhead, anticipated profits, or to any direct, indirect, incidental, or consequential damages. If it should ever be determined that Contractor terminated a Subcontractor or Project Subcontract without cause, it shall be deemed a termination for convenience and Subcontractor shall be entitled to seek only the relief as stated in this Subparagraph 8.9.b.
- 8.9.c. Subcontractor understands and agrees that the default and termination provisions contained in this Agreement are intended to allow Contractor to complete its obligations to Owner. If Subcontractor is in default, Contractor shall have the right to take possession of Subcontractor's Project items, such as materials, equipment, tools and appliances, in order to finish the Work even if Contractor is later determined to be in breach of a provision in the Contract Documents. Subcontractor expressly authorizes such actions by Contractor and agrees that such actions shall not constitute a conversion of the Project items or any other wrongful conduct. Contractor shall also have the right to proceed with the Work while awaiting a response to its notice of default or adequate assurances from Subcontractor (or its Surety) or an election to assume or reject a project subcontract from a bankruptcy court. Termination either for cause or for convenience shall not affect any right or obligation which is accrued or vested prior to such termination. Any provision in the Contract Documents relating to such right or obligation shall survive the termination of the Subcontract.
- 8.10 If Subcontractor is responsible for any delays in the time and sequence of the schedule, Subcontractor shall pay Contractor for all costs and damages suffered by Contractor as a result of such delays, including but not limited to any damages (liquidated damages or otherwise) assessed against Contractor under the General Contract Documents. Time is of the essence to this Subcontract.
- 8.11 Any time Subcontractor is behind schedule in its Work, Subcontractor shall, at its own expense, perform any overtime work necessary to bring its Work back on schedule. Contractor may, at any other

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time, direct Subcontractor to perform additional overtime work and Contractor shall pay the cost of the premium time only without overhead or profit.

- 8.12 The Subcontractor shall obtain and pay for all permits, licenses and fees required to perform the Work and will comply with all ordinances, statutes and regulations relating to any Work, including, but not limited to prevailing wage and equal opportunity requirements. Subcontractor will hold harmless, indemnify and defend Contractor for all cost, losses, expenses and fines of any nature whatsoever caused in whole or part by Subcontractor's failure to comply with such ordinances, statutes or regulations.
- 8.13 Subcontractor shall review and accept the condition of any work related to the performance of its Work. If Subcontractor observes any condition that is not in conformity with the General Contract Documents or any condition that might prevent Subcontractor from properly performing the Work, Subcontractor must promptly notify Contractor in writing of such nonconformity or condition. If Subcontractor proceeds without written notice to Contractor, it shall be deemed to have accepted the conditions of the other work.
- 8.14 The Subcontractor shall effectively secure and protect his materials and Work and adjacent work and not damage the work of the Contractor and other subcontractors and shall bear and be liable for all loss and/or damage of any kind in connection therewith whether as a result of an act, an omission to act, faulty material or faulty workmanship. Subcontractor assumes the entire responsibility and liability for all Work, whether or not erected in place, and for all plant, scaffolding, hoisting, tools, equipment, supplies and other things provided by Subcontractor until final acceptance of the Work by the Owner. In the event of any loss, damage or destruction thereof from any cause, Subcontractor shall be liable therefor, and shall repair, rebuild and make good said loss, damage or destruction at Subcontractor's cost, except to the extent of any recoveries or payments from Builders Risk or property insurance, if any, applicable to such loss, damage or destruction.
- 8.15 Subcontractor shall cooperate with Contractor and other subcontractors whose work might interfere with Subcontractor's Work, and shall participate in the preparation of coordinated drawings in areas of congestion as required by the Subcontract Documents, specifically noting and advising Contractor of any such interference.
- 8.16 Subcontractor understands and agrees that it is an independent contractor and shall be solely responsible for establishing and maintaining a safe working environment in connection with its Work. It is Subcontractor's responsibility to inspect the Work area prior to commencing any Work and to report to Contractor in writing any unsafe or hazardous conditions. The Subcontractor agrees not to remove guards or safety appliances. Subcontractor is solely responsible for its means, methods and details of performing the Work. Contractor's interest is in the results of the Work only. Subcontractor shall take all reasonable safety precautions with respect to its Work, shall comply with all safety measures required by the Owner, Contractor or the Contract Documents if such measures are more stringent and with all applicable laws, ordinances, rules, regulations and order of any public authority for the safety of persons or property in accordance with the requirements of the Subcontract Documents.
- 8.17 Subcontractor at all times shall have adequate on-site supervision to properly manage and coordinate all of its employees and all of its sub-subcontractors and vendors of every tier.
- 8.18 Subcontractor warrants to Contractor and Owner that all materials and equipment furnished shall be new unless otherwise specified, and that all Work under the Subcontract shall be of good quality, free from faults and defects and in conformance with the Subcontract Documents and all applicable laws, rules, regulations and ordinances for a period of one (1) year from the date of substantial completion of the Project as a whole or as stipulated by Contractor's agreement with the Owner, whichever is longer. All Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The warranty provided in Paragraph 8.18 shall be in addition to and not in limitation of any other warranty or remedy required by law or by contract. Subcontractor shall indemnify and hold Contractor and Owner harmless from and against any direct and/or consequential damages resulting from Subcontractor's defective or non-conforming Work.

- 8.19 Subcontractor shall make all claims promptly to Contractor for additional cost, extensions of time, damages, delays or other causes in strict accordance with the Subcontract Documents. Any such claims must be received by Contractor not less than seven (7) working days preceding the time by which Contractor's claim must be made to the Owner. Compliance with this Article 8.19 shall be a condition precedent to Subcontractor's right to assert such claims and failure of Subcontractor to make such a timely claim shall bar Subcontractor's claims.
- 8.20 <u>Indemnity</u> a) In exchange for good and valuable consideration, Subcontractor shall indemnify, protect, hold harmless and defend Contractor, Owner and Architect and all of their consultants, agents, officers, representatives and employees (the "Indemnitees") from and against all claims, damages, liabilities, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from the Work, provided that any such claim, damage, loss, or expense (i) is attributable to bodily injury, sickness, disease, or death, or fine, penalty or other action brought or assessed by a governmental entity, or to injury to or destruction of tangible property, including the loss of use resulting therefrom, and (ii) is caused in whole or in part by any negligent act or omission of Subcontractor or anyone directly or indirectly employed by it or anyone for whose acts it may be liable, or is caused by or arises out of the use of any products, material or equipment furnished by Subcontractor.
- b) Except as stated in (c) below, Subcontractor shall indemnify the Indemnitees to the extent Subcontractor's negligence or wrongful conduct caused such loss, damage or expense.
- c) In the event of any injury or death to an employee of Subcontractor, its subsubcontractors, vendors or lessors (or any independent contractor thereof), it is the express intention of the parties hereto that the indemnity provided above is intended to indemnify, protect, hold harmless and defend the indemnified parties from consequences of their own real or alleged negligence, whether such negligence to be joint, concurrent, active or passive.
- d) In any and all claims against Contractor, Owner or Architect or any of their agents or employees, by any employee of Subcontractor, or anyone directly or indirectly employed by Subcontractor, or anyone for whose acts Subcontractor may be liable, the indemnification obligation under this Paragraph 8.20 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for Subcontractor under Worker's Compensation Acts, disability benefit acts or other employee benefit acts.
- e) The obligations of Subcontractor under this Paragraph 8.20 shall not extend to the liability of Architect, its agents or employees, arising out of (1) the preparation or approval of maps, drawings, opinion, reports, surveys, Change Orders, designs or specifications, or (2) the giving or the failure to give directions or instructions by Architect, its agents or employees, provided such giving or failure to give is the primary cause of the injury or damage.
- f) Subcontractor understands and agrees that its obligations of indemnification shall control over any conflicting provision in the Contract Documents and shall survive the termination or expiration of any Project Subcontract.
- g) Subcontractor is not required to indemnify Contractor for damages due to the sole negligence of Contractor.
- 8.21 Subcontractor shall save and keep the Project and all improvements thereon free from all mechanic's liens and all other liens by reason of the Work or any labor, materials, or other things used therein. If Subcontractor fails to remove any lien by "bonding around" it or otherwise, Contractor may retain sufficient funds, out of any money due or thereafter to become due by Contractor or Subcontractor, to pay the lien and all costs incurred by reason thereof, and may pay or bond around said lien or liens and deduct such costs out of any funds at any time in the hands of Contractor owing to Subcontractor. Nothing herein shall prevent Subcontractor from filing its own lien if otherwise entitled to do so.

- 8.22 Subcontractor warrants its workforce is authorized to work at the project location and shall comply with all Federal, State and local employment and immigration laws and regulations. Subcontractor shall not be entitled to change orders or time extensions due to changes in such laws or regulations. Subcontractor shall indemnify and hold Contractor harmless from all costs incurred by Contractor resulting from Subcontractor's failure to comply with such laws or regulations.
- 8.23 Subcontractor shall properly coordinate its Work with other trades and participate in project modeling and coordination efforts (2D and 3D).
- 8.24 Neither Subcontractor, lower-tier sub-subcontractors, or any of their employees shall take photographs of the Work or site, publish or display advertising matter of any description relating to the Project, or display signs at or near the Project without first obtaining the written consent of Contractor and the Owner.
- 8.25 Subcontractor is required to submit a Daily Construction Report (the "Report") to Contractor. The Report must include a description of the Subcontractor's activities for the day, a work force count by trade for both the Subcontractor and sub-subcontractors, as well as a listing of any major deliveries. The Report must be submitted by noon the following day.
- 8.26 Subcontractor shall daily maintain an up-to-date and accurate record of all deviations from the approved drawings, specifications, and shop drawings which may occur in the Work as actually constructed, and shall submit to Contractor for submission to the Owner, at completion of the Work prior to final payment, completely corrected record drawings representing the actual condition of the Work.

MISCELLANEOUS PROVISIONS

- 9.1 Unless otherwise specifically stated herein, notice shall be deemed effective upon actual receipt or three (3) days following posting the notice, certified mail, return receipt requested, in the United States Mail. Any notice from Subcontractor to Contractor alleging Contractor has failed to comply with the terms of a Project Subcontract or Master Subcontract Terms and Conditions must be sent to: Tom Vaughn, CEO, Vaughn Construction, 10355 Westpark Drive, Houston, Texas 77042, by certified mail, return receipt requested.
- 9.2 No proposals or oral understandings are valid unless specifically contained in the Contract Documents. The Contract Documents represent the entire and integrated agreement between Subcontractor and Contractor. The Master Terms and Conditions, Project Subcontract and the other Contract Documents shall be read so as to compliment each other. However, in the event of an irreconcilable conflict in the terms thereof, Subcontractor shall be bound by the more stringent requirement as determined by Contractor.
- 9.3 If at any time any controversy shall arise between the Contractor and the Subcontractor with respect to any matter or thing involved in this Master Subcontract Terms and Conditions and related Project Subcontract, and which the parties hereto do not promptly adjust and determine or which the Owner or his authorized representative cannot decide to the satisfaction of both parties hereto, then the written orders of the Contractor shall be followed and upon the completion of the Work and before the final settlement and payment is made, said controversies shall be resolved as follows:
- 9.3.1 In case of any dispute between Contractor and Subcontractor in any way relating to or arising from any act or omission of the Owner, the Architect, or involving the General Contract Documents, Subcontractor agrees to be bound to Contractor to the same extent that Contractor is bound to the Owner by the terms of the General Contract Documents, and by any and all preliminary and final decisions or determinations made thereunder by any party, board or court so authorized in the General Contract Documents or by law, whether or not Subcontractor is a party to such proceedings. In case of such dispute, Subcontractor will comply with all provisions of the General Contract Documents and allow

a reasonable time for Contractor to analyze and forward to the Owner any required communications or documentation sufficiently in advance of any time limits sets forth in the General Contract Documents. Contractor may, at its option, (1) present to the Owner in Contractor's name, or (2) authorize Subcontractor to present to the Owner, in Contractor's name, all of Subcontractor's claims and answer the Owner's claims involving Subcontractor's Work. Contractor may further invoke on behalf of Subcontractor, or allow Subcontractor to invoke, those provisions in the General Contract Documents for determining disputes. Nothing herein shall require Contractor to certify a claim under a contract when it cannot do so in good faith. If such dispute is prosecuted or defended by Contractor, Subcontractor at its own expense agrees to furnish all documents, statements, witnesses, and other information required by Contractor and to pay or reimburse Contractor for all costs incurred by Contractor in connection with the dispute, including attorneys' fees. If Contractor exercises either of the options referenced above, Subcontractor agrees that it shall only recover against Contractor to the extent Contractor recovers funds from the Owner.

- 9.3.2 All other disputes between the parties shall be resolved by litigation, in a court of competent jurisdiction, except that Contractor may, at its sole option, require that any dispute be submitted to arbitration pursuant to the Construction Industry Rules of the American Arbitration Association except that all arbitrators shall be attorneys with at least ten (10) years experience in construction law. The election by Contractor shall be made not later than thirty (30) days following receipt of service of process of any such litigation from Subcontractor or, if the claim is asserted by Contractor, shall be made upon the filing of a demand for arbitration by Contractor. Notwithstanding the above, Contractor shall not be deemed to have waived any right it may have to arbitrate its dispute with Subcontractor by the filing of litigation against Subcontractor and its surety.
- 9.3.3 If Contractor elects to arbitrate any such dispute with Subcontractor, Subcontractor consents to the joint arbitration of any dispute it might have with Contractor with the arbitration of any dispute Contractor might have with any other subcontractor of Contractor or with Owner or Architect, if Contractor should so elect.
- 9.3.4 Contractor, if the prevailing party shall be entitled to have included in the judgment or award costs and reasonable attorney's fees incurred in connection with said action. Venue for any arbitration or lawsuit arising out of this agreement shall lie exclusively in Harris County, Texas, and the substantive laws of the State of Texas shall govern all Subcontracts and any disputes arising therefrom.
- 9.4 The Subcontractor shall not interrupt or slow down the progress of the Work during the pendency of (i) a cure period within which the Contractor is entitled to cure any contended default of Contractor hereunder, or (ii) the dispute resolution process described herein with respect to any dispute that may arise between the Parties hereunder.
- 9.5 The Subcontractor shall not have dealings with the Owner or his authorized representatives in regard to the General Contract Documents, changes, extras, or omissions relating to the Work, but shall deal only with the Contractor.
- 9.6 It is understood that the Subcontractor will pay all sales and/or use taxes applicable to the Work and all other Federal, State or Local Taxes applicable in any way related to the Work performed regardless of whom the assessment is made upon, and that the cost of these taxes is included in the total contract price as stipulated by Project Subcontract. If the Contractor is obliged to pay any such taxes he may deduct the amount of such payment from sums due the Subcontractor or the Subcontractor will on demand reimburse the Contractor for such expenditures.
- 9.7 The Contractor may deduct from any amounts due or to become due to the Subcontractor any sum or sums owing by the Subcontractor to the Contractor. The Subcontractor expressly recognizes that this right of Contractor applies to the right of set off from payments otherwise due to Subcontractor on all Project Subcontracts, regardless of which project the debt arose.

- 9.8 The Subcontractor shall take all reasonable safety precautions pertaining to the Work and the conduct thereof and shall comply with all applicable safety and health laws. Subcontractor shall comply with all applicable laws, ordinances, rules, regulations or orders issued by all public authorities with jurisdiction over all or a part of the Work as well as rules established by Owner, Contractor or the Contract documents if more stringent. Subcontractor shall familiarize himself with and abide by the safety rules and regulations stated in the Contract Documents, as well as the safety laws, rules and regulations of any governmental body, including but without limitation to, the Occupational Safety and Health Act of 1970 (OSHA), all rules and regulations established pursuant thereto, and all amendments and supplements thereto. Subcontractor shall and is responsible for establishing and enforcing such safety measures as may be required by the nature of the Work.
- 9.9 Upon first notice of any injury (alleged or actual), Subcontractor's employee or subsubcontractor's employee, any 3rd party and/or property damage allegations or claims, a copy of any internal report(s) and/or accident reports produced or provided to Subcontractor shall be furnished to Contractor. Subcontractor agrees to cooperate fully in any investigation including providing documents as may be required by the Contractor.
- 9.10 Subcontractor is solely responsible for the safety of its employees, agents, and subsubcontractors and shall maintain its own safety program, which shall meet all applicable federal, state and/or local safety related laws and regulations. Subcontractor will release, indemnify, defend and hold harmless Contractor from any claims, demands, losses or fines incurred by Contractor caused in whole or in part by Subcontractor's failure to comply with any safety law, regulation, ordinance rule or contract.
- 9.11 Subcontractor shall specifically cooperate in Contractor's hazardous communications program, including, but not limited to, furnishing a project specific list of Hazardous Substances and Material Data Safety Sheets on all such substances which the Subcontractor actually uses on each project. Subcontractor shall provide a project specific chemical inventory list and material safety data sheets for Contractors' Hazardous Communication Program and update as required. Subcontractor shall comply with all provisions of the Clean Water Act, as amended, to prevent the unauthorized discharge of pollutants to water of the United States. Pollutants are those defined by the Clean Water Act, Environmental Protection Agency and any State or Municipal Authorities.
- 9.12 As to any Work, the Subcontract Documents, which constitute the entire Agreement between the Subcontractor and Contractor (which may not be modified, except by a document in writing, signed by the parties) and the documents, which are applicable to the Subcontract, are enumerated as follows:
 - 1. The Project Subcontract;
 - 2. This Master Subcontract Terms and Conditions;
 - 3. The General Contract Documents:
 - 4. Exhibit "A, and A-1" Insurance. Refer to project subcontract for revision of requirements, if any;
 - 5. Exhibit "B" Partial/Final Release of Lien and Claims;
 - 6. Exhibit "C" Enumeration of General, Supplemental and Special Conditions, Drawings & Specifications and other Contract Documents as attached to Project Subcontract;
 - 7. Exhibit "D" Payment and Performance Bond Forms; and
 - 8. Other Exhibits attached to the Project Subcontract.
- 9.13 Failure or delay by Contractor to specifically enforce any of its rights provided herein shall not constitute a waiver of such rights.
- 9.14 Notwithstanding any provision to the contrary in this Agreement, Subcontractor shall in all respects be acting as an independent contractor and under no circumstance or condition as an agent, employee or partner of Contractor.
- 9.15 The parties acknowledge that the rule of contract construction requiring any ambiguities to be resolved against the drafting party shall not be utilized in the interpretation of this Agreement or any

amendments, attachments, or exhibits to this Agreement. The parties further acknowledge that the descriptive headings are included for convenience only and shall not be considered in the construction or interpretation of any provision of this Agreement.

- 9.16 If a court of competent jurisdiction determines that any provision of this Agreement is invalid or unenforceable, then the invalidity or unenforceability of that provision shall not affect the validity or enforceability of any other provision of this Agreement, and all other provisions shall remain in full force and effect.
- 9.17 Unless otherwise specifically limited in this Agreement, the duties and obligations imposed by the Subcontract, and the corresponding rights and remedies, shall be in addition to and not in limitation of any duties, obligations, rights and remedies otherwise imposed by or available at law or in equity.

[Remainder of Page Intentionally Left Blank]

	Conditions have been received, read, acknowledged and agreed to, 2009.
	CONTRACTOR:
	J. T. VAUGHN ENTERPRISES, INC. f/k/a J.T. VAUGHN CONSTRUCTION COMPANY, INC. 10355 Westpark Drive Houston, Texas 77042-5312
	BY: CEO or Contracts Manager
	PRINTED NAME:
	AND/OR
	J. T. VAUGHN CONSTRUCTION, LLC 10355 Westpark Drive Houston, Texas 77042-5312
	BY:CEO or Contracts Manager
	PRINTED NAME:
	SUBCONTRACTOR:
	RELIABLE SUBCONTRACTOR, INC. 111 Main Street Anywhere, Texas 77070
	BY:(Its Authorized Agent)
	PRINTED NAME:

TITLE:

Section 4 – Standard Contracts for Trade Contractors/Suppliers

The work will be awarded under lump sum subcontracts and/or purchase orders to the respondents offering the best value to Vaughn Construction. The successful respondents will be required to execute Vaughn Construction's standard subcontract or purchase order documents. A copy of the Master Subcontract Terms and Conditions, an example Project Subcontract, an example Purchase Order, and the associated exhibits are included as attachments to this section.

Attachment 1:	Master Subcontract Terms and Conditions				
Attachment 2:	Project Subcontract				
Attachment 3:	Project Purchase Order				
Attachment 4:	Purchase Order Terms and Conditions				
Attachment 5:	Exhibit A	Insurance Requirements			
Attachment 6:	Exhibit A-1	Sample Certificate of Insurance			
Attachment 7:	Exhibit A-2	Sample Additional Insured Endorsement			
Attachment 8:	Exhibit B-1	Conditional Waiver and Release on Progress Payments			
Attachment 9:	Exhibit B-2	Unconditional Waiver and Release on Progress Payments			
Attachment 10:	Exhibit B-3	Conditional Waiver and Release on Final Payment			
Attachment 10:	Exhibit B-4	Unconditional Waiver and Release on Final Payment			
Attachment 11:	Exhibit C	List of Documents			
Attachment 12:	Exhibit D	Bond Requirements			
Attachment 13:	Exhibit D-1	Labor and Material Payment Bond			
Attachment 14:	Exhibit D-2	Performance Bond			
Attachment 15:	Exhibit F	Scope Information			
Attachment 16:	Exhibit G	Submittal Coversheet			
Attachment 17:	Exhibit H	Wage Rate Notification Form			
Attachment 18:	Exhibit I	Warranty Guarantee			
Attachment 19:	Exhibit K	Electronic Information			

End of Section



PROJECT SUBCONTRACT

COST CODE: QSR No.:

DATE:

PROJECT SUBCONTRACT NO.:

TITLE: (ITS OFFICER OR AUTHORIZED AGENT)

DATE: _____

TITLE:	
PRINTED NAME:	, ,
BY:	BY:
	J.T. VAUGHN CONSTRUCTION, LLC
	TELEPHONE:
SALES TAX STATUS:	PROJECT MANAGER:
Exhibits attached hereto are hereby made a part of this Su No is hereby incorporated in this Subcontract and conditions are part of this agreement.	ubcontract. Master Subcontract Terms and Conditions to by reference as if fully set forth below and these terms
All monthly requests for payment must be submitted with projecting work to be completed by the end of the month accepted until the 25th and if received later than the 28th percentage of each estimate to be paid of each progress bi	. Any invoice submitted prior to the 25th will not be n, may be held until the following billing period. The
Subcontractor shall commence the Work upon receipt of the Work within the time period to be determined by Counder the General Contract Documents. The Contractor again material, and the Subcontractor agrees to accept, there	ntractor in accordance with Contractor's obligations prees to pay the Subcontractor for the described work
The Subcontractor promises, covenants and agrees to supplies required for a complete job of: in strict accordance with the project plans, specification recommendations and all applicable local, state and feet	ns, notes, codes, ordinances, manufacturers'
OWNER:	
PROJECT:	
ATTENTION:	
This Agreement made and entered into on this day of , bet Subcontractor:	ween J.T. Vaughn Construction, LLC ("Contractor") and

Exhibit "A"

Insurance

Before proceeding with any portion of its Work, Subcontractor (Seller) shall furnish the Contractor (Buyer) necessary certificates of insurance, from insurance companies acceptable to the Contractor (Buyer). The attached Exhibits A-1 and A-2 are examples only. Also <u>see</u> Article 6 of Master Subcontract Terms and Conditions or the Purchase Order Terms and General Conditions and the <u>Additional Insured</u> requirements below for insurance requirements. If any portion of these insurance requirements shall be declared invalid or unenforceable, these requirements shall be enforced to the maximum extent allowed by law.

The actual endorsements proving that Contractor (Buyer) and Owner have been added as additional insureds including primary language, along with waivers of subrogation and notice of cancellation are required. See A-2.

Additional Insured. Contractor (Buyer), Owner and all other required parties shall be included as additional insureds under the Subcontractor's (Seller's) CGL and all excess liability policies for liability arising out of Subcontractor's (Seller's) Work performed under this Subcontract (Purchase Order), including products-completed operations coverage. Additional insured status shall be provided on a combination of unmodified ISO endorsements CG 20 10 10 01 and CG 20 37 10 01.

All insurance provided by Subcontractor (Seller) (including excess) to Contractor (Buyer) and Owner shall be primary and noncontributory to other insurance (or self-insurance) available to Contractor (Buyer) or Owner. Subcontractor's (Seller's) excess liability policies shall be on a "follow form" basis with coverage no less broad than the underlying policies.

Subcontractor (Seller) shall provide no less than the limits of insurance required by this agreement.

Exhibit "A-1"

Sample Certificate of Insurance

		ACORD 25 (2010/05) This sho		The ACORD name and log	-	red marks	of ACORD		•			
		•			HO! HOKIZE			ODD 0000001750	A11			Signed by the Broker only
		J. T. Vaughn Construction 10355 Westpark Drive Houston, Texas 77042-53			THE E	XPIRATION	I DATE TH TH THE POLK	DESCRIBED POLICIES BE EREOF, NOTICE WILL CY PROVISIONS.				
	L	CERTIFICATE HOLDER			CANCEL	LATION						number and Owner
	/ u a F	Imbrella policies per the attached endor ttached hereto. Project: [Project Name & Nu Dwner: [Owner Name]	ement	ts. 30 days notice of cancella								project name, project location and/or project
	⊿ \	DESCRIPTION OF OPERATIONS / LOCATIONS / VE Vaiver of Subrogation in favor of J.T. Va Indorsements. Additional Insured (CG 2	ıghn C	onstruction, LLC & Owner on	Workers Com	pensation	General Lia					should reference the
												This section
Liability or Pollution Liability if required		DEO RETENTIONS WORKERS COMPENSATION AND EMPLOYERS LIABILITY ANY PROPRIETOR/PARTNER/RESCUTIVE OFFICE/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	1 N ##	A X				WC STATU- TORY LIMITS ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYE E.L. DISEASE - POLICY LIMIT	\$ 50 E \$ 50	000,0		
This section is to evidence Professional	_	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-M.	1	X				EACH OCCURRENCE AGGREGATE	\$ 5,00 \$ 5,00			
		X ANY AUTO ALL OWNED AUTOS X HIRED AUTOS X NON-OWNED AUTOS X AUTOS	Į x	X				(Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident PROPERTY DAMAGE (Per accident)	\$ 1,00 \$ \$ \$			Subcontractor Seller to provide no less than the limits show
acceptable		GEN'L AGGREGATE LIMIT APPLIES PER POLICY X PRO- POLICY X LOC AUTOMOBILE LIABILITY						PRODUCTS - COMP/OP AGG COMBINED SINGLE LIMIT (Ea accident)	\$	·		
Occurrence is <u>not</u>		CLAIMS-MADE A OCCOR						MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE	\$ 1,00 \$ 2,00	000,00	×	
Claims Made or Modified		GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR	×	×			_	DAMAGE TO RENTED PREMISES (Ea occurrence)		0,000 0,000 5,000		
	=	THIS IS TO CERTIFY THAT THE POLICI INDICATED. NOTWITHSTANDING ANY CERTIFICATE MAY BE ISSUED OR M. EXCLUSIONS AND CONDITIONS OF SU IST TYPE OF INSURANCE	REQU Y PER CH POL	IREMENT, TERM OR CONDITI RTAIN, THE INSURANCE AFFO	ON OF ANY O ORDED BY TH IVE BEEN RED	CONTRACT E POLICIE DUCED BY I	OR OTHER S DESCRIBE	DOCUMENT WITH RESP	TO ALL	WHICH THIS		
Subcontract/ Purchase Order)	L			ICATE NUMBER:	INSURER F	:		REVISION NUMBER:				are required
match the name		→			INSURER D	:						Current dates
Name of Subcontractor/ Seller (It should		NSURED			INSURER A INSURER B INSURER C	:	URER(S) AFFOR	RDING COVERAGE		NAIC#		
Seller's Insurance Broker		•			PHONE (A/C, No, E) E-MAIL ADDRESS:	t):		FAX (A/C, No)	:			
Subcontractor's/		IMPORTANT: If the certificate holde terms and conditions of the policy certificate holder in lieu of such ence PRODUCER	certai	in policies may require an	e policy(les) endorsemen CONTACT NAME:	must be e	ndorsed. If ment on th	s certificate does not	confer	ubject to the rights to the		
		CERTIFICATE DOES NOT AFFIRM BELOW. THIS CERTIFICATE OF REPRESENTATIVE OR PRODUCER	NSUR AND 1	ANCE DOES NOT CONST THE CERTIFICATE HOLDER	TUTE A CO	NTRACT	BETWEEN	THE ISSUING INSURE	R(S), A	UTHORIZED		
		THIS CERTIFICATE IS ISSUED AS	A MA	TTER OF INFORMATION O	NLY AND CO	ONFERS N	O RIGHTS	UPON THE CERTIFIC	ATE HO			
		ACORD CER	·T15	FICATE OF LI	ARII IT	LA IVI	SHDA	NCE [(MM/DD/YYYY)		

The verbiage in this section should read as shown above. "Waiver of Subrogation in favor of J.T. Vaughn Construction, LLC & Owner on Workers Compensation, General Liability, Auto & Umbrella policies per the attached endorsements. Additional Insured (CG 20 10 10 01 and CG 20 10 & 20 37 10/01 or equivalent) in favor of J.T. Vaughn Construction, LLC & Owner on General Liability, Auto & Umbrella policies per the attached endorsements. 30 days notice of cancellation endorsement provided for J.T. Vaughn Construction, LLC. Endorsements attached hereto."

This policy number should **Sample Additional Insured Endorsement** be the same as that listed for General Liability on the Certificate of Insurance POLICY NUMBER: COMMERCIAL GENERAL LIABILITY The Insured should INSURED: always be the same as the "Insured" / THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY. name on the Certificate ADDITIONAL INSURED - OWNERS, LESSEES OR (It should also read exactly the same as CONTRACTORS (FORM B) in the Subcontract/ Purchase Oder) This endorsement modifies insurance provided under the following: COMMERCIAL GENERAL LIABILITY COVERAGE PART **SCHEDULE** Name of Person or Organization: J. T. Vaughn Construction, LLC, its affiliated companies; Owner; other parties as required by Owner Contract and/or necessitated by construction activities (If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.) Should list the This is where the project name, WHO IS AN INSURED (Section II) is amended to include as an insured the person or organization shown in the **Additional Insureds** location, and/or Schedule, but only with respect to liability arising out of "your work" for that insured by or for you. should be listed project number to exactly as noted It is further agreed that such insurance as is afforded by this policy for the benefit of the above which the <u>here</u> Additional Insured(s) shall be primary insurance as respects any claim, loss or liability arising out Subcontract/ of the Named Insured's operations, and any other insurance maintained by the Additional **Purchase Order** Insured(s) shall be excess and non-contributory with the insurance provided hereunder. refers It is agreed that the above policy contains a standard cross liability or severability of interest clause. The primary wording, as required in the Subcontract/Purchase Order, is typed onto the Additional CG 20 10 10 01 Copyright, Insurance Services Office, Inc., 1984 Insured Endorsement here. and 20 37 10 01 The severability of interest clause is often typed here too. Standard endorsement numbers (GC 20 10 and 20 37) and 10 01 edition date or its equivalent are required by the Subcontract/ **Purchase Order** Vaughn Doc PM0017 Page 1 of 1 Version 1.0

(05.09.13)

Exhibit "B"

Waiver and Release Forms

- **B-1 Conditional Waiver for Progress Payments** (Submit with each payment application.)
- **B-2 Unconditional Waiver for Progress Payments** (Submit when picking up progress payment. If payment is mailed, it must be submitted before next payment application will be approved.)
- **B-3 Conditional Waiver for Final Payment** (Submit with final payment application.)
- **B-4 Unconditional Waiver for Final Payment** (Exchange for final check.)

Exhibit "B-1"

Conditional Waiver and Release on Progress Payments

STATE OF TEXAS	§ §
COUNTY OF [COUNTY OF PROJECT]	§ S/V Commitment No.:
[Project Name & Number] [Additional Line For Project Name, If Ne [Stree Address][City, State & Zip]	eded]
	ed into an agreement with J.T. Vaughn Construction, LLC ("VAUGHN") to furnish r improvements on the property described above (the "Project"), which may be more t.
payable to Subcontractor/Seller and wh which it is drawn, this document beco payment bond that complies with a st payment, and any rights under any simi the signer's position that the signer h	en the check from Vaughn in the sum of \$
	for all labor, services, equipment, or materials furnished to the property or to statement(s) or progress payment request(s), except for unpaid retention, other items furnished.
Before any recipient of this document resigner.	elies on this document, the recipient should verify evidence of payment to the
promptly pay in full all the signer's la	s already paid or will use the funds received from this progress payment to borers, subcontractors, materialmen, and suppliers for all work, materials, r to the above-referenced project in regard to the attached statement(s) or
EXECUTED on this day of	· <u> </u>
Ву:	Name and Title:
Subcontractor/Seller:	
Address:	City, State, Zip:
STATE OF	<u>_</u> §
COUNTY OF	§ \$
	ME, the undersigned authority, a Notary Public, in and for said County and State,
of	who personally appeared
the same was the act of said company,	officer whose name is subscribed to the foregoing instrument, and swore to me that that he executed the same as the act of such company for the purposes and a capacity therein stated that all the facts stated herein are true and correct.
GIVEN UNDER MY HAND AND SEAL Owitness my hand and seal of office.	F OFFICE, thisday of,, to certify which
	My Commission Expires:
Notary Public in and for State of Texas	
Printed Name:	
	s and equipment furnished through the following date:

Exhibit "B-1"

Conditional Waiver and Release on Progress Payments

STATE OF TEXAS	§ §
COUNTY OF [COUNTY OF PROJECT]	§ S/V Commitment No.:
[Project Name & Number] [Additional Line For Project Name, If Ne [Stree Address][City, State & Zip]	eded]
	ed into an agreement with J.T. Vaughn Construction, LLC ("VAUGHN") to furnish r improvements on the property described above (the "Project"), which may be more t.
payable to Subcontractor/Seller and wh which it is drawn, this document beco payment bond that complies with a st payment, and any rights under any simi the signer's position that the signer h	en the check from Vaughn in the sum of \$
	for all labor, services, equipment, or materials furnished to the property or to statement(s) or progress payment request(s), except for unpaid retention, other items furnished.
Before any recipient of this document resigner.	elies on this document, the recipient should verify evidence of payment to the
promptly pay in full all the signer's la	s already paid or will use the funds received from this progress payment to borers, subcontractors, materialmen, and suppliers for all work, materials, r to the above-referenced project in regard to the attached statement(s) or
EXECUTED on this day of	· <u> </u>
Ву:	Name and Title:
Subcontractor/Seller:	
Address:	City, State, Zip:
STATE OF	<u>_</u> §
COUNTY OF	§ \$
	ME, the undersigned authority, a Notary Public, in and for said County and State,
of	who personally appeared
the same was the act of said company,	officer whose name is subscribed to the foregoing instrument, and swore to me that that he executed the same as the act of such company for the purposes and a capacity therein stated that all the facts stated herein are true and correct.
GIVEN UNDER MY HAND AND SEAL Owitness my hand and seal of office.	F OFFICE, thisday of,, to certify which
	My Commission Expires:
Notary Public in and for State of Texas	
Printed Name:	
	s and equipment furnished through the following date:

NOTICE: THIS DOCUMENT WAIVES RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. IT IS PROHIBITED FOR A PERSON TO REQUIRE YOU TO SIGN THIS DOCUMENT IF YOU HAVE NOT BEEN PAID THE PAYMENT AMOUNT SET FORTH BELOW. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL RELEASE FORM.

Exhibit "B-2"

Unconditional Waiver and Release on Progress Payments

STATE OF TEXAS	8
COUNTY OF [COUNTY OF PROJECT]	§ S/V Commitment No.:
[Project Name & Number] [Additional Line For Project Name, If Nee [Stree Address][City, State & Zip]	eded]
-	d into an agreement with J.T. Vaughn Construction, LLC ("VAUGHN") to furnish improvements on the property described above (the "Project"), which may be more .
\$ for Vaughn on the property of [Project Owned of the Work described in the Statement lien right, any right arising from a pay payment bond right, any claim for payment bond right, any claim for payment.	been paid and has received a progress payment in the sum of all labor, services, equipment, or materials furnished to the property or to er] (Owner) located at [Project Location] (location) to the following extent: All Summary below. The signer therefore waives and releases any mechanic's ment bond that complies with a state or federal statute, any common law nent, and any rights under any similar ordinance, rule, or statute related to be signer's position that the signer has on the above-referenced project to the
	for all labor, services, equipment, or materials furnished to the property or to statement(s) or progress payment request(s), except for unpaid retention, other items furnished.
promptly pay in full all of the signer's	s already paid or will use the funds received from this progress payment to laborers, subcontractors, materialmen, and suppliers for all work, materials, to the above-referenced project in regard to the attached statement(s) or
EXECUTED on this day of	
Ву:	Name and Title:
Subcontractor/Seller:	
Address:	City, State, Zip:
STATE OF	_§
COUNTY OF	§ _\$
on this day,	ME, the undersigned authority, a Notary Public, in and for said County and State,
the same was the act of said company,	who personally appeared fficer whose name is subscribed to the foregoing instrument, and swore to me that that he executed the same as the act of such company for the purposes and capacity therein stated that all the facts stated herein are true and correct.
GIVEN UNDER MY HAND AND SEAL OF witness my hand and seal of office.	F OFFICE, this,, to certify which
	My Commission Expires:
Notary Public in and for State of Texas	
Printed Name:	
Statement Summary: All labor, materials Pending Changes: None, except:	s and equipment furnished through the following date:

NOTICE: THIS DOCUMENT WAIVES RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. IT IS PROHIBITED FOR A PERSON TO REQUIRE YOU TO SIGN THIS DOCUMENT IF YOU HAVE NOT BEEN PAID THE PAYMENT AMOUNT SET FORTH BELOW. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL RELEASE FORM.

Exhibit "B-2"

Unconditional Waiver and Release on Progress Payments

STATE OF TEXAS	8
COUNTY OF [COUNTY OF PROJECT]	§ S/V Commitment No.:
[Project Name & Number] [Additional Line For Project Name, If Nee [Stree Address][City, State & Zip]	eded]
-	d into an agreement with J.T. Vaughn Construction, LLC ("VAUGHN") to furnish improvements on the property described above (the "Project"), which may be more .
\$ for Vaughn on the property of [Project Owned of the Work described in the Statement lien right, any right arising from a pay payment bond right, any claim for payment bond right, any claim for payment.	been paid and has received a progress payment in the sum of all labor, services, equipment, or materials furnished to the property or to er] (Owner) located at [Project Location] (location) to the following extent: All Summary below. The signer therefore waives and releases any mechanic's ment bond that complies with a state or federal statute, any common law nent, and any rights under any similar ordinance, rule, or statute related to be signer's position that the signer has on the above-referenced project to the
	for all labor, services, equipment, or materials furnished to the property or to statement(s) or progress payment request(s), except for unpaid retention, other items furnished.
promptly pay in full all of the signer's	s already paid or will use the funds received from this progress payment to laborers, subcontractors, materialmen, and suppliers for all work, materials, to the above-referenced project in regard to the attached statement(s) or
EXECUTED on this day of	
Ву:	Name and Title:
Subcontractor/Seller:	
Address:	City, State, Zip:
STATE OF	_§
COUNTY OF	§ _\$
on this day,	ME, the undersigned authority, a Notary Public, in and for said County and State,
the same was the act of said company,	who personally appeared fficer whose name is subscribed to the foregoing instrument, and swore to me that that he executed the same as the act of such company for the purposes and capacity therein stated that all the facts stated herein are true and correct.
GIVEN UNDER MY HAND AND SEAL OF witness my hand and seal of office.	F OFFICE, this,, to certify which
	My Commission Expires:
Notary Public in and for State of Texas	
Printed Name:	
Statement Summary: All labor, materials Pending Changes: None, except:	s and equipment furnished through the following date:

Exhibit "B-3"

Conditional Waiver and Release on Final Payment

STATE OF TEXAS	§		
COUNTY OF [COUNTY OF PROJECT]	§ §	S/V Commitment No.	:
[Project Name & Number] [Additional Line For Project Name, If N [Stree Address][City, State & Zip]	eeded]		
-	or improveme	agreement with J.T. Vaughn Construction ents on the property described above (the '	
payable to Subcontractor/Seller and w which it is drawn, this document bec payment bond that complies with a s payment, and any rights under any sin	when the che comes effect state or fede nilar ordinan has on the	ck from Vaughn in the sum of \$	s been paid by the bank on ht, any right arising from a t bond right, any claim for nyment rights for persons in
This release covers the final payment property or to Vaughn.	to the sign	er for all labor, services, equipment, o	r materials furnished to the
Before any recipient of this document signer.	relies on this	s document, the recipient should verify	evidence of payment to the
promptly pay in full all the signer's	laborers, su	paid or will use the funds received bcontractors, materialmen, and suppli e-referenced project up to the date of th	ers for all work, materials,
EXECUTED on this day	of		
Ву:		Name and Title:	
Subcontractor/Seller:			
		City, State, Zip:	
STATE OF	§		
STATE OF	§ §		
on this day,		ndersigned authority, a Notary Public, in an	
the same was the act of said company	y, that he ex	te name is subscribed to the foregoing inst tecuted the same as the act of such conterein stated that all the facts stated herein	mpany for the purposes and
GIVEN UNDER MY HAND AND SEAL witness my hand and seal of office.	OF OFFICE,	thisday of	_,, to certify which
		My Commission Expires	:
Notary Public in and for State of Texas			
Drinted Name:			

Page 1 of 1 Version 2-2012

Exhibit "B-3"

Conditional Waiver and Release on Final Payment

STATE OF TEXAS	§		
COUNTY OF [COUNTY OF PROJECT]	§ §	S/V Commitment No.	:
[Project Name & Number] [Additional Line For Project Name, If N [Stree Address][City, State & Zip]	eeded]		
-	or improveme	agreement with J.T. Vaughn Construction ents on the property described above (the '	
payable to Subcontractor/Seller and w which it is drawn, this document bec payment bond that complies with a s payment, and any rights under any sin	when the che comes effect state or fede nilar ordinan has on the	ck from Vaughn in the sum of \$	s been paid by the bank on ht, any right arising from a t bond right, any claim for nyment rights for persons in
This release covers the final payment property or to Vaughn.	to the sign	er for all labor, services, equipment, o	r materials furnished to the
Before any recipient of this document signer.	relies on this	s document, the recipient should verify	evidence of payment to the
promptly pay in full all the signer's	laborers, su	paid or will use the funds received bcontractors, materialmen, and suppli e-referenced project up to the date of th	ers for all work, materials,
EXECUTED on this day	of		
Ву:		Name and Title:	
Subcontractor/Seller:			
		City, State, Zip:	
STATE OF	§		
STATE OF	§ §		
on this day,		ndersigned authority, a Notary Public, in an	
the same was the act of said company	y, that he ex	te name is subscribed to the foregoing inst tecuted the same as the act of such conterein stated that all the facts stated herein	mpany for the purposes and
GIVEN UNDER MY HAND AND SEAL witness my hand and seal of office.	OF OFFICE,	thisday of	_,, to certify which
		My Commission Expires	:
Notary Public in and for State of Texas			
Drinted Name:			

Page 1 of 1 Version 2-2012

NOTICE: THIS DOCUMENT WAIVES RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. IT IS PROHIBITED FOR A PERSON TO REQUIRE YOU TO SIGN THIS DOCUMENT IF YOU HAVE NOT BEEN PAID THE PAYMENT AMOUNT SET FORTH BELOW. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL RELEASE FORM.

Exhibit "B-4"

Unconditional Waiver and Release on Final Payment

STATE OF TEXAS	999		
COUNTY OF [COUNTY OF PROJECT]	§ §	S/V Commitment No.:	
[Project Name & Number] [Additional Line For Project Name, If Ne [Stree Address][City, State & Zip]	eded]		
BEFORE ME, the undersigned has enter abor and/or materials and/or equipment for particularly described in an attached exhibit	r improvements on th		
The signer of this document has been property or to Vaughn on the propert following extent: All Work performed or right, any right arising from a payment bond right, any claim for payment, and payment rights for persons in the signe	y of <u>[Project Owner</u> on the Project. The bond that complies d any rights under	r] (Owner) located at [Project Lo signer therefore waives and relea s with a state or federal statute, a	ocation] (location) to the ases any mechanic's lien ny common law payment
The signer warrants that the signer has pay in full all of the signer's laborers, sor services provided for or to the above	subcontractors, mat	terialmen, and suppliers for all wo	ork, materials, equipment,
EXECUTED on this day o	f	<u>,</u> .	
Ву:		Name and Title:	
Subcontractor/Seller:			
Address:	City, Sta	te, Zip:	
STATE OF	§		
COUNTY OF	§ §		
SWORN AND SUBSCRIBED TO BEFORE on this day,			or said County and State,
of			who personally appeared
and is known to me to be the person and the same was the act of said company, consideration therein expressed, and in the	that he executed t	he same as the act of such comp	any for the purposes and
GIVEN UNDER MY HAND AND SEAL C witness my hand and seal of office.	OF OFFICE, this	day of, _	, to certify which
		My Commission Expires:	
Notary Public in and for State of Texas		· -	
Printed Name:			

Page 1 of 1 Version 2-2012 NOTICE: THIS DOCUMENT WAIVES RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. IT IS PROHIBITED FOR A PERSON TO REQUIRE YOU TO SIGN THIS DOCUMENT IF YOU HAVE NOT BEEN PAID THE PAYMENT AMOUNT SET FORTH BELOW. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL RELEASE FORM.

Exhibit "B-4"

Unconditional Waiver and Release on Final Payment

STATE OF TEXAS	999		
COUNTY OF [COUNTY OF PROJECT]	§ §	S/V Commitment No.:	
[Project Name & Number] [Additional Line For Project Name, If Ne [Stree Address][City, State & Zip]	eded]		
BEFORE ME, the undersigned has enter abor and/or materials and/or equipment for particularly described in an attached exhibit	r improvements on th		
The signer of this document has been property or to Vaughn on the propert following extent: All Work performed or right, any right arising from a payment bond right, any claim for payment, and payment rights for persons in the signe	y of <u>[Project Owner</u> on the Project. The bond that complies d any rights under	r] (Owner) located at [Project Lo signer therefore waives and relea s with a state or federal statute, a	ocation] (location) to the ases any mechanic's lien ny common law payment
The signer warrants that the signer has pay in full all of the signer's laborers, sor services provided for or to the above	subcontractors, mat	terialmen, and suppliers for all wo	ork, materials, equipment,
EXECUTED on this day o	f	<u>,</u> .	
Ву:		Name and Title:	
Subcontractor/Seller:			
Address:	City, Sta	te, Zip:	
STATE OF	§		
COUNTY OF	§ §		
SWORN AND SUBSCRIBED TO BEFORE on this day,			or said County and State,
of			who personally appeared
and is known to me to be the person and the same was the act of said company, consideration therein expressed, and in the	that he executed t	he same as the act of such comp	any for the purposes and
GIVEN UNDER MY HAND AND SEAL C witness my hand and seal of office.	OF OFFICE, this	day of, _	, to certify which
		My Commission Expires:	
Notary Public in and for State of Texas		· -	
Printed Name:			

Page 1 of 1 Version 2-2012

Exhibit "C"

List of Documents

- 1. Agreement dated the [Day] day of [Month] 2010, between [Owner Name] and J.T. Vaughn Construction, LLC (Contractor).
- 2. Specifications issued by [Architect Name] dated [Date], entitled "[Fill in from Specs]."

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGES</u>
00 00 01	Title 1	#
00 00 02	Title 2	#
00 00 03	Title 3	#
00 00 04	Title 4	#
00 00 05	Title 5	#
00 00 06	Title 6	#
00 00 07	Title 7	#
80 00 00	Title 8	#
00 00 09	Title 9	#
00 00 10	Title 10	#

3. Drawings issued by [Architect Name] dated [Date], entitled "[Fill in from Drawings]."

NUMBER	<u>TITLE</u>	<u>DATE</u>
A-101	Title 1	09/17/2010
A-102	Title 2	09/17/2010
A-103	Title 3	09/17/2010
A-104	Title 4	09/17/2010
A-105	Title 5	09/17/2010
A-106	Title 6	09/17/2010
A-107	Title 7	09/17/2010
A-108	Title 8	09/17/2010
A-109	Title 9	09/17/2010
A-110	Title10	09/17/2010

4. Addendum

(If there are not any addendum to list, insert "Not Applicable" here. Do not delete/renumber this section.)

5. Alternates

(If there are not any alternates to list, insert "Not Applicable" here. Do not delete/renumber this section.)

6. Other Documents

(If there are not any other documents to list, insert "Not Applicable" here. Do not delete/renumber this section.)

End of Exhibit "C"

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Exhibit "D"

Bonds

A Performance Bond and a Labor and Material Bond are to be furnished as part of this Subcontract. The Subcontractor will submit bonds to the Contractor for acceptance.

The Contractor will pay the cost of the bonds directly to the Subcontractor's bonding company from an invoice submitted by the Subcontractor's bonding company.

Additional bond costs incurred from changes in work will be the responsibility of the Subcontractor.



A Performance Bond and a Labor and Material Bond are to be furnished as part of this Subcontract. The Subcontractor will submit bonds to the Contractor for acceptance.

The bond costs are included in the subcontract amount

Additional bond costs incurred from changes in work will be the responsibility of the Subcontractor.

** Determine which scenario applies to the project and delete the other one

**Delete this text box prior to printing

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Exhibit "D-1"

Subcontract Labor and Material Payment Bond

				BOND NO	
KNOW ALL ME	N BY THESE PF	RESENTS: That [Full	Legal Name an	d Address o	f Subcontractor
from Subcontra	act Cover] as Pri	ncipal, hereinafter calle	ed Principal, and		

(Name and Address of Surety)

as Surety, hereinafter called Surety, are held and firmly bound unto J.T. Vaughn Construction, LLC ("VAUGHN"), hereinafter called Obligee, for the use and benefit of all persons or entities supplying labor, materials or equipment, directly or indirectly to Principal, in the amount of **[CONTRACT AMOUNT IN WORDS]** DOLLARS \$(**[Contract Amount in Numbers]**) for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated [Subcontract Date] entered into a Subcontract with VAUGHN for [Scope from Subcontract Cover (Vaughn Project No. XXXX-XX)] in accordance with Drawings and Specifications prepared by [Architect Name], which Subcontract is by reference made a part hereof, and is hereinafter referred to as the Subcontract.

If the Principal shall promptly make payments for all labor, material and equipment directly or indirectly used, incorporated or consumed, in the performance of the Subcontract, then this bond shall be null and void; otherwise it shall remain in full force and effect, subject, however, to the following conditions.

1. NOW THEREFORE, the condition of this obligation is such that the Subcontractor shall make prompt payment to all claimants for all costs and expenses resulting from the performance of the Subcontract and for all labor, materials, equipment, supplies, services and the like, used or reasonably required directly or indirectly for use in the performance of this Subcontract, failing which such claimants shall have a direct right of action against the Subcontractor and Surety under this obligation, then this obligation shall be null and void, otherwise, it shall remain in full force and effect;

AND PROVIDED, that any alterations which may be made to the terms of the Subcontract or in the work to be done under it, or the given by the Obligee of any extension of time for the performance of the Subcontract, or any other forbearance on the part of either the Obligee or the Subcontractor to the other shall not in any way release the Subcontractor and the Surety, or either of them, their heirs, executors, administrator, successors or assigns, from their liability hereunder, notice to the Surety of any such alteration, extension of forbearance being hereby waived.

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Exhibit "D-1"

AND PROVIDED FURTHER, that any increase in the Subcontract amount shall automatically result in a corresponding increase in the penal amount of the bond (limited to 20% of the original subcontract amount) without notice to or consent from the Surety, such notice and consent being herby waived. Decreases in the Subcontract amount shall not, however, reduce the penal amount of the bond.

Signed and sealed this	day of	A.D.,
IN THE PRESENCE OF:		
	(Principal)	(Seal)
(Witness or Attest)	Ву:	
	Title:	
	(Name of Surety)	(Seal)
	By:(Attorney In Fact)	

A properly executed power of attorney must be attached hereto.

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Exhibit "D-2"

Subcontract Performance Bond

	BOND NO.
KNOW ALL MEN BY THESE PRESENTS: That [Full Legal Name ar	nd Address of Subcontractor
from Subcontract Cover] as Principal, hereinafter called Principal, and	

(Name and Address of Surety)

as Surety, hereinafter called Surety, are held and firmly bound unto J.T. Vaughn Construction, LLC ("VAUGHN"), hereinafter called Obligee, for the use and benefit of all persons or entities supplying labor, materials or equipment, directly or indirectly to Principal, in the amount of [CONTRACT AMOUNT IN WORDS] DOLLARS \$([Contract Amount in Numbers]) for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, for the performance of the Subcontract set forth below, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated [Subcontract Date] entered into a Subcontract with VAUGHN for [Scope from Subcontract Cover (Vaughn Project No. XXXX-XX)] in accordance with Drawings and Specifications prepared by [Architect Name], which Subcontract is by reference made a part hereof, and is hereinafter referred to as the Subcontract.

NOW THEREFORE, the parties agree as follows:

- 1. <u>EFFECT OF OBLIGATION</u>. If the principal faithfully performs all of its obligations under the Subcontract, then this bond shall be null and void; otherwise it shall remain in full force and effect.
- 2. <u>ALTERATION NOTICE WAIVER</u>. The Surety hereby waives notice of any alteration or extension of the Subcontract, including but not limited to the Subcontract price and/or time, made by the Obligee. Any increase in the Subcontract amount shall automatically result in a corresponding increase in the penal amount of the bond (limited to 20% of the original subcontract amount) without notice to or consent from the Surety, such notice and consent being herby waived. Decreases in the Subcontract amount shall not, however, reduce the penal amount of the bond.
- 3. <u>PRINCIPAL DEFAULT</u>. Whenever the Principal is declared by the Obligee to be in default under the Subcontract, the Surety agrees to meet with Obligee at the Project site within ten (10) days of Principal being declared in default and may either promptly remedy the default, or shall promptly:
 - 3.1 <u>COMPLETE SUBCONTRACT</u>. Complete the Subcontract in accordance with its terms and conditions; or

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Exhibit "D-2"

- 3.2 OBTAIN NEW CONTRACTORS. Promptly obtain a bid or bids formally, informally or negotiated for completing the Subcontract in accordance with its terms and conditions, and upon determination by the Surety of the lowest responsible bidder, or negotiated proposal, or, if the Obligee elects, upon determination by the Obligee and the Surety jointly of the lowest responsible bidder, or negotiated proposal, arrange for a a contract between such party and the Obligee. The Surety will make available as work progresses sufficient funds to pay the cost of completion less the balance of the contract price. The cost of completion includes responsibilities of the Principal for correction of defective work and completion of the Subcontract, any legal and design professional costs resulting directly from the Principal's default, any liquidated damages or actual damages and any other costs incurred by the Obligee resulting from the default. The term "balance of the contract price", as used in this paragraph 3, shall mean the total amount payable by the Obligee to the Principal under the Subcontract and any amendments to it, less the amount paid by the Obligee to the Principal, or
- 3.3 PAY THE OBLIGEE the penal amount of the bond, promptly after default of the Principal.
- 4. <u>TIME FOR SUIT</u>. Any suit under this bond must be instituted before the expiration of four years from the date the right of action accrues.

	of action shall accrue on this bon med herein, its heirs, executors, a		• •
Signed and sealed this	day of	A.D.,	
IN THE PRESENCE OF:			
(Witness or Attest)	(Principal) By: Title:		(Seal)
	(Name of Surety) By:(Attorney In Fact)		(Seal)

A properly executed power of attorney must be attached hereto.

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Exhibit "E"

For project subcontract number **[Subcontract Number]** only, for **[Project Name]**, the terms and conditions of the Master Subcontract Terms and Conditions No. **[Master Number]**, between Vaughn Construction and **[Subcontract Name]** are hereby modified as follows:

1. Article 8.20: Replace with:

Indemnity -

- In exchange for good and a) valuable consideration. Subcontractor shall indemnify, hold harmless and defend Contractor, Owner and Architect and all of their consultants, agents, officers, representatives and employees (the "Indemnitees") from and against all claims, damages, liabilities, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from its Work, provided that any such claim, damage, loss, or expense (a) is attributable to bodily injury, sickness, disease, or death, or fine, penalty or other action brought or assessed by a governmental entity, or to injury to or destruction of tangible property, including the loss of use resulting therefrom, and (b) is caused in whole or in part by any negligent act or omission of Subcontractor or anyone directly or indirectly employed by it or anyone for whose acts it may be liable, or is caused by or arises out of the use of any products, material or equipment furnished by Subcontractor.
- b) Except as stated in (c) below, Subcontractor shall indemnify, hold harmless and defend the Indemnitees to the extent Subcontractor's (or anyone directly or indirectly employed by Subcontractor or anyone whose acts Subcontractor may be liable) negligence or wrongful conduct caused such loss, damage or expense.
- c) In the event of any injury or death to an employee of Subcontractor, its sub-subcontractors, vendors or lessors (or any independent contractor thereof), it is the express intention of the parties hereto that the indemnity provided above is intended to indemnify, hold harmless and defend the indemnified parties from consequences of their own real or alleged negligence, whether such negligence to be joint, sole, concurrent, active or passive.
- d) In any and all claims against Contractor, Owner or Architect or any of their agents or employees, by any employee of Subcontractor, or anyone directly or indirectly employed by Subcontractor, or anyone for whose acts Subcontractor may be liable, the indemnification obligation under this Paragraph 8.20 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for Subcontractor under Worker's Compensation Acts, disability benefit acts or other employee benefit acts.

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- e) The obligations of Subcontractor under this Paragraph 8.20 shall not extend to the liability of Architect, its agents or employees, arising out of (1) the preparation or approval of maps, drawings, opinion, reports, surveys, Change Orders, designs or specifications, or (2) the giving or the failure to give directions or instructions by Architect, its agents or employees, provided such giving or failure to give is the primary cause of the injury or damage.
- f) Subcontractor understands and agrees that its obligations of indemnification shall control over any conflicting provision in the Contract Documents and shall survive the termination or expiration of any Project Subcontract. If any portion of this Article 8.20 should be declared invalid or unenforceable, it shall be enforced to the maximum extent allowed by law.

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Exhibit "F"

Project Subcontract [XXXX-XXX]

The Project Subcontract additionally includes, but is not limited to, the following:

- 1. Item
- 2. Item
- 3. Item
- 4. Item
- 5. Item

The Project Subcontract specifically excludes the following:

- 1. Item
- 2. Item
- 3. Item
- 4. Item
- 5. Item

End of Exhibit "F"

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Exhibit "G"

Submittal Coversheet

Date:	
Project:	[Project Name & Number] [Additional Line For Project Name, If Needed] [Address] [City, State & Zip]
Subcontract	tor/Seller:
Submittal D	escription(s):
Specification	n Section(s):
AND/OR S	tor/Seller CERTIFIES THAT THE SHOP DRAWINGS, PRODUCT DATA AMPLES INCLUDED IN THIS SUBMITTAL HAVE BEEN CHECKED AND WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND SITE CONDITIONS, UNLESS OTHERWISE NOTED BELOW.
☐ Deviation	ns
Deviations/0	Clarifications:
	tor/Seller CERTIFIES THAT NO ASBESTOS CONTAINING MATERIALS OF NCLUDED WITHIN THE SCOPE OF THIS PROPOSED SUBMITTAL.
Submitted E	Зу:
(Signature)	
(Printed Nam	ne)
(Title)	

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Exhibit "H"

Worker Wage Rate Notification Form

This notice must be delivered and signed by all workers involved in the project and must list both monetary wages and fringe benefits required to be paid to the worker. For workers engaged in multiple classifications, submit separate Wage Notification forms for each classification upon the beginning of such work.

Project: [Project Name & Number]	
Contractor: Vaughn Construction	
Subcontractor: [Subcontractor Name]	
Employee Name (printed):	
Work Classification: (for this project) (where applicable as	the Employer of the Employee named herein)
Base Rate + Health	n + <u>Pension</u> + <u>Vacation</u> = <u>Total</u>
Wage Rate Required + +	+ =
Actual Wages Paid + +	+ =
	by acknowledge receipt of this notice and by moth the Classification of work to which I have been bosed to be paid to me for such work. Attest:
Employee Signature	Witness
Date	Witness Printed Name
	Date

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Exhibit "[I or I-1, I-2, etc.]"

Warranty - Guarantee

To:	J.T. Vaughn Construction, LLC 10355 Westpark Drive Houston, Texas 77042-5312
And:	[Owner Name] [Address] [City, State, Zip]
Descr	ndersigned, being first duly sworn, says: We hereby warrant and guarantee the [Scope iption] which we have furnished and/or installed for the [Project Name] (Vaughn Project roject No.]) for TWO year(s) from the date of Substantial Completion.
may be other p	ree to repair or replace to the satisfaction of the Architect or Owner any and all work that a defective in workmanship or material within the period stated above, together with any property which may be damaged or displaced by our defective work, or damaged or ced in repairing or replacing the work.
Any re	pairs or replacements shall be in accordance with project plans and specifications.
time at	event of our failure to comply with the above mentioned conditions within a reasonable fter being notified in writing, we hereby authorize Owner and/or Contractor to proceed to lefects repaired and made good at our expense, and we will pay the costs and charges one immediately upon demand.
Subco	ntractor/Seller: [Sub/Vendor Name]
Signed	d:
Ву:	
Its:	

Printed Name: _____

My Commission Expires:

Notary Public

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Subscribed and sworn to before me on this _____ day of ______, _____.

Exhibit "K"

Electronic Information

Subcontractor acknowledges that in order to help facilitate the exchange of information related to the Project, Contractor may provide information in an electronic format (Electronic Information). Subcontractor acknowledges that any information made available in an electronic format in no way changes, deletes, adds to, modifies or alters in any way the Contract Documents, or any requirements of this Subcontract.

Subcontractor agrees to assume all risks associated with the use of any Electronic Information and shall indemnify, protect, hold harmless and defend Contractor, Owner and Architect and all of their consultants, agents, officers, representatives and employees from and against all claims, damages, liabilities, losses and expenses including but not limited to attorney's fees, arising out of or resulting from the use of the Electronic Information provided to them.

Subcontractor agrees that Electronic Information is not intended to provide the level of detail needed in order to extract precise material or object quantities, and that the apparent accuracy of Electronic Information is an artifact of the techniques used to generate it and is in no way intended to imply actual accuracy.

Subcontractor agrees that the translation of Electronic Information from one computer system or environment to another may cause the loss of data and that this data may be integral and important to the Electronic Information. Subcontractor further agrees that there may be changes to the Contract Documents which are not included in the Electronic Information, and that Subcontractor is responsible for verification and comparison to the Contract Documents.

Subcontractor shall indemnify, protect, hold harmless and defend Contractor for any legal liability arising from the loss, damage, distorted or erased documents, and all cost and charges incurred by Subcontractor, whether actual or consequential, in replacing or restoring such documents caused by the transmission of a computer virus, worm, time bomb, logic bomb or other such computer program in association with the Electronic Information.

Subcontractor agrees that the Electronic Information may include proprietary and or copyrighted information and that they will not use the Electronic Information for any purpose other than as a source of information. The Electronic Information is not to be used for commercial gain or be traded or sold in any manner.

End of Exhibit "K"

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Section 5 – Diversity Program Plan

It is the policy of the Houston First Corporation and Vaughn to actively seek the involvement of Diversity Companies which includes minority-owned and women-owned businesses). and Small, Minority, and Women Owned Business enterprise (SMWBE) in its construction projects as prime contractor, subcontractors, and materials suppliers. Further, state law requires each state agency, including the Houston First Corporation, to make a good faith effort to assist Diversity Contractors to receive not less than 34% of the total value of each construction contract awarded.

Each respondent is required to complete the HUB Subcontracting Plan (HSP).

Attachment 1: Diversity Program see attached



Diversity Program

Instructions to Bidders/Proposers

A. Overview of Policy

Houston First Corporation ("HFC") is dedicated to promoting the growth and development of minority, women, and small and historically underutilized businesses by providing robust opportunities to participate in its procurement and service contracts. In support of this commitment, HFC has established a Diversity Program to ensure the maximum practicable inclusion of certified, diverse contractors and suppliers who can provide quality goods and services at competitive rates in all areas of its operations. It is the policy of Houston First Corporation to prohibit discrimination based on race, sex, religion, national or ethnic origin, age, or disability.

HFC's policy is to strive for competitive pricing, qualifications and demonstrated competencies in the selection of all contractors. The Program is designed to create opportunities, while requiring competitiveness and quality of work. The Program allows HFC to target more effectively and continuously improve the participation of minorities, women and small and historically underutilized businesses in contracting and procurement activities.

As a local government corporation created by the City of Houston, HFC recognizes the City of Houston's efforts to stimulate the growth of local small, minority, women and historically underutilized business enterprises by encouraging full participation of these businesses in various areas of city contracting. HFC has a contractual commitment to make good faith efforts to award contracts to certified minority and women-owned business enterprises and has adopted this commitment as part of this Program.

Nothing in the Program shall be construed to give a bidder or proposer ("Contractor") any right or interest prior to the award and full execution of a contract. Compliance with all statutory and legal requirements is expected of all Contractors.

Contractors should also be sure that the MWBE subcontractor is certified as of the date that HFC receives the bid/offers and should provide verification by attaching certification certificates of all MWBEs identified to respond to meeting the Contract Goal.

To ensure that the Contractors are meeting participation goals for the project, the following enclosures are attached to these instructions:

- Contractor Utilization Plan
- Letter of Intent
- MWBE/HUB Unavailability Certification Form

Contractors are required to submit the appropriate enclosures along with <u>complete</u> documentation of Good Faith Efforts accomplished to meet the goal. Failure to provide <u>complete</u> documentation of good faith efforts <u>may</u> result in your bid/proposal being deemed non-responsive.

B. Contract Goal

An MWBE/HUB contract goal has been established as part of this solicitation. Accordingly, Contractors are required to use good-faith efforts to utilize certified businesses to meet the goal.

1. Meeting the Contract Goal:

Contractors may meet the MWBE/HUB contract goals by subcontracting portions of the work to currently certified businesses that perform a "Commercially Useful Function," which means a discrete task or group of tasks performed by a business by using its own forces or by actively supervising on-site the work by another business for whose work the certified business is responsible. An MWBE/HUB will not be considered to be performing a Commercially Useful Function if it subcontracts more than seventy five percent (75%) of a contract being counted toward the applicable participation goal. Contractor may count toward its MWBE/HUB contract goal its expenditures for materials and supplies required under the contract and obtained from a certified business, provided that the business assumes actual responsibility for the provision of materials and supplies.

2. The Responsive Contractor:

To be considered a responsive Contractor as related to the MWBE/HUB contract goal, a Contractor must meet the goal referred to in the solicitation or make a documented good faith effort to attain the goal.

3. The Responsible Contractor:

The responsible Contractor must submit with a bid or proposal a Contractor Utilization Plan with the following to comply with the Program:

- a. Names and addresses of certified MWBE/HUB participating subcontractors and the work they are to perform,*
- b. The dollar value of each proposed certified MWBE/HUB contract,
- c. Project work start and completion dates, and
- d. Documentation of good faith efforts, if applicable.

* NOTE: No changes will be allowed to the MWBE/HUB names listed after the response is submitted without prior written approval from the HFC President.

4. Enclosures 1-3:

Requirements for the Program are addressed in Enclosures 1-3. Contractors must complete and return applicable enclosures.

Enclosure 1 - Contractor Utilization Plan Form

This document must be submitted by the Contractor for every MWBE/HUB subcontractor/consultant Contractor used to meet the goal. It must contain the information specified and must be signed by the Contractor. No changes may be made to the MWBE subcontractors listed and no additional MWBE/HUB subcontractors can be provided after responses have been submitted without prior written approval from the HFC President. A copy of the current MWBE/HUB certificate for each listed entity must be attached in order for the MWBE/HUB subcontractor/consultant to be counted toward the assigned MWBE/HUB goal.

Enclosure 2 - Letter of Intent

This document must be submitted by the Contractor for all the listed MWBE/HUB subcontractors/ consultants listed on the **Contractor Utilization Plan Form**. This document verifies the intent of the Contractor to enter into a contract with the MWBE/HUB if awarded the contract. The Letter of Intent should be signed by both the MWBE and the non-MWBE/HUB Contractor.

Enclosure 3 – MWBE/HUB Unavailability Certification Form

This document must be submitted if the Contractor is unable to locate or contract with MWBE/HUB firms to meet the applicable goal. Contractor must document its Good Faith Effort to offer portions of the work to MWBE/HUBs, advertise and provide information to the MWBE/HUB community regarding contract opportunities on the project.

C. <u>Compliance/MWBE</u> Certification:

The following are acceptable certification sources:

- City of Houston
- Houston Minority Supplier Development Council
- METRO's Small Business Certification Program
- Women's Business Enterprise Alliance
- Texas Department of Transportation's Unified Certification Program
- Texas Small Business Association

D. Responsibilities of Contractors

Contractors are required to make Good Faith Efforts to achieve their Contract Goal. The term "Good Faith Efforts" shall mean all commercially reasonable efforts necessary and practicable to increase the opportunities available to certified businesses in order to meet the applicable Contract Goal. Specific examples of Good Faith Efforts include, but are not limited to, the following:

- 1. Delivering of written notice of subcontracting opportunities on eligible contracts to the appropriate and industry-specific certified businesses;
- 2. Utilizing local or targeted newspapers, periodicals and local small business and minority and women-focused associations and websites for notice purposes regarding subcontracting opportunities;
- 3. Responding to requests for information from certified businesses regarding the eligible contract;
- 4. Ensuring that written notices contain the following:
- a. adequate information about the plans, specifications, and relevant terms and conditions
 of the contract and about the work to be subcontracted to, or the goods to be obtained
 from, subcontractors and suppliers;
- b. a contact person with the proposer's office to answer questions;
- c. information regarding the proposer's bonding and insurance requirements; and
- d. the last date for receipt by the proposer of certified business price quotations.
- 5. Attending any special pre-proposal meeting called to inform businesses of subcontracting or supply opportunities, if set forth in the proposal documents;
- 6. Dividing tasks within the eligible contract, in accordance with normal industry practice, into small, economically-feasible segments that can be performed by certified businesses;
- 7. Developing internal policies and procedures and designating an employee to monitor compliance with the Program;
- 8. Documenting and maintaining accurate and accessible records of such Good Faith Efforts to utilize women-owned, minority-owned and small-business programs;
- 9. Attending compliance meetings as requested by HFC;
- 10. Negotiating written contracts with certified businesses in good faith to provide goods or services related directly to the eligible contract; and
- 11. Submitting completed reports required by contract or requested by HFC completely and in a timely manner.

E. Termination of MWBE/HUB Subcontract:

Contractor shall not terminate a MWBE/HUB subcontractor for convenience and then perform that work with its own forces or its affiliate without the HFC President's prior written approval.

F. <u>Defaulting MWBE Subcontractors</u>:

Contractor must make a good faith effort to replace a defaulting MWBE/HUB with another certified MWBE/HUB. Contractor must notify HFC immediately of the MWBE's/HUB's inability to perform and of the intent to obtain a substitute certified MWBE/HUB. Contractor must provide HFC with reasonable documentation of the defaulting subcontractor's inability to perform, as well as Contractor's good faith efforts to come to terms with the MWBE/HUB subcontractor. The substitute MWBE/HUB must receive prior written approval by HFC's President. When Contractor obtains a substitute MWBE/HUB, Contractor will notify HFC and provide copies or descriptions of the new or amended subcontracts and a certification for each new MWBE/HUB.

G. Failure to Comply:

If HFC finds that Contractor has failed to comply with the requirements of this Program, then HFC will notify Contractor in writing. Contractor shall immediately take corrective action. If Contractor fails or refuses to comply in the time specified, HFC may issue an order to delay all or part of payment until satisfactory action has been taken. If Contractor continues non-compliance, HFC may recommend an issue of termination for default of contract.

H. Records and Documents:

It is Contractor's responsibility to maintain records and documents that indicate compliance with the Program for three (3) years following the performance of the contract. Those records shall be made available at reasonable times and places for inspection upon request by HFC, with any other compliance information that HFC may require. This reporting requirement is also extended to any certified MWBE/HUB subcontractor.

I. Reporting:

To ensure that the MWBE/HUB contract goal is met by Contractor, Contractor must provide the following documentation each month as a requirement for processing all invoices for payment.

1. Progress Assessment Report of Work Subcontracted

This form must be submitted by Contractor and will be used to provide a cumulative account of Contractor's participation level in various work categories. The form should also be signed by Contractor and submitted with each monthly invoice as a requirement for payment processing.

2. Subcontractor/Contractor Partial Release of Liens Payment Certification

This document must be submitted for each MWBE/HUB subcontractor/supplier on the project and submitted with each invoice. It will be required documentation for payment processing. It will be used to verify that MWBEs/HUBs are being paid and to verify the progress of their contracts.

3. Subcontractor/Consultant Payment Certification

This document must be submitted for each MWBE/HUB subcontractor/consultant on the project and submitted with each invoice. It will be required documentation for payment processing. It will be used to verify that each MWBE/HUB is being paid and to verify the progress of their contracts.

Additionally, the following documents are required as indicated.

1. Affidavit of MWBE/HUB Contractor Change

This document is used by the Contractor to request approval for changing a MWBE/HUB subcontractor presently working on the project. The document should include the name of the

- subcontractor removed from the project, the scope of work performed by the subcontractor, the existing contract value, and the reason for the change.
- **2.** Each Contractor shall, upon request, provide a copy of the MWBE/HUB firm's scope of work and subcontract agreement or letter of intent that describes the anticipated services the MWBE/HUB firm will provide.
- 3. When the contract expires or is terminated, an "End-of-Contract Report" must be submitted to HFC. The "End-of-Contract Report" must include all information noted on the Progress Assessment Report. This report will list final payments to all MWBE/HUB subcontractors to ensure that the actual amount paid to the MWBE/HUB subcontractors equals or exceeds the dollar amounts stated in the Enclosure. All discrepancies must be noted and explained.

J. Payments:

Contractor must pay MWBEs/HUBs for satisfactory performance of their contracts by contract or no later than ten business days from the receipt of payment made to Contractor by HFC. Prompt return of retainage payments from Contractor to the MWBE/HUB shall be made by contract or within ten business days after the subcontractor's work is satisfactorily completed. Failure to comply with the above may be considered to be a breach of contract.



CONTRACTOR UTILIZATION PLAN

Respondents' Total Bid Value:	
Nesdonacius I diai dia vaide.	· · · · · · · · · · · · · · · · · · ·

	BUSINESS TYPE (Prime, Subcontractor, Supplier, Consultant)	BUSINESS STATUS (MWBE, HUB)	TYPE OF MEANINGFULWORK TO BE PERFORMED	START DATE	END DATE	APPROX. DOLLAR VALUE	% OF PRIME BID VALUE
Business Name:							
Business Address:	4						
Telephone #:	4						
Contact Person:							
Business Name:							
Business Address:							
Telephone #:							
Contact Person:							
Business Name:							
Business Address:	1						
Telephone #:							
Contact Person:	1						
TOTAL CONSULTANT							
TOTAL SUB-CONTRACTOR							
TOTAL SUPPLIER							_
GRAND TOTAL							

Company Name:			
(Signature)	(Title)	(Date)	



LETTER OF INTENT

The undersigned contractor and MWBE/HUB subcontractor will enter into a formal agreement for the work listed on the Contractor / Consultant / Supplier Utilization Plan form conditioned upon the contractor's execution of a contract with Houston First Corporation (HFC).

MWBE/HUB Name:		_
Address:		
		NOTICE
Telephone #:		% of the dollar value of this MWBE/HUB subcontract will be sublet and/or awarded to a non-
Scope of Work:		MWBE contractor and/or non-
		MWBE supplier/consultant
Start Date:		-
Projected Completion Date:		_
Estimated Contract Value:		_
MWBE/HUB Subcontractor Company Name:		
[signature]	[title]	[date]
Contractor Name:		
[signature]	 [title]	 [date]



MWBE/HUB UNAVAILABILITY CERTIFICATION

l,		of
[name]	j]	itle]
, certify th [company]	at the following efforts were m	ade to meet the MWBE Goal on
Bid/RFP #		
[please attach any additional efforts that	do not fit on this form]	
Did a Contractor representative attend the	e pre-bid/proposal meeting? Yo	es No
Newspaper Advertisement Log: (attach co	opies of ads):	
Newspaper/Publication	Type of Publication Minority/General/Trade	Dates of Advertisement

• Selected portions of the work to be performed by MWBEs:

Work Categories	Type of Bid (Subcontractor or Supplier)	Contractor's Estimated Budget	Additional Comments

any specific offers	s made by responder	itj		
Solicited the follow	ving MWBEs/HUBs: Name of MWBE/HUB Firm	Contact Person	Phone #	Work Categor
Followed up with i Date	nitial contacts: Name of MWBE/HUB	Phone #	Bidding (Yes or No)	Additional Comments
	Name of	Phone #		
Date	Name of MWBE/HUB		No)	Comments
	Name of MWBE/HUB	Phone # s, organizations in recruit Organization	ment of MWBEs/HUBs	Comments

Section 6 – Special Provisions For Trade Contractors/Suppliers

These Special Provisions are in addition to the requirements of the Uniform General and Supplementary Conditions and the Special Conditions of the Contract and are part of the Contract Documents. These Special Provisions do not override or modify any contract provisions between the Owner and Vaughn Construction.

This section describes the relationship between the Vaughn Construction and the Trade Contractor/Supplier and is intended to clarify which Trade Contractor/Supplier has been allocated responsibility by the Vaughn Construction for particular items or activities. These requirements shall govern in the event of any conflicts with any other sections of the Project Manuals.

Building Layout

Vaughn Construction will provide a minimum of two (2) permanent benchmarks for use of all Trade Contractors at each building floor level. Vaughn Construction will provide a minimum of two (2) control points at each building floor level, for the use of all Trade Contractors. Each Trade Contractor will be responsible for all necessary layout to complete their scope of work, specifically including but not limited to, layout of walls by the Trade Contractor performing the wall framing work and layout of all penetrations and embeds by the Trade Contractor performing the work that requires the penetration or embed. The Trade Contractor performing the work shall provide levels, transits, and/or other layout equipment and qualified operators. Each Trade Contractor shall be responsible to verify that the work of the Trade Contractor will function and properly fit as intended prior to the installation of the Trade Contractor's work. Vaughn Construction shall not be held liable for the removal and reinstallation of work upon which Trade Contractor failed to make such verifications prior to installation of work. Trade Contractor is required to immediately report, to Vaughn Construction, any discrepancies discovered in layout that may affect the performance of the Trade Contractor's work.

Cutting, Patching, Boring, Jacking, & Hand Excavation

Each Trade Contractor will provide all necessary cutting, patching, boring, jacking, and hand excavation directly related to their scope of work. Each Trade Contractor performing cutting patching, boring jacking, and/or hand excavation will perform all repairs, fit around, close up, patching, and/or point up as directed to the entire satisfaction of Vaughn Construction and the Architect/Engineer. Trade Contractors understand that at times hand excavation is required in order to perform the work safely and will be required but is not limited to areas around Metro materials and equipment and for final connections.

Embeds & Sleeves

Each Trade Contractor will provide all necessary embeds and sleeves directly related to their scope of work. Each Trade Contractor shall also be responsible for all sealing and firesafing associated with sleeves directly related to Trade Contractor's scope. The Trade Contractor will be required to fill each sleeve with the appropriate product as applicable to prevent migration of moisture, sound, and/or fire stop. The fire stop application by an FM Global 4991 approved fire stop contractor.

Project Facilities

It is unlikely that space will be available on the project site for Trade Contractor trailers and storage facilities. Vaughn Construction will not provide trailers, storage sheds, and/or any facilities for use of the Trade Contractor(s). Space at the project site, if available, will be very limited, and use by Trade Contractor(s) will be at Vaughn Construction's sole discretion.

Lifting, Hoisting, and Scaffolding

Vaughn Construction will not provide any hoisting, scaffolding, tools, apparatus, or cranes. Each Trade Contractor will provide scaffolding, cranes, tools, and hoisting as required to perform their scope of work. All hoisting, scaffolding, tools, apparatus, and/or cranes provided by Trade Contractor(s) will be erected, used, and dismantled in accordance with all local, state, and federal regulations and guidelines.

Temporary And Permanent Shoring:

Vaughn Construction will not provide any shoring. Each Trade Contractor will provide all shoring required to perform their scope of work and assume responsibility for this work and make good any damages caused by improper supports or failure of shoring in any respect.

Existing Utilities, Subsurface Lines, and Cables

To the extent the existence thereof is reflected in any survey or other written materials that have been provided to the trade contractor, the trade contractor shall be responsible for determining the existence and location of subsurface lines, cables and pipes within the site. Because the Contract Documents are complementary, the trade contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as any information furnished by Vaughn, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. The Trade Contractor shall promptly report to Vaughn any errors, inconsistencies or omissions discovered by or made known to the Trade Contractor as a request for information in such form as Vaughn may require. Before performing any portion of the Work, the Trade Contractor shall fully investigate all physical aspects of the Project site and verify all utility locations, existing improvements including Metro, surface conditions, drainage of surface and general suitability of conditions at the Project site.

Existing Conditions

The Trade Contractor shall protect all adjacent construction and existing surfaces from damage. In addition, the Trade Contractor shall promptly report to Vaughn any nonconformity discovered in the Contract Documents with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities (nothing in this sentence shall release or relieve Trade Contractor from its obligations with regard to compliance with laws governing the means and methods of construction) as a request for information in such form as Vaughn may require.

If the Trade Contractor fails to perform the obligations regarding reporting then the Trade contractor shall be required to pay such costs and damages to Vaughn as would have been avoided if the Trade Contractor had performed such obligations.

Project Clean Up

All Trade Contractors will be required to perform daily cleanup of debris, dirt, and all materials generated by their scope of work with disposal to a Vaughn designated location on or near the project site.

Dust Control

In an effort to reduce and limit areas of dust and dust creating activities Vaughn has set forth the following guidelines. When winds exceed 35 mph all areas of dust will be covered with water and dust creating activities will be limited or suspended at the superintendent's discretion. Water will be applied in numerous ways including manual application, spray from a water tank designated for dust control, or mobile application through a water truck. All open bodied trucks that

service the site will be required to cover their loads upon entry and exit of the construction site. At the superintendent's discretion, all stockpiles of particulate material will be covered or sprayed with water to hinder large areas of dust that might accumulate. Equipment operators will be advised to operate their machinery creating the least amount of free falling soil or particulate matter as possible to perform their task. Vaughn will continuously monitor equipment operators to ensure compliance. Tire wash stations will be used by the trade contractors and enforced by Vaughn for the duration of the project to prevent debris from reaching public roadways. They will be located at all major entrances on the jobsite. In addition to the tire wash stations, the earthwork, utility, and concrete structure trade contractors must provide street sweeping with operated equipment capable of collecting the dirt and dust to keep it from becoming air borne similar to an Elgin Crosswind Model J. The earthwork, utility and concrete structure trade contractors must provide fulltime onsite staff to assist with maintaining the dust control plan. It is the Trade Contractors responsibility to assure that their Work has as little effect on the surrounding area as possible.

Temporary Water

The Plumbing Trade Contractor will provide all materials and labor, including any required meters and taps, to provide temporary water to the remaining Trade Contractors. Each Trade Contractor will coordinate location of temporary water service connection and distribution with Vaughn Construction and Owner.

Temporary Electric

The Electrical Trade Contractor will provide all electrical materials and labor, including any required meters, to provide temporary and permanent power to the project site, the building, jobsite equipment for the remaining Trade Contractors including but not limited to crane(s) and hoists. Jobsite equipment that will require temporary power will include, but is not limited to cranes by future Trade Contractors, masonry saws, man lifts, permanent elevators and mechanical equipment for early equipment start up prior to availability of permanent power, and all small tools. Each Trade Contractor will coordinate location of temporary electrical service connection and distribution with Vaughn Construction and Owner. The electrical trade contractor will be responsible for the removal of all temporary power at the end of the project regardless of the trade contractor that performed the initial installation.

Temporary Lighting

The Electrical Trade Contractor will provide all materials and labor to provide temporary lighting (within OSHA standards) to the project site including but not limited to crane lighting and the building interior to facilitate safety, quality workmanship, and appropriate inspection opportunities. Each Trade Contractor will coordinate location of temporary lighting service connection and distribution with Vaughn Construction and Owner. The electrical trade contractor will be responsible for the removal of all temporary power at the end of the project regardless of the trade contractor that performed the initial installation.

Prevailing Wage Guidelines

All Trade Contractors are responsible for compliance with the prevailing wage law in accordance with Houston First Corporation Prevailing Wage Guidelines. Compliance includes submission of wage rate notification forms prior to beginning work for all workers on the project and the providing of certified payrolls submitted to the jobsite on a monthly basis. Refer to Exhibit H located under Section 4 as Attachment 17. Refer to section 10.

Ongoing GRB Operations

All Trade Contractors shall make every effort to avoid disruption to ongoing George R. Brown activities and to maintain a safe environment for visitors in the areas adjacent to the project. Due to the nature of the surrounding facilities, certain activities and deliveries for the project will require coordination and/ or rescheduling. Trade Contractors will not be allowed compensation in the form of monetary or schedule duration as a result of these instances.

Work Hours

Regular work week schedule- 5 days per week / 10 hour shifts. Work weeks with inclement weather and/or Holidays shall still work 40 hours per week minimum with every effort to make up for lost hours on weekends.

Parking

There is no parking available on the site or adjacent to the site for any Trade Contractor or Supplier. All costs for remote parking and transportation to the site will be the sole responsibility of each Trade Contractor or Supplier.

Site Access

All Trade Contractors and Suppliers must obtain advance approval for all material deliveries, truck traffic, equipment delivery, and after hours work from the project Superintendent and must have all the required safety devices, personnel, and apparatuses to perform the delivery and/or installation of work safely and in accordance with all local, state, and federal regulations. Requests shall include size of delivery vehicle, date of delivery, and time of delivery and must be submitted to the Vaughn Construction Superintendent 72 hours in advance of all deliveries with deliveries being conducted before 6:00am or after 6:00pm (M-F) or Saturday and Sunday as scheduled and approved in advance.

Site and Area Maintenance

All Trade Contractors and Suppliers will be required to wash tires prior to exiting the jobsite, clean all streets of mud, dirt, dust control, debris and construction materials related to their scope of work, equipment, or vehicles.

No more than 2 weeks' worth of materials onsite at any given time.

Temporary Safety and Directional Signage

All Trade Contractors and Suppliers will be required to provide temporary Safety and Directional Signage in order to comply with city, state, and federal regulations associated with the installation of the scope work.

Metro Safety

All Trade Contractors shall take precautions for safety of and shall provide reasonable protection to prevent damage, injuries, or loss associated with the active Metro Rail Line or train and related rail facilities on site and running through the site operated by the METRO. All trade contractors will be required to comply with Metro/HRT track safety protocols.

Submittals

Trade Contractors shall provide 6 hard copies of all product data, samples, and shop drawings plus one electronic copy. One electronic copy that has been reviewed will be returned. No substitutions will be reviewed unless a dollar value is provided along with complete descriptive liter-

ature and performance data for the specified item and the proposed substitution, plus any samples as applicable or requested. Vaughn, WHR, and Owner must review and approve before the substitution can be accepted.

Utility Outages

Trade Contractors shall not activate or deactivate any George R. Brown system, or component of any such system, without express written direction from the Owner and Vaughn Construction as coordinated through Vaughn Construction to mitigate impacts to the operational capabilities of the George R. Brown. Major utility outages will require advance notification of 10 working days in writing.

Preconstruction Conference

All Trade Contractors and Suppliers attend a preconstruction conference held by Vaughn Construction.

Preinstallation Conference

All Trade Contractors and Suppliers attend a preinstallation conference held by Vaughn Construction with jobsite foreman/superintendents in attendance.

Meetings

All Trade Contractors and Suppliers while working on site will be required to attend regularly scheduled coordination meetings by a representative with authority to make binding decisions on schedule and costs.

Pre-Task Planning, Daily Reports, and Inspection Notification Request

Submit Pre-Task Planning forms daily to Vaughn jobsite office by 9am for that work day. Daily Reports shall be completed daily and submitted to Contractor by 9am of the following work day. All Trade Contractors must provide prior notification for any and all inspections and submit a preinspection request form to Vaughn Construction.

Changes In the Work

Timeliness for providing cost in the correct format is critical and failure to comply has consequences.

All pricing must be properly itemized and supported by sufficient substantiating data to permit evaluation. For work performed by its forces, the Contractor will be allowed their actual cost for materials, the total amount of wages paid for labor, the total cost of Federal Old Age Benefit (Social Security Tax) and of worker's Compensation and liability insurance, plus bond cost if the change results in an increase in the Bond premium paid. To the total of the above costs, the Contractor will be allowed to add a percentage as noted below to cover overhead and profit combined. Overhead shall be considered to include insurance other than mentioned above, field and office supervisors, and assistants, including safety and scheduling personnel, use of small tools, incidental job burdens, and general home office expenses, and no separate allowance will be made therefore. Allowable percentages for overhead and profit on changes will not exceed 15 percent, for any specific change priced. For Subcontracted Work each affected Subcontractor shall figure its costs, overhead and profit as described above for contractor's work, all subcontractor costs shall be combined, and to that total subcontractor cost the Contractor will be allowed to add a maximum mark-up of 7.5 percent. On changes involving both additions and deletions, percentages for overhead and profit will be allowed only on the net addition. Labor Burden must be approved in advance based upon the criteria in the specifications and noted above.

Progress Payments

Progress payments to subcontractors will be subject to retention of five percent (5%). Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by Vaughn and HFC, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by Vaughn with procedures satisfactory to HFC to establish HFC's title to such materials and equipment or otherwise protect HFC's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site. Without limiting the foregoing, In the event any Application for Payment includes the cost of materials stored at a location other than the site that have been approved by HFC ("Off-Site Materials"), such Application for Payment shall include each of the following: (a) evidence, in the form of Bill of Sale, that HFC holds title to Off-Site Materials, (b) evidence that the Off-Site Materials have been segregated from other materials in the facility and have been appropriately marked to indicate HFC's ownership thereof; and (c) evidence that the Off-Site Materials are insured as required by HFC.

Record Drawings

All Trade Contractors and Suppliers shall update by red line a set of Record Drawings that will be located in the job office trailer weekly in addition to any other requirement regarding record drawings or As Builts in other sections of the specifications or front end documents.

Warranty

The Warranty period is not less than two years. Refer to section 4 attachment 18 regarding the warranty form. Some specifications require longer duration or special warranty requirements which must be provided, unless the requirement is less than the required two year warranty period. The Trade Contractor warrants corrective Work for the same amount of time after, as originally warranted from, the date of completion of the corrective Work.

GRB Existing Load Capacity for construction equipment

The first level exhibit halls have a load limit of 1,000 pounds per square foot. Halls A3 – B3 have a load limit of 400 pounds per square foot. The public areas on the second and third levels have a load limit of 150 pounds per square foot. I will send the freight elevator sizes and capacities for the small freight elevators that service the 2^{nd} level. If we have equipment in the public areas on the second and third levels that exceed the load limit, they will have to use plywood or steel plates to distribute the weight to walk and support the equipment. The carpet will have to be protected during movement and construction. – Based upon email from Owner dated 4/15/2014.

Hilton Garage Load Capacity for Construction

Assume that the live load capacity of the existing Hilton Garage Structure will support 40 lbs per square foot and should not be exceeded by the materials or equipment.

End of Section

Section 7 - Scheduling

Purpose and Scope

- A. This document provides general information about the requirements for the trade contractor's response to the Project Schedule.
- B. The scheduling software required for this project is the latest edition of Primavera (P6). All data required must be submitted in a format compatible with that software. Any additional data required to format and update a cost & resource loaded Primavera P6 schedule that is not included in this section will still be required to be provided by the trade contractor.
- C. Trade contractor refers to a firm that is supplying labor on this project and is contracted directly to Vaughn Construction. Tier contractors refer to any firm that is supplying labor on this project that is not contracted directly to Vaughn Construction. All trade contractors are responsible for supplying the required data from any tier contractor under their scope of work. The information from tier contractors must come through the trade contractors and be formatted uniformly and with the trade contractor data.
- D. For the purposes of this Project, the following are identified as Major Trade Contractors: Demolition, Cast in Place Concrete, Structural Precast Concrete, Masonry, Glass and Glazing, Elevators & Escalators, Fire Suppression, Plumbing, HVAC, Electrical and Utilities.
- E. Respondent refers to a firm that submits a proposal on this project. Requests for additional information from respondents by Vaughn Construction do not constitute a letter of intent or a contract offer.

Response to the Preliminary Schedule

- A. Each respondent will provide, with their proposal, an initial schedule for the completion of their scope of work within the milestones of the project.
- B. The information will be used in the evaluation of the respondents, but in no way will limit the trade contractor's requirement to complete their scope of work to allow the project to meet the owners required completion date.

Final Baseline Schedule

- A. Within 14 days of instruction from Vaughn Construction, each respondent or trade contractor will submit the following for approval.
 - 1. Schedule of values with breakdown.
 - 2. Schedule activities including construction activities, submittal preparation, submittal approval, fabrication, mobilization, critical inspections, utility shutdowns, incremental completion milestones, and commissioning activities.
 - 3. Schedule activity detail. For each schedule activity provide:
 - a. Description that generally follows verb, object, floor, area format such as "Install Top Track, Level 4 Area 1". Follow area designation set in preliminary schedule.

- Durations in whole days. No onsite construction activity will be allowed to exceed 15 days.
- c. For sub-tier contractor activities, provide assignments of which activities are to which tier contractors.
- d. The work schedule shall be based on working 6 days a week.
- 4. Activity relationships. Provide relationships between activities in standard Critical Path Method nomenclature. Such as Finish to Start, Start to Start, and Finish to Finish. Provide lags as necessary. All activities to have predecessors and successors except where the predecessor or successors required are out of scope activities.
- 5. Schedule activities to schedule of values comparison. The schedule of values should include a line item of labor and material for each line item in the schedule. Once approved by Vaughn Construction then this will be used as a basis for the monthly pay application.
- 6. Major trade contractors will participate in meetings regarding the schedule with personnel who have the ability to make binding decisions for the company.
- 7. Comments, notes, required revisions from Vaughn Construction must be responded to by the trade contractors within three (3) working days.

Monthly Updates

- 1. By the 15th of each month, all trade contractors are to provide:
 - a. Schedule update.
 - b. Submittal schedule: A detail list of all unapproved submittals and information of their status. For un-submitted information, provide expected date of submission.
 - c. Procurement log with updated delivery times for all major equipment and materials. Include contact information from suppliers, date of last contact, and notes. Provide information of any approved materials not in production and why.

Note- Vaughn may require the schedule updates to be provided from some Trade Contractors every two weeks and this effort will not result in any additional compensation to the Trade Contractors.

End of Section

Section 8 – Proposal Form				
Date:				
Proposal of	Of: (Name)			
	(Address)			
	(Telephone No.)			
	(Email Address)			
10 Ho At	aughn Construction 0355 Westpark Drive ouston TX 77042 tn: Andrew Thompson RBBids@vaughnconstruction.com			
Re: Al	DLA/GRB Renovations - George R Brown Convention Center Improvements			
Dear Sir:				
Constructi Specificat Constructi Purchase undersign	irefully examined the State of Texas Uniform General Conditions for Building ion, Vaughn Construction's Contractor's Supplemental Specifications, the Plans and ions, and addenda thereto, as prepared by WHR, the Architect on this project, Vaughn ion's Master Subcontract Terms and Conditions and Project Subcontract forms (or Order forms), as well as the premises and all the conditions affecting the work, the ed proposes to furnish all labor, materials, and equipment necessary to achieve final n of the work defined in accordance with the Contract Documents for the following sum:			
-	m General Conditions Amount (based on \$5,000,000 cost of work) \$a detailed list of all General Conditions cost)			
Foo Porce	entage to be applied to Cost of Work (based on \$5,000,000 cost of work			

____%

Excl	lusi	ons	•
	usi	0113	•

List of numbered exclusions. If Respondent feels they cannot comply with any specific items and cost for any such items is not included in this proposal, those items must be listed below. Vaughn Construction reserves the right to accept or reject any exclusion in the order of its own choosing.				
				_
				_
Attach additio	onal sheet(s) if neces	ssary.		
Addenda:				
	rehy acknowledged	I of the following adde	nda:	
•		•		
No	No	No	No	No
No	No	No	No	No
Performance	& Payment Bonds	s:		
subcontract/p notification of Vaughn Cons	urchase order and paward and to comm	ded a subcontract/purc provide Performance a nence work on or befor to Proceed; such comr nceed.	nd Payment Bonds verthe commencemer	vithin 10 days after nt date stated by
Bonding Rate	e(s):			
Respondent	's Technical Propo	sal Will Follow:		
proposals and	d to waive proposal	struction reserves the r irregularities. It is furth ety (90) days from the d	er agreed that this B	id shall be valid and
Ву:				

Title:		
Business Address:		
Corporate Seal (If proposal by a corporation)		
Fill in the applicable information: A corporation, chartered in the State of		authorized to do
business in the State of Texas.		
An individual, operating under the name of		
A joint venture, operating under the name of		
the joint ventures are	, and	

End of Section

lauckgroup

Houston First Corporation

The Partnership Tower Houston, TX November 6, 2015

These notes require referral to Floor Plan Test-Fits and corresponding colored Designation Floor Plans, Reflected Ceiling and Power/Signal Plans. Provide your preliminary response on the Excel bid form provided. A meeting to review the plans and answer any questions can be requested by the Bidder upon review of the package.

GENERAL REQUIREMENTS

- These notes are for Preliminary Budget Pricing Only. The Design Team requests your expertise in estimating the construction cost based on these Pricing Documents. Please email your budget pricing (broken down by trade) to jblackwell@vaughnconstruction.com by Thursday, November 19, 2015, 12 PM

 This is not a bid.
- 2 GC to provide a construction schedule with their pricing. Construction start date is currently scheduled for February 15, 2016.
- GC to be Substantially Complete by June 10, 2016. Construction Documents are scheduled to be issued on or before January 8, 2015. If required, other work may follow shortly thereafter.
- 4 Refer to Schedule of Alternates outlined below for additional budget pricing requested. Alternates to be priced separately.
- Refer to the attached Designation Floor Plan outlining extents of millwork, glazing, and flooring finishes and ceiling types.
- 6 All new construction to adhere to City of Houston Building Code/Life Safety regulation and TAS guidelines.
- 7 Base building MEP Engineer to document full MEP set for this project.
- 8 N/A
- 9 This is a new building and first generation build out. Please refer to Building Shell Conditions for further information about building provided construction items.
- Assume Typical Wall Construction to be 4 7/8" wall thickness 3 5/8", 25 ga. metal studs, at 24" o. c. and 5/8" drywall on each side and sound attenuation batting within wall and 4'-0" on either side above ceiling. Exceptions as noted below. Walls to extend to deck at all Conference /Meeting Rooms, Phone Room, and PO1/PO2 Private Offices. PO1 offices (qty. 2) to receive two layers of drywall on each side of studs. New bathroom partitions to receive 3" acoustical insulation & two layers of drywall walls shared with open area.
- Assume ceiling heights to be 12' high at 2nd floor Reception Area. Refer reflected ceiling plan for additional ceiling heights in conferencing center. Assume ceiling heights to be 9'-0" high at all other levels, typ. U.N.O.
- Structural Column Surround: 5/8" gypsum drywall on furring strips/hat channels to underside of ceiling. At areas where power outlets are designated, provide 3 5/6" stud and one layer of 5/8" gyp. Refer power/signal plans.
- Typical Doors, Frames and Hardware: 3' x 9' solid core flush wood clad in plastic laminate Formica or equal, in aluminum frames, Raco or equal, mortised lever locksets, Schlage or equal. Include transom glass over door to 10'6" in aluminum frame.

- 14 Integral sidelites in aluminum Raco frames at all office locations. Assume 1/2" thk. clear tempered glass, 9'-0"h x 3'-0"w. Refer attached glazing plan for additional information on extents of framed glazing.
- 15 Structural glass doors and sidelites: 3'w x 12'h x 5/8"thk. structural glass door with pivots, patch fittings, Dorma Arcos and 48"L satin stainless pull, CRL or equal. Provide 5/8" thk. transom glass above structural glass doors, Dorma Arcos hardware, and above ceiling support as required at Presentation Conference Room. All glazing to be installed in concealed top and bottom channels. Refer attached glazing plan for additional extents of structural glass doors and ½" thk. sidelites.
- 16 Concealed, acoustic wrapped panel flush double doors with top/bottom hinge & closer at Board Room Storage Room. 2 pair.
- Millwork Typical: Plastic laminate upper and lower cabinets with plastic laminate countertops and 4"H plastic laminate backsplashes, U.N.O. Assume 3 drawers per each location with balance as enclosed cabinets w/adj. shelves. Provide cabinet pulls, \$12/piece.
- Assume in-wall fire retardant blocking for all wall hung items, cabinetry, televisions, etc. Assume wall mounted Flat Screen Monitors to be located at all Meeting/Conference Rooms, (2) Reception, (2) Break Room, huddle areas and approx. 20 private offices. Refer power/signal plans for additional locations/information.
- Provide one (1) fully recessed fire extinguisher cabinets to match building standard, assume a total of ten (10) total to be dispersed throughout all floors.
- All walls within area of work to receive building standard latex paint, flat finish, two (2) coats minimum and new 2 ½" rubber base, rolled goods only, U.N.O.
- 21 Provide required Life Safety devices (exit signs, fire alarms, smoke detectors, etc.) as per city codes. Where possible locate these devices on finished ceiling.
- 22 Mechanical, Electrical & Plumbing Notes:
 - a. HVAC. Reuse existing established zones. Provide new supply and return air devices as required to accommodate interior layout. Provide air balance report for comfort balance upon completion of construction. Provide return air boots above ceiling grid as required at any/all deck high wall locations.
 - b. New supply/return devices should match base building standards. Provide new linear slot diffusers and 12"w gyp. board surround at building perimeter.
 - c. No new electrical power panels are anticipated. MEP to advise.
 - d. Electrical supply should be assumed at 6Watts/SF for low voltage power for office suite areas. Verify available panel capacity on tenant's floor.
 - e. Provide new 2x4 fluorescent direct/indirect lighting. Ledalite PureFX or equal. Assume one (1) 2 x 4 light fixture per 100 square feet in open area.
 - f. Refer attached Light Fixture Schedules for lighting packages to be priced.
 - g. All offices to be individually switched, U.N.O. All rooms shall have an occupancy sensor. All open area spaces shall have a ceiling occupancy sensor control.
 - h. All switches, dimmers, strobes, fire alarms, etc. to be stacked within 6" of door jamb @ required heights, U.N.O.
 - i. All equipment and appliances to be provided by the tenant, U.N.O.
 - j. Provide new copper water line for tenant provided coffee. Provide new copper water line and drain at tenant provided under counter ice machines.
 - k. Provide exhaust fan at break room, IDF rooms, spray mount room and private restroom.
 - I. Provide air vent in door at all IDF closets.
 - m. Provide supplemental cooling units and power for second floor conference rooms. Systems shall match Building Engineer's required system choice.
 - n. Provide supplemental cooling unit and power for board room and multi-purpose room. System shall match Building Engineer's required system choice.
 - o. All work shall comply with Building, Mechanical, Electrical, Plumbing, and Energy codes governing this project.
 - p. All new sink locations in Break room and coffee areas to have a garbage disposal.
 - q. Install new sinks with new 2" waste, 2" vent and ½" cold water. Install new water heater with ½" hot water to serve new sink. All break room and coffee sink locations to be

- <mark>heated with an instahot</mark> water heater. New plumbing piping to be routed to building main riser.
- r. Install new floor drain at break room, including 2" waste and 2" vent. Floor drain is to serve water heater drain lines. New plumbing piping to be routed to building main riser.
- s. At new restroom, provide floor drain and lav. Route new 2" cold water /4" waste/ 2" vent serving plumbing fixtures to building main risers. Install new water heater in each toilet room to serve new lavs.
- All offices/workstations to have one (1) personal computer. Assume new private office to have one (1) desktop printer.
- Assume all office to have three (3) duplex outlet boxes, with one (1) designated for PC, one (1) general convenience duplex power outlet and one (1) data/comm. outlet with pull string. Refer attached power/and signal plans.
- New millwork reception desk to be hardwired to wall mounted power/data/comm. junction boxes. Provide power/data/comm. outlet boxes in desk.
- All workstations to be powered from either wall or floor mounted junction. Each workstation to have three (3) duplex outlet boxes, with one (1) designated for PC, one (1) general convenience duplex power outlet and one (1) data/comm. outlet with pull string.
- 27 Medium, Feature, and Formal Conference Rooms to have core drills for power/data and A/V connectivity. Provide hard conduit from core at table to TV at head wall. Coordinate core sizes with A/V and data vendors. Refer attached power/and signal plans.
- 28 Boardroom/Multipurpose Room to have approximately ten (10) floor cores with power/data and three (3) above ceiling junction boxes for ceiling hung flat screen monitors/ceiling mounted projectors. Refer attached power/and signal plans.
- 29 Provided dedicated power outlets at all multifunctional devices and GFI outlets at all appliances and wet wall locations.
- Provide manual operable partition at Boardroom, Hufcor 642 or similar. Single hinged panel, with fabric COM on Board Room side and writable marker board of Multi-Purpose Room side and pocket door for storage side.
- 31 Contractor to provide standard aluminum mini blinds. Allowance of \$120 per window.

1. GENERAL CONSTRUCTION NOTES: SECOND FLOOR

1.1—Lobby

- 1.1.1 By others, for information only: Floors and Base: Porcelain Tile Flooring and 6"H base.
- 1.1.2 By others, for information only: Base Building Walls: Painted gypsum board with vinyl graphic wallcovering at garage entry.
- 1.1.3 Millwork:
 - 1.1.3.1—4"H millwork plinth under artwork to be clad in thin solid surface material, Corian or equal.
 - 1.1.3.2—8'L x 3'-6"W x 8"H millwork box planter clad in thin solid surface material, Corian or equal.
 - 1.1.3.3—19'L x 2'W x 36"H logo feature wall with relief lettering and wall panels in solid surface material, Corian or equal
- 1.1.4 Ceiling and Lighting: Painted gyp. board ceiling surround and wood panel ceiling, Armstrong Woodworks channeled plank, Decoustics

Saint-Gobain, Quadrillo or equal, inset as indicated on plans. Access panels (as required): Intersource Specialties Co. Stylemark Drywall Ceiling Access Doors. CAP-3030 or similar

1.1.5 Lighting:

- 1.1.5.1 6" square LED down lights spaced approx. 6' on center.
- 1.1.5.2—19' recessed linear LED light above feature wall
- 1.1.5.3 Three (3) 3" LED pinlights at feature art.

1.2 Reception

- 1.2.1 Floors and Base: Porcelain tile: Crossville, Marco Corona, Planet, Color: Gray, sizes: 12x24 and 18x36 & recessed wood base, 6" high, painted.
- 1.2.2 Walls:
 - 1.2.2.1 Painted gypsum board
 - 1.2.2.2 Decorative stone tile wall tile behind reception desk: Esmer Champagne light. Corners to be finished with painted wood to match.
 - 1.2.2.3 Wood wallcovering behind banquette and at Multi-Purpose wall: Koroseal Arbor Series, Cherry FC BM1BAA251 100009.

1.2.3 Millwork:

- 1.2.3.1 22'-6"L x 3'-6"W x 8"H millwork box planter clad in thin solid surface material, Corian, or equal
- 1.2.3.2 Provide an allowance of \$25,000 for custom millwork reception desk & Hospitality Bar with stone transaction top.

1.2.4 Special Accessories:

- I.2.4.1 Provide Solarflective ES1 Motorized Shade with Ceiling Mount
 4" Fascia at perimeter glazing with 5% open shade cloth.
 Contact: Architectural Fabric Systems for pricing.
- 1.2.5 Ceiling: Refer attached RCP plans for additional information.
 - 1.2.5.1 Painted gyp. board ceiling throughout
 - 1.2.5.2 Wood ceiling Insets: Armstrong Woodworks channeled plank, Decoustics Saint-Gobain, Quadrillo or equal wood ceiling $\frac{20' \times 15'}{100}$ inset as indicated on plans.
 - 1.2.5.3 Access panels in gyp. board ceiling (as required): Intersource Specialties Co. Stylemark Drywall Ceiling Access Doors. CAP-3030 or similar
- 1.2.6 Lighting: Refer attached RCP plans for additional information.
 - 1.2.6.1 Type D2: 6" double wallwash fluorescent down lights
 - 1.2.6.2 Type C1: 6'-0" Recessed linear fluorescent wallwash behind reception desk.
 - 1.2.6.3 Type C1: 12'-0" Recessed linear fluorescent over banquette and at multi-purpose room wall
 - 1.2.6.4 Decorative pendant: qty. 6, Vibia teardrop or equal.

1.3 Elevator Lobby

- 1.3.1 Floors and Base: Porcelain tile: Crossville, Marco Corona, Planet, Color: Gray, sizes: 12x24 and 18x36 & recessed wood base, 6" high, painted
- 1.3.2 Walls:

- 1.3.2.1 Painted gypsum board.
- 1.3.3 Ceilings: Refer attached RCP plans for additional information.
 - 1.3.3.1 Painted gyp. board ceiling throughout at 10'-6" H. Access panels: Intersource Specialties Co. Stylemark Drywall Ceiling Access Doors. CAP-3030 or similar
 - 1.3.3.2 18"D painted gyp. board soffit at 10'-0" A.F.F as indicated on plans.
 - 1.3.3.3 Wood Panel Ceiling: Ceiling: 16'-6"W x 7'-0"L wood plank ceiling as indicated on plans, Armstrong Woodworks channeled plank, Decoustics Saint-Gobain, Quadrillo or equal.
- 1.3.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information.
 - 1.3.4.1 Type 6" round fluorescent down lights spaced approx. 6' o.c. throughout.
 - 1.3.4.2 Linear recessed LED wall washer (short throw) at accent wall finish 2 walls.

1.4 Hallway

- 1.4.1 Floors and Base: Porcelain tile: Crossville, Marco Corona, Planet, Color: Gray, sizes: 12x24 and 18x36 & recessed wood base, 6" high, painted.
- 1.4.2 Walls: Painted gypsum board at core wall. Direct Glue fabric wallcovering at balance of wall, allow \$25/yard materials only.
- 1.4.3 Ceiling: Refer attached RCP plans for additional information. Painted gyp. board ceiling throughout. Access panels: Intersource Specialties Co. Stylemark Drywall Ceiling Access Doors. CAP-3030 or similar
- 1.4.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture
 Schedules for additional information. 6" square fluorescent down lights
 spaced approx. 8' o.c. throughout

1.5 Medium Conference Room (Qty. 2)

- 1.5.1 Floors and Base: Broadloom carpet, Mohawk Group, Harmonic Vibe KC 172, 00413 Navy Intermezzo & recessed wood base, 6" high, painted.
- 1.5.2 Walls:
 - 1.5.2.1 Painted gyp. bd.
 - 1.5.2.2 Fabric wrapped panels: Fabric wrapped on wood grounds with 2" fiberglass in-fill, butt-joint panels, squared edges.

 Mount with clip angles, typical. Occurs behind millwork. Luna Textiles: Affinity, AFN-5447, Color: Photon.
- 1.5.3 Millwork: 8' linear feet of painted wood lower cabinets with one (1) set of drawers and stone countertop with 8"H backsplash. Walker Zanger Memphis, Honed, Vein.
- 1.5.4 Ceiling: Refer attached RCP plans for additional information. Stretch fabric ceiling system, Eurospan or equal. To align with adjacent gyp. board ceiling. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Ultima tegular tile in 9/16" grid, or USG Mars.

- 1.5.5 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture
 Schedules for additional information
 - 1.5.5.1 6" square fluorescent wallwashers, qty. 4 spaced approx. 2' o.c.
 - 1.5.5.2 6" square fluorescent down lights, on dimmer, qty. 6.

1.6 Feature Presentation Conference Room

- 1.6.1 Floors and Base: Broadloom carpet, Tandus Centina, Style: Full Volume III 60102, Color: Deep Indigo 01353 & recessed wood base, 6" high, painted.
- 1.6.2 Walls:
 - 1.6.2.1 Painted gyp. bd.
 - 1.6.2.2 Direct glue fabric wallcovering: Maharam: Cloak 399561, 001 Puff. Occurs behind millwork.
- 1.6.3 Millwork: 11' linear feet of painted wood countertop with drawers and stone countertop with 8"H backsplash. Walker Zanger Memphis, Honed, Vein.
- 1.6.4 Ceiling: Refer attached RCP plans for additional information.

 Wood wallcovering faced gyp. bd. surround, Koroseal Arbor Series,
 Cherry FC BM1BAA251 100009 with stretch fabric ceiling system,
 Eurospan or equal. To align with adjacent gyp. board ceiling.
- 1.6.5 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. Axis Sketch recessed linear LED in 60" diameter. Contact: Anita Eckhardt with CW Lighting, 713.690.9320.

1.7 Formal Conference Room

- 1.7.1 Floors and Base: Broadloom carpet, Mohawk Group, Harmonic Vibe KC 172, 00413 Navy Intermezzo & recessed wood base, 6" high, painted.
- 1.7.2 Walls: Direct glue fabric wallcovering. Allowance: \$30/yd materials only. Include fabric wrapped acoustical panels, 1/2" thick at plan west wall above millwork allow \$30/yd materials. Painted gyp. board.
- 1.7.3 Millwork: 17' linear feet of painted wood lower cabinets with one (1) set of drawers and stone countertop with 8"H backsplash. Walker Zanger Memphis, Honed, Vein.

1.7.4 Special Accessories:

- 1.7.4.1 Provide Solarflective ES1 Motorized Shade with Ceiling Mount 4" Fascia at perimeter glazing with 5% open shade cloth. Contact: Architectural Fabric Systems for pricing.
- 1.7.5 Ceiling: Refer attached RCP plans for additional information. Painted gyp. board ceiling throughout with recessed stretch fabric cove. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Ultima tegular tile in 9/16" grid, or USG Mars.

- 1.7.6 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information
 - 1.7.6.1 6" square fluorescent down lights, on dimmer, spaced approx. 4" o.c. at gyp. board surround.
 - 1.7.6.2 LED strip lighting at stretch fabric ceiling cove.
 - 1.7.6.3 Provide \$5,000 allowance for new pendant fixture over table.
 - 1.7.6.4 Linear wall washer above millwork, Pinnacle Edge Evolution EV3WW or equal.

1.8 Board Room

- 1.8.1 Floors and Base: Carpet tile: Mohawk 12 x 36 plank. Equal mixture of Hem GT295, Zip It GT296 and InseamGT297, Color: 585 Bootcut & recessed wood base, 6" high, painted.
- 1.8.2 Walls: Painted gypsum board with fabric wrapped acoustical panels at plan North wall and above millwork. Allowance: \$30/yd materials only.
- 1.8.3 Millwork: 15' linear feet of painted wood lower cabinets with two (2) sets of drawers and stone countertop with 8"H backsplash. Walker Zanger Memphis, Honed, Vein.

1.8.4 Special Accessories:

- 1.8.4.1 Provide Solarflective ES1 Motorized Shade with Ceiling Mount 4" Fascia at perimeter glazing with 5% open shade cloth. Contact: Architectural Fabric Systems for pricing.
- 1.8.5 Ceiling: Refer attached RCP plans for additional information. Large format, 4' x 4' acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Ultima tegular tile in 9/16" grid, or USG Mars.
- 1.8.6 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture
 Schedules for additional information. 6" square fluorescent down lights
 spaced approx. 8' o.c. around boarder

1.9 Multi-Purpose Room

- 1.9.1 Floors and Base: Carpet tile: Mohawk 12 x 36 plank. Equal mixture of Hem GT295, Zip It GT296 and InseamGT297, Color: 585 Bootcut & recessed wood base, 6" high, painted.
- 1.9.2 Walls: Painted gypsum board with fabric wrapped acoustical panels at plan North wall and above millwork. Allowance: \$30/yd materials only.
- 1.9.3 Millwork: 16' linear feet of painted wood lower cabinets with two (2) sets of drawers and stone countertop with 8"H backsplash. Walker Zanger Memphis, Honed, Vein.

1.9.4 Special Accessories:

1.9.4.1 Provide Solarflective ES1 Motorized Shade with Ceiling Mount 4" Fascia at perimeter glazing with 5% open shade cloth. Contact: Architectural Fabric Systems for pricing.

- 1.9.5 Ceiling: Refer attached RCP plans for additional information. Large format, 4' x 4' acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Ultima tegular tile in 9/16" grid, or USG Mars.
- 1.9.6 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture
 Schedules for additional information. 6" square fluorescent down lights
 spaced approx. 8' o.c. around boarder

1.10 Galley

- 1.10.1 Floors and Base: Porcelain tile flooring, allow \$9 SF materials only & recessed wood base, 6" high, painted. Resilient Flooring Tile: Armstrong Excelon Stonetex, 52147 Pumice Stone with 2 ½" H rubber base, Roppe or equal, rolled good only.
- 1.10.2 Walls: Painted gypsum board.
- 1.10.3 Millwork: 14' linear feet of plastic laminate lower cabinets with quartz countertops, Zodiaq Cloud White, and full height plastic laminate backsplash. Assume 3 drawers with the rest being enclosed cabinets w/adj. shelves. Provide one (1) 24" wide millwork tower for storage. \$12/ a piece for cabinet pulls. Provide decorative tile on wall behind millwork. Provide \$15/SF installed.
- 1.10.4 Appliances: Refrigerator, coffee and under counter ice machine by tenant. Provide waterline at refrigerators and coffee. Provide waterline and drain as required at under counter ice machine. Provide dishwasher: GE built-in dishwasher with hidden controls, GLDT696DSS.
- 1.10.5 Plumbing Fixtures: Stainless steel double compartment sink, Just UD-ADA-1632-A-18 Ga. with ADA compliant faucet, Moen 90 Degree Chrome One-Handle High Arc Pullout Kitchen Faucet, Model: S7597 series, Finish: Chrome.
- 1.10.6 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Sand Micro ceiling, narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 1.10.7 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

1.11 Multi-Purpose Room Storage

- 1.11.1 Floors and Base: Resilient Flooring Tile: Armstrong Excelon Stonetex, 52147 Pumice Stone with 2 ½" H rubber base, Roppe or equal, rolled good only.
- 1.11.2 Walls: Painted gypsum board.
- 1.11.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Sand Micro ceiling, narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.

1.11.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

1.12 Break Room

- 1.12.1 Floors and Base: Porcelain tile: Crossville, Marco Corona, Planet, Color: Gray, sizes: 12x24 and 18x36 & recessed wood base, 6" high, painted.
- 1.12.2 Walls: Painted gypsum board.

1.12.3 Millwork:

- 1.12.3.1 6' linear feet of plastic laminate lower cabinets with quartz countertops, Zodiaq Cloud White, and 8"H plastic laminate backsplash, U.N.O. Assume 3 drawers with the rest being enclosed cabinets w/adj. shelves. Provide one (1) 24" wide millwork tower for storage. \$12/ a piece for cabinet pulls. Provide decorative tile on wall behind millwork. PantheonTile Aspire 620-108.
- 1.12.3.2 6' linear feet of full height plastic laminate millwork consisting of a 3'-0" w full height cabinet with two (2) routed out vinyl edged round trash grommets and a 3'-0" w microwave tower with storage cabinets above and below.
- 1.12.3.3 Provide new 12'L x 12Dx42"H quartz clad bar top surround with 6'-0" x 2'-0" ADA height seating surround. Provide under counter support as required. Approx. 12'L angled plastic laminate millwork island with quartz countertop and sides, Zodiaq Cloud White. Provide closed cabinets, sink with removable TAS panel and cutouts for dishwasher and ice machine on one side. Finish other side with full height p-lam panel, inset 12".
- 1.12.4 Appliances: Two (2) Refrigerators, Two (2) vending, coffee, under counter water/ice and microwaves by tenant. Provide waterline at refrigerators and coffee. Provide waterline and drain at under counter ice machine as required. Provide one (1) stainless steel dishwasher: GE built-in dishwasher with hidden controls, GLDT696DSS.
- 1.12.5 Plumbing Fixtures: Stainless steel double compartment sink, Just UD-ADA-1632-A-18 Ga. with ADA compliant faucet, Moen 90 Degree Chrome One-Handle High Arc Pullout Kitchen Faucet, Model: S7597 series, Finish: Chrome.
- 1.12.6 Special Accessory: Provide new 11'-0" W x 8'-0"H x 7 1/4" thk. gyp board wall with Dirtt Breathe wall system on either side from floor to top of wall. Provide cutout on either side for new flat screen televisions, approx, 5'-0"w x 4'-0"H. Contact Matthew Cooley with Agile Ofis for pricing. 713.572.6760.
- 1.12.7 Ceiling: Refer attached RCP plans for additional information.
 - 1.12.7.1.1 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Optima tegular tile in 9/16" grid, or USG Halcyon.

- 1.12.7.1.2 Wood plank ceiling insets: 4'x 16' and 8'x8', Armstrong Woodworks channeled plank, Decoustics Saint-Gobain, Quadrillo or equal wood ceiling
- 1.12.8 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

1.13 Mail Room

- 1.13.1 Floors and Base: 12" x 12" resilient flooring tile. Armstrong Excelon Stonetex, 52147 Pumice Stone and 2 ½" H rubber base, Roppe or similar, rolled good only.
- 1.13.2 Walls: Painted gypsum board. Provide 15'L x 30"H wrapped tack panel above printers. Knoll Accent Screenplay Series, Color: Poppy or equal.
- 1.13.3 Millwork: 42' linear feet of typical millwork as outlined in general comments. Provide one (1) 72"L x 36"W x 2'-10"H island and one (1) 72"L x 36"W x 42"H island with plastic laminate surround, and center support panel. Provide open shelving on one side only.
- 1.13.4 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 1.13.5 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

1.14 Mail Room General Storage/Mail Supply Room/IT Storage Pantry

- 1.14.1 Floors and Base: 12" x 12" resilient flooring tile. Armstrong Excelon Stonetex, 52147 Pumice Stone and 2 ½" H rubber base, Roppe or similar, rolled good only.
- 1.14.2 Walls: Painted gypsum board.
- 1.14.3 Ceiling: Refer attached RCP plans for additional information.2x2 acoustic ceiling tile, Certainteed Sand Micro ceiling, narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 1.14.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

1.15 Typical Storage, File and Service Rooms IT Storage

- 1.15.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal, rolled goods only.
- 1.15.2 Walls: Painted gypsum board
- 1.15.3 Ceiling: Refer attached RCP plans for additional information.2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.

1.15.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture
Schedules for additional information. 2x4 direct/indirect fluorescent

1.16 Typical Offices

- 1.16.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal, rolled goods only.
- 1.16.2 Walls: Painted gypsum board
- 1.16.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Ultima tegular tile in 9/16" grid, or USG Mars.
- 1.16.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

1.17 Typical Open Offices

- 1.17.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal, rolled goods only.
- 1.17.2 Walls: Painted gypsum board
- 1.17.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Optima tegular tile in 9/16" grid, or USG Halcyon.
- 1.17.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture
 Schedules for additional information 2x4 direct/indirect fluorescent

1.18 Server Room

- 1.18.1 Sealed concrete, BASF The Chemical Company, KURE-N-SEAL waterborne acrylic sealer. Static Dissipative Tile, Armstrong 51953 Pearl White, 2 ½"H rubber base, Rope or equal.
- 1.18.2 Walls: Painted gypsum board
- 1.18.3 Millwork: Provide 4' x 8' fire treated wood panel. Paint to match adj. wall.
- 1.18.4 Ceiling: Refer attached RCP plans for additional information.2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Optima tegular tile in 9/16" grid, or USG Olympia Micro.
- 1.18.5 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent
- 1.19 Print/Copy: Qty.2

- 1.19.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal, rolled goods only.
- 1.19.2 Millwork: Provide approx. 6' linear feet of plastic laminate lower cabinets with plastic laminate countertop and 4"H backsplash. Assume one (1) sets of three (3) drawers with the rest being enclosed cabinets w/adj. shelves. \$10/ a piece for cabinet pulls. Provide 12'L x 30"H wrapped tack panel above printers. Knoll Accent Screenplay Series, Color: Poppy or equal.

1.20 Future Expansion

- 1.20.1 Floors and Base: Typical carpet, allowance: \$30.00/yd installed, 2 ½"H rubber base, Rope or equal.
- 1.20.2 Walls: Painted gypsum board
- 1.20.3 Ceiling: 2x2 acoustic ceiling tile, Certainteed Sand Micro ceiling, narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 1.20.4 Lighting: 2x4 direct/indirect fluorescent

2. GENERAL CONSTRUCTION NOTES: FOURTH FLOOR

2.1 Elevator Lobby

- 2.1.1 Floors and Base: Porcelain tile: Crossville, Marco Corona, Planet, Color: Gray, sizes: 12x24 and 18x36 & recessed wood base, 6" high, painted
- 2.1.2 Walls:
 - 2.1.2.1 Painted gypsum board.
- 2.1.3 Ceilings: Refer attached RCP plans for additional information.
 - 2.1.3.1 Painted gyp. board ceiling throughout at 10'-6" H. Access panels: Intersource Specialties Co. Stylemark Drywall Ceiling Access Doors. CAP-3030 or similar
 - 2.1.3.2 18"D painted gyp. board soffit at 10'-0" A.F.F as indicated on plans.
 - 2.1.3.3 Wood Panel Ceiling: Ceiling: 16'-6"W x 7'-0"L wood plank ceiling as indicated on plans, Armstrong Woodworks channeled plank, Decoustics Saint-Gobain, Quadrillo or equal.
- 2.1.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information.
 - 2.1.4.1—Type 6" round fluorescent down lights spaced approx. 6' o.c. throughout.
 - 2.1.4.2 Linear recessed LED wall washer (short throw) at accent wall finish 2 walls:

2.2 Hallway

- 2.2.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and, 2 ½"H rubber base, Rope or equal.
- 2.2.2 Walls: Painted gypsum board
- 2.2.3 Ceiling: Refer attached RCP plans for additional information. Painted gyp. board ceiling throughout. Access panels: Intersource Specialties Co. Stylemark Drywall Ceiling Access Doors. CAP-3030 or similar. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Optima tegular tile in 9/16" grid, or USG Olympia Micro
- 2.2.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture
 Schedules for additional information. 6" square fluorescent down lights
 spaced approx. 8' o.c. throughout

2.3 Storage 1

- 2.3.1 Floors and Base: 12 x 12 vinyl composite tile, Mannington Progressions or equal. Armstrong Excelon Stonetex, 52147 Pumice Stone and 2 ½" H rubber base, Roppe or similar, rolled good only.
- 2.3.2 Walls: Painted gypsum board. Provide 8'L x 30"H wrapped tack panel above printers. Knoll Accent Screenplay Series, Color: Poppy or equal.
- 2.3.3 Millwork: 25' linear feet of typical millwork as outlined in general comments.
- 2.3.4 Ceiling: Refer attached RCP plans for additional information.2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 2.3.5 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

2.4 Storage 2

- 2.4.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.
- 2.4.2 Walls: Painted gypsum board.
- 2.4.3 Ceiling: Refer attached RCP plans for additional information.2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 2.4.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

2.5 Typical Offices

2.5.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.

- 2.5.2 Walls: Painted gypsum board
- 2.5.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Ultima tegular tile in 9/16" grid, or USG Mars.
- 2.5.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

2.6 Typical Open Offices

- 2.6.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.
- 2.6.2 Walls: Painted gypsum board
- 2.6.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Optima tegular tile in 9/16" grid, or USG Halcyon.
- 2.6.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

2.7 Typical IDF Rooms

- 2.7.1 Sealed concrete, BASF The Chemical Company, KURE-N-SEAL waterborne acrylic sealer. Static Dissipative Tile, Armstrong 51953 Pearl White, 2 ½"H rubber base, Rope or equal.
- 2.7.2 Walls: Painted gypsum board
- 2.7.3 Millwork: Provide 4' x 8' fire treated wood panel. Paint to match adj. wall.
- 2.7.4 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Optima tegular tile in 9/16" grid, or USG Olympia Micro.
- 2.7.5 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

2.8 Coffee/Storage

- 2.8.1 Floors: Armstrong Excelon Stonetex, 52147 Pumice Stone and 2 ½" H rubber base, Roppe or similar, rolled good only.
- 2.8.2 Millwork:
 - 2.8.2.1 25' linear feet of plastic laminate lower cabinets with quartz countertop and full height p-lam backsplash, Zodiaq or equal.

 Assume 3 drawers with the rest being enclosed cabinets w/adj. shelves. Provide one (1) 24" wide millwork tower for storage. \$12/ a piece for cabinet pulls.
 - 2.8.2.2 Provide 4' x 8' fire treated wood panel. Paint to match adj. wall.

- 2.8.3 Appliances: coffee and under counter ice machine by tenant. Provide waterline at refrigerators and coffee. Provide waterline and drain only as required at under counter ice machine. Provide dishwasher: GE builtin dishwasher with hidden controls, GLDT696DSS.
- 2.8.4 Plumbing Fixtures: Stainless steel single compartment sink, Just UD-US-ADA-1821-A-18 Ga. with ADA compliant faucet, Moen 90 Degree Chrome One-Handle High Arc Pullout Kitchen Faucet, Model: S7597 series, Finish: Chrome.

2.9 Coffee/Copy/Print

2.9.1 Floors: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal, rolled goods only.

2.9.2 Millwork:

- 2.9.2.1 20' linear feet of plastic laminate lower cabinets with quartz countertop and full height p-lam backsplash, Zodiaq or equal. Assume two (2) 3 drawer cabinets with the rest being enclosed cabinets w/adj. shelves. Provide one (1) 24" wide millwork tower for storage. \$12/ a piece for cabinet pulls.
- 2.9.3 Appliances: coffee and under counter ice machine by tenant. Provide waterline at coffee. Provide waterline at under counter ice machine. Provide dishwasher: GE built-in dishwasher with hidden controls, GLDT696DSS.
- 2.9.4 Plumbing Fixtures: Stainless steel single compartment sink, Just UD- US-ADA-1821-A-18 Ga. with ADA compliant faucet, Moen 90 Degree Chrome One-Handle High Arc Pullout Kitchen Faucet, Model: S7597 series, Finish: Chrome.

2.10 Print/Copy:

- 2.10.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal, rolled goods only.
- 2.10.2 Millwork: Provide approx. 6' linear feet of plastic laminate lower cabinets with plastic laminate countertop and 4"H backsplash. Assume one (1) set of three (3) drawers with the rest being enclosed cabinets w/adj. shelves. \$10/ a piece for cabinet pulls. Provide 12'L x 30"H wrapped tack panel above printers. Knoll Accent Screenplay Series, Color: Poppy or equal.

2.11 Future Expansion

- 2.11.1 Floors and Base: Typical carpet, allowance: \$30.00/yd installed, 2 ½"H rubber base, Rope or equal.
- 2.11.2 Walls: Painted gypsum board

- 2.11.3 Ceiling: 2x2 acoustic ceiling tile, Certainteed Sand Micro ceiling, narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 2.11.4 Lighting: 2x4 direct/indirect fluorescent-MEP to layout emergency lighting as needed.

3. GENERAL CONSTRUCTION NOTES: SIXTH FLOOR

3.1 Elevator Lobby

- 3.1.1 Floors and Base: Porcelain tile: Crossville, Marco Corona, Planet, Color: Gray, sizes: 12x24 and 18x36 & recessed wood base, 6" high, painted
- 3.1.2 Walls: Painted gypsum board.
- 3.1.3 Ceilings: Refer attached RCP plans for additional information.
 - 3.1.3.1 Painted gyp. board ceiling throughout at 10'-6" H. Access panels: Intersource Specialties Co. Stylemark Drywall Ceiling Access Doors. CAP-3030 or similar
 - 3.1.3.2 18"D painted gyp. board soffit at 10'-0" A.F.F as indicated on plans.
 - 3.1.3.3 Wood Panel Ceiling: Ceiling: 16'-6"W x 7'-0"L wood plank ceiling as indicated on plans, Armstrong Woodworks channeled plank, Decoustics Saint-Gobain, Quadrillo or equal.
- 3.1.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information.
 - 3.1.4.1 Type 6" round fluorescent down lights spaced approx. 6' o.c. throughout.
 - 3.1.4.2 Linear recessed LED wall washer (short throw) at accent wall finish 2 walls.

3.2 Hallway

- 3.2.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.
- 3.2.2 Walls: Painted gypsum board
- 3.2.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 3.2.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture
 Schedules for additional information. 6" square fluorescent down lights
 spaced approx. 8' o.c. throughout.

3.3 Storage

3.3.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.

- 3.3.2 Walls: Painted gypsum board.
- 3.3.3 Ceiling: 2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 3.3.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture
 Schedules for additional information 2x4 direct/indirect fluorescent

3.4 Typical Offices

- 3.4.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.
- 3.4.2 Walls: Painted gypsum board
- 3.4.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Ultima tegular tile in 9/16" grid, or USG Mars.
- 3.4.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

3.5 Typical Open Offices

- 3.5.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.
- 3.5.2 Walls: Painted gypsum board
- 3.5.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Optima tegular tile in 9/16" grid, or USG Halcyon.
- 3.5.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

3.6 CEO Office

- 3.6.1 Floors and Base: Upgraded Broadloom carpet, allowance: \$30.00/yd installed, 2 ½"H rubber base, Rope or equal.
- 3.6.2 Walls: Painted gypsum board
- 3.6.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Ultima tegular tile in 9/16" grid, or USG Mars.
- 3.6.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture
 Schedules for additional information. 2x4 direct/indirect fluorescent

3.7 CEO Bath

- 3.7.1 Millwork:
 - 3.7.1.1.1 4'-6" linear feet of wood veneer lower cabinets with quartz countertops, Zodiaq or equal, and 4"H backsplash with lit mirror above.
 - 3.7.1.1.2 Assume 1'-6"W x 9'-0"H millwork closet with adj. shelving and frameless pivot door. Assume \$12/ a piece for cabinet pulls.
- 3.7.2 Plumbing Fixtures:
 - 3.7.2.1 Porcelain single vanity sink and Delta or equal ADA complaint faucet.
 - 3.7.2.2 New porcelain floor mounted toilet, Kohler or equal.
 - 3.7.2.3 New shower head and drain kit, Kohler or equal
- 3.7.3 Walls
 - 3.7.3.1 Porcelain wall tile at wet walls and shower. Provide 12"W x 12"H x 4"D niche for toiletries in shower enclosure, provide \$9/SF allowance.
 - 3.7.3.2 Vinyl wallcovering at all other walls, provide \$30/yd allowance.
- 3.7.4 Floors and Base: Porcelain Tile Flooring and 4"H tile base, provide \$9/SF allowance.
- 3.7.5 Accessories: Provide toilet paper holder and shower curtain rod/rings, Bobrick or equal.
- 3.7.6 Ceiling: Refer attached RCP plans for additional information. Painted gyp. board ceiling throughout.
- 3.7.7 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture

 Schedules for additional information. 6" square fluorescent down lights,
 provide approximately five (5) fixtures.

3.8 Large/Small Conference Rooms

- 3.8.1 Floors and Base: Upgraded Broadloom carpet, allowance: \$30.00/ydinstalled, 2 ½"H rubber base, Rope or equal.
- 3.8.2 Walls: Painted gypsum board
- 3.8.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Ultima tegular tile in 9/16" grid, or USG Mars.
- 3.8.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information.

3.9 Typical IDF Rooms

- 3.9.1 Sealed concrete, BASF The Chemical Company, KURE-N-SEAL waterborne acrylic sealer. Static Dissipative Tile, Armstrong 51953 Pearl White, 2 ½"H rubber base, Rope or equal.
- 3.9.2 Walls: Painted gypsum board

- 3.9.3 Millwork: Provide 4' x 8' fire treated wood panel. Paint to match adj. wall.
- 3.9.4 Ceiling: Refer attached RCP plans for additional information.2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Optima tegular tile in 9/16" grid, or USG Olympia Micro.
- 3.9.5 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

3.10 Coffee / Lounge

3.10.1 Floors and Base: Porcelain Tile Flooring Luxury Vinyl Flooring, USF Contract, Stratum 900, 50DLV902 Alston Oak and 2 ½"H rubber base, Rope or equal.

3.10.2 Millwork:

- 3.10.2.1 Provide 11' linear feet of plastic laminate lower cabinets with quartz countertops and 8"H backsplash, Zodiaq or equal. Provide decorative tile above backsplash, PantheonTile, Aspire 620-108. Assume 3 drawers with the rest being enclosed cabinets w/adj. shelves. \$12/ a piece for cabinet pulls.
- 3.10.2.2 Provide 15'L x 18"D floating quartz countertop, Zodiaq or equal with 2" in-wall steel support every 3'-0" o.c.
- 3.10.2.3 Provide 8' linear feet of custom millwork banquet seating with fixed cushion and back. Provide \$27/yd material allowance.

 Provide new vinyl wallcovering above, \$27/yd materials only.
- 3.10.3 Appliances: Full height refrigerator, coffee and under counter ice machine by tenant. Provide waterline at refrigerators and coffee.

 Provide waterline and drain as required at under counter ice machine.
- 3.10.4 Plumbing Fixtures: Stainless steel double single compartment sink, Just ADA-1821-A-18 Ga. with ADA compliant faucet, Moen 90 Degree Chrome One-Handle High Arc Pullout Kitchen Faucet, Model: S7597 series, Finish: Chrome.
- 3.10.5 Ceiling: Refer attached RCP plans for additional information.2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Optima tegular tile in 9/16" grid, or USG Olympia Micro.
- 3.10.6 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information

3.11 Typical Print/Copy

3.11.1 Millwork: 8' linear feet of plastic laminate lower and upper cabinets with plastic laminate countertops and 8"H backsplash. Assume 3 drawers with the rest being enclosed cabinets w/adj. shelves. \$12/ a piece for cabinet pulls. Provide under cabinet LED strip lighting. Provide 12'L x

- 30"H wrapped tack panel above printers. Knoll Accent Screenplay Series, Color: Poppy or equal.
- 3.11.2 Ceiling: Refer attached RCP plans for additional information. Painted gyp. board ceiling soffit above millwork.

3.12 Typical IDF Rooms

- 3.12.1 Sealed concrete, BASF The Chemical Company, KURE-N-SEAL waterborne acrylic sealer. Static Dissipative Tile, Armstrong 51953 Pearl White and 2 ½"H rubber base, Rope or equal.
- 3.12.2 Walls: Painted gypsum board
- 3.12.3 Millwork: Provide 4' x 8' fire treated wood panel. Paint to match adj. wall.
- 3.12.4 Ceiling: Refer attached RCP plans for additional information.2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 3.12.5 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

3.13 Phone/Wellness Room

- 3.13.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.
- 3.13.2 Walls: Painted gypsum board
- 3.13.3 Ceiling: Refer attached RCP plans for additional information.2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 3.13.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

3.14 Spray Mount Room/Marketing Storage

- 3.14.1 Floors and Base: 12 x 12 vinyl composite tile, Mannington Progressions or equal. Armstrong Excelon Stonetex, 52147 Pumice Stone and 2 ½" H rubber base, Roppe or similar, rolled good only.
- 3.14.2 Walls: Painted gypsum board
- 3.14.3 Ceiling: 2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro. Provide vent above hood with direct access to the outside.
- 3.14.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

3.15 Future Expansion

- 3.15.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.
- 3.15.2 Walls: Painted gypsum board
- 3.15.3 Ceiling: 2x2 acoustic ceiling tile, Certainteed Sand Micro ceiling, narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 3.15.4 Lighting: -2x4 direct/indirect fluorescent MEP to layout emergency lighting as needed.

4. GENERAL CONSTRUCTION NOTES: EIGHTH FLOOR

4.1 Elevator Lobby

- 4.1.1 Floors and Base: Porcelain tile: Crossville, Marco Corona, Planet, Color: Gray, sizes: 12x24 and 18x36 & recessed wood base, 6" high, painted
- 4.1.2 Walls: Painted gypsum board.
- 4.1.3 Ceilings: Refer attached RCP plans for additional information.
 - 4.1.3.1 Painted gyp. board ceiling throughout at 10'-6" H. Access panels: Intersource Specialties Co. Stylemark Drywall Ceiling Access Doors. CAP-3030 or similar
 - 4.1.3.2 18"D painted gyp. board soffit at 10'-0" A.F.F as indicated on plans.
 - 4.1.3.3 Wood Panel Ceiling: Ceiling: 16'-6"W x 7'-0"L wood plank ceiling as indicated on plans, Armstrong Woodworks channeled plank, Decoustics Saint-Gobain, Quadrillo or equal.
- 4.1.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information.
 - 4.1.4.1 Type 6" round fluorescent down lights spaced approx. 6' o.c. throughout.
 - 4.1.4.2 Linear recessed LED wall washer (short throw) at accent wall finish 2 walls.

4.2 Hallway

- 4.2.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.
- 4.2.2 Walls: Painted gypsum board
- 4.2.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.

4.2.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 6" square fluorescent down lights spaced approx. 8' o.c. throughout.

4.3 Typical Storage / Typical File / Wellness

- 4.3.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.
- 4.3.2 Walls: Painted gypsum board.
- 4.3.3 Ceiling: 2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 4.3.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture
 Schedules for additional information. 2x4 direct/indirect fluorescent

4.4 Typical Offices

- 4.4.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.
- 4.4.2 Walls: Painted gypsum board
- 4.4.3 Ceiling: Refer attached RCP plans for additional information.2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Ultima tegular tile in 9/16" grid, or USG Mars.
- 4.4.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

4.5 Small / Medium Conference

- 4.5.1 Floors and Base: Typical carpet, allowance: \$30.00/yd installed, $2 \frac{1}{2}$ "H rubber base, Rope or equal.
- 4.5.2 Walls: Painted gypsum board
- 4.5.3 Ceiling: Refer attached RCP plans for additional information.2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Ultima tegular tile in 9/16" grid, or USG Mars.
- 4.5.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture

 Schedules for additional information. Approx. three (3) 48"L recessed fluorescent slot fixtures above table.

4.6 Typical Open Offices

- 4.6.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.
- 4.6.2 Walls: Painted gypsum board

- 4.6.3 Ceiling: Refer attached RCP plans for additional information.2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Optima tegular tile in 9/16" grid, or USG
- 4.6.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

4.7 Typical IDF Rooms

- 4.7.1 Sealed concrete, BASF The Chemical Company, KURE-N-SEAL waterborne acrylic sealer. Static Dissipative Tile, Armstrong 51953 Pearl White 2 ½"H rubber base, Rope or equal.
- 4.7.2 Walls: Painted gypsum board
- 4.7.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 4.7.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

4.8 Typical Print/Copy

- 4.8.1 Millwork: 8' linear feet of plastic laminate lower and upper cabinets with plastic laminate countertops and 8"H backsplash. Assume 3 drawers with the rest being enclosed cabinets w/adj. shelves. \$12/ a piece for cabinet pulls. Provide under cabinet LED strip lighting. Provide 12'L x 30"H wrapped tack panel above printers. Knoll Accent Screenplay Series, Color: Poppy or equal.
- 4.8.2 Ceiling: Refer attached RCP plans for additional information. Painted gyp. board above millwork

4.9 Phone Rooms

- 4.9.1 Floors and Base: Typical carpet, Interface Style: 1386502500 Vector, Color: 103526 Charcoal and 2 ½"H rubber base, Rope or equal.
- 4.9.2 Walls: Painted gypsum board
- 4.9.3 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Sand Micro Mineral Fiber Ceilings narrow reveal edge in 9/16" grid, or Armstrong Dune tegular tile in 9/16" grid, or USG Olympia Micro.
- 4.9.4 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information. 2x4 direct/indirect fluorescent

4.10 Coffee / Lounge

- 4.10.1 Floors and Base: Porcelain Tile Flooring Luxury Vinyl Flooring, USF Contract, Stratum 900, 50DLV902 Alston Oak and 2 ½"H rubber base, Rope or equal.
- 4.10.2 Millwork: Provide 14' linear feet of plastic laminate lower cabinets with quartz countertops and 8" backsplash, Zodiaq or equal. Provide decorative tile above backsplash, \$9/SF materials only. PantheonTile Aspire 620-108. Assume 3 drawers with the rest being enclosed cabinets w/adj. shelves. \$12/ a piece for cabinet pulls. Provide one (1) 36" full height storage cabinet with adj. shelving.
- 4.10.3 Appliances: Full height refrigerator, coffee and under counter ice machine by tenant. Provide waterline at refrigerators and coffee.

 Provide waterline and drain as required at under counter ice machine.
- 4.10.4 Plumbing Fixtures: Stainless steel single compartment sink, Just UD-ADA-1821-A-18 Ga. with ADA compliant faucet, Moen 90 Degree Chrome One-Handle High Arc Pullout Kitchen Faucet, Model: S7597 series, Finish: Chrome.
- 4.10.5 Ceiling: Refer attached RCP plans for additional information. 2x2 acoustic ceiling tile, Certainteed Symphony M fiberglass ceiling, narrow reveal edge in 9/16" grid, or Armstrong Optima tegular tile in 9/16" grid, or USG Olympia Micro.
- 4.10.6 Lighting: Refer attached Reflected Ceiling Plans and Light Fixture Schedules for additional information.

Refer to Budget Pricing Breakdown		
	END OF PRICING NOTES	

SCHEDULE OF ALTERNATES

(please provide separate breakout price for each)

					XTURE SCHEDULE	
TYPE	MANUFACTURER	MOUNTING	LAMPS	VOLTS	REMARKS	NOTES
A1	NULITE LD2 SERIES	LAY-IN	T5 3500K	UNV	2X4 LED DIRECT/INDIRECT LAYIN FIXTURE - NON-DIMMING	
A1E	NULITE LD2 SERIES	LAY-IN	T5 3500K	UNV	2X4 LED DIRECT/INDIRECT LAYIN FIXTURE - NON-DIMMING, EMERGENCY	
B1	ATLANTIC CONCENTRIC CRM36 FLUORESCENT SERIES	RECESSED	T5 3500K	UNV	ROUND 36IN DIAMETER SKYLIGHT RECESSED FIXTURE -NON-DIMMING	
B2	ATLANTIC CONCENTRIC CSS18 FLUORESCENT SERIES	SURFACE	T5 3500K	UNV	ROUND 18IN DIAMETER SKYLIGHT SURFACE MOUNT FIXTURE - NON-DIMMMING	
C1	NULITE	RECESSED	T5	UNV	4IN WIDE LINEAR FIXTURE, RECESSED, NON-DIMMING	
	REGOLO 4 GRID SERIES ALW		3500K T5		3.5IN WIDE LINEAR RECESSED WALLWASHER, NON-DIMMING	VERIFY LENGTH OF FIXTURES
C2	LIGHTPLANE 3.5 WALL WASHER	RECESSED	3500K	UNV		VERIFY LENGTH OF FIXTURES
D1	PORTFOLIO CD6042 DOWNLIGHT	RECESSED	26-42W CFL 3500K	UNV	6IN CFL DOWNLIGHT - NON-DIMMING	
D2	PORTFOLIO CD6042 6CWWV142 WALLWASH	RECESSED	26-42W CFL 3500K	UNV	6IN CFL WALLWASH - NON-DIMMING	
D3	PORTFOLIO CD6042 6CWWV142 DOUBLE WALLWASH	RECESSED	26-42W CFL 3500K	UNV	6IN CFL DOUBLE WALLWASH - DIMMING	
D4	DELTA LIGHT MOVE IT SQUARE, SINGLE FIXTURE	RECESSED	LED 3500K	UNV	1-3/4* DECORATIVE DOWNLIGHT FOR WOOD CEILING FEATURE - DIMMING	COORDINATE INSTALLATION WITH MILLWORKER OR CEILING CONTRACTOR
D5	ALW RECESSED LYTESPOT - 1 HEADS	RECESSED	50W MR16 3500K	UNV	SINGLE HEAD RECESSED ADJUSTABLE DOWNLIGHT, TRIMLESS - DIMMING	CONTRACTOR
D6	ALW RECESSED LYTESPOT - 2 HEADS	RECESSED	(2) 50W MR16 3500K	UNV	DUAL HEAD RECESSED ADJUSTABLE DOWNLIGHT, TRIMLESS - DIMMING	COORDINATE INSTALLATION WITH CEILING CONTRACTOR
D7	EDISON PRICE TWO MR DL	RECESSED	50W MR16 3500K	UNV	2IN ROUND MR16 DOWNLIGHT - <i>DIMMING</i>	GENERAL GOVERNMENTON
D8	PORTFOLIO CD6042 6CLV142W	RECESSED	26-42W CFL 3500K	UNV	6IN ROUND LENSED DOWNLIGHT FOR SHOWER AREA - NON-DIMMING	
F1	METALUX 4FT SNF 228T5, CHAIN HUNG	RECESSED	T5 3500K	UNV	4FT CHAIN HUNG STRIP FIXTURE, NON-DIMMING	
G1	ALW MOONRING PENDANT, DIMMING	RECESSED	LED 3500K	UNV	PENDANT TO BE MOUNTED FLUSH WITH FABRIC CEILING ELEMENTS, DIMMING	TO BE SUSPENDED FLUSH WITH FABRIC CEILING, COORDINATE INSTALL WITH CEILING CONTRACTOR, COORDINATE FIXTURE DIAMETER WITH ARCHITECT
J1	LED INSPIRATIONS NUDE V2 BRIGHT	RECESSED	LED 3500K	UNV	LED COVE LIGHTING	COORDINATE SIZE WITH ARCHITECT
J2	ALW LP1RWWT WALLWASHER	RECESSED	LED 3500K	UNV	LED LINEAR RECESSED WALLWASHER	COORDINATE SIZE WITH ARCHITECT
M1	SEURA LUMINATION COLLECTION LIT MIRROR	RECESSED	T5 3500K	UNV	LIT MIRROR FOR RESTROOMS, NON-DIMMING	COORDINATE SIZE WITH ARCHITECT
P1	NULITE REGOLO 4 PENDANT SERIES, NON-DIMMING	PENDANT	T5 3500K	UNV	4IN WIDE LINEAR PENDANT, NON-DIMMING	COORDINATE LENGTH OF FIXTURE WITH ARCHITECT
P2	ATLANTIC CONCENTRIC CSS36 FLUORESCENT SERIES, PENDANT, NON-DIMMING	PENDANT	T5 3500K	UNV	36* ROUND PENDANT, NON-DIMMING	
P3	EGOLUCE POOL 1504 - CUSTOM 3 FIXTURES ON ONE FLUSH MOUNT CANOPY, DIMMING	PENDANT	LED 3500K	UNV	(3) PENDANTS ON ONE FLUSH MOUNT CANOPY - DIMMING	
P4	TBD	PENDANT	3500K	UNV	DEEP BOWL PENDANT	COORDINATE SIZE WITH ARCHITECT
U1	METALUX CL UNDERCABINET LIGHT	UNDERCABINET	T5 3500K	UNV	UNDERCABINET FIXTURE, NON-DIMMING	COORDINATE INSTALLATION WITH
X1	SURE-LITES APX	EXIT SIGN	LED	UNV	EXIT SIGN	
X2	SURE-LITES APEL	EMERGENCY LIGHTING	LED	UNV	WALL MOUNTED EMERGENCY LIGHTING	

Houston First LED Schedule

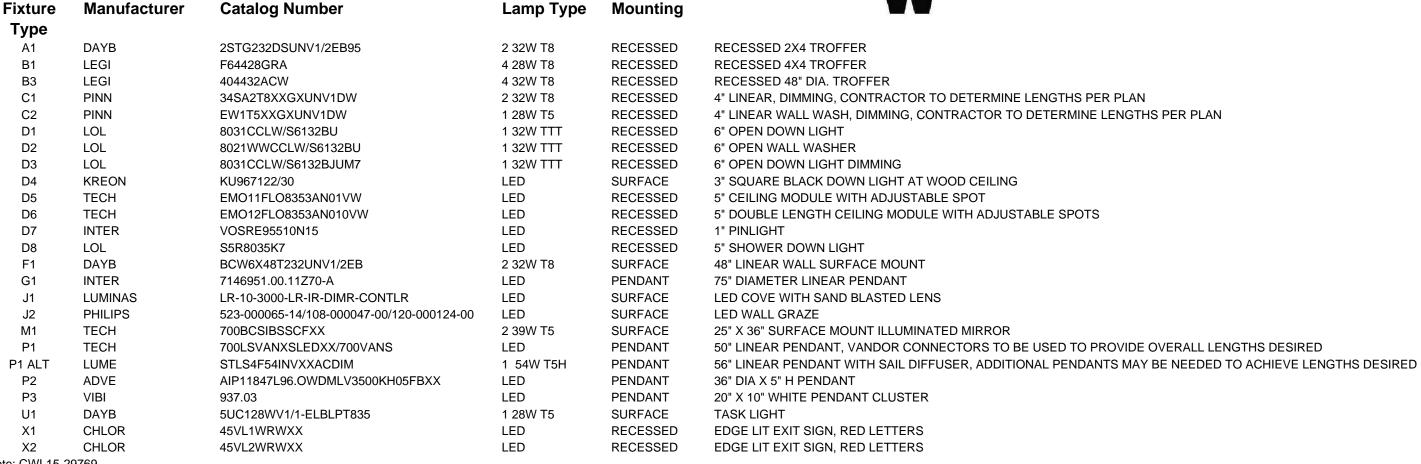
Lighting Fixture Schedule Date: Oct 22, 2015 Fixture Manufacturer Catalog Number

Fixture	Manufacturer	Catalog Number	Lamp Type	• Mounting	Voltage Description
Type					
A1	DAYB	2STG42L8354DSUNVDIM	LED	RECESSED	2X4 TROFFER
B1	LEGI	X64L411235GRAUNVDIM	LED	RECESSED	4X4 TROFFER
В3	LEGI	404432ACW	4 32W T8	RECESSED	48" DIA. TROFFER
C1	PINN	ET4A35XXGXUNV1DW	LED	RECESSED	4" LINEAR, CONTRACTOR TO DETERMINE LENGTHS PER PLAN
C2	PINN	EV3WW35XXGXUNV1DW	LED	RECESSED	4" LINEAR WALL WASHER, CONTRACTOR TO DETERMINE LENGTHS PER PLAN
D1	LOL	C6L15NUVBZ10V/C6L1520DL35KMCCLWVB	LED	RECESSED	6" DOWN LIGHT
D2	LOL	C6L15NUVBZ10V/C6L1520WW35KCCLWVB	LED	RECESSED	6" WALL WASHER
D3	LOL	C6L15NUVBZ10V/C6L1520DW35KCCLWVB	LED	RECESSED	6" DOUBLE WALL WASHER
D4	KREON	KU967122/30	LED	SURFACE	3" SQUARE BLACK DOWN LIGHT AT WOOD CEILING
D5	TECH	EMO11FLO8353AN01VW	LED	RECESSED	5" CEILING MODULE WITH ADJUSTABLE SPOT
D6	TECH	EMO12FLO8353AN010VW	LED	RECESSED	5" DOUBLE LENGTH CEILING MODULE WITH ADJUSTABLE SPOTS
D7	INTER	VOSRE95510N15	LED	RECESSED	1" PINLIGHT
D8	LOL	S5R8035K7	LED	RECESSED	5" SHOWER DOWN LIGHT
F1	DAYB	BCW6X48T232UNV1/2EB	2 32W T8	SURFACE	48" LINEAR WALL SURFACE MOUNT
G1	AXIS	SK10008B3MFCIRAL#40035SOWUNVD1DS/	LED	RECESSED	90" AND 50" DIAMETER RECESSED LINEAR
		SK10005B3MFCIRAL#40035SOWUNVD1DS			
J1	LUMINAS	LR-10-3000-LR-IR-DIMR-CONTLR	LED	SURFACE	LED COVE WITH SAND BLASTED LENS
J2	PHILIPS	523-000065-14/108-000047-00/120-000124-00	LED	SURFACE	LED WALL GRAZE
M1	TECH	700BCSIBSSCFXX	2 39W T5	SURFACE	25" X 36" SURFACE MOUNT ILLUMINATED MIRROR
P1	TECH	700LSVANXSLEDXX/700VANS	LED	PENDANT	50" LINEAR PENDANT, VANDOR CONNECTORS TO BE USED TO PROVIDE OVERALL LENGTHS DESIRED
P1 ALT	LUME	STLS4F54INVXXACDIM	1 54W T5H	PENDANT	56" LINEAR PENDANT WITH SAIL DIFFUSER, ADDITIONAL PENDANTS MAY BE NEEDED TO ACHIEVE LENGTHS DESIRED
P2	ADVE	AIP11847L96.OWDMLV3500KH05FBXX	LED	PENDANT	36" DIA X 5" H PENDANT
P3	VIBI	937.03	LED	PENDANT	20" X 10" WHITE PENDANT CLUSTER
U1	DAYB	5UC128WV1/1-ELBLPT835	1 28W T5	SURFACE	TASK LIGHT
X1	CHLOR	45VL1WRWXX	LED	RECESSED	EDGE LIT EXIT SIGN, RED LETTERS
X2	CHLOR	45VL2WRWXX	LED	RECESSED	EDGE LIT EXIT SIGN, RED LETTERS
Quote: CV	VL15-29770				

Houston First Corporation FLUORESCENT SCHEDULE

Lighting Fixture Schedule

Date: Oct 22, 2015



CW Lighting

713.690.9320

Quote: CWL15-29769



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HOUSTON FIRST PARTNERSHIP- LEVELS 2, 4, 6 &8 777 AVENIDA DE LAS AMERICAS, HOUSTON, TEXAS MECHANICAL, ELECTRICAL, AND PLUMBING (MEP) SYSTEMS NARRATIVE

1. SCOPE OF WORK

- a. The project includes tenant space renovation of approximately 60,000 Net Rentable/ 51,000 usable square feet of tenant space as described in Lauck Group's preliminary drawings dated 07/29 /2015.
- b. Project occupancy is 222 total; thus or 1 person per 270 rentable square feet per person

2. **APPLICABLE CODES & STANDARDS** The following codes will govern this project:

- a. CITY OF HOUSTON
 - i. BUILDING CODE: 2012 IBC, AMENDED
 - ii. MECHANICAL CODE: 2006 UMC, AMENDED or version current at time of permit
 - iii. COMMERCIAL ENERGY CONSERVATION CODE: ASHRAE 90.1 2007 AMENDED or version current at time of permit
- b. The building is 'high rise'.
- c. There are no Tenant areas that qualify as an 'atrium'.

3. **LEED**

a. The project may seek LEED-CI silver status

4. HVAC:

- a. Base building shell systems are:
 - i. Chilled water VAV airhandlers, plus chilled water, outside air and relief risers
 - ii. Pretreated Outside air based on
 - iii. Primary supply duct between AHU and boxes
 - iv. 15 Fan powered terminal units (electric heat) available for Tenant use there is no duct downstream of the box) with t'stat on a coiled wire
 - v. VAV boxes with downstream duct and air devices serving base building common areas
 - vi. Stub out on each floor for Tenant exhaust or relief air
- b. Base Building basis of design is:
 - i. 6 people per 1000 sq. feet net rentable
 - ii. 1.00 watts lighting per sq. feet net rentable
 - iii. 1.50 watts plug loads per sq. feet net rentable
- c. Tenant buildout scope- all floors:
 - i. VAV or fan powered VAV boxes in excess of the 15 base building boxes





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- ii. Ductwork and air devices downstream of all base building or tenantadded boxes
 - No building standard method of air delivery at the windows has been stipulated. Assume that slot diffusers (2 slot type) will be used at all exterior zones; portions unused for supply will have light shields for return air
 - 2. Assume 2x2 lay-in supply ceiling diffusers in interior zones
 - 3. Assume 2x2 lay-in non-ducted return grilles in interior zones

iii.

- iv. Supplemental cooling (metered) when exceeding the Base Building basis of design
 - 1. GRBCC central chilled water plant runs 24x7
 - 2. TI scope shall include hot-tapping the chilled water risers; there are not existing stub outs.
- v. After-hours HVAC for areas regularly operating after Base Building hours
 - 1. GRBCC central chilled water plant runs 24x7
 - 2. TI scope shall include hot-tapping the chilled water risers; there are not existing stub outs.
- vi. Add all new boxes or fan coils to the existing Building Automation System.
- d. Tenant buildout scope- comments by floor :
 - i. Floor 02:
 - New dedicated VAV boxes anticipated for Board Room, for Formal conference and for IDF room
 - ii. Floor 04: New dedicated VAV box for IDF room
 - iii. Floor 06: New dedicated VAV box for IDF room
 - iv. Floor 08:
 - 1. New dedicated VAV box for IDF room
 - 2. This floor appears to be slightly over 6 people per 1000 square feet, but we suspect the the base building AHU can handle the load without supplemental air

5. Plumbing:

- a. 2" Sanitary waste and vent are stubbed into the space, at 3 locations, for tenant connections
- b. 3/4" Cold water is stubbed into the space, at 3 locations, for tenant connections
 - i. Submetering is not required
- c. Tenant shall provide their own electric water heater and all hot water piping and circ pumps
- d. Base Building common area plumbing fixtures are based on minimum requirement of City Houston IBC table 2902.1 (men's 1 wc+2 urinals / women's 3 wc)
 - i. Tenant buildout is not expected to require additional fixtures

6. Fire Protection

- a. Build is fully wet pipe sprinklered
- Base building shell spaces do not have ceiling and sprinkler heads are turned up



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- c. Tenant buildout shall maintain 100% sprinklering
- d. Ensure that spaces are within reach of standpipe fire hoses

7. Electrical: Power

- i. Base building shell includes on each floor:
 - **1.** 1200 amp bus riser
 - 2. Bus plug and feed to one 480/277 volt/600 amp/84 space panel
 - 3. 480/277 volt transformer 112.5 kw
 - 4. One 120/208 volt/ 400 amp /42 space panel
- ii. Tenant buildout shall include all tenant required circuiting, raceways, devices and backboxes
- No emergency power is available to the Tenant from Base building systems
 - **1.** Tenant emergency or UPS power (generator, switches & distribution) if required, shall be part of TI buildout

8. Electrical: Lighting

- Tenant scope includes: all lighting and lighting controls throughout the TI space
 - 1. Available in the shell space, for Tenant re-use is desired, is one 2 lamp fluorescent light fixture per 1000 sq. feet
- ii. Tenant scope includes all required exit & egress lighting

9. Electrical: Low voltage

- a. Voice & data: Vertical raceway location (slab sleeve at each floor) are available in common areas shafts
- b. Fire alarm: TI fire alarm shall be an expansion of base building systems
- c. Security: TI security & access control systems shall be an expansion of base building system



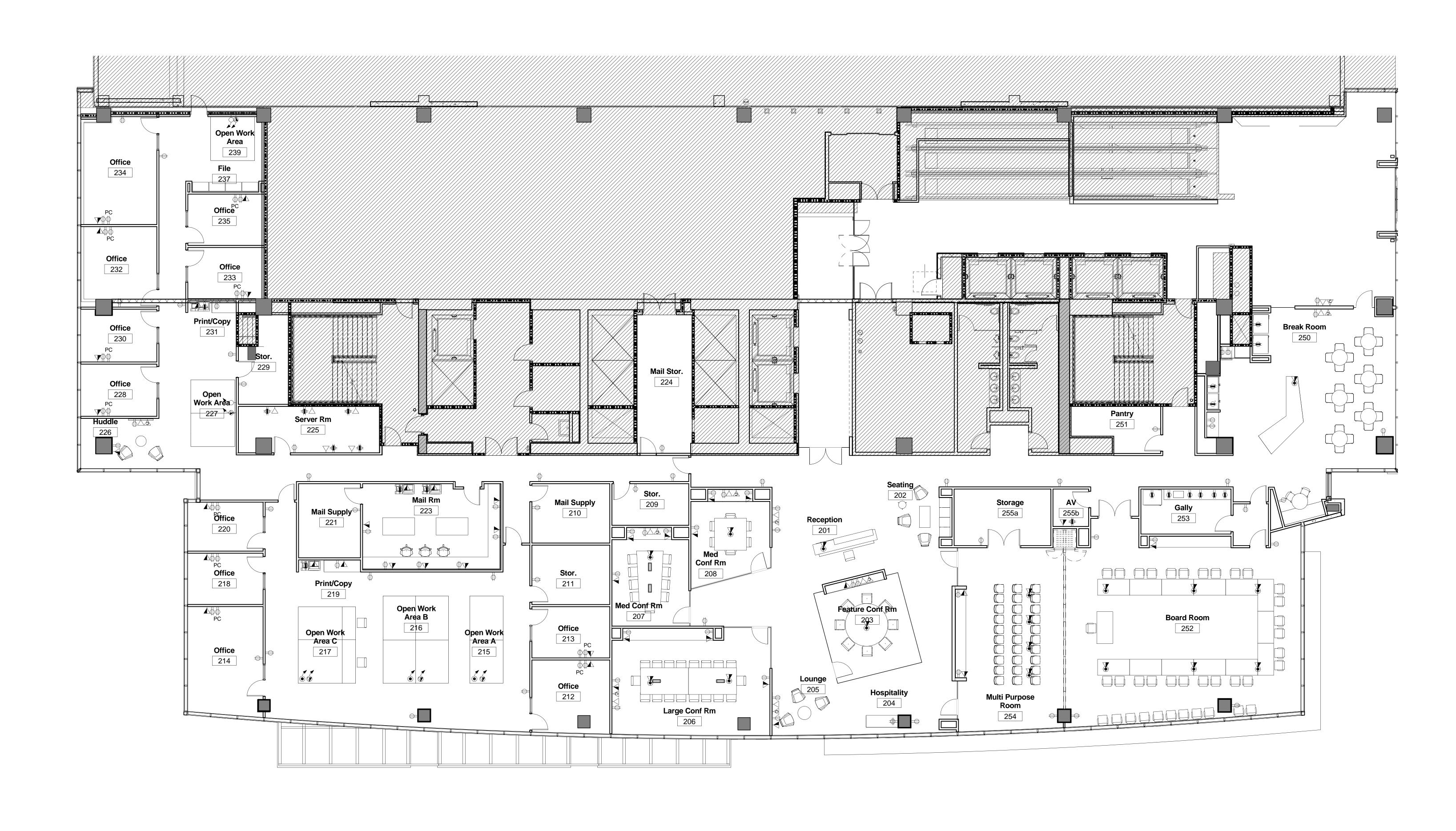
Key Plan

Project Number:

Level 2 Power Signal Plan

0000-00000

Sheet No:
A132



Level 2 Power/Signal Plan

1/8" = 1'-0"

Level 4 Power/Signal Plan

1/8" = 1'-0"

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Key Plan

Project Number

Level 4 Power Signal Plan

0000-00000

Sheet No:

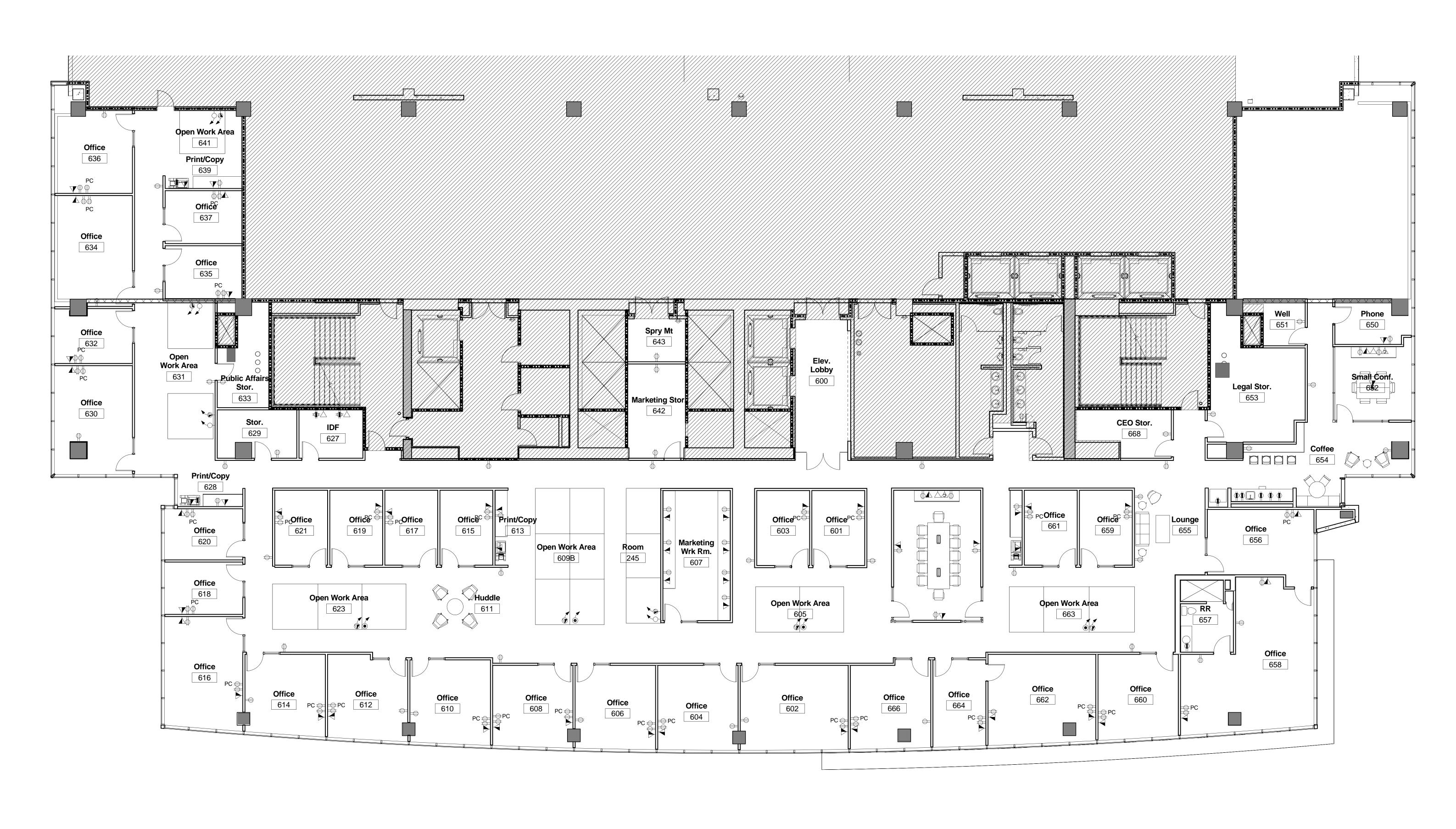
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Project Number

Level 6 Power Signal Plan

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Sheet No:
A136



Level 6 Power/Signal Plan

1/8" = 1'-0"

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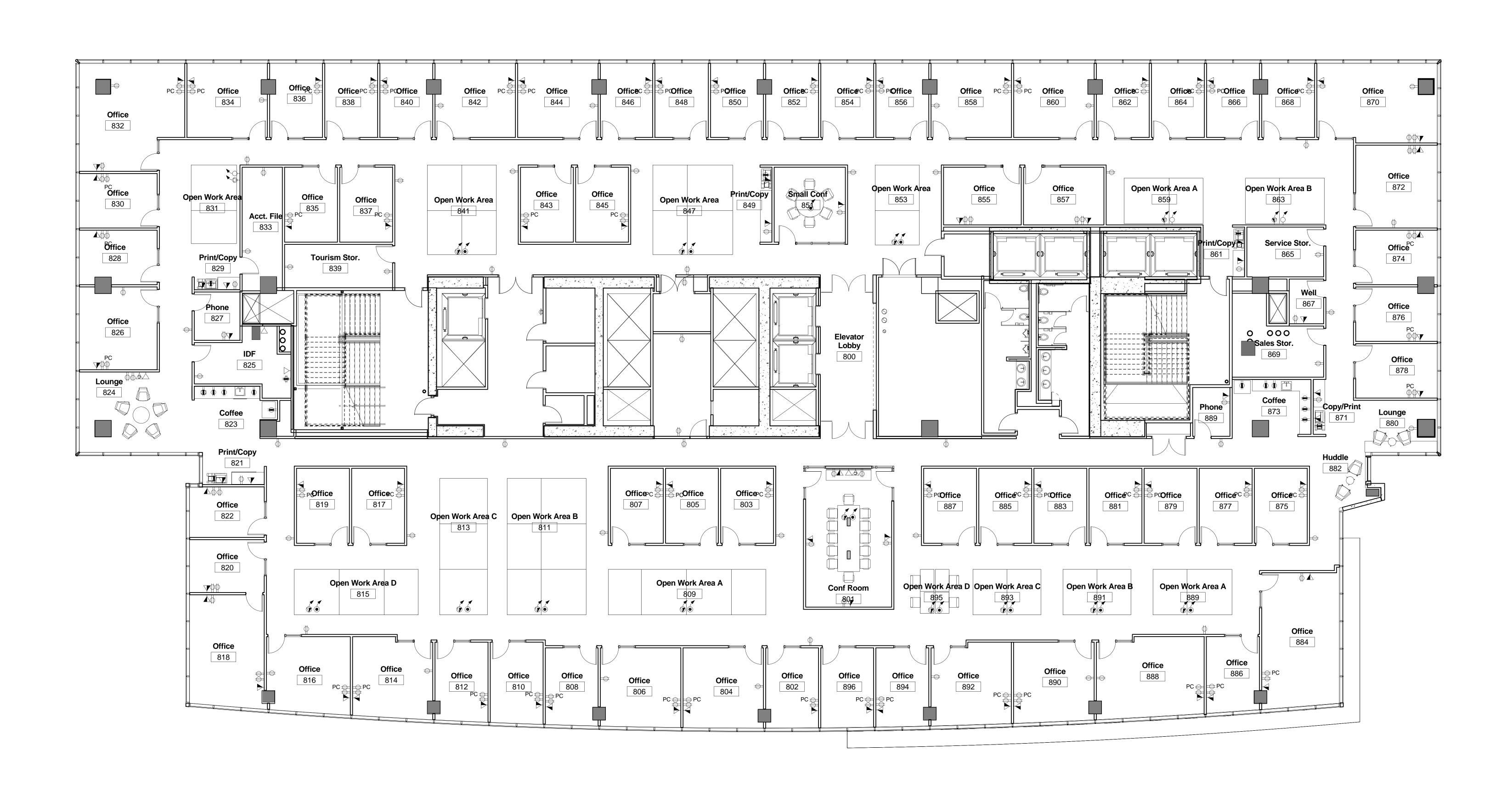
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Project Number:

Level 8 Power Signal Plan

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Sheet No:
A138



Level 8 Power/Signal Plan

1/8" = 1'-0"

Level 2 Reflected Ceiling Plan

1/8" = 1'-0"

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Key Plan

Project Number

A142

Level 2
Reflected
Ceiling Plan
Sheet No:

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Level 4 Reflected Ceiling Plan

1/8" = 1'-0"

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Project Revisions:

Key Plan

Project Number

Level 4
Reflected
Ceiling Plan

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Sheet No:
A144

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Level 6 Reflected Ceiling Plan

1/8" = 1'-0"

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A146

Sheet Name: Level 6 Reflected Ceiling Plan

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Level 8 Reflected Ceiling Plan

1/8" = 1'-0"

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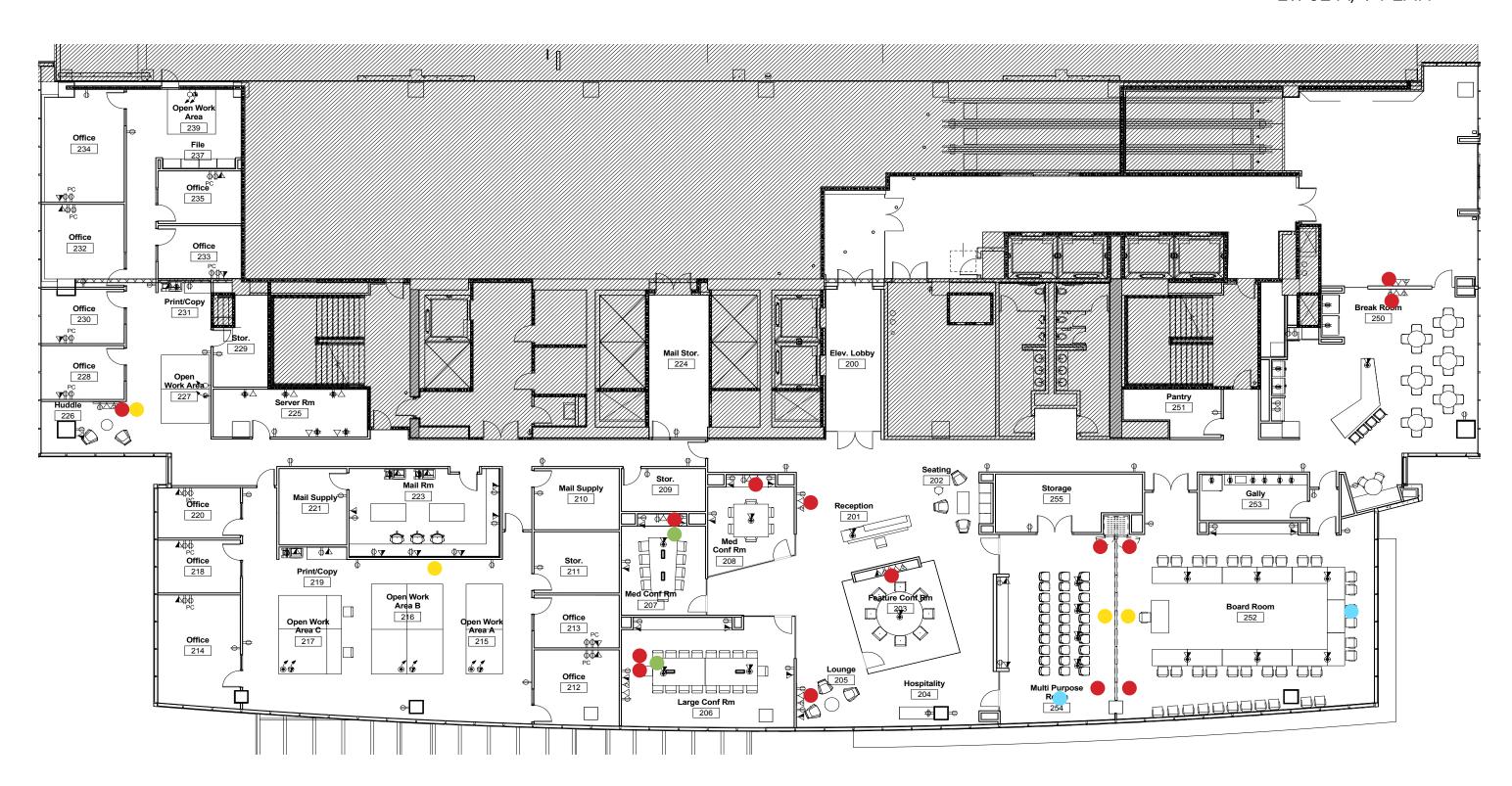
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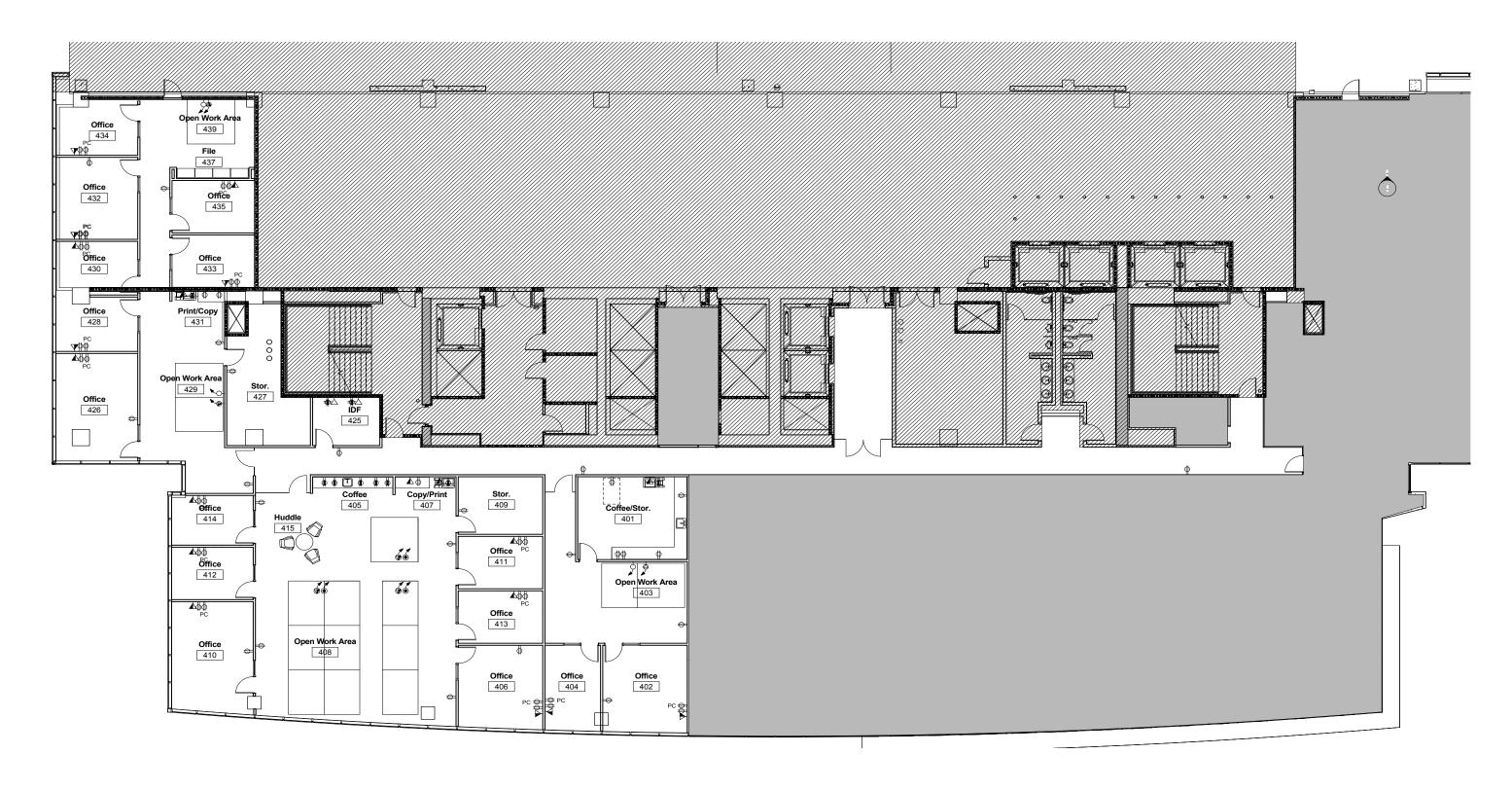
Project Number

Level 8
Reflected
Ceiling Plan

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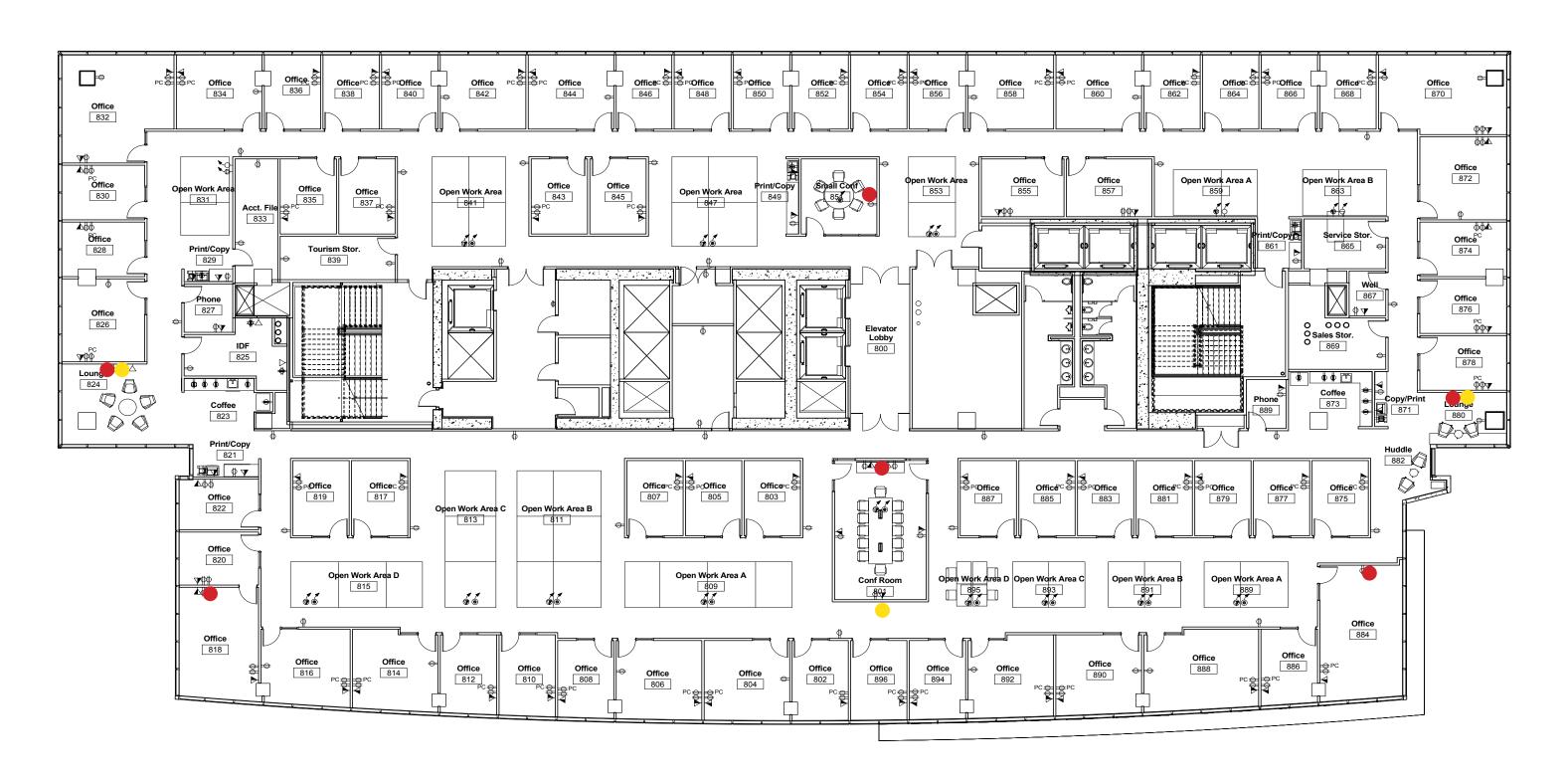




DESIGN DEVELOPMENT



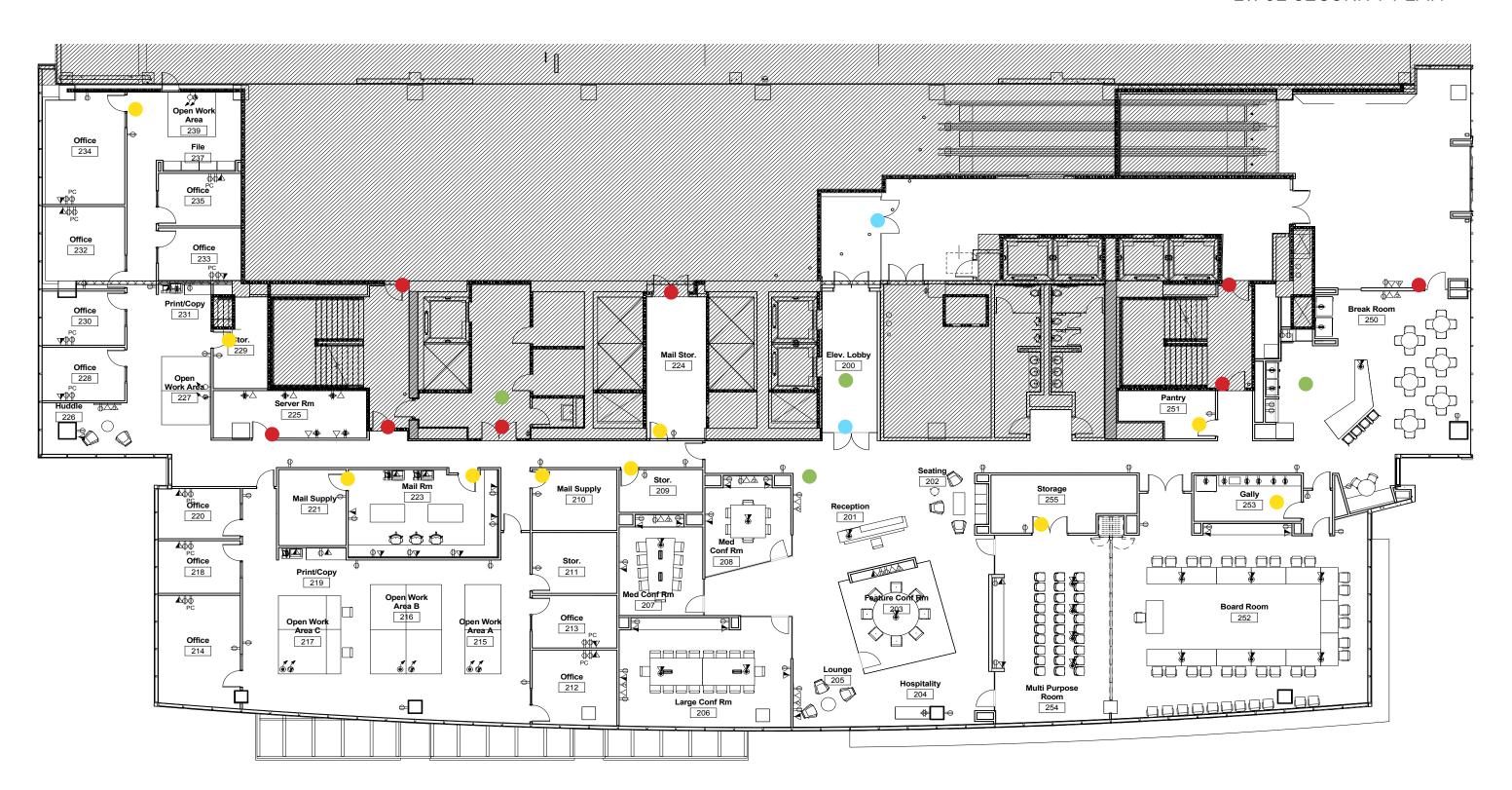
LV. 08 A/V PLAN



DESIGN DEVELOPMENT audio visual

DESIGN DEVELOPMENT security

LV. 02 SECURITY PLAN



LV. 04 SECURITY PLAN



CARD KEY ACCESS ONLY

LV. 06 SECURITY PLAN



CARD KEY ACCESS ONLY

LV. 08 SECURITY PLAN



1 LEVEL 2- POWER PLAN 1/8" = 1'-0"

KEYED NOTES

- RELOCATED FAN POWERED BOX WITH HEAT (FPB). CONTRACTOR SHALL INTERCEPT AND EXTEND CONDUIT AND WIRING TO NEW LOCATION.
- 2 RELOCATED VARIABLE AIR VOLUME (VAV) BOX. CONTRACTOR SHALL INTERCEPT AND EXTEND CONDUIT AND WIRING TO NEW LOCATION.
- 3 NEW POKE-THRU SHALL BE HUBBELL(OR EQUIVALENT) #PT4X4FIT FOR THE IN FLOOR, #PT4X4SFGY FOR SERVICE FITTINGS AND #HBL5EGY FOR CATEGORY 5E JACKS. VERIFY EXACT FINISHES WITH ARCHITECT BEFORE INSTALLATION. FIELD VERIFY EXACT LOCATION OF POKE-THRU CORING WITH EXISTING BLDG. STRUCTURE. PROVIDE 1"C FOR DATA & 3/4"C FOR POWER UNDER SLAB TO NEAREST WALL. STUBBED TO ACCESSIBLE CEILING. COORDINATE EXACT LOCATION WITH OWNER/ARCHITECT.
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- DISCONNECT. THE ATS IS SERVED FROM A DISCONNECT LOCATED IN THE GENERATOR IN THE GARAGE. FOR THE PURPOSES OF PRICING, A SECOND DISCONNECT OF THIS SIZE IS REQUIRED IN THE GENERATOR ROOM. SEE RISER DIAGRAM FOR MORE DETAILS.



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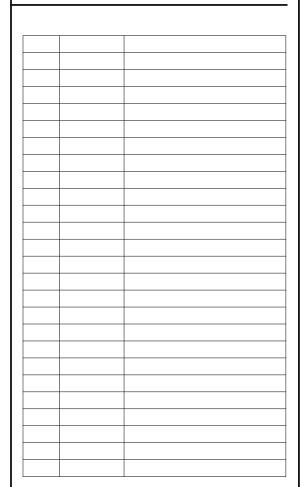
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Key Plan

Project Number:

POWER PLAN

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Sheet Name: LEVEL 2-

E01



1 LEVEL 4- POWER PLAN 1/8" = 1'-0"

KEYED NOTES

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Teyas Registered Engineering Firm E-10573

Texas Registered Engineering Firm F-10573

1 LEVEL 6- POWER PLAN 1/8" = 1'-0"

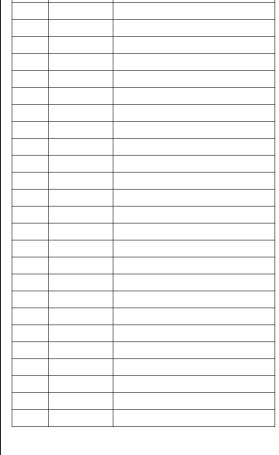
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Sheet Name:
LEVEL 6POWER PLAN

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Texas Registered Engineering Firm F-10573

1 LEVEL 8- POWER PLAN 1/8" = 1'-0"

KEYED NOTES

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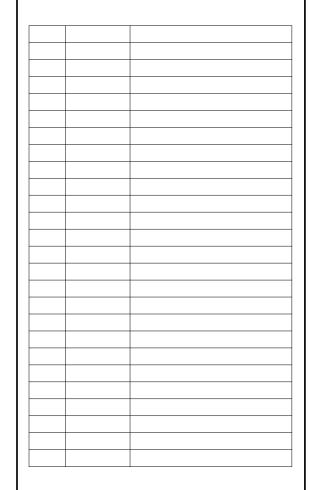
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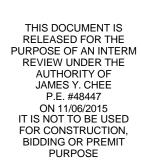
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Key Plan

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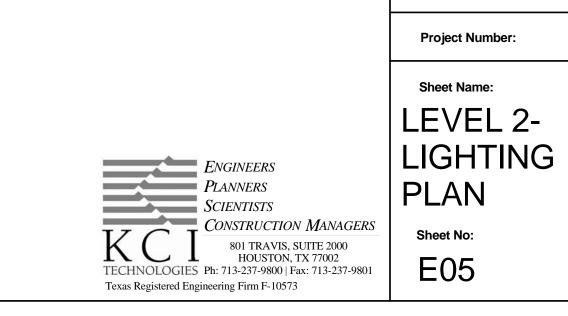
Sheet Name:
LEVEL 8POWER PLAN

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Sheet No:

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Texas Registered Engineering Firm F-10573





1 LEVEL 2- LIGHTING PLAN

1/8" = 1'-0"

P4 oo P4

≙ D2

⊗D1 ⊚ D1 D1 ⊗ ⊗ D1 B D3

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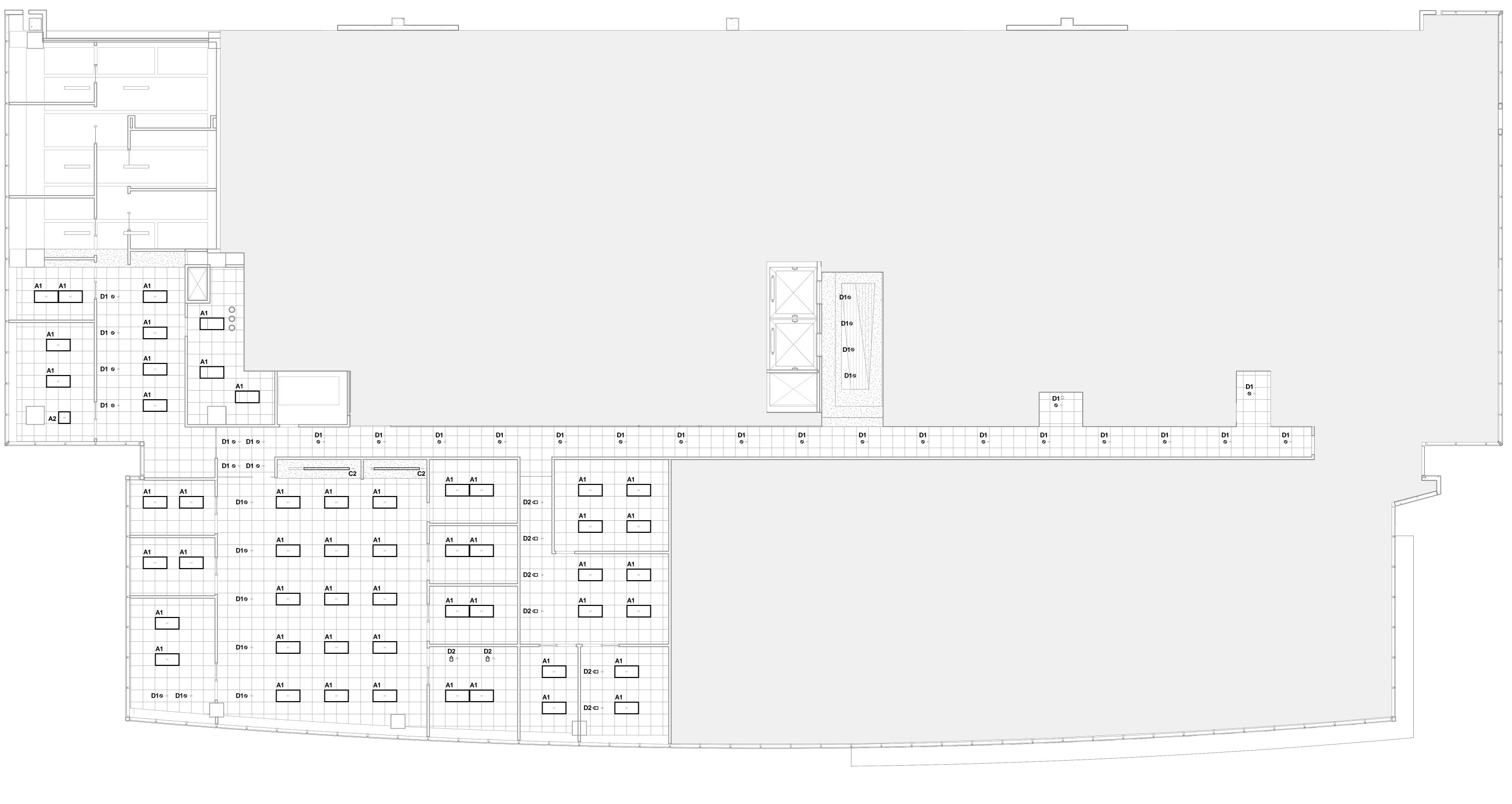
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11/02/15





1 LEVEL 4- LIGHTING PLAN

1/8" = 1'-0"

KEYED NOTES

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Key Plan

Project Number:

Sheet Name:

LEVEL 4LIGHTING
PLAN
Sheet No:



KEYED NOTES

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Key Plan

Project Number:

Sheet Name: LEVEL 6-LIGHTING PLAN



KEYED NOTES



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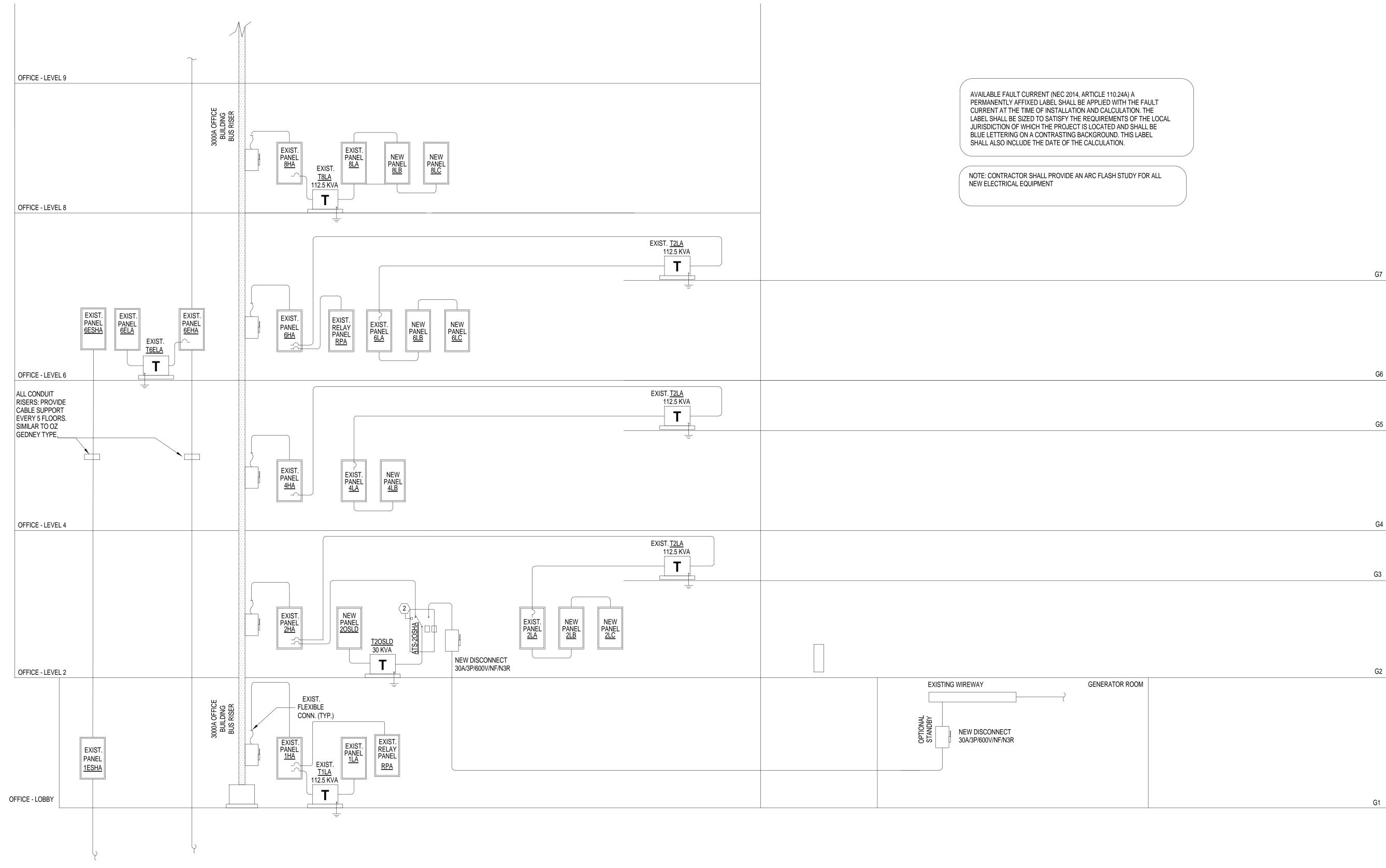
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Key Plan

Project Number:

Sheet Name: LEVEL 8-LIGHTING PLAN





1 RISER DIAGRAM

1/8" = 1'-0"

KEYED NOTES 1 SIGNAL AND CONTROL WIRING IN 2" CONDUIT FROM ATS TO GENERATOR.

Corporation First Houston

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Key Plan Project Number:

Sheet Name: ONE LINE DIAGRAM

E09

NOTE:

- 1. ALL OFFICES SHALL HAVE AUTOMATIC SWITCHING VIA OCCUPANCY SENSOR SWITCHES.
- 2. CONFERENCE ROOMS SHALL HAVE CEILING MOUNTED OCCUPANCY SENSORS
- 3. CORRIDORS ARE NOT REQUIRED TO HAVE AUTOMATIC SWITCH FOR SAFETY PURPOSES.

Houston First Corporation

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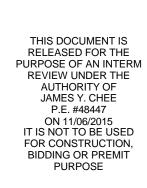
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Key Plan

Project Number:

Sheet Name:
LIGHTING
FIXTURE
SCHEDULE

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

801 TRAVIS, SUITE 2000
HOUSTON, TX 77002
TECHNOLOGIES Ph: 713-237-9801 Fax: 713-237-9801
Texas Registered Engineering Firm F-10573

G1. All circuit numbers shown are for reference only. Field verify actual circuit

combine two or more circuits in one common conduit and with common neutral where allowed (circuits with high content of harmonic currents may not use common neutral, example: circuits with non-linear electronic power supplies such as computers, copiers, printers, etc.). Note: Ampacities of conductors shall be reduced if more than three current carrying conductors are installed in a raceway. See N.E.C. Article 310.15(B)(2)(a) "Adjustment Factors". Conductors shall be derated if 4 or more wires are installed in one conduit (see related note "G3" on temperature limitation of conductor ampacity), typical examples for 20-amp circuits are shown below:

GENERAL NOTES: (APPLY TO ALL ELECTRICAL SHEETS)

No. of % of value in Wire size, 4 or Wire size, 4 or Wire size, 4 or tables as adjustecmore wire in one more wire in one more wire in one carrying for temperature conduit 60°C wire conduit 75°C wire conduit 90°C wire conductors if necessary (e.g. TW) (e.g. THWN) (e.g. THHN) 4 thru 6 #10 #12 7 thru 9 70% 10 thru 20 50% #10 21 thru 30 45% 31 thru 40 40% 41 and above 35%

G3. Temperature limitations on ampacity of conductor: The ampacity of a conductor shall be selected based on the National Electrical Code Articles 310.15 and 110.14.(C)(1).(2). The temperature limitations noted in 110.14.(C)(1),(2) may be paraphrased as follows:

(A) Circuits rated 100 amp or less: Use 60°C rated conductors only. 75°C and 90°C conductor may be used but only Exceptions: higher temperature cable are allowed provided the equipment is listed and identified for use with the higher rated conductors. (B) Circuits rated more than 100 amp or conductor larger than #1 AWG. Use 75°C rated conductors only. 90°C conductor may be used but only at 75°C Exceptions: higher temperature cable are allowed provided the equipment is listed and identified for use with the higher rated conductors

G4. Wires oversized to alleviate voltage drop: Where oversized wires are used to alleviate voltage drop, Contractor to provide reducer lugs and/or J-boxes as required to terminate wires in equipment G5. All conduit and wire must be concealed from view. Exposed conduit and

wire are not acceptable, exceptions are Central Plant, Mechanical/Electrical

Existing Construction: All new wirings installed in existing wall/ceiling/millwork shall be concealed, including concrete block wall. Patch any cut areas to match existing condition.

G6. All electrical and communication devices (light switches, receptacles,

telephone, data etc.) shall be recessed mounted unless noted otherwise. Field

verify receptacle mounting requirements with Owner/Arch., mount all duplex receptacles with the "u" ground terminal on top, unless noted otherwise or as required by Owner/Arch. Neutral terminal shall be on top for horizontally mounted G7. All outlets on dedicated circuits (marked "DED" or "D" on plans) shall be

properly identified by using distinctive color devices (use brown or gray devices. Confirm color requirements with Architect/Owner.). Cover plates shall be marked with circuit number(s) and loads served. Example: Ckt # LA-1 Copy Machine. G8. Equipment layout is based on Square D and/or Siemens. equipment by

other manufacturers such as GE may have larger dimensions. It is the responsibility of the electrical contractor to provide equipment with similar dimensions that would fit in the space noted. G9. Verify location of all outlets (power & communication) with Owner/Arch

prior to rough-in. Owner reserves the right to move any outlets 5 feet in any direction prior to rough-in. All receptacles within 6 feet of any wet area (example: sink, dishwasher, etc...) shall have ground fault circuit protection, whether specifically indicated on drawings or not. Mounting height of all outlets (receptacles, switches, telephone, data, etc.) in

areas with countertop shall be verified with Arch/Owner. Generally all outlets are to be mounted above countertop except outlets for disposers, undercounter dishwasher, undercounter refrigerators, etc. Refer to Arch interior elevations.

G10. Switches/starters for mech and other equipment: Location of disconnect switches, starters, control stations, etc. are shown diagrammatically on the drawings. E.C. shall install such devices in compliance with Code required clearance requirements. All such devices shall be accessible after equipment are in place and satisfy code clearance requirements. Remove and re-install devices that are inaccessible or with inadequate code clearance. Coordinate installation

G11. HVAC Equipment: Overcurrent devices, disconnect switches, conduit/wire are selected based on equipment shown on Mechanical drawings. Field verify ratings of eqpt supplied by HVAC, revise electrical as required to

match actual eqpt supplied by Mech Contractor. Outdoor Pad-Mounted A/C Equipment: Connect A/C equipment to outdoor NEMA 3R disconnect switches with underground rigid conduit feeder, stub up conduit near equipment connection point. Provide sealtite from conduit stub-up to equipment, maximum length of sealtite 5 feet. Sealtite longer than 5 feet is not

G12. Estimated Loads: Information and data on specialty equipment may not be available during the design process. Some loads are necessarily estimated. Such estimated loads are indicated as (EST.) on plans, riser diagrams and/or panel schedules. Contractor shall bid the project using the estimated feeder/breaker/switches shown on drawings. However, the Contractor is responsible for confirmation and verification of all such estimated loads with the appropriate vendors/suppliers. All shop drawings submitted by the Contractor shall include certification that the Contractor has confirmed/verified any estimated loads shown on the drawings. Contractor will not be due any additional compensation for his failure to verify the estimated loads shown on drawings. provide credit to the Owner if actual loads are smaller than estimated loads, credit shall be given for size reduction of feeder/breaker/switches.

Example of equipment loads that are typically estimated: special copy machine, welding eqpt outlet, elevator machinery ...

G13. Exhaust Fans: Where exhaust fans are indicated as interlocked with HVAC equipment, E.C. shall provide all required relays, conduit/control wires, etc. as required for a complete and operating system. Coordiante interlock requirements with HVAC contractor.

indoor/outdoor floor or ground mounted electrical equipment including switches, transformers, switchboards, M.C.C., transfer switches etc. Provide all required and necessary galvanized unistrut support for all indoor/outdoor electrical

G15. Fire Wall: Do not install receptacles, telephone, data outlets, etc. back-toback in fire/smoke partitions or within the same space enclosed by two adjacent stud. Also apply to all corridor walls.

G14. Provide house keeping concrete pads (minimum 4" high) for all

G16. Sleeves thru rated walls: Provide sleeves thru rated walls for all low voltage and line voltage (120V and higher) wirings. Provide sleeves as required for routing wirings from all outlet locations back to control panels/terminal boards, panels, junction boxes, etc. Coordinate requirements with communication systems contractor(s).

Note: For all low voltage outlet devices including telephone, data, etc., the Electrical Contractor shall "Provide outlet back box with cover plates and 3/4" conduit stubbed to accessible ceiling". In addition, E.C. shall provide all required and necessary sleeves through all rated walls/floors from accessible ceiling back to control panels/terminal boards, panels, junction boxes, etc.

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Key Plan

Project Number:

Sheet Name: ELECTRICAL **SPECIFICATIONS**

7915276.00

HOUSTON FIRST CORPORATION

GENERAL NOTES AND ELECTRICAL SPECIFICATIONS

CODE INFORMATION

Applicable codes include but are not limited to: City of Houston, TX Electrical Code, National Electrical Code (2014 N.E.C), International Bldg Code 2006, Life Safety Code (NFPA 101), Texas Accessibility Standards, Americans with Disabilities Act.

26 05 00 BASIC ELECTRICAL REQUIREMENTS

Permits and Codes: Obtain and pay for all necessary permits and required inspections. Comply with all national, state and municipal laws, codes and ordinances relating to building and public safety. Provide any required temporary power and utilities for all trades and all construction trailers. Provide temporary construction lighting and power. Electrical Contractor shall include Temporary Electric: All temporary electric shall be in accordance with OSHA Construction standards 29FCR, Part 1926 and Article 590 of the National Electrical Code. Temporary lighting and power shall be provided in accordance with OSHA standards. The OSHA minimum is 5 footcandles. Included are connections to all construction trailers. The cost of this work is to be included in the base electrical bid for the project. Refer to division 17 specifications for commissioning requirements of electrical systems.

VISITING THE JOB SITE

Visit the site of the proposed construction in order to fully understand the facilities, difficulties and restrictions attending the execution of the work. No additional compensation will be allowed this Contractor for work or items omitted from his original proposal due to his failure to inform himself regarding such matters affecting the performance of the work in this contract or necessary for the installation and completion of the work included herein.

Drawings are diagrammatic, confirm dimensions & locations in the field. If conflicting dimensions are shown, use larger dimensions and verify with Architect. See architectural plans and elevations for exact locations of fixtures and wall mounted devices.

All materials shall be new, made in USA and U.L. listed. Material installation shall comply with NEC requirements and perform by craftsmen skilled in this particular work.

EQUIPMENT PROTECTION Protect equipment and work from damage during handling and installation until completion of construction.

RELATION WITH OTHER TRADES Cooperate with other trades as necessary to accomplish the full intent of the documents.

Provide access panels of doors for all devices requiring adjustment. Similarly for all junction boxes, pull boxes, etc. that are required to be accessible per Code and/or the local authority having jurisdiction. Appearance of access panels/doors shall be acceptable to Architect. Panels/doors shall be designed for the fire rating of wall or ceiling in which they are installed. All access panels shall be lockable and shall be keyed alike (same keying as panels from other divisions).

Plenums are crowded and not all obstacles are indicated. Allow for conduit offsets and pull boxes not indicated on drawings.

Plaster, gypsum board or other non-accessible ceilings: Contractor shall minimize cutting and patching by installing conduit prior to ceiling/wall/partition cover-up.

LOSS OR DAMAGE TO FACILITIES The Contractor shall be responsible for loss or damage to the facilities caused by him and his workmen, and shall be responsible for repairing or replacing such loss or damage. The Contractor shall send proper notices, make necessary arrangements, and perform other services required for the care, protection and in-service maintenance of all electrical services for the facilities. The Contractor shall erect temporary barricades, with necessary safety devices, as required to protect personnel and the general public from injury, removing all such temporary protection upon completion of the work.

The Contractor shall modify, remove and/or replace all materials and items so indicated on the drawings or required by the installation of new facilities. Salvage materials shall remain the property of the Owner and shall be delivered to such destination as directed by the Owner. Dispose of salvage material if not retained by owner Where existing construction is removed to provide working and extension access to existing facilities, Contractor shall remove ceiling grids, tiles, doors, piping, air conditioning ductwork and equipment, etc., to provide this access and shall reinstall same upon completion of work in the areas

WORK IN OCCUPIED AREAS Work in, above, below or near occupied areas shall be at Owner's convenience and may be during evenings or weekends. Schedule all required power outages a minimum of 7 days in advance with the Facility Engineer/Owner. Do not turn off any power sources. Only facility engineer/owner or his authorized representative may do so.

FIRE STOPS AND PENETRATION SEALS All penetrations through fire rated floors and walls shall be sealed with 3M fire resistant foam sealant, to prevent the spread of smoke, fire, toxic gas or water through the penetration either before, during or after a fire. The fire rating of the penetration seal shall be at least that of the floor or wall into which it is installed, so that the original fire rating of the floor or wall is maintained as required by Article 300.21 of the National Electrical Code. The sealant shall be low VOC emitting per LEED CS credit 4.1

All adhesives and sealants used on the interior of the building shall comply (submit documentation of compliance) with the requirements of each of these standards: a. Adhesives, Sealants and Sealant Primers: South Coast Air

Quality Management District (SCAQMD) Rule # 1168. VOC limits correspond to an effective date of July 1. 2005 and rule amendment date of January 7, 2005. b. Aerosol Adhesives: Green Seal Standard for Commercial Adhesives GS-36 requirements in effect on October 19,

A) Provide for isolation of work areas and daily removal of debris. B) Clean all equipment and fixture lenses. C) Replace all burned out lamps. D) Touch up with paint where required.

SUBMITTAL DATA Submittal are required but not limited to the following equipment: Lighting Fixtures

Switchgear **Branch Circuit Panelboards** Transformers

Switches Relay Panels

SHOP DRAWINGS Shop drawings as required shall be provided by the Electrical Contractor at no additional cost to the Architect. These shop drawings shall be prepared to indicate installation at major equipment where special coordination problem exist. Overcurrent & Safety Disconnect Devices for HVAC & Plumbing Eqpt: Overcurrent (OC) & disconnect devices shown on plans are based on a specific equipment manufacturer. M & P Contractors may submit other manufacturers, different models or ratings. It is the responsibility of the Electrical Contractor to coordinate OC/Disconnect devices with the M & P Contractors prior to submitting such devices for Engineer's review. Any deviations from sizes shown on drawings must be noted in the submittals. The Electrical Contractor must certify that he has reviewed and coordinated with the M & P Contractors and that all OC/Disconnect devices submitted match the HVAC eqpt requirements. Shop drawings without such certification will be returned to the Contractor. Only submittals with such certification will be reviewed.

All systems shall be complete and working at completion of construction.

to be changed or corrected in order to comply with these specifications and the drawings shall be accomplished without delay. **GUARANTEE** Guarantee all work and materials furnished under this contract for a period of one year from the date of acceptance by the Owner and Architect. Guarantee shall include: All labor, parts, travel/subsistence, etc.

At the time designated by the Architect, the entire system shall be inspected by

system to an operating test under design conditions to ensure proper sequence

and operation throughout the range of operation. make adjustments as required

to ensure proper functioning of all systems. Special tests on individual systems

The Contractor shall provide a set of as-built drawings and mylar reproducibles

to the Owner/Arch. After the inspection, any items which are noted as needing

the Architect and the Engineer. The Contractor or his representative shall be

After all systems have been completed and put into operation, subject each

FINAL INSPECTION & OPERATING TESTS

are specified under individual sections.

present at this inspection.

RECORD DRAWINGS Provide Record Drawings in AutoCAD and/or Revit 2010 or higher and hard copy on reproducible media showing exact dimensions and location for all underslab conduit, switchgear, panelboards, transformers, equipment, and revised homerun circuit locations. Record drawings shall include all changes and deviations in the work from the Construction Documents. Electronic CAD backgrounds may be available from the Architect.

26 05 73 SHORT CIRCUIT CALCULATION, PROTECTIVE DEVICE COORDINATION AND ARC FLASH STUDIES Provide short circuit calculation, protective device coordination and arc flash hazard studies. Where emergency system(s) are provided, studies shall include overcurrent devices selective coordination with all supply side overcurrent protective devices. Emergency systems(s) overcurrent protective devices shall be selectively coordinated with all supply side overcurrent protective devices, in compliance with requirement as outlined in NEC 620, 700, 701, 708 & 517. Studies shall encompass electrical distribution system from normal power source or sources to and including {branch breakers in each panelboard}. Prepare study to verify required equipment ratings prior to ordering distribution equipment. All overcurrent protective devices shall be selected based on the results of the studies. Equipment short circuit current ratings (AIC) shown on drawings are for reference only, provide equipment with the correct AIC rating based on the results of the studies. Submit report with equipment submittals for engineer's review. Perform study with aid of computer software programs. Report shall include: (a) Calculation methods and assumptions, (b) one line diagram, (c) state conclusions and recommendations. Studies and report shall be prepared by a professional engineer licensed in the

Contractor shall provide warning labels on electrical equipment indicating incident energy level, level of hazard and the required personal protection equipment. Equipment required to be labelled shall include, but not limited to, switchboards. distribution panels, motor control centers, panels, contactors, disconnect switches and motor starters. Contractor shall provide Siemens Dynamic Arc Flash Sentry (DAS) System and

ETU776 trip unit in WL circuit breakers where arc flash studies reveal dangerous or category 3 levels. Contractor shall provide remote keyed switch for control, located per the engineer, and provide blue beacon light visible from all areas of the equipment room, to indicate "maintenance mode" is active. Equivalent system by GE, Eaton and Square D are acceptable.

26 05 33 CONDUIT AND BOXES

Shall be rigid galvanized steel (RGS) or electrical metallic tubing (EMT) as manufactured by Allied, Triangle or Wheatland. Indoors above grade: EMT or RGS. Install ground wires where shown on the drawings. Compression or set-screw type fittings may be used for EMT. Minimum conduit size 1/2 inch. Type "MC" metal clad cable is acceptable if approved by the Local Authority. MC cable, where used in lengths greater than 6', shall be properly supported per NEC. Homerun circuits to panels shall be in conduit, MC homerun to panels are not acceptable. Type "AC" armored cable (commonly referred to as "BX") is not acceptable

and shall not be used. Electrical nonmetallic tubing (ENT, NEC Article 362) shall not be used unless specifically approved by the Engineer. Flexible conduit shall be utilized as final connections (3'-5' only) at the following equipment: motors, lighting fixtures, heater, power supplies, and any other vibration producing equipment, Utilize 1/2" flexible metallic conduit minimum and include a green ground wire. Conduit shall be supported from structure every 5 feet and within 3 feet of all boxes. Use locknuts inside and out at boxes. Maintain minimum 12" separation from all high temperature pipes. All conduit runs shall be installed either parallel or perpendicular to building lines. Route conduit as directly as possible with largest radius bends possible. Make bends with standard ells or bends per NEC. Provide expansions fittings if conduit crosses structural expansion joint. All conduit on roof shall be supported by an engineered, prefabricated portable pipe system specifically designed to be installed aboved finished roof without roof penetrations, flashings or damage to roof membrane. Provide pipe hanger systems manufactured by PHP (phone 713-672-5088, 800-797-6585), NO EXCEPTIONS. Provide SS8-C for conduit up to 2 1/2", for conduit 3 1/2" and smaller provide PP10 with strut, for conduit 4" and larger provide PSE-Custom or PPH-D. Support at interval not to exceed 10' on center, and within 5' of any deflection of conduit. Clean conduit interior after installation; coat scratches with zinc paint. Provide pull wire in all conduit (power, fire alarm. telephone and other communication conduit). Pull wire also required in all spare conduit. All conduit connection adhesives and coating paint shall be low VOC emitting

Outlet Boxes: Shall be galvanized steel suitable for location. Ceiling outlet boxes shall be 4" octagon. Wall outlet boxes shall be proper design to accommodate the devices required - 4 inch square with raised cover. provide Raco, Steel City or Appleton. ALL J-BOXES / SPLICE BOXES MUST BE ACCESSIBLE

Junction / Pull Boxes for each conduit run: provide one junction/pull box for each equivalent three quarter bends (270°).

26 05 19 BUILDING WIRE AND CABLE Wire: (Triangle, American Insulated Cable Co., or Cablec)

per LEED CS Credit 4.1 requirements.

All wiring shall be in conduit (except plenum rated low voltage cables). All wires must be 75°C rated or better, 60°C rated wire shall not be used. 90°C rated wire may be used but only at 75°C ampacity A.) Minimum size #12 except controls may be #14. Use #10 conductors for 20 ampere, 120 volt branch circuits longer than 100 feet. Use #10 conductors for 20 ampere, 277 volt branch circuits longer than 200 feet. B.) Type THHN/THWN stranded copper thermoplastic in dry locations. C.) Type THWN in wet locations (outdoor, underground, on roof, ...). D.) All wire shall be 98% conductivity copper, 600 volt. Aluminum wiring will be allowed for feeders 150 amp and larger; however it is the contractor's responsibility to properly size conductors and raceway per NEC. E.) Wire #10 and smaller may be solid or stranded, #8 or larger shall be stranded. F.) Communication wires (Fire Alarm, Telephone, HVAC thermostat, data etc.): Plenum rated low-smoke cable may be used in lieu of wire/conduit type installation. All plenum rated cable shall be properly supported by bridal rings cable ties, clips etc made by Erico (caddy communication fasteners) or equal. Do not use scrap wire to wrap and support communication wires. Homemade support devices are not acceptable. Do not lay communication cable directly on top of ceiling tiles, install cables a minimum of 12" above ceiling tiles and 12"

from HVAC ductwork. Provide minimum 6" separation between power conduit

and communication wirings.

FIELD INSULATION TESTING Insulation resistance of all conductors shall be tested. Each conductor shall have its insulation resistance tested after the installation is completed and all splices, taps and connections are made except connection to or into its source and point (or points) of termination. insulation resistance of conductors which are to operate at 600 volts or less shall be tested by using a Biddle megger of not less than 1000 volts DC. insulation resistance of conductors rated at 600 volts shall be free of shorts and grounds and have a minimum resistance phaseto-phase and phase-to-ground of at least 10 megohms. Conductors that do not exceed insulation resistance values listed above shall be removed at Contractor's expense and replaced and test repeated. The Contractor shall furnish all instruments and personnel required for tests, shall tabulate readings observed, and shall forward copies of the test readings to the Owner. These tests reports shall identify each conductor tested, date and time of test and weather conditions. Each test shall be signed by the party making the test.

26 27 26 WIRING DEVICES Wiring Devices: Furnish and install where indicated on drawings. All devices shall be Leviton "Decora" type (white color, confirm w/Architect) or approved equal unless specified otherwise by Architect, All receptacles shall be "Spec Grade" type. Ground fault circuit interrupter (GFCI) receptacle shall have integral LED indicator light. Cover plates: high abuse nylon or stainless steel per architect.

All electrical boxes on opposite sides of corridor wall and firewalls must be separated by a horizontal distance of not less than 24 inches.

Testing and Certification: Contractor shall deliver a written report certifying that every receptacle has been tested as follows and found acceptable: (a) the physical integrity of each receptacle shall be confirmed by visual inspection. (b) The continuity of the grounding circuit in each electrical receptacle shall be verified. (c) Correct polarity of the hot and neutral connections in each electrical receptacle shall be confirmed. (d) The retention force of the grounding blade of each electrical receptacle (except locking-type receptacle) shall be not less than 115 grams (4oz.).

Select the appropriate tap setting on transformer so that the actual secondary voltage is 1/2 (plus or minus) of a tap span at full load. Record the transformer serial number, KVA rating, selected tap setting and secondary voltage readings. Submit copies of the record to the Architect/Engineer. Average sound levels must not exceed the following values: 51-150 151-300 Provide a 220C insulation system for a maximum 80-degree C temperature rise over a 40-degree C ambient. (80-degree C rise transformers shall be capable of

transformer noise from the building structure.

26 05 26 GROUNDING AND BONDING

26 05 53 ELECTRICAL IDENTIFICATION

(a) 480 volt system - black.

(c) fire alarm system -red,

(d) telephone system - yellow

interval if accessible and/or visible, example:

3 Ph, 4W

Brown

Purple

Yellow

Green

be 1/4" minimum), example:

similiarly identified.

submitted by Owner.

and the interiors.

208Y/120V, 3 PHASE, 4 WIRE

33 71 73 ELECTRICAL SERVICE

after award of project contract.

center. Color of paint band:

requirements.

Phase A

Phase B

Phase C

Neutral

Ground

Grounding: All conduit work and electrical equipment shall be effectively and

equipment grounding conductor with all power and receptacle and lighting circuits.

Grounding electrodes: Provide 3/4" x 10-ft long, copper-clad, steel grounding rod.

connections provide mechanical bolted-type connections utilizing high conductive

than 25 ohms. Provide additional ground rods as required to obtain 25 ohms or less.

All junction and pull boxes in ceiling plenum shall be painted yellow for 480 volt high

Furnish markers or paint band for each conduit longer than 6 feet, spacing 20 feet on

Label all homerun and major conduit with home panels/switches, etc. at every 10-ft.

For below-grade connections provide exothermic welded type: for above grade

copper alloy or bronze lugs or clamps. Service ground resistance: Must be less

Identification: Label all junction and pull boxes with panels and circuit numbers.

voltage system; blue for low voltage system (240 volt and/or 208 volts).

Panel "X", Sw. "X", Cond Unit XXX, Xfmr Disc, Sw., etc.

Mark all branch conduit with circuit numbers at each surface mounted panel

208Y/120V

3 Ph, 4W

Red

Blue

Green

All panels shall be identified using nameplates with 5 rows of text (letter height shall

MAX. AVAILABLE SHORT CURRENT XXXX AMPS, CALCULATED MM/DD/YYYY

black background. Secure nameplates to equipment using screws or rivets.

Panel nameplates shall be engraved three-layer laminated plastic, white letters on

All switches, starters, transformers, wireways, communication cabinets etc. shall be

Contractor shall make arrangements for temporary and permanent service. Comply

with all service installation standards of the serving utility. Electrical service

characteristics shall be as shown on the electrical one line diagram. Contractor

shall coordinate location of service entrance with the Power Company. Provide

system. Contractor shall submit to the Power Company an application for service.

Contractor shall submit service application to the Power Company within 30 days

Contractor shall secure a Service Outlet and Data Statement ("statement") from the

Power Company. Verify that the information on the statement is correct, including

voltage, phase and number of wires, type of service, service facility arrangements,

review. Failure to submit service application in a timely manner may cause project

however, contractor shall be responsible for coordinating any increased equipment

are not acceptable and shall not be used. Provide breakers which are quick-make

and quick-break on both manual and automatic operation. Use a trip-fre breaker

are not acceptable. All breakers shall be bolt-on thermal magnetic type. Stab-on

breakers rated 100 amp or less shall be suitable for terminating 75-degree C wire

(breakers rated for only 60-degree C wire is not acceptable. See 26 05 19 - Building

All equipment shall be labeled, panelboards shall be labeled both on the coverplates

Panelboard Directories: Provide a steel directory frame mounted inside the door

served. Identify each circuit with load and locations (room names and room

Acceptable manufacturers are GE, Square D, Eaton, and Siemens.

26 28 19 ENCLOSED SAFETY SWITCHES

26 22 00 DRY TYPE TRANSFORMERS

KVA Rating

3-15KVA, single phase

25-100KVA, single phase

30-300KVA, three phase

167-250KVA, single phase

9-15KVA, three phase

500KVA, three phase

dimensions with equipment clearance requirements.

Furnish full-load taps in the primary windings as follows:

numbers) and indicate with typed directories. (Example: 5 duplex receptacles,

with a heat-resistant transparent face and a directory card for identifying the loads

Office, RM XXX). Install the panelboards such that the center of the switch or circuit

breaker in the highest position will not be more than 6 1/2 feet above the floor or

All safety switches shall be heavy-duty type with quick-make, quick-break contacts

and suitable for terminating 75-degree C wire. Provide each switch with a ground

opening the door when the switch is in the ON position and to prevent turning the

switch ON when the door is open. Provide incoming line terminals with an insulated

shield so that no live parts are exposed when the door is open. Provide each switch with an isolated, fully rated neutral block with provisions for bonding the block to the

enclosure. Where fusible switches are shown, provide switches with rejection-type

fuse holders which are suitable for use with fuses. In general, mount switches so

grouped, align tops of switches. Acceptable manufacturers are GE, Square D, Eaton,

Provide dry type quiet transformers (per ANSI - C89 and UL 506), self-cooled NEMA

Two 5% taps below rated voltage

Two 5% taps below rated voltage

Six 2 1/2% taps, 4 below and 2 above rated

Six 2 1/2% taps, 4 below and 2 above rated

voltage below rated voltage

voltage below rated voltage

voltage below rated voltage

Four 2 1/2% taps, 2 below and 2 above

voltage below rated voltage

Four 2 1/2% taps, 2 below and 2 above rated

Class AA, copper wire windings. Aluminum windings are acceptable; however,

contractor shall be responsible for coordinating any increased equipment

that operating handle is approximately 44 inches above finished floor; where

lug. Provide a defeatable, front accessible, coin-proof door interlock to prevent

breakers are not acceptable. Do not use tandem circuit breakers. All circuit

dimensions with equipment clearance requirements. Load center type panelboards

which is trip indicating. For 2-pole and 3-pole breakers, use the common-trip type so

that an overload or fault on one pole will trip all poles simultaneously. Handle ties

delay and additional cost. All such cost due to Contractor's failure to apply and

coordinate for service in a timely manner shall be borne by the Contractor.

Contractor shall coordinate and assist Owner if application is required to be

All panelboards shall have copper buses. Aluminum bussing is acceptable;

26 24 16 PANELBOARDS - DISTRIBUTION AND BRANCH CIRCUIT

and location of service outlet. Provide a copy of the statement for Engineer's

materials and equipment required to connect the project service to the utility

location. For recessed panels, mark branch conduit in ceiling plenum just above

All paint used for identification shall be low VOC emitting per LEED CS credit 4.1

3 Ph, 4W

Blue

White

Green

Orange (High Leg)

120/240V

1 Ph, 3W

(b) 208 volt system - black w/blue stripes,

Color Code: Conductors shall be color coded as follows:

Gray or White White

PANEL "XX" 225 AMPS, SECTION #1 of 2-SECT PNL

FEEDER SIZE 4 # 4/0 THWN, 1 # 4 G, 2 1/2" C

FED FROM DIST PANEL "XXX", 1ST FLOOR

(e) other system - by specific letter description.

permanently grounded in accordance with NEC requirements. Provide green

degree C ambient). Special transformers: 150-degree C rise for shielded isolation type; 115-degree C rise for K-rated transformers. Make transformer cable connections with compression-type lugs suitable for terminations of 75C rated conductors. Construct concrete pad for floor-mounted transformers. maintain a minimum of 6 inches free air space between enclosure and wall. Mount transformers on vibration isolating pads suitable for isolating the

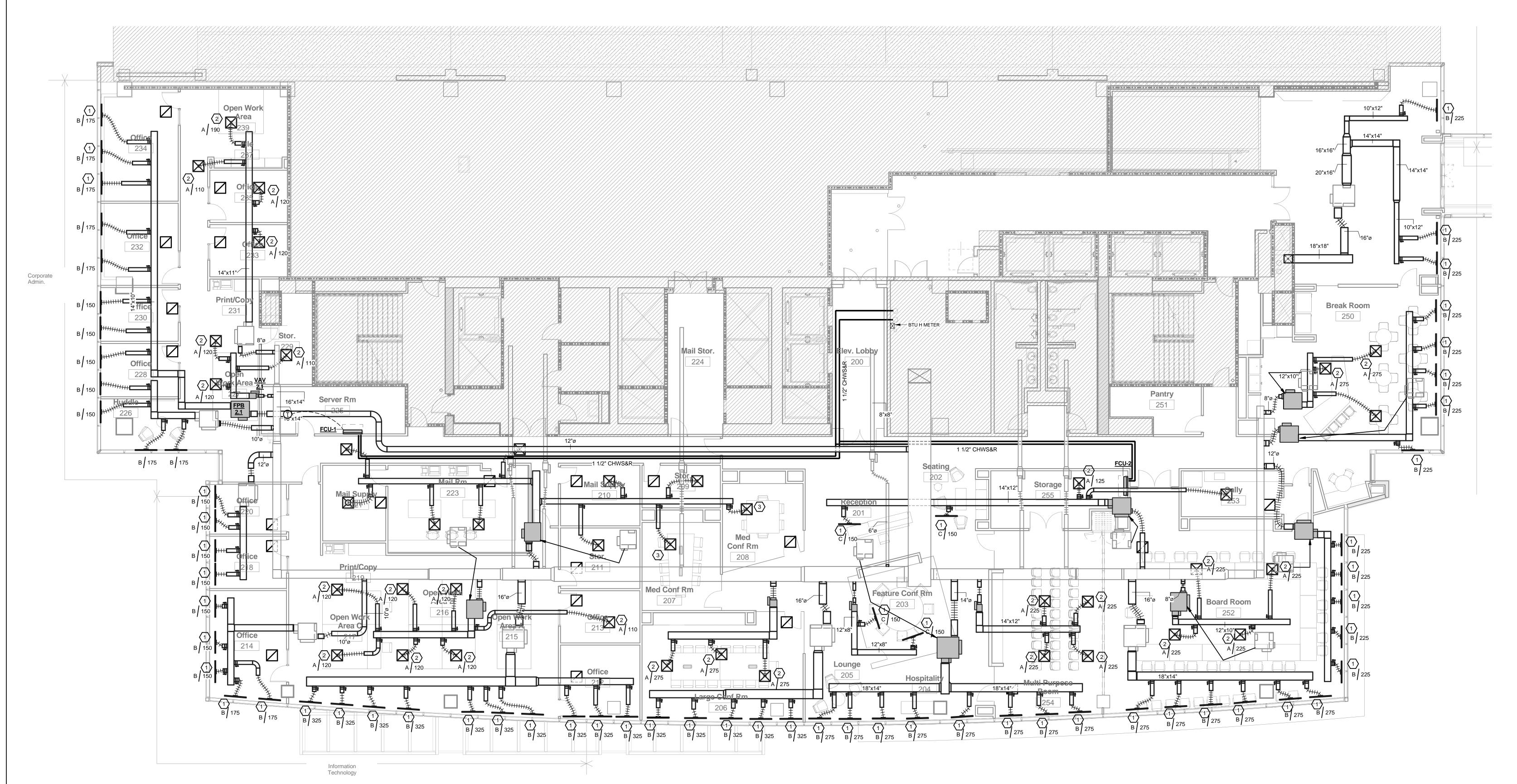
carrying a 30% continuous overload without exceeding a 150-degree C rise in a 40-

Provide Square D "Energy Saving Watchdog" transformer or equal. Provide double or additional lugs as required where two or more secondary feeders are connected to transformers. Provide vibration isolators for all transformers.

Acceptable manufacturers are GE, Square D, Eaton, and Siemens.

27 05 33 COMMUNICATION SYSTEMS Felephone, Data, Monitoring Systems: Unless otherwise noted on the drawings, provide and install wall outlet boxes, cover plates and 3/4" conduit and pull string stubbed to a J-box above accessible ceiling for installation of wiring by others.

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1 LEVEL 2- MECHANICAL PLAN

1/8" = 1'-0"

KEYED NOTES

- 1 NEW SUPPLY SLOT DIFFUSER SHALL BE LOCATED AS SHOWN.BALANCE TO CFM INDICATED. PROVIDE NEW SPIN-IN AND FLEX DUCT. SEE SCHEDULE AND DETAILS.
- NEW SUPPLY DIFFUSER SHALL BE LOCATED AS SHOWN.
 BALANCE TO CFM INDICATED. PROVIDE NEW SPIN-IN AND FLEX
- DUCT. SEE SCHEDULE AND DETAILS. 3 NEW VAV DIFFUSER SHALL BE LOCATED AS SHOWN. BALANCE TO CFM INDICATED. PROVIDE NEW SPIN-IN AND FLEX DUCT. SEE SCHEDULE AND DETAILS.

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M01

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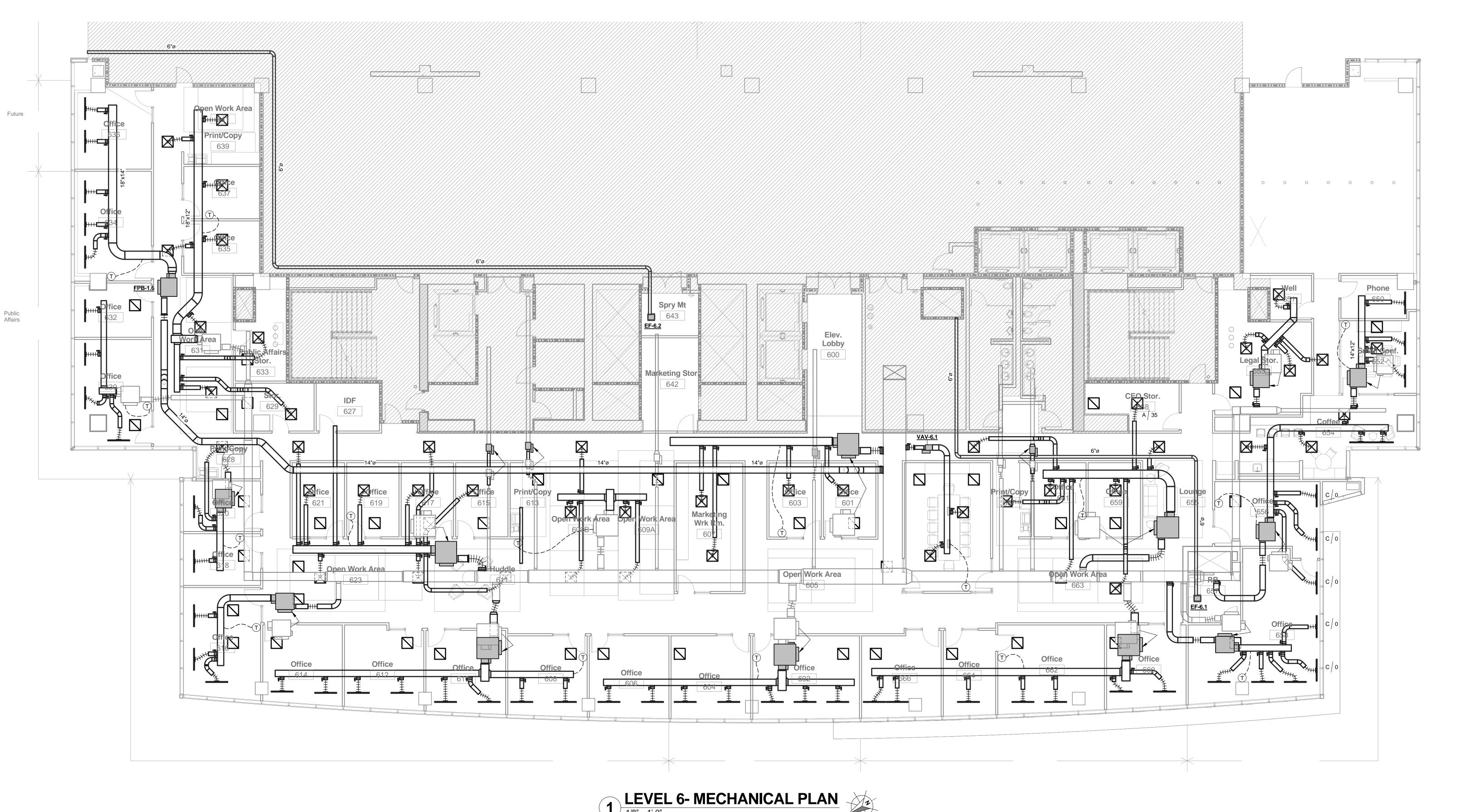
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LEVEL 4
MECHANICAL

PLAN





1 LEVEL 6- MECHANICAL PLAN

1/8" = 1'-0"

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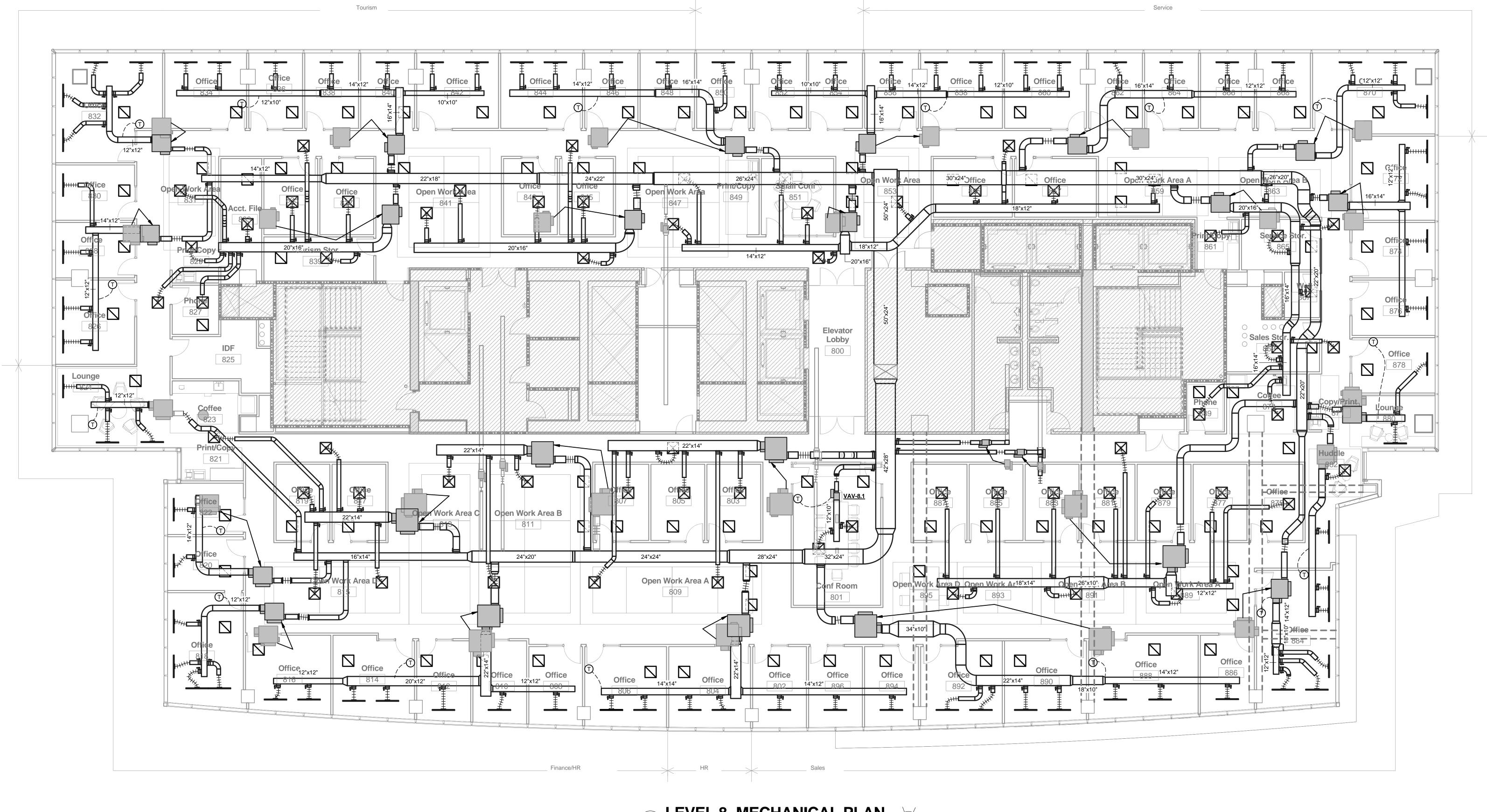
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Sheet Name: LEVEL 8-MECHANICAL PLAN



BOX TAG

FPB-2.1

FPB-4.1

FPB-6.1

NOTES:
• FAN MOTOR TO BE ECM TYPE. • ELECTRIC COIL STAGES: USE STAGE 1 FOR 0.5 TO 1.5 KW; 2 STAGES FOR 2-4.5 KW; 3 STAGES FOR 5KW OR ABOVE.

FAN POWERED CONSTANT AIR VOLUME BOX SCHEDULE (SINGLE DUCT)

- HTG COIL LVG AIR NOT TO EXCEED 90°F. • MIN STATIC PRESS NOT TO EXCEED 0.25".
- NC AT 1" STATIC <35 RADIATED; USING ASHRAE 885-98 APPENDIX E.
- SELECT ALL BOXES WITH AVAILABLE CAPACITY OF 20% ABOVE SCHEDULED CAPACITY. • ALL BOXES TO BE PROVIDED WITH SINGLE POINT WIRING.
- PROVIDE INTAKE BOOT W/RACK & FILTER FOR FAN AIR OPENING. (REMOVE FILTER AFTER CONSTRUCTION)

PROJECT: HOUSTON FIRST CORPOR	CATION	•
TAG	FCU-1	FCU-2
LOCATION	SERVER ROOM 225	STORAGE ROOM 255
SERVICES	SERVER	IT ROOM
TYPE	HORIZONTAL	HORIZONTAL
FAN		
TOTAL CFM, HIGH SPEED	XX	XX
OUTSIDE AIR CFM		
EXT. STATIC, "WG	XX	XX
SPEED HIGH	HIGH	HIGH
MOTOR POWER, HP	(2) 1/10	(2) 1/10
VOLTS/PH/CYCLES	277/1/60	277/1/60
COOLING COIL		
CFM	XX	XX
BTUH, SENSIBLE	XX	XX
BTUH, TOTAL	XX	XX
MIN ROWS	4	4
ENT DB/WB, °F	75/63	75/63
LVG DB/WB, °F	55/54	55/54
GPM	XX	XX
EWT-LWT, °F	45-55	45-55
FILTERS		
FILTER EFF	30%	30%
FILTER-TYPE	1" PLEATED	1" PLEATED
FEATURES		
PREMIUM EFF MOTOR	YES	YES
UNIT MTD DISCONNECT	NO	NO
SINGLE POINT ELEC CONNECTION	YES	YES
CONTROLS	24-VOLT	24-VOLT
VALVE PACKAGE	BLDG MODULATING CHW	BLDG MODULATING CHW
CONDENSATE PUMP	YES	YES
INTERNAL ENVR. MODEL OR EQ.	XX	XX

EXTERNAL STATIC INCLUDES DUCT.

COILS, FILTERS, AND INTEGRAL GRILLES.

FUSING AND STARTERS FOR MOTORS. PROVIDE CONTROL TRANSFORMER.

BALL VALVES, AIR VENT, PRESS/TEST PORTS.

INTERNAL STATIC INCLUDES WET COIL, CASING LOSSES,

VALVE PACKAGE TO INCLUDE 2 WAY VALVES PER PLANS,

SINGLE-POINT ELECTRICAL CONNECTION INCLUDES INTERNAL

VARIAE	BLE AIR VOLUME	BOX (NO FAN) S	SCHEDULE			
PRESSURE	E INDEPENDENT					
BOX NO.	MAX COOLING CFM	MIN. COOLING CFM	INLET SIZE	HEATING, KW	VOLTAGE	MANUFACTURE AND MODEL NUMBER OR EQ.
VAV-2.1	XX	0	8	XX	CONTROL	PRICE SDV
VAV-6.1	XX	0	8	XX	CONTROL	PRICE SDV
VAV-8.1	XX	0	8	XX	CONTROL	PRICE SDV

NOTES:
MIN STATIC PRESSURE NOT TO EXCEED 0.25"

NC AT 1" STATIC < 25 RADIATED SELECT ALL BOXES WITH AVAILABLE CAPACITY OF 20% ABOVE SCHEDULED CAPACITY

AIR [AIR DEVICE SCHEDULE							
TAG	SERVICE	MANUFACTURER AND MODEL	FACE SIZE	NECK SIZE	CFM	FINISH	MATERIAL	NOTES
			24"x24"	6"ø	0-180			
Α	A SUPPLY	TITUS OMNI	24"x24"	8"ø	181-235	WHITE	STEEL	1,2
		24"x24"	10"ø	236-405				
В	RETURN	TITUS PAR	24"x24"	20"x20"		WHITE	STEEL	
			48"	6"ø	0-165			
	C SUPPLY SLOT	SUPPLY SLOT TITUS TBD-30 2-SLOT, 1" SLOTS	48"	8"ø	170-195	DI ACK	OTEEL	1,2,3
			48"	10"ø	200-235	BLACK	STEEL	
			48"	12"ø	240-270			

I. 4-WAY UNLESS SHOWN DIFFERENT

2. PROVIDE OPP BLADE DAMPER AT EACH SUPPLY OR EXH UNLESS BALANCING DAMPER IS PROVIDED AT RUNOUT TAKEOFF 3. INSULATE SLOT DIFFUSER PLENUMS

TAG	EF-1
SERVICE	EXHAUST
AREA SERVED	RESTROOM 657
FAN TYPE	CABINET FAN
AIR FLOW CFM	100
EXT. STATIC PRES	0.5" WG
DRIVE	DIRECT
MOTOR DATA	129 W
VOLTS/PH/CYCLES	115/1/60
ACCESSORIES	
FACTORY DISCONNECT	NO
BACKDRAFT DAMPER	YES
FAN SPEED CONTROLLER	YES
NOTES	2
GREENHECK MODEL OR EQ.	SP-B150

2. FAN SHALL BE CONTROLLED BY A LIGHT SWITCH

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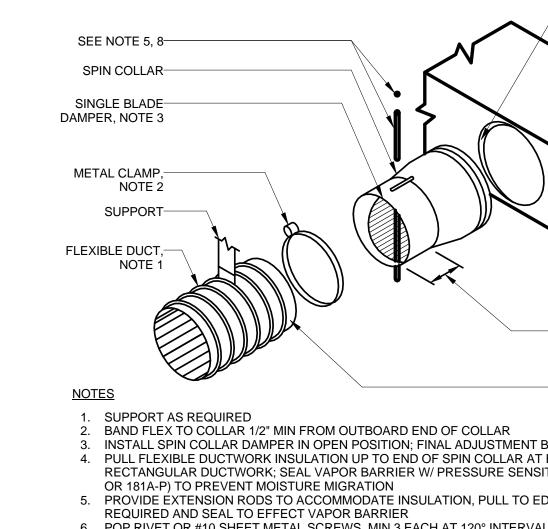
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M05

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3. INSTALL SPIN COLLAR DAMPER IN OPEN POSITION; FINAL ADJUSTMENT BY TAB CONTRACTOR 4. PULL FLEXIBLE DUCTWORK INSULATION UP TO END OF SPIN COLLAR AT EDGE OF RECTANGULAR DUCTWORK; SEAL VAPOR BARRIER W/ PRESSURE SENSITIVE TAPE (UL 181B-FX 5. PROVIDE ÉXTENSION RODS TO ACCOMMODATE INSULATION, PULL TO EDGE OF DUCTWORK AS 6. POP RIVET OR #10 SHEET METAL SCREWS, MIN 3 EACH AT 120° INTERVALS, CONNECTING STOVEPIPE TO COLLAR. ENSURE RIVETS OR SCREWS DO NOT INTERFERE W/ DAMPER

—SEAL JOINT, NOTE 7

-RECTANGULAR

-3" MIN LENGTH

-SEE NOTE 4,6

-SUPPLY AIR TO CONDITIONED

-MIN 3 LINEAR FT OF DUCT

PRIOR TO ANY TAPS

FLEX CONNECTION

-CONTROL BOX IN

ACCESSIBLE

LOCATION

-INSULATION

AT INLET

-MIN 3 DUCT DIAMETERS

HARD, STRAIGHT DUCT

—SEE TYPICAL FLEX

SPIN-IN DETAIL

SPACE

DUCTWORK SHOWN

8. INSTALL LOCKING QUADRANT AND HANDLE ON BOTTOM OF DUCT FOR EASE OF SERVICE (SHOWN ON TOP FOR EASE OF ILLUSTRATION ONLY) SPIN-IN FITTING WITH DAMPER

7. TAPE AND SEAL ALL JOINTS TO PREVENT LEAKAGE

SUPPORT WITH 2 TRAPESE HANGERS WITH

STRAP FOLDED UNDER UNIT AND SCREWED

TO CASING WITH #10 SHEET METAL SCREWS.

AT EACH CORNER OR 2" WIDE, 22 GA

MAINTENANCE ACCESS:

PROVIDE A MINIMUM OF

2'-0" ACCESS AREA, ALL

ELECTRIC HTG COIL PER BOX SCHEDULE

CONCENTRIC REDUCER-

FLEX DUCT, ONE SIZE-LARGER THAN INLET

FLEX MORE THAN 90°

FLEX NOT TO EXCEED 2 FT

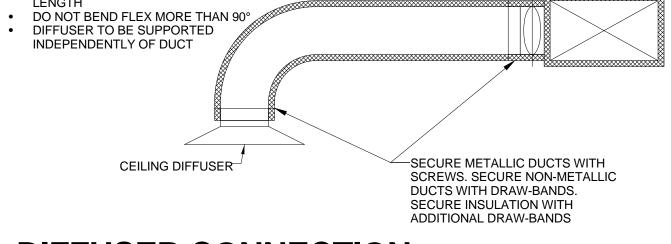
LENGTH; USE HARD DUCT FOR ADD'L LENGTH. DO NOT BEND

SUPPORTS SHALL NOT BLOCK

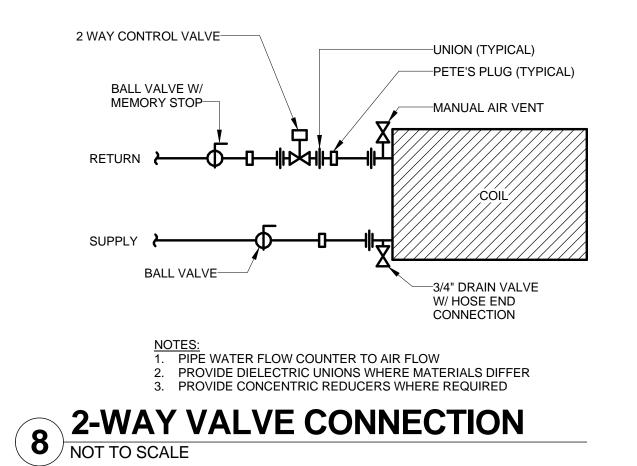
ACCESS TO UNIT-

AROUND-

METAL STRAP AT EACH OF 4 CORNERS;



STANDING WATER IN OVEFLOW DRAIN PAN. 7 FAN COIL UNIT NOT TO SCALE



STRUCTURE

CEILING

P-TRAP

1. DRAIN PAN, SUPPORTS, PIPING AND RELATED APPURTENANCES SHALL

2. PLACE VIBRATION ISOLATORS AS CLOSE TO STRUCTURE AS POSSIBLE.

3. PROVIDE DRAIN PAN UNDER ENTIRE UNIT INCLUDING CHILLED WATER VALVES. SEE CHILLED WATER COIL CONNECTION DETAIL FOR MORE

CONTRACTOR MAY EXCLUDE VIBRATION ISOLATION IF UNIT IS INTERNALLY

APPROVED VIEWABLE LOCATION. PROVIDE CHROME ESCUTCHEON AT CEILING. ALTERNATIVELY, CONTRACTOR MAY PROVIDE A FLOAT SWITCH IN SECONDARY DRAIN PAN THAT SHALL TURN UNIT OFF UPON SENSING

NOT BLOCK ACCESS TO FILTERS OR UNIT ACCESS PANELS.

4. 3/4" SECONDARY DRAIN: DRIP OVER MOP SINK OR OTHER CODE

INFORMATION << REMOVE IF DX EQUIPMENT>>

FILTER-

RETURN DUCT

OUTSIDE AIR WITH-

BALANCE DAMPER

PRIMARY DRAIN PAN-

SECONDARY DRAIN-

PAN. SEE NOTE 3

SUSPEND FROM STRUCTURE

WITH VIBRATION ISOLATORS (TYPICAL OF 4). SEE NOTE 2

—COOLING COIL

—HEATING COIL

(TYPICAL)

SLOPE──

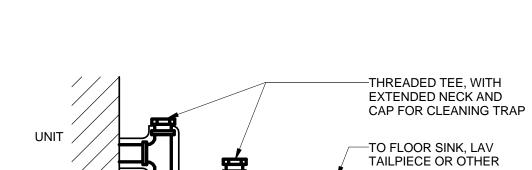
SEE NOTE 4-

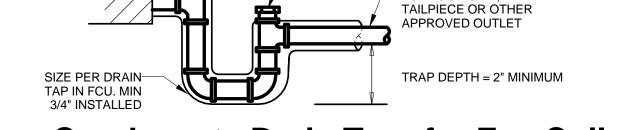
FLEXIBLE CONNECTION

→ PRIMARY CONDENSATE

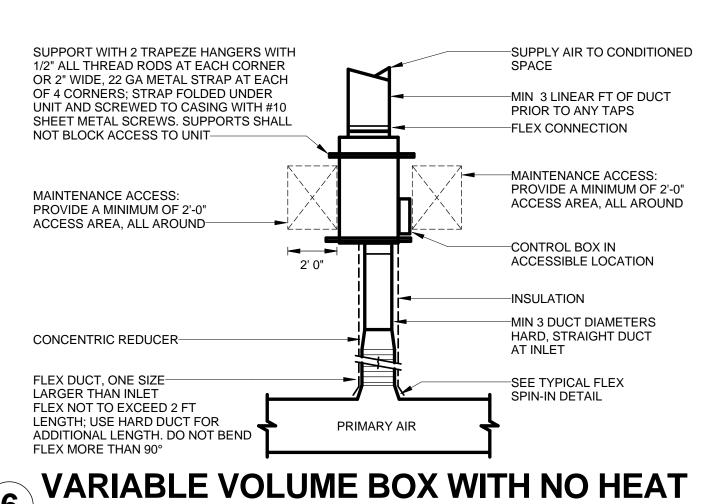
DRAIN, INSULATED

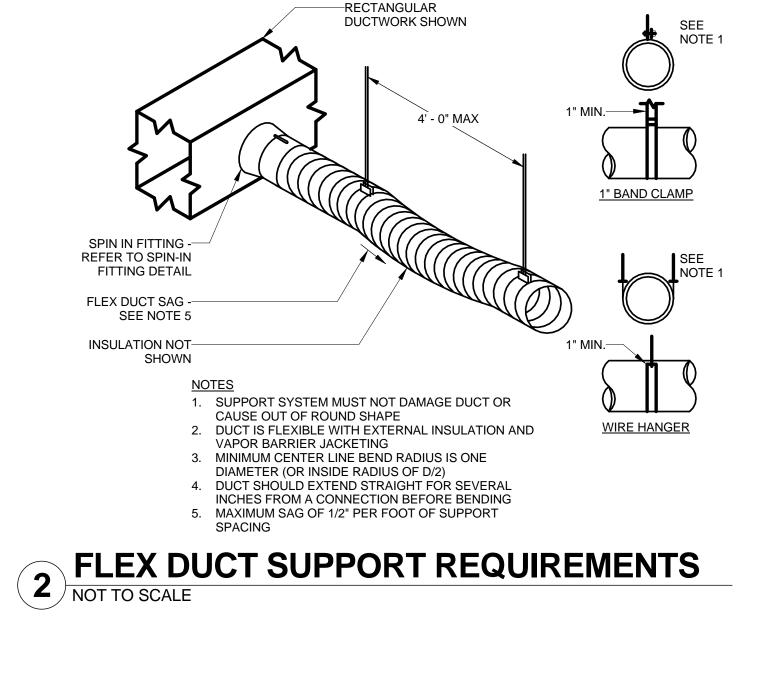
SUPPLY DUCT

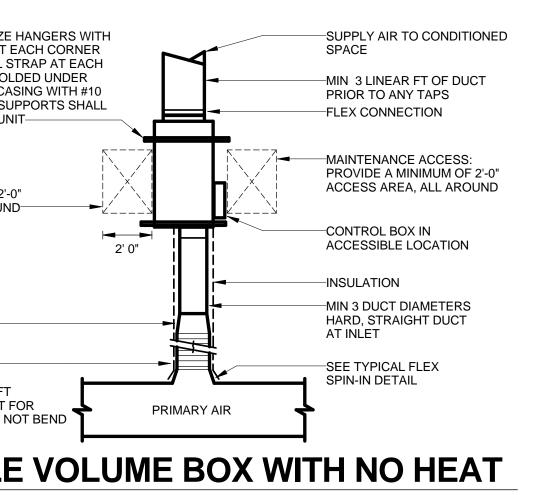




9 Condensate Drain Trap for Fan Coils or Furnaces
NOT TO SCALE

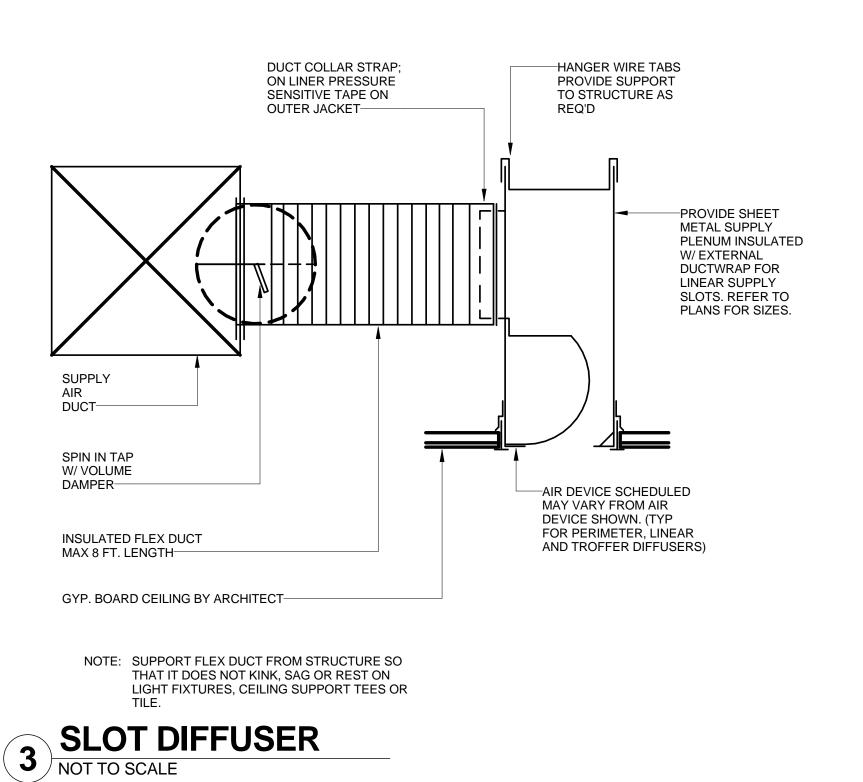


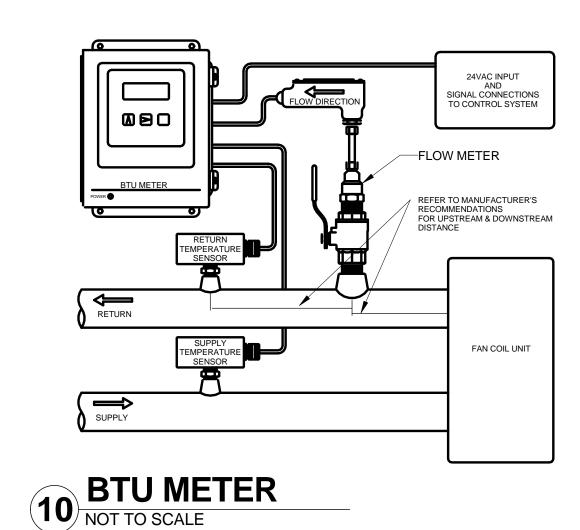




PRIMARY AIR

5 FAN POWERED SERIES SIDE POCKET BOX NOT TO SCALE





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AMENDMENTS, TABLE 302.2: 96°F DB, 80°F WB SUMMER; 28°F DB WINTER

7534 DEGREE DAYS COOLING; 1371 DEGREE DAYS HEATING CLIMATE ZONE 2A

<u>CODE INFORMATION</u>

APPLICABLE CODES INCLUDE BUT ARE NOT LIMITED TO: CITY OF HOUSTON BUILDING CODE: 2006 IBC, AMENDED CITY OF HOUSTON MECHANICAL CODE: 2006 UMC, AMENDED

CITY OF HOUSTON COMMERCIAL ENERGY CONSERVATION CODE: 2009 IECC

FIRE AND SMOKE DAMPER REQUIREMENTS (PER TABLE 716.5, CITY HOUSTON <u> AMENDED IBC):</u>

SHAFT ENCLOSURES: FIRE & SMOKE DAMPER REQUIRED EXCEPTION 3: FIRE DAMPER NOT REQUIRED IN SPRINKLERED BUILDING OTHER THAN GROUP H PENETRATED BY DUCTED HVAC SYSTEM EXCEPTION 4: FIRE & SMOKE DAMPERS NOT REQUIRED FOR STEEL EXHAUST SUBDUCTS EXTENDING AT LEAST 22" VERTICALLY IN EXHAUST SHAFTS HAVING CONTINUOUS AIR FLOW UPWARD TO THE OUTSIDE.

OUTSIDE AIR REQUIREMENTS - CITY OF HOUSTON AMENDMENTS, UMC TABLE 4-1

OFFICES: 0.08 CFM /SQ F7 RECEPTION: 0.20 CFM /SQ FT CORRIDOR: 0.05 CFM /SQ FT CONFERENCE: 0.20 CFM /SQ FT

ENERGY CODE PER 2009 IECC CHAPTER 5 (NOT ASHRAE 90.1) - MANDATORY HOUSTON IS ZONE 2 WARM-HUMID

503.2.1 Calculation of heating and cooling loads. Engineer has performed HVAC load calculations using Elite or Trace capacity shall not exceed the loads calculated in accordance with generally accepted

engineering standards and methods. **503.2.3 HVAC equipment performance requirements.** Equipment shall meet the minimum efficiency requirements of Tables 503.2.3. **503.2.4 HVAC system controls.** Each heating and cooling system shall be provided with

thermostatic controls. **503.2.4.1 Thermostatic controls.** The supply of heating and cooling energy to each zone shall be controlled by individual thermostatic controls capable of responding to temperature within the zone. Where humidification or dehumidification or both is provided, at least one humidity control device shall be provided for each humidity control system.

503.2.4.2 Set point overlap restriction. Where used to control both heating and cooling. zone thermostatic controls shall provide a temperature range or deadband of at least 5°F or reduced to a minimum.

503.2.4.3 Off-hour controls. Each zone shall be provided with thermostatic setback controls that are controlled by either an automatic time clock or programmable control system. Exceptions: 1. Zones that will be operated continuously. 2. Zones with a full HVAC load demand not exceeding 6,800 Btu/h and having a readily accessible manual shutoff switch.

503.2.4.3.1 Thermostatic setback capabilities. Thermostatic setback controls shall have the capability to set back or temporarily operate the system to maintain zone temperatures down to 55°F or up to 85°F.

503.2.4.3.2 Automatic setback and shutdown capabilities. Automatic time clock or programmable controls shall be capable of starting and stopping the system for seven different daily schedules per week and retaining their programming and time setting during a **Coordination:** Provide Electrical Contractor with electrical requirements of approved loss of power for at least 10 hours. Additionally, controls shall have a manual override that allows temporary operation of the system for up to 2 hours; a manually operated timer capable equipment in sufficient time to order panel boards, disconnects, etc. of being adjusted to operate the system for up to 2 hours; or an occupancy sensor.

503.2.4.4 Shutoff damper controls. Both outdoor air supply and exhaust ducts shall be equipped with motorized dampers that will automatically shut when the systems or spaces served are not in use. Exceptions: 1. Gravity dampers shall be permitted in buildings less than Sleeves: Provide metal sleeves where pipes or control wiring penetrate walls three stories in height. 2. Gravity dampers shall be permitted for buildings of any height located in climate zones 1, 2, and 3. 3. Gravity dampers shall be permitted for outside air intake or exhaust airflows of 300 cfm or less.

503.2.5 Ventilation. Where mechanical ventilation is provided, the system shall provide the capability to reduce the outdoor air supply to the minimum required by Chapter 4 of the International Mechanical Code.

503.2.7 Duct and plenum insulation and sealing. All supply and return air ducts and plenums shall be insulated with a minimum of R-5 insulation when located in unconditioned spaces and with a minimum of R-8 insulation when located outside the building. Exceptions: When the design temperature difference between the interior and exterior of the duct or plenum does not exceed 15°F. All joints, longitudinal and transverse seams and connections in ductwork, shall be securely fastened and sealed with welds, gaskets, mastics (adhesives), mastic-plus-embedded fabric systems or tapes.

503.2.7.1.1 Low-pressure duct systems. All longitudinal and transverse joints, seams and connections of supply and return ducts operating at a static pressure less than or equal to 2 inches w.g. shall be securely fastened and sealed with welds, gaskets, mastics (adhesives), mastic-plus-embedded-fabric systems or tapes installed in accordance with the manufacturer's installation instructions.

503.2.7.1.2 Medium-pressure duct systems. All ducts and plenums designed to operate at a static pressure greater than 2 inches w.g. but less than 3 inches w.g. shall be insulated and Nipples for Drains, Vents, Gauges: Sch 80, ASTM A53 Grade B seamless. sealed in accordance with Section 503.2.7

503.2.8 Piping insulation. All piping serving as part of a heating or cooling system shall be thermally insulated in accordance with Table 503.2.8. Exceptions: 1. Factory-installed piping within HVAC equipment. 2. Piping that conveys fluids that have a design operating temperature range between 55°F and 105°F. 3. Piping that conveys fluids that have not been **Copper pipe fittings:** ASME B16.18, cast brass, or ASME B16.22 solder wrought copper. heated or cooled through the use of fossil fuels or electric power. 4. Runout piping not exceeding 4 feet in length and 1 inch in diameter between the control valve and HVAC coil.

503.2.9 HVAC system completion. Prior to the issuance of a certificate of occupancy, the design professional shall provide evidence of system completion in accordance with:

503.2.9.1 Air system balancing. Each supply air outlet and zone terminal device shall be equipped with means for air balancing in accordance with the requirements of Chapter 6 of the International Mechanical Code. Discharge dampers are prohibited on constant volume fans and variable volume fans with motors 25 HP and larger.

503.2.9.3 Manuals. The construction documents shall require that an operating and maintenance manual be provided to the building owner by the mechanical contractor. The

manual shall include, at least, the following: 1. Equipment capacity (input and output) and required maintenance actions. Equipment operation and maintenance manuals.

3. HVAC system control maintenance and calibration information, including wiring diagrams, 23 05 29 HANGERS AND SUPPORTS FOR HVAC PIPING & EQUIPMENT schematics, and control sequence descriptions. Desired or field-determined setpoints shall be Pipe, duct and equipment hangers and supports shall be per the local code. Support piping at permanently recorded on control drawings, at control devices or, for digital control systems, in a minimum every 10' or less for 1" and larger pipe, every 6' on 3/4" or smaller. With copper programming comments.

4. A complete written narrative of how each system is intended to operate. **503.9.4 Control Verification.** HVAC control systems shall be tested to ensure that control

elements are calibrated, adjusted, and in proper working condition, and in accordance with the inch wide galvanized iron straps on 4-foot maximum spacing. designed sequence of operation.

HVAC GENERAL NOTES (APPLY TO ALL SHEETS) DRAWINGS ARE DIAGRAMMATIC; CONFIRM DIMENSIONS AND LOCATIONS IN

- THE FIELD. RUNOUTS TO INDIVIDUAL AIR DEVICES ARE SAME SIZE AS AIR DEVICE NECK.
- DUCT SIZES SHOWN ARE FREE AREA. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR TYPE OF CEILING AND LOCATION OF CEILING DEVICES.
- SEE ARCH ELEVATIONS FOR LOCATION OF WALL MTD DEVICES. PLENUMS ARE CROWDED AND NOT ALL OBSTACLES ARE INDICATED. ALLOW FOR ADDITIONAL DUCT OR PIPE OFFSETS OR TRANSITIONS NOT INDICATED ON 23 05 53 IDENTIFICATION FOR HVAC PIPING & EQUIPMENT
- DRAWINGS. SEAL ALL PENETRATIONS OF FLOORS, RATED WALLS, EXTERIOR WALLS CONTRACTOR SHALL SUBMIT DRAWINGS FOR ALL PERMITS IN A TIMELY
- MANNER AND PAY ALL PERMIT FEES. PROVIDE ANY REQUIRED TEMPORARY UTILITIES.

- THE LISTING OF PRODUCT MANUFACTURERS, MATERIALS AND METHODS ARE THE BASIS OF DESIGN AND ARE INTENDED TO ESTABLISH A STANDARD OF QUALITY. THE ENGINEER SHALL BE THE SOLE JUDGE OF QUALITY AND EQUIVALENCE OF EQUIPMENT, MATERIALS AND METHODS. WHERE SUBSTITUTED OR ALTERNATIVE EQUIPMENT IS PROPOSED ON THE PROJECT BEFORE BIDDING, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE EQUIPMENT WILL FIT THE SPACE AVAILABLE. INCLUDING ALL REQUIRED CODE AND MAINTENANCE CLEARANCES, AND TO COORDINATE ALL **EQUIPMENT REQUIREMENTS WITH OTHER CONTRACTORS**
- INSTALL ALL EQUIPMENT TO PROVIDE CLEARANCE AROUND ALL HVAC EQUIPMENT CONFORMING TO MANUFACTURER'S MINIMUM RECOMMENDED SPACE FOR MAINTENANCE AND/ OR AIR FLOW AND SUFFICIENT TO ALLOW INSPECTION, SERVICE, REPAIR OR REPLACEMENT WITHOUT REMOVING ELEMENTS OF PERMANENT CONSTRUCTION OR DISABLING THE FUNCTION OF
- FIRE RESISTANCE RATED ASSEMBLIES.

 DO NOT RUN DUCT OR PIPE ABOVE ELECTRICAL PANELS. ALL WORK IN OR ABOVE OCCUPIED AREAS SHALL BE AT OWNERS CONVENIENCE AND MAY BE DURING EVENINGS OR WEEKENDS. SCHEDULE ALL SERVICE INTERRUPTIONS IN ADVANCE WITH OWNER. ONLY OWNER'S REPRESENTATIVE MAY SHUT OFF EQUIPMENT OR

DISCONNECT UTILITIES. BEFORE SUBMITTING A BID, IT WILL BE NECESSARY FOR EACH CONTRACTOR WHOSE WORK IS INVOLVED TO VISIT THE SITE AND ASCERTAIN FOR HIMSELF THE CONDITIONS TO BE MET IN INSTALLING THE WORK AND MAKE PROVISIONS FOR THE CONDITIONS IN HIS FINAL PRICE. FAILURE OF THE CONTRACTOR TO COMPLY WITH THIS REQUIREMENT SHALL NOT BE CONSIDERED JUSTIFICATION FOR THE OMISSION OR FAULTY INSTALLATION OF ANY WORK COVERED BY THE CONTRACT DOCUMENTS. THE BID SHALL INCLUDE ALL THE WORK REQUIRED OR NECESSARY TO COMPLY WITH THE WORK SHOWN ON THE DRAWINGS AND

CONDITIONS THAT COULD BE READILY OBSERVED.

23 05 00 BASIC MECHANICAL REQUIREMENTS **Demolition:** Remove ducts/pipe to above ceiling or below floor. Re-support any remaining duct/pipe that was supported by demolition walls. Damage to existing materials/equipment will be repaired at no additional cost. Give demolished equipment to Owner, dispose of if Owner does not want. Refrigerants become the property of the Contractor and shall be removed per

EPA regulations and ARI Standard 770. Warranty: Guarantee labor and materials for 1-year. Warranties begin upon Owner's acceptance of substantial completion of the installation.

IDENTIFIED IN THE SPECIFICATIONS. NO EXTRAS WILL BE ALLOWED FOR

Shop drawings: Submit complete information on all equipment, air devices, valves, duct accessories and controls. Submit complete ductwork and piping shop drawings, based on approved equipment and field observation of building conditions. Submit detailed layout of mechanical rooms and yards. Incomplete submittals will be returned to the contractor unreviewed. No time extensions or cost increases will be allowed for delays caused by return of incomplete submittals

Operations and maintenance instructions: Provide 3 copies of operation and maintenance manuals to Owner. Provide within 90 days after the date of system acceptance. These manuals shall be in accordance with industry-accepted standard such as ASHRAE Guideline 1 and shall include, at a minimum, the following: (a) Submittal data stating equipment size and selected options for each piece of equipment requiring maintenance. (b) Operation manuals and maintenance manuals for each piece of equipment requiring maintenance, within which the supply of heating and cooling energy to the zone is capable of being shut off except equipment not furnished as part of the project. Required routine maintenance actions shall be clearly identified. (c) Names and addresses of at least one service agency. (d) HVAC controls system maintenance and calibration information, including wiring diagrams, schematics, and control sequence descriptions. Desired or field-determined setpoints shall be permanently recorded on control drawings at control devices or, for digital control systems, in programming comments. (e) A complete narrative of how each system is intended to operate, including suggested setpoints. Provide instruction on system operation to Owner's

> **Record drawings:** Within 90 days after the date of system acceptance, provide record drawings in Revit Format (using the same software and version the project was designed in), plus full size hard copy. Project designed in Revit. Electronic drawings may be available from Engineer for a fee. Record drawings shall include as a minimum the installed location and performance data on each piece of equipment, air devices, control sensors, control panels, general configuration of duct and pipe distribution system including sizes, and the terminal air or water design flow rates.

Access doors: Provide *Milcor* or equal as required for access to all valves, filters, controls, dampers or other devices requiring attention. Doors shall match wall or ceiling rating. Architect must approve location and appearance of all access doors. Access panels for fire or smoke dampers shall be openable without the use of tools.

23 05 03 PIPES FOR HVAC PIPING AND EQUIPMENT

Air vents at high points; drains at low points. Provide dielectric unions between dissimilar

HVAC condensate drains: Inside building use insulated copper or galvanized steel in environmental air plenums. Inside (but not in environmental air plenums) may use insulated PVC. Slope to outlet min 1/8" per foot. Provide trap (unless HVAC unit is internally trapped) and clean out plugs. Size condensate drain per applicable code; size shall not be less than outlet size of unit or less than 3/4 inches. Discharge condensate to an approved location inside or outside building. Do not discharge into a gutter system if that gutter discharges onto a public walk or street.

Chilled water – schedule 40 or 80, as required by pressure rating, ASTM A53 black steel; or type L or M copper. System shall be rated for 300 psi.

Steel Joints: Threaded, welded, or roll-grooved (do not use cut-groove). Welded joints will be full circle butt-weld joints to ANSI/ASME B31.9 latest edition. No other welded joints will be allowed. Backing rings are not allowed.

Steel fittings: ASME B16.3, malleable iron or ASTM A234/A234M, forged steel welding type. Thread-o-lets, Weld-o-lets, grooved fittings also allowed. Couplings, Caps, Plugs: ANSI Class 3000, ASTM 181 Class 70, ANSI B16.11. Unions: ANSI Class 3000, forged steel, steel-to-steel ground joints, ASTM 105. Flanges: ASTM A105, flat face ANSI Class 150. Bolts and Nuts: Stud bolts, carbon steel, semi-finished with heavy hex nuts, ASTM A307 Grade B. Gaskets: Full face, red rubber or inorganic fiber (non-asbestos) gasket, ANSI B16.21.

Tee Connections: Mechanically extracted collars with notched and dimpled branch tube. Joints: Solder, lead free, ASTM B32, 95-5 tin-antimony, or tin and silver, with melting range 430 to 535 degrees F. Braze, AWS A5.8 BCuP silver/phosphorus/copper alloy with melting range 1190 - 1480 degrees F

23 05 23 VALVES FOR HVAC PIPING

Ball valves: Nibco 585 Series with NIB SEAL – two piece, fullport, bronze body, stainless steel trim, memory stop, with insulated handle; or equivalent in Scott, Kitz, or Milwaukee.

Butterfly Valves: drop tight closure at rated working pressure. Bi-directional flow. Dry stem journals with no leakage to stems. One piece, cast iron, lug or grooved body with end-of-line liquid service at 200 psig with the downstream flange removed. Disc: Aluminum bronze or 316 stainless steel. Seat: Resilient EPDM liner molded to a rigid backing ring. Stainless steel stem. Manual lever actuator with memory stop. Worm gear operators for 8" and larger. Acceptable manufacturers include Nibco, Scott, Kitz, or Milwaukee.

pipe use copper hangers or tape at contact point. Support flex ducts per manufacturer's installation instructions (provide instructions for inspector review). Alternate acceptable flex duct support (in City of Houston) is 26 gage, 1.5

23 05 48 VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING & EQUIPMENT Fans and fan coils shall be suspended or supported with spring isolator unless internally

Pipe: All piping shall be vibration isolated within 50 ft of vibrating equipment. First 3 hangers shall be same deflection as equipment isolators (but maximum of 2"); remaining hangers shall be 0.75" deflection spring or spring+rubber. First 2 hangers closest to equipment shall be positioning or pre-compressed type, to prevent load transfer to equipment flanges when pipe is filled.

Equipment: Permanent label (stencil, metal tag or engraved plastic) with unit tag or name and

area or space served. Piping: Provide pipe markers every 20 feet. Identify service and flow direction. Install in clear view and align with axis of piping.

Valve tags: Install engraved metal tags with corrosion resistant chain. Number tags consecutively by location. Tag Chart: Typewritten letter size list in anodized aluminum frame or plastic laminated.

23 05 93 TESTING, ADJUSTING AND BALANCING (TAB) FOR HVAC Balance may be by a qualified employee of the mechanical contractor. Technician shall be

Balance in accordance with NEBB Procedural Standards –1999 Procedural Standards for Building Systems, or AABC 2002 Associated Air Balance Council Test and Balance

Adjust system to achieve air quantities shown, then adjust volumes to provide constant temperature (±2 °F) throughout the zone. Adjust fan sheaves, when applicable and where available. Calibrate all thermostats. Mark setpoints on all dampers and valves. Return to project at 1 and 3 month intervals after completion to make balance adjustments in response to Owner's perceived comfort.

Linear Slots shall be have their air flow properly adjusted, depending on location in space. For slots located on exterior walls – 1) Single slots shall adjusted to supply air vertically down. 2) 2slots shall be adjusted so that one air stream supplies air vertically down and the secondary airstream supplies air horizontally across the ceiling. 3) Slots located in interior spaces; or, away from outside walls shall be adjusted to supply air horizontally across the ceiling, either in one direction, or opposed.

Submit report (NEBB or AABC format) and include – General data: Nameplate data on all equipment. Outside air temp; cfm each supply, exhaust and return grille and actual room temperatures and humidities vs. setpoints Fans: Volume and static pressure; fan rpm and amps

Water coil air handlers or fan coils (each coil): Air and water entering and leaving temperatures and pressures. Fan cfm, rpm, amps, static pressures. Outside air cfm. VAV boxes: maximum cooling cfm, min cooling cfm, heating cfm

Ductwork designed to operate at static pressures in excess of 3 in. w.c. shall be leak tested according to SMACNA Duct Leakage Test Procedures- 1985. Representative sections totaling no less than 25% of the total installed duct area for the designated pressure class shall be tested. The maximum permitted duct leakage shall be no more than 1% of the total airflow in the section tested.

Air systems shall be balanced to meet air quantities shown at each air device; and, in a manner to first minimize throttling losses in the effected system. Then, for fans with fan system power greater than 1 HP, fan speed shall be adjusted to meet design flow conditions.

HVAC control systems shall be tested to ensure that control elements are calibrated, adjusted, and in proper working condition. Submit test documentation.

No adjustment to existing air handlers and fans serving the area are allowed without Owner's

express knowledge and consent. 23 07 01 PIPING INSULATION

Pipe insulations, mastics and jackets located in environmental air plenums shall have maximum flame spread index of 25 and maximum smoke developed index of not exceeding 50 in accordance with ASTM E84.

Primary condensate drains inside buildings: 3/4" Armaflex for entire length. No insulation required outdoors. Insulation of secondary (overflow) condensate drains not required.

Chilled water: Closed cell insulations only (fiberglass is not acceptable) with vapor barrier coating at all vapor barrier jacket seams, joints and butts.

Acceptable outdoors products are: Pittsburgh Corning Foamglas only. A vapor retarder jacket is not required, but a foil scrim kraft type All Service Jacket for decorative/ abuse purposes shall

Acceptable indoors products are – 1. Pittsburgh Corning Foamglas: A vapor retarder jacket is not required, but a foil scrim kraft type All Service Jacket for decorative/ abuse purposes shall be provided. 2. Koolphen 'K' or Resolco Insul-Phen: phenolic foam with factory applied vapor retarder

Minimum installed R-value or thickness shall be per the local energy code. Per the Houston Amendments to the 2009 IECC, Table 503.2.8: minimum 1.5" thick for pipes up to 4"; minimum 2" thick for piping larger than 4"; based on conductivity not exceeding 0.27

Insulation thickness shall also be of sufficient thickness to result in NO external surface condensation under the following conditions; as calculated by current version of 3E Plus® Insulation Thickness Computer Program developed by the North American Insulation Manufacturers Association (NAIMA). Contractor shall submit calculations for review by

1. Chilled water temperature: 42°F 2. Surface emittance of the submitted and approved jacket

3. Wind velocity: pipes inside building: 0 mph

4. Ambient conditions: a. pipes inside the conditioned building shell: 80 degrees F. and 75% relative humidity

Vapor retarder jackets shall be: 1. Indoors and hidden from public view (i.e. above ceilings, in chases, or in mechanical rooms): foil (or polypropylene) scrim-kraft type All Service Jacket (ASJ) with self-sealing lap; or Venture Clad 1577CW self-adhesive zero perm vapor barrier jacket; white

2. Where specified to be painted: foil scrim kraft type All Service Jacket with self-sealing lap; 3. Where visible to the public, but not painted (mechanical rooms are not 'public'): Venture Clad 1577CW self-adhesive zero perm vapor barrier jacket; standard color and finish as

Jackets for decorative purposes: when noted on drawings, add a white PVC jacket over the pipe and fittings vapor barrier jacket

Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with reinforcing mesh and vapor barrier coating or PVC fitting covers. Secure factory-applied vapor retarders and jackets with pressure sensitive adhesive selfsealing longitudinal laps and butt strips. Do not use staples. Vapor seal all vapor retarder jacket seams on cold piping/equipment with vapor barrier coating. Secure field-applied jackets with manufacturer's published method, such as bands and mastic; do not use staples or other methods that penetrate the jacket.

Follow manufacturer's instructions for field-applied vapor retarders.

At locations, size and spacings recommended by insulation manufacturer, provide: a) galv. steel shield between outside of pipe jacket and pipe support; b) insert of compression resistant insulating material between support shield and piping and under finish jacket. Install vapor stops at all changes in configuration such as elbows, flanges, valves, and insulation terminations and all locations on piping and equipment requiring maintenance including instrumentation connections. Vapor stops are also required where straight pipe runs exceed 24 feet between pipe supports. Vapor stops shall be constructed using reinforcing mesh and vapor barrier coating. When the vapor stop is dry, the adjacent layer of insulation

shall be installed using insulation joint sealant. Vapor Barrier Coating: Vimasco Vapor-Block 749, Foster 30-65, or Childers' Chil-Perm #CP-34, or as recommended by insulation manufacturer. Embed reinforcing mesh into coating. Use to seal all fittings, valves, heads and equipment insulation prior to application of outer covering. Seal all vapor retarder jacket seams. Water-based, compatible with the insulation material and flexible at the environmental temperature. Reinforcing mesh: Foster Mast-a-Fab, Childers Chil Glas#10, or engineer reviewed equivalent.

Insulation Joint Sealant (polyisocyanurate, phenolic, cellular glass): Fire-resistive and water resistant, flexible sealant. Foster 30-45, Foster 95-50, Childers CP-70, Childers CP-76, or engineer reviewed equivalent. Metal jacketing sealant: Fire-resistive and water resistant, flexible sealant. Foster 95-44,

Childers CP-76, or engineer reviewed equivalent. Weather Barrier/Breather Mastic: Water based; suitable for indoor and outdoor use on ambient applictions. Foster 46-50, Childers CP-10/CP-11, or engineer reviewed equivalent. Calcium silicate adhesive: Foster 91-27, Childers CP-97, or equivalent.

23 07 02 EQUIPMENT INSULATION Flame spread less than 25, smoke developed less than 50 as per ASTM E84, NFPA 255, UL

23 07 03 DUCTWORK INSULATION

Flame spread less than 25, smoke developed less than 50 as per ASTM E84, NFPA 255, UL273. Minimum required installed R values for non-residential projects (excluding film 1. Within the conditioned space: Supply R5.6; Return -none required; Exhaust or relief: none

required; Conditioned outside air R5.6 2. In return air plenums (but inside building insulation envelope): Supply R5.6; Return-none required; Exhaust or relief: none required; Conditioned outside air R5.6 3. In non-conditioned attics, garages or crawl spaces (i.e. outside the building envelope insulation): Supply R8; Return R5.6; Exhaust or relief: R5.6; Conditioned outside air R8

External duct wrap: foil face rigid or flexible fiberglass with vapor retarder. R value stenciled on outside. ASTM A96 Water Vapor Permeance: 0.5 perms maximum. Mold Growth per ASTM C1338- No Growth. GREENGUARD Environmental Institute Certified. Vapor Retarder Jacket conforming to ASTM C 1136 Type II: Foil Scrim Kraft (FSK), or White polypropylene—scrim kraft (PSK). 2" Staple flange on longitudinal seam. Adhere to duct with vapor barrier type adhesive. Overlap all joints. Vapor seal all joints or breaks with reinforcing mesh imbedded in vapor barrier coating.

Vapor Barrier Coating: Vimasco Vapor-Block 749, Foster 30-65, Childers Chil-Perm #CP-34, or equivalent. Reinforcing mesh: Foster Mast-a-Fab, Childers Chil Glas #10, or equivalent.

Insulate backs of supply diffusers when in attics or when ceiling plenum is not used for return

Internal liners- see section 23 31 00.

23 08 00 COMMISSIONING

b. Lighting controls

For projects larger than 50,000 square feet of conditioned area (except heated-only warehouses and semi-heated spaces): 1. Commissioning agent (CxA) shall be hired by the General Contractor and shall be one of the

a. Professional Engineer or Architect with Commissioning experience

b. Test and Balance contractor with Commissioning experience

c. A third party Commissioning Agent

d. A qualified employee or consultant of the Owner. 2. The individual serving as the CxA shall be independent of the project's design and construction management, but may be employees of the firms providing those services. 3. Systems to be commissioned this project are:

 a. HVAC equipment i. New VAV or fan powered boxes: using a minimum of 50% sampling

ii. 100% of new fans iii. 100% of Tenant fan coils, heat pumps and split systems

iv. HVAC controls, energy mgmt system and sequences of operation

v. Excluded from this project: base building air handlers; base building exhaust and outside air

c. Plumbing: water heaters and circulating pumps. 4. If a pre-bid meeting is held with bidding contractors, CxA shall participate and describe the commissioning process for the specific project. 5. CxA shall conduct a meeting with the project team reviewing QA procedures, roles, and

responsibilities and establishing a schedule of QA/CxA activities. CxA shall provide the prefunctional checklists to the contractors for their use during the delivery process. 6. CxA shall review submittal information for systems being commissioned and provide appropriate comments to team. Based on the submittal information, develop functional test procedures that will be used to verify system performance and distribute to the team. 7. CxA shall conduct two site visits during construction to observe construction techniques and to identify issues that may affect performance. Review issues with appropriate team members at end of site visit and issue one report per visit documenting findings. Establish and

maintain an issues log for tracking issues identified. 8. Direct and witness functional testing and document results. Issues identified will be documented in the issues log and tracked to resolution. General contractor will schedule functional testing activities and ensure that responsible parties needed for verification are

9. CxA shall observe demonstrations of all sequences of operation and shall provide written certification that operation is per the sequences. Certification shall include actual field verification that every controlled damper, fan, fan coil, condensing unit, air conditioning unit, unit heater, pump, and associated mechanical system operates per the sequence. CxA shall provide a written report documenting that he has observed the energy management and control system and that each of the input, output, control and calculated points are calibrated, adjusted, and functioning properly. Confirm by visual observation that start/stop command do start/stop equipment; that equipment failure does initiate alarms, that analog readings are calibrated and

10.CxA shall review operation and maintenance information to ensure warranty requirements and preventive maintenance information required are part of the documentation. 11.CxA shall witness training of O&M staff to help ensure O&M staff understands systems and their operation, warranty responsibilities, and preventive maintenance requirements.

23 09 23 DIRECT DIGITAL CONTROLS FOR HVAC

Provide system consisting of temperature sensors, control valves, dampers and operators. indicating devices, interface equipment, low voltage transformers and wiring, apparatus, relays and accessories to operate mechanical systems and perform functions specified. Electrical control interlocks are the responsibility of the mechanical contractor. Motor starters are furnished by Division 26, unless integral with equipment. Provide 120 volt power to system controllers and transformers. Control cabling shall be plenum rated. Install conduit and electrical wiring in accordance with Division 26 requirements.

Renovations/ Additions:

New work shall be an expansion to the existing system. Existing DDC system vendor contact is_ Add new and revised areas to graphics.

All new VAV boxes shall have DDC controller Monitoring points or status measurements required are:

For each existing or new VAV box: control of box damper, fan and heater and space temperature For each new water coil fan coil: system start/stop; leaving air temp and setpoint adjustment,

system status (via air flow switch), dirty filter alarm, control of chilled and hot water valves. 23 09 93 SEQUENCES OF OPERATION

1. ALL SYSTEMS **a. Dead Bands:** Where used to control both heating and cooling, automatic changeover zone thermostatic controls shall be capable of providing a temperature range or dead band of at least 5°F within which the supply of heating and cooling energy to the zone is shut off or reduced to a minimum. Exceptions: Special applications where wide temperature ranges are not acceptable (retirement homes, data processing, museums, and or varied hospital areas) and are approved

by the authority having jurisdiction. **b. Automatic Shutdown.** Each HVAC system shall have controls that can start and stop the system under different time schedules for seven different daytypes per week, are capable of retaining programming and time setting during loss of power for a period of at least 10 hours, and include an accessible manual override, or equivalent function, that allows temporary

operation of the system for up to two hours. c. Setback Controls. Heating systems have the capability to automatically restart and temporarily operate the system to maintain *zone* temperatures above a heating setpoint adjustable down to 55°F or lower. Cooling systems shall have the capability to automatically restart and temporarily operate the system as required to maintain *zone* temperatures below a cooling setpoint adjustable up to 85°F or higher or to prevent high space humidity levels. d. Gravity Hoods, Vents, and Ventilators. All outdoor air supply and exhaust hoods, vents, and ventilators shall have motorized dampers that automatically shut when the spaces served

are not in use. e. Shutoff Damper Controls. Both outdoor air supply and exhaust systems shall be equipped with motorized dampers that automatically shut when the systems or spaces served are not in use. Ventilation outdoor air dampers shall automatically shut off during preoccupancy building warm-up, cool down, and setback, Exceptions:

i. Gravity (non-motorized) dampers are acceptable in exhaust systems in ASHRAE 90.1 2007 climate zones 1, 2, 3, such as City of Houston. ii. Gravity (non-motorized) dampers are acceptable in systems with a design outdoor air intake or exhaust capacity of 300 cfm or less.

2. COMPUTER ROOM AND IT CLOSET UNITS

a. Unit is intended to operate 24-hours per day; programmable /setback thermostat is not b. Supply fan runs continuously.

c. Space thermostat modulates chilled water valve, to maintain zone set point.

a minimum cfm (operator adjustable) through the action of the digital controller.

3. VAV BOXES (NO HEAT): Each of these units shall be controlled by a factory-mounted unitary controller. Room temperature sensor shall modulate the variable volume damper. As the space temperature approaches setpoint, the air volume shall be proportionately reduced to

4. FAN POWERED BOXES (PARALLEL FLOW, ELECTRIC HEAT): Each of these units shall consist of a fan, variable volume damper, electric heating coil and factory-mounted unitary controller. A room temperature sensor shall modulate the variable volume damper and activate the heating coil through the unitary controller. When the space temperature is above setpoint the unit shall supply 100% volume and the heater shall be off. As the space temperature approaches setpoint, the air volume shall be proportionately reduced to a minimum cfm (operator adjustable) through the action of the digital controller. Upon a further decrease in temperature, the digital controller shall stage the heater.

23 31 00 HVAC DUCTS Do not fabricate duct from these drawings, confirm all dimensions and available space in field.

Dimensions given on drawings are inside free area, sheet metal is larger on lined duct. Branch takeoffs to have 45 degree entry fitting with volume damper. Elbows to be radius type with minimum centerline radius 1.5 times width or mitered elbows with single thickness turning

Sheet metal: Use galvanized sheet metal, conforming to current SMACNA for construction. reinforcing, support and other aspects. PRESSURE CLASS

Supply from single zone units: +1" Supply upstream of VAV boxes: + 2". Supply downstream of VAV boxes: +1".

Return: -1" Exhaust: -1" upstream of fan, 1" downstream DUCT SEALING:

Definitions (per ASHRAE 2008 TABLE 18-1): Seal Level A: All transverse joints and longitudinal seams, and all duct wall penetrations Seal Level B: All transverse joints and longitudinal seams Round or flat oval spiral seams need not be sealed

access door frames, duct connections to equipment) Duct wall penetrations include but are not limited to screws, pipe, tubes, rods, wires & non self-sealing fasteners

Transverse joints include connections (including but not limited to spin-ins, taps, branches,

Supply air ducts, all locations; return or exhaust ducts, outdoors: Seal Level A. Return or exhaust ducts, indoors: Seal Level B Seal all metal ducts using Hardcast or equal mastic plus fiberglass scrim.

Sealant: Foster 32-19 or Childers CP-146. Do not use oil or solvent base sealants inside buildings. Do not exceed LEED/SCAQMD volatile organic compound limits inside buildings. Tape sealants are not allowed Externally insulated ducts shall be sealed before being insulated. Sealants of exterior ducts shall form a water and air-tight seal, bond to the metal involved, remain flexible with metal

sunlight, sealant shall be UV and ozone resistant. Foster 32-19 or Childers CP-146.

DUCT LINER / INSULATION SCHEDULE: Rectangular supply: Unlined, externally insulated, except that 25 feet closest to fan or air

units shall be internally lined Round supply: Unlined, externally insulated Return duct- Internal liner Exhaust- No liner, no insulation; except that exhaust ducts in non-conditioned attics shall be

movement and have a service temperature range of -30°F to +175°F. If exposed to direct

externally insulated Liner (when specified in duct description above): Schuller Permacote Linacoustic; Certainteed Tough Gard or equal, 1.5 PCF (pounds per cubic foot) density, coated fiberglass conforming to ASTM C1071; coating to be cleanable and shall prevent microbial growth per

90% coverage and stick clips. Meet minimum noise reduction Standard of ASTMC1071.

Leading edges and transverse joints to be sealed, Foster 81-42W (white), CP-50AMV1

(white), CP-135 (black), or equivalent. Liner R-values shall meet duct insulation values spec'd in section 23 07 03. In addition to meeting R-values, the following minimum thicknesses shall be maintained for acoustic reasons: Supply duct: 1". Return ducts: 1/2" except that within 15 feet of fan or air unit use 1

ASTM G21, G22. Attached with adhesive (Foster 85-60, Childers CP-127, or equivalent) with

Flex duct

Return air sound traps: 1".

Shall not exceed 8 feet in length, nor be bent more than 90 degrees. Flex duct shall be same size as diffuser neck. Flexmaster 5B, 5M, 6B, 6M, 8B, 8M or eq. Nylon, CPE or foil/fiberglass/polyester laminate, supported by helically wound spring steel wire; fiberglass insulation; vapor barrier film. Product shall have listed marks by either ETL, or UL and shall have minimum 25/50 Flame/Smoke ratings. Pressure Rating: 6-inches WG positive; 1-inch WG negative. Vapor barrier Perm rating of 0.10 or less per ASTM E96 procedure A. Insulation: R value to meet that required for ductwork. Inner core shall maintain shape and full free area at 90 degree bends without glues or reinforcement.

23 33 00 DUCTWORK ACCESSORIES

Provide manual balancing dampers in all supply and exhaust branches. Provide manual balancing dampers in outside air and return ducts to each air unit. Provide manual balancing damper at each motorized duct damper location. VOLUME CONTROL DAMPERS: per SMACNA HVAC Duct Construction Standards - Metal and Flexible. Single blade dampers for duct sizes up to 6 x 30 inch. Multi-Blade Damper: opposed blade pattern. Assemble center and edge crimped blades in prime coated or galvanized frame channel with suitable hardware. Except in round ductwork 12 inches and smaller, furnish end bearings. Furnish closed end bearings on ducts having pressure classification over 2 inches wg. Furnish locking, indicating quadrant regulators on single and multi-blade dampers. On insulated ducts mount quadrant regulators on standoff mounting brackets, bases, or

adapters to allow full insulation thickness. Where rod lengths exceed 30 inches furnish regulator at both ends. All balance damper operators shall be accessible via access panel, lay-in ceiling or remote cable operator. All motorized damper operators shall be accessible and shall not block the air

Supply and exhaust air dampers shall have a maximum leakage rate of 0.3 cfm per square BACKDRAFT DAMPERS: Parallel-action, gravity-balanced, galv. 16 gage thick steel or extruded aluminum blades with felt or flexible vinyl sealed edges. Blades linked together in rattle-free manner with 90-degree stop, steel ball bearings, and plated steel pivot pin. Adjustment device to permit setting for varying differential static pressure. DUCT ACCESS DOORS: per SMACNA, rigid and close fitting of galvanized steel with sealing gaskets and quick fastening locking devices. For insulated ductwork, furnish same insulating value as adjacent duct, plus sheet metal cover. Less than 12 inches sq., secure with sash locks. Up to 18 inches sq.: two hinges and two sash locks. Up to 24 x 48 inches:

Three hinges and two compression latches. Access panels with sheet metal screw

access doors per local requirements FLEXIBLE CONNECTIONS: per SMACNA. Fabric crimped into 24 gage galvanized metal edging strip. Fabric: Approx. 3 inches wide. UL listed fire-retardant neoprene coated woven glass fiber fabric conforming to NFPA 90A. DUCT TEST HOLES: air tight flanged fittings with screw cap. Furnish extended neck fittings

fasteners or requiring use of tools are not acceptable. Stencil or label fire and smoke damper

to clear insulation. 23 36 00 AIR TERMINAL UNITS (VAV BOXES AND FAN POWERED BOXES) A. Metal Industries, Carnes, Carrier, Kreuger, Price, Tempmaster, Titus, Trane or York. B. Ceiling mounted variable air volume or fan powered as noted.

C. Identification label and airflow indicator. Include unit nominal airflow, maximum factory set airflow, min factory set airflow, coil data. D. Casings: Minimum 24 gage galvanize steel. Maximum unit depth is 14" for VAV boxes; 16 for fan powered boxes up through size 14; 18" for size 14 fan powered box E. Lining: neoprene or vinyl coated fibrous glass insulation, 1.5 lb/cu ft density, meeting NFPA 90A and UL 181. Coat raw edges. Line attenuator sections with 2-inch thick insulation.

F. S and drive connections for inlet and outlet duct attachment.

G. Access panels for all devices requiring adjustment or maintenance

H. Max Casing Leakage: 2 percent of design air flow at 3" inlet static pressure. I. VOLUME DAMPER -Factory calibrated damper and shaft extension for connection to externally mounted control actuator (normally closed damper). Damper leakage shall not exceed 1% of maximum cfm at 3" static pressure J. HEATING (on fan inlet of fan powered boxes) Hot Water Heating Coil: 1/2 inch minimum copper tube, aluminum fins, leak tested under water to 250-psig pressure, factory installed.

Drains and air vents. Provide rack for filter at hot water coil; install filter during construction process; remove at time of final air balance ELECTRIC HEATING (on fan inlet of fan powered boxes): single point connection for box; door interlocked disconnect, fusing, air flow switch, control transformers, PE switch K. FAN ASSEMBLY (INTERMITTENT OPERATION; NOT IN PRIMARY AIR FLOW) Forward curved centrifugal type fan with direct drive ECM type, thermally protected motor. Adjustable multispeed control. Internally suspend and vibration isolate fan/motor assembly from casing L. WIRING: Factory mounted and wired controls. Electrical components in control box with removable cover. Single point electrical connection to power source. Factory wire fan to

terminal strip. Provide disconnect. M. CONTROLS: DDC damper operator, maximum volume controller; pressure independent proportional variable air volume control, compensating for varying inlet static pressure, with minimum and maximum limits set at reset device, mounted in control box. N. FAN POWERED UNIT CONTROLS: NEMA-1 enclosure with access panel sealed from airflow and mounted on side of unit.

23 40 00 HVAC AIR CLEANING DEVICES

Filters shall be 2", 30 percent efficiency as per ASHRAE 52.2 -1999, Maximum initial resistance at 500 fpm = 0.25". AAF 'Perfect Pleat HC M8' or equal. Use standard sizes only.

Provide construction filters for the duration of this project in all air units serving the project

area and in air units serving other areas on the same floor. Replace with new filters after balancing and adjusting is complete. Provide temporary filter media over all return or exhaust grilles in project area, to keep construction dust out of air



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lauckgroup

Houston, TX 77057

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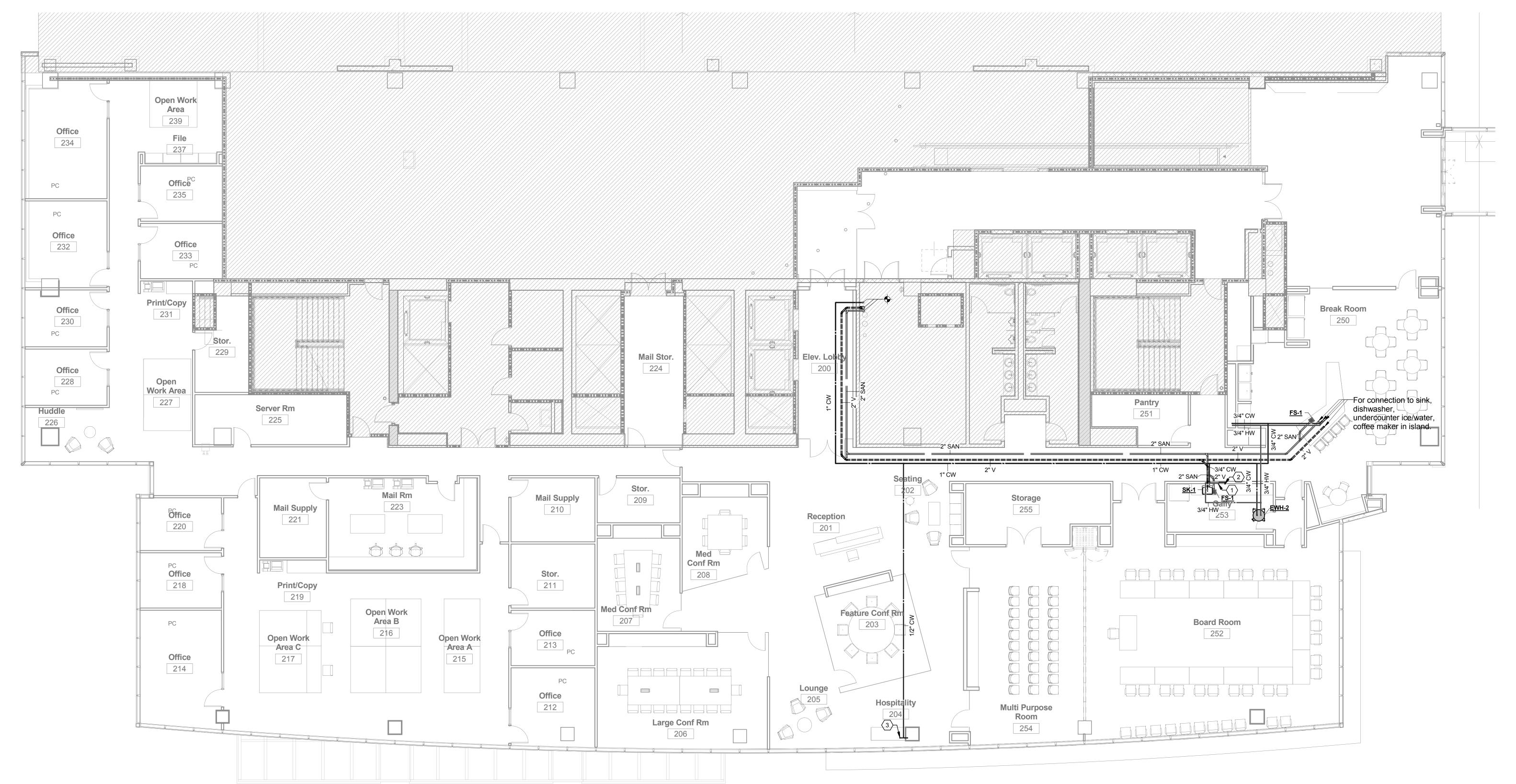
Key Plan

Project Number:

Sheet Name: **MECHANICAL SPECIFICATIONS**

7915276.00

M07



1 LEVEL 2- PLUMBING PLAN 1/8" = 1'-0"

KEYED NOTES

- 1 PROVIDE 1/2" HOT WATER CONNECTION WITH QUARTER TURN SHUT-OFF VALVE TO DISHWASHER. REFERENCE DETAIL ON SHEET P2.47. PROVIDE 1/2" FILTERED COLD WATER LINE WITH STOP VALVE AND 36" COIL
- OF TYPE "K" COPPER TUBING SIZED FOR ICE MAKING MACHINE. PROVIDE 3/8" FILTERED COLD WATER LINE WITH STOP VALVE FOR OWNER PROVIDED EQUIPMENT CONNECTION, BRING FILTERED COPPER LINE UP THROUGH CABINET WITH 1/4 TURN VALVE AND TYPE "K" COPPER COIL (24" LENGTH). PROVIDE FITTING TO ADAPT FROM 3/8" COPPER TUBING TO CONNECTION ON EQUIPMENT.

MARK	PLUMBING SYMBOLS DESCRIPTION	MARK	DESCRIPTION
CW	COLD WATER LINE		COLD WATER LINE
HW	HOT WATER LINE		HOT WATER LINE
HWR	HOT WATER RECIRC LINE		HOT WATER RECIRC LINE
SAN	SANITARY DRAIN LINE		SANITARY DRAIN LINE
V	SANITARY VENT LINE		SANITARY VENT LINE
GW	GREASE WASTE DRAIN LINE	—GW—	GREASE WASTE DRAIN LINE
GV	GREASE VENT LINE	GV	GREASE VENT LINE
ST	STORM DRAIN LINE	— ST —	STORM DRAIN LINE
OD	OVER FLOW DRAIN LINE	— OD —	OVER FLOW DRAIN LINE
G	NATURAL GAS LINE	— G —	NATURAL GAS LINE
Α	COMPRESSED AIR LINE	— А —	COMPRESSED AIR LINE
(N)	NEW		NEW
(E)	EXISTING		EXISTING
(D)	DEMO'D		DEMO'D
B.F.F.	BELOW FINISHED FLOOR	A.F.F.	ABOVE FINISHED FLOOR
WCO	WALL CLEAN OUT	B.O.P.	BOTTOM OF PIPE
FCO	FLOOR CLEAN OUT	I.E.	INVERT ELEVATION
COTG	CLEAN OUT TO GRADE	НВ	HOSE BIB
N.I.C.	NOT IN CONTRACT	VTR	VENT THRU ROOF
СН	PIPE DOWN	۲	BALL VALVE
О	PIPE UP	6	BUTTERFLY VALVE
Ю	FCO / COTG	M	GATE VALVE
1	END OF LINE CLEANOUT	L	GLOBE VALVE
	END CAP	† Z	CHECK VALVE
\(\rightarrow \)	POINT OF CONNECTION	ഥ	HOSE BIBB
♦	POINT OF DEMOLITION	#	RISER DESIGNATION
	KEYED NOTES	1	MOEK DESIGNATION



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7915276.00 Project Number: Sheet Name:

LEVEL 2-

1 LEVEL 4- PLUMBING PLAN

1/8" = 1'-0"

KEYED NOTES

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1 LEVEL 6- PLUMBING PLAN 1/8" = 1'-0"

KEYED NOTES

- 1 PROVIDE 1/2" FILTERED COLD WATER LINE WITH STOP VALVE AND 36" COIL OF TYPE "K" COPPER TUBING SIZED FOR ICE MAKING MACHINE.
- PROVIDE 1/2" HOT WATER CONNECTION WITH QUARTER TURN SHUT-OFF VALVE TO DISHWASHER. REFERENCE DETAIL ON SHEET P2.47.

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1 LEVEL 8- PLUMBING PLAN 1/8" = 1'-0"

KEYED NOTES

- 1 PROVIDE 3/8" FILTERED CW LINE WITH STOP VALVE FOR COFFEE MAKER CONNECTION, BRING COPPER FILTERED WATER LINE UP THROUGH
- CABINET WITH 1/4 TURN VALVE AND TYPE "K" COPPER COIL (24" LENGTH). 2 PROVIDE 1/2" FILTERED COLD WATER LINE WITH STOP VALVE AND 36" COIL OF TYPE "K" COPPER TUBING SIZED FOR ICE MAKING MACHINE.
 - PROVIDE 1/2" HOT WATER CONNECTION WITH QUARTER TURN SHUT-OFF VALVE TO DISHWASHER. REFERENCE DETAIL ON SHEET P2.47.

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per current code requirements shall be documented and the engineer shall be made aware C. All plumbing piping, equipment, and fixture installations shall be performed by a licensed plumbing contractor. All plumbing work shall be supervised by a licensed Master Plumber.

D. Guarantee labor and materials for 1-year. Warranties begin upon Owner's acceptance of substantial completion of the installation. E. All plumbing materials, installation, testing, cleaning, supports, and workmanship shall be

in strict accordance with the below listed applicable codes: . 2006 Uniform Plumbing Code with City Houston Amendments

2. City of Houston Energy Code – ASHRAE 90.1-2007 (WITH NO ASHRAE

AMENDMENTS) plus City of Houston Amendments

3. 2006 International Fire Code F. All exceptions or substitutions taken to specified materials, fixtures, equipment, or requirements of these documents shall be submitted to the owner, Architect, and Engineer for review prior to purchase and installation.

G. Refer to project contract documentation and architectural drawings for additional requirements and information H. See Architectural plans and elevations for exact location of fixtures and wall mounted

I. Plenums are crowded and not all obstacles are indicated. Allow for additional pipe offsets, as required, and when not indicated on drawings.

J. Properly seal all penetrations of floors, exterior walls, and rated walls. K. Secure all permits and provide any required temporary utilities.

L. All plumbing vents thru roof shall have the minimum separation from HVAC outside air inlets, per the applicable code; coordinate with HVAC contractor.

M. All work in or above occupied areas shall be at Owner's convenience and may be during evenings or weekends. Schedule all service interruptions in advance with Owner. N. Location of existing underslab plumbing is estimated – allow for exploratory chipping to

O. Before submitting a bid, it will be necessary for each contractor whose work is involved to visit the site and ascertain for himself the conditions to be met in installing the work and make provisions for the conditions in his final price. Failure of the contractor to comply with this requirement shall not be considered justification for the omission or faulty installation of any work covered by the contract documents. The bid shall include all the work required or necessary to comply with the work shown on the drawings and identified in the

specifications.

P. Piping shall not be routed over electrical panels or transformers. Q. Provide water hammer arrestors for all new quick-acting valves. Size in accordance with PDI standards; refer to sizing chart and Detail on Sheet P06. The use of air chambers shall not be acceptable and are not allowed.

R. The general contractor shall make an allowance in his price to pay all gas company setup fees associated with installation of gas service and meter at the building. S. The listing of product manufacturers, materials and methods are the basis of design and are intended to establish a standard of quality. The engineer shall be the sole judge of quality and equivalence of equipment, materials and methods. Where substituted or alternative equipment is proposed on the project before bidding, it shall be the contractor's responsibility to verify that the equipment will fit the space available, including all required code and maintenance clearances, and to coordinate all equipment requirements with other contractors.

PLUMBING SPECIFICATIONS

confirm actual locations.

22 05 00 Common Work Results for Plumbing

Remove pipe to above ceiling or below floor. Provide new supports for any remaining pipe that was supported by demolished walls. Damage to existing materials/equipment will be repaired at no additional cost. Where fixtures are removed, cap utilities inside wall, above ceiling, or below floor. Return demolished equipment/fixtures to Owner for re-use. If owner does not want same, properly dispose items off-site.

Shop drawings: Submit all fixtures, trim, equipment, specialties and insulation for review by Engineer-of-

Operations and maintenance instructions:

sanitary piping, provide installed invert elevations.

Provide 3-copies of operation and maintenance manuals to Owner. Provide instruction on system operation to Owner's representatives. Record drawings:

Within 90 days after the date of system acceptance, provide record drawings in Revit/AutoCad Format (using the same software and version the project was designed in), plus full size hard copy. Project designed in Revit. Electronic drawings may be available from Engineer for a fee. Record drawings shall include, as a minimum, the installed location and performance data on each piece of equipment and plumbing fixture. In addition, provide general configuration of all piping distribution systems, including sizes. For below grade

Coordination: Provide Electrical Contractor with electrical requirements of approved equipment in sufficient time to order panel boards, disconnects, and related appurtenances.

Access doors Provide Milcor, or equal, for access to all valves, controls, water hammer arrestors, or other devices requiring maintenance. Doors shall match wall or ceiling rating. Architect must approve location and appearance of all access doors, prior to installation.

Provide metal sleeves where pipes or control wiring penetrate walls.

22 05 23 GENERAL DUTY VALVES FOR PLUMBING PIPING

Ball valves: NIBCO 585 Series with NIB SEAL – two piece, fullport, bronze body, stainless steel trim, memory stop, with insulated handle; or equivalent in Scott, Kitz, or Milwaukee.

22 05 29 HANGERS AND SUPPORTS Pipe and equipment hangers and supports shall be per local code.

Support all above floor piping utilizing support systems manufactured for the applicable installation. Wire or tape supports are not acceptable. Provide 4" reinforced concrete housekeeping pad with chamfered edges for all floor or

ground mounted equipment. Isolate all water piping from direct contact with structural members (studs, joists, beams,

etc.) to prevent the transmission of sound. Flash and seal equipment, pipe stacks, and roof penetrations.

No wood sills allowed. Roof supports compatible with existing roof system shall be portable pipe hangers or approved equal.

22 05 48 VIBRATION ISOLATION

Inline circulating pump: suspend or support with rubber or spring isolators.

22 05 73 PLUMBING COMPONENTS IDENTIFICATION

legible; do not insulate over this product information.

Equipment: permanent label (stencil, metal tag or engraved plastic) with unit tag or name and area or space served. **Piping:** provide Brady or Seton pipe markers every 20 feet. Identify service, flow direction,

and pressure. Install in clear view and align with axis of piping. **Valve tags:** Install engraved metal tags with corrosion resistant chain. Number tags

Valve Tag Chart: Typewritten letter size list in anodized aluminum, or plastic laminated,

22 07 16 EQUIPMENT INSULATION

Flame spread less than 25; smoke developed less than 50 as per ASTM E84, NFPA 255, **Pumps:** Construct rigid insulation box around pump with removable sections for pump

maintenance. Insulator shall insure all pump nameplate and performance data are fully

22 07 19 PIPING INSULATION All insulation must have flame spread less than 25 and smoke developed less than 50 as per ASTM E84, NFPA 255, and UL 273.

Provide galvanized sheet metal shields at all pipe hangers for pipes 1½" or larger. For pipe 4" and larger, provide high-density insulation (calcium silicate) inserts at hangers.

Domestic cold water in exterior walls, attics above building insulation, or other areas subject to freezing – 1" fiberglass.

Domestic hot water – For pipe sizes 1½" or less, provide 1½" fiberglass insulation with allservice jacket. 2" and larger, provide 2" fiberglass insulation with all-service jacket (RE: ASHRAE 90.1-2007, City of Houston Code Amendments

Insulate all exposed drain and water supply piping beneath handicap accessible sinks with closed cell insulating kit as manufactured by 'Truebro' or equal by 'McGuire.'

Floor drains receiving condensate from HVAC units or ice machines shall be insulated with 1" fiberglass a minimum of 5-feet downstream of drain.

22 10 00 PLUMBING PIPING Domestic hot/cold -

Shall meet all requirements of the "Reduction of Lead in Drinking Water Act," as established in NSF/ANSI 61. Drinking water components shall also comply with NSF/ANSI 372. Materials: ASTM B88 Type "L" copper with wrought copper or cast bronze fittings using lead-free solder joints. Or, press fit type copper fittings, up to 4" diameter (similar to NIBCO Press System, or equivalent) and meeting ASME B16.18 and B16.22. Copper, or galvanized, grooved piping materials may be used with Engineer approval. System shall be drainable.

Testing: upon completion of construction, all domestic water piping shall be thoroughly flushed and sterilized. Submit Certificates of Testing for Engineer review.

Waste and vent –

Above slab: ASTM A888 Service Weight hubless cast iron pipe and fittings, with ASTM C1540 heavy duty clamps and ASTM C561 Gaskets; and/or ASTM D1784 Schedule 40 PVC pipe shall be iron pipe size (IPS) conforming to ASTM D1785 and D2665, with DWV no-hub fittings and clamps. Fabricated DWV fittings shall conform to ASTM F1866. No-hub clamps shall be manufactured by 'Tyler Pipe,' 'Clamp-All,' 'Husky,' or 'Mission.'

NOTE: Plastic piping of any type may not be used for any plumbing piping system when the piping is routed within a ceiling plenum used as a return air plenum. Exception: Plastic piping materials may be used when it complies with all the requirements as listed in the '2006 - Uniform Mechanical Code,' Section 602.2, City of Houston Code Amendments.

Make connections between dissimilar piping materials with adaptors manufactured for the applicable type of transition.

Provide dielectric isolation device (dielectric union or coupling) where copper lines connect to ferrous lines or equipment.

Support piping every 10'-0" or less for 1" and larger pipe size; every 6'-0" for 3/4" or smaller piping. When installing non-insulated copper pipe, use copper hangers or tape at contact point.

22 40 00 PLUMBING FIXTURES Refer to plumbing construction drawings for 'Plumbing Fixture Schedule.'

All piping penetrations through floors shall be sealed with UL listed firestop.

Fixtures shall be certified to meet the water saving performance standards of Texas Civil Statutes Section 372.002 and shall be listed with the State as complying with such. All fixtures shall comply with the more restrictive of ANSI or the following (when tested per ANSI testing a) maximum flow from sink or lavatory faucet or faucet aerator shall be 2.20 gallons per

minute (gpm) at a pressure of 60 psi; b) maximum flow from a shower head shall be 2.75 gpm at a pressure of 80 psi; c) maximum volume of water per flush from a toilet shall not exceed 1.28 gallons.

Fixtures shall comply with requirements of the Americans with Disabilities Act, Public Law 101-336 and with State of Texas Civil Statutes Articles 7, 601B. Flush controls shall be no more than 44" above floor and on the wide side of stalls.

Exposed hot water and drain pipes shall be configured to protect against contact and shall be insulated with prefabricated covers by Truebro or equal. Lavatories shall be minimum 17" front to back and shall allow minimum 27" high knee

clearance. Drinking fountain spouts shall be no higher than 36"; flow shall be parallel to unit front and arc at least 4" high.

21 13 00 FIRE SPRINKLER SUPPRESSION SYSTEM Area is currently provided with fire sprinklers; add new heads and revise head locations; as required, to accommodate wall and ceiling revisions. All new sprinkler heads shall be similar in form and function as existing heads. New project area shall be fully sprinklered. For areas requiring new devices, provide pendant mounted chrome plated heads in ceilings or sidewalls. For sprinklers located in ceilings, insure new heads are of the concealed type.

All head locations shall be field-reviewed by the Architect and shall typically be centered (+/-2") in ceiling tiles or ceiling elements.

Work shall be by a licensed fire sprinkler contractor in accordance with current NFPA 13, Texas Department of Insurance Fire Sprinkler Rules and Factory Mutual (FM).

Piping: Up to 4" diameter – Schedule 40 black steel, ASTM A135 with class 125 cast iron threaded, or grooved, fittings. 4" diameter & larger – Schedule 10 iron pipe may be used. All piping shall be concealed above finished ceilings; seal penetrations of floors and rated walls. Coordinate pipe routing with other trades.

Fire Sprinkler Contractor shall be responsible for system design and a layout that provides proper coverage. Submit the following to Engineer for review: hydraulic calculations and pipe/head shop drawings, approved in writing by a licensed Professional Engineer or Contractor's "Responsible Managing Employee." Contractor shall be responsible for all required submittals to City/County, Fire Marshall and FM (or insurance agency designated by Owner). Test system in presence of local authorities. Work shall proceed prior to receiving State Board and FM approvals, however after receipt of agency reviews, Contractor shall return to site and make all required modifications or additions at no additional cost.

ELECTRIC WATER HEATER SCHEDULE							
MARK	DESCRIPTION	MANUFACTURER	MODEL#	ELEMENT WATTAGE	VOLTAGE	PHASE	ACCESSORIES
	20 GALLON (LOW BOY) COMMERCIAL LIGHT DUTY ELECTRIC WATER HEATER	A.O. SMITH "DURA-POWER"	DEL-20	3000 W	277 V	1	WATTS #LFN36-M1 VACUUM RELIEF VALVE AND AMTROL 'THERM-X-TROL' EXPANSION TANK
	40 GALLON (LOW BOY) COMMERCIAL LIGHT DUTY ELECTRIC WATER HEATER	A.O. SMITH "DURA-POWER"	DEL-40	6000 W	208 V	3	WATTS #LFN36-M1 VACUUM RELIEF VALVE AND AMTROL 'THERM-X-TROL' EXPANSION TANK
	SERIES 1 POINT OF USE THERMOSTATIC ELECTRIC TANKLESS WATER HEATER	EEMAX, INC.	EX3277	3000 W	277 V	1	

	PLUMBING F	IXTURE SCH	EDULE					
MARK	DESCRIPTION	MANUFACTURER	MODEL#	ACCESSORIES	SAN	VENT	CW	HW
FS-1	SQUARE CAST IRON FLANGED RECEPTOR WITH SEEPAGE HOLES, ACID RESISTANT COATED INTERIOR, NICKEL BRONZE RIM, DOME BOTTOM STRAIN AND SECURED 1/2 GRATE	JAY R. SMITH MFG. CO.	3100-02-1 2		2"	2"		
IM-1	ICE MAKER OUTLET BOX – WHITE POWDER COATED 20 GAUGE WALL BOX, CW CONNECTION ONLY, 1/4 TURN BALL VALVE STOP, LEAD FREE WATER HAMMER ARRESTOR	GUY GRAY	MIB1HAAB	WATER FILTER: AQUA PURE #AP717			1/2"	
L-1	UNDERMOUNT VITREOUS CHINA BASIN LAVATORY (BOWL SIZE 15-1/16"x12-1/16"x5-1/2") WITH UNGLAZED RIM (PROVIDE RIM SEALANT), BARRIER FREE (ADA APPROVED), FRONT OVERFLOW	AMERICAN STANDARD "OVALYN"	0495.221	DELTA FAUCET #523LF-HGMHDF, WATTS #LFMMV THERMOSTATIC MIXING VALVE, McGUIRE STOPS AND P-TRAP	2"	2"	1/2"	1/2"
SH-1	SEE ARCHITECTURAL PLANS FOR SHOWER ENCLOSER SIZE. PROVIDE PRESSURE BALANCING VALVE, FIXED SHOWER HEAD, METAL LEVER HANDLE	DELTA "TECK"	T13H-182		2"	2"	1/2"	1/2"
SK-1	SELF-RIMMING SINGLE COMPARTMENT, OFF-CENTERED REAR DRAIN LOCATION, 3 HOLES ON 4" CENTERS, OVERALL SIZE: 22" L x 19" W x 6" DEEP, TYPE 304 18 GAUGE STAINLESS STEEL, BACKLEDGE, SATIN FINISH RIM AND BOWL, FULLY UNDERCOATED TO REDUCE CONDENSATION AND RESONANCE, CRUMB CUP STRAINER.	1	LRAD2219 -6-3	DELTA FAUCET #100LF-HDF (1.5 GPM AERATOR), ELKAY STRAINER #LK35, McGUIRE STOPS AND P-TRAP	2"	2"	1/2"	1/2"
WC-1								



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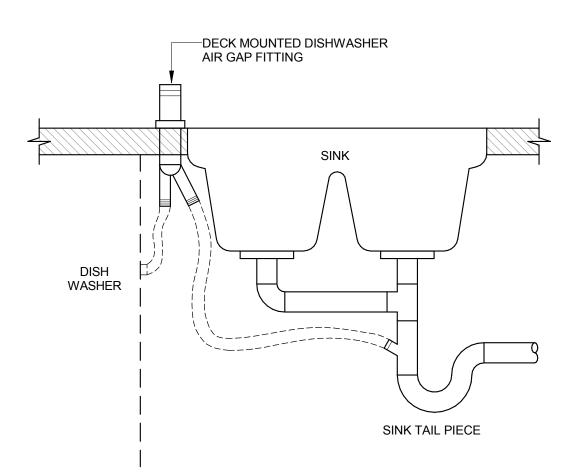
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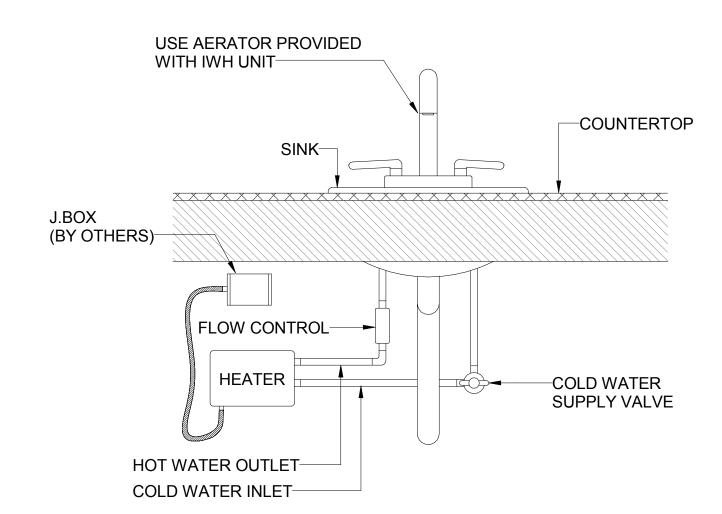
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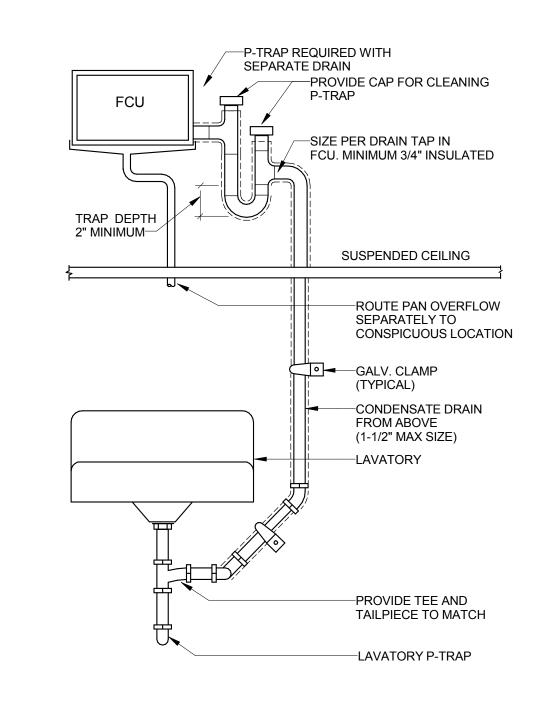
9 TYPICAL LAVATORY & SINK
NOT TO SCALE



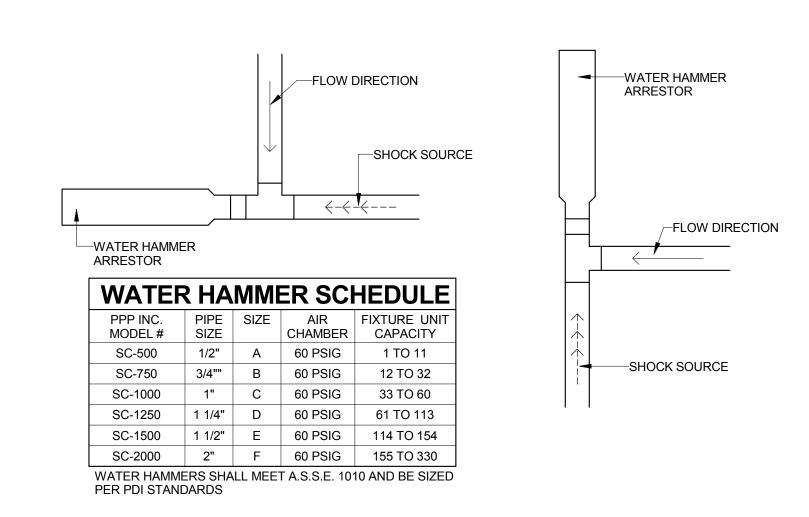
5 DISHWASHER AIR GAP TO TAILPIECE
NOT TO SCALE



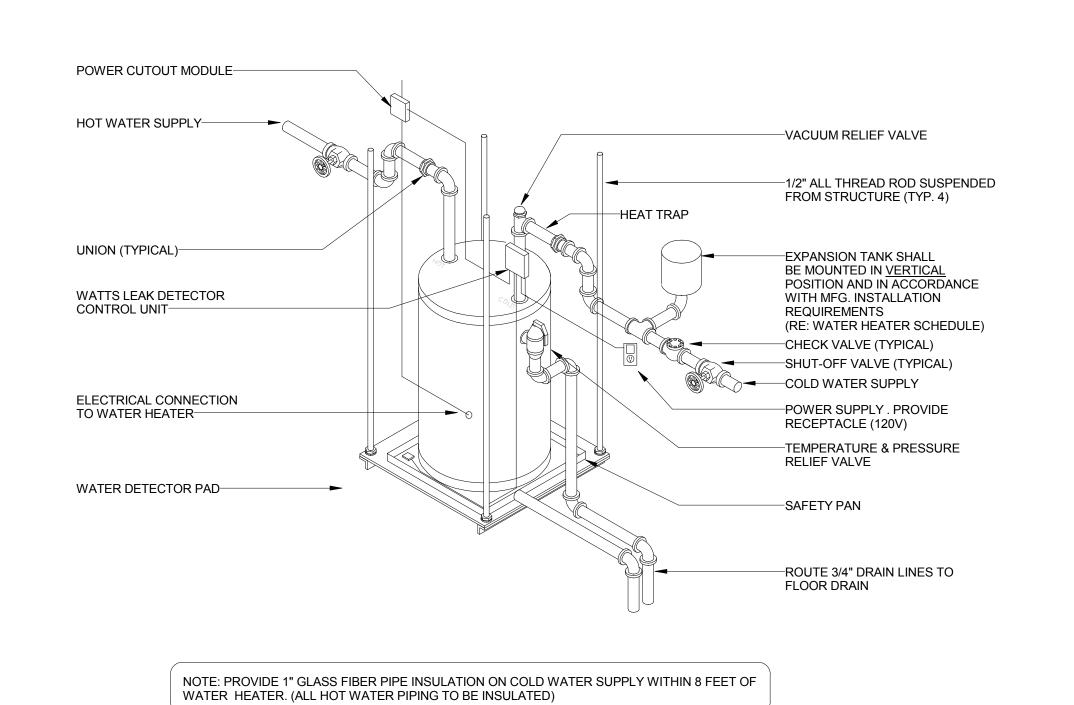
6 INSTA-HOT WATER HEATER DETAIL
NOT TO SCALE



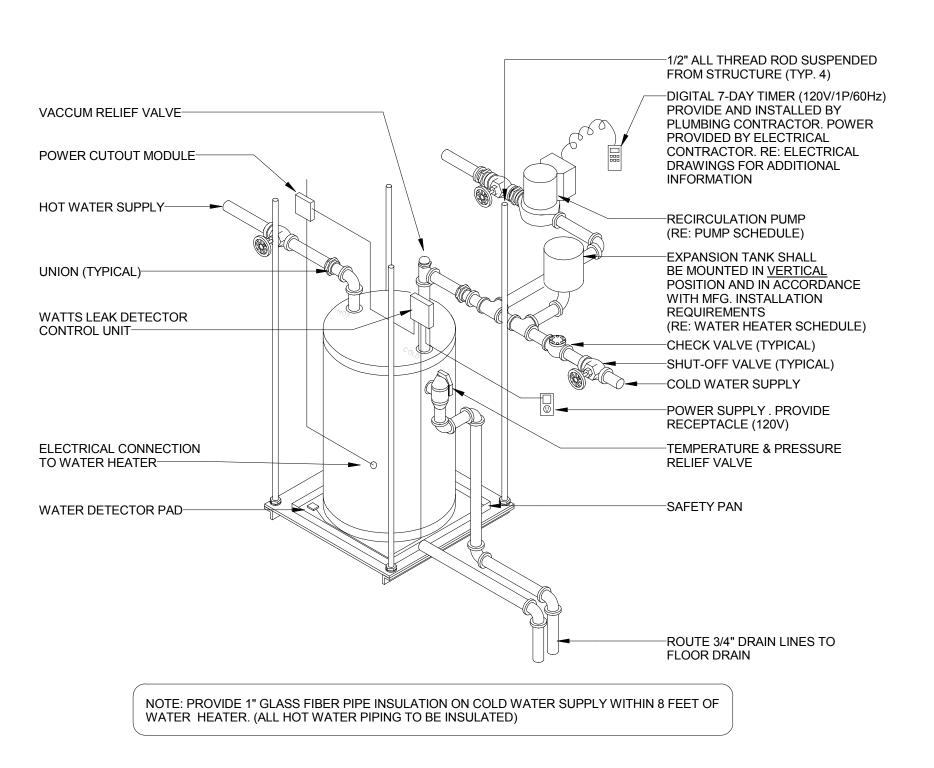
7 CONDENSATE DRAIN TO TAILPIECE
NOT TO SCALE



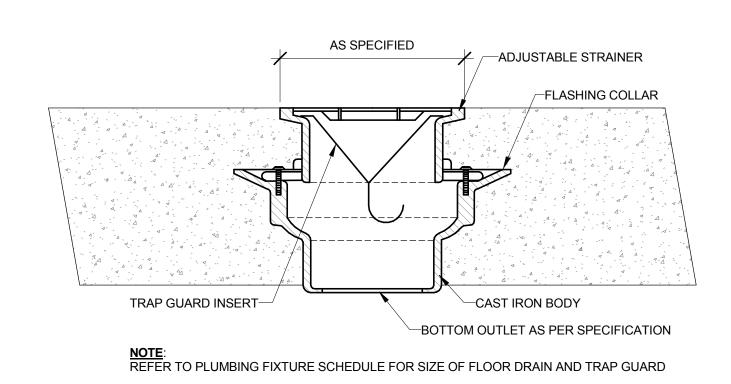
8 WATER HAMMER ARRESTOR
NOT TO SCALE



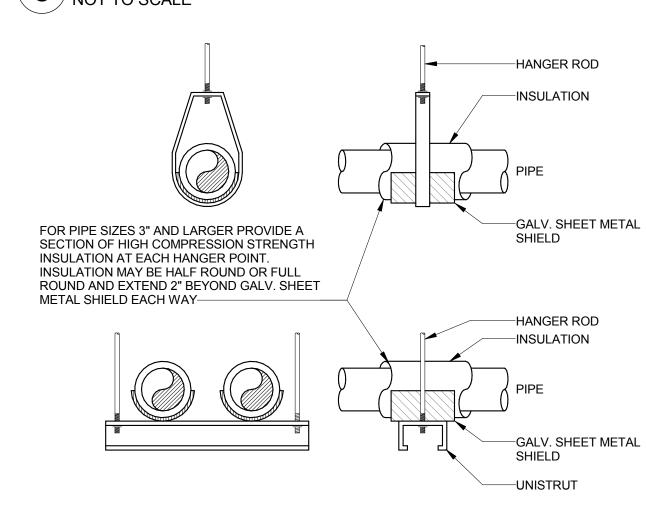
1 ELECTRIC WATER HEATER W/ WATER DETECTOR (ABV. CLG.)
NOT TO SCALE



2 ELECTRIC WATER HEATER WITH RECIRC. PUMP
NOT TO SCALE



FLOOR DRAIN WITH TRAP GUARD
NOT TO SCALE



4 HANGERS FOR INSULATED PIPING
NOT TO SCALE



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02.12.2015 Date of Expiration: 11/02/15 Date of Affixation:

Project Revisions:

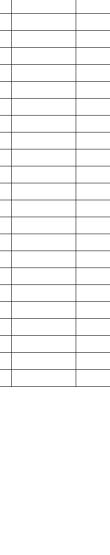
1	11/06/15	ISSUE FOR PRICIN

Key Plan

7915276.00

Sheet Name: PLUMBING DETAILS

Project Number:



ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

801 TRAVIS, SUITE 2000
HOUSTON, TX 77002
TECHNOLOGIES Ph: 713-237-9800 | Fax: 713-237-9801
Texas Registered Engineering Firm F-10573

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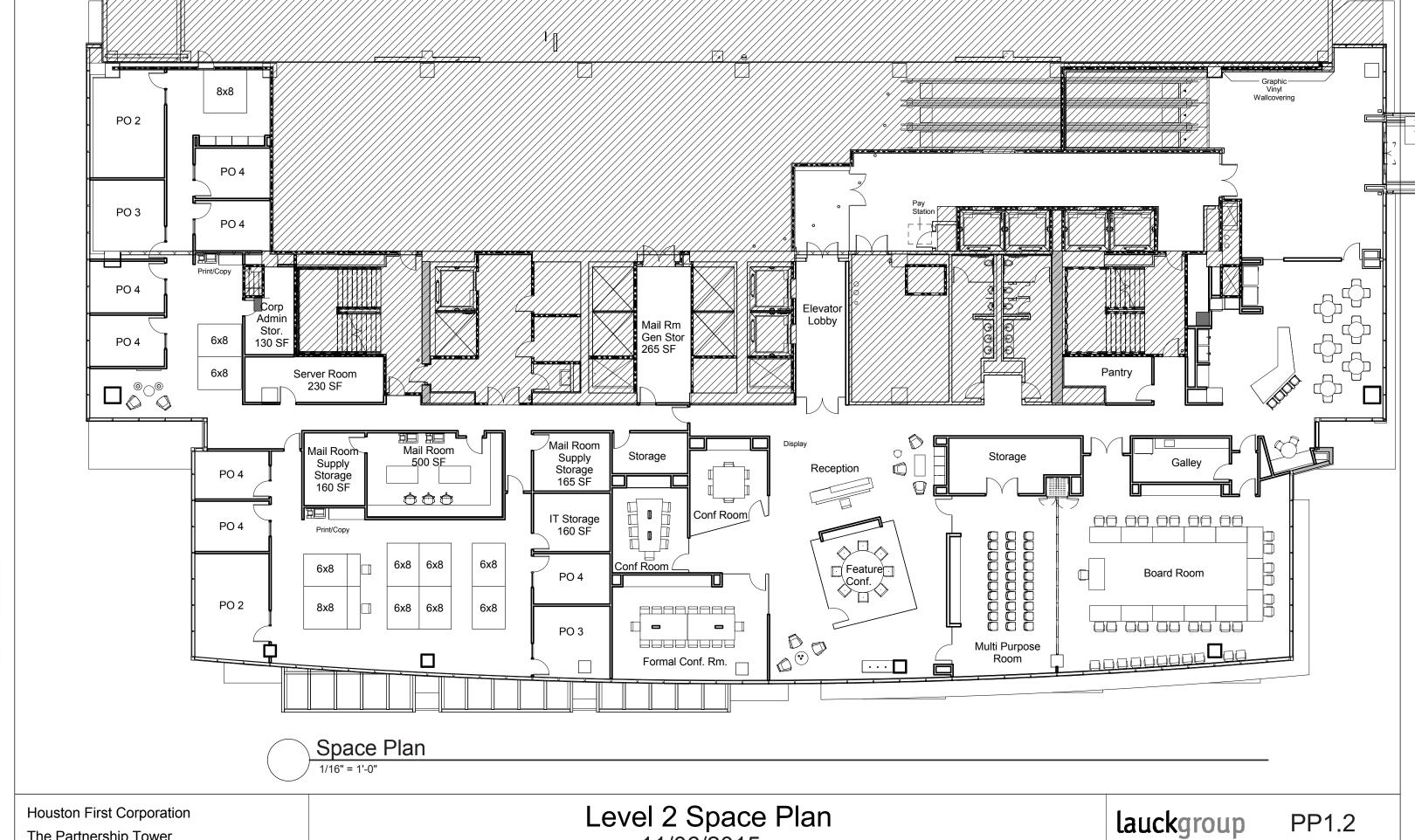
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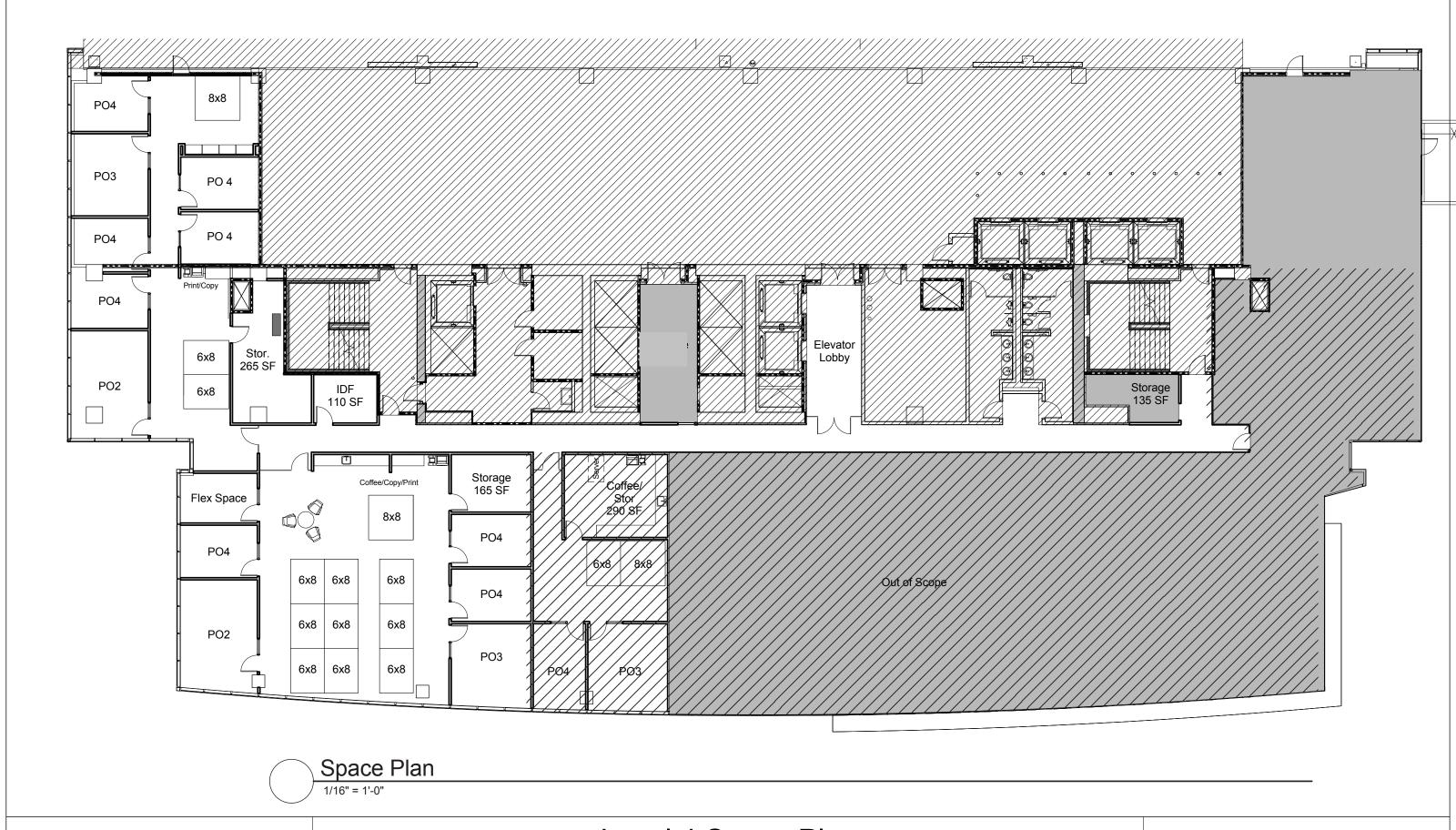
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7915276.00 Project Number:

Sheet Name: PLUMBING RISER DIAGRAM

P07





Level 4 Space Plan 11/06/2015

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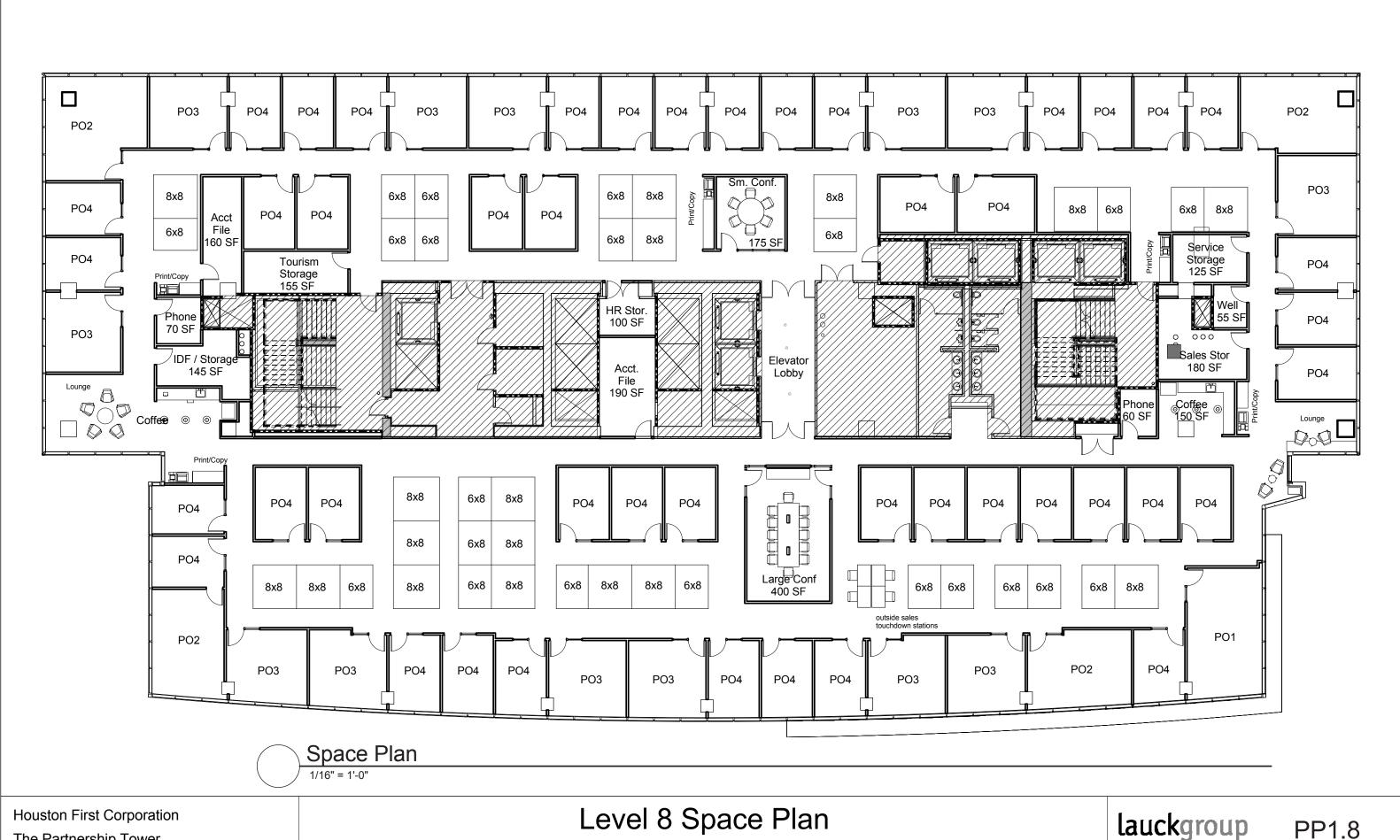
PP1.4



Level 6 Space Plan 11/06/2015

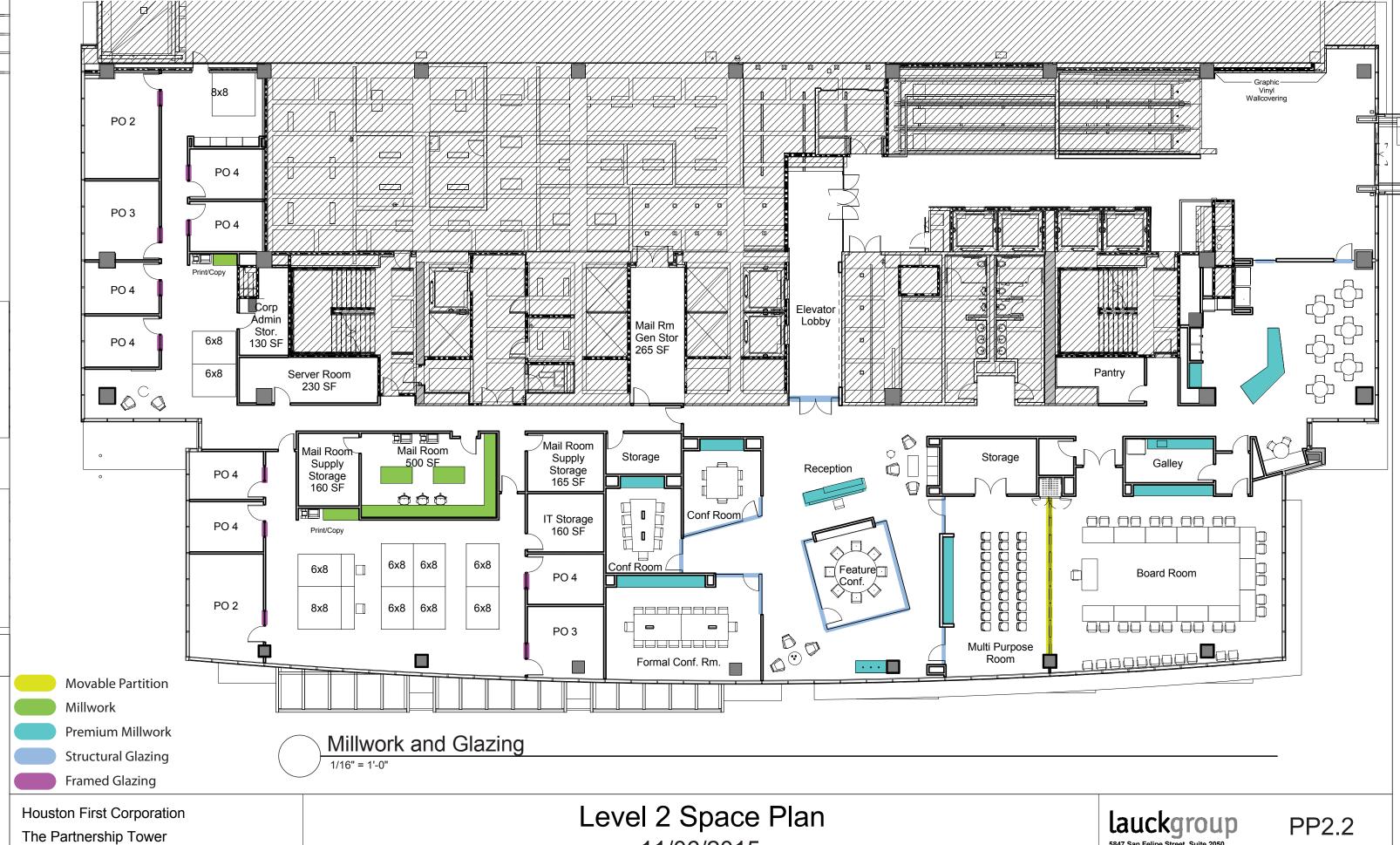
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PP1.6



Level 8 Space Plan 11/06/2015

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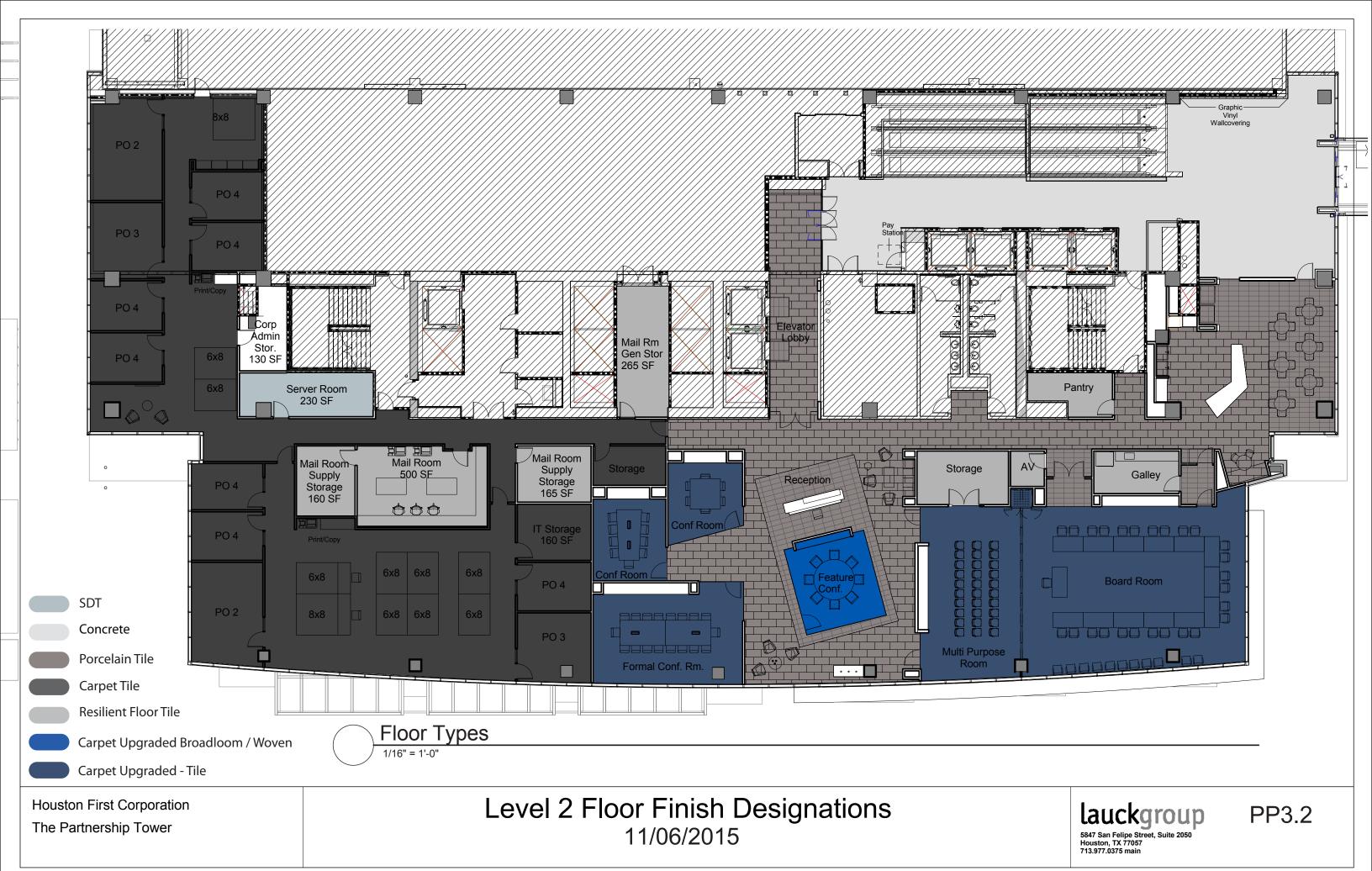






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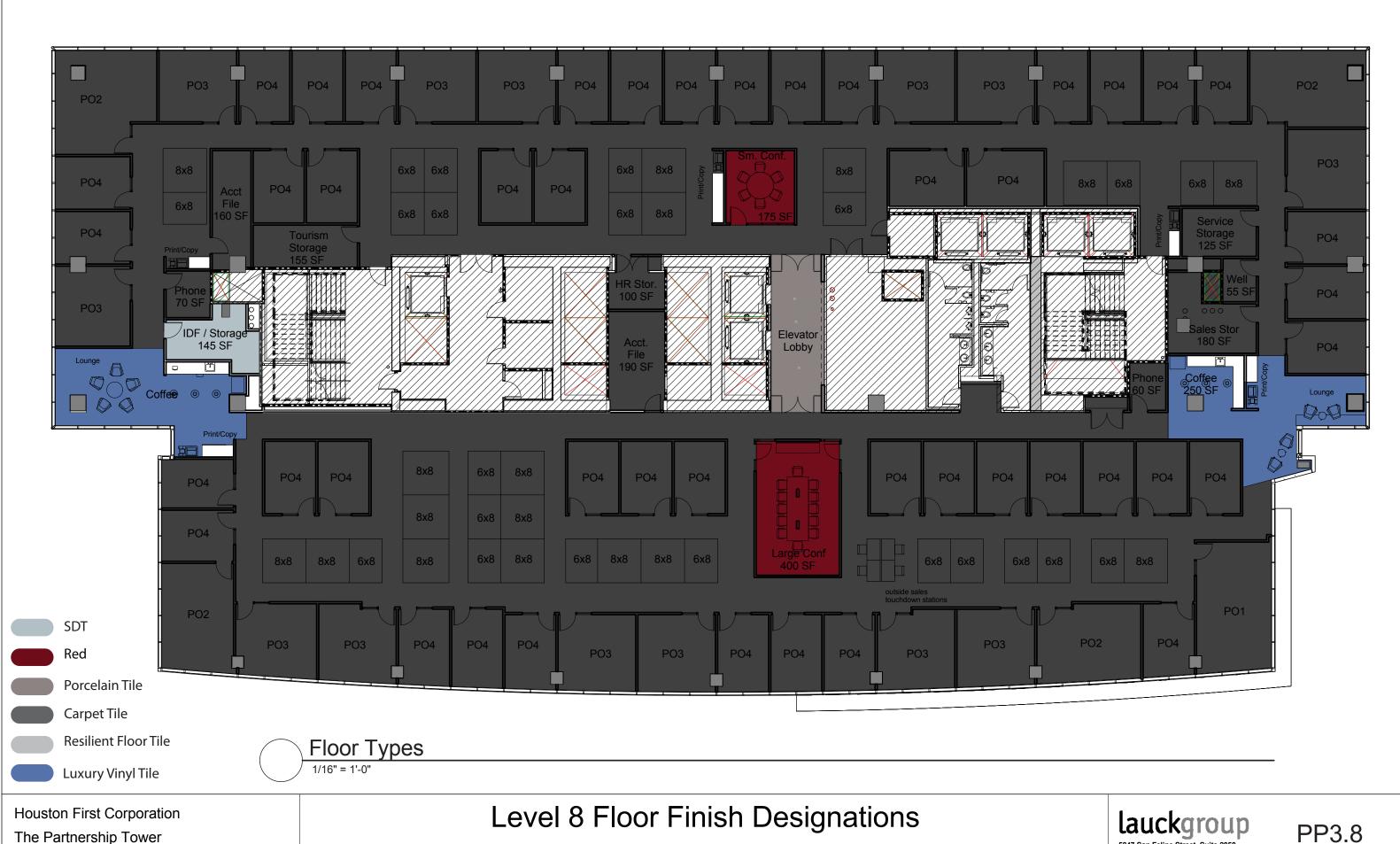
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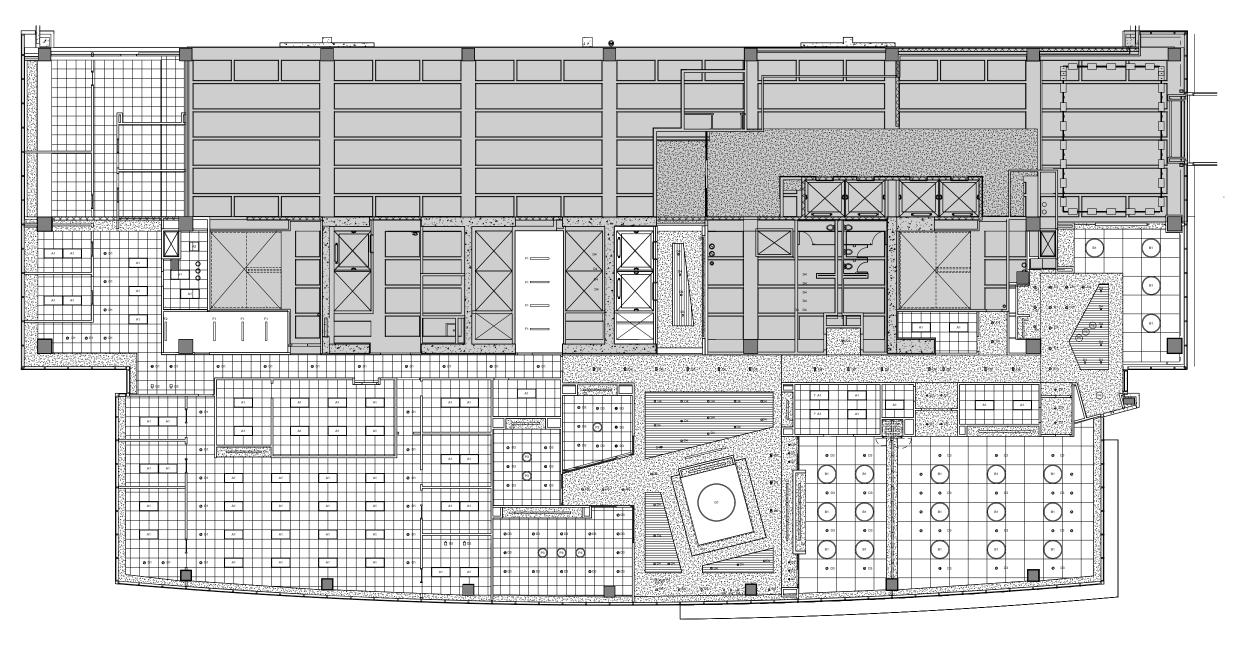


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4X4 Ceiling Tile
2X2 Ceiling Tile
Gyp. Ceiling
Wood Acoustical Plank

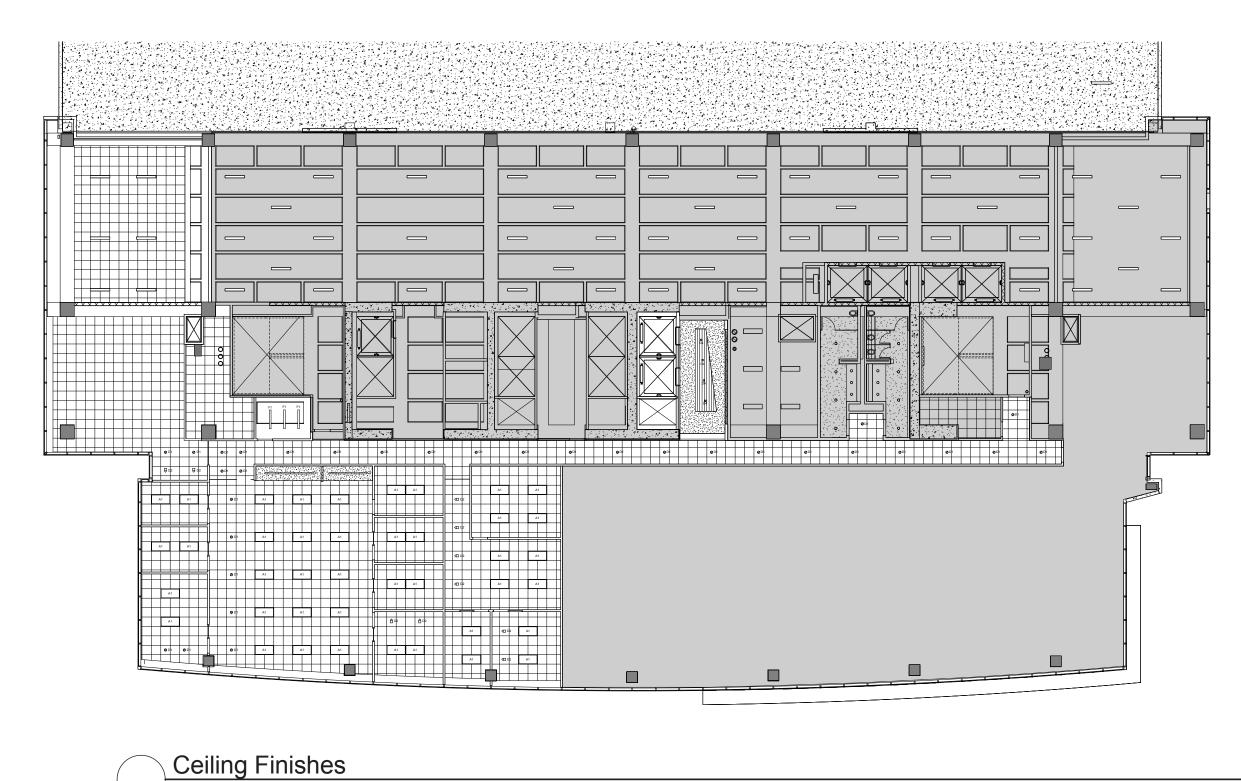
Ceiling Finishes

1/16" = 1'-0"

Houston First Corporation
The Partnership Tower

RCP - Level 2 11/06/2015





2X2 Ceiling Tile

Gyp. Ceiling

Wood Acoustical Plank

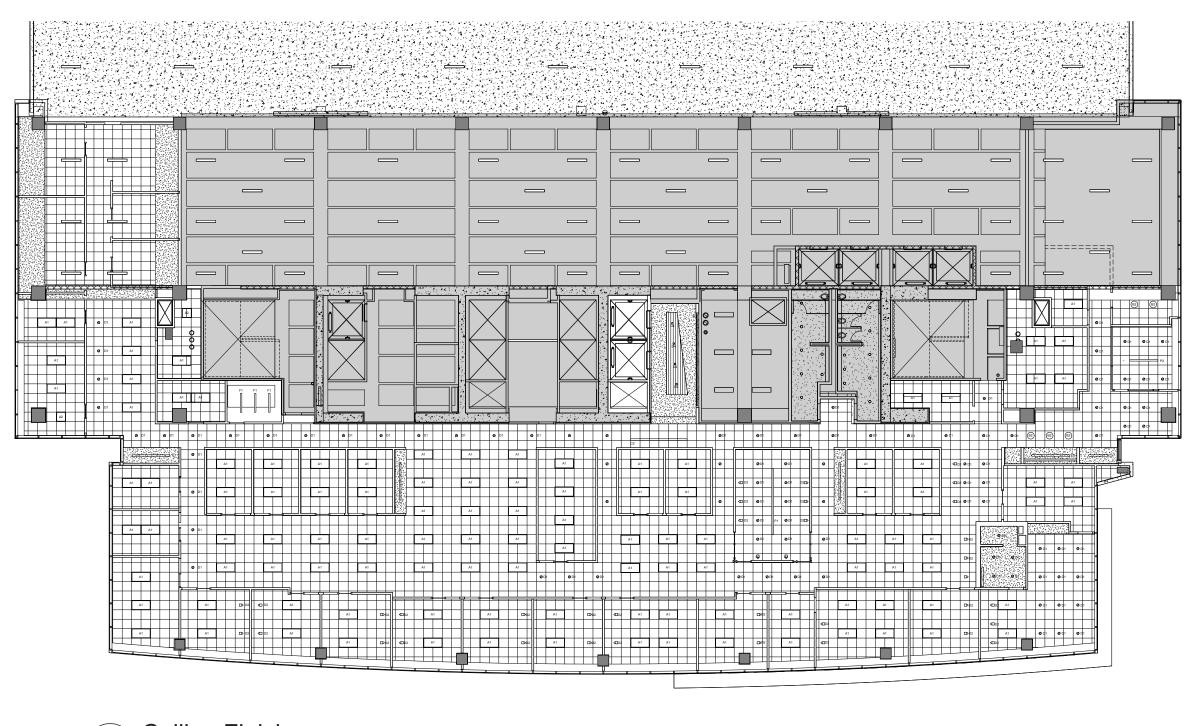
1/16" = 1'-0"

Houston First Corporation
The Partnership Tower

RCP - Level 4 11/06/2015



PP4.4



2X2 Ceiling Tile

Gyp. Ceiling

Wood Acoustical Plank

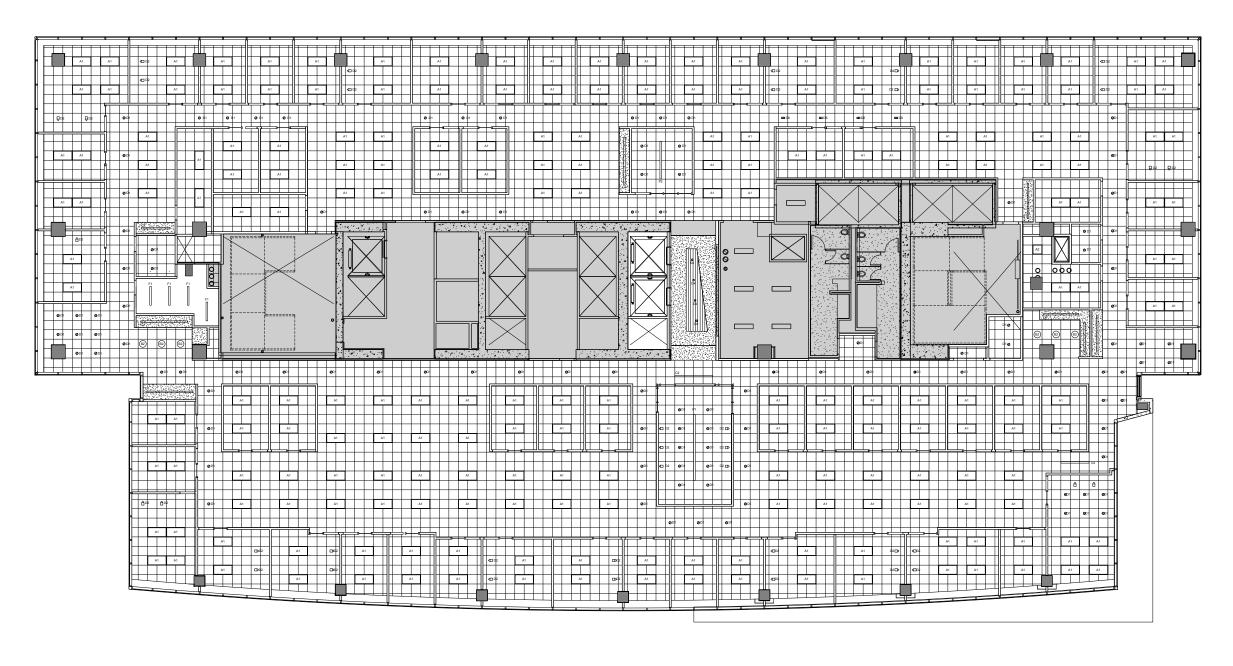
Ceiling Finishes

1/16" = 1'-0"

Houston First Corporation
The Partnership Tower

RCP - Level 6 11/06/2015





2X2 Ceiling Tile

Gyp. Ceiling

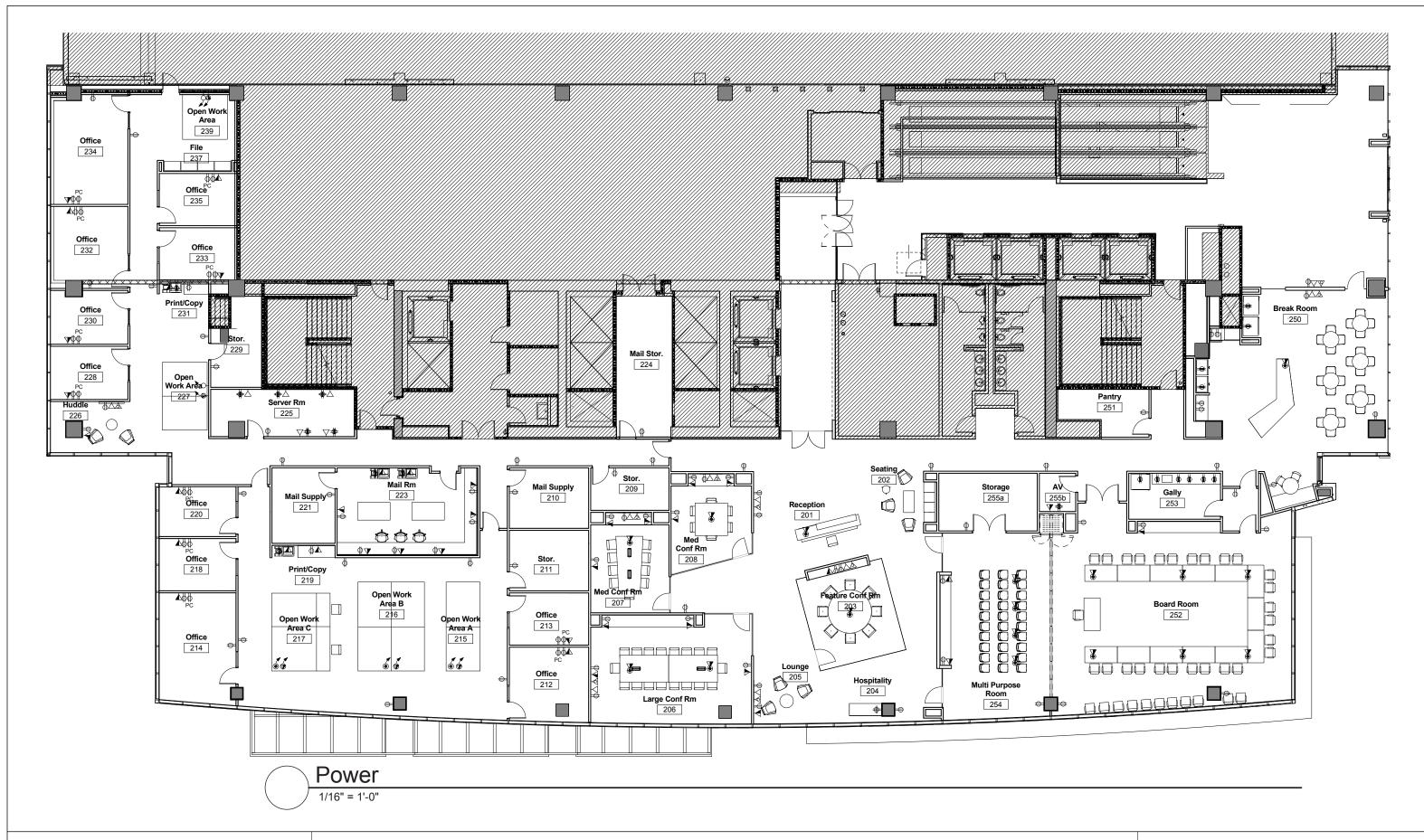
Wood Acoustical Plank

Ceiling Finishes

Houston First Corporation
The Partnership Tower

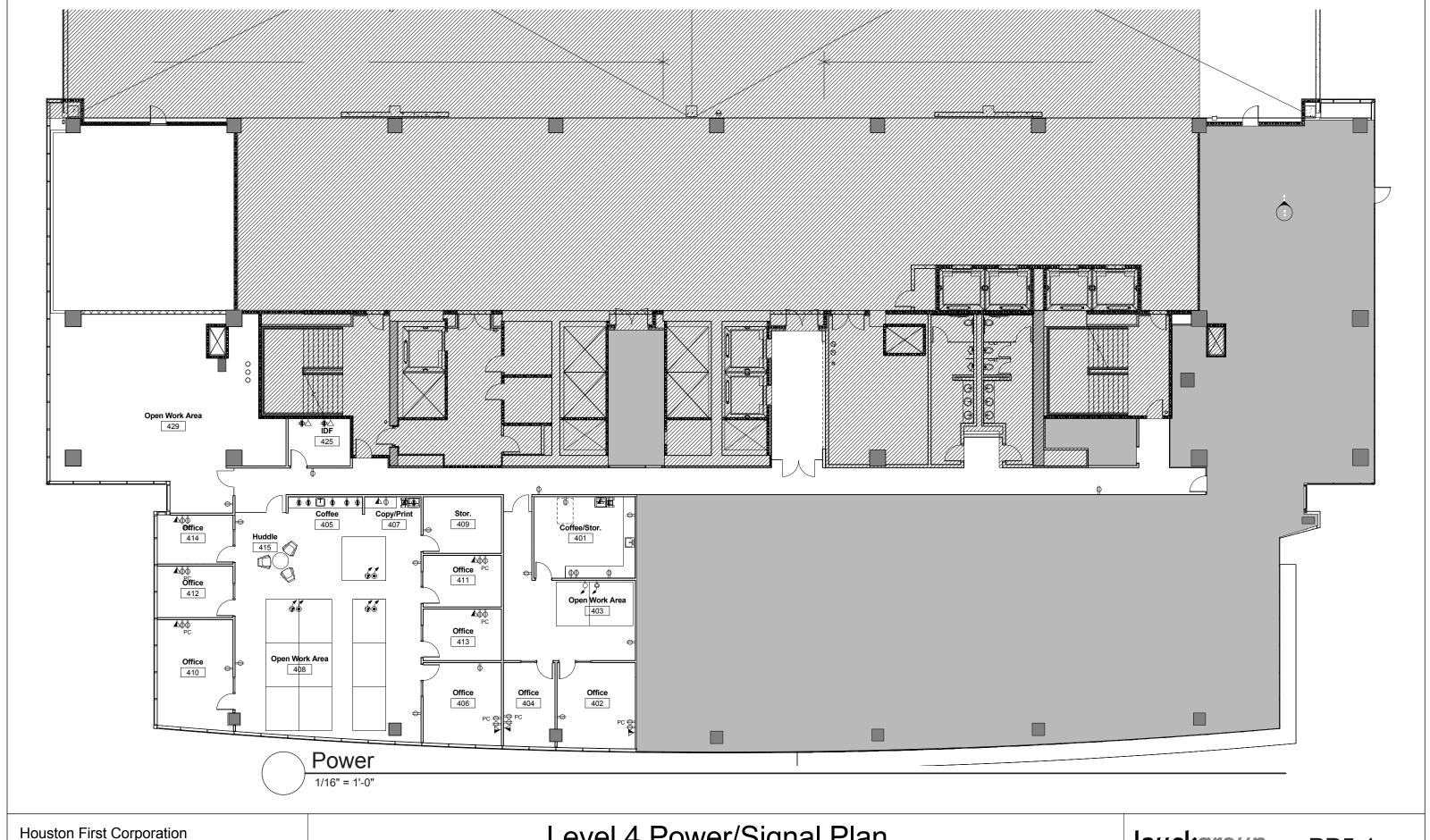
RCP - Level 8 11/06/2015





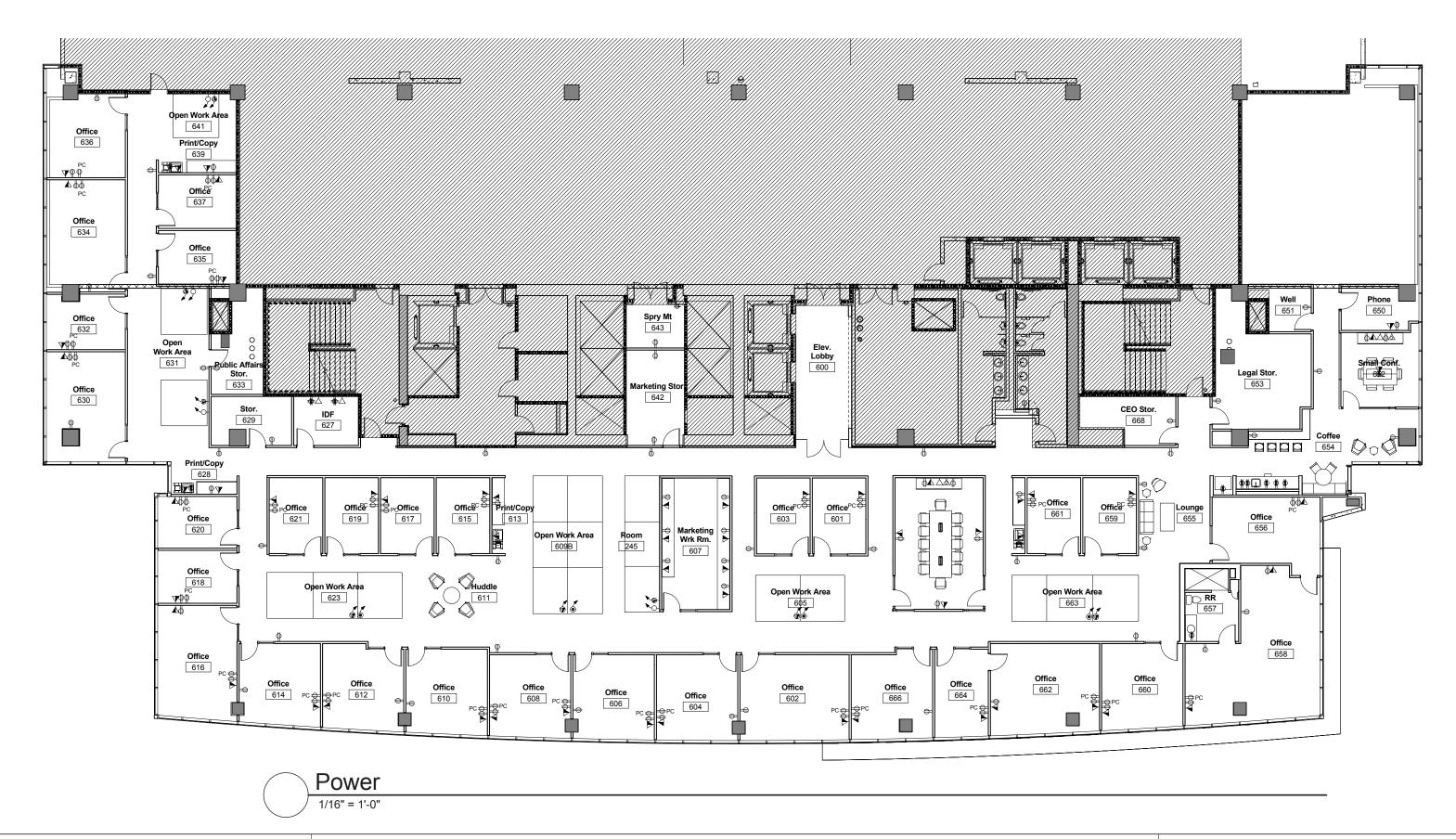
Level 2 Power/Signal Plan 11/06/2015

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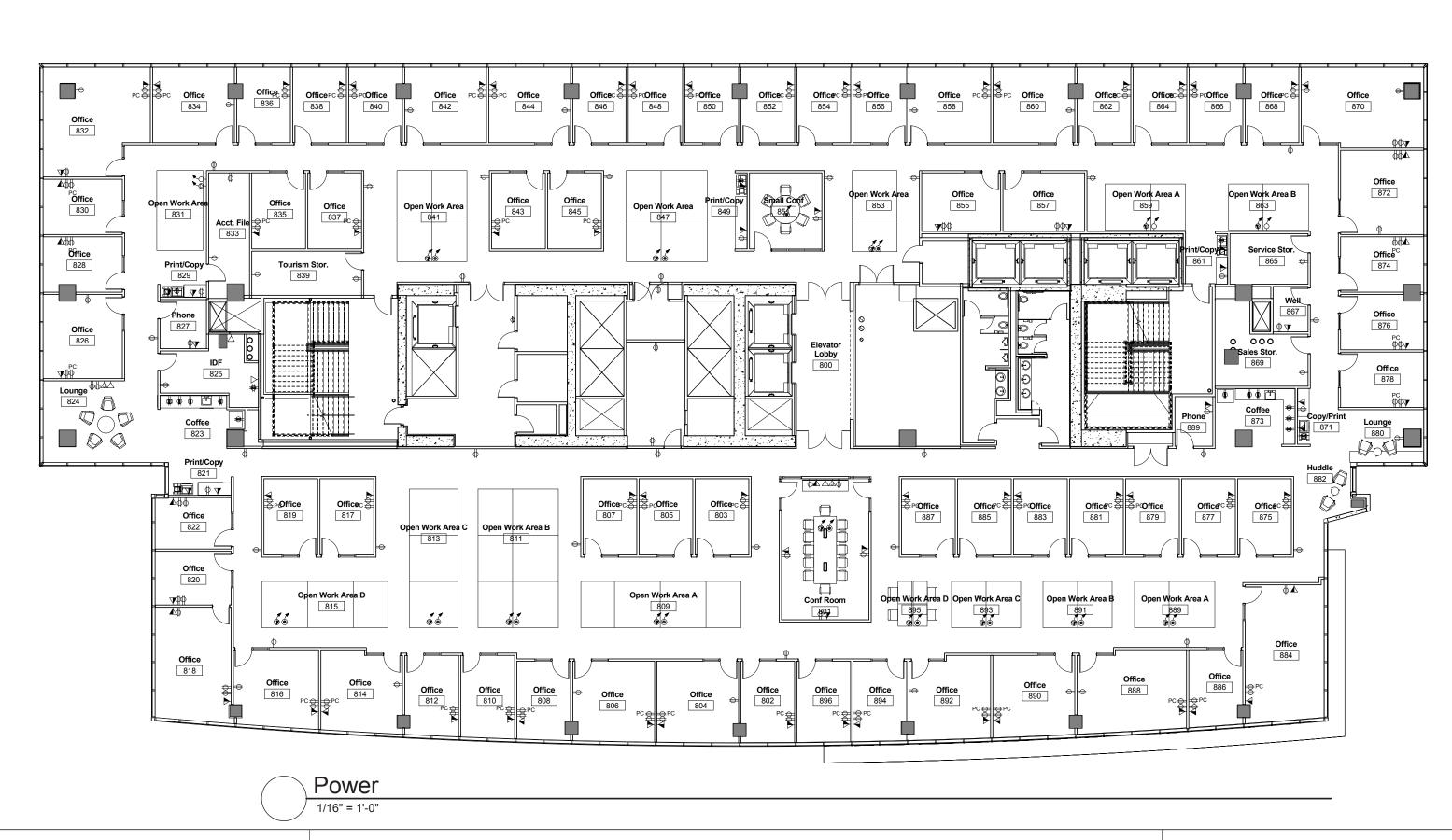
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Level 6 Power/Signal Plan 11/06/2015

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Level 8 Power/Signal Plan 11/06/2015

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